

The Bulletin of the
UNIVERSITY of MINNESOTA

Learn for Living



Correspondence Study Courses Announcement 1946-47

XI-LX-10

Suggestions for 1946-47

There's a new world in the making! These courses will help you do your share of the job:

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INFORMATION

(Service Personnel and Veterans. See page 6.)

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 \$10. A few 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 the course further on in this bulletin.

Does This Cost Include Books?

No; you must buy your own books or borrow them from a library. Suggestions on where to buy or borrow books will be sent to you with your course. Nor does the cost of the course cover apparatus such as a drawing set or slide rule.

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?

This depends on you. The description of each course in this bulletin states the number of lessons in the course. You can complete these lessons as fast as you are able, tho we may ask you to reduce your speed if your work suffers because of it.

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 extend its validity for another year by paying a \$1 reinstatement fee.

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 the plan 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.

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.

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. Payment should be made by post-office 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:

Art Ed. 15 Interior Decoration. Design principles in relation to the home. Identification of period and modern furniture. Subjects discussed include wall treatment, floor coverings, color schemes, furniture arrangement, window treatment, and the use of accessories. Of interest to sales people, homemakers, and decorators. No prerequisite.

16 lessons, 3 credits, \$10, Mrs. Lewis

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, **Art Ed.** means Art 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 non-credit 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. Note that these are **quarter credits**; three quarter credits equal two semester credits. Unless these credits are called **Extension credits** or entrance units, they are understood to be valid toward a degree in the college under which the course in question is organized. **Extension credits** count only toward Extension certificates, not toward degrees. Entrance units count only toward entering the University, not toward certificates or degrees.

Then comes mention of the **tuition fee** (here, \$10) 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?

Certificates: See page 6.

Credits:

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 47.

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. Note, however, that each college of the University has its own entrance requirements. This means that a student who has been graduated and certificated 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 page 47.

Limitations—No college of the University will grant a degree without at least 1 year (45 quarter credits) of residence study. Therefore, since correspondence study does not count as a residence study, a correspondence student who is working for a degree must spend at least the senior year in residence study. So the maximum number of credits which he may earn for a degree in any college by correspondence study is 135. But some of the colleges have placed additional restrictions on the number of credits which may be earned toward a degree by correspondence study, as follows (these limitations may be waived for service personnel):

College of Science, Literature, and the Arts: Only 3 credits in the student's major sequence.

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 as indicated in class descriptions.

(3) As elective credits: Draw. 44 Freehand Lettering, Genl. Eng. 70 Slide Rule, Civ. Eng. 5c Steel Building Design. 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.

Validity—A course designated "3 credits" counts toward a university degree; a course designated "3 Extension credits" counts only toward an Extension certificate. Note that credits are ordinarily valid only in the college which offers the course in question.

Established by 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 advisers of the Correspondence Study Department.

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 University 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 advisers in the department.

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.

Examinations: To earn credit in a correspondence course the student must pass the final examination. This examination should be written in the depart-

ment's offices in the Administration Building on the Main 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 1 year) has expired, the regular reinstatement fee of \$1 will be charged for the examination except for service personnel.

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 consult 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.

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. A noncredit student's first written assignment must include a proposal to the instructor as to how much of the work of the course the student wishes to do.

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 refund, provided he makes application no later than six months after date of registration, or before he has completed half the course. Of his tuition fee, provided he is eligible for a refund, \$2 registration fee and 65 cents for each lesson serviced are non-refundable.

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.

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 sixty-five cents for each lesson

already completed. 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.

Transfer is also permitted between the correspondence courses and extension classes of the General Extension Division on the basis of terms available on request.

SPECIAL INFORMATION FOR SERVICE PERSONNEL AND VETERANS

Service Personnel

Three 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 co-operation 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. The University of Minnesota grants credit for satisfactory completion of these courses.

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.

Type 3—Service personnel may also register for any of the courses listed in the USAFI catalog. The fee is \$2 for the first course and nothing for subsequent courses. Register through USAFI. The University of Minnesota will allow credit for the satisfactory completion of USAFI college-level correspondence courses (designated C) and their respective end-of-course tests.

Veterans

Eligible veterans may have tuition and book costs of 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 office of the Veterans Administration. To secure this certificate the veteran should complete Veterans Administration Form 1950 and send it, together with a certified copy of discharge, to his nearest Veterans Administration office. Write to Correspondence Study Department for further details concerning registration.

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. **Substitutions will be permitted for courses not now available.** Transfer students must complete at least 25 per cent of the work for any certificate by correspondence courses or Extension classes of the University of Minnesota. Special attention is invited to the four short certificates listed immediately below. For advice or information on programs of study leading to certificates, consult the Students' Work Committee. Certificates are awarded to students who complete with a C average any of the following programs of study:

GENERAL CERTIFICATES

The Citizen's Tool Kit (27 credits)*First Year*

Engl. Comp. 4-5-6 Freshman Composition
 Phil. 2 Logic
 Speech 1 Fundamentals of Speech

Second Year

Psych. 1 or 1c
 Speech 2-3 Fundamentals of Speech
 Phil. 54 or 63

American Studies Certificate: Know Ourselves (27 credits)*First Year*

Humanities in the United States
 Hist. 20-21-22 American History

Second Year

Pol. Sci. 1-2 American Government
 Additional courses in American Geography, American Government, American History,
 or American Literature to make a total of 27 credits for the certificate

Latin-American Certificate: Know Our Neighbors (24 credits)*First Year*

Spanish 1-2 Beginning Spanish
 Spanish 7 Latin-American Culture
 Econ. 126 Economic Problems of Latin America

Second Year

Spanish 3-4 Intermediate Spanish
 Geog. 110 Geography of Latin America
 Anthropol. 118 Indian Civilizations of Mexico and Peru

International Certificate: Know Our World (24 credits)*First Year*

European History: 6-9 credits
 Geography: 3-6 credits

Second Year

Pol. Sci. 25 World Politics
 Pol.Sci. 30 Problems of Postwar Reconstruction
 Pol.Sci. 85 Problems of World Politics
 Econ. 166 International Economic Problems

Liberal Education Certificate (45 credits)

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, philosophy, speech

Sciences: astronomy, botany, chemistry, geology, mathematics, physics, psychology, zoology

Social Science: 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.

N.B.—The 90-credit Junior College and Liberal Education certificates have been discontinued, since most students interested in these certificates would probably prefer to work for the new 90-credit degree, associate in liberal arts, now granted by the College of Science, Literature, and the Arts. For information about this degree, consult the Students' Work Committee.

BUSINESS CERTIFICATES**Junior Certificate (45 credits)**

Core requirement:

Bus. Engl. 1ex, or Composition 4, or exemption
 B.A. 51 Business Law
 Econ. 5 Elements of Statistics
 Econ. 6-7 Principles of Economics
 Econ. 20-25-26 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

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
 B.A. 51-52 and either 53 or 54 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. 20-25-26 Elements and Principles of Accounting
 Econ. 161 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
 Draw. and Des. Geom. 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
- Draw. and Des. Geom. 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

OTHER EXTENSION SERVICES OF THE UNIVERSITY IN WHICH YOU MAY BE INTERESTED

AGRICULTURAL EXTENSION SERVICE

The Agricultural Extension Service includes the county agricultural agents, the home demonstration agents, and the 4-H Club agents working in the counties, as well as the subject-matter specialists working out of the state office. The purpose of the Agricultural Extension Service is to assist farm people in improving farm and home conditions through the adoption of improved practices in accord with plans of work prepared by their own groups.

Various short courses are arranged each year in the University Department of Agriculture. These short courses and conferences vary in length from one day to eight or ten weeks. For further information write directly to the Director of Short Courses, University Farm, St. Paul 8, Minnesota.

GENERAL EXTENSION DIVISION

Center for Continuation Study: Arranges short courses for all kinds of professional and trade groups throughout the year; registrants in these courses can get living accommodations at the Center.

Community Service Bureau: Provides lectures, lyceum courses, concerts, entertainments; lends lantern slides and films for visual instruction; gives advice on selection and production of plays.

Correspondence Study Department: Encourages clubs and other groups to study any of its 275 courses on a group basis; provides study guides for clubs and other groups.

Extension classes in the Twin Cities, Duluth, and other cities of Minnesota.

Bureau for Current Affairs: Issues "Current Affairs Reading Bulletin," a monthly digest of timely books and magazine articles; conducts a Current Affairs Reading Room, 108 Library, and a weekly radio discussion over KUOM called "The World We Want."

Municipal Reference Bureau: Maintained for the benefit of municipalities of Minnesota and their officers; offers consultation service to city councils.

Radio Station KUOM: Provides daily educational broadcasts over a wavelength of 770 kilocycles.

COLLEGE COURSES*

(High school courses begin page 47.)

AGRICULTURE

Ag. 1 General Farm Crops. The topics are as follows: the importance of crop plants; the types of plants grown for human food and for livestock feeding; the relationships to the sciences; the fundamentals of plant growth; plant classification; crop rotations; soil and maintenance of its fertility; tillage and cultivation; grain crops; forage crops; pastures; miscellaneous crops; and crop improvement. It is hoped that the student who completes the course will be able to practice the art of agriculture on a sound scientific basis. The emphasis of the subject matter will be on practical applications with sufficient consideration given to scientific facts and theory to enable the student to understand the why and wherefore of recommended farm practices. No prerequisite.
16 lessons, 3 credits, \$10, Mr. Thomas

ANTHROPOLOGY

40 Introduction to Anthropology. Characteristics of the human races; fossil men; pre-history. The life of primitive peoples; economics, religious, social activities, and other phases of culture. The bearings of anthropology on present-day thought and problems. No prerequisite.
27 lessons, 5 credits, \$17, Mr. Cline

ART

Art Ed. 1 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, \$10, Mrs. Lewis

Art Ed. 15 Interior Decoration (Introduction to Art Education B). Design principles in relation to the home. Identification of period and modern furniture. Subjects discussed include wall treatment, floor coverings, color schemes, furniture arrangement, window treatment, and the use of accessories. Of interest to sales people, homemakers, and decorators. No prerequisite.
16 lessons, 3 credits, \$10, Mrs. Lewis

Art Ed. 17c Art Appreciation. An introductory survey of art to provide a background for personal growth and for effective co-operation 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

* 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.

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. 17-18-19. No prerequisite.

21 lessons, 4 credits, \$13.50 plus 75 cents material fee, Mr. Gayne

Art Ed. 22 Advanced Interior Decoration (Second Year Design). Continuation of Art Education 15, emphasizing color theory and the study of decorative fabrics. Trends in materials considered. Glassware, china, silver accessories studied. Prerequisite: Art Education 15.

16 lessons, 3 credits, \$10, Mrs. Lewis

Home Ec. 2c Introduction to Textiles. A course for consumers and people in the field of merchandising. A study of textile fibers as used in clothing and home furnishings. Their identification, properties, and uses. Methods of yarn and fabric construction and fabric finishing. Determination of fabric quality in relation to use. How to care for fabrics. No prerequisite.

16 lessons, 3 credits, \$10 plus \$1 material fee, Miss Birong

Art Ed. 31 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, \$10, Mrs. Robinson

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 jeweler's saw in pierced work; etching; soldering; making candlesticks, book ends, desk sets, lamps, bracelets. No prerequisite.

16 lessons, 3 credits, \$10, Mr. Dent

Engineering Drawing. See page 22.

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, \$17, Mr. Luyten

BUSINESS ADMINISTRATION

(For other business courses see page 16, Economics)

N.B.—See page 16 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, \$10, Mr. Haga

†51 **Business Law—Contracts and Agency.** Contracts: Formation of contracts, the essentials thereof, the operation and interpretation of contracts. Agency: Methods of forming the relation and liabilities of agency. Since the general rules of contracts are fundamental to all work in business law, this course must precede Business Law 52, 53, 54c. No prerequisite.

16 lessons, 3 credits, \$10 plus \$1 material fee, Mr. Peterson

†52 **Business Law—Partnerships, Corporations, and Bankruptcy.** Partnerships: formation of partnerships and application of uniform partnership act. Joint stock companies; how distinguished from ordinary partnerships; how like ordinary partnerships; statutory requirements. Corporations: formation, rights and liabilities. Prerequisite: Business Law 51.

16 lessons, 3 credits, \$10 plus \$1 material fee, Mr. Peterson

†53 **Business Law—Sales, Bailments, Negotiable Instruments, Personal Property.** Prerequisite: Business Law 51.

16 lessons, 3 credits, \$10 plus \$1 material fee, Mr. Peterson

54c **Business Law—Real Property, Mortgages.** Classification of property, distinction between real and personal property; estates in land as to quantity, quality, and time of enjoyment; conveyances, mortgages and liens. Prerequisite: Business Law 51.

16 lessons, 3 credits, \$10 plus \$1 material fee, Mr. Peterson

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, \$10, Mr. Borak

59 **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, \$10, Mr. Graves

60 **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, \$10, Mr. Graves

61 **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, \$10, Mr. Graves

67 **Retail Store Management for Pharmacists.** A survey of store planning, management, and control for operating or prospective pharmacists. Retailing background; organizing, locating, and financing a drug store; layout and equipment; insurance; purchasing and pricing; sales planning, promotions, and services; personnel; professional aspects; costs, expenses, and records; regulation and control. Practical problems and projects are included. Prerequisite: Economics 10 and 30, or equivalent. Registrations accepted beginning July 1, 1946.

16 lessons, 3 credits in College of Pharmacy, \$10, Mr. Chute

† All three courses (B.A. 51-52-53) required for credit.

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 methods of studying and solving the problems. Prerequisite: Principles of Economics I and II, or equivalent; recommended to business men to whom it is open without prerequisite.

16 lessons, 3 credits, \$10, 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, \$10, Mr. Chute

86 Office Organization and Management. A general course dealing with the place of the office in business; functional analysis; personnel, hiring, and training; planning, production control; standardization; scientific management. Prerequisite: Principles of Economics I and II.

16 lessons, 3 credits, \$10, Miss Bentson

88 Elementary Advertising. A course emphasizing the retail point of view in advertising. The course covers the economics of advertising, advertising and retail sales promotion, advertising media and technique. Prerequisite: Principles of Economics I and II, or equivalent.

16 lessons, 3 credits, \$10, Miss Canoyer

95 Auditing Laboratory. See Course 135.

130 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. "Cost-plus" and "target" contracts, C.P.A. cost problems. Prerequisite: Economics 25 and 26.

16 lessons, 3 credits, \$10, Mr. Miller

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 break-even point; use of break-even computations in management; statement of application of funds; funds provided by profits; other sources of funds; and analysis of fixed asset and reserve accounts. Prerequisites for credit: Economics 20, 25, and 26 or equivalent.

16 lessons (three credits). \$10, Mr. Lund. (Registrations accepted beginning July 1, 1946.)

135 Auditing and Public Accounting. This course as offered through Correspondence Study includes Course 95, Auditing Laboratory. 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. C.P.A. questions. Prerequisite: Economics 25 and 26.

21 lessons, 4 credits, \$13.50, Mr. Miller

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. Prerequisite: Elements of Money and Banking and Corporation Finance; recommended to business men to whom it is open without prerequisite.

16 lessons, 3 credits, \$10, Mr. Stehman

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, \$10, Mr. Stehman

167 Personnel Administration. Evaluation of managerial policies and devices designed to secure the co-operation and efficient participation of employees in business, industry, and government. Attention is directed especially to the determination of labor needs, job analysis and classification, methods of recruiting workers, selective devices, training and safety programs, service rating, employment stabilization, collective bargaining, and compensation. Prerequisite: Economics 161 or registration in this course.

16 lessons, 3 credits, \$10, Mr. Heneman. (Registrations accepted after May 1, 1946.)

CHILD WELFARE

1c Child Care and Training. Physical growth and care of young children. Mental development, personality, and behavior. The management of young children. Establishing desirable habits. Play, toys, games, stories, and music. Intended primarily for the parents of young children. No prerequisite.

16 lessons, no credit, \$1, Mrs. Cummings

2c The Older Child and Adolescent. This course follows that in Child Care and Training. Physical, intellectual, and emotional development of older children. The personality of the child, his vocational and educational interests and his recreations and friendships are discussed with a view to showing how they affect the process of growing up. No prerequisite.

16 lessons, no credit, \$1, Mrs. Cummings

40 Child Training. A brief study 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, \$10, 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: C.W. 40 Child Training.

16 lessons, 3 credits, \$10, 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, \$10, 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: C.W. 40 or 80 or equivalent.

16 lessons, 3 credits, \$10, Miss Templin

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, \$10, Mr. Chu

ECONOMICS

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, \$17, Mr. Myers

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, \$17, 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, \$17, 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, \$17, Mr. Graves

20 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, \$10, 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, \$10, 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: Principles of Accounting I or equivalent.

16 lessons, 3 credits, \$10, 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, \$10, Mr. Graves

161 Labor Problems and Trade Unionism. Labor problems are viewed as part of the labor market situation. Special attention is given to seasonal, technological, and cyclical unemployment; unemployment and workmen's compensation; 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, \$10, Mr. Graves

Bookkeeping. See page 47.

† Both Econ. 6 and 7 required for credit.

EDUCATION

4c Introduction to the Philosophy of Education. A critical interpretation of leading movements in the philosophy of American education today. Special attention given to the underlying principles of progressive education, the essentialist school, the authoritarian movement, and recent developments. Readings in basic literature are emphasized, and an attempt will be made to show the significance of philosophy for educational practice, as well as the relation of educational theory to the context of American society. Not open for credit to those who have completed H.Ed. 77. No prerequisite.

21 lessons, 4 credits, \$13.50, Mr. Brameld

†51A Introduction to Secondary School Teaching I (Educational Psychology). A survey of the fundamental facts of human nature involved in educational activities. Psychological and educational measurements, learning, factors related to efficiency of learning, personality, and problems of adjustment. Elementary education majors should register for this course as 61A. Prerequisite: Psychology I-II.

16 lessons, 3 credits, \$10, Mr. Anderson

†51C Introduction to Secondary School Teaching III (The High School). A comprehensive study of the modern secondary school. The nature of adolescence; development of modern secondary school; trends in school population; nature of teaching staff; adolescents and modern social conditions; task of the secondary school in a democracy; organization; curriculum; health problems, civic obligations; the home; guidance; leisure time; evaluation of the secondary school. Prerequisite: Psychology I-II and 5 credits in Education.

16 lessons, 3 credits, \$10, Mr. Anderson

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, \$10, Mr. Field

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. Prerequisite: Ed. 51A or equivalent.

16 lessons, 3 credits, \$10, Miss Edwards

† These courses are part of Ed. 51A-B-C and Ed. 61A-B-C which are three-quarter sequences in the College of Education. Credit for any of these courses is usually granted only when the sequence is completed. Students not working for a degree at the University of Minnesota may petition the Students' Work Committee for credit in the course if they do not plan to complete the sequence. Graduates of teachers colleges should consult their advisers before registering for any part of the sequence.

60 Introduction to Statistical Methods. A study of elementary statistical methods. The commonly used statistical terms and methods are covered in this course. An attempt is made to give the student some understanding of the possibilities of different approaches—their strengths and their weaknesses—in order that he may plan studies and interpret results intelligently. Prerequisite: 6 credits in Psychology.

16 lessons, 3 credits, \$10, Mr. Johnson

67 Junior High School. A study of the origin and growth and the special purposes of this institution and of the appropriate reorganization to achieve those purposes, including the organization and content of the curriculum, provisions for individual differences, advisory system, social organization (extra-curricular activities), methods of teaching, departmentalization, promotion, staff, plant, etc. Comparisons with secondary schools of Europe. This course may be substituted for Ed. 167 in undergraduate curricula. Not open to those who have had Ed. 51C, Introduction to Secondary School Teaching III. Prerequisites: Psychology I-II and 5 credits in Education.

16 lessons, 3 credits, \$10, Mr. Anderson

69 Extra-curricular Activities. Consideration is given to developing guiding principles of pupil participation in the extra-curricular phase of school life. Purpose of extra-curricular activities; membership in clubs; meetings and programs; officers of organizations; financing extra-curricular activities; student government; publications and journalistic organizations; social, moral leadership and guidance clubs. This course may be substituted for Ed.C.I. 169 in undergraduate curricula. Prerequisite: 10 hours in Education including Ed. 51A.

16 lessons, 3 credits, \$10, Mr. Anderson

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, \$10, Mr. Brameld

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, H.Ed. 76, or H.Ed. 176. Prerequisite: 6 hours in Psychology.

Sixteen lessons, 3 credits, \$10, Mr. Brameld

81 Historical Foundations of Modern Education. The history of education in ancient and medieval times. The study includes the development of educational theories and practices among the Greeks and the Romans and the ancient Hebrews and during the Middle Ages and through the recovery of the classical heritage in the sixteenth century. This course may be substituted for H.Ed. 101

in undergraduate curricula. Prerequisite: junior standing in college or university.

