

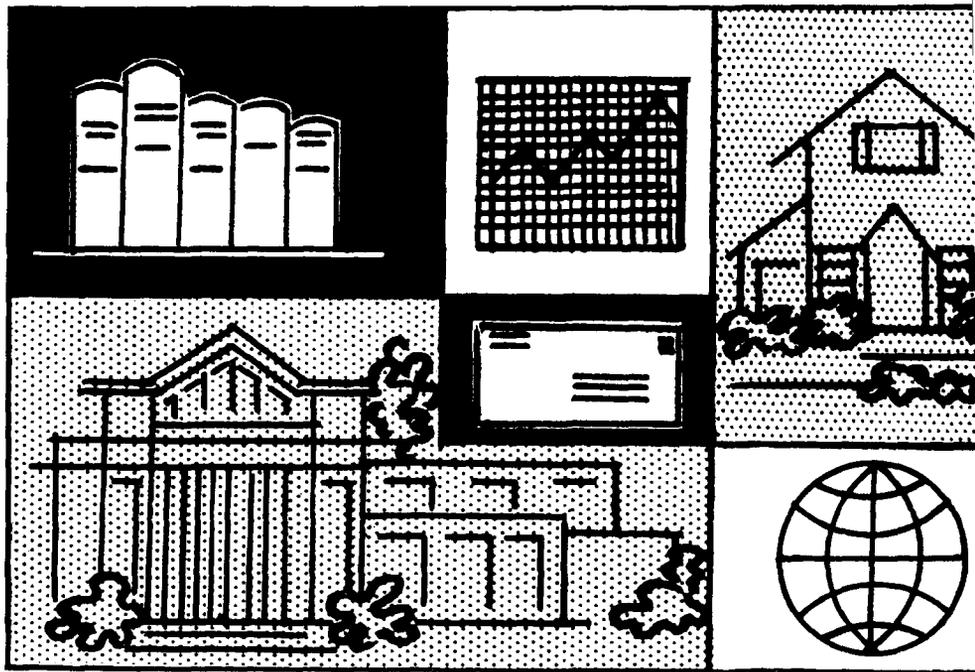
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Bulletin of the

UNIVERSITY OF MINNESOTA



Correspondence Study Courses 1958-1960

General Extension Division

Learn for Living
Through
Home Study

Volume LXI

No. 10

May 15, 1958

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University Program Service, James S. Lombard, 229 Northrop Memorial Auditorium

CORRESPONDENCE STUDY DEPARTMENT

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General Information

Location

The Correspondence Study Department is a part of the General Extension Division which is housed in the east wing of Nicholson Hall on the Minneapolis Campus. The main office is in room 251 Nicholson Hall. The telephone number is FEderal 8-8791.

Eligibility

The University's correspondence courses are open to everyone who can handle them successfully.

Cost

Tuition fees are \$7 per credit hour or equivalent. Most courses cost \$21 plus a \$2 per course fee for registrations originating outside of Minnesota. The tuition fee for each course is stated in the course description section of this bulletin. Some courses have a material fee. Textbooks are not included in the tuition cost.

Applicants, except military personnel, living outside of Minnesota must add the \$2 per course fee to their remittance. (See Correspondence Application blank)

Books

Students must purchase or have constant access to the required textbooks and materials.

The Nicholson Hall Bookstore, University of Minnesota, has made a special effort to stock books required in correspondence courses, but texts may be purchased at other campus bookstores. If you cannot locate proper texts, write to the Correspondence Study Department. A list of the required books for any course will be sent on request.

All textbook prices are approximate and subject to change without notice.

Under certain conditions textbooks may be returned to the bookstore for partial refund of purchase price.

Registration

Complete the application blank that is with this bulletin and send it with the proper fee to the Correspondence Study Department, University of Minnesota, Minneapolis 14. Payment should be made by post office or express

money order, personal check, or draft. Make remittance payable to the University of Minnesota and for the *exact* amount of the fee.

With the acceptance of the application and the mailing of lesson materials, the student is enrolled.

Beginning Date

A correspondence course may be started at any time, and the department operates throughout the calendar year. This is an advantage of home study.

Completion Date

Courses of 3 credits or more should not be completed in less than 6 weeks. Ordinarily no more than 3 lessons will be accepted in 1 week. You have 1 year for completion.

Students, teachers, and others working against a deadline for submission of credits must take full responsibility for arranging the work in such a manner as to allow ample time for completion, including examinations.

Reinstatements

If, for **valid** reasons, a course is not completed in 1 year, reinstatements are provided as follows:

First 6 months for a fee of \$2 per course

Second 6 months, or for any subsequent 6-month period, a fee of \$3 per course

Lesson Service

The department will make every effort to provide reasonable and prompt lesson service throughout the calendar year. Service may become delinquent, however, due to circumstances over which the department has no control. A critical period is the summer months when some faculty are off the campus.

See the General Directions card in your study guide for submitting lessons.

Credit

Most of the courses in this bulletin are listed for credit, which means credit toward a degree in the appropriate college of the University of Minnesota, subject to limitations mentioned in the bulletin. Credits are not applicable in Graduate School.

These credits are *quarter* credits: 3 quarter credits equal 2 semester credits.

The few courses listed for Extension credit only cannot be used for a degree from the University of Minnesota or for a teacher's certificate issued by the Minnesota State Department of Education. Extension credits may be used only in Extension certificate programs.

Transfer of Credits

The Extension clerk in the University Office of Admissions and Records has an official record of credits earned through correspondence study. To

transfer these credits to a college within the University or to another institution or to the State Department of Education, you should request the Extension clerk to send an official transcript. Final grades and credits are not automatically transferred.

Students completing courses listed in this bulletin for credit that is to be applied toward an educational program at another university or college should determine acceptance of such credit before registration. Many colleges and universities will accept credits earned through correspondence, but the amount and application varies with each institution. You should check the credit policy of the institution from which you expect to receive transfer credit.

Program Advising

Advisers in the department will assist in the selection of courses and programs of study leading to occupational or educational objectives. They will also assist in making contact with advisers in the resident colleges at the appropriate stage of the educational program.

When you write or call for such advice, please give full information about your past training, educational and occupational experience, and your objectives.

Examinations

To earn credit in a correspondence course the student must pass the final examination.

All supervised examinations may be taken at the following offices or under the supervision of the following individuals:

1. Correspondence Study Department, 251 Nicholson Hall, University of Minnesota
2. General Extension offices in Minneapolis, St. Paul, or Duluth
3. School superintendent or principal; college instructor or administrator
4. Commissioned officers (for military personnel)

Refunds

To receive a partial refund of tuition, the student must make application within 3 months from the date of registration. This application must be submitted prior to the completion of half of the lessons in the course.

Of the tuition fee, provided the student is eligible for a refund, 20 per cent of the cost and \$1 for each lesson serviced are nonrefundable.

High School Courses

This bulletin carries only a brief listing of high school courses (see page 60). A more complete course description is contained in a separate high school bulletin.

These courses, with the approval of the local school authorities, may be used toward the completion of requirements for graduation from high school. The diploma, however, is granted by the local school, not the University.

High school deficiencies for admission to universities and colleges can be rectified by approved correspondence courses. See the high school bulletin for details.

Military Personnel

Most of the courses in this bulletin are offered under special contract with the United States Armed Forces Institute. Under this contract, eligible military personnel can save half or more of the cost of each course. Write to the Correspondence Study Department for special USAFI folder or to USAFI Headquarters, Madison 3, Wisconsin.

Veterans

Courses in this bulletin have been approved under Public Law 550 (Korean Bill). Military personnel who were in service between June 27, 1950 and January 31, 1955 are eligible for educational benefits, provided the educational program or training is started within 3 years from the date of separation from service.

Correspondence courses may be used to initiate or continue a program leading to a certificate or degree, a vocational or professional objective. The veteran may change from resident classes to correspondence study or from correspondence to resident study without penalty. Under Public Law 550, however, the veteran cannot be enrolled in correspondence courses and resident classes at the same time.

A veteran must register and pay his tuition and fees, after which such costs are refunded quarterly by the Veterans Administration, on a prorated basis according to the number of completed lessons. The Veterans Administration will not pay for textbooks. No subsistence (monthly educational allowance) is paid for enrollment in correspondence courses.

Write to the Correspondence Department for instructions for enrolling under Public Law 550.

Teachers' Certificates

With some limitations, correspondence courses may be used to acquire and renew teachers' certificates. Note that the Correspondence Study Department can only provide the courses and cannot evaluate teaching or educational experience for a certificate. Questions concerning the regulations related to teachers' certificates should be directed to the State Department of Education or similar agency. (In Minnesota—Director of Teacher Personnel, State Office Building, St. Paul 1.)

Grades

The grades A, B, C, and D indicate work of varying degrees of merit, D being the lowest passing grade. The grade F, failure, indicates marked deficiency and that the student must repeat the course to earn credit. A failure in a continuation course should be made up before proceeding with the sequence.

Official grade reports are sent by the Office of Admissions and Records.

Course Transfers

A student may transfer from one correspondence course to another correspondence course within 6 months from the date of registration. The transfer fee is \$2 per course and the student pays \$1 for each of the completed lessons. The balance of the original fee is applied to the tuition for the new course. The second course must be completed within the year from the original registration date, or be reinstated. When a transfer is recommended by this department, there is no charge, except for lessons serviced.

Transfers cannot be made from one individual to another.

Transfers to the Evening Class Department of the Extension Division have special regulations. Consult department.

Permits

Students, including University of Minnesota students, expecting to earn additional credit through correspondence instruction, should have the permission of their adviser or registrar. Submit approval with correspondence application or write for permit blank.

Tapes and Recordings

Special records and tapes have been prepared to cover basic pronunciation for nearly all of the language courses in this bulletin. The size and content of each record varies. Recordings are sold at cost. Generally the tape for a language can be supplied for about one-half the cost of the record or records.

Miscellaneous Information

Postage—The student prepays postage on all mail sent to the University; return mail to the student is prepaid by the Correspondence Study Department.

Maximum Load—A student may enroll for not more than two courses at a time without special permission from advisers in Correspondence Study.

Noncredit Registration—A noncredit registration is made by writing "noncredit" in the credits column on the application blank. Noncredit students need not complete the examinations but must pay the regular fees.

Course Numbers—In general, courses listed for University credit numbered below 50 are completed during freshman and sophomore years, courses numbered 50 or above during the junior and senior years of college.

Guide to Correspondence Study—The Correspondence Study Department as a part of the General Extension Division is a member of the National University Extension Association. This association publishes *A Guide to Correspondence Study*. The booklet lists correspondence courses offered by 54 colleges, universities, and comparable educational agencies. It is available from the secretary of the National University Extension Association, TSMc 112, University of Minnesota, Minneapolis 14. There is a cost of 25 cents.

Working Toward a Degree by Correspondence

There are some limitations on the use of credits earned by correspondence for a degree from the University of Minnesota. No college of the University will grant a degree without a minimum of 1 year (45 quarter credits) of resident study. Moreover, many of the courses completed during the junior and senior years are not available by correspondence study. Credits earned by correspondence do not count as resident credits, nor do they apply toward a Master's or Doctor's degree.

Following are applications to some of the programs at the University. It is understood that a student who wishes to become a candidate for a degree must meet the admission requirements of the University and the en-

trance and degree requirements of the college in which the degree is sought. Consult the advisers in the department for assistance.

College of Science, Literature, and the Arts

Leading to B.A. degree with a minimum of 180 quarter credits

All of the requirements (except the laboratory in Group D) for the first 2 years (Junior College) could be accomplished by correspondence study.

A. Freshman English Courses: Engl A-B-C or Engl 1a-2a-3a or Engl 1b-2b-3b or Comm 1-2-3 or Comp 4-5-6 or exemption. (Only Comp 4-5-6 and Engl 1b-2b-3b offered by correspondence study)

B. Foreign Language: from 0-15 credits according to the following schedule:

Amount presented from high school	Additional amount required in college
None	15 credits in 1 language
1 year	(a) 10 credits in same language or (b) 15 credits in different language
2 years in 1 language	(a) 5 credits in same language or (b) 10 credits in different language
3 or more years in 1 language	No college requirement if the high school work is validated by the appropriate college department
2 years in each of 2 languages	No college requirement if 1 language is validated at the 2-year level by the appropriate college department

C. Courses in Social Science Departments: At least 15 credits in 2 or more of the following departments. At least 5 credits must be offered in 1 department to count.

- | | |
|---|----------------------|
| 1. Anthropology | 5. Political Science |
| 2. Economics (except 24-25-26, 27, 32, 33, 34, 36, 37-38-39, 40-41, 43) | 6. Psychology |
| 3. Geography | 7. Sociology |
| 4. History | 8. Social Science |

D. Courses in Natural Science Departments: At least 15 credits (of which a minimum of 8 must include laboratory from 2 or more of the following groups. At least 5 credits must be offered from 1 department to count.

1. Biological sciences: botany, psychology, zoology, General Biology (NSci 7-8-9)
2. Physical sciences: astronomy, chemistry, geology, physics, Physical World (NSci 4-5-6)
3. Mathematics (except 1, 8, 20, 21)
4. Orientation in the natural sciences (NSci 1-2-3) (a student presenting credits in only NSci 1-2 must take his additional work in other than group D2).

E. Courses in Humanistic Departments: At least 15 credits from 2 or more of the following categories. At least 5 credits must be offered from 1 category to count.

- | | |
|-----------------------|---|
| 1. Art | 6. Mathematics (except 1, 6, 8, 20, 21) |
| 2. English literature | 7. Music |
| 3. Foreign literature | 8. Philosophy |
| 4. History | 9. Speech and theater arts (except 3, 6, 9, 39) |
| 5. Humanities | |

F. Courses in Health: PubH 2 or PubH 3 or equivalent.

G. Electives: Additional credits to make a total of 90.

Note—Only 3 credits by correspondence in student's major sequence in courses numbered 50 or above.

School of Business Administration

Leading to B.B.A. degree with a minimum of 180 quarter credits

All of the requirements in the prebusiness curriculum can be satisfied by correspondence courses.

PREBUSINESS COURSE REQUIREMENTS FOR THE B.B.A. DEGREE

1. **Freshman English:** Engl A-B-C or Engl 1a-2a-3a or Engl 1b-2b-3b or Comm 1-2-3 or Comp 4-5-6 or exemption.
2. **Mathematics:** Math 7 or 8 or 15.
3. **Natural Sciences:** 9 credits in mathematics or 1 of the following laboratory sciences: botany, chemistry, geology, physics, zoology, psychology with laboratory; or NSci 1-2-3; or NSci 4-5-6; or NSci 7-8-9.
4. **Social Sciences:** 8 credits in 1 of the following: anthropology, geography, history, political science, sociology; or SSci 1-2-3.
5. **Economics:** Econ 1-2, Principles of Economics; BA 5, Elements of Statistics; BA 24-25-26, Principles of Accounting.
6. **Electives:** Additional credits to make a total of 90. (In selecting electives, students should include such courses as may be prerequisite to advanced courses required in special sequences in the School of Business Administration.)

COURSE REQUIREMENTS FOR THE B.S. IN ECONOMICS DEGREE (MAJOR ECONOMICS)

1. **Freshman English:** Engl A-B-C or Engl 1a-2a-3a or Engl 1b-2b-3b or Comm 1-2-3 or Comp 4-5-6 or exemption.
2. **Mathematics:** 10 credits.
3. **Additional Mathematics or Laboratory Science:** 10 credits.
4. **Political Science or History:** 9 credits.
5. **Philosophy:** Phil 1 or 2.
6. **Economics:** Econ 1-2, Principles of Economics; BA 5, Elements of Statistics.
7. **Electives:** Additional credits to make a total of 90.

Note—Only 15 credits by correspondence in courses numbered 50 or above. (This means that a total of 105 credits toward the B.B.A. degree may be earned by correspondence study.)

Institute of Technology

(College of Engineering; Schools of Architecture, Chemistry,
Mines and Metallurgy, Physics)

Leads to degrees in aeronautical, agricultural, civil, electrical, geological, mechanical, metallurgical, and mining engineering; chemistry, chemical engineering; applied mathematics; architecture; physics.

About 250 quarter credits are needed for a degree in the Institute of Technology.

The first-year curriculum is the same for all students in the College of Engineering and Schools of Architecture, Mines and Metallurgy, and Physics while some courses are the same in the School of Chemistry. The common first year of the College of Engineering is listed here to assist in guiding those who must or wish to begin their work through correspondence study. (See the I.T. bulletin for more details and the complete curriculum)

FIRST YEAR

(Credits shown in parentheses)

ITM 11, 12, 13a—College Algebra and Trigonometry I; College Algebra and Trigonometry II; Calculus I: Analytic Geometry and Calculus (5-5-5)	Phys 11, 12, 13—General Physics (5-5-5)
Draw 14, 15, 16—Engineering Graphics (3-3-3)	Engl 14, 15, 16—Written and Spoken Communication (3-3-3)
	GE 21—Orientation (1)
	Total credits (17-16-16)

Note that most of these first-year subjects can be completed by correspondence. Following is a list of the correspondence courses that may be completed for full credit in the Institute of Technology.

Comp 4, 5, 6—Freshman Composition (substitute for Engl 14, 15, 16)
 Draw 14, 16—Engineering Graphics (offered fall 1959)
 Draw 4, 6—Engineering Drawing (substitute for Draw 15, 16)
 ITM 11—College Algebra and Trigonometry I
 ITM 12—College Algebra and Trigonometry II
 ITM 13a—Calculus I: Analytic Geometry and Calculus (offered June 1958)

ITM 24a—Calculus II: Analytic Geometry and Calculus (offered December 1958)
 ITM 25a—Calculus III: Analytic Geometry and Calculus (offered March 1959)
 ITM 26a—Calculus IV: Differential Equations and Calculus (offered June 1959)
 MM 26—Engineering Statics
 MM 127—Engineering Dynamics
 MM 128—Engineering Solid Mechanics
 CE 146—Concrete and Concrete Materials

Note—Elementary and higher or advanced algebra and plane and solid geometry are prerequisites for the college level mathematics sequence that begins with ITM 11. Any deficiencies in these preparatory subjects may be made up by correspondence study.

ITM 11A, 12A may be substituted as a pair for ITM 11, 12.

ITM 13, 24, 25, 80 may be substituted as a group for ITM 13a, 24a, 25a, 26a.

The required 30 credits in the Social-Humanistic Area may be satisfied by selecting correspondence courses in history, psychology, economics, political science, philosophy, and English. Consult the *Bulletin of the Institute of Technology* or write the Correspondence Study Department.

Colleges of Medical Sciences and Pharmacy

No professional courses are offered by correspondence.

Several elective and some required courses in the premedical, pre dental, and prepharmacy curriculums could be done by correspondence instruction. Required courses in the basic sciences are ordinarily not offered by home study. Write to the Correspondence Study Department for additional details.

Law School

It is recommended that students applying for admission to the University of Minnesota Law School obtain a Bachelor's degree from an accredited college or university. In this 4-year program the student may apply a *maximum* of 45 quarter credits or 30 semester hours that have been earned from accredited correspondence courses.

Students seeking admission to the Law School upon completion of a special 3-year prelaw course, *cannot* use credits earned through correspondence study. The special 3-year program *must be completed in residence*.

Students expecting to attend another law school should contact that school for admission requirements.

No accredited college or university attempts to teach professional law courses by correspondence.

College of Education

Leading to B.S. degree with a minimum of 180 quarter credits

Because of the variety of programs offered in this college it is not feasible to present a specific curriculum and to indicate appropriate correspondence courses. Here are two general suggestions that may be helpful.

1. If you have had no college experience, the 2-year program listed under the College of Science, Literature, and the Arts could be used as a guide in completing many of the basic requirements in this college. Several credits must be earned in academic subjects, and these credits may be transferred to the College of Education.
2. Those with 2 or more years of college work should write to the College of Education or to the Correspondence Study Department for guidance. Some correspondence courses will apply on professional or academic requirements.

College of Agriculture, Forestry, and Home Economics and College of Veterinary Medicine

Leading to B.S. degree or other Bachelor's degrees with a
minimum of 180 quarter credits

There are a number of programs within these colleges and no specific curriculum can be listed. Correspondence courses, however, may satisfy several general academic requirements as well as provide elective credits. The English requirement, 18 credits in social science, 3 credits in personal health, and other conditions can be satisfied by correspondence courses. For additional information write to the Correspondence Study Department or to the Associate Dean, College of Agriculture, Forestry, and Home Economics, University of Minnesota, St. Paul 1.

School of Nursing

Leading to B.S. degree with a minimum of 255 quarter credits

1. Those with no college experience and no professional training might use the 2-year curriculum in the College of Science, Literature, and the Arts as a guide in completing many of the requirements in prenursing. (Some of the required courses in chemistry, zoology, and physical education are not offered by correspondence study.) (See page 9.)
2. Graduate professional nurses seeking a degree can satisfy general requirements with the following correspondence courses:

(Credits shown in parentheses)

Engl 1b-2b-3b—Freshman English (12)	Psy 1-2—General Psychology (6)
(or) Comp 4-5-6—Freshman Composition (9)	CD 40—Child Training (3)
Sociology (6)	(or) CD 80—Child Psychology (3)

Note—There are a number of nursing programs with a variety of requirements. It is recommended that the student contact the School of Nursing for details.

Graduate School

The University of Minnesota will not accept correspondence courses for advanced degrees; that is, Master's or Doctor's degrees. But graduate students may use these courses to satisfy undergraduate requirements or for subject matter content.

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 a combination of the two methods. Moreover, credits earned in resident classes, including the Summer Session terms, may be utilized.

Some of the certificates cannot be earned entirely by correspondence courses listed in this bulletin. Students may, however, use credits earned from other approved correspondence study departments or substitute or transfer resident credits from accredited institutions. At least 25 per cent of the credits needed for a certificate must be earned from the University of Minnesota.

For advice or information on programs of study leading to certificates, including transfer of credits, write to the Correspondence Study Depart-

ment. Certificates are awarded to students who complete with a C average any of the following programs of study.

Liberal Arts Certificate

English requirement (12 or 9 credits):

Engl 1b-2b-3b—Freshman English
(or) Comp 4-5-6—Freshman Composition, or equivalent

Spread requirement (18 credits): at least 6 credits in each of the following fields:

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

Concentration requirement: at least 12 credits in 1 subject, or in approved related liberal arts subjects, in addition to the credits earned in that subject under the spread and English requirements above.

Electives: additional liberal arts courses approved by the Committee on Student Scholastic Standing to make a minimum of 45 credits for the certificate.

Public Administration Certificate

Core requirement:

Pol 1-2—American Government and Politics Pol 62—Public Personnel Administration
Pol 60—Introduction to Public Administration Pol 63—Public Financial Administration

Spread requirement: at least 15 credits in the following courses:

Pol 58—Governmental Accounting	Pol 69—Problems of Tax Administration
Pol 61—Municipal Law and Administration	Pol 73—City and County Planning
Pol 64—Employee Training Techniques	Pol 76—Business and Government
Pol 66—Problems in Public Administration	Pol 77—Administrative Regulation
Pol 67—Administrative Analysis	Jour 78—Public Relations
Pol 68—Administrative Communication	BA 5—Elements of Statistics

Concentration requirement: at least 15 credits in 1 of the following fields or in any approved combination thereof to make a minimum of 45 credits for the certificate:

Accounting	Political Science
Child Development and Welfare	Psychology
Economics and Finance	Recreation
Engineering	Social Work
Industrial Relations	Sociology
Insurance	Traffic and Transportation
Nursing Education	

Secretarial Certificate

The Secretarial Certificate is awarded to those who, in addition to the necessary skills and experience in typewriting and shorthand, have completed a selection of courses appropriate to a background in business administration, such as needed for qualifying for Certified Professional Secretary examinations. Candidates for the certificate must take a test in transcription under the supervision of the secretarial faculty in the School of Business Administration.

Core requirement:

Review of Business English and Business Correspondence; or Comp 58, Business Reports and Letters	Econ 36—Office Procedures
Econ 2—Principles of Economics	Econ 40-41—Secretarial Procedures
BA 24-25—Principles of Accounting	BA 58, 88—Business Law
	BA 99—Survey of Office Management
	Psy 1-2—General Psychology

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

Communication in Management	BA 53—Insurance Principles
BA 5—Elements of Statistics	BA 78, 98—Business Law
BA 26—Principles of Accounting	Econ 67—Money and Banking

Concentration requirement: at least 18 additional credits in 1 or 2 of the following fields, in addition to credits earned under core and spread requirement:

Accounting	Industrial Management
Advertising, Marketing, and Merchandising	Industrial Relations
Economics, Finance, and Insurance	Real Estate
	Traffic and Transportation

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 90 credits for the certificate. Some courses in the liberal arts field are recommended as electives.

Industrial Relations Certificate

Core requirement:

Econ 1-2—Principles of Economics	One course from the following:
BA 52—Modern Industrial Relations: Labor Marketing	Survey of Current Problems in Industrial Relations
Econ 172—Labor Policy: Labor Relations	Advanced Personnel Administration
BA 72—Modern Industrial Relations: Manpower Management	Senior Topics in Industrial Relations
Econ 182—Economic Security	One course from the following:
Psy 1-2—General Psychology	Labor Movements
Psy 4-5—Introductory Laboratory Psychology	Union Government and Policies
Psy 122-123—Vocational and Personnel Psychology	Settlement of Industrial Disputes

Electives: any two courses from the following:

BA 99—Survey of Office Management	Supervision I, II, III
BA 50—Production Management	Elements of Work Simplification
Pol 64—Employee Training Techniques	Advanced Work Simplification
Pol 68—Administrative Communication	Economics of Collective Bargaining
Psy 125-126—Psychology of Individual Differences	Work Measurement and Production Standards
Psy 144-145—Abnormal Psychology	Industrial Plant Layout
Soc 120—Social Psychology	Problems of Union Administration
Soc 146—Industrial and Occupational Sociology	Personnel Methods
	Human Relations in Industry

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

Business Administration Certificates**Junior Certificate**

Students transferring credits from other institutions to this certificate program must take a minimum of 6 credits in economics or business administration courses at the University of Minnesota.

Core requirement:

Review of Business English; or Business Correspondence; or Engl 1b; or Comm 1a; or Comp 4 or exemption	BA 5—Elements of Statistics
Econ 1-2—Principles of Economics	BA 24-25-26—Principles of Accounting
	BA 58—Business Law

Spread requirement (9 credits): at least one 3-credit course in 3 of the following 5 fields, in addition to credits earned under core requirement:

1. Industrial Management
2. Distribution: Advertising, Marketing and Merchandising, Traffic and Transportation
3. Economics and Finance
4. Industrial Relations
5. Business Law

Concentration requirement: at least 9 credits in 1 of the following fields, in addition to credits earned under core and spread requirements:

Accounting	Insurance
Advertising	Marketing and Merchandising
Economics and Finance	Real Estate
Industrial Management	Traffic and Transportation
Industrial Relations	

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 45 credits for the certificate.

Senior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 12 credits in economics or business administration courses at the University of Minnesota.

Core requirement:

Business English (6 cr); or Engl 1b-2b-3b; or Comm 1a-2a-3a; or Comp 4-5-6 or exemption	BA 5—Elements of Statistics
Econ 1-2—Principles of Economics	BA 24-25-26—Principles of Accounting
	BA 58—Business Law
	Econ 67—Money and Banking

Spread requirement: at least 12 credits from the following courses:

BA 78 or 88—Business Law (not both)	BA 56—Corporation Finance
Econ 68—Elements of Public Finance	Survey in Marketing
BA 71—Transportation: Services and Charges I	Intermediate Economic Analysis
BA 52—Modern Industrial Relations: Labor Marketing	Government Regulation of Business
	BA 99—Survey of Office Management
	(or) BA 50—Production Management

Electives: additional courses from engineering or the physical sciences approved by the Committee on Student Scholastic Standing to make a minimum of 45 credits for the certificate.

General Engineering Certificates

Junior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 6 credits in engineering courses at the University of Minnesota.

Core requirement:

Basic Technical Writing I; or Engl 1b; or Comm 1a; or Comp 4 or exemption	ITM 13—Analytic Geometry
ITM 11—College Algebra and Trigonometry I	ITM 24—Calculus I: Differential
ITM 12—College Algebra and Trigonometry II	ITM 25—Calculus II: Integral
	Draw 14-15—Engineering Graphics

Note: Students eligible for ITM 13 should consider the new sequence, ITM 13a, 24a, and 25a. Either sequence will satisfy the requirements, but *must be done as a group*.

Senior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 12 credits in engineering courses at the University of Minnesota.

Core requirement:

Basic Technical Writing I-II; or Engl 1b-2b-3b; or Comm 1a-2a-3a; or Comp 4-5-6 or exemption	ITM 24—Calculus I: Differential
ITM 11—College Algebra and Trigonometry I	ITM 25—Calculus II: Integral
ITM 12—College Algebra and Trigonometry II	MM 26—Engineering Statics
ITM 13—Analytic Geometry	MM 127—Engineering Dynamics
	(or) MM 128—Engineering Solid Mechanics
	Draw 14-15-16—Engineering Graphics

(See references to new sequence in IT Mathematics on pages 11, 31.)

Concentration requirement: at least 30 additional credits in 1 of the following fields, or approved combination thereof:

Aeronautical Engineering	Electrical Engineering
Agricultural Engineering	Mathematics
Chemical Engineering	Mechanical Engineering
Chemistry	Mining Engineering
Civil Engineering	Physics

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 90 credits for the certificate. Courses in liberal arts and business administration are recommended.

Industrial Engineering Certificates

Junior Certificate

Students transferring credit from other institutions to this certificate program must take a minimum of 6 credits in industrial engineering courses at the University of Minnesota.

Core requirement:

Basic Technical Writing I; or Engl 1b; or Comm 1a, or Comp 4 or exemption	Econ 1-2—Principles of Economics
ITM 11—College Algebra and Trigonometry I	Elements of Industrial Engineering and Management
ITM 12—College Algebra and Trigonometry II	Elements of Work Simplification
Draw 14-15—Engineering Graphics	Work Measurement and Production Standards
Machine Tool Operation I	

Electives: additional courses to be selected from the list of requirements or recommended electives for the senior certificate to make a minimum of 45 credits for the certificate.