16 lessons, 3 credits, \$10, Miss Alexander

82 History of Modern Secondary Education. A historical study of secondary schools in western Europe and America in modern times, including such topics as the revival of classical learning; the reorganization of secondary schools in the sixteenth century; the rise of scientific inquiry; types of secondary schools in England, France, and Germany; the American Latin grammar school and academy; the rise of the high school. This course may be substituted for H.Ed. 102 in undergraduate curricula. Prerequisite: junior standing in college or university.

16 lessons, 3 credits, \$10, Miss Alexander

83 History of Modern Elementary Education. Theory and work of the great educators, such as Comenius, Pestalozzi, Herbart, and Froebel; the rise of state school systems in Germany, France, England, and the United States; the development of the common school and of educational practices. This course may be substituted for H.Ed. 103 in undergraduate curricula. Not open to those who have had H.Ed. 71 (Brief Course in History of Education). Students who have transferred credit in H.Ed. 71 should consult the instructor before registering. Prerequisite: junior standing in college or university.

16 lessons, 3 credits, \$10, Miss Alexander

90 Basic Principles of Measurement. Principles of measurement applied to the construction, administration, and interpretation of educational and psychological tests. The course will involve the construction of achievement tests in the student's particular field of teaching. This course may be substituted for Ed.Psy. 120 in undergraduate curricula. Prerequisite: Introduction to Statistical Methods.

16 lessons, 3 credits, \$10, Mr. Cook

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, \$10, Mr. Nolte

129 Principles and Problems of Teaching Social Hygiene. Prepared by Division of Preventable Diseases of the Minnesota Department of Health. 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, relationships between members of the family, and venereal diseases. 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. Number of registrations limited. Offered at present to residents of Minnesota

only. This course may not be counted as a methods course for certification purposes. Prerequisites: 9 credits in Education.

16 lessons, 3 credits, \$10, Miss Biester

Physical Education. See page 40.

ENGINEERING

The Institute of Technology embraces the College of Engineering and Architecture, the School of Chemistry, and the School of Mines and Metallurgy. See page 4 for limitation on amount of credit earnable by correspondence courses for Institute of Technology degrees.

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 altho 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, \$10, Mr. Peilen

CIVIL ENGINEERING

1c Elementary Structural Steel Design. An introductory course covering the analysis of simple structures and their design. Algebraic and graphical methods of analysis of the treatment of dead, live, and moving loads; the design of simple tension and of compression members, beams, girders, and riveted and welded connections. Application of these principles is made to roof and bridge trusses. While this course is a complete unit, it would be advisable for the student to follow up his work by taking Courses 2c or 5c or both. (May be substituted for C.E. 31. 2 credits in Institute of Technology.) Prerequisite: Mechanics 26 and 128, or equivalent.

16 lessons, 3 credits, \$10, Mr. Wise

2c Steel Bridge Design. A course in the theory and practice of the design of statically determinate bridges. Stress analysis of parallel and curved chord trusses, trusses with subdivided palens, K-trusses, Whipple trusses, cantilevers, three-hinged arches, and skew trusses; and of the design of floor systems; riveted and pin-connected trusses; lateral and sway bracing; portals and end bearings. Courses 1c and 2c should provide a satisfactory elementary training for draftsmen, mechanics, and others who desire to enter the field of bridge design. (May be substituted for C.E. 32. 3 credits in Institute of Technology.) Prerequisite: Elementary Structural Steel Design or its equivalent.

16 lessons, 3 credits, \$10, Mr. Wise

5c Steel Building Design. A course in the theory and practice of the design of the structural steel framework of buildings—shop, factory, office buildings, and warehouses. The various systems of framing, and connections, balconies, roof framing, footings, fire protection, and erection. Courses 1c and 5c should provide a satisfactory training for draftsmen, mechanics, and others who wish to obtain a start in building design work. Equivalent to lecture portions of C.E. 33 and 38. Prerequisite: Elementary Structural Steel Design or equivalent.

16 lessons, 3 credits, \$10, Mr. Wise

46c Plain Concrete. Properties of concrete and concrete materials. Subjects discussed include portland cement, special cement, aggregates, proportioning, mixing, placing, field control, admixtures, durability, volumetric changes, tests and testing procedure, cold weather construction, etc. Prerequisite: knowledge of arithmetic.

16 lessons, 3 credits, \$10, Mr. Hughes

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: two years of engineering college education or permission of instructor.

16 lessons, 3 Extension credits, \$10, Mr. Kersten

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, \$10, Mr. Potter

2 Engineering Drawing. Sections, auxiliary views, conventions, standards, tolerance dimensioning, working drawings, tracing. Prerequisite: Drawing 1.

16 lessons, 3 credits, \$10, Mr. Potter

44 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 Direct Current and Alternating Current Circuits. Fundamental laws of direct current circuits. Electric power and energy. Study of metallic conductors. The magnetic circuit and magnetic properties of iron and steel. Methods of resistance measurement. Fundamental laws of alternating current circuits. Study of inductance and capacitance. Series and parallel A.C. circuits. Star and delta connections. Polyphase A.C. circuits. Power measurements in single and poly-phase circuits. Prerequisite: Elementary Algebra.

16 lessons, 3 Extension credits, \$10, Mr. Cartwright.

2c Electronic Principles and Applications. Review of D.C. and A.C. circuit fundamentals. Electronic emission, physical construction of vacuum and gaseous tubes, conduction through vacuum and gases. Equivalent circuits, rectified power supplies, class A, B, and C amplifiers, oscillator circuits. Detection and transmission of signals by radio. Amplitude and frequency modulation. Vacuum tube instruments. Industrial applications. Photoelectric circuits, motor control, resistance welder control and others. Prerequisite: Direct Current and Alternating Current Circuits, or equivalent.

16 lessons, 3 credits toward Extension certificate, \$10, Mr. Cartwright.

3c Direct Current and Alternating Current Machinery. Fundamental theory of direct current generators and motors. Armature winding. Study of operating characteristics of the various types of D.C. machines. Maintenance of D.C.

equipment. Construction and theory of operation of transformers. Synchronous machines—construction, operating characteristics, and applications. Power factor correction. Induction motors—theory of operation, and operating characteristics. Single phase A.C. motors. A.C. controllers and regulators. Prerequisites: D.C. and A. C. circuits.

16 lessons, 3 Extension credits, \$10, 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 pages 37-38.

1c Basic Mathematics. Arithmetic from fractions through proportion. Problems in areas, volumes, weights of materials, percentage, discounts. Elementary algebra, plane geometry, trigonometry, and logarithms. Practical man's course. Also valuable for the teacher who is preparing to teach applied mathematics under the Smith-Hughes Act. Particularly useful to those who plan to take an examination for an operating engineer's license. No prerequisite.

16 lessons, 3 Extension credits, \$10, Mr. Fischer

1c 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, \$10, 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 ½ entrance unit, \$12.50, 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 ½ entrance unit, \$12.50, 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, \$17, Mr. Priester

12 Trigonometry. Graphical representation of functions, 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, \$17, Mr. Fischer

13 Analytic Geometry—Plane and Solid. Co-ordinate systems, locus and equation, straight line, circle, parabola, ellipse, and hyperbola. Transformation of co-ordinates and simplification of equations. Polar co-ordinates, higher plane curves, tangents, normals, empirical equations, and elementary solid analytic geometry. Prerequisite: Courses 11 and 12.

27 lessons, 5 credits, \$17, 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, \$17, 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, \$17, 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, \$17, 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, \$17, 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, \$17, Mr. Priester

MECHANICAL ENGINEERING

1c Steam Power Plants I. A course for boiler operators. Fuels, combustion, furnaces, steam generators, pumps, pipe and fittings. Boiler room practices. Properties of steam; boiler-water conditioning. No prerequisite.

16 lessons, 3 Extension credits, \$10, 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 con-

sideration has been given to the basic principles and their application to practical problems. Prerequisite: Elementary Algebra or permission of instructor. 16 lessons, 3 credits, \$10, Mr. Algren, Mr. Jordan

6c 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, \$10, Mr. Jordan

16c Refrigeration. This course is arranged to meet the demands not only of the operating and designing engineers who have to do with refrigerating plants and air conditioning installations, but also of those who have made a business of the installation and servicing of household 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; flow of refrigerants; piping and fittings; automotive refrigerating machines; water vapor refrigerating systems; adsorption and absorption machines; refrigeration in air conditioning; heat transfer and methods of calculating refrigeration load. No prerequisite.

16 lessons, 3 Extension credits, \$10, Mr. Algren

Note—For those who may plan to take an examination to obtain an operating engineer's license, Basic Mathematics, Course 1c, or equivalent preparation, is of the utmost importance.

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 study of English classics included in that course. This course carries university credit for the work in literature of English A. It includes a study of the drama as illustrated by Shakespeare's *Henry IV*, Part I, *Romeo and Juliet*, and several plays of modern dramatists. Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$10, Miss Grandy

†2c Freshman Literature II. This course carries university credit for the work in literature (prose writers) of English B. It includes a study of the works of Macaulay, Huxley, Newman, and Stevenson. Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$10, Miss Grandy

†3c Freshman Literature III. This course carries university credit for the work in literature of English C. It includes a study of various types of poetry from early ballads to dramatic monologs and free verse. Prerequisite: Composition 4-5-6.

16 lessons, 3 credits, \$10, Miss Grandy

† 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.

***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, \$17, Mr. Hessler

***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, \$17, Mr. Hessler

***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, \$17, Mr. Hessler

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, Masefield, Sassoon, Amy Lowell, Sandburg, Jeffers, Eliot, MacLeish, O'Neill, Kaufman, Connelly, Rice, 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, \$10, Mr. Dunn

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, \$10, Mr. Dunn.

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 information 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, \$10, Mr. Hessler

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, \$10, Mr. Hessler

* Students must take either 21 and 22 or 22 and 23 to receive credit. Two quarters are required as a prerequisite for a major sequence; the second and third quarters are required for a teacher's certificate.

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, \$10, Mr. Dunn

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, \$10, Mr. Dunn

73 American Literature I. A survey of American literary development in the seventeenth, eighteenth, and early nineteenth centuries. Prerequisite: Composition 4-5-6 and 6 additional credits in English.

16 lessons, 3 credits, \$10, Miss Turpie

74 American Literature II. A continuation of 73. A survey of American literary development from Hawthorne to the end of the nineteenth century. Prerequisite: Composition 4-5-6 and 6 additional credits in English.

16 lessons, 3 credits, \$10, 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 and *Some New Light on Chaucer* by J. M. Manly). 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, \$13.50, Mr. Dunn

COMPOSITION

Preparatory English. See page 49.

Vocabulary Building. See page 45.

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, \$10, 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, \$10, 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, \$10, Mr. Dunn

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, \$10, 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, \$10, 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, \$10, 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 as models represent some of the best modern American fiction. Prerequisite: Composition 4-5-6 and Advanced Writing 27-28.

16 lessons (each story submitted will count as two or more lessons according to the length of the story), 3 credits, \$10, Mr. Cronin

70 Short Story Writing II. A continuation of Short Story Writing I, with careful study of great stories and with emphasis on the student's original writing. Special types and forms of the short story will be studied. Manuscripts will be carefully criticized with consideration of individual aims and problems. Prerequisite: Course 69.

16 lessons (each story submitted will count as two or more lessons according to the length of the story), 3 credits, \$10, Mr. Cronin

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. It is to the student's advantage that he submit a sample of his writing for the approval of the instructor before actually registering for this course.

16 installments of a total of approximately 8,000 words. 3 Extension credits, \$10, Mrs. Anderson.

FRENCH

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, \$17, Mr. Wilson

* Both Composition 27-28 or 27, 29 required for credit

2 Beginning French II. A continuation of Course 1. Prerequisite: Course 1 or one year of high school French.

27 lessons, 5 credits, \$17, Mr. Wilson

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, \$17, Mr. Wilson

4 Intermediate French II. A continuation of Course 3. Prerequisite: Course 3 or 3 years of high school French.

27 lessons, 5 credits, \$17, Mr. Wilson

53 Elementary French Composition. Translations of passages of connected prose dealing with everyday life in France. Prerequisite: Course 4.

16 lessons, 3 credits, \$10, Mr. Wilson

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, \$10, Mr. Wilson

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, \$17, Mr. Thiel

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, \$17, Mr. Burkhard

2 Beginning German II. A continuation of Course 1. Prerequisite: Course 1 or one year of high school German.

27 lessons, 5 credits, \$17, Mr. Burkhard

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, \$17, Mr. Burkhard

24 Introduction to Chemical German. Selections of simple chemical German prose. Vocabulary and grammatical exercises. No prerequisite.

16 lessons, 3 credits, \$10, 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, \$10, Mr. Downs

Course 26—16 lessons, 3 credits, \$10, Mr. Downs

30 Medical German I. 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.

16 lessons, 3 credits, \$10, Mr. Burkhard

31 Medical German II. A continuation of Course 30 which is prerequisite.

16 lessons, 3 credits, \$10, Mr. Burkhard

32 Medical German III. A continuation of Course 31 which is prerequisite.

16 lessons, 3 credits, \$10, Mr. Burkhard

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, \$7, Mr. Holske

51 Elementary Composition II. Translation and grammar review. Prerequisite: Course 50.

11 lessons, 2 credits, \$7, Mr. Holske

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, \$15, Mr. Downs

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, \$15, Mr. Downs

GREEK

†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, \$17, Mr. Heller

†2 **Beginning Greek II.** General principles, inflections, word formations, syntax, elementary readings, composition. Prerequisite: Course 1.

27 lessons, 5 credits, \$17, Mr. Heller

3 Beginning Greek III. Prerequisite: Course 2.

27 lessons, 5 credits, \$17, Mr. Heller

HEALTH

1c Maternal and Child Hygiene. Prepared by the Division of Child Hygiene 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 aftercare 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.

15 lessons, no credit, free, Dr. Wilson

† Both Greek I and II required for credit.

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, \$10, Dr. Kernan

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, \$10, Mrs. White

2 Civilization in the Modern World II. A survey of European history from 1648 to 1870. Emphasis is placed upon the struggle for control of the state. No prerequisite.

16 lessons, 3 credits, \$10, 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 19th century civilization and the development of the problems that have upset the world civilization in the 20th century. No prerequisite.

16 lessons, 3 credits, \$10, Mrs. White

4 English History I—England in the Middle Ages. A survey of English history from the earliest times to 1485. No prerequisite.

16 lessons, 3 credits, \$10, Mrs. White

5 English History II—Expansion of England 1485-1748. No prerequisite.

16 lessons, 3 credits, \$10, Mrs. White

6 English History III—The Modern Empire and the Commonwealth of Nations. No prerequisite.

16 lessons, 3 credits, \$10, 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, \$13.50, Mr. Loehr.

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, literature, science, economics, political institutions, and whatever else made up a civilization at a given time. Not open for credit to those who have completed Hist. 1-2-3. No prerequisite.

21 lessons, 4 credits, \$13.50, Mrs. White

18c Europe in the Middle Ages (800-1500). A study of western European history from the fall of the Roman Empire to the rise of the modern states. No prerequisite.

27 lessons, 5 credits, \$17, Mr. Kane

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, \$10, Mr. Kane

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, \$10, Mr. Kane

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 I. Special emphasis is laid on the economic changes of the period and their reaction upon politics. No prerequisite.

16 lessons, 3 credits, \$10, Mr. Kane

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, \$10, Mr. Kane

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, \$10, Mr. Kane

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, \$10, Mr. Kane

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 Mediterranean area to 133 B.C. Archeological studies, the evolution of the Roman government, as well as eco-

conomic and cultural developments, will be stressed. Prerequisite: nine credits in history. Open to juniors and seniors without prerequisite.

16 lessons, 3 credits, \$10, Mr. Kane

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, \$10, Mr. Kane

52a Roman History II. 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, \$10, Mr. Kane

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, \$10, Mr. Loehr

83 American Economic History I—Colonial Period. Two sets of influences meet to produce the early economic history of America; the first, what the colonist brought with him from Europe; the second, what he found here upon arrival. Prerequisite: 15 credits in history or 10 credits in economics, political science, or sociology.

16 lessons, 3 credits, \$10, Mr. Loehr

84 American Economic History II—Early National Period. The struggle for political and economic independence, the protection of economic interests afforded by the new Constitution, the influence of the Supreme Court upon economic development, and the early westward movement. Prerequisite: History 83.

16 lessons, 3 credits, \$10, Mr. Loehr

85 American Economic History III—Later National Period. The economic history of the Civil War and the expansion of American business at home and abroad. Prerequisite: History 84.

16 lessons, 3 credits, \$10, Mr. Loehr

93a-94a-95a History. 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: 93a, Spanish and Portuguese exploration and settlement in the New World; 94a, The Wars for Independence and the nineteenth-century development of Latin America; 95a, The Twentieth Century. The course may be taken for credit in two ways: the whole sequence (93a-94a-95a) may be completed for nine credits, or 95a (The Twentieth Century) may be taken separately for 3 credits. No prerequisite.

16 lessons, 3 credits each section, \$10 each, Mrs. Tyler

HOME ECONOMICS

See page 12.

ITALIAN

1 Beginning Italian I. Elements of pronunciation, grammar, and suitable readings. Emphasis upon accurate translation and composition. No prerequisite. 27 lessons, 5 credits, \$17, Mr. Brackney

2 Beginning Italian II. Continuation of Course 1. Completion of elements of grammar with further readings. Emphasis upon vocabulary building and practice in easy composition. Prerequisite: Italian 1. 27 lessons, 5 credits, \$17, Mr. Brackney

INTERIOR DECORATION

See Art, page 11.

JOURNALISM

1c Rural Community Reporting. Gathering and writing news of the rural neighborhood for the local community newspaper, sometimes called country correspondence; analysis of rural neighborhood groups and their news interests; study of the obligations of the rural reporter, to his neighborhood, and to his newspaper; practical exercises in the gathering and writing of rural news. No prerequisite.

16 lessons, 3 credits, \$10, Mr. Barnhart

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, \$10, 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; "made" news and advanced interviewing. Numerous writing assignments. Prerequisite: Course 13.

16 lessons, 3 credits, \$10, Mr. Charnley

†15 Newspaper Reporting III. Study of newspaper law, including libel, rights of the press, study of "privilege," and so on; advanced reporting; the interpretative story; the series news story. Numerous writing assignments. Prerequisite: Course 14.

16 lessons, 3 credits, \$10, 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, \$10, Mr. Charnley

† Both courses required for credit.

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, \$10, Mr. Steward

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, \$10, Mr. Steward

78 Public Relations. A course in the techniques of interpreting business and industrial organizations, educational and scientific institutions, social welfare groups, war 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. Prerequisite: Journalism 69 or 73.

16 lessons, 3 credits, \$10, 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; engraving; photography and other subjects are considered. Access to *Scholastic Editor* is required. No prerequisite.

16 lessons, 3 credits, \$10, Mr. Barnhart

LANDSCAPING

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 importance 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, \$10, Mr. Phillips. (Registrations accepted after July 1, 1946.)

LATIN

Students who have taken Course 3 or have had two years of preparatory Latin may take either Course 9 or Course 11. Those who take 9, or 9 and 10, cannot take for credit 11, or 11 and 12. Courses 1, 2, 3, and 9 or 11 satisfy Junior College requirement in Latin.

†1 Beginning Latin I. Inflections; translation of easy Latin prose; the study of elementary syntax; Latin composition. No prerequisite.

27 lessons, 5 credits, \$17, Mr. Cram

† Both courses must be completed before credit is allowed for either.

†2 **Beginning Latin II.** A continuation of Course 1. Translation of selections from Eutropius; syntax; Latin composition. Prerequisite: Course I or equivalent. 27 lessons, 5 credits, \$17, Mr. Cram

3 **Caesar.** Translation of the Campaign against the Belgians (Book II entire); and of the manners and customs of the Gauls and Germans (Book VI, chs. 9-29); syntax; composition; life of Caesar. Prerequisite: Courses 1 and 2 or equivalent. 27 lessons, 5 credits, \$17, Mr. Cram

9 **Cicero I.** Translation of the First and Second Orations against Catiline and of selected Letters; syntax; composition; life of Cicero. Prerequisite: Two years of preparatory Latin or Course 3. 27 lessons, 5 credits, \$17, Mr. Cram

10 **Cicero II.** Translation of the Oration for the Manilian Law (the equivalent of two orations) the Archias, and the Marcellus; syntax; composition. Prerequisite: Course 9. 27 lessons, 5 credits, \$17, Mr. Cram

11 **Vergil's Aeneid I.** Translation and interpretation of Books I and II of the *Aeneid*; syntax; principles of Latin versification; life of Vergil. Prerequisite: Two years of preparatory Latin or Course 3. 27 lessons, 5 credits, \$17, Mr. Cram

12 **Vergil's Aeneid II.** Translations of books IV and VI of the *Aeneid*; a very brief consideration of Vergil's influence. Prerequisite: Course 11. 27 lessons, 5 credits, \$17, Mr. Cram

LIBRARY TRAINING

The courses in Library Training are not part of the curriculum of the Division of Library Instruction. Those students, therefore, who major in library training will not be allowed to apply credits earned in these subjects towards graduation. These courses may be taken as elective credits, and in addition, the credits earned in either one or the other of these courses may be used to apply on the requirement for the Minnesota endorsement for teacher-librarians.

52 **Elementary Cataloging.** The forms and principles involved in making a dictionary card catalog. Based primarily upon the Catalog Rules of the American Library Association, with reference to other codes. Directions for the use of the printed Library of Congress cards. No prerequisite. 16 lessons, 3 credits, \$10, Miss Davenport

54 **Elementary Classification.** Based on the unabridged edition of the Dewey Decimal Classification. Aims to give an understanding of the standard classification scheme and its use in a library. Considerable attention is given to modifications and adaptations useful in various types of libraries. Includes Cutter-Sanborn author numbers, accession, and card shelf-list records. No prerequisite. 16 lessons, 3 credits, \$10, Miss Davenport

† Both courses must be completed before credit is allowed for either.

MATHEMATICS

(For students who want credit in the College of Science, Literature, and the Arts)

Engineering Mathematics. See page 23.

High School Mathematics. See page 50.

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, \$17, 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 $\frac{1}{2}$ entrance unit, \$12.50, Miss Hepworth

***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, \$17, 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, \$17, Miss Gibbens

***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, five credits, \$17, 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, Miss Gibbens

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, \$17, Miss Thorp

* 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.

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, \$17, 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, expansions and partial differentiation. Prerequisite: Mathematics 30.

27 lessons, 5 credits, \$17, 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, \$17, 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, \$10, Miss Carlson

106 Differential Equations. Prerequisite: Mathematics 51.

16 lessons, 3 credits, \$10, Miss Gibbens

MUSIC

4 Harmony I. 16 lessons, 3 credits, \$10, Miss Malcolm

5 Harmony II. 16 lessons, 3 credits, \$10, Miss Malcolm

6 Harmony III. 16 lessons, 3 credits, \$10, Miss Malcolm

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.

65 (Music Education). Instrumentation and Orchestration. A practical study of the standard instruments of band and orchestra; their compass, key, particular difficulties, characteristic passages, effective use in combinations, substitution for missing parts; reading and writing of scores and individual parts; all with reference particularly to the small orchestra and to school organizations. Prerequisite: Music 3, 4 (Harmony) or its equivalent.

16 lessons, 3 credits, \$10, Mr. Boessenroth

NORWEGIAN

1 Beginning Norwegian I. Complete survey of Norwegian grammar. Composition. Reading of easy prose. No prerequisite.

27 lessons, 5 credits, \$17, 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, \$17, Miss Farseth

3 Intermediate Norwegian. Continuation of Course 2. Based on Björnson's *Synnøve Solbakken*. Reading and composition. Prerequisite: Course 2 or equivalent.

27 lessons, 5 credits, \$17, Miss Farseth

4 Advanced Norwegian. Based on *Norge Gjennem Tiderne IV*. Reading of representative poetry and prose, literary and historical. Prerequisite: Course 3 or equivalent.

27 lessons, 5 credits, \$17, Miss Farseth

25 Introduction to Norwegian Literature. Brief view of the entire field of Norwegian literature. Reading of four representative plays or books. Prerequisite: Course 3 or 4 or equivalent.

27 lessons, 5 credits, \$17, Miss Farseth

51 Modern Norwegian Literature. History of Norwegian literature. A rapid survey of the earlier periods of Norwegian literature and the reading of representative works by later and modern authors, including Holberg, Asbjørnsen and Moe, Ibsen, Björnson, Lie, and Kielland. Prerequisite: Course 5 or reading knowledge of Norwegian.

27 lessons, 5 credits, \$17, Miss Farseth

62 Ibsen. Study of the life and works of Henrik Ibsen. Interpretation of selected dramas. Emphasis on the chronological order and historical setting of his works. Prerequisite: Course 3 or 25 or reading knowledge of Norwegian-Danish.

16 lessons, 3 credits, \$10, Miss Farseth

63 Björnson. Study of the life and works of Bjørnstjerne Björnson. Reading of selected plays, novels, and poems. Prerequisite: Course 3 or 25 or reading knowledge of Norwegian-Danish.

16 lessons, 3 credits, \$10, Miss Farseth

PHILOSOPHY

1 Problems of Philosophy. What are the fundamental differences in mental processes and temperament which determine belief? What is truth? Knowledge? Is the physical world an illusion or can we prove that it exists outside our minds? What is the nature of man? Does he possess a free will? How do we know what is right? Is democracy the best political system? These are some of the questions discussed in this course. The answers of great thinkers from ancient times down to the present are examined. No prerequisite.

27 lessons, 5 credits, \$17, Mr. Everett

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, \$10, Mr. Ahlen.

PHYSICAL EDUCATION

32 Introductory 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, \$10, 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, \$10, Mr. Haislet.

57 Operation and Conduct of Play 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, \$10, Mr. Haislet

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 gymnasias and athletic fields. No prerequisite.

16 lessons, 3 credits, \$10, Mr. Piper

83 Course in School Health Education: Method and Content, listed below, is open to both men and women.

COURSES FOR WOMEN

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, \$10, Miss Baker

Ed.T. 83 School Health Education: Method and Content. Study of principles, curriculum, resources, and problems of health education in preparation for health teaching. No prerequisite.

16 lessons, 3 credits, \$10, Miss Starr

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, manage-

ment 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, \$10, Miss Snell

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, \$10, Mr. Buchta

29 Introduction to Meteorology. Fundamental physical principles and first elements underlying meteorological study, weather map analysis and construction; also local meteorological observation. Prerequisite: permission of instructor.

16 lessons, 3 credits, \$10, Mr. Valasek

POLITICAL SCIENCE

Citizenship. See page 51.

Civics. See page 47.

†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, \$10, 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 departments 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

† Both Course 1 and Course 2 must be completed before credit is allowed for either.

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, \$10, 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, \$10, Mr. Christensen

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 \$13.50, 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. Problems of the next peace conference, and the last, such as Czechoslovakia, Poland, and disarmament. 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 co-operation. The effect of world events upon American interests. No prerequisite.

16 lessons, 3 credits, \$10, Mr. Mills

144 American Parties and Politics. The policies, composition, organization, activities, and functions of the political parties of today; suffrage, elections, and related subjects; evaluation of the party as a force in American government. Prerequisite: 6 credits in political science or 12 credits in social science.

16 lessons, 3 credits, \$10, Mr. Christensen

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, \$10, Mr. White

1 General Psychology I. The study of the beginnings of behavior, its development, and the factors that influence its development. Centered, for the most part, around child life. No prerequisite.

16 lessons, 3 credits. \$10, 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 the experimental method and to problems of psychology in general. Prerequisite: General Psychology I.

16 lessons, 3 credits, \$10, Mr. White

Child Psychology. See page 16.

Educational Psychology. See page 18.

Social Psychology. See page 44.

ROMANCE LANGUAGES

See pages 28, 34, 45.

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, \$17, Mr. Reichardt

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, \$17, Mr. Reichardt

SCANDINAVIAN LANGUAGES

See pages 38, 39, 46.

SOCIAL SCIENCE

2 Introduction to the Social Sciences. A survey course introducing the student to the social sciences of sociology, social anthropology, social psychology, human geography, government, and economics. The objective of this course is to so enlarge the resources of the student that he may know and use the vocabulary, methods, and tools of the social sciences in order that independent reading in these fields may be undertaken with understanding. An attempt is made to show the interrelations of all of the social sciences with the aim of securing a more thoro explanation of modern social problems. No prerequisite.

16 lessons, 3 credits, \$10, Miss Shaw

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, \$17, Mr. Monachesi

6 Social Interaction. Influences affecting group life; forms of interaction and communication; personality and its development in the social situation; coercion and intolerance; present-day problems of co-operation, leadership, and social change in an age of science. Prerequisite: Sociology 1.

16 lessons, 3 credits, \$10, Mr. Kirkpatrick

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, \$10, Mr. Davies

49 Social Pathology. 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.

16 lessons, 3 credits, \$10, Mrs. Fenlason

100 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, \$10, Mr. Kirkpatrick

110 Rural Community Organization. This course is intended for those working in the rural community and small towns. It considers more technical problems than those discussed in the course in Rural Sociology. The subjects covered include what constitutes the rural community, the techniques of community organization, the institutions and agencies, the role of leadership, the problems of crime and delinquency, population changes, land utilization, tenancy, migratory labor, etc. Should be preceded by Course 14 (Rural Sociology), but may be taken independently by those who have a special interest in the subject.

16 lessons, 3 credits, \$10, Mr. Davies

119 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: Course 1 or its equivalent.

16 lessons, 3 credits, \$10, Mr. Kirkpatrick

SPANISH

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, \$17, Mr. Grismer

2 Beginning Spanish II. Continuation of Course 1, which is prerequisite.

27 lessons, 5 credits, \$17, Mr. Grismer

3 Intermediate Spanish I. Review of grammar; composition, reading of modern Spanish texts. Prerequisite: Course 2 or equivalent.

27 lessons, 5 credits, \$17, Mr. Grismer

4 Intermediate Spanish II. A continuation of Course 3 which is prerequisite.

27 lessons, 5 credits, \$17, Mr. Brackney

30 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.

16 lessons, 3 credits, \$10, Mr. Cúneo

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, \$10, Mr. Cúneo

60 Advanced Spanish Composition. A continuation of Course 53 which is prerequisite.

16 lessons, 3 credits, \$10, Mr. Cúneo

SPEECH

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, \$10, Mrs. Dreher

115 Playwriting. A detailed analysis of the structure of the play. A study of the fundamentals of character portrayal, dramatic crisis, dialog, and plot involvement. Functioning of the play as an organic unit. Assignments will be in the nature of writing units that go to make up the fundamentals of playwriting technique. A study of modern play models and a classic survey of traditional techniques in drama. Prerequisite: Speech 31 or permission of instructor.

16 lessons, 3 credits, \$10, Mr. Dusenbury

SWEDISH

7 Beginning Swedish I. Grammar and composition; selected readings in easy prose and verse. No prerequisite.

27 lessons, 5 credits, \$17, Mr. Gustafson

8 Beginning Swedish II. A continuation of Course 7, which is prerequisite.

27 lessons, 5 credits, \$17, Mr. Gustafson

9 Intermediate Swedish. Grammar; composition; easy reading. Prerequisite: Course 8 or equivalent.

27 lessons, 5 credits, \$17, Mr. Gustafson

10 Advanced Swedish I. The reading of selected authors in prose and poetry. Prerequisite: Course 9 or equivalent.

27 lessons, 5 credits, \$17, Mr. Gustafson

11 Advanced Swedish II. A continuation of Course 10, which is prerequisite.

27 lessons, 5 credits, \$17, Mr. Gustafson

107 Swedish Literature I. A history of Swedish literature from the seventeenth century to the present time. Selections from representative authors are studied. Prerequisite: Course 11 or equivalent.

16 lessons, 3 credits, \$10, Mr. Gustafson

108 Swedish Literature II. Continuation of Course 107, which is prerequisite.

16 lessons, 3 credits, \$10, Mr. Gustafson

109 Swedish Literature III. Continuation of Course 108, which is prerequisite

16 lessons, 3 credits, \$10, Mr. Gustafson

HIGH SCHOOL COURSES

AGRICULTURE

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.

16 lessons, 3 credits in School of Agriculture, \$10, Mr. Swensen

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, 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 wintering, preparation of honey and wax for market. No prerequisite.

16 lessons, 3 credits in School of Agriculture, \$10, Mr. Haydak

A21 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 in School of Agriculture, \$10, Mr. Nodland

BOOKKEEPING

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, \$12.50, Mr. Lund

CIVICS

1 Civics. This course is intended to provide the basis for an intelligent approach to public affairs. The relation of government to the individual is stressed. The approach is in terms of the constant process of change in the social setting. No prerequisite.

20 lessons, ½ entrance unit, \$12.50, Mr. Friedman

ENGLISH

1 English Composition A. This course, and the three 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, \$12.50, Mr. Carlsen

2 English Composition B. This course is a continuation of the work of the first year, and covers the equivalent of the sophomore work in composition in high schools. Prerequisite: Course 1 or equivalent.

20 lessons, ½ entrance unit, \$12.50, Mr. Carlsen

3 English Composition C. This course is a continuation of Courses 1 and 2. It 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, ½ entrance unit, \$12.50, Mr. Carlsen

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, ½ entrance unit, \$12.50, Mr. Carlsen

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, ½ entrance unit, \$12.50, Miss Grandy

6 English Literature B. The aim of this course is similar to that of English Literature A but the material studied is more difficult and the standard of work higher. The works studied are Poe's *Tales*, Shakespeare's *Julius Caesar*, Dickens' *Tale of Two Cities*, Lowell's *Vision of Sir Launfal*, and Coleridge's *Rime of the Ancient Mariner*. Outside reading from literature of each type is also required. This course corresponds to the literature part of high school sophomore English. Prerequisite: Course 5 or equivalent.

20 lessons, ½ entrance unit, \$12.50, Miss Grandy

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 type rather than in chronological order. Some knowledge of the authors' lives as well as of their works is required. The course corresponds to the literature half of high school junior English. Prerequisite: Course 6 or equivalent.

20 lessons, ½ entrance unit, \$12.50, Miss Grandy

8 English Literature D. This course, which corresponds to high school senior English literature, consists of a chronological study of the outstanding writers of English literature, their chief works and the periods in which they lived. It aims to establish standards of appreciation for the student's later reading, and stimulate him to further reading of good literature. Prerequisite: Course 7 or equivalent.

20 lessons, $\frac{1}{2}$ entrance unit, \$12.50, Miss Grandy

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, \$7.50, Miss Klohn

FRENCH

1 Beginning French I. 1 entrance unit. See page 28.

2 Beginning French II. 1 entrance unit. See page 29.

3 Intermediate French I. 1 entrance unit. See page 29.

4 Intermediate French II. 1 entrance unit. See page 29.

GERMAN

1 Beginning German I. 1 entrance unit. See page 29.

2 Beginning German II. 1 entrance unit. See page 29.

3 Beginning German III. 1 entrance unit. See page 29.

HISTORY

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, \$12.50, 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, \$12.50, 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, colonial 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, \$12.50, Mr. McCune

Part B, 20 lessons, $\frac{1}{2}$ entrance unit, \$12.50, Mr. McCune

MATHEMATICS

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, \$12.50, 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, \$12.50, 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, \$12.50, 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, \$12.50, 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, \$12.50, 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 and B or one year of high school plane geometry.

20 lessons, $\frac{1}{2}$ entrance unit, \$12.50, 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 38.

2 Beginning Norwegian II. 1 entrance unit. See page 39.

3 Intermediate Norwegian. 1 entrance unit. See page 39.

4 Advanced Norwegian. 1 entrance unit. See page 39.

PARLIAMENTARY LAW

A41 Parliamentary Law. Fundamental principles and practices of parliamentary law essential for all executive officers of such rural organizations will be discussed: 4-H clubs, Future Farmers of America, Farm Bureau units, local business organizations, study clubs, local service clubs, church and school organizations. 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 credits in School of Agriculture, \$7.50, Mr. Miller.

SOCIAL SCIENCE

1 Social Science A. This course aims to give citizens an insight into the world in which they are living through the study of the economic, social, and political forces of everyday existence, as brought out in the presentation of fundamental economic, social, and business principles underlying the present organization of society. No prerequisite.

20 lessons, $\frac{1}{2}$ entrance unit, \$12.50, Mr. Christianson

2 Social Science B. The purpose of this course is, through a basis of factual understanding, to stimulate a desire and ability to recognize and appreciate sociological problems and something of the forces that affect the everyday welfare of individuals, through the study of heredity, human nature, the family, the community, education, religion, standards of living, social progress, and related topics. No prerequisite.

20 lessons, $\frac{1}{2}$ entrance unit, \$12.50, Mr. Christianson

A55 Social Training. In the increasingly complex situations in which a student finds himself, study and observation are necessary supplements to his home training in good manners. This course in social training is designed to encourage the student to broaden his range of information and deepen his experience in this field through the study of well-known authorities, by the observation of good manners, and by the application of acquired knowledge to the everyday conduct of his life. No prerequisite.

12 lessons, 2 credits in School of Agriculture, \$7.50, Miss Hognason, Miss Matson

SPANISH

1 Beginning Spanish I. 1 entrance unit. See page 45.

2 Beginning Spanish II. 1 entrance unit. See page 45.

3 Intermediate Spanish I. 1 entrance unit. See page 45.

4 Intermediate Spanish II. 1 entrance unit. See page 45.

SWEDISH

7 Beginning Swedish I. 1 entrance unit. See page 46.

8 Beginning Swedish II. 1 entrance unit. See page 46.

9 Intermediate Swedish. 1 entrance unit. See page 46.

CITIZENSHIP

Citizenship. This is a course given by the Extension Division of the University of Minnesota in co-operation 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 credits, free, Mr. Kane

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For Your Club . . .

GROUP STUDY BY CORRESPONDENCE

Your club can study any of our more than 200 correspondence courses as a group. One member registers on behalf of the club; all members may purchase the study guide and participate in preparing reports and receiving the instructor's comments.



STUDY PROGRAMS

A number of study programs have been specially prepared for club use. Here are some of the newest and most complete programs:

Democracy for All

Folklore and Folk Groups of the Northwest

Minnesota History

The Middle West in American Literature

The Republics of South America



The Bulletin of the
UNIVERSITY of MINNESOTA

Learn for Living

EXTENSION CLASSES

1946-47

CALENDAR

1946

September	16 Monday	Fall semester registration begins
September	30 Monday	Classes begin
October	5 Saturday	Last day for registration without extra fee
December	20 Friday	Christmas recess begins

1947

January	6 Monday	Classes resumed
January	27 Monday	Spring semester registration begins
February	3-7	Fall semester examinations
February	7 Friday	Fall semester closes
February	10 Monday	Spring semester classes begin
February	15 Saturday	Last day for registration without extra fee
June	2-6	Spring semester examinations
June	6 Friday	Spring semester closes
June	8 Sunday	Baccalaureate service
June	13 Friday	Commencement exercises

WHERE TO REGISTER

Minneapolis: 402 Administration Building, University of Minnesota,
(Campus) Main 8177, Julius M. Nolte, Dean

NOTE: After fall registration period the campus office will move to the southeast wing of Nicholson Hall (old Minnesota Union) directly behind Northrop Memorial Auditorium.

Minneapolis: 690 Northwestern Bank Building, Marquette Ave. and
(Downtown) Sixth St. South, Main 0624

St. Paul: 500 Robert St., Extension Center, Cedar 6175, C. H. Dow,
Resident Manager

Duluth: 504 Alworth Building, Melrose 7900

The Administration Building on the University campus may be reached by going one block north on Church Street from the Minneapolis-St. Paul car line, or two blocks south on 17th Avenue S.E., from the Oak-Harriet car line.

Nicholson Hall is located on 15th Avenue S.E., one block north from the Minneapolis-St. Paul car line or two blocks south from the Oak-Harriet car line.

OFFICE HOURS

From September 23 through October 5, and from February 3 to February 15, 8:30 a.m. to 8:30 p.m., including Saturdays.

At other times, 8:30 a.m. to 5:00 p.m.; Saturday to 12:00 noon.

From September 16 to March 1 the campus office will be open from 8:30 a.m. to 8:30 p.m., except on Saturday.

REGISTRATION TIME

All registrations should be made and fees paid before the first week of each semester. Registrations made later than Saturday, October 5, for the fall semester, and Saturday, February 15, for the spring semester, are subject to a late registration fee.

Volume XLIX

Number 30

August 15, 1946

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SPECIAL NOTICES

LECTURES AND SPECIAL EVENTS

The fall and spring lecture series, **Our World and Our Times**, will be continued this year by members of the university faculty who will discuss contemporary artistic, economic, literary, philosophical, political and social problems. Time: 8:15 p.m. Wednesdays; place: Center for Continuation Study; dates: October 9-December 11 and February 19-April 23. The lecturers and their subjects will be announced in **The Interpreter** and the **Minnesota Daily** and on the Extension Bulletin Board.

We suggest you consult these same sources for announcements of other events, lectures, movies, etc. of special interest to Extension students.

NEW QUARTERS

The General Extension Division will move during the fall into new quarters in the southeast wing of remodeled Nicholson Hall, better known to some as the old Minnesota Union. The full three floors of this wing, formerly occupied by the Campus Club, will be devoted to Extension offices. We hope that this location, with the easier access of our own ground-floor entrance, will result in greater convenience to our students and in closer contact between them and members of the Extension staff. Remember that Extension offices are open every week day through the school year, and on many evenings at registration periods, for information or advice and for personal counseling on the selection of courses or work programs.