Senior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 12 credits in industrial engineering courses at the University of Minnesota.

Core requirement:

Basic Technical Writing I-II; or Engl 1b-2b-3b; or Comm 1a-2a-3a; or Comp 4-5-6 or exemption	BA 52—Modern Industrial Relations: Labor Marketing
ITM 11—College Algebra and Trigonometry I	BA 72—Modern Industrial Relations: Manpower Management
ITM 12—College Algebra and Trigonometry II	Elements of Industrial Engineering and Management
ITM 13—Analytic Geometry	Production Planning and Control
Draw 14-15-16—Engineering Graphics	Elements of Work Simplification
Machine Tool Operation I	Work Measurement and Production Standards
Econ 1-2—Principles of Economics	Industrial Plant Layout
BA 5—Elements of Statistics	Elements of Quality Control
(or) ITM 90—Elementary Engineering Statistics	Manufacturing Cost Analysis

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 90 credits for the certificate. The following courses are recommended:

Psy 1-2—General Psychology	Process Engineering
Soc 146—Industrial and Occupational Sociology	Advanced Work Simplification
BA 133—Standard Cost Accounting	Advanced Topics in Quality Control
Draw 52—Alignment Charts	Methods-Time Measurement
Supervision I, II, III	Beginning Practical Speech Making
Industrial Safety and Health	Basic Salesmanship
Materials Handling and Packaging	Motion Picture Photography

Engineering Aid Program

The Engineering Aid program has been developed by the General Extension Division in co-operation with the Institute of Technology, the Relations with Industry Committee of the American Society for Engineering Education, and the Minnesota Highway Department. It is a terminal program designed to qualify the student as an engineering technician capable of performing responsible design or supervisory assignments in his field of specialization. The program is particularly recommended for persons interested in engineering work who are unable to pursue the full-time day study necessary for an engineering degree. In civil engineering the certificate programs provide the supplementary education required for Minnesota Highway Department Engineering Aids. Persons interested in the program who are already employed or seeking employment in a Twin Cities area industry utilizing engineering aid technicians should consult their company's training or personnel officer for program counseling and registration information. Others may obtain program counseling and registration information from any General Extension Division office. Many of the required and elective courses, as well as the prerequisite subjects, are available through the Correspondence Study Department.

Basic Engineering Aid Certificate (47 credits)

Prerequisite: high school graduate or equivalent, higher algebra, solid geometry, and satisfactory completion of English Placement Test.

The Basic Engineering Aid Certificate Program is designed to provide the student with the fundamentals of mathematics, drawing, physics, and English which will enable him to handle basic engineering and drafting assignments in any engineering field and will give him the necessary background for more specialized or advanced study. The required courses are listed below. No electives or substitutions are permitted in this program nor will any prerequisite be waived. Certificates are awarded to students who complete with a minimum C average the prescribed program of study.

ITM 11—College Algebra and Trigonometry I
 ITM 12—College Algebra and Trigonometry II
 ITM 13—Analytic Geometry
 (or) ITM 13a—Calculus I: Analytic Geometry
 and Calculus

Draw 14-15-16—Engineering Graphics
 GE 70—The Slide Rule
 Phys 11-12—General Physics for Engineers
 Engl 1b-2b-3b or Comp 4-5-6—Freshman
 English

Senior Engineering Aid Certificates

Prerequisite: Basic Engineering Aid Certificate.

The Senior Engineering Aid Certificate provides a concentration in a specialized engineering field and prepares the student for responsible design and supervisory assignments in the area of concentration.

Senior Certificates are awarded in Civil, Mechanical, and Electrical Engineering. A limited number of courses in these programs are available by correspondence study. Write for special Engineering Aid catalog.

College Courses

Note—There is a \$2 per course fee for registrations originating outside of Minnesota.

Prices of textbooks are approximate and subject to change without notice. Under certain conditions used books may be sent to the bookstore for resale.

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.

AGRICULTURE

Mykola H. Haydak, Ph.D., Associate Professor of Entomology and Economic Zoology

Harry W. Kitts, Ph.D., Associate Professor of Agricultural Education

Truman Nodland, Ph.D., Assistant Professor of Agricultural Economics

Robert A. Phillips, M.S., Assistant Professor of Horticulture

A4. Beekeeping. Presents 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, presents 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 are the study of the honey bee colony and of the individual bee, fundamentals of bee behavior, the value of bees in pollination, colony development, beekeeping equipment and practices, swarm control, package bees, supersedure, increase, queen rearing, apiary management, bee diseases and enemies and their control, methods of wintering, preparation of honey and wax for market. (No prerequisite and no credit toward a degree)

Haydak, 3 Extension credits only, \$21, texts \$5

AgEc 80. Farm Accounting. 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 and factors affecting earnings. (No prerequisite)

Nodland, 3 credits, \$21, texts \$6

Agricultural Education (Rural Education). Kitts. See page 27.

Home Economics (Textiles). Babcock. See page 21.

Horticulture. Phillips. See page 43.

Parliamentary Law. Miller. See page 49.

ANTHROPOLOGY (Anth)

Priscilla S. Reining, Ph.D., Instructor in Anthropology (Correspondence Study)

Clark Johnson, M.A., Teaching Assistant in Anthropology

1. Introduction to Anthropology. Characteristics of human races; fossil men; pre-history. The life of primitive peoples; economic, religious, social activities, and other phases of culture. The bearings of anthropology on present-day thought and problems. (No prerequisite)

Johnson, 5 credits, \$35, texts \$13

- 1A. Introduction to Anthropology: Prehistoric Man and Culture.** Origins of man and development of modern races. Growth and differentiation of the cultures of man from the Dawn Stone Age of early glacial times through the Old and New Stone Ages to the dawn of civilization in the Bronze and Iron Ages. (No prerequisite)
5 credits, \$35 (registrations accepted after January 1, 1959)
- 2A. Introduction to Anthropology: Cultural Anthropology.** The varieties and range of human behavior as revealed through the study of primitive societies in all parts of the world. A scientific analysis of the ways in which primitive men organize their lives, directed toward a deeper and broader understanding of human capacities and purposes. (No prerequisite)
5 credits, \$35 (registrations accepted after January 1, 1959)
- 80. The American Indian.** A survey of the native cultures of the Americas. Descriptive accounts of the physical types, languages, prehistory, and cultures of North, Central, and South America. (No prerequisite)
Reining, 3 credits, \$21, texts \$8.50
- 165. Culture and Personality.** Role of culture in the formation of personality. Problems of individual adjustments to the demands of culture. Psychological approach to culture. (Prerequisite: Anth 2A or consent of instructor)
3 credits, \$21 (registrations accepted after January 1, 1959)

ART (Art)

Clifton Gayne, Jr., Professor and Chairman, Department of Art Education
Gladys Babcock, M.A., Associate Professor of Textiles, University of Texas
Leah Lewis, B.S., Assistant Professor of Art
Lucile S. Robinson, B.A., Instructor in Handcraft (Correspondence Study)

- 4(c). Design I.** Fundamental principles of design 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 art courses. (No prerequisite)
Lewis, 3 credits, \$21, texts \$9
- 43A(c). General Handcrafts I.** A practical course which includes chip carving, block printing, stenciling, and puppets. Also included are projects and gift suggestions to be made from scraps of material such as paper, tin, yarn, and wire. For teachers, occupational therapists, camp and playground workers, and home makers. (No prerequisite; may precede or follow General Handcrafts II)
Robinson, 3 credits, \$21, texts and materials \$15
- 43A(c). General Handcrafts II.** Similar to General Handcrafts I, but may precede or follow the first course. Lessons cover paper sculpture, stick printing, bead weaving, glass etching, clay craft, braiding, and simple book binding. Course may be taken for 1 or 2 credits. (No prerequisite)
Robinson, 1 credit, \$7, texts \$3
Robinson, 2 credits, \$14, texts \$3
- 43B(c). Textile Crafts.** A practical course in needlework and other textile crafts suitable for use in homes, schools, camps, playgrounds, social service, and for those interested in adult education. (No prerequisite)
Robinson, 3 credits, \$21, texts \$2
- 83(c). Interior Design I. (Interior Decoration)** A study of traditional and modern furniture and how to combine various styles successfully. Additional subjects include floor coverings, wall treatment, how to build color schemes

and general trends in home decoration. Of interest to teachers, homemakers, and home furnishings sales people. (No prerequisite)

Lewis, 3 credits, \$21, texts \$7.50

84(c). Interior Design II. Trends in decorative fabrics and floor coverings including a study of the new fibers used in curtain, drapery, and upholstering fabrics. How to estimate. Major accessories such as picture selection, ceramics, and the use of metals in decoration are considered. Another major emphasis is on window treatment and planning room color schemes. (Prerequisite: Art 83(c)).

Lewis, 3 credits, \$21, texts \$7

ArEd 19(c). Art Appreciation in Education. 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 techniques will be examined in terms of his contributions to enriched living. Painting, sculpture, architecture, city planning, personal appearance, and industrial design are some of the specific areas studied in relation to current personal and social problems. (No prerequisite; recommended for elementary school teachers but of general interest; not open for credit to art majors or those who have completed ArEd 19)

Gayne, 4 credits, \$28 plus \$1.50 materials fee, texts \$12

HE 2(c). Introduction to Textiles. For consumers and people in the field of merchandising. A study of textiles commonly used in clothing and home furnishings including fiber identification and properties, yarn and fabric construction, fabric finishing, determination of fabric quality in relation to use, and care of fabrics. (No prerequisite)

Babcock, 3 credits, \$21 plus \$1.50 for materials, texts \$15

ASTRONOMY (Ast)

Willem J. Luyten, Ph.D., Professor and Chairman, Department of Astronomy

11. Descriptive Astronomy. A descriptive course designed to give accurate general information regarding the solar system and the stellar universe. 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)

Luyten, 5 credits, \$35, texts \$7

BUSINESS ADMINISTRATION (BA)

Herbert G. Heneman, Jr., Ph.D., Professor of Economics and Industrial Relations

Edwin H. Lewis, Ph.D., Professor of Economics and Marketing

Ben B. Sutton, Ph.D., Professor of Economics and Finance

John A. Dettmann, Ph.D., C.P.A., Associate Professor of Economics and Business

Ernestine C. Donaldson, M.A., Associate Professor of Business Administration

Reuel I. Lund, Ph.D., C.P.A., Associate Professor of Accounting

John Neter, Ph.D., Associate Professor of Economics and Statistics

C. Arthur Williams, Jr., Ph.D., Associate Professor of Economics and Insurance

Thomas A. Mahoney, Ph.D., Assistant Professor of Economics and Industrial Relations

Donald H. Bruer, LL.B., Instructor in Business Law (Correspondence Study)

Paul W. Eaton, M.A., Instructor in Economics

Jac L. Goldstucker, M.B.A., Instructor in Economics

Elvin L. Peterson, B.B.A., Instructor in Industrial Management (Correspondence Study)

Note—See page 10 for limitation on amount of credit earned by correspondence courses toward B.B.A. degree. See page 26 for courses in Economics.

5. Elements of Statistics. The elementary tools for the collection, analysis, and interpretation of statistical data in economics and business; the collection of material; 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 widely used statistical techniques. (No prerequisite)

Eaton, 3 credits, \$21, texts \$7

- 24. Elements of Accounting.** The form and content of financial statements; ledgers; debit and credit; journals; control accounts; special books; the trial balance; adjusting and closing entries; the work sheet; and the preparation of financial statements. Each lesson will include a reading assignment in a text and a number of problems to work. (No prerequisite)

Lund, 3 credits, \$21, texts \$9

- 25. Principles of Accounting I.** Deals mainly 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: BA 24 or equivalent)

Lund, 3 credits, \$21, texts same as BA 24, plus \$1.50

- 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 near the end of the course. (Prerequisite: BA 25, or equivalent)

Lund, 3 credits, \$21, texts same as BA 25, plus \$1.75

- 50. Production Management.** A survey course in the techniques of modern management of production. The basic principles of the techniques of scientific management are studied with particular emphasis on the need for the scientific method of approach to the solution of management problems. The following topics are considered: organization, the physical plant, product development, material control, quantity control, quality control, and production control. (Prerequisite: Econ 2 or equivalent; recommended to businessmen to whom it is open without prerequisites)

Peterson, 3 credits, \$21, texts \$7

- 51. Business Statistics.** Includes three applications of statistical techniques to business: (a) measurement of time series, (b) index numbers, and (c) statistical quality control. (Prerequisite: BA 5 or equivalent)

Neter, 3 credits, \$18, texts \$13

- 52. Modern Industrial Relations: Labor Marketing.** Deals with (a) marketing of manpower resources, (b) institutional structure of labor markets, (c) economic and social problems arising from labor marketing processes, (d) methods, procedures, and proposals for solving these problems. (Prerequisite: Econ 2 or equivalent)

Mahoney, 3 credits, \$21, texts \$7

- 53. Insurance Principles.** An analysis of the role insurance plays in combating risk; fundamentals of personal, property, and liability insurance contracts; types of insurers; sales, underwriting, actuarial, finance, and claims functions of insurers; regulation; and social insurance. Designed primarily for the insurance consumer and as an introductory course for a person who wishes to take more work in insurance. (Prerequisite: Econ 2)

Williams, 3 credits, \$21, texts \$7

- 55C. Managerial Costs.** The uses of cost information in modern industry, the accounting mechanism for costs, types of cost systems, the definition of cost terms; the use of the factory ledger; the accounting for materials, their purchase, storage, use, the stores ledger, and the calculation of materials costs; the accounting for labor with particular reference to applying labor

costs to production; the accumulation and analysis of overhead and its application to product; cost reports and statements for the management. (Prerequisite: BA 26 or approximate equivalent)

Lund, 3 credits, \$21, texts \$8

55D. Analysis of Financial Statements. Tangible fixed assets (problems of valuation, retirement, and appraisal); intangibles; investments; liabilities; comparative statements; vertical and horizontal analysis; significance of per cents and ratios; analysis of working capital; age of accounts receivable; book value per share of stock; causes of change in gross profit; changes in manufacturing costs; distortion in ratios; profit and loss analysis; a statement of variation in net profit; causes of variations in profits; changes in quantity volume; the breakeven point; use of breakeven computations in management; statement of application of funds; funds provided by profits; other sources of funds; and analysis of fixed asset and reserve accounts. (Prerequisite for credit: BA 26 or equivalent)

Lund, 3 credits, \$21, texts \$6

56. 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: Econ 2 or equivalent)

Sutton, 3 credits, \$21, texts \$7

58. Business Law—Contracts. Deals with the basic law of contracts, the formation, operation, effect, and discharge of contracts. Inasmuch as a knowledge of the general rules of contract law is fundamental to all work in business law, this course must precede BA 78, 88, and 98. (No prerequisite)

Bruer, 3 credits, \$21, texts \$11

64(c). Operation of a Small Business. The practical problems of operating a small business. Covers all phases of organization and management including advertising, layout, financing, location, buying, pricing, personnel. Emphasis on retailing. (No prerequisite)

Goldstucker, 3 credits in General College, \$21, texts \$3

72. Modern Industrial Relations: Manpower Management. 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, selection devices, training and safety programs, service rating, employment stabilization, collective bargaining, and compensation. (Prerequisite: BA 52 or concurrent registration)

Heneman, 3 credits, \$21, texts \$7

73. Life and Accident, Injury and Sickness Insurance. Functions of life insurance, and the concept of a human life value; types of life insurance contracts, their interpretation and their uses; disability provisions in life insurance contracts; industrial, group, fraternal, and government insurance; underwriting; principles underlying rates and reserves; investments. (Prerequisite: Econ 2 [BA 53 recommended but not required])

Williams, 3 credits, \$21, texts \$5

77. Advertising. A survey course of advertising principles and techniques as related to the product and its market including the uses of advertising media: newspapers, magazines, direct mail, display, radio and television, and basic layout and copy techniques used in the construction of advertisements. (Prerequisite: students who are candidates for a degree at the University of Minnesota are required to have Survey of Marketing, and Psy 156, Psychology of Advertising; other students who have had business experience may have the prerequisites waived upon request)

Lewis, 3 credits, \$21, texts \$8.50

- 78. Business Law—Agency, Partnerships, and Corporations.** The law of agency and a consideration of problems of partnerships and corporations, including business associations. Includes a study of the nature, creation, and terms of relationships, and rights and liabilities of the parties when doing business through agents, partnerships, and corporations. (Prerequisite: BA 58)
Bruer, 3 credits, \$21, texts same as BA 58
- 88. Business Law—Sales and Negotiable Instruments.** Law of sales of goods under the Uniform Sales Act and law of commercial paper under the Uniform Negotiable Instruments Law. Includes a study of negotiable notes, checks, drafts, etc., and rights of parties thereto. (Prerequisite: BA 58)
Bruer, 3 credits, \$21, no texts
- 93. Property and Liability Insurance I.** A discussion of the nature and relative importance of losses covered under property and liability insurance contracts; a detailed analysis of the contract provisions in the most important fire, marine, and casualty insurance contracts and surety bonds. (Prerequisite: Econ 2 [BA 53 highly recommended but not required])
Williams, 3 credits, \$21, texts \$7
- 98. Business Law—Property Rights and Obligations.** Nature and classification of real and personal property; deeds and conveyances; landlord and tenant; recording and abstracting; Torrens titles; liens and mortgages; wills, probating of estates, and duties of administrators and executors. (Prerequisite: BA 58)
Bruer, 3 credits, \$21, no texts
- 99. Survey of Office Management.** The office as a producing unit; organization and control of clerical services; selection of equipment and supplies; flow of work layout, and working conditions; office personnel; relation of the office to operating divisions; work simplification; scientific management as applied to the office. (Prerequisite for credit: Econ 2 or equivalent)
Donaldson, 3 credits, \$21, texts \$7
- 125. Auditing and Public Accounting.** The purposes and principles of auditing. Auditing "from the records" and investigations by independent, internal, and governmental auditors. Accounting principles, the S.E.C., and the verification and certification of published statements by public accountants. Specific procedures and particular working papers are interrelated by the audit of a laboratory set calling for actual examination of records and accounts, the preparation of complete working papers, and an audit report. (Prerequisite: BA 26 or approximate equivalent)
Lund, 4 credits, \$28, texts \$13.50
- 135. Income Tax Accounting.** The application of the federal income tax law to individuals and corporations. Begins with a consideration of what types of income are taxable and which are not. Consideration is then given to items which can be deducted from gross income. Exemptions and tax rates are then studied as the final step in calculation of tax. Practice is given in the preparation of returns. (Prerequisite: some knowledge of elementary accounting)
Dettmann, 3 credits, \$21, texts \$8
- 146. Real Estate.** The valuation of urban real estate with consideration of problems of real estate financing, rent control, housing land development, zoning and other factors affecting real estate values. (Prerequisite: Econ 2 or equivalent; recommended to businessmen to whom it is open without prerequisite)
Sutton, 3 credits, \$21, texts \$7
- 176. Investments.** Study of the principles of investment and their application to actual cases. Lessons developed out of concrete examples to assist in a critical appraisal of specific securities and to add to working knowledge of investment issues. Principal emphasis on the most important groups of securities—

railroad, industrial, public utility, and governmental issues. (Prerequisite: BA 56; recommended to businessmen to whom it is open without prerequisite)

Sutton, 3 credits, \$21, texts \$7

Business Correspondence. See page 36.

Salesmanship. See page 55.

Industrial Supervision. See page 44.

Other business courses. See Economics, page 26.

CHILD DEVELOPMENT AND WELFARE (CD)

(A Department in the College of Education)

Armin Grams, Ph.D., Associate Professor of Child Development and Welfare
Mildred C. Templin, Ph.D., Associate Professor of Child Development and Welfare
Elizabeth Peterson, B.S., Instructor in Child Development and Welfare
Eleanor Robinson, M.S., Instructor in Child Development and Welfare

See Education, page 27.

- 40. Child Training.** A brief survey of physical and mental development together with a discussion of the training of young children. Behavior problems in their various aspects, and the techniques of good and poor management are considered. (Prerequisite: Psy 1 and 2 or equivalent)
Peterson, 3 credits, \$21, texts \$4 (registrations accepted after August 1, 1958)
- 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: Psy 1 and 2 or equivalent)
Grams, 3 credits, \$21, texts \$7
- 82. Adolescent Psychology.** 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. (Prerequisite: Psy 1 and 2 or equivalent; not open to those who have completed Psychology of Adolescence in the College of Education)
Grams, 3 credits, \$21, texts \$7
- 83. The Guidance of Children's Activities.** 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: Psy 1 and 2 or equivalent)
Robinson, 3 credits, \$21, texts \$7
- 86. The Gifted Child.** Survey course for parents and professional workers. Intellectual, physical, social, and personal characteristics. Guidance of gifted children.
Grams, 2 credits, \$14 (registrations accepted after January, 1959)
- 88. Psychology of Atypical Children.** Development, behavior, personal and social adjustment of atypical children: blind, partially sighted, deaf, hard-of-hearing, speech handicapped, emotionally disturbed, mentally retarded, gifted, and physically handicapped.
Templin, 3 credits, \$21, texts \$12 (registrations accepted after June, 1959)
- 90. Psychology of Parent-Child Relationships.** Relation of adults and children within the family; the influence of family practices with respect to finance,

discipline, recreation, social relations, affection, etc., on the development of children.

Robinson, 2 credits, \$14, texts \$8 (registrations accepted after January, 1959)

CHINESE (Chin)

Richard B. Mather, Ph.D., Associate Professor of Chinese

- 1. Beginning Chinese I.** Prepares for the reading and writing of colloquial Chinese (Mandarin), the language of conversation, modern fiction and newspapers. Principles of pronunciation and intonation will be treated; principles of grammar will be implemented with ample exercises. (No prerequisite)

Mather, 5 credits, \$35, texts \$8, record (78 rpm) \$4 (tape about one-half cost of record)

ECONOMICS (Econ)

Arthur M. Borak, Ph.D., Associate Professor of Economics

Zdenek Cernohous, M.A., Instructor in Economics

George D. Hanrahan, B.S., Instructor in Economics

- 1. Principles of Economics I.** Analysis of the principles determining the production (supply) and exchange (demand) of goods and services by individual firms and households. Determination of costs and prices under conditions of competition and monopoly. Forms of business organization and economic activity of government. Economic significance of taxation and labor organizations; study of wages, rents, interest, and profit. (No prerequisite)

Cernohous, 3 credits, \$21, texts \$5.50

- 2. Principles of Economics II.** Analysis of national income, employment, and price level, with attention to aggregate consumption and investment. Financial organization of society; distribution of wealth and income. Fiscal and monetary policies; economic significance of banking; business cycles; foreign trade. Review of systems of economic organization: capitalism, socialism, fascism, and communism. (Prerequisite: Econ 1)

Cernohous, 3 credits, \$21, texts same as Econ 1 (registrations accepted October 1, 1958)

- 67. Money and Banking.** Historical development, present pattern and economic role of financial institutions, with special emphasis upon commercial banks, the money supply, and the Federal Reserve System. Prerequisite: Econ 2 or equivalent)

Hanrahan, 3 credits, \$21 (registrations accepted October 1, 1958)

- 68. Elements of Public Finance.** Public expenditures, revenues, debts, fiscal policy, and financial administration. Includes a study of the nature of public expenditures, various kinds of nontax public revenues, various forms of taxation, shifting and incidence of taxation, budgetary and legislative control, and fiscal reforms. (Prerequisite: Econ 2 or equivalent)

Borak, 3 credits, \$21, texts \$5

- 172. Labor Policy: Labor Relations.** An analysis of (a) employer-employee-union relationships and their social control; emphasis is placed upon the actions of legislative, executive, and judicial branches of the government; and (b) the economic and social implications of issues arising in this area. (Prerequisite: BA 52 or equivalent)

Mahoney, 3 credits, \$18, texts \$13

- 182. Economic Security.** An analysis of (a) the origins and development of economic and social problems of the individual worker, (b) executive, legislative, and judicial attempts to deal with these problems, and (c) economic and social consequences of the developments. Treatment of "protective labor

legislation" involving child labor, hours and wages, industrial accidents and illness, old age, and unemployment. (Prerequisite: BA 52 or equivalent)

Mahoney, 3 credits, \$21, texts \$6

EDUCATION (Ed)

Adrian Dupuis, Ph.D., Associate Professor of Education, Marquette University
 Donovan Johnson, Ph.D., Associate Professor of Education
 Harry W. Kitts, Ph.D., Associate Professor of Agricultural Education
 Gordon Mork, Ph.D., Associate Professor of General Education
 Maynard C. Reynolds, Ph.D., Associate Professor of Education
 Helen P. Mudgett, M.A., Assistant Professor of Intercultural Education

Note—See Child Development and Welfare, page 25, for courses in Child Training, Child Psychology, Guidance of Children's Activities, Adolescent Psychology, The Gifted Child, etc. These courses accepted for credit in College of Education. See page 49 for courses in Physical Education.

4(c). Introduction to Philosophy of Education. A study of the ideas influencing contemporary education in the United States. An effort will be made to show how these ideas might influence the day-to-day work of the teacher. The central objective of this course is to help teachers clarify their thinking in respect to the many conflicting viewpoints in educational philosophy.

Dupuis, 4 credits, \$28, texts \$8.50

AgEd 20. Rural Education and Community Leadership. An appraisal of community educational agencies; the process of and responsibilities for community leadership; the role of the school in the rural community; co-ordination of the school with nonschool educational agencies. (No prerequisite)

Kitts, 3 credits, \$21, texts \$11

60. Introduction to Measurement and Statistics. A study of elementary statistical methods and their application to educational problems. The commonly used statistical terms and methods such as mean, median, mode, percentiles, graphs, standard deviation, correlation, standard scores, test analysis, and sampling theory are considered. An attempt is made to give the student some understanding of these terms, practice problems with educational data, and applications and interpretations of statistics. Emphasis is placed on the intelligent interpretation of statistical methods so that the student may interpret educational data correctly. (Prerequisite: 6 credits in psychology)

Johnson, 3 credits, \$21, texts \$4

65. Teaching of Science in the Elementary Schools. Designed to acquaint the elementary school teacher with objectives, methods, and materials of importance in the teaching of science to children. Special attention is given to developing understanding of science concepts and scientific method among children. Those phases of science content of importance in elementary education are identified and special attention is given to their explanation. (No prerequisite)

Mork, 3 credits, \$21, texts \$12

77. Critical Issues in Modern Education. The principal aim 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. (May be substituted for HEd 141 in undergraduate curriculums; not open to students who have taken HEd 141)

Dupuis, 3 credits, \$21, texts \$14

EPsy 82. Education of Exceptional Children. Provides an overview of the field of special education. The major objective is to develop a beginning understanding of the characteristics and needs of socially maladjusted, gifted,

mentally retarded, crippled, visually and auditorially handicapped children. A number of general problems in special education (such as prevention of handicaps, current trends, research needs, teacher training opportunities, patterns of school organization and administration, etc.) are also given brief consideration. Especially planned for classroom teachers, counselors, supervisors, and administrators. Also is a suitable first course for students working for special certificates to teach exceptional children. (Prerequisite: Psy 1 and 2 or equivalent or teacher's certificate)

Reynolds, 3 quarter credits, \$21, texts \$10

HEd 92(c). Techniques of Intergroup Education for Rural Schools. Designed to help rural teachers gain clearer insight into the need of their school community for a better understanding, both of themselves and of others. (No prerequisite)

Mudgett, 2 credits, \$14, materials \$6.50

ENGINEERING

Robert Edward Summers, M.S.(Ch.E.), M.E., Dean of Admissions and Records and Professor of Mechanical Engineering

Miles S. Kersten, Ph.D., Professor of Civil Engineering

Forrest E. Miller, M.S.(M.E.), Professor of Mechanics and Materials

James K. Threlkeld, Ph.D., Professor of Mechanical Engineering

Edward S. Loye, Ph.D., Associate Professor of Mathematics

Theodor W. Thomas, M.S.(C.E.), Associate Professor of Civil Engineering

Paul A. Cartwright, M.S., Assistant Professor of Electrical Engineering

Immanuel C. Fischer, M.S., Assistant Professor of Engineering

Thomas F. Irvine, Jr., Ph.D., Assistant Professor of Mechanical Engineering

James L. Lundy, Ph.D., Assistant Professor of Mechanical Engineering

Lewis G. Palmer, M.A., Assistant Professor of Mechanical Engineering

Ellis Peilen, B.S.(Aero.E.), Instructor in Engineering (Correspondence Study)

The Institute of Technology consists of the College of Engineering, the School of Architecture, the School of Chemistry, the School of Mines and Metallurgy, and the School of Physics. See page 10 for the amount of credit earned by correspondence courses for degrees in the Institute of Technology.