INCREASED TUITION FEES

By action of the Board of Regents of the University the General Extension Division has been authorized to return to a basic tuition fee of \$5 per credit hour for its regular evening classes. The Extension Division must conduct many of its activities on a self-supporting basis, and must rely upon its tuition income for the remuneration of the major portion of its instructional staff and for its general operational expenses. The experience of the past several semesters has clearly shown that the actual and expected increase in Extension class enrolment will not balance the steadily rising cost of operation, including pay increases granted to university academic and non-academic staffs. The decision to return to the former tuition rate was unavoidable, therefore, if we were to maintain the present quality of instruction and to be in a position to meet the constant requests for increases in the number and scope of our course offerings.

MAKE YOUR LEARNING COUNT

Two special classes for those who wish to increase the efficiency of their study methods or to derive the maximum in pleasure and value from their everyday reading.

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. 2 credits may be granted in S.L.A. with consent of instructor. Class limited to 35. No prerequisite.

Fall Semester

Th 6:20 Nicholson 108, Herbert

How to Read with Pleasure and Profit. 3 Extension credits. \$15.

Many people are seriously handicapped in business, professional and social life by their inability to read with speed and comprehension. Many others are unaware of the pleasure and profit that come from extensive reading of good books and magazines. This course is designed for practical guidance in developing more efficient methods of reading both fiction and non-fiction materials. Special emphasis will be placed on improving the student's learning and retention abilities. Class limited to 35. No prerequisite.

Fall Semester

T 6:20 Nicholson 108, Herbert

INFORMATION

GENERAL REGULATIONS

Am I Eligible To Take These Classes?

The University's Extension classes are open to everyone who can handle them successfully. If you are in doubt, you are welcome to visit, without charge, the first meeting (but **only** the first meeting) of the class you are interested in and talk with the instructor.

How Much Do They Cost?

Most classes cost \$15 per semester. A few cost more or less than this amount, and some involve a small materials or laboratory fee. The fee for each class is designated in the description of the class further on in this bulletin. **Checks** should be drawn for the exact amount due, payable to the University of Minnesota.

When Do Classes Begin and How Long Do They Last?

Fall semester classes begin the week of September 30, 1946; spring semester classes, the week of February 10, 1947. Most classes start at 6:20 p.m. or 8:05 p.m., last an hour and forty minutes, and have seventeen weekly meetings. Variations are noted in class descriptions. Extension classes meet on **holidays** unless instructors and students agree otherwise.

Where Do Classes Meet?

At the University, or in downtown Minneapolis (690 Northwestern Bank Building) or in downtown St. Paul (500 Robert Street); see class descriptions. The map on the back cover shows location of buildings on the Main campus of the University.

Who Are the Instructors?

For the most part they are drawn from 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 conditions may interfere with these assignments.

How Do I Register for Extension Classes?

Simply fill out the registration form and pay the fee indicated in the description of the class you want. **Service veterans see special information section on page 10.**

Registration dates, offices, and office hours are indicated inside the front cover of this bulletin; registration may also be made **by mail**. Please note that **late registrations** are subject to penalty: \$1 per class for those which are one week late, \$2 per class for those two weeks late. After the third week of a semester, registration for credit may be made only with the approval of the Students' Work Committee.

A student who does not want 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, any time before the final examination, to record him as an auditor. Auditor's status carries no credit. Auditors pay the same fee as other students.

Transfers from one class to another may be made without charge by application to the main office of the General Extension Division.

Refunds of tuition fees are available on a pro-rata basis to students who cancel their registrations, provided the student requesting the refund has not attended class after the eighth meeting. Notice of cancellation and application for refund should be in writing, accompanied by fee receipt, and submitted before the end of the semester during which registration was made.

To help you with your registration, here is a **sample class description**, with explanatory comment:

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

The School of Business Administration course in cost accounting with text, laboratory set and problems, requiring outside preparation, covering job order and process cost procedure and theory. Prerequisite: B.A. 55 or Econ. 25L or equivalent with instructor's consent.

Fall Semester		Spring Semester	
152	M 6:20	Vincent 115,	Rotzel
153	M 6:20	Vincent 115,	Rotzel

The **numbers** and **names** of Extension classes are usually the same as those of corresponding day classes. Capital letters preceding the class number refer to university colleges, divisions, and departments: B.A. means Business Administration, G.C. means General College, ArtEd. means Art Education, M.E. means Mechanical Engineering, etc.

The **dagger** (†) means that both B.A. 152 and B.A. 153 must be completed before credit is given for either. When a class runs through two semesters, as does B.A. 152-153, the second semester is a continuation rather than a repetition of the first semester unless otherwise indicated. Non-daggered continuation classes may be taken for credit in single semester units; students planning to take only the second semester of such a class should obtain the instructor's consent before registering.

The name of the class is followed by the **credits** which the class carries. (See "**credits**" below.)

Then comes mention of the **tuition fee** (here, \$15) and of any **special fee** which may be involved. All fees are for one semester unless otherwise indicated.

For information on **prerequisites** see below.

The time and place of meeting are indicated by abbreviations which in most cases will be obvious. For example, "M 6:20 Vincent 115" means that the class will meet on Monday at 6:20 in Vincent Hall 115 on the campus. The **instructor's name** follows the room number.

Where Can I Get Advice About a Program?

The Students' Work Committee in the General Extension Division's campus office gives advice on the selection of individual classes and of programs of study leading to Extension certificates, assists students to make contact with advisers in the various colleges of the University for information on programs of study leading to degrees, and arranges appointments for the testing and counseling services of the Student Counseling Bureau. The chairman of the Students' Work Committee keeps customary office hours and is also available till 8:30 p.m. during registration periods; at other times conferences may be arranged by appointment.

Are There Other Facts or Regulations Concerning Extension Classes Which I Might Want To Know?

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.

Credits:

Validity—The credits listed in the class description are quarter credits, notwithstanding the fact that 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 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 "residence" 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 transfers 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—In the General Extension Division 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. 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.

Certificates: See page 8.

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 Students' Work Committee will assist the student to determine his status with regard to these requirements.

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; nor may a student who receives a failure in a continuation class 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 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 two semesters following the student's resumption of Extension class work, 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 and credits are sent them by the university recorder and will not be furnished by the General Extension Division.

Maximum load: The maximum amount of Extension work, including both Extension classes and correspondence study courses, to be carried by students regularly employed is 9 or 10 credit hours, the equivalent of three 3-credit or two 5-credit classes, per semester. Permission to exceed this maximum must be sought from the Students' Work Committee.

EXTENSION CLASSES

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

A student who has been dropped by any unit of the University may not register for Extension classes until he has been readmitted to his unit.

Attendance: Attendance at every meeting of a class is expected; success in the work of the class is based on this attendance. Instructors or the Students' Work Committee may inquire into the causes of absence and the student's intentions and make appropriate recommendations. Such inquiry and recommendation is entirely in the interest of the student and in no sense disciplinary; Extension students are in classes for very definite purposes, are competent to govern their comings and goings, and may be trusted to give the attendance necessary to the accomplishment of their purposes.

Classes listed in this bulletin may be cancelled because of insufficient enrollment.

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

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) may purchase one season ticket book if single, or two if married; fee \$8.00—checks not accepted in payment. 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.

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.

Correspondence Study Courses

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

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. For advice or information on programs of study leading to certificates, including **permission for substitutions**, consult the Students' Work Committee. Certificates are awarded to students who complete with a C average any of the following programs of study:

GENERAL CERTIFICATES

Liberal Education Certificate (45 credits)

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, 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.

NOTE—The 90-credit Junior College and Liberal Education certificates have been discontinued, since most students interested in these certificates would probably prefer to work for the new 90-credit degree, associate in liberal arts, now granted by the College of Science, Literature, and the Arts. For information about this degree, consult the Students' Work Committee.

Communications Certificate: Essentials of Speech and Composition (27 credits)

American Studies Certificate: Know Ourselves (27 credits)

Latin-American Certificate: Know Our Neighbors (24 credits)

International Certificate: Know Our World (24 credits)

The four short term certificates listed above may be completed in the space of two years' study. Inasmuch as the available course offerings in these fields change from year to year, the Students' Work Committee should be consulted for advice in arranging a satisfactory study program.

BUSINESS CERTIFICATES

Junior Certificate (45 credits)

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
 B.A. 54-55 Accounting Survey

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

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 (90 credits)

Core requirement:

Bus. English or Composition 4-5-6, or exemption
 B.A. 51-52 and either 53 or 56 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
 B.A. 54-55 Accounting Survey
 Econ. 161 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.

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
 Draw. and Des. Geom. 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. 128a-128b Strength of Materials
 Draw. and Des. Geom. 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.

SPECIAL INFORMATION FOR VETERANS

Most veterans are eligible for financial aid for educational purposes or vocational training under the G.I. Bill (P.L. 346) or the Vocational Rehabilitation Act (P.L. 16). For properly qualified veterans the expenses of tuition fees, books and supplies in Extension classes will be paid by the Veterans' Administration. In certain cases a veteran may also be eligible to receive partial or even full subsistence payments from the Veterans' Administration while regularly enrolled in Extension evening classes.

To facilitate the prompt authorization of such payments it is important, where time and circumstances permit, that the veteran deliver certain documents to the Extension Division **at the time of registration**. Space does not permit the listing here of special requirements for the various classes of veteran-day school enrollees; students in Extension only; rehabilitation, on-the-job or apprentice trainees, etc.—full information, however, will be found in our special Veterans' Information Bulletin. As considerable delay is often unavoidable in obtaining the papers necessary for registration, we urge all veterans who expect to enroll in any Extension classes to write immediately to the main Extension Division office or to call in person at any of the Extension Division offices, and ask for the **Veterans' Information Bulletin**.

NOTE: If you have already submitted to the University of Minnesota a Certificate of Eligibility **under P.L. 346** in connection with a previous registration in Extension classes **only**, no other papers will be necessary for further registrations **unless your status with regard to subsistence payment eligibility has changed**. In all other cases original or supplemental papers will be required and prompt action is recommended.

GENERAL CLASSES

AGRICULTURE

6 Types and Breeds of Light Horses. 3 credits. \$15 plus \$4 laboratory fee.

The origin, history, and characteristics, the economic and recreational importance of the breeds of light horses. Practice judging of the more popular types and breeds. No prerequisite.

Spring Semester

T 8:05 Livestock Pavilion, University Farm, Harvey

7 Principles of Livestock Production. 3 credits. \$15 plus \$1 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, dairy cattle, sheep, swine, horses, and poultry. Practice in judging the various kinds of farm animals. No prerequisite.

Fall Semester

T 8:05 Livestock Pavilion, University Farm, Harvey

ART

Art Education—For full information on all Art Education courses offered in 1946-47: Interior Decorating, Painting, Drawing, Ceramics, etc., see Education section, page 14.

Fine Arts I. 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. Repeated spring semester. No prerequisite.

Fall Semester

W 8:05 Jones 2

Spring Semester

T 6:20 St. P. Ext. Center 212

Use of Color. 3 Extension credits. \$15.

Lectures and laboratory work demonstrating how color should and should not be used in public buildings and private residences. The use of color in stage work and in clothing for men and women will also be considered. This course is designed to be of service both to the amateur home decorator and to the professional artist, architect, advertiser, or decorator. Class meets twice a week for eight weeks beginning March 3. Students are expected to supply own water colors and paper.

March 3-April 22

MT 6:20 Main Engineering 305, Hopkins

Life Drawing and Painting I-II. 1½-3 credits each semester. \$15.

Figure composition; pencil, pen, charcoal, oil pastels, and water colors; print making. Amount of credit to be arranged with instructor. Students may register for either class either semester. No prerequisite.

Fall Semester

W 8:05 Main Engineering 417, Burton

Spring Semester

W 8:05 Main Engineering 417, Burton

Freehand Drawing I-II. 1½ credits each semester. \$15.

Theory and practice of freehand drawing; perspective, design, and composition; drawing of geometric solids and ornaments in charcoal, pencil, pen and ink, water color, or other media. Students may register for either class either semester. No prerequisite.

Fall Semester

T 8:05 Main Engineering 417, Doseff

Spring Semester

T 8:05 Main Engineering 417, Doseff

Commercial Drawing I-II. 3 Extension credits each semester. \$15.

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. Students may register for either class either semester. No prerequisite.

Fall Semester

M 8:05 Main Engineering 417, Doseff

Spring Semester

M 8:05 Main Engineering 417, Doseff

Agr.Eng. 42A Art Metal Work. 3 credits. \$15.

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; bookends; desk sets; lamps; bracelets. Students may choose project and kind of metal. No prerequisite.

Fall Semester

Th 6:20 Agricultural Engineering 20, 106,
Dent

Agr.Eng. 42B Art Metal Work. 3 credits. \$15.

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. Open to men and women. This course may be taken either as a supplement to Ag.Eng. 42A or separately. No prerequisite.

Spring Semester

Th 6:20 Agricultural Engineering 20, 106,
Dent

Gardening and Landscaping. See page 19.

Planning Your Modern Home. See page 21.

Drawing Your Modern Home. See page 21.

Engineering Drawing. See page 44.

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. 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, the 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.

Spring Semester

W 6:20 Physics 133, Luyten

BACTERIOLOGY**53 General Bacteriology.** 5 credits. \$25 plus \$2 laboratory fee.

Culture media; methods of staining and identification; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries 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 Semester

TTh 7:00 Millard 214, Skinner

104 Sanitary Bacteriology. 5 credits. \$25 plus \$2 laboratory fee.

A laboratory class in standard and approved methods for the bacteriological examination of water, milk, and foods; preparation and use of standard culture media; methods for standardization of germicides. Class meets 6 hours per week for 11 weeks. Prerequisite: Bacteriology 53.

Spring Semester

TTh 7:00 Millard 201, Skinner

CHEMISTRY

Note—The following chemistry classes, except Advanced Quantitative Analysis, meet for a minimum of one lecture, one recitation, and three hours laboratory a week. Class periods: 7:30 to 10:00 p.m., both Tuesdays and Thursdays except spring semester. These classes require a deposit of \$5, payable at Chemistry Department, of which \$2 is a laboratory fee and the remainder for breakage. The unused portion is returned.

9 General Inorganic—Nonmetals. 5 credits. \$25.

The common nonmetallic elements and their principal compounds; the laws and theories of chemistry. Repeated spring semester. No prerequisite.

Fall Semester
TTh 7:30 Chemistry 315, 210, Herr

Spring Semester
T 6:30-7:30 Chemistry 215, Herr
Th 6:30-10:00 Chemistry 215, Herr

12 Semimicro Qualitative Analysis. 5 credits. \$25.

The laws, theories, and calculations involved; systematic qualitative analysis. Prerequisite: Chem. 9 or equivalent.

Spring Semester
TTh 7:30 Chemistry 315, 210, Herr

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

Principles and methods of gravimetric analysis; typical problems and proper laboratory practice. Prerequisite: Qualitative Analysis.

Fall Semester
TTh 7:30 Chemistry 310, 315, Herr

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

General principles, methods, and calculations of volumetric analysis. Prerequisite: Qualitative Analysis.

Spring Semester
TTh 7:30 Chemistry 310, 315, 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.

Spring Semester
TTh 7:30 Chemistry 310, 315, Herr

123-124-125 Advanced Quantitative Analysis. 5 credits fall semester, \$25; 4 credits spring semester, \$20.

Prerequisite: Analytical Chemistry 1-2 or equivalent.

Fall Semester
123-124 TTh 7:30 Chemistry 310, Herr

Spring Semester
124-125 TTh 7:30 Chemistry 310, Herr

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. Prerequisite: Psychology 1-2.

Fall Semester
T 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. Prerequisite: Psychology 1-2.

Fall Semester
M 6:20 Folwell 101, Kuenne

90 Home, School, and Family Relations. 3 credits. \$15.

Adjustment within and outside the family circle; relation of adults and children within the family; the establishment of the home; discussion of family problems such as finance, discipline, recreation, etc. Prerequisite: Psychology 1-2.

Spring Semester
T 8:05 Folwell 101, Cummings

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, Kuenne

142 Psychology of Atypical Children. 3 credits. \$15.

Survey of the abilities, development, and adjustment of children with physical and mental handicaps. Emphasis upon personal, social, educational, and vocational adjustment. Prerequisite: 12 credits in psychology.

Fall Semester

M 8:05 Folwell 101

185 Children in a Changing World. 3 credits. \$15.

Effects of social change and social stress upon children. Some emphasis upon the effects of war, depressions and catastrophes. Problems of reconstruction and rehabilitation. Prerequisite: 12 credits in psychology, education, or sociology.

Spring Semester

M 8:05 Folwell 101

EDUCATION**Art Education****ArtEd. 4-5-6 Drawing from Still Life and Pose.** 3 credits each semester. \$15, plus \$1 model fee payable to instructor.

Emphasis on developing ability to do quick sketches. Especially planned to meet the needs of public school teachers. Includes ArtEd. 4-5-6, 7-8-9, 24-25-26; students may register for any three of these in any semester provided they are taken in sequence. No prerequisite.

Fall Semester

M 5:00 Jones 207, Lewis

ArtEd. 15 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 8:05 Nicholson 209, Lewis
T 6:20 Nicholson 209, Lewis
W 6:20 Nicholson 209, Lewis
Th 6:20 St. P. Ext. Center 212, Lewis

Spring Semester

M 8:05 Nicholson 209, Lewis

ArtEd. 17-18-19 Survey of Art in Life and Education. 3 credits each semester. \$15.

An introductory survey for the layman to develop appreciation and understanding through illustrated lectures, laboratory demonstrations and experiments. 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. 19: Social and educational significance of design in contemporary life; personal appearance, the home, architecture, city-planning, industrial design, advertising, theater, hobbies, etc. 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 203, Gayne

Spring Semester

18 W 6:20 Jones 203, Gayne

ArtEd. 22 Interior Decorating II. 3 credits. \$15.

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. With special permission from the instructor, students may register for this course as ArtEd. 72. Prerequisite: Art Education 15.

Spring Semester

T 6:20 Jones 203, Lewis
W 6:20 Jones 203, Lewis
Th 6:20 St. P. Ext. Center 212, Lewis

ArtEd. 28, 61, 62 Painting Experiences Applicable to Designing and Appreciating. 3 credits each semester. \$15, plus \$1 model fee payable to instructor.

Collection and application of source material available in nature. Problems ranging from designs for simple handicrafts to the composition of mural paintings, selected in accordance with individual interests and abilities and organized to develop appreciation and enjoyment of the experiences of sketching from nature and of various studio practices. Advanced students may register for this course as ArtEd. 124-125-126 with the approval of the instructor. Consult instructor for number of course for which to register. No prerequisite.

Fall Semester

Th 6:20 Jones 207, Rollins

Spring Semester

Th 6:20 Jones 207, Rollins

ArtEd. 73-74-75 Ceramics. 3 credits each quarter. \$15 per quarter plus \$1.50 laboratory fee.

Emphasis upon ceramic sculpture. Class meetings are 2½ hours in length and are divided in three units of 12 meetings each, corresponding with the day school quarter periods. No prerequisite.

Fall Semester
73-74 M 6:20 Jones 10, Lupori

Spring Semester
74-75 M 6:20 Jones 10, Lupori

ArtEd. 157 Art Movements of 20th Century Scandinavia. 3 credits. \$15.

Illustrated lectures on the timely contributions of Scandinavia's public arts program with emphasis on the organization of the housing, art-in-industry and home-craft movements. The significant social role of the artist will be studied through such contemporary expression as the monumental mural form. No prerequisite.

Fall Semester
M 6:20 Jones 207b, Lien

Curriculum and Instruction

Ed.C.I. 65 (see Ed.C.I. 103)

Ed.C.I. 103 The Teaching of Science in the Elementary School. 3 credits. \$15.

Emphasis on resources and materials, and their application in the elementary grades. This may be taken for credit in either Ed.C.I. 103 or Ed.C.I. 65.

Fall Semester
M 6:20 U. High School 7, Anderson

Educational Psychology

Ed.Psy. 60 Introduction to Measurement 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

Ed.Psy. 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. Each student will have an opportunity to construct an examination in his own field. Prerequisite: Ed.Psy. 60 or equivalent.

Fall Semester
M 6:20 Mpls. N. W. Bank Bldg. 690
Van Wagenen

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

Ed.Psy. 183 Psychology of Gifted Children. 3 credits. \$15.

A study of the abilities and characteristics of intellectually gifted children. Prerequisite: Ed. 51A or equivalent.

Spring Semester
M 6:20 Mpls. N. W. Bank Bldg. 690,
Van Wagenen

Music Education

Mu.Ed. 220E Survey and Evaluation of Research in Music Education. 3 credits. \$15.

The study of recent and significant findings and writings on special topics within the student's major professional needs and interests in music education. This course is conducted by individual conferences with the instructor. Hours to be arranged. Prerequisite: consent of instructor; seniors and graduates. (See note.)

Mu.Ed. 224E Seminar and Individual Research Problems in Music Education. 2-6 credits. \$10-\$30.

The student is individually guided in the conduct of field studies and investigations within his major needs and interests in music education. Seniors and graduates. (See note.)

Note—Mu.Ed. 220E and 224E are applicable toward the B.S. and M.Ed. degrees in Music Education. Course will be taught on the individual conference basis by appointment with Professor Winslow. Call Main 8177, Extension 229 or 342.

Nursing Education

60 Ward Administration. 3 credits. \$15.

Organization of the hospital; authority, responsibility and relationships of the head nurse, principles of administration; analysis and maintenance of a good nursing service; environment of the patient; selection, orientation, assignment, and motivation of personnel; planning clinical teaching programs. Repeated spring semester. Open to graduate nurses.

Fall Semester

M 5:00 Medical Sciences 113, Randall

Spring Semester

M 5:00 Medical Sciences 113, Randall

62 Personnel Work in Schools of Nursing. 3 credits. \$15.

Survey of principles of techniques of personnel work applied to problems in schools of nursing. The relationship of such topics as individual differences, human behavior, personality, emotions, and intelligence to the problem of personnel guidance. Study of such techniques as psychological tests, personnel records, orientation periods, remedial programs, and counseling interviews in schools of nursing. Open to graduate nurses.

Spring Semester

T 6:20 Medical Sciences 113, Gordon

68 Construction and Use of Examinations and Other Measurement in Basic Nursing Courses. 3 credits. \$15.

Practice in making and scoring course examinations; study of criteria for judging and improving methods of measurement; discussion of examinations as aids to student progress; relation of examination scores to grading systems. Open to graduate nurses.

Fall Semester

T 6:20 Medical Sciences 113, Gordon

72 Principles of Learning and Methods of 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.

Fall Semester

Th 6:20 Medical Sciences 113, Harrington

Spring Semester

Th 6:20 Millard 113, Harrington

82 Survey of Current Economic Problems. 3 credits. \$15.

The functioning of our economic system with respect to specific problems such as the impact of war on national and individual income; the significance of price level changes, labor union activity and government regulation upon employment and prosperity; the effect of domestic economic policies and problems upon international economic problems and world co-operation. Open to graduate nurses.

Fall Semester

W 5:00 Medical Sciences 113, Hines

For classes in Motion Study and Time Study open to Graduate Nurses, see Mechanical Engineering, page 50.

Physical Education

Phys.Ed. 111 An Advanced Course in Methods of Teaching Physical Education—for Women. 3 credits. \$15.

The purpose of this course is to give an overview of the activity program in reference to instructional procedures. Outstanding results of the course should be increased perspective of the common method problems in the various activities as well as those peculiar to each activity and possible solutions for conspicuous instructional problems today.

Fall Semester

Th 6:00-8:00 Norris Gymnasium 201

ENGLISH

Classes in Composition

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 four years, you must ask for assignment to the proper composition class a week before the first meeting of the class. (*You need not take the test again.*) Telephone, write, or call in person 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 four years ago, report for it at the following time and place.

Fall Semester

7:00 Wednesday, September 25
7:00 Wednesday, September 25
7:00 Wednesday, October 2

Room 104, Nicholson Hall
Room 212, St. P. Ext. Center
Room 104, Nicholson Hall

Spring Semester

7:00 Wednesday, February 5

Room 104, Nicholson Hall

Preparatory Composition. No credit. \$11.25.

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

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

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 105	4-5	T	6:20 Folwell 202
4-5	T	6:20 Folwell 102, Scallon	5-6	M	6:20 Folwell 105
4-5	W	6:20 St. P. Ext. Center 217, Scott	5-6	T	6:20 Folwell 102, Scallon
5-6	W	6:20 Folwell 102,	5-6	W	6:20 St. P. Ext. Center 217, Duffy

Grammar Review. 2 Extension credits. \$10.

A "refresher" course for those who need a quick and thoro review of grammar, mechanics, and usage. More intensive than Preparatory Composition. Twelve meetings. No prerequisite.

Fall Semester			Spring Semester		
Th	8:05	Folwell 209	W	8:05	St. P. Ext. Center 216

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

The language we speak, a consideration of various of its aspects: its vocabulary, grammar, and pronunciation; regional speech; standards of usage; popular misconceptions about language; meaning, etc. The particular emphasis of the course will be determined largely by the interests of the class. Open to students with Senior College standing and to others by permission of the instructor.

Fall Semester		
M	6:20	Folwell 109, Allen

Vocabulary Building. See page 33.

Classes in Writing**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 27 or 28. Prerequisite: Composition 4-5-6, or consent of instructor.

Fall Semester			Spring Semester		
27	Th	8:05 Folwell 203, Cronin	28	Th	8:05 Folwell 203, Cronin

69-70 Short Story Writing I-II. 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			Spring Semester		
69	Th	6:20 Folwell 203	70	Th	6:20 Folwell 203

91-92 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		
91	M	6:20 Folwell 203, Phelan	92	M	6:20 Folwell 203, Phelan

Writing of Magazine Articles. See page 22.

Classes in Literature**21-22-23† Introduction to Literature. 4½ credits each semester. \$22.50.**

A study of English literature as to history and types of writing. 21, seventeenth century; 22, eighteenth century; 23, nineteenth century. Prerequisite to major in English and required for teacher's certificate. Prerequisite: Comp. 4-5-6 or exemption.

Fall Semester			Spring Semester		
21-22	T	6:20 Folwell 203, Moore	22-23	T	6:20 Folwell 203, Moore

38-39 Contemporary Literature. 3 credits each semester. \$15.

Readings, lectures, and discussions of contemporary British and American literature including the novel. 38, poetry and drama; 39, novel. Designed to help students appreciate and understand the literature of today. Prerequisite: Comp. 4-5-6 or exemption.

Fall Semester			Spring Semester		
38	W	6:20 Folwell 202	39	W	6:20 Folwell 202

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

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

Fall Semester
55 Th 6:20 Folwell 101, Christie

Spring Semester
56 Th 6:20 Folwell 101, Christie

73-74 American Literature. Not offered 1946-47.**120 Interpretation of Poetry.** Not offered 1946-47.**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 authors read include Voltaire, Goethe, Dostoevski, Marx, Zola, and Tolstoy. No prerequisite.

Fall Semester
I M 6:20 Folwell 322

Spring Semester
II M 6:20 Folwell 305

Humanities in the United States. 3 credits. \$15.

An interpretation of the past and the present civilization of the United States through history, literature, philosophy, and the related arts. Lectures, discussions, and readings on the three related themes of nationalism, regionalism, and internationalism.

Spring Semester
M 6:20 Burton 111, Tyler

Book Reviews. Not offered 1946-47.**Business English.** See page 37.**Business Correspondence.** See page 37.**The World and Our Times.** See Special Notice, page 3.**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 227, Wilson
Th 6:20 St. P. Ext. Center 214, Lichtenstein

Spring Semester
2 W 6:20 Folwell 227, Wilson
Th 6:20 St. P. Ext. Center 214, Lichtenstein

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, Lichtenstein
3 W 8:05 St. P. Ext. Center 216

Spring Semester
4 M 6:20 Folwell 213, Lichtenstein
4 W 8:05 St. P. Ext. Center 214

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

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

Fall Semester
5 T 6:20 Folwell 304

Spring Semester
6 T 6:20 Folwell 304

17 French for Graduate Students. No credit. \$15.

Fundamentals of grammar; reading of appropriate prose. Prepares for examinations in French. Students may enter or continue in spring semester. No prerequisite.

Fall Semester
M 6:20 Folwell 102, Brackney

Spring Semester
M 6:20 Folwell 102, Brackney

53-54 French Conversation. 3 credits each semester. \$15.

Discussion of current affairs, based mainly on readings from French newspapers.

Fall Semester
53 W 6:20 Folwell 203, Fermaud

Spring Semester
54 W 6:20 Folwell 203, Fermaud

GARDENING

Hort. 10 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 and hot beds. Special emphasis on pruning, fertilizing, weed control, and insect and disease control. Also a survey of all the classes of plants recommended for Minnesota gardens and yards.

Spring Semester

T 6:20 Botany 4, 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.

Fall Semester

T 6:20 Botany 4, Phillips

GEOGRAPHY

101 Geography of Europe. 3 credits. \$15.

A study of the major geographic regions of Europe, with special emphasis on the geographic basis for the economic activities. Prerequisite: Geography 11.

Fall Semester

T 6:20 Burton 103, Dicken

11 Human Geography. 5 credits. \$25.

A study of the development, types, and uses of maps, followed by a consideration of the factors of the physical environment and their effect on human activities. Current problems in the use of our natural resources are used as illustrative material. This is a basic course and a prerequisite for further courses in geography. It likewise supplies background material necessary for intelligent interpretation of the world's news. No prerequisite.

Spring Semester

T 6:20 Burton 103, Brown

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, oil, and other economic mineral resources. No prerequisite.

Fall Semester

1 Th 6:20 Pillsbury 210

A Th 8:05 Pillsbury 22

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

25 Elements of Rock Study. 3 credits. \$15.

A study of rock forming minerals and igneous, sedimentary, and metamorphic rocks; their occurrence and classification. No prerequisite.

Fall Semester

Th 6:20 Pillsbury 110, Gruner

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, Gruner

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, Wangness

Spring Semester
2 T 6:20 Folwell 207, Wangness

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, Prottinger

4 Intermediate German. 3 credits. \$15.

Modern narrative prose. Prerequisite: German 3.

Spring Semester
T 6:20 Folwell 206, Prottinger

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 212, Downs

Spring Semester
17b M 6:20 Folwell 212, Downs

HEALTH

P.H. 53 Elements of Preventive Medicine. 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

P.H. 62-63† Principles of Public Health Nursing. 3 credits each semester. \$15.

The public health nurse's role in the various services of a public health program; discussion of individual, family, and community health problems; teaching in the home, principles of organization and administration of public health nursing services including planning of the program; some discussion of special services such as school and industrial nursing. Prerequisite: open to public health nurses.

Fall Semester
62 Th 6:20 Millard 129

Spring Semester
63 Th 6:20 Millard 129

P.H. 102 Environmental Sanitation. 3 credits. \$15.

Methods for promoting man's health and comfort by controlling his environment; water supply sanitation, food sanitation, pollution abatement; sewage, excreta, and waste disposal; bathing place sanitation, air hygiene, illumination, housing, control of insect and animal vectors of disease, industrial hygiene and sanitation. Prerequisite: 50 or 51 or 53 or 100 or by permission of instructor.

Fall Semester
W 6:20 Millard 129, Pierce

P.H. 115 Food Sanitation. 3 credits. \$15.

Sanitary problems associated with the production, processing and distribution of milk, meat, shellfish, and other foods, methods of public health supervision. Lectures, field and laboratory demonstrations.

Spring Semester
W 6:20 Millard 201, Adams

P.H. 126 Industrial Health Problems. 3 credits. \$15.

Organization of industrial health services, state problems in industrial hygiene. Industrial hazards and their control. Procedures in industrial health services. Prerequisite: P.H. 53, Chemistry 1 and 2 or equivalent, or permission of instructor.

Fall Semester
Th 8:05 Millard 129, Foker

HISTORY

1-2† European Civilization. 5 credits each semester. \$25.

Political, social, and economic factors. Course 1: 1500-1799; Course 2: 1799 to the present. No prerequisite.

Fall Semester
1 M 6:20 Folwell 104, Kane

Spring Semester
2 M 6:20 Folwell 104, Kane

20-21-22† American History. 4½ credits each semester. \$22.50.

For students who want to cover the entire sequence of History 20-21-22 in one year. Class meets for one period of 2½ hours each week. No prerequisite.

Fall Semester
20-21 T 6:20 Folwell 109, Kane
W 6:20 St. P. Ext. Center 219, Kane

Spring Semester
21-22 T 6:20 Folwell 109, Kane
W 6:20 St. P. Ext. Center 219, Kane

56-57-58 Early Modern European History. (One-year course.) 4½ credits each semester. \$22.50.

History 56: 1684 to 1815; 57: the French Revolution; 58: the Napoleonic era. No prerequisite.

Fall Semester
56-57 Th 6:20 Folwell 104, Kane

Spring Semester
57-58 Th 6:20 Folwell 104, Kane

65-66 Europe in the Twentieth Century. 3 credits each semester. \$15.

Course 65: 1900-1918; Course 66: 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
65 Th 6:20 Folwell 202, Deutsch

Spring Semester
66 Th 6:20 Folwell 202, Deutsch

83-84-85† American Economic History. 4½ credits each semester. \$22.50.

American economic life in the colonial, early, and later national periods. No prerequisite.

Fall Semester
83-84 W 6:20 Folwell 109, Loehr

Spring Semester
84-85 W 6:20 Folwell 109, Loehr

86a-87a-88a Social and Intellectual History of the United States. 3 credits each semester. \$15.

A survey of American history from the earliest colonial times to the present with emphasis upon social trends, religious and reform movements, cultural development, and the intellectual expression of such topics in the literature of each period.

Fall Semester
86a-87a M 6:20 Burton 111, Tyler

Spring Semester
87a-88a M 6:20 Burton 111, Tyler

95a Latin America in the Twentieth Century. 3 credits. \$15.

A survey of the recent history of the Latin-American countries with special attention to their background and development, their internal problems and policies, their relations with Europe and the United States, their economic, social, and cultural development, especially as related to Pan-Americanism. No prerequisite.

Fall Semester
T 6:20 Burton 111, Beatty

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 Semester
T 8:05 Main Engineering 320, Cerny

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.

Spring Semester
T 8:05 Main Engineering 320, Heath

Uses of Color. See page 11.

Architectural Drafting I-II. See page 45.

JOURNALISM

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

News, its sources, methods of finding and gathering; correct style of written presentation; brief survey of the place and purpose of the newspaper and the processes of newspaper production. Prerequisite: English Composition 4-5-6 or exemption.

Fall Semester

W 6:20 Murphy 311

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. Prerequisite: consent of instructor.

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 press, to employer and employee, consumer and citizen. The production of public relations programs and campaigns for industry, social work agencies, educational institutions, and government. Prerequisite: 13 or permission of instructor.

Fall Semester

W 6:20 Murphy 308, Emery

97 Advertising Copy, Layout, and Typography. 3 credits. \$15.

Practical study of advertising copy, layout, and typography, with particular emphasis upon retail classification of newspaper advertising. Lectures and laboratory work are designed to teach the student how to write and arrange copy and headline forms, how to handle illustrations, borders, and other type devices, and how to improve attention-getting qualities of display advertising. Students receive individual criticism of all advertisements prepared as class projects. Limited to twenty-five students accepted in order of registration. Prerequisite: consent of instructor.

Fall Semester

T 6:20 Murphy 311

LIBRARY SCIENCE

51 Origins of the Book. 2 credits. \$10.

A historical survey of writing and the materials and methods of writing from the earliest times through the invention and spread of printing in the fifteenth century. Twelve meetings. No prerequisite.

October 2-December 18

W 6:20 Library 5, Strout

52 History of Publishing. 2 credits. \$10.

A survey of publishers and publishing from the sixteenth century to the present, with special attention to the history of publishing in the U.S.A.; present-day publishing houses and their specialties; current trends in publishing and their effect upon libraries. Twelve meetings beginning January 8. No prerequisite.

January 8-March 26

W 6:20 Library 5, Strout

MUSIC

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

Enjoying Music. 3 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.

Fall Semester

W 8:05 Wesbrook 202, Hill

Spring Semester

W 8:05 Wesbrook 202, 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		Spring Semester
35-36	Th 6:20 Music 104, Ferguson	36-34	Th 6:20 Music 104, Ferguson

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		Spring Semester
40-41	T 7:00 Northrop Aud., Oberg	41-42	T 7:00 Northrop Aud., Oberg

58 Bach, Beethoven, Wagner, and Brahms. 3 credits each semester. \$15.

Critical study of selections from the master works of the four greatest composers; biographical readings, topics and analyses, giving historical and literary background to culminative periods in composition. This is the equivalent of the third quarter of the regular sequence of Music 56-57-58. Prerequisite: Music 56-57.

Fall Semester
W 6:20 Music 104, Ferguson

Piano Playing for Pleasure. 3 Extension credits each semester. \$15 plus \$1 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. Open to all, without previous musical training, but limited to 20 students. Students may either begin or continue in the spring semester.

	Fall Semester		Spring Semester
F 6:20	Music 104, Twichell	F 6:20	Music 104, Twichell

Music Education

For full information on all Music Education courses offered in 1946-47, see Education section, page 15.

NATURAL HISTORY**Birds of Minnesota.** 3 Extension credits. \$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. No prerequisite.

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

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, demonstrations, and discussions. 10 meetings beginning February 26. No prerequisite.

Spring Semester
W 8:05 Zoology 313, Eddy

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

A nontechnical survey of the upland game birds, waterfowl, fur bearers, and big game of Minnesota; their habits, characteristics, and requirements. Emphasis on the recognition of the more difficult plumage encountered by the hunter and on conservation of the principal game species. Illustrated lectures and demonstrations. 12 meetings beginning October 2. No prerequisite.

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

NURSING EDUCATION

For full information on all Nursing Education courses offered in 1946-47, see Education section, page 16.

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
Th 8:05 Folwell 322, Conger

Spring Semester
W 8:05 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.

Spring Semester
M 6:20 Folwell 322, Castell

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 St. P. Ext. Center 214, Holmer

Spring Semester
T 6:20 Folwell 322, Wiggins

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, explanations, statistics, etc.; outstanding theories and problems of science; philosophy, religion, and social issues; the unity of science. No prerequisite.

Fall Semester
Th 6:20 Folwell 322, Feigl

70 Modern Philosophies of Social Reform. 3 credits. \$15.

A historical and critical survey of social reformers from Adam Smith to the present, with special attention to the philosophical ideas underlying reform movements. No prerequisite.

Spring Semester
Th 8:05 Folwell 322, Shaw

Humanities. See page 18.

PHOTOGRAPHY

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

Two informal classes—one for beginners and one for advanced amateur photographers. Both classes will enjoy the stimulating experience of working with other amateurs under the guidance of an experienced instructor. Both classes will use the extensive and modern photographic laboratory of the School of Journalism. Both classes offered both semesters; students may enter either semester. Beginning sections limited to 34 students; advanced sections to 17 students. No prerequisite, but consult instructor about choice of beginning or advanced class.

Fall Semester
Beg. M 6:20 Murphy 20, Nestler
Adv. W 6:20 Murphy 20

Spring Semester
Beg. M 6:20 Murphy 20
Adv. W 6:20 Murphy 20

PHYSICS

7-8-9 General Physics. 5 credits each semester. \$25.

A general class in college physics for students majoring in physics, mathematics, chemistry, and in the Institute of Technology; includes mechanics, sound, heat, light, and electricity. Laboratory work an integral part of the class. Phys. 7 (Mechanics and Heat) fall semester; Phys. 8 (Electricity and Modern Physics) spring semester; Phys. 9 (Acoustics and Optics) fall semester; Phys. 9 will be offered again in fall of 1947-48 for those completing Phys. 8 in spring of 1947. Prerequisite: completion of, or concurrent registration in, differential calculus but note that students who cannot meet this requirement may register for Phys. 1a-2a, 4 credits (Science, Literature, and the Arts) each semester, \$20.

Fall Semester
7 MW 7:00 Physics 166, Christensen
9 TTh 7:00 Physics 166, Christensen

Spring Semester
8 MW 7:00 Physics 166, Christensen

POLITICAL SCIENCE

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

All of us are aware of the impact of the war upon the American system of government and of 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 the current developments, wartime changes, and postwar problems. No prerequisite.

Fall Semester

M 6:20 Burton 209, 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, wartime changes, and postwar problems. No prerequisite.

Spring Semester

M 6:20 Burton 209, Kirkpatrick

3 American Government and Politics, Part III. 3 credits. \$15.

The emphasis of this course is not upon the 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.

Spring Semester

T 6:20 Burton 209, Weidner

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

Th 6:20 Burton 209, Mills

45 Problems of Democracy. 3 credits. \$15.

It is essential—if we are to act intelligently as citizens—that we have an understanding of the nature of democracy and of the problems confronting it. This course, therefore, is designed to provide an analysis of the nature and operation of democratic government; an evaluation of the concept of democracy in relation to totalitarian dictatorship and an examination of the domestic and international problems that confront democracy today. No prerequisite.

Fall Semester

T 6:20 Burton 209, Kirkpatrick

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.

Fall Semester

W 6:20 Burton 209, Weidner

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

The theory and practice of public administration; organization, budgeting, and personnel; types of organization and their analysis; administrative management techniques; human aspects of management; inter-agency and intergovernmental relationships, including federal-state problems in Minnesota; federal central-field problems; community organization. Special lectures by public officials—federal, state, and local. No prerequisite.