Aeronautical Engineering (Aero)

1(c). Elementary Aeronautics. 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, aerodynamics resistance; stability and control; aircraft engine operation; propellers; jet propulsion; flight maneuvers; aircraft construction; seaplanes and flying boats; military and commercial aircraft applications; radio; accessories; instruments. (No prerequisite is required although a knowledge of high school algebra will be helpful; may be substituted for Aero 1; 3 credits in Institute of Technology)

Peilen, 3 Extension credits only, \$21, texts \$6

Civil Engineering (CE)

54(c). Soils Engineering. Intended for engineers and students who wish to become familiar with the basic principles of soil behavior, the terminology, the tests, and applications to practical problems. Soil development and maps; laboratory tests, constants, and classification. Surveys, frost action, compaction, stabilization, and flexible pavement design. Stress distribution, consolidation, and shear strength. (Prerequisite: 1 year of college mathematics desirable; consult instructor)

Kersten, 3 Extension credits only, \$21, texts \$6

146. Concrete and Concrete Materials. Includes a study of the materials from which concrete is made, methods of designing a concrete mixture, the principles of air-entrained concrete, methods of measuring and controlling the air content, the chemical constitution of cement, properties of concrete, the practical aspects of proportioning, mixing, placing, and curing concrete and other special related topics. (Prerequisite: knowledge of elementary algebra, physics, and chemistry; if credit is desired, prerequisite is MM 128 or consent of instructor)

Thomas, 3 credits, \$21, texts \$3

Drawing (Draw)

4. Engineering Drawing. Orthographic projection, multi-view drawing, geometry, lettering, dimensioning, working drawings, and freehand sketching. (Prerequisite: solid geometry) (Note: Draw 4 not available after September 15, 1959—will be replaced by Engineering Graphics 15)

Palmer, 3 credits, \$21, texts \$7

6. Engineering Drawing. Sections, auxiliary views, conventions, limit dimensioning, graphical mathematics, functional scales, nomography, and curve fitting. (Prerequisite: Draw 4) (Note: Draw 6 not available after September 15, 1959—will be replaced by Engineering Graphics 16)

Palmer, 3 credits, \$21, texts same as Draw 4 plus \$1.50

44(c). Freehand Lettering. Practice in freehand commercial Gothic lettering, as used by draftsmen and engineers and in offices, stores, hospitals, libraries, schools, etc. (No prerequisite)

Palmer, 1 Extension credit only, \$7, texts \$2

Electrical Engineering (EE)

1(c). Elements of Electric Circuits. Fundamental laws of direct-current circuits, the magnetic field and magnetic properties of iron and steel, induced and generated electromotive forces. Fundamental laws of alternating current circuits, complex representation. Series and parallel circuits, polyphase circuits, power measurements in electric circuits. (No prerequisite)

Cartwright, 3 Extension credits only, \$21, texts \$6.50

2(c). Elements of Electronics. Electronic emission, conduction through vacuums and gases; characteristics of vacuum tubes, of gas and vapor tubes. Amplifier circuits, oscilloscopes, and control circuits; application of electronic devices to industry. (Prerequisite: EE 1(c) or equivalent)

Cartwright, 3 Extension credits only, \$21, texts \$10

3(c). Elements of Electric Machinery. Theory of direct-current and alternating-current machinery. Study of operating characteristics. Elementary control equipment and maintenance. (Prerequisite: EE 1(c) or equivalent)

Cartwright, 3 Extension credits only, \$18, texts \$5.50

Basic Mathematics and Practical Electricity for Electrical Workers. A great deal of the material covered is very basic in nature although later courses are directed toward individuals doing electrical maintenance and construction work for power utilities. The work is divided into 6 separate courses, each course consisting of 12 lessons (plus an examination if credit is desired).

I. Basic Mathematics (Algebra). Cartwright, 2 Extension credits, \$14, texts \$5

II. Basic Mathematics (Trigonometry). Cartwright, 2 Extension credits, \$14, texts same as course I

III. DC Circuits and Fundamentals of Electricity. Cartwright, 2 Extension credits, \$14, texts \$6

IV. DC Equipment and Introduction to AC Circuits. Cartwright, 2 Extension credits, \$14, texts same as course III

V.** Alternating Current Circuits. Cartwright, 2 Extension credits, \$14

VI.** AC Equipment and Power Systems. Cartwright, 2 Extension credits, \$14

General Engineering (GE)

70. **Slide Rule.** Practical course for engineers and office workers. Position of decimal point in computation stressed. (No prerequisite)

Palmer, 1 credit, \$7, texts \$2.25, slide rule \$3.25 and up

Mathematics (ITM)

(For additional credit courses in mathematics, see page 47)

1(c). **Basic Mathematics Review I.** A thorough review of grade school arithmetic; square and cube root. A good foundation in elementary algebra; the fundamental operations involving positive and negative numbers; fractions; the solution of simple equations and fractional equations; exponents; symbols of grouping; special products and factoring; and simplification of fractional expressions. (No prerequisite)

Fischer, 3 Extension credits only, \$21, texts \$3

3(c). **Basic Mathematics Review II.** Covers the material of the second semester of high school algebra and the numerical part (called mensuration) of plane and solid geometry, plus numerical trigonometry and logarithms. *In algebra:* simultaneous linear equations; exponents and radicals; solution of quadratic equations, irrational equations; ratio, proportion, variation; graphical representation of statistical data and of equations; and the use of formulas. *In geometry:* formulas from plane and solid geometry and how to apply them. *In trigonometry:* logarithms and how to use them; the trigonometric functions; and solution of right and oblique triangles. (Prerequisite: equivalent of ITM 1(c))

Fischer, 3 Extension credits only, \$21, texts same as ITM 1(c)

9. **Higher Algebra.** Review of elementary algebra, linear equations, factoring, fractions, simultaneous linear equations, exponents, radicals, graphical methods, quadratic equations, systems of quadratics, ratio and variation, binomial theorem, logarithms, progressions. (Prerequisite: 1 year of elementary algebra in high school or equivalent)

Loye, ½ entrance unit, \$22.50, texts \$4

10. **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)

Fischer, ½ entrance unit, \$22.50, texts \$3

Note—Courses 9 and 10 meet the entrance requirements in mathematics of the Institute of Technology.

11. **College Algebra and Trigonometry I.** Review of elementary algebra, factoring, fractions, functions and graphs, linear equations, determinants, exponents and radicals, quadratic equations, inequalities, systems of quadratic equations, proportion and variation, mathematical induction, binomial theorem, trigonometric functions, right triangles, oblique triangles, radian measure, slide rule. (Prerequisite: ITM 9 or equivalent)

Loye, 5 credits, \$35, texts \$6

** Starred courses will be developed if demand warrants.

- 12. College Algebra and Trigonometry II.** Progressions, logarithms. Trigonometric formulas and identities, trigonometric curves, inverse trigonometric functions, trigonometric equations, complex numbers. Theory of equations, permutations, combinations, probabilities, partial fractions, hyperbolic functions. (Prerequisite: ITM 11 or equivalent)
Loye, 5 credits, \$35, texts same as ITM 11 plus \$1.50
- 11A. College Algebra.** Review of fundamentals, linear equations, exponents and radicals, quadratic equations, simultaneous quadratic equations, inequalities, proportion and variation, logarithms, mathematical induction, binomial theorem, progressions, complex numbers, theory of equations, partial fractions, determinants, infinite series. (Prerequisite: ITM 9 or equivalent)
Loye, 5 credits, \$35, texts \$5
- 12A. Trigonometry.** Computation by logarithms. Trigonometric functions, plane right triangles, reduction formulas, fundamental relations, addition formulas, double angles, half angles, identities and equations, inverse functions, oblique triangles, de Moivre's theorem, spherical right triangles. (Prerequisite: ITM 11)
Fischer, 5 credits, \$35, texts \$5
- Note**—Courses 11A and 12A may be substituted as a group for courses 11 and 12 in the curriculums of the Institute of Technology, University of Minnesota.
- 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: ITM 10, 11, and 12 or equivalent)
Fischer, 5 credits, \$35, texts \$4
- 13a. Calculus I: Analytic Geometry and Calculus.** Rectangular co-ordinates, locus and equation, straight line, conic sections. Limit, derivative, rules of differentiation, rates, curve tracing, maxima and minima. Elements of integration and applications. (Prerequisite: ITM 10, 11, and 12 or equivalent)
Loye, 5 credits, \$35 (registrations accepted June 1, 1958)
- 24. Differential Calculus.** Functions and limits, the derivative. Applications of the derivative to problems in rates, maxima and minima, inflections, curve tracing. Differentials, approximation with differentials, parametric equations, curvature, indeterminate forms, partial differentiation. (Prerequisite: ITM 13 or equivalent)
Fischer, 5 credits, \$35, texts \$5.50
- 24a. Calculus II: Analytic Geometry and Calculus.** Mean value theorem, definite integral. Differentiation of transcendental functions, polar co-ordinates, parametric equations, vectors, geometric applications. Applications of integration: moments, centroids, moments of inertia, hydrostatic pressure, work. (Prerequisite: ITM 13a or equivalent)
Fischer, 5 credits, \$35 (registrations accepted December 1, 1958)
- 25. Integral Calculus.** The integration of standard elementary forms, integration by various devices, the evaluation of constant of integration, the definite integral, areas, volumes, length of curve, area of surfaces, centroids, moments of inertia, fluid pressures, multiple integration with applications, infinite series and the expansion of functions. (Prerequisite: ITM 24 or equivalent)
Fischer, 5 credits, \$30, texts same as ITM 24
- 25a. Calculus III: Analytic Geometry and Calculus.** Methods of integration. Solid analytic geometry treated by vector methods, partial differentiation, geometry of surfaces, differentials, directional derivative, maxima and minima. Multiple

integrals, volume, surface area, physical applications. (Prerequisite: ITM 24a or equivalent)

Fischer, 5 credits, \$35 (registrations accepted March 1, 1959)

26a. Calculus IV: Differential Equations and Calculus. Infinite series; convergence tests, Taylor's formula and expansion of functions. Differential equations; equations of first order; standard methods of solutions; linear equations with constant coefficients, applications; simultaneous equations, integration by series, numerical methods. (Prerequisite: ITM 25a or equivalent)

Fischer, 5 credits, \$35 (registrations accepted June 1, 1959)

80. Elementary Differential Equations. Equations of first order, singular solutions; linear equations with constant coefficients, simultaneous equations, integration in series. (Prerequisite: ITM 25 or equivalent)

Loye, 3 credits, \$21, texts \$7

Note—Courses 13, 24, 25, and 80 may be substituted as a group for courses 13a, 24a, 25a, and 26a in the curriculums of the Institute of Technology, University of Minnesota.

Mechanical Engineering (ME)

1(c). Steam Power Plants I. For boiler operators. Fuels, combustion, furnaces, steam generators, pumps, pipes and fittings. Boiler room practices. Properties of steam; boiler-water conditioning. (Prerequisite: proficiency in arithmetic)

Summers, 3 Extension credits only, \$21, texts \$12

2(c). Introduction to Heat Transfer. Examination of the fundamentals of heat transfer by conduction, convection, and radiation, and their application to engineering analysis. (Prerequisites: basic physics and differential and integral calculus)

Irvine, 3 Extension credits only, \$21, texts \$6

3(c). Selected Advanced Topics in Heat Transfer. Mathematical investigations of selected advanced topics in conduction, convection, and radiation. Particular emphasis is placed on approximate solutions of the boundary layer momentum and energy equations and on modern developments in forced convection heat transfer. Temperature measurements and temperature measurement errors are discussed. (Prerequisite: ME 2(c) or equivalent, ordinary differential equations, or consent of instructor)

Irvine, 2 Extension credits only, \$14, texts \$6

4(c). Air Conditioning. 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. Deals with the comfort conditions of the human body; the laws of temperature, pressure, humidity, etc.; calculation of heat transmission losses and heating loads; calculation of cooling loads including sensible heat load, effect of solar radiation, and latent heat load; humidification and dehumidification; air distribution and air motion; air duct design including pressure losses, friction losses, size of ducts, air velocities, and duct construction. Especial consideration has been given to the basic principles and their application to practical problems. (Prerequisite: elementary algebra or consent of instructor)

Threlkeld, 3 Extension credits only, \$21, texts \$7

17(c). Industrial Plant Layout. Lessons on the application of industrial engineering principles in simplifying and improving the layout of manufacturing plants, shops, and warehouses, and in planning new layouts. Topics covered include: types of layouts; analysis of flow; safety factors in layout work;

determination of equipment and space requirements; service facilities; buildings. (No prerequisite)

Lundy, 5 Extension credits only, \$35, texts \$10

- 18(c). Motion and Time Study Engineering.** One of the most necessary and most used branches of industrial engineering, this work is absolutely essential for efficient plant operation and accurate wage determination. Beginning with the skeletal structure of the subject, which gives the student a firm grasp of the logical development of the subject matter, all phases are explained, first in terms of present practice, and then in terms of the most recently developed techniques. Some of the topics covered are: the importance of motion and time study; the skeletal structure of methods analysis; process analysis; operation analysis; micromotion study; motion study problems; the skeletal structure of time study; breakdown of job into elements; determination of time consumed; job rating; personal, fatigue, and delay allowances; new techniques in the field; timing techniques for typical industrial operations; time study problems. (No prerequisite)

Lundy, 5 Extension credits only, \$35, texts \$6

Mechanics and Materials (MM)

- 26. Engineering Statics.** Characteristics of a force and of a couple, resolution of force systems, equilibrium of rigid bodies, analysis of framed structures, graphical methods. Centroids and moments of inertia. Friction. Virtual work. (Prerequisite: ITM 25 or 25a)

Fischer, 5 credits, \$35, texts \$4.50

- 127. Engineering Dynamics.** Kinematics and its application to structural elements. Dynamics of particles and of rigid bodies. Work and energy. Impulse and momentum. Introduction to mechanical vibrations. (Prerequisite: MM 26)

Fischer, 5 credits, \$35, texts \$4.50

- 128. Engineering Solid Mechanics.** Mechanical and elastic properties of engineering materials. Stress, strain, and deformation in continuous solids. Applications to simply stressed members, joints, shafts, beams, and columns. State of stress at a point, combined stresses, and Mohr's circle. (Prerequisite: MM 26)

Miller, 5 credits, \$35, texts \$6

ENGLISH

(For courses in humanities, see page 43)

Clifford I. Haga, B.A., Assistant Professor of English
 Robert R. Owens, Ph.D., Assistant Professor of English
 Helen A. Anderson, M.A., Instructor in English (Correspondence Study)
 Ada Carson, M.A., Instructor in English (Correspondence Study)
 Herbert Carson, M.A., Instructor in English
 Sumner J. Ferris, B.A., Instructor in English
 Ralph Haug, Ph.D., Instructor in English (Correspondence Study)
 Louise Klohn, M.A., Instructor in English (Correspondence Study)
 John Lippert, B.S., Instructor in English (Correspondence Study)
 Agnes Macdonald, M.A., Instructor in English (Correspondence Study)

English (Engl)

- 1b. Freshman English I.** A combined course in composition (3 credits) and literature (1 credit). The entire series (1b-2b-3b) concentrates upon developing the student's skill in writing expository prose; the first (1b) emphasizes clarity and correctness, especially in the sentence and paragraph. The literature

consists of assignments in narrative prose. (Prerequisite: Preparatory English or satisfactory score on English Placement Test, or satisfactory Trial Lesson)

Haug, 4 credits, \$28 (registrations accepted after October 1, 1958)

- 2b. Freshman English II.** Continuation of 1b. Emphasis is on effectiveness in composition, how to use printed sources, and how to draw inferences from them. Several plays are studied, and much of the writing of the course concerns them. (Prerequisite: Engl 1b)

Haug, 4 credits, \$28 (write for enrollment date)

- 3b. Freshman English III.** Continuation of 2b. Emphasis is on clarity of thought and organization of material, culminating in the preparation of a research paper. English and American poems provide several topics for critical writing. Students who do not have access to libraries may arrange a special writing project with the instructor. (Prerequisite: Engl 2b)

Haug, 4 credits, \$28 (write for enrollment date)

Note—The above sequence leading to 12 credits in Freshman English will eventually replace the Comp 4-5-6 courses listed on page 36. Students expecting to use the credits at the University of Minnesota are urged to use this new sequence to meet the English requirement in degree and certificate programs.