Spring Semester

W 6:20 Burton 209, Latham

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.

Spring Semester

Th 6:20 Burton 209, Mills

90 Government in Latin America. 3 credits. \$15.

A course for those interested in the problems and inter-relations of the American republics, emphasizing the historical background, constitutional history, and governmental organization of the Latin-American countries. Special attention will be given to the influence of the United States, not only upon the constitutional theory and organization of the other nations of America but also upon their current domestic, inter-American, and international politics. The general outlines of governmental organization of these countries will be compared with that obtaining in the United States, and particular emphasis will be placed upon the governments of Argentina, Brazil, Chile, and Mexico. No prerequisite.

Spring Semester

T 6:20 Burton 221, Christensen

The World and Our Times. See Special Notice, page 3.

PORTUGUESE**1-2 Beginning Portuguese. 3 credits each semester. \$15.**

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

Fall Semester

1 Th 6:20 Folwell 205

Spring Semester

2 Th 6:20 Folwell 205

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.

Fall Semester

M 6:20 St. P. Ext. Center 212, White

T 6:20 Folwell 301, White

Th 8:05 Folwell 301, White

Spring Semester

M 8:05 Folwell 301, White

T 8:05 St. P. Ext. Center 212, White

Th 6:20 Folwell 301, 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 8:05 Folwell 301, White

F 6:20 St. P. Ext. Center 214, White

Spring Semester

2 W 8:05 Folwell 301, White

F 6:20 St. P. Ext. Center 214, White

4-5 Introductory Laboratory Psychology. Not offered 1946-47.**56 Psychology of Advertising. Not offered 1946-47.****119 Personality: Facts and Theories. 3 credits. \$15.**

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 T 6:20 Psychology 211, Longstaff

Spring Semester

123 T 6:20 Psychology 211, Longstaff

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, Bird

Spring Semester

145 M 8:05 Psychology 115, Bird

RADIO

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

Fundamentals of writing "for the ear." Designed for radio writers and those who hope to become radio writers; for educators, advertising men and women, and public service executives. Participants are urged to select script subjects that fit their particular interests or jobs. The student begins with short announcements, and carries through longer announcement forms into 15-minute and longer programs of drama, interviews, music, etc. Cultural, entertainment, and advertising values maintained throughout. Handling of sound effects and music. Constant survey and discussion of current radio, with emphasis on what to listen for. Selected work may be presented on KUOM or other 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

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

Basic plan: writing a series of 15-minute or longer programs for consecutive presentation on the air. Participants set up projects in their own fields of interest or employment. Used by active script writers to get unhampered criticism of their work before it is submitted to station, network or other agency. Experimentation in new patterns is encouraged. Survey of current radio begun in Radio Writing I is continued. Selected work frequently presented on KUOM or other stations. Prerequisite: I to precede II, II to precede III.

Spring Semester
T 6:20 Murphy 302, Weaver

Note—Radio Writing III, for those who have completed I and II, or equivalent in advanced writing, can be offered if a sufficient number desire it.

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

Speech art and psychology of the radio; announcing and broadcasting; radio speech; radio drama; interpretive reading, voice, diction, articulation, and pronunciation. Practice, exercises, projects, and reports on problems of appeal and audience response. Voice recordings will be made. Repeated spring semester. Prerequisite: Speech 1-2-3.

Fall Semester
W 8:05 Murphy 302, Ziebarth

Spring Semester
W 8:05 Murphy 302, Ziebarth

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

A study of the historical development of radio drama with an analysis of various types of radio drama including actual participation in production, direction, and acting. Prerequisite: Speech 1-2.

Fall Semester
W 6:20 Murphy 302, Dusenbury

RECREATION

Note that these 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.**

Class and individual instruction in the use of the brassie, midiron, mashie, and putter. Discussion of rules, golf etiquette, and terminology. Last few lessons at University Golf Course. Sections limited to 25. Equipment (clubs and soft balls) furnished by students. Repeated spring semester.

Fall Semester
T 6:00 Norris Gym. 60, Jaeger

Spring Semester
T 6:00 Norris Gym. 60, Jaeger
T 7:00 Norris Gym. 60, Jaeger

Golf (Intermediate)—for Women. \$7.50.

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 25. Prerequisite: some knowledge of and experience in golf.

Spring Semester
W 6:00 Norris Gym. 60, Snell
W 7:00 Norris Gym. 60, Snell

Rhythmic Exercise and Recreational Games for Physical Fitness—for Women. \$7.50.

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
W 6:30 Norris Gym, 153

Spring Semester
W 6:30 Norris Gym, 153

Modern Dance—for Women. \$9.

A course in Modern Dance especially planned for teachers of physical education who would like to add to their methods and content in the teaching of rhythm and dance. This course is concerned with present trends in dance techniques and composition.

Fall Semester

T 6:00 Norris Gym. 151

Rhythm—for Children (4 to 7 years of age). \$9.

A course in rhythm training for the small child with emphasis on free imaginative response to rhythm fundamentals and music. Rhythm fundamentals will be applied in ball activities, rhythmic games and dances, and in individual and group projects in the making of original dance patterns.

Spring Semester

S 10:30 Norris Gym. 151

Swimming—for Children (8 to 12 years of age). \$7.50.

A course in swimming for children between the ages of 8 and 12 years. A health examination for which a fee of 50 cents is charged will be given at the first class meeting. The University furnishes regulation suit and towel for which a fee of 10 cents is charged.

Spring Semester

S 10:30 Norris Gym. 51

Swimming (Beginning)—for Women. \$7.50.

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. University furnishes regulation suit and towel for a fee of 10 cents. Repeated spring semester.

Fall Semester

T 7:00 Norris Gym. 51, Eibner
W 8:00 Norris Gym. 51, Eibner

Spring Semester

T 7:00 Norris Gym. 51, Eibner
W 8:00 Norris Gym. 51, Eibner

Swimming (Intermediate and Advanced)—for Women. \$7.50.

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. Repeated spring semester.

Fall Semester

W 6:00 Norris Gym. 51, Starr
W 7:00 Norris Gym. 51, Eibner

Spring Semester

W 6:00 Norris Gym. 51, Starr
W 7:00 Norris Gym. 51, Eibner

Synchronized Swimming and Water Ballet—for Women. \$7.50.

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

Fall Semester

T 6:00 Norris Gym. 58, Starr
T 7:00 Norris Gym. 58, Starr

Spring Semester

T 6:00 Norris Gym. 58, Starr
T 7:00 Norris Gym. 58, Starr

Tennis (Beginning)—for Women. \$7.50 plus court fee (25 cents each time or \$1 for season, payable at courts).

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

Th 6:00 Norris Gym. 151, Jaeger

Phys.Ed. 111 An Advanced Course in Methods of Teaching Physical Education—for Women. 3 credits. \$15. (See Education, page 16.)**Activities Open to Both Men and Women****American Country Dancing—for Men and Women. \$7.50 plus \$1 laboratory fee.**

A recreational course reviving old American dances, the schottische, polka, and the more popular European folk dances. Repeated spring semester.

Fall Semester

W 7:00 Norris Gym. 151

Spring Semester

W 7:00 Norris Gym. 151

Badminton Club—for Men and Women. One period, 5 months, \$10.50.

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 September 30 and continuing through February 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.

Social Games and Mixers. No credit. \$9.

This course consists of games and mixers which can be used in planning parties for the home, club, and other types of informal recreation. Emphasis is also placed on indoor and outdoor activities for the family group.

Spring Semester

W 8:00 Norris Gym. 151

Activities Open Only to Men**Golf—for Men.** \$7.50 plus \$1 laboratory 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 10. Lessons or appointments with competent golf instructors in the golf gymnasium will be scheduled for Tuesday, Wednesday, Thursday, or Friday evenings between February 10 and April 14. 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 Cooke Hall 205, Smith

Physical Development—for Men. \$7.50.

Exercises based on individual needs. Includes calisthenics, weight lifting, apparatus work, dual sports, and recreational activities. Adaptable for handicapped individuals.

Fall Semester

T 7:00 Cooke Hall 215, Osell

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.

Fall Semester

M 8:05 Cooke Hall, Thorpe

Spring Semester

M 8:05 Cooke Hall, Thorpe

RUSSIAN**1-2 Beginning Russian.** 3 credits each semester. \$15 plus \$2 materials fee.*

A beginning course with emphasis on reading. Comprehensive discussion of the Russian grammatical system, interpretation of easy texts, and composition. After fulfilling the requirements of the course, students will have the basic knowledge necessary for the reading of any kind of Russian texts.

Fall Semester

1 Th 6:20 Folwell 109, Reichardt

Spring Semester

2 Th 6:20 Folwell 109, Reichardt

5 Elementary Scientific Russian. 3 Extension credits. \$15 plus \$2 materials fee.*

The publication of numerous important scientific contributions in Russian makes it essential for scientists in this country to have at least some rudimentary reading knowledge of the Russian language. The course in Scientific and Technical Russian is designed as a short cut for the acquisition of such a reading knowledge. No previous knowledge of Russian is necessary, but acquaintance with some scientific field or with the usual English scientific terminology is essential.

Fall Semester

T 6:20 Medical Sciences 111, Corson

6 Intermediate Scientific Russian. 3 Extension credits. \$15 plus \$2 materials fee.*

Reading and translation of classic and current Russian scientific literature. Prerequisite: Elementary Scientific Russian or Russian 1-2.

Spring Semester

T 6:20 Medical Sciences 111, Corson

* This fee covers all necessary texts and other materials.

7 Advanced Scientific Russian. 3 Extension credits. \$15 plus \$2 materials fee.*

Reading and translation of classical and contemporary Russian scientific literature in various fields. Prerequisite: 6 or 71-72 or consent of instructor.

Fall Semester

M 6:20 Medical Sciences 111, Corson

30 Contemporary Russian Civilization. 3 Extension credits. \$15 plus \$1 materials fee.*

A peaceful and prosperous postwar world may well depend upon the existence of friendly and co-operative relations between the United States and Soviet Russia. Such co-operation can be achieved only on the basis of mutual understanding. This course attempts to lay the foundation for such an understanding by presenting the facts in regard to modern Russian life, particularly in the cultural and scientific fields. Among the topics presented will be: foreign policy, education, science, public health, the press, literature, art, and music. The course will be directed by Mr. Samuel A. Corson and will be taught by a number of faculty members from various departments of the University. No prerequisite.

Fall Semester

T 8:05 Medical Sciences 111, Corson, with
G. Anderson, Bragg, Kolthoff,
Nafziger, Reichardt, Steefel, and
others.

71-72 Rapid Reading of Russian Literature. 3 credits each semester. \$15 plus \$2 materials fee.*

Selected readings of modern Russian prose. Advanced discussion of grammar and style. Opportunity for conversation. Prerequisite: 6 credits in Russian 1-2 or consent of the instructor.

Fall Semester

71 Th 8:05 Folwell 109, Reichardt

Spring Semester

72 Th 8:05 Folwell 109, Reichardt

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

This course emphasizes spoken Norwegian with some attention to cultural backgrounds. It is intended for students who have little or no previous knowledge of the language. The intensive method, so successful in the ASTP programs, will be used.

Fall Semester

1 T 6:20 Folwell 101, Farseth
1 W 6:20 Mpls. Miller Vocational
High 209, Farseth

Spring Semester

2 T 6:20 Folwell 101, Farseth
2 W 6:20 Mpls. Miller Vocational
High 209, Farseth

2-3 Intermediate Norwegian. 3 credits each semester. \$15.

Continuation of course 2. Based on readings from modern authors, including Ring, Elster, Kjør, Krag, Heiberg, Kinck, Wildenwey, and Øverland.

Fall Semester

2 W 6:20 Folwell 12, Midgard

Spring Semester

3 W 6:20 Folwell 12, Midgard

5-6 Advanced Norwegian. 3 credits each semester. \$15.

Dramatic and narrative masterpieces of the 19th century, especially Ibsen's Peer Gynt and the novels of Björnson and Kielland. The first half hour of the class will be devoted to a study of the culture and civilization of contemporary Norway. Prerequisite: Norwegian 1-2 or equivalent.

Fall Semester

5 T 6:20 Folwell 104, Rølvaag-Tweet

Spring Semester

6 T 6:20 Folwell 104, Rølvaag-Tweet

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

Minimum of grammar, simple composition and conversation, reading of selected prose. No prerequisite.

Fall Semester

7 T 6:20 Folwell 12, Gustafson

Spring Semester

8 T 6:20 Folwell 12, Gustafson

9-10 Second Year Swedish. 3 credits each semester. \$15.

Composition, conversation, readings in Swedish prose and poetry. Prerequisite: Scandinavian 7-8 or equivalent.

Fall Semester

9 T 8:05 Folwell 12, Gustafson

Spring Semester

10 T 8:05 Folwell 12, Gustafson

71 The Modern Scandinavian Drama. 3 credits. \$15.

Informal lectures on the general background of the Scandinavian drama and the development of characteristic dramatic forms and thought tendencies as represented in Ibsen, Björnson, Strindberg, and others. Required reading available in English translation. No prerequisite.

Spring Semester

Th 6:20 Folwell 12, Gustafson

* This fee covers all necessary texts and other materials.

SOCIOLOGY AND SOCIAL WORK**Classes in Sociology**

(Prerequisite to technical social work classes)

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		Spring Semester	
T 8:05	St. P. Ext. Center 219, Marshall	Th 6:20	Jones 109, Schneider
W 6:20	Jones 104, Schneider		

2 Individual and Group Adjustment. Not offered 1946-47.**49 Social Pathology. 3 credits. \$15.**

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

Fall Semester		Spring Semester	
W 6:20	Jones 109, Sletto	W 6:20	Jones 109, Sletto

96 Recent Social Trends. Not offered 1946-47.**119 Contemporary Marriage Problems. 3 credits. \$15.**

Origins of the family in relation to social change; family problems of successive age groups; family disorganization and family reorganization. Prerequisite: Sociology 1 and 15 credits in social science, child welfare, education, philosophy, or psychology, or consent of instructor.

Spring Semester	
T 6:20	Jones 109, Kirkpatrick

Classes in Social Work

Note—These classes are open to persons employed in social work positions who are recommended by the executive of the agency in which they are employed and approved by an adviser in the School of Social Work. In satisfaction of requirements for membership in professional social work organizations, the courses listed are accounted as "technical social work" courses. 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.

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. Corresponds with Medicine 70 (Neuropsychiatry) in the Medical School. See note above.

Spring Semester	
T 6:20	Jones 207, Hansen

129 Principles of Social Case Work. 3 credits. \$15.

A study of the purposes, problems, and processes of generic social case work, including a study of the relationships between the individual and the social worker and community as contributory to the treatment of the problems presented. See note above.

Fall Semester	
M 6:20	Jones 109

133 Case Work in Health. 3 credits. \$15.

Discussion of the meaning of illness in a case work situation with a correlation of the medical and social needs of an individual and his family. Prerequisite: 129 or equivalent. See note above.

Fall Semester	
M 6:20	Jones 209, Clendening

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 essentially with 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.

Fall Semester	
Th 6:20	St. P. Wilder Dispensary, Lippman

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 227, Corbett
	T	4:40	Mpls. N. W. Bank Bldg. 690
	T	8:05	St. P. Ext. Center 214, Mousolite
	Th	6:20	Folwell 227

Spring Semester

2	M	6:20	Folwell 227, Corbett
	T	4:40	Mpls. N. W. Bank Bldg. 690
	T	6:20	St. P. Ext. Center 217, Mousolite
	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

3	T	6:20	St. P. Ext. Center 219, Buss
	W	6:20	Folwell 201, Brackney
	Th	4:40	Mpls. N. W. Bank Bldg. 690

Spring Semester

4	T	6:20	St. P. Ext. Center 219, Buss
	W	6:20	Folwell 201, Brackney
	Th	4:40	Mpls. N. W. Bank Bldg. 690

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 212
	Th	6:20	Folwell 213, Mills

Spring Semester

6	W	6:20	St. P. Ext. Center 212
	Th	6:20	Folwell 213, Mills

7 Latin-American Culture. 3 credits. \$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

	Th	6:20	Folwell 201, Cuneo
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30-31 Commercial Spanish. 3 credits each semester. \$15.

The aim of this course is to give the student sufficient knowledge of commercial Spanish to enable him to understand and handle commercial correspondence in Spanish. It includes the study of the main parts of a Spanish letter, the envelope, models of letters and commercial forms and documents, abbreviations used in Spanish correspondence and business vocabulary. Prerequisite: 5-6 or permission of instructor.

Fall Semester

30	T	6:20	Folwell 201, Cuneo
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Spring Semester

31	T	6:20	Folwell 201, Cuneo
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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

53	T	6:20	Folwell 213, Castro
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Spring Semester

54	T	6:20	Folwell 213, Castro
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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, Gilkinson
	Th	6:20	St. P. Ext. Center 216, Ziebarth
2	M	8:05	Folwell 308, Gilkinson
	Th	6:20	St. P. Ext. Center 216, Ziebarth
3	M	8:05	Folwell 308, Gilkinson
	Th	6:20	St. P. Ext. Center 216, Ziebarth

Spring Semester

1	M	8:05	Folwell 308, Gilkinson
	Th	6:20	St. P. Ext. Center 216, Ziebarth
2	M	8:05	Folwell 308, Gilkinson
	Th	6:20	St. P. Ext. Center 216, Ziebarth
3	M	8:05	Folwell 308, Gilkinson
	Th	6:20	St. P. Ext. Center 216, Ziebarth

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.

Fall Semester

M	6:20	Folwell 6, Nichols
W	6:20	Folwell 6, Nichols

Spring Semester

M	6:20	Folwell 6, Nichols
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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.

Spring Semester

W 6:20 Folwell 6, Nichols

61 Speech Hygiene. Not offered 1946-47.

65 Radio Speech. See page 27.

66 Radio Drama. See page 27.

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

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 214, Dreher
T 8:05 Folwell 308, Dreher

THEATER

Introduction to the Theater (Speech 31). 3 credits. \$15.

This class is a prerequisite for students majoring in speech sequence B. It is designed to acquaint students with the theater of today. Demonstrations, projects, and excursions to Twin City theaters. A survey of modern theater practices to develop a keen appreciation of the theater. Individual and group exercises for the student. Prerequisite: Speech 1-2-3 or 5-6, or concurrent registration, or consent of instructor.

Fall Semester

Th 8:05 Music 19, Whiting

Beginning Acting (Speech 32). 3 credits. \$15 plus \$1 laboratory fee.

Creative and technical approaches. Designed particularly for the student interested in gaining skill in self-expression. A study of the art of pantomime based upon observation and memory recall. Underlying principles of stage technique and voice. Exercises and projects in characterization and work in University Theatre. Students are eligible for try-out in construction and acting phases of University Theatre activities. Prerequisite: Speech 1-2-3 (or 5-6) or concurrent registration, and Speech 31, or consent of instructor.

Spring Semester

Th 8:05 Music 19, Whiting

History of the Theater (Modern American Theater) (Speech 173). 3 credits. \$15.

The course corresponds to the final quarter of the theater history sequence 171-172-173 with emphasis placed on the American theater of the twentieth century and on current theatrical productions. Plays, playwrights, actors, actresses, and general theatrical history will be discussed in a series of lectures. Students will be asked to read plays of the period. Some discussion will be devoted to the theater in England and on the continent for comparative purposes. Prerequisite: Speech 1-2-3, 31, or consent of instructor.

Spring Semester

W 6:20 Folwell 308, Dusenbury

Radio Drama. See page 27.

Radio Writing. See page 27.

ZOOLOGY

1-2† General Zoology. 5 credits each semester. \$25.

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, Olson

Spring Semester

2 MW 6:30 Zoology 211, Olson

51 Parasitology. 5 credits. \$25.

An elementary course dealing with parasitic protozoa, worms, and arthropods, and their relation to diseases of man and animals, with particular emphasis on diagnostic methods. Prerequisite: Zoology 1-2-3 or equivalent with consent of instructor.

Fall Semester

TTh 7:00-9:30 Zool. Lab. 208, Cuckler

Birds of Minnesota. See page 23.

Fish and Fishing in Minnesota. See page 23.

Wild Game of Minnesota. See page 23.

BUSINESS CLASSES

ACCOUNTING

B.A. 54-55 Accounting Survey. 4 credits each semester. \$20.

Principles of accounting based on text and problems requiring preparation outside the class period, equivalent to the full first year university course in accounting. B.A. 55 is suitable as a review and refresher for students who have previously had a course in accounting. Classes meet for approximately 2½ hours. No prerequisite. (Econ. 20L will be accepted as prerequisite for 55.)