- 4(c). Masterpieces of World Literature.** For those who want to learn to read well, to raise the standard of their reading, and to acquaint themselves with the classics which everyone should know. The books on the reading list have been selected from the world's great stories and are treated in a way to help the reader discuss intelligently with others the problems of today. Of interest to prospective college students, club women, book reviewers, writers, teachers, and other professional people, as well as to homemakers and those in the business world who realize the opportunities that a command of reading and intelligent conversation has to offer. (No prerequisite; cannot be used for credit toward teachers' certificates; see page 5)

Klohn, 2 Extension credits only, \$14, texts \$20††

- 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 3 terms (21, 22, 23) 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 Shakespeare. (Prerequisite: Freshman English or Comp 4-5-6)

Anderson, 5 credits, \$35, texts \$9,††

- 22.** Introduction to Literature II.** Continuation of 21. Addison and Steele, Swift, Pope, Fielding, Johnson, Boswell, Sheridan, Congreve, and Dryden. (Prerequisite: Freshman English or Comp 4-5-6)

Anderson, 5 credits, \$35,†† texts same as Engl 21 plus \$1.50

- 23.** Introduction to Literature III.** Continuation of 22. Wordsworth, Coleridge, Lamb, Byron, Shelley, Keats, Carlyle, Tennyson, Browning, and Arnold. (Prerequisite: Freshman English or Comp 4-5-6)

Anderson, 5 credits, \$35, texts \$7

- 39. Twentieth-Century Literature III.** The novel since Thomas Hardy. Covers at least the following 3 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 3 American novels: Ernest Hemingway's *A Farewell to*

** Students may enter any course of 21, 22, 23. Two courses are required as a prerequisite for a major sequence; the second and third are required for a teacher's certificate.

†† Includes books which are available at most libraries.

Arms, Thomas Wolfe's *Of Time and the River*, John Steinbeck's *The Grapes of Wrath*. (Prerequisite: Freshman English or Comp 4-5-6)

Anderson, 3 credits, \$21, texts \$11††

- 40. Survey of Dramatic Literature I.** The drama from Aeschylus to Racine; including classic tragedy and comedy, Eastern drama, Medieval drama, the "Golden Age" of English drama, and the continental drama prior to 1700. The emphasis will be on masterworks which exemplify the place and time of their writing. (Prerequisite: Freshman English or Comp 4-5-6 or equivalent) (If there is call for a second course in dramatic literature, it may be written)
- H. Carson, 3 credits, \$21, texts \$5.50 (registrations accepted after August 1, 1958)
- 52. English Novel I.** A study of the English novel from its 18th-century beginning with the work of Defoe, through its development by Richardson, Fielding, Smollett, and Sterne, to its early 19th-century refinement in the realism of Jane Austen and the romance of Sir Walter Scott. Emphasis will be placed upon the contributions of the successive works to the evolution of the novel as a literary form. (Prerequisite: Freshman English or Comp 4-5-6 and 5 additional credits in English)
- Anderson, 3 credits, \$21, texts \$13.50††
- 53. English Novel II.** A study of the novel during the age of Victoria, showing the progression from older forms and earlier taste toward the anticipation of the modern naturalistic and psychological novel at the end of the 19th century. Works of Thackeray, Dickens, the Brontë sisters, George Eliot, Trollope, Meredith, and Hardy will be read. (Prerequisite: Freshman English or Comp 4-5-6 and 5 additional credits in English)
- Anderson, 3 credits, \$21, texts \$10††
- 55. Shakespeare I.** The development of Shakespeare's dramatic art is traced chronologically from the earliest plays to one of the mature tragedies. The student becomes familiar with various types of Shakespeare's drama: comedy, tragedy, and history plays. (Prerequisite: Comp 4-5-6 or Freshman English and 5 additional credits in English)
- Owens, 3 credits, \$21, texts \$7
- 56. Shakespeare II.** This course, which is a continuation of 55 in chronological order, is devoted to Shakespeare's later career from 1599 to 1611. It includes the famous late comedies, tragedies, and one of the problem plays. (Prerequisite: Engl 55 or consent of instructor)
- Owens, 3 credits, \$21, texts \$6
- 73. American Literature I.** American literary development from the Colonial period through the American Renaissance. (Prerequisite: Freshman English or Comp 4-5-6 and 5 additional credits in English)
- A. Carson, 3 credits, \$21, texts \$6.50
- 74. American Literature II.** Continuation of 73. American literary development from the Civil War to the present. (Prerequisite: Freshman English or Comp 4-5-6 and 5 additional credits in English)
- A. Carson, 3 credits, \$21, texts \$6.50
- 75. Chaucer.** Reading of selections from *The Canterbury Tales*. Emphasis 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 the language of Chaucer. (Prerequisite: Freshman English or Comp 4-5-6 and 5 additional credits in English)
- Ferris, 4 credits, \$28, texts \$7

†† Includes books which are available at most libraries.

Composition (Comp)

Vocabulary Building. See page 57.

Preparatory English. The simple fundamentals of correct English, intended to give additional drill to high school graduates who need further preparation for college English. (No prerequisite)

Klohn, no credit, \$14, texts \$2 without and \$7 with dictionary

1(c). **Business Correspondence.** 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)

Haga, 3 Extension credits only, \$21, texts \$5

2(c). **Basic Technical Writing I.** Review of basic English and introduction to technical writing. Designed for people in the technical industries. Includes sentence design, spelling, and punctuation. Covers basic techniques of definition, description, process, procedure, and analysis writing. Organization and correlation into text of tables, diagrams, and illustrations. Emphasis on accuracy, brevity, simplicity, and layout. (No prerequisite)

Lippert, 3 Extension credits only, \$21, texts \$5 without and \$10 with dictionary

3(c). **Basic Technical Writing II.** Continuation of 2(c). Covers both formal and informal writing on all levels. Includes various types of reports, specifications, material for manuals, supervisory materials, and basic letters required of technical men. Special projects if the students want them. (Prerequisite: 2(c) or equivalent)

Lippert, 3 Extension credits only, \$21 (registrations accepted after July 1, 1958)

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. (Prerequisite: Preparatory English, satisfactory score on English Placement Test, or satisfactory Trial Lesson)

Haug, 3 credits, \$21, texts \$6.50 without and \$11.50 with dictionary

5. **Composition V.** Continuation of 4. 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: Comp 4)

Haug, 3 credits, \$21, texts same as Comp 4

6. **Composition VI.** Continuation of 5, including themes and reading; but the emphasis throughout is on diction, the history of the English language, and the use of the dictionary. (Prerequisite: Comp 5)

Haug, 3 credits, \$21, texts same as Comp 4

Note—Composition 4-5-6 will meet the English requirement in degree and certificate programs through 1958-59, but students expecting to use credits at the University of Minnesota are urged to consider the new sequence in Freshman English on page 33. The first course in the new sequence will be available by October 1, 1958.

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. Intended to aid the student in working out individual problems. (Prerequisite: Comp 4-5-6 or Freshman English or equivalent)

Haug, 3 credits, \$21, texts \$8 without and \$13 with dictionary

- 28. Advanced Writing II—Narration and Description.** Study of principles of description and narration with analysis of specimens and exercises in writing. (Prerequisite: Comp 27)
Haug, 3 credits, \$21, texts same as Engl 27 plus \$3.50
- 69. Short Story Writing I.** A basic study of short story technique, with emphasis on the student's completion of several original stories. Manuscripts will be carefully read, and suggestions for improvement will be offered. The textbook is the work of a successful author, and the stories studied illustrate a variety of writing methods. (Prerequisite: Comp 27-28)
Macdonald, 3 credits, \$21, texts \$5
- 70. Short Story Writing II.** The student should here reap the benefits of what he has learned in Comp 69. He will write 4 stories, in all approximately 10,000 words, and these stories will be carefully read and criticized. He will read a number of useful stories and consider such things as style, tone, pace, suggestion, and symbols. (Prerequisite: Comp 69)
Macdonald, 3 credits, \$21, texts \$2
- 80(c). 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.
Anderson, 16 installments of a total of approximately 8,000 words; 3 Extension credits only, \$21, no texts

FAMILY LIFE (FL)

Maurine Hansen, M.A., Instructor in Family Life

- 1(c). Building a Better Marriage.** Designed to help men and women gain a clearer picture of marriage today and of their own participation in a satisfying family life. Three general areas of study and reading will cover: what you bring to marriage—backgrounds and self-understanding, adolescent development and dating experiences; what you expect of marriage—changing roles and goals for men and women, choice of a mate and engagement; what you put into marriage—marriage adjustments including husband-wife interaction, finances, children, social and family relationships, and facing crises. In addition to the regular correspondence course lessons, arrangements may be made for attending 1 or 2 on-campus sessions during the day or on Tuesday evenings to view films or to observe class participation and discussions. If there are several people in an area who can arrange for a group meeting, an instructor will be sent for group conference (this visit will necessitate travel expenses with an agreed-upon fee for cost).
Hansen, 3 credits, \$21, texts \$6 (registrations accepted July 15, 1958)

FRENCH (Fr)

Janis L. Pallister, M.A., Teaching Assistant in Romance Languages

A French pronunciation record (78 revolutions per minute) prepared by the Romance Language Department and the Correspondence Study Department may be purchased for \$4. Not required but recommended.

- 1. Beginning French I.** Essentials of the French language; grammar, reading, pronunciation, easy composition. (No prerequisite)
Pallister, 5 credits, \$35, texts \$4.50
- 2. Beginning French II.** Continuation of 1. (Prerequisite: Fr 1, or 1 year of high school French)
Pallister, 5 credits, \$35, texts same as Fr 1

- 3. Intermediate French I.** Review of grammar; composition; reading of representative authors. (Prerequisite: Fr 2, or 2 years of high school French)
Pallister, 5 credits, \$35, texts \$7
- 4. Intermediate French II.** Continuation of 3. (Prerequisite: Fr 3, or 3 years of high school French)
Pallister, 5 credits, \$35, texts same as Fr 3
- 53. Elementary French Composition.** Translations of passages of connected prose dealing with everyday life in France. (Prerequisite: Fr 4)
Pallister, 3 credits, \$21, texts \$2.50
- 63. Advanced French Composition.** Continuation of 53. Affords practical exercises in prose composition. (Prerequisite: Fr 53 or equivalent)
Pallister, 3 credits, \$21, texts \$2

GEOGRAPHY (Geog)

Dean Phelps, M.A., Instructor, General College

- 7(c). Geography of Minnesota.** A geographical study of the physical and human resource base of this state with reference to the physical resources, the population, and the resultant patterns of distribution. (No prerequisite)
Phelps, 4 credits, \$28, materials \$1, texts \$4
- 41. Geography of Commercial Production.** An introductory course in economic geography with special emphasis on commodities of commercial significance. Particular attention is given to the world patterns of raw material occurrence and production, as well as to the associated centers of industrial fabrication. (No prerequisite)
5 credits, \$35, texts \$16.50 (registrations accepted January 1, 1959)

GEOLOGY (Geol)

Robert E. Sloan, Ph.D., Assistant Professor of Geology

- 2. Historical Geology.** An introductory treatment of the geological history of the earth. The changing physical conditions and the record of life during geologic times, with emphasis on the North American continent. (Prerequisite: Geol 1 or 8)
Sloan, 3 credits, \$21, texts \$6.50
- 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)
Sloan, 5 credits, \$35, texts \$7

GERMAN (Ger)

Herman Ramras, Ph.D., Associate Professor and Chairman, Department of German
Edwin F. Menze, Ph.D., Associate Professor of German

A German pronunciation record (33½ revolutions per minute) prepared by the German Department is available for about \$8. Each side will give about 13 minutes of basic German. A tape recording of the same material is available for approximately \$4.50. The recording is not required but strongly recommended. Order from the Correspondence Study Department.

- 1. Beginning German I.** Grammar and easy composition. 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)
Ramras, 5 credits, \$35, texts \$4

2. **Beginning German II.** Continuation of 1. (Prerequisite: Ger 1, or 1 year of high school German)
Ramras, 5 credits, \$35, texts same as Ger 1
3. **Beginning German III.** Grammar and composition continued; selected readings in easy prose and verse. (Prerequisite: Ger 2, or 2 years of high school German)
Menze, 5 credits, \$35, texts \$4
4. **Intermediate German.** Selections from modern narrative and descriptive prose. Assigned outside readings and reports. (Prerequisites: Ger 1, 2, and 3 or equivalent)
5 credits, \$35, texts \$6
24. **Introduction to Chemical German.** Selections of simple chemical German prose. Vocabulary and grammatical exercises. (No prerequisite)
Menze, 3 credits, \$21, texts \$2
- 25-26. **Chemical German.** Reading of works on chemistry. Vocabulary exercises. (Prerequisite: Ger 24, 1, or 1 year of high school German)
Course 25—3 credits, \$18, texts \$3.50
Course 26—Menze, 3 credits, \$18, texts \$4
33. **Medical German.** Intended primarily for medical students. Articles on anatomy, biology, embryology, comparative anatomy, surgery, and other fields of medicine. (Prerequisite: Ger 3 or equivalent)
Menze, 5 credits, \$35, texts \$5
57. **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: Ger 4)
2 credits, \$14, texts \$3.50
58. **Elementary Composition II.** Translation and grammar review. (Prerequisite: Ger 50)
2 credits, \$14, texts same as Ger 57
59. **Elementary Composition III.** Translation and writing of an original dialogue. (Prerequisite: Ger 51)
2 credits, \$14, texts \$5
- 73(c). **Drama I.** Study of the 19th-century drama in Germany. Selected plays of Hebbel, Hauptmann, or Sudermann, with assigned readings and reports. (Open to those who have completed Ger 1, 2, 3, and 4)
Menze, 4½ credits, \$31.50, text same as Ger 57 plus \$1.50
- 74(c). **Drama II.** Study of the German drama of the 18th century and through the classic period. Selected plays of Lessing, Goethe, or Schiller, with assigned readings. (Open to those who have completed Ger 1, 2, 3, and 4)
Menze, 4½ credits, \$31.50, texts \$8

GREEK (Grk)

William A. McDonald, Ph.D., Associate Professor of Classics

1. **Beginning Greek I.** Successful completion of courses 1 and 2 should provide the familiarity with the language necessary to launch out (with a dictionary and a modicum of courage) on the reading of ancient Greek authors of moderate difficulty. From the very start, short but authentic selections from the famous writers are read. A student should have no difficulty (other than new vocabulary) in reading most parts of the New Testament after course 2.
McDonald, 5 credits, \$35, text \$4

2. Beginning Greek II. (See Grk 1)

McDonald, 5 credits, \$35, text same as Grk 1

HEALTH (PubH)

Murray Bates, M.D., Assistant Professor of Public Health

3. Personal Health. Elementary principles of normal body function; predisposing and actual causes of disease; ways in which disease may be avoided. (No prerequisite; not open to students who have taken 10C [Human Biology] in General College or PubH 2, 5, 50 or 51)

Bates, 2 credits, \$14, texts \$11

50. Personal and Community Health. Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. (No prerequisite; not open to students who have taken 10C in General College or PubH 2, 3, 4, 5 or 51)

Bates, 3 credits, \$21, texts \$11

HISTORY (Hist)

Maude L. Lindquist, Ph.D., Professor and Head, Department of History, Duluth Branch

Tom B. Jones, Ph.D., Professor of History

Clarke A. Chambers, Ph.D., Associate Professor of History

Donald F. Warner, Ph.D., Associate Professor of History, Wisconsin State College (Eau Claire)

Paul L. Murphy, Ph.D., Assistant Professor of History

David W. Noble, Ph.D., Assistant Professor of History

Earl Spangler, M.A., Assistant Professor of History, Macalester College

Mary White, B.S., Instructor in History (Correspondence Study)

George A. Olkhovsky, B.A., Teaching Assistant in History

1. Civilization in the Modern World I. A survey of European history from 1500 to 1763. The emphasis is upon the rise of the state. (No prerequisite)

White, 3 credits, \$21, texts \$12.50

2. Civilization in the Modern World II. A survey of European history from 1763 to 1870. Emphasis is placed upon the struggle for control of the state. (No prerequisite)

White, 3 credits, \$21, texts same as Hist 1 plus \$6.50

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 world civilization in the 20th century. (No prerequisite)

White, 3 credits, \$21, texts same as Hist 2

4. English History I. Conquest and settlement, the feudal age, foreshadowings of limited monarchy and popular government. (No prerequisite)

White, 3 credits, \$21, texts \$9.50

5. English History II. Tudors and Stuarts, parliament versus king, colonization. (No prerequisite)

White, 3 credits, \$21, texts same as Hist 4

6. English History III. The coming of democracy, Britain and Europe, Empire and Commonwealth. (No prerequisite)

3 credits, \$21, texts same as Hist 4

7(c). Survey of Minnesota History. The political, social, and economic development of Minnesota from the period of European explorations to the present. Access to W. W. Folwell's *History of Minnesota* and the *Minnesota History*

magazine and other publications of the State Historical Society will be required. (No prerequisite; not open to those who have completed Hist 79)

Lindquist, 4 credits, \$28, texts \$4

- 8(c). 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 A.D. 1500. Throughout, 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. (No prerequisite; not open for credit to those who have completed Hist 1, 2, 3)

White, 4 credits, \$28, texts \$13

- 14. History of Ancient Civilization I.** A survey of the rise of civilization in the Ancient Near East from the earliest times to 500 B.C. Emphasis is placed upon the origin of culture and its development in complexity from the primitive to the civilized stage. Special attention is given to the civilizations of Babylonia, Egypt, Indus Valley, Syria, Palestine, and Crete. (No prerequisite)

Jones, 3 credits, \$21, texts \$8.50

- 14a. Basic Readings in Ancient Civilization I.** An introduction to the literature of the Ancient Near East and its relation to the Old Testament. The reading will include translations of Babylonian and Egyptian epics, religious texts, folk tales, and public records, Assyrian, Hittite, and North Syrian literature as well as the Greek epics. (Prerequisite: Hist 14 or concurrent registration)

Jones, 2 credits, \$14, texts \$5

- 15. History of Ancient Civilization II.** The history of the rise and flowering of Greek civilization from the earliest times to the death of Alexander the Great in 323 B.C. Special emphasis is placed on Greek civilization in the fifth century (Age of Pericles) with attention to the political, social, literary, artistic, and philosophic achievements of that period. (No prerequisite; Hist 14 helpful in providing a background for the Greek period)

Jones, 3 credits, \$21, texts same as Hist 14 plus \$3

- 15a. Basic Readings in Ancient Civilization II.** An introduction to the major authors of the classical Greek period. Selections from the poets, the dramatists, Herodotus, Thucydides, Xenophon, the orators, Plato and Aristotle. (Prerequisite: Hist 15 or concurrent registration)

Jones, 2 credits, \$14, texts, \$6.50

- 16. History of Ancient Civilization III.** The climax of ancient civilization during the Hellenistic Age (323-133 B.C.) and the Roman Imperial Period followed by the decline of Rome and of ancient civilization (to about A.D. 300). The three main topics to be considered are (a) the civilization of the ancient world at its peak, (b) the rise and flowering of Roman culture, and (c) the reasons for the decline of ancient civilization. Special attention will be paid to political institutions, art, literature, economics and society, philosophy, and ancient science. (No prerequisite; suggested that Hist 16 be preceded by Hist 14 and 15 in order that the student may acquire a background for the history of the Roman period)

Jones, 3 credits, \$21, texts same as Hist 14 plus \$6.50

- 16a. Basic Readings in Ancient Civilization III.** An introduction to the literature of the Hellenistic and Roman periods. Selections from poetry, drama, history, biography, science, philosophy, oratory, and letters. The New Testament and early Christian writings will be considered in their relation to pagan literature. (Prerequisite: Hist 16 or concurrent registration)

Jones, 2 credits, \$14, texts same as Hist 15a plus \$5

- 20. American History I, 1600-1844.** Colonial establishments; social, economic, and political development of the colonies; mercantilism; problems of empire; the

Revolution; the Constitution; Westward expansion; development of the American party system; foreign relations and the Monroe Doctrine; problems of nationalism and sectionalism.

Murphy, 4 credits, \$28 (registrations accepted October 1, 1958)

21. **American History II, 1844-1896.** Manifest Destiny and the Mexican War; problems of slavery; politics of sectionalism; roots of the Civil War; the War at home and abroad; Reconstruction; the passing of the frontier; the triumph of industrial capitalism; the problems of labor; immigration; agriculture and the Populist revolt.

Noble, 4 credits, \$28 (registrations accepted October 1, 1958)

22. **American History III, 1896 to present.** Resurgence of Manifest Destiny and the Spanish-American War; social problems at the turn of the century; the theory and practice of progressivism; Roosevelt, Taft, and Wilson; World War I; normalcy and reaction; Harding, Coolidge, and Hoover; the Jazz Age; retreat to isolation; depression and the New Deal; the world crisis and Pearl Harbor; problems of peace; Truman and foreign policy; the Eisenhower administrations.

Chambers, 4 credits, \$28 (registrations accepted October 1, 1958)

Note—The above sequence parallels the 12-credit American history program at the University of Minnesota. The following courses are open for registration now and for an indefinite period:

History 20A (1492-1790), Spangler, 3 credits, \$21, texts \$6

History 21A (1790-1877), Spangler, 3 credits, \$21, texts \$6

History 22A (1877-1950), Spangler, 3 credits, \$21, texts \$6

Write for additional information about these courses.

93. **American Diplomatic History I.** (1776-1846) Traces the early history of our foreign policy. Three principal aspects are treated: the origins and basic principles of American foreign policy; the fight for survival and recognition after the Revolution; and the drive for continental expansion. (Prerequisite: Hist 20 or equivalent)

Warner, 3 credits, \$21, texts \$13.50

95. **American Diplomatic History III.** A survey of the history of American foreign policy since 1909. The principal emphasis is placed upon the causes and consequences of our entry into the two world wars and our shift from isolationism to world leadership in foreign affairs.

Warner, 3 credits, \$21, texts same as Hist 93

100. **History of the Ancient Near East I.** The first civilization in the Ancient Near East. Main topics: the sources of our knowledge about the past with special attention to the role of archaeology; the beginnings of agriculture and the advent of civilization in the great river valleys; the Old Kingdom in Egypt and Sumerian period in Mesopotamia; the Egyptian Middle Kingdom; the Age of Hammurabi; characteristics of ancient Near Eastern civilization: literature, art and architecture, law, religion, economics, society, and technology. (Prerequisite: 9 credits in history; open to juniors and seniors without prerequisite)

Jones, 3 credits, \$21, texts \$8.50

101. **History of the Ancient Near East II.** The Age of Empires: 1600-1000 B.C. Main topics: the New Kingdom (Empire) in Egypt; the Hittite Empire; developments in Syria and Palestine with special attention to the Canaanites, Philistines, and Hebrews; the spread of civilization to Asia Minor and Aegean lands. (Prerequisite: same as Hist 100)

Jones, 3 credits, \$21, texts \$4

- 102. History of the Ancient Near East III.** A survey of developments in the period 1000-500 B.C. Main topics: Phoenicians; Hebrews; the Assyrian Empire; Assyrian civilization; the Age of Nebuchadnezzar; Saite period in Egypt; the Lydian kingdom; contacts between Greece and the Near East; the Persian Empire. (Prerequisite: same as Hist 100)
Jones, 3 credits, \$21 (registrations accepted after July 1, 1958)
- 125. Russian History I.** A survey of Russian history to the time of Peter the Great, including the origins of the Russian state, Kievan Russia, and the rise of Muscovy. (Prerequisite: Hist 1, 2, and 3 or equivalent)
Olkhovsky, 3 credits, \$21, texts \$11
- 126. Russian History II.** Covers the period from Peter the Great through the Crimean War and includes the study of the Europeanization of Russia and the crystallization of the Empire. (Prerequisite: Hist 1, 2, and 3 or equivalent)
Olkhovsky, 3 credits, \$21, texts same as Hist 125
- 127. Russian History III.** A survey of the last years of the Russian Empire, the background of the revolution, and the establishment and history of the Soviet government. (Prerequisite: Hist 1, 2, and 3 or equivalent)
Olkhovsky, 3 credits, \$21, texts same as Hist 125

HOME ECONOMICS (HE)

(See page 21)

HORTICULTURE (Hort)

Robert A. Phillips, M.S., Assistant Professor of Horticulture

- 24. Home Landscape Planning.** Planning the home grounds for greater use and enjoyment, with an introduction to the principles of landscape design, their application and importance in the use and decoration of the home grounds. Uses an artistic approach to the problems and prospects of home landscaping which 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. A practical program of study for nurserymen, teachers, homeowners, and others interested in home landscaping. (No prerequisite)
Phillips, 3 credits, \$21, texts \$5.50
- 51. Garden Flowers and Home Gardening.** A broad general study of the principles and practices of gardening especially prepared for beginners, but also valuable for the advanced or experienced gardener. There will be textbook assignments and practical home projects in propagating plants for the garden. Some of the topics covered will be planting, transplanting, seeds, soils, fertilizers, preparing beds and planting areas, selecting a good garden site, controlling insects and diseases, weeding, watering, cultivating, pruning, tools, and equipment. Lists of recommended varieties of annuals, perennials, bulbs, and roses for northern gardens will be supplied. Similar lists for other areas of the country can be secured from state agricultural colleges and experiment stations and from the U.S. Department of Agriculture. (No prerequisite)
Phillips, 3 credits, \$21, texts \$1.50

HUMANITIES (Hum)

Philip Siegelman, M.A., Instructor in Interdisciplinary Studies, Humanities Program
David Brown, M.A., Teaching Assistant in Interdisciplinary Studies, Humanities Program

- 1. Humanities in the Modern World I.** The old regime, the revolution and Napoleon. Period: from about 1770 to about 1830. Authors: Voltaire, Rousseau,

Burke, Paine, Goethe, and the poets. One historical novel, Tolstoy's *War and Peace*. (No prerequisite)

Siegelman, 3 credits, \$21, texts \$10.50††

- 3. Humanities in the Modern World III.** The impact of science and evolution on philosophy, religion, and the prevailing values of western Europe from about the middle of the 19th century to the opening of World War I. Writings by the influential scientists and philosophers of the latter half of the 19th and early 20th centuries. Essays by Darwin, Bagehot, T. H. Huxley, Newman, Bergson, Haeckel, Wallace, and others. Full length works by Kierkegaard, Nietzsche, Chekhov, James Joyce, Thomas Mann.

Siegelman, 3 credits, \$21 (registrations accepted September 15, 1958)

- 4. Humanities in the Modern World IV.** Civilization between two wars; the impact of psychoanalysis; a critique of communism; a prediction of the future. Period: from World War I to the present. Authors: Huxley, Bellamy, Freud, O'Neill, Lenin, Malraux, Koestler. (No prerequisite)

Brown, 3 credits, \$21, texts \$7.50††

INDUSTRIAL RELATIONS (IR)

(See Industrial Relations Certificate Requirements, page 14)

(See courses in Business Administration and Economics, pages 21, 26)

Thomas Mahoney, Ph.D., Assistant Professor of Economics and Industrial Relations
Thomas H. Jerdee, M.A., Research Fellow in Industrial Relations

- 1(c). Supervision I.** A study of the basic principles of supervision and leadership. Survey of the problems of industrial relations and personnel management met with in day-to-day supervision with emphasis upon human relations. Practical aspects of these problems are emphasized. Included is a coverage of selection, induction, and training of employees, status of supervisors, merit rating, giving orders, and labor legislation affecting the supervisor's job. (No prerequisite)

Jerdee, 3 Extension credits only, \$21, texts \$5.50

- 2(c). Supervision II.** Covers advanced techniques based on principles of supervision discussed in 1(c). Morale measurement, job analysis, employee selection and training, principles of work organization and employee communications are discussed. (Prerequisite: IR 1(c))

Mahoney, 3 Extension credits only, \$21, texts \$5

INTERIOR DECORATION

(See Art, page 20)

ITALIAN (Ital)

Emmert M. Brackney, Ph.D., Associate Professor of Romance Languages

- 1. Beginning Italian I.** Elements of pronunciation, grammar, and suitable readings. Emphasis upon accurate translation and composition. (No prerequisite)

Brackney, 5 credits, \$35, texts \$5.50

†† Includes books which are available at most libraries.

JOURNALISM (Jour)

Edwin Emery, Ph.D., Professor of Journalism
 George S. Hage, Ph.D., Associate Professor of Journalism
 William A. Mindak, Ph.D., Assistant Professor of Journalism
 John C. Sim, M.A., Assistant Professor of Journalism
 Robert G. Lindsay, M.A., Instructor in Journalism

- 13. Introduction to Reporting.** 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: Comp 4-5-6 or consent of instructor)
 Sim, 3 credits, \$21, texts \$4.50
- 14. Newspaper Reporting I.** Continued study of the news gathering and of writing the "straight" news story; the human interest or feature story; analysis of newspapers; special types of reporting; advanced interviewing. Numerous writing assignments. (Prerequisite: Jour 13)
 Sim, 3 credits, \$21, texts same as Jour 13
- 15. Newspaper Reporting II.** Study of newspaper law, including libel, rights of the press, study of "privilege," and other legal regulations affecting the press; advanced reporting; the interpretative story; the newspaper feature story. Numerous writing assignments. (Prerequisite: Jour 14)
 Sim, 3 credits, \$21, texts \$3.25
- 70. Advertising Copy Writing.** Problems and techniques of writing copy for newspapers, magazines, direct mail, posters, brochures; radio and television. Study of relation of advertising appeals to the audience and medium. (Prerequisite: Jour 41 or 51 or consent of instructor)
 Mindak, 3 credits, \$21, texts \$7
- 73. Newspaper and Magazine Articles I.** A study in the writing of factual and opinion articles, interviews and expository articles, both serious and feature, for newspapers and magazines. Main emphasis is laid on the journalistic type of article rather than the essay type. (Prerequisite: Jour 15; not open to those who have completed Jour 69)
 Hage, 3 credits, \$21, texts \$5
- 78. Public Relations.** Techniques of interpreting business and industrial organizations, educational and scientific institutions, social welfare groups, government agencies, and other organizations to the public through the press, radio, trade papers, magazines, pamphlets, circulars, bulletins, direct mail, etc. An analysis of the methods of using each of the media. Policy determinants in public relations. (Prerequisite: Jour 69 or 73 or consent of instructor)
 Emery, 3 credits, \$21, texts \$4.50
- 86. Problems of Radio and Television Writing.** Introduces the student to the lines of experience in both major fields of broadcasting. More emphasis is placed on radio than on television since radio is good foundation for learning television. Starts with the simplest kind of radio writing and progresses by logical steps to more complex work. Numerous writing assignments are made, and optional exercises are provided for additional experience. (Prerequisite: Comp 4-5-6 or consent of instructor)
 Lindsay, 3 credits, \$21, texts \$7

LATIN (Lat)

Margaret Forbes, M.A., Assistant Professor of Classics

The following courses represent a graded sequence completing Junior College requirements, or the equivalent of 4 years of high school Latin. The prerequisite for each course (except course 1) is the course immediately

preceding, or equivalent credit. Students who have completed the first 3 courses or the equivalent, however, may register for Lat 4, 5, or 6. Those who wish to increase aural-oral facility may want to supplement their course work by using drill-practice records or tapes. While these are not required for the courses outlined, students will find their individual study made easier, more interesting, and more satisfying if they are able to make use of these audio-aids. There are at least two private sources making recordings in Latin. Names and addresses will be sent on request. Write to the Correspondence Study Department or to the Classics Department, University of Minnesota.