Fall Semester				Spring Semester			
54	M	6:20-8:45	Vincent 306, Sevenich	55	M	6:20-8:45	Vincent 306, Sevenich
	M	6:20	St. P. Ext. Center 216, Mont-gomery		M	6:20	St. P. Ext. Center 218, Mont-gomery
	T	6:20	Vincent 115, Ostlund		T	6:20	Vincent 115, Ostlund
	W	6:20	Mpls. N. W. Bank Bldg. 690		W	6:20	Mpls. N. W. Bank Bldg. 690
	Th	6:20	St. Paul Ext. Center 218, Mont-gomery		Th	6:20	St. P. Ext. Center 218, Mont-gomery

B.A. 54-55 Combined. 8 credits. \$20 each unit.

This course offers both 54 and 55 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 54 or Econ. 20L has preceded 55.

Spring Semester	
MF	6:20 Vincent 301, Sevenich
MF	6:20 St. P. Ext. Center 216

Econ. 25L Principles of Accounting. 4 credits. \$20.

A special offering of the second half of the old Econ. 20L-25L sequence, now replaced by B.A. 54-55, for the benefit of students who have completed only 20L. Also suitable as a general refresher course in elementary accounting.

Fall Semester
Th 6:20 Vincent 301

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

The School of Business Administration second year course 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 statement presentation and analysis, theories of valuation and amortization procedures, and problems of consolidated statement preparation. Prerequisite: B.A. 55 or Econ. 25L, or equivalent with instructor's consent.

Fall Semester				Spring Semester			
150	M	6:20	Vincent 113, Heilman	151	M	6:20	Vincent 113, Heilman
	W	6:20	St. P. Ext. Center 216, Lund		W	6:20	St. P. Ext. Center 216, Lund
	W	6:20	Vincent 301		W	6:20	Vincent 301

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

The School of Business Administration course in cost accounting with text, laboratory set and problems, requiring outside preparation, covering job order and process cost procedures and theory. Prerequisite: B.A. 55 or Econ. 25L, or equivalent with instructor's consent.

Fall Semester				Spring Semester			
152	M	6:20	Vincent 115, Rotzel	153	M	6:20	Vincent 115, Rotzel

Cost Accounting I-II Introduction to Cost Accounting. 3 Extension credits each semester. \$15.

Principles used to determine the profitableness of each branch of manufacturing, and basis for judging the relative efficiencies of operations; materials, labor, and burden; continuous process and production order costs; burden distribution methods, standard costs, etc. Lectures, text and case materials. A less intensive course than B.A. 152-153 Cost Accounting. Prerequisite: B.A. 55 or Econ. 25L, or equivalent with instructor's consent.

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

Note—Students who have received Extension credit in accounting courses—Cost Accounting I-II or Advanced Accounting Problems—may, upon satisfactory completion of an advanced numbered university credit course, petition for a transfer of Extension credit to university credit. Such credit, however, may not exceed the amount established for parallel, numbered courses and their prerequisites in the regular Science, Literature, and the Arts or School of Business Administration curricula. Students who wish to take advantage of this privilege should consult an adviser in School of Business Administration for information as to the evaluation and transfer of their Extension credits.

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 8:05 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 8:05 St. P. Ext. Center 218, Tuttle

Advanced Accounting Problems. 3 Extension credits. \$15.

A sequence course following courses B.A. 150-151. Students who possess considerable accounting experience may also be admitted at the option of the instructor. Designed to meet the needs of advanced students, professional accountants, and comptrollers; concerned primarily with the analysis of accounting problems and their solution; representative problems from various state C.P.A. examinations.

Fall Semester

T 8:05 Vincent 301, Rotzel

(See "Note" under Cost Accounting I-II concerning transfer of Extension credits.)

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. 153 or Cost Accounting IV.

Fall Semester

W 6:20 Vincent 115, Rotzel

W 6:20 St. P. Ext. Center 214, Tuttle

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

An introduction to auditing procedure with the preparation of a co-ordinated 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 153.

Fall Semester

T 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

T 6:20 Vincent 306, Reighard

B.A. 180A Accounting Topics—Budgetary Control. 3 credits. \$15.

Budget systems in business-type and kinds; profit and cost trends; profit engineering; budget administration, committees, etc.; budget reports and statements—form, content, and use; problem studies, solutions; recent developments in foundations for budgetary control. Prerequisite: see instructor.

Spring Semester

W 6:20 Vincent 115, Rotzel

Industrial Engineering Accounts and Accounting I. Statistical Methods. 3 Extension credits. \$15.

A special course to parallel the course in Standard Costs. The determination of cost trends by statistical means, in relation to the volume of business as measured by sales income and/or other criteria of volume such as direct labor or direct labor hours in the case of manufacturing costs. Useful in the better determination of standard costs, in connection with the study of standard cost accounting. Applications in the determination of fixed and variable capital in relation to volume. A treatise, mimeograph charts, and problems. Prerequisite: see instructor.

Fall Semester

W 8:05 Vincent 115, Rotzel

Industrial Engineering Accounts and Accounting II. Budgetary Control. 3 Extension credits. \$15.

That which properly determines satisfactory operation; proper product apportioning; determination of manufacturing capacity, of selling capacity; product fixed gross profit vs. product variable gross profit; variable net profit. A continuation of Statistical Methods Section but not dependent upon it. A treatise, mimeograph charts, and problems. Prerequisite: see instructor.

Spring Semester

W 8:05 Vincent 115, Rotzel

Industrial Engineering Accounts and Accounting III. Special Industries. 3 Extension credits. \$15.

A special course in manufacturing accounting whereby the results obtained from statistical studies are applied for the purpose of obtaining the cost trend in correlation to revenue produced. A selection of industries to be studied will be available such as steel castings and/or metal press work, etc. A continuation of Statistical Methods Section and Budgetary Control Section but not dependent upon them. Valuable in connection with Standard Cost Accounting methods and purposes of control. A special treatise on the subject and typewritten material, problems, from actual situations and their solution, charts. Prerequisite: see instructor.

Fall Semester

W 8:05 Vincent 115, Rotzel

Elements and Principles of Accounting (A.I.B.) I and II. 3¼ credits each semester. \$18.75.

A special class, primarily for members of the American Institute of Banking, Minneapolis chapter, covering the essentials of B.A. 54-55, for which see p. 35. Students completing both semesters receive 7½ credits and may continue with advanced classes in accounting. Begins October 1. No prerequisite.

Fall Semester

I TF 6:30 McKnight Bldg. 250, Lund

Spring Semester

II TF 6:30 McKnight Bldg. 250, Lund

B.A. 134 Income Tax Accounting I-II. First eight weeks, 3 credits; next sixteen weeks, 3 credits for certificate. Students must register for both I and II; fee: \$30.

Application of income tax laws to various business conditions; possible errors in preparation of income tax reports; state and federal problems. Course I meets once a week for three hours and twenty minutes for first eight weeks; Course II, which is a continuation of Course I, meets once a week for one hour and forty minutes for next sixteen weeks. Prerequisite: B.A. 151.

September 30-November 18I M 6:20 St. P. Ext. Center 218, Connolly
T 6:20 Vincent 307, Connolly**November 25-March 17**II M 6:20 St. P. Ext. Center 219, Connolly
T 6:20 Vincent 301, Connolly**B.A. 134a Income Tax Accounting Survey. 2 credits. \$10.**

A brief survey of current regulations and principles governing the preparation of tax returns from accounting and other records. Eleven meetings beginning January 2. No prerequisite.

January 2-March 13

Th 6:20 Vincent 113, Reighard

Practical Aspects of Income Taxation. See page 38.**ADVERTISING****Psy. 56 Psychology of Advertising. Not offered 1946-47.****B.A. 88 Elementary 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 and Psychology 1-2, 56, or consent of instructor.

Spring Semester

W 6:20 Vincent 112

97 Advertising Copy, Layout, and Typography. See Journalism, page 22.**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 SemesterT 6:20 St. P. Ext. Center 216
T 8:05 Vincent 105
W 6:20 Vincent 105**Spring Semester**

T 6:20 Vincent 105

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

A more advanced class with less emphasis on grammar and mechanics. Practical adaptations 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 SemesterM 8:05 St. P. Ext. Center 212
T 8:05 Vincent 105, Haga

BUSINESS LAW

B.A. 51-52-53†, 56 Business Law. 3 credits each semester; 51, 52, 53 must be completed before credit for degree is granted; 51, 52, and either 53 or 56 for the 90-credit business certificate. \$15.

Comprehensive course in the fundamental principles of law for the business and professional man. B.A. 51: contracts—formation, operation, transfer, discharge; agency—creation, nature, and terms of the relation, rights, and liabilities of the parties. B.A. 52: organization, management, and responsibility of association; business trusts; partnerships and corporations; bankruptcy. B.A. 53: personal property and transactions concerning it; law of sales, of bailments, and the Uniform Negotiable Instruments and Bills of Lading acts. 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. No prerequisite but B.A. 51 should precede or go along with 52, 53, or 56.

Fall Semester			Spring Semester		
51	W 6:20	Vincent 221, Newhall	51	M 8:05	St. P. Ext. Center 217, McClendon
52	M 6:20	St. P. Ext. Center 217, McClendon	52	W 8:05	Vincent 221, Newhall
	W 8:05	Vincent 221, Newhall	52	M 6:20	St. P. Ext. Center 217, McClendon
53	M 8:05	St. P. Ext. Center 217, McClendon		W 6:20	Vincent 221, Newhall
	T 6:20	Vincent 221, McClendon	56	W 8:05	Vincent 105, Maloney

Legal Aspects of Collective Bargaining and Wage and Hour Laws. See page 41.

Practical Aspects of Income Taxation. No credit. \$9.

This course is restricted to lawyers. It will survey the interrelations between legal and accounting aspects of income tax problems for the purpose of showing the importance of both accounting and legal analysis in understanding and solving them. Class limited to 25, in order of registration and admission. Ten weekly 1½-hour meetings only, beginning October 2. Prerequisite: consent of instructor.

Fall Semester
W 7:00 Nicholson 101, Gold

Labor Law. No credit. \$9.

A consideration of the laws governing collective bargaining and labor disputes. Class meets for 12 weeks beginning Thursday, October 3, for 1½-hour period. No prerequisite.

Fall Semester
Th 8:05 St. P. Center 217, Robins

Parliamentary Law. No credit. \$9.

Rules and regulations of parliamentary procedure in organized meetings. A course designed to equip the student to take an active and informed part, either as a member in the assembly or as an officer. Class meets for 12 weeks beginning Tuesday, October 1, for 1½-hour period. No prerequisite.

Fall Semester
T 8:05 St. P. Ext. Center 217, Ryan

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 8:05 Vincent 105, Graves
W 8:05 St. P. Ext. Center 214

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

Fundamental principles underlying the economic activities of society; utility and valuation; prices and the cost of production; the factors of production; division of labor and its relation to the development of industry; wages, rent, interest; capitalization, enterprise, business profits. Fundamental to the study of any business subject. No prerequisite.

Fall Semester			Spring Semester		
6	M 6:20	St. P. Ext. Center 214	6	T 8:05	Vincent 207, Graves
	W 6:20	Vincent 207	7	M 6:20	St. P. Ext. Center 214
	Th 8:05	Vincent 207, Graves		W 6:20	Vincent 207
7	M 6:20	Vincent 207		Th 8:05	Vincent 207

B.A. 101-102† Advanced General Economics. 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
101 Th 6:20 Vincent 205, Waite

Spring Semester
102 Th 6:20 Vincent 205, Waite

B.A. 109 Business Policy. 3 credits. \$15.

This course is devoted to the study of problems of a general administrative character. It deals with the integration of management, the methods of analysis and budgetary control used to establish policies with respect to recurring and new developments. Case studies and student reports. Prerequisite: B.A. 101.

Fall Semester

T 8:05 Vincent 113, Reighard

B.A. 112 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: Econ. 5, or 14, or equivalent.

Spring Semester

W 8:05 Vincent 112

Econ. 175 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. Topics studied include economic origins of modern business limitations on free competition; regulation of public institutes, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups. Prerequisite: 20 credits in social science including Economics 6-7 or 83.

Fall Semester

Th 6:20 Vincent 105, 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

Th 6:20 Vincent 115, Stehman

B.A. 142 Advanced 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 207, Borak

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 B.A. 142 or consent of instructor.

Spring Semester

T 6:20 Vincent 207, Borak

B.A. 155 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: Econ. 3 and 6-7.

Spring Semester

Th 6:20 Vincent 115, Stehman

GRAPHIC ARTS**Graphic Arts Association Curriculum.**

The University of Minnesota co-operates with the Graphic Arts Association of St. Paul in a program of educational training designed to increase the professional competence of members of the local graphic arts industry. Prospective students should consult the educational director of the Association for advice in the selection of courses to meet their individual needs. The following current course offerings have been approved by the Educational Committee of the Association as comprising a suitable core group of subjects from which a study program may be arranged.

Classes held at St. Paul Extension Center:

B.A. 54-55 Accounting Survey	B.A. 51, 52 Business Law
B.A. 150-151 Intermediate Accounting	Econ. 6-7 Principles of Economics
Cost Accounting I-II	Econ. 161 Labor Relations and Trade Unionism
Business English	B.A. 167 Personnel Administration
Business Correspondence	Practical Speech Making

Classes held on University of Minnesota campus:

B.A. 88 Elementary Advertising	B.A. 68 Sales Management
Commercial Drawing I-II	B.A. 89 Production Management
Econ. 3 Money and Banking	Cameracraft, Beginning and Advanced
B.A. 77 Marketing Survey	Psy. 122-123 Vocational and Personnel Psychology

Note: Details of day, time, classroom, semester, etc., will be found in the individual class listings in this bulletin.

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.

Fall Semester

T 8:05 Vincent 2, Graves

College of Life Underwriters Curriculum. In co-operation with the Minneapolis and St. Paul Chapters of the American College of Life Underwriters (C.L.U.).

The General Extension Division plans to offer during the spring semester of 1947 the first of a series of courses based upon the sectional study outlines established by the C.L.U. and designed to aid in the preparation of students for the annual C.L.U. examinations. The course this spring will cover the material in Part A, Life Insurance Fundamentals, of the C.L.U. outline, including 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. Classes will be held once a week for a two-hour period, beginning the week of February 10 and ending the week of May 26; the day, time, and place will be announced later.

Additional information on this course should be available after the first of January, 1947 at the General Extension Division offices or through the Minneapolis or St. Paul chapters of Chartered Life Underwriters.

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

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

The University of Minnesota co-operates 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	Econ. 50 Insurance Principles B.A. 60 Fire and Marine Insurance* B.A. 61 Casualty Insurance*
Part III General Education 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	B.A. 54-55 Accounting Survey Econ. 3 Elements of Money and Banking B.A. 89 Production Management and B.A. 52 Business Law

* Available by correspondence study only.

† Not offered 1946-47.

LABOR AND PERSONNEL RELATIONS

Econ. 161 Labor Problems and Trade Unionism. 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

M 6:20 St. P. Ext. Center 219
Th 8:05 Vincent 205

B.A. 167 Personnel Administration. 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: Econ. 161.

Spring Semester

M 6:20 St. P. Ext. Center 212
Th 8:05 Vincent 205

Labor Law. No credit. \$9. See page 38.

Special labor classes for union members. Ask for announcement.

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 T 6:20 Psychology 211, Longstaff

Spring Semester

123 T 6:20 Psychology 211, Longstaff

Legal Aspects of Collective Bargaining and Wage and Hour Regulations. 3 Extension credits. \$15 plus \$1.50 materials fee.

This course is designed for union officials, business representatives, business men, personnel men and others who are interested in acquiring a working knowledge of the laws of collective bargaining and wage and hour regulations. It will cover the National and State Labor Relations Act, the Fair Labor Standards Act of 1938 (Wage and Hour Law) and State Wage and Hour Regulations. It is non-technical, and no prerequisites are necessary.

Fall Semester

M 8:05 Vincent 105, McCabe

Wage and Salary Administration. 4 Extension credits. \$20.

Job analysis and evaluation as a basis for setting wage rates and salaries. Definitions and principles; methods of job analysis; methods of employee merit rating; payroll records; appraising administration. Prerequisite: this course is designed for operating personnel managers or persons currently employed and experienced in personnel administration work, not below the junior executive level. Subject to consent of instructor.

Spring Semester

TTh 7:00 Vincent 112, Humphrey

MARKETING AND MERCHANDISING**Salesmanship. 3 Extension credits. \$15.**

Principles underlying salesmanship—buying motives; pre-approach, approach, the interview, meeting objections, closing the sale; demonstration sales. Repeated spring semester. No prerequisite.

Fall Semester

M 8:05 Vincent 205, Faragher
W 8:05 St. P. Ext. Center 212, Faragher

Spring Semester

M 8:05 Vincent 205, Faragher

B.A. 68 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 salesman; training in salesmanship; supervision and control. Case studies and discussions. Prerequisite: Economics 6-7.

Fall Semester

M 8:05 Vincent 112

B.A. 69 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

M 8:05 Vincent 112

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

M 6:20 Vincent 210

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. Prerequisite: B.A. 77.

Fall Semester

T 6:20 Mech.Eng. 202, Laitala

Wholesale Credit and Collection Curriculum. In co-operation with the National Institute of Credit.

The University of Minnesota co-operates with the Minneapolis and St. Paul chapters of the National Institute of Credit in a program of educational training leading toward the awards of associate and fellow of the National Institute of Credit. The National Institute of Credit is the educational branch of the National Association of Credit Men. Course registrations may be made through the association offices, 502 Thorpe Building, Minneapolis 2, and 512 Guardian Building, St. Paul 1. Registration in the National Institute of Credit is required for credit toward awards of associate and fellow. Transfer credit may be applied for courses completed previously in recognized colleges, up to 50 per cent of the requirements listed below.

The following program has been approved as fulfilling the requirements for awards of associate and fellow of the National Institute of Credit:

Classes in Association Curriculum*Associate Award*

Economics and Business Organization
Management Accounting
Credits and Collections
Business Writing

Fellow Program (in addition to courses above)

Credit and Commercial Laws
Effective Speaking and Service Selling

Credit Problems and Statement Analysis
Techniques of Supervision
Applied Psychology

Electives

Equivalent Extension Classes

Econ. 6-7 Principles of Economics
B.A. 54-55 Accounting Survey
B.A. 76 Credits and Collections
1 Business English

B.A. 51-52-53 Business Law
Beginning Practical Speech, Salesmanship

Information on request
B.A. 167 Personnel Administration
Psy. 1a Application of Psychology to Living

Consult Institute offices.

REAL ESTATE

The University of Minnesota co-operates with the National Associations 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.

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 realtor; 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 112, Co-ordinator:
Bernard G. Rice

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: consult instructor.

Spring Semester

M 6:20 Vincent 221, Co-ordinator:
Paul Bauer

Conveyancing, Financing and Insurance. 3 Extension credits. \$15.

Drafting and execution of instruments relative to the transfer of interests in real estate; methods of financing of purchase and construction of homes, commercial and industrial structures. Protection of interests in real estate by insurance. Prerequisite: consult instructor.

Spring Semester

M 6:20 Vincent 105, Co-ordinator:
Bernard G. Rice

Planning Your Modern Home. 2 Extension credits. \$10. See page 21.

Real Estate Law (Business Law 56). 3 credits. \$15. See page 38.

Building Material Estimating. 3 Extension credits. \$15. See page 48.

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 governing rail and highway transportation. Detailed study of highway rates and problems. 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 1, Nightingale

Spring Semester

II T 6:20 Vincent 1, Nightingale

ENGINEERING CLASSES

AERONAUTICAL ENGINEERING

Aeronautics I: Airplane Construction. 3 Extension credits. \$15.

Nomenclature; theory of lift and drag; wind tunnel; airfoil characteristics; airplane performance; stability and control; types of airplanes; demonstration and inspection of airplane and its parts; materials and their properties; principles in propeller theory. Prerequisite: elementary mathematics.

Fall Semester

T 7:30 Armory 105, Ruszaj

Aeronautics II: Elementary Navigation and Meteorology. 3 Extension credits. \$15.

Navigation instruments; principles of celestial navigation; laying out and checking course; dead reckoning; radio use; magnetic compass and its use; maps and charts; the atmosphere and clouds; reading of weather maps. Prerequisite: elementary mathematics.

Spring Semester

T 7:30 Armory 105

10 Air Pilot's Ground School. 3 credits. \$15, plus \$2 laboratory fee.

An elementary course on the subjects which a light-plane student pilot should learn before he secures a Private Pilot Certificate. Aerial navigation methods, aircraft instruments, weather, theory of flight maneuvers, contract flight rules, general operation regulations, engine operation, airplane inspection and miscellaneous related topics. No prerequisite. Lectures and laboratory work.

Fall Semester

Th 6:20 Armory 105, Hamilton

Spring Semester

Th 6:20 Armory 105, Hamilton

12 Commercial Pilot's Ground School. 3 credits. \$15.

A ground course intended primarily for the air pilot who is seeking a federal Commercial Pilot Certificate and Instrument Rating. Advanced study of aircraft engines, theory of flight, aeronautical meteorology, radio and dead-reckoning navigation, instruments and civil air regulations pertaining to both contact and instrument flight. Lecture and laboratory work. Prerequisite: Aeronautics 10, or consent of instructor.

Fall Semester

Th 6:20 Armory 105, Hamilton

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, Dow

Th 7:30 Main Engineering 201, Myers

Spring Semester

W 7:30 Main Engineering 101, Potter

W 7:30 St. P. Ext. Center 218, Dow

Th 7:30 Main Engineering 201, Myers

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, Dow

Th 7:30 Main Engineering 201, Myers

Spring Semester

W 7:30 Main Engineering 101, Potter

W 7:30 St. P. Ext. Center 218, Dow

Th 7:30 Main Engineering 201, Myers

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 Extension credits. \$10.

Working drawings, gearing, cams, developments, multiple auxiliary views, special projections. St. Paul class repeated spring semester. Prerequisite: Drawing 1.

Fall Semester

W 7:30 Main Engineering 201, Quaid

W 7:30 St. P. Ext. Center 218, Dow

Spring Semester

W 7:30 St. P. Ext. Center 218, Dow

29 Aeronautical Drafting. 2 credits. \$10.

Detail, assembly, and layout drawings. Standard practices in the aircraft industry. Army-Navy standards and specifications; tolerances and allowances; graphical integration. Prerequisite: Drawing 2 or consent of instructor.

Fall Semester

W 6:20 Main Engineering 201, Quaid

38 Reading Drawings. 2 credits. \$10.

Calculations of areas, volumes, and weights from drawings. Tabulation of quantities. Problems concerned with fabrication, manufacture, and construction. Repeated spring semester. Prerequisite: Drawing 1 or equivalent experience.

Fall Semester

W 7:30 Main Engineering 101, Potter

Spring Semester

W 7:30 Main Engineering 101, Potter

55 Production Illustration. 3 Extension credits. \$15.

Pictorial drawing as used in industry. Detail and assembly drawing in pictorial form by the use of isometric, oblique, axonometric, and prospective projection. Prerequisite: Drawing 1.

Fall Semester

W 7:30 Chemistry 411, Doseff

Spring Semester

W 7:30 Chemistry 411, Doseff

75 Industrial Design. 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, altho it is preceded by study of two-dimensional design through drawing. No prerequisite.

Fall Semester

W 7:30 Chemistry 411, Doseff

Spring Semester

W 7:30 Chemistry 411, Doseff

Architectural Drafting I-II. 3 Extension credits each semester. \$15.

A basic course for those needing training for work in architecture. Drawing, layout, floor plans, materials, standards in construction, conventions, etc. Students may register for either I or II in each semester. No prerequisite.

Fall Semester

T 7:00 Main Eng. 201, Smalley
Th 7:00 St. P. Mech. Arts High 101,
Smalley

Spring Semester

T 7:00 Main Eng. 201, Smalley
Th 7:00 St. P. Mech. Arts High 101,
Smalley

Architectural Design I. 3 Extension credits. \$15.

Principles of planning and composition as applied to problems in various types of buildings. Intended to develop facility in conceiving and presenting ideas quickly from assigned data. More advanced problems as time permits. Prerequisite: Architectural Drafting I and II, or equivalent with consent of instructor.

Spring Semester

Th 7:00 St. P. Mech. Arts 101, Smalley

CIVIL ENGINEERING**31-32 Stress Analysis.** 31: 2 credits, \$10. 32: 3 credits, \$15.

Analytical and graphic analysis of various types of bridge roof trusses and portals for fixed and moving loads. Prerequisite: Mathematics and Mechanics 26.

Fall Semester

31 M 6:20 Main Engineering 229, Hughes

Spring Semester

32 M 6:20 Main Engineering 229, Hughes

141-142 Reinforced Concrete. 3 credits each semester. \$15.

Principles of reinforced concrete. Theory of beams, slabs, and columns, and the application to ordinary structures. Prerequisite: Civil Engineering 32.

Fall Semester

141 Th 6:20 Main Engineering 229, Hughes

Spring Semester

142 Th 6:20 Main Engineering 229, Hughes

ELECTRICAL ENGINEERING**1-2 Fundamentals of Electrical Engineering.** 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 alternating-current circuits, complex representation of AC quantities, series and parallel AC circuits, polyphase AC circuits, power measurements in AC circuits. No prerequisite.

Fall Semester1 TTh 7:00 Electrical Engineering 237,
Cartwright**Spring Semester**2 TTh 7:00 Electrical Engineering 237,
Cartwright**3-4 Fundamentals of Electronics.** 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.

Fall Semester3 TTh 7:00 Electrical Engineering 138,
Sanderson**Spring Semester**4 TTh 7:00 Electrical Engineering 138,
Sanderson

5-6 Fundamentals of Radio. 5 Extension credits each semester. \$25.

First semester: vacuum tube characteristics, gas tube characteristics, audio amplifiers, R.F. amplifiers, oscillators, amplitude modulators, detection, power supplies, trigger and sweep circuits, oscilloscopes. Second semester: radio receivers, transmitters, frequency modulation, transmission lines, antennas, television, ultra high frequency tubes and circuits, wave guides. Prerequisite: 3-4 or equivalent.

Fall Semester

5 TTh 7:00 Electrical Engineering 321

Spring Semester

6 TTh 7:00 Electrical Engineering 321

11-12 Elements of Electrical Engineering. 4 credits. \$20.

Direct current circuit analysis; network theorems; application of the theorems to circuit problems. Laboratory study of direct current circuits. Prerequisites: Calculus or concurrent registration in Calculus.

Fall SemesterMW 7:00 Electrical Engineering 237,
Caverley**13-14 Elements of Electrical Engineering.** 4 credits. \$20.

Magnetic circuits and electromagnet theory; electrostatics. Laboratory study of magnetic and electrostatic phenomena. Prerequisite: E.E. 11 and 12.

Spring SemesterMW 7:00 Electrical Engineering 237,
Caverley**132-134-136 Electrical Machine Design.** 3 credits per semester. \$15.

Design of Electrical Machinery: DC generators and motors, transformers, AC generators and motors. Prerequisite: E.E. 121-123-125.

Fall SemesterW 7:00 Electrical Engineering 138,
Kuhlmann**Spring Semester**W 7:00 Electrical Engineering 138,
Kuhlmann**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.

Fall Semester

Th 7:00 Main Engineering 217, Boon

Building Material Estimating. 3 Extension credits. \$15.

Training in reading detailed blue prints 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.

Fall Semester

Th 8:05 Main Engineering 217, Boon

MATHEMATICS AND MECHANICS**Basic Mathematics.** 3 Extension credits. \$15.

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. Repeated spring semester. Prerequisite: grade school arithmetic.

Fall SemesterM 6:20 Main Engineering 106
Th 6:20 Main Engineering 106**Spring Semester**M 6:20 Main Engineering 106
Th 6:20 Main Engineering 106**Elementary Algebra I-II†** Credit toward entrance. \$15.

Elements of algebra to quadratic equations. No prerequisite.

Fall SemesterI M 8:05 Main Engineering 136
Th 8:05 Main Engineering 104**Spring Semester**II M 8:05 Main Engineering 136
Th 8:05 Main Engineering 104**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. Class will finish December 16; extra sessions arranged to complete semester's work. Prerequisite: plane geometry.

Fall Semester
M 8:05 Main Engineering 203, Schuck

Spring Semester
M 8:05 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 6:20 Main Engineering 107, Teeter
Th 7:00 Main Engineering 107, Snyder

Spring Semester
M 6:20 Main Engineering 107, Teeter
Th 7:00 Main Engineering 107, Snyder

11 College Algebra. 5 credits. \$25.

Quadratic equations; logarithms; mathematics of investment; simultaneous quadratic equations; graphical representation; progressions; mathematical induction; binomial theorem; permutations; combinations; probability; determinants; theory of equations; partial fractions. Repeated spring semester. Prerequisite: higher algebra.

Fall Semester
M 7:00 Main Engineering 205, Fischer

Spring Semester
M 7:00 Main Engineering 205, Snyder

12 Trigonometry. 5 credits. \$25.

Logarithms and plane and spherical trigonometry. Prerequisite: college algebra, or satisfactory performance on placement test.

Fall Semester
T 6:20 Main Engineering 106, Teeter
T 7:00 St. P. Ext. Center 212, Dow
W 7:00 Main Engineering 136, Snyder

Spring Semester
T 6:20 Main Engineering 106, Teeter

13 Analytical Geometry, Plane and Solid. 5 credits. \$25.

Elements of plane analytical geometry including conic sections; brief introduction to solid analytical geometry. Prerequisite: trigonometry.

Spring Semester
M 7:00 Main Engineering 215, Fischer
T 7:00 St. P. Ext. Center 216, Dow

24 Differential Calculus. 5 credits. \$25.

Limit; derivative; simple applications of derivative; maxima and minima; differentials; rates; change of variable; radius of curvature; mean value; indeterminate forms; partial differentiation; series; expansion of functions. Prerequisite: analytical geometry.

Fall Semester
T 7:00 Main Engineering 136, Fischer

25 Integral Calculus. 5 credits. \$25.

Standard elementary forms; definite integral; partial fractions; integrations by substitution, by parts; reduction formulas; integration a process of summation; double and triple integration. Prerequisite: differential calculus.

Spring Semester
T 7:00 Main Engineering 136, Fischer

M.&M. 26 Technical Mechanics—Statics. 5 credits. \$25.

This class deals with the following aspects of statics: characteristics of a force, parallelogram law, moments, resultants, equilibrium, friction, graphical methods, work, and theory of the moment of inertia. Prerequisite: integral calculus.

Fall Semester
Th 7:00 Main Engineering 136, Fischer

M.&M. 127 Technical Mechanics—Dynamics. 5 credits. \$25.

This class deals with the following aspects of dynamics: mass, acceleration, governors, power, momentum, and the theorem of Coriolis. Prerequisite: statics.

Spring Semester
Th 7:00 Main Engineering 136, Fischer

MECHANICAL ENGINEERING**Use of Mechanical Engineering Handbooks I-II.** 3 Extension credits. \$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 Semester		Spring Semester	
I	T 7:00	Experimental Engineering 201, LaJoy	II T 7:00 Experimental Engineering 201, LaJoy

Kinematics of Machines I-II. 3 Extension credits each semester. \$15.

A course designed to give a fundamental background in mechanical movements. The make-up of complex machinery is studied as simple basic mechanisms. Displacement and velocity analysis of moving machine members such as pistons, cranks, connecting rods, cams, gears, and miscellaneous linkages. Part II is a continuation of Part I and includes more detailed work on velocity analysis and its relation to forces acting on various machine members during a complete cycle of operation. In addition some time will be devoted to the study of accelerations and inertia forces of moving machine members and their relation to the complete force system. Twelve 3-hour meetings. Prerequisite: consult instructor.

Fall Semester		Spring Semester	
I	T 7:00	Mechanical Engineering 251, Larsen or Palmer	II T 7:00 Mechanical Engineering 251, Larsen or Palmer

Industrial Instrumentation and Automatic Control I-II. 3 Extension credits. \$15.

A course planned to cover the basic principles involved in industrial automatic controls. The complete control system is studied under four separate subheadings, as follows: the measuring means, the controller mechanism, the final control element, and the process. Typical commercial control instruments will be investigated for constructional details and operative principles. Emphasis will be placed on the controlled variables of industrial processes such as temperature, fluid flow, pressure, liquid level, and humidity. Part II is a continuation of Part I. Selection of a complete control system for typical industrial processes. Problems in the design of instrument mechanisms. Twelve 3-hour meetings. Prerequisite: consult instructor.

Fall Semester		Spring Semester	
I	W 7:00	Mechanical Engineering 251, LaJoy or Larsen	II W 7:00 Mechanical Engineering 251, LaJoy or Larsen

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 gages for the manufacture of the piece parts. Twelve 3-hour meetings, beginning January 7 and April 1. Prerequisite: Product Analysis 1 or Quality Control, or equivalent in shop experience.

January 7-March 11		April 1-June 3	
I	T 7:00	Mechanical Engineering 151 Crowder	II T 7:00 Mechanical Engineering 151, Crowder

27 Machine Design. 3 credits. \$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: Analytical Geometry.

Fall Semester	
M	7:30 Main Engineering 104, Herrick

Airplane Engines I-II. 3 Extension credits each semester. \$15 plus \$1 laboratory fee.

Types and development; mechanical details of modern aircraft engines, radial, twin-row, corn-cob, in-line, etc.; lubrication, cooling and air systems; aircraft fuels and carburetors; geared superchargers; turbo-superchargers, elementary fundamentals of jet propulsion; aircraft fuel specifications; altitude performance; aircraft engine testing. Prerequisite: Internal Combustion Engines or equivalent experience.

Fall Semester		Spring Semester	
I	M 7:30	Oak Street Lab., Murphy	II M 7:30 Oak Street Lab., Murphy

Diesel Engines I-II. 3 Extension credits each semester. \$15 plus \$1 laboratory fee.

A study of diesel principles and the construction and operation of modern diesel engines, diesel fuels, fuel pumps, injection nozzles and combustion systems; stationary, industrial and marine diesels; automotive and aircraft diesels, diesel locomotives; diesel operation and maintenance. Prerequisite: Internal Combustion Engines or equivalent experience.

Fall Semester		Spring Semester	
I	T 7:30	Oak Street Lab., Robertson	II T 7:30 Oak Street Lab., Robertson

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 heat transfer; heat transmission coefficients, heat transmission losses and heating loads; psychrometry and humidification; warm air, steam, hot water, vapor, vacuum, panel and fan system of heating; fuels and combustion; boilers, radiators, oil burners, gas burners and stokers; air duct design; air flow and air distribution; cooling loads and cooling load calculations. Class limited to 40 students accepted in order of registration. Prerequisite: high school mathematics or consent of instructor.

Fall Semester

I W 7:00 Experimental Engineering 110,
Algren

Spring Semester

II W 7:00 Experimental Engineering 110,
Algren

Heating, Ventilating and Air Conditioning III-IV.† 4½ Extension credits each semester. \$22.50.

A continuation of Heating, Ventilating and Air Conditioning I-II. The application of the principles of heating, ventilating and air conditioning to practical problems, the design of system to meet the requirements of occupied spaces and industrial plants; fan characteristics; controls; exhaust systems. Instructor will decide whether students have equivalent preparation. Class limited to 40 students accepted in order of registration. Prerequisite: I-II or equivalent.

Fall Semester

III Th 7:00 Experimental Engineering 110,
Algren

Spring Semester

IV Th 7:00 Experimental Engineering 110,
Algren

Refrigeration I-II. 4½ Extension credits each semester. \$22.50 plus \$1 material fee.

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 T 7:00 Experimental Engineering 110,
Jordan

Spring Semester

II T 7:00 Experimental Engineering 110,
Jordan

Plumbing—Theory and Cost Estimating. 3 Extension credits. \$15.

A course arranged for those engaged in designing, installing, selling plumbing fixtures and equipment. The subject matter of this course deals with plumbing theory, practice, ordinances and installation methods; compilation of cost data sheets for various unit installations; planning, sizing, taking off lists of materials from blue prints; estimating labor required; pricing materials and labor to arrive at total cost of the installation. No prerequisite.

Fall Semester

M 7:00 Experimental Engineering 110,
Hughes

Heating Systems—Installation and Cost Estimating. 3 Extension credits. \$15.

A course for those interested in the field of heating, emphasizing heating plant design, installation, material and labor costs. A study of heating ordinances and codes; classification of heating systems, including types of systems, materials and auxiliary equipment; radiators, convectors, steam and hot water piping; taking off lists of materials from blue prints; estimating labor required; pricing materials and labor to arrive at total cost of the installation. Prerequisite: Heating and Ventilating I-II or consent of instructor.

Spring Semester

M 7:00 Experimental Engineering 110,
Hughes

Production Control. 3 Extension credits. \$15.

Detailed study of basic principles underlying economical production of manufactured goods; production planning, routing, scheduling, dispatching, and follow-up. Relationship of various departments to production control. No prerequisite.

Fall Semester

T 6:20 Mechanical Engineering 202, Laitala

Time Study. 3 Extension credits. \$15 plus \$1 laboratory fee.

Detailed study of fundamental steps in time study procedure: breaking job into elements, performance rating, selection of elemental times, and allowances. Twelve 3-hour meetings, beginning September 30. Repeated spring semester, beginning March 31. No prerequisite.

September 30-December 16

M 7:00 Mechanical Engineering 202, Laitala

March 31-June 16

M 7:00 Mechanical Engineering 202, Laitala

Motion Study. 3 Extension credits. \$15.

Study and application of principles of work simplification to manufacturing and other activities. Process charts, operation charts, and micromotion studies. Lectures are followed by laboratory problems. Class limited to 25 students accepted in order of registration. Twelve 3-hour meetings, beginning January 6. No prerequisite.

January 6-March 24

M 7:00 Mechanical Engineering 202, Laitala

Plant Layout. 3 Extension credits. \$15 plus \$2 laboratory fee.

A study of plant design location and arrangements of departments and equipment to obtain orderly and economical flow of work through plant. Materials-handling methods and equipment. Lectures and laboratory. Class limited to 25 students accepted in order of registration. Twelve 3-hour meetings, beginning April 1. Prerequisite: Motion Study.

April 1-June 17

T 7:00 Mechanical Engineering 202, Laitala

Safety Engineering I-II. 4½ Extension credits each semester. \$22.50 plus \$1 material fee.

Introduction to industrial safety, development of industrial safety movement, accident costs, injury sources and causes, appraising safety performance, safety organization, new worker, job analysis for safety, arousing and maintaining interest in safety; first aid, layout and arrangement, the prevention of falls, materials handling, machinery safe-guarding, hand tools, industrial health hazards, fire prevention and protection fundamentals, eye protection, safety inspections, accident investigation, accident reports and records. Prerequisite: consult instructor.

Fall Semester

I M 7:00 Mechanical Engineering 254, Lee

Spring Semester

II M 7:00 Mechanical Engineering 254, Lee

Control of Manufacturing Standards. 3 Extension credits. \$15.

Lecture and laboratory covering the organization and operation of piece part and tool and gage inspection departments. The selection and use of precision measuring instruments for the control of dimensions and surface finishes in the manufacture of metal products. Class limited to 20 students accepted in order of registration. No prerequisite.

October 1-December 17

T 7:00 Mechanical Engineering 104, Crowder

Machine Tool Operation I-II. 4½ Extension credits each semester. \$22.50 plus \$1 laboratory fee.

Lecture and laboratory covering the selection and use of jigs, fixtures, gages, 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 quarter's work or equivalent.

Fall SemesterI M 7:00 Mechanical Engineering 206,
Crowder**Spring Semester**II M 7:00 Mechanical Engineering 206,
Crowder**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. Repeated spring semester. No prerequisite.

Fall Semester

T 7:30 Mechanical Engineering 153, Holtby

Spring Semester

Th 7:30 Mechanical Engineering 153, Holtby

Advanced Plastics. 3 Extension credits. \$15 plus \$2 materials fee.

A laboratory and lecture course dealing with the design of plastic products and molds, heat treatment and chrome plating of molds, product and mold costs, types of compression, transfer, injection, and extrusion molds and dies. Prerequisite: Beginning Plastics or consent of instructor.

Spring Semester

T 7:30 Mechanical Engineering 153, Holtby

Petroleum Products and Testing. 3 Extension credits each semester. \$15.

Testing of petroleum products—gasoline, kerosene, heating oil, diesel fuel oils, lubricating oils and residual oils. The test will be accompanied by lectures covering methods of tests. For the spring semester, the lectures will include characteristics and properties of petroleum products; the significance of test results and their relation with behavior of petroleum products in service. Both semesters are necessary for complete results. No prerequisite.

Fall Semester

T 7:30 Experimental Engineering 215,
Peterson

Spring Semester

T 7:30 Experimental Engineering 215,
Peterson

Paint Materials. 3 Extension credits. \$15.

The lectures will cover source and properties of raw materials for paint, varnish, and lacquers. Types of failure due to characteristics of materials will be included. Proper use of materials in products, such as primers, will be brought out. No prerequisite.

Fall Semester

M 6:20 Experimental Engineering 215,
Peterson

METALLOGRAPHY**1-2 Metallography and Heat Treatment of Iron and Steel.** 3 Extension credits each semester. \$15 plus \$2 laboratory fee.

A beginning course for those engaged in practical heat treatment, in writing specifications, and in purchasing or selling iron or steel. Lectures, demonstrations, and laboratory work in pyrometry, thermal analysis, preparation of alloys, microscopic examination of metal alloys; preparation of photomicrographs. The theory of heat treating, and its relation to practice; welding. No prerequisite but 1 must precede 2 unless the student has had experience in heat treatment.

Fall Semester

1 W 7:00 Appleby Hall 306, Dowdell

Spring Semester

2 W 7:00 Appleby Hall 306

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