1. **Beginning Latin I.** Basic grammar and vocabulary; practice in reading and writing Latin; workbook exercises; easy Latin readings and Roman legends. (No prerequisite)
Forbes, 5 credits, \$35, texts \$5.50
2. **Beginning Latin II.** Continuation of 1. Similar in content and method, leading to connected reading in *Fabulae Faciles* (Easy Stories).
Forbes, 5 credits, \$35, texts same as Lat 1 plus \$1.75
3. **Intermediate Latin Reading.** A review of the elements of 1 and 2, with a shift of emphasis to longer passages of continuous reading on Roman life. A considerable amount of historical and literary background is presented in English to orient the student to the material.
Forbes, 5 credits, \$35, texts \$4
4. **Selections from Latin Prose and Poetry.** The student has an opportunity to read selections from the most famous public addresses of Cicero, and to gain, through the English descriptive passages, an understanding of their importance then and now. Through reading some of the *Tales of Ovid* in the original Latin verse, he may become better acquainted with mythology and its influence upon the literature of our time. Other poets and prose writers are included. These selections have been made from the standpoint of present-day interest.
Forbes, 3 credits, \$21, texts \$4
5. **Vergil's Aeneid.** Readings of selections from Books I-II; background reading in Roman life and thought is included in the text.
Forbes, 5 credits, \$35, texts \$3
6. **Cicero.** Readings from the most famous humanistic essays.
Forbes, 3 credits, \$21, texts \$1

LIBRARY SCIENCE (Lib)

Joyce Davenport, M.A., Instructor in Library Science (Correspondence Study)

52. **Descriptive Cataloguing.** The forms and principles involved in making a dictionary card catalogue. Based primarily on *Akers Simple Library Cataloging*. Directions for the use of printed cards prepared by the Wilson Company and the Library of Congress. (No prerequisite; recommended that 52 precede 54)
Davenport, 3 credits, \$21, materials \$2.15, texts \$10.35
54. **Elementary Classification and Subject Heading.** Based on the unabridged edition of the *Dewey Decimal Classification* and *Sears List of Subject Headings for Small Libraries*. Aims to give an understanding of methods of classification and the principles of assigning subject headings to books in a library. Attention is given to modifications and adaptations useful in school or small

public libraries. Includes use of Cutter-Sanborn author numbers and preparation of a shelf-list. (No prerequisite)

Davenport, 3 credits, \$21, materials \$3.10, texts \$22.40††

MATHEMATICS (Math)

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

Warren S. Loud, Ph.D., Associate Professor of Mathematics

Charles Hatfield, Ph.D., Assistant Professor of Mathematics

Robert W. Deming, M.A., Instructor in Mathematics

David Lewis, M.A., Instructor in Mathematics

Engineering Mathematics. See page 30.

High School Mathematics. See page 59.

1. Higher Algebra. A review and a collegiate treatment of the topics of elementary algebra for those who have 1 year of elementary algebra. (Open for credit to any student offering 1 year of elementary algebra but not more than ½ year of high school higher algebra for entrance)

Lewis, 5 credits, \$35, texts \$5

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: plane geometry and either Math 1 or high school higher algebra††; students offering high school trigonometry for entrance will receive college credit)

Deming, 5 credits, \$35, texts \$6

7. College Algebra. Quadratic equations, simultaneous quadratic equations, progressions, the binomial theorem, mathematical induction, inequalities, complex numbers, theory of equations, permutations and combinations, probability, and determinants. (Prerequisite: Math 6 or high school trigonometry)

Loud, 5 credits, \$35, texts \$5

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: Math 6 and 7, or 7 and 9(c), or 8, or 15 and 16)

Lewis, 5 credits, \$35, texts \$6.50

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: Math 6 and 7, or 15 and 16)

Lewis, 5 credits, \$35, texts \$4

50. Calculus I. Differential calculus. Limits, continuity, differentiation, maxima and minima, applications to geometry and physics, differentials, law of the mean, indeterminate forms, convergence of series, series expansion and partial differentiation. (Prerequisite: Math 30)

Loud, 5 credits, \$35, texts \$5.50

†† Includes books which are available at most libraries.

†† A substantial high school course in advanced algebra for 1 semester is sufficient. However, some students with less than 1 year of advanced high school algebra may prefer to take Math 1 before 6 or 8.

- 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: Math 50)
Loud, 5 credits, \$35, text same as Math 50
- 62. Theory of Equations I.** Complex numbers, solution of algebraic equations, properties of polynomials, isolation of the real zeros of a real polynomial, determinants and linear equations. (Prerequisite: Math 50)
Lewis, 3 credits, \$21, texts \$4
- 106. Differential Equations.** A problem course in the solution of ordinary differential equations, with the basic theory necessary for the development of the methods to be used. (Prerequisite: Math 51)
Hatfield, 3 credits, \$18, texts \$7

MUSIC (Mus)

Mary E. Malcolm, M.A., Associate Professor of Music
Paul Fetler, Ph.D., Assistant Professor of Music

- 4. Harmony I.** Intervals, triads, major and minor scales, the structure and progression of four-part chords based upon the triad and its inversions, part-writing, melody, harmonization, modulation, analysis.
Malcolm, 3 credits, \$21, texts \$5.50
- 5. Harmony II.** Continuation of 4, with the addition of nonharmonic tones and diatonic seventh chords.
Malcolm, 3 credits, \$21, texts same as Mus 4 plus \$3.50
- 6. Harmony III.** Continuation of 5, with the addition of chromatically altered non-harmonic tones, chromatically altered chords, and modes.
Malcolm, 3 credits, \$21, texts same as Mus 4

Note—Mus 4, 5, 6 correspond to the written portion of Music Theory for resident students in the Department of Music, University of Minnesota.

- 9(c). Counterpoint.** Counterpoint is the creative study of writing one or more independent melodies against each other in a strict style. Such a study is of great value in particular to the student of composition. Course is based directly on 16th-century polyphony. Works of Lassus and Palestrina are examined and the rules for writing formulated accordingly. An elementary course. The student learns the writing of good melodic lines and gradually continues with two-voice counterpoint. The writing of canon is an important part of this course. (Prerequisite: general knowledge of music theory)
Fetler, 3 credits, \$21, texts \$7.50

NORWEGIAN (Scan)

Marion John Nelson, M.A., Instructor in Scandinavian

- 1. Beginning Norwegian I.** Complete survey of Norwegian grammar. Composition. Reading of easy prose. (No prerequisite)
Nelson, 5 credits, \$35, texts \$3
- 2. Beginning Norwegian II.** Study of short stories and Björnson's *En Glad Gut*. Reading and composition. (Prerequisite: Scan 1 or equivalent)
Nelson, 5 credits, \$35, texts \$2.50
- 3. Intermediate Norwegian.** Continuation of 2. Based on Björnson's *Synnöve Solbakken*. Reading and composition. (Prerequisite: Scan 2 or equivalent)
Nelson, 5 credits, \$35, texts \$2

PARLIAMENTARY PROCEDURE

Ralph E. Miller, M.S., Associate Professor, School of Agriculture

A41. Parliamentary Procedure. Fundamental principles and practices of parliamentary law essential for conducting meetings and participating in community organizations. Particular emphasis is given to discussion of problems relative to federated clubs, P.T.A., Legion Auxiliary, extension organizations, farm organizations, such as: Grange, Farm Bureau, Farmers Union, 4-H clubs, and Future Farmers of America. Topics to be considered will include formation of organizations, drafting of constitutions, duties of officers, motions, amendments, nominations, and elections. (No prerequisite)

Miller, 2 Extension credits only, \$14, texts \$3.50

PHILOSOPHY (Phil)

A. Carl Ahlen, Ph.D., Professor of Philosophy, Northwestern Lutheran Theological Seminary
Reginald E. Allen, Ph.D., Visiting Lecturer in Philosophy

1. Problems of Philosophy. Is there any principle or set of principles in terms of which we can understand man, experience, and the world? Does life have a meaning? What, if anything, can we know? What are good and evil? Is the nature of reality discoverable? How, if at all, are religion, science, art, and politics interrelated? Attempts to answer these questions are considered. Proposed solutions by the world's great minds, ancient and modern, are examined. The student is encouraged to do critically reflective thinking of his own concerning these basic issues.

Ahlen, 3 credits, \$21, texts \$6

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 hypotheses? 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)

Ahlen, 3 credits, \$21, texts \$8

3. Ethics. A study of the principles and problems of right and wrong in human relationships. The course will include such topics as the following: The history of moral development, the ethical theories of classical philosophy, the problems of free-will, the nature of man, the ethical problem involved in international relations and in other social problems, the relationship of religion to ethics. (No prerequisite)

Ahlen, 3 credits, \$21, texts \$9††

10. Science and Religion. Inquiry into nature of science and religion as currently interpreted, with an attempt to find grounds of conflict and/or reconciliation. (No prerequisite)

Allen, 2 credits, \$14, texts \$5.50 (registrations accepted October 1, 1958)

PHYSICAL EDUCATION (PE)

Gertrude Baker, Ed.D., Professor and Director of Physical Education for Women
Ralph Piper, Ed.D., Professor of Physical Education
Herschel R. Giles, M.A., Associate Professor of Physical Education
Marjorie U. Wilson, Ph.D., Associate Professor of Physical Education

†† Includes books which are available at most libraries.

Fred Chapman, M.A., Assistant Professor of Physical Education
 Eloise M. Jaeger, Ph.D., Assistant Professor of Physical Education
 Maurice Ostrander, M.Ed., Assistant Professor of Physical Education
 Helen Slocum, Ph.D., Assistant Professor of Physical Education
 Gordon L. Starr, M.Ed., Assistant Professor of Physical Education
 Gerald B. Fitzgerald, Re.D., Lecturer in Physical Education

- 11.a.b.c. Survey of Recreational Activities.** Serves the student as an introduction to many areas of and kinds of recreational activities. It is designed to acquaint the student with many recreational activities that surround him every day, and enable him to better understand the world in terms of leisure and recreation. The beginning student should find the course and course material a good orientation for his professional choice, and other students should be encouraged to seek additional information and training.
 Starr, 3 credits, \$21, texts \$6
- 32. Introduction to Principles of Physical Education.** Principles and problems connected with the philosophy, organization, administration, program construction, and methods of teaching physical education. (No prerequisite; open to men only)
 Ostrander, 3 credits, \$18, texts \$11.50
- 48. Methods in Supervision of Recreation.** The various in-service training devices and supervisory techniques common to recreation programs in communities and hospitals are considered. Necessary qualities, traits, and characteristics of the supervisor are reviewed along with the purposes and advantages of good supervision. This course should be of value to those in formal and informal settings who find it necessary to deal effectively with personnel in working relationships.
 Chapman, 3 credits, \$21, texts \$4
- 49. Social Aspects of Leisure.** Designed to acquaint the student with leisure and recreation as basic forces in the social and economic structure of our society. It stresses the nature of leisure and recreation with particular reference to their relationships. Attention is focused upon leisure and recreation as parts of daily living in our society and as products of our social progress. (No prerequisite)
 Fitzgerald, 3 credits, \$21, texts \$6
- 50. Orientation to Recreation in Hospitals.** Introductory principles of hospital recreation are examined. A general description of types of hospitals and their patients' activities programs are studied. The philosophy and purposes of hospital recreation as well as the program content is highlighted. Beginning methods in the leadership and supervision of recreation programs for patients in hospitals are featured.
 Chapman, 3 credits, \$21, texts \$8.50
- 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. (No prerequisite)
 Giles, 3 credits, \$21, texts \$9
- 57. Operation of Recreation Centers.** 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)
 Fitzgerald, 3 credits, \$21, texts \$12
- 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 gymnasium and athletic fields. (No prerequisite; open to men only)

Piper, 3 credits, \$21, texts \$11.50

- 82. Principles of Physical Education.** Principles of philosophy, curriculum, method, and evaluation are studied in the light of their psychological, biological, and social significance. (No prerequisite; open to women only)

Wilson, 3 credits, \$21, texts \$10

- 83. School Health Education: Method and Content.** Study of scope of field, principles underlying the development of a program, curricular suggestions on elementary and secondary level, methods and materials for teaching, steps in unit planning, and evaluation of the instructional program. (No prerequisite)

Slocum, 3 credits, \$21, texts \$8

- 84. The Physical Education Program in the Elementary and Secondary School.** Curricular problems in physical education are studied in relation to the best thinking in general education. Both elementary and secondary levels are considered but individual application may be made to specific level. (Prerequisite: senior major or minor in physical education, experienced elementary classroom teacher, or consent of instructor)

Jaeger, 3 credits, \$21, texts \$12

- 95. Administration of Physical Education.** A study of the co-ordination of the various aspects of the physical education department concerned with children, girls, and women. Stress is placed upon the administration of the balanced program, organization of groups, persistent problems in the conduct of the girls' physical education program, facilities, equipment, finance, promotion, and ethics; relationships to the school as a whole and the community are considered throughout. (No prerequisite; open to women only)

Baker, 3 credits, \$21, texts \$8

PHYSICS (Phys)

Fritjof E. Christensen, M.A., Professor of Physics, St. Olaf College
Joseph Valasek, Ph.D., Professor of Physics

- 1. Introduction to Physical Science I.** An introductory course in the study of mechanics. Emphasis on the physical laws and principles and their applications. Mathematics can be shown to clarify the ideas of physics and, to this extent, it is the purpose of the course that a certain amount of problem solving be done. (Prerequisite: high school elementary algebra and plane geometry)

Christensen, 3 credits, \$21, texts \$8 (registrations accepted June 1, 1958)

- 16(c). 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. Prepares the student to continue with other courses in physics or engineering. (Prerequisite: trigonometry and higher algebra, preferably college algebra)

Christensen, 3 credits, \$21, texts \$8

- 29. Introduction to Meteorology.** Fundamental physical principles and first elements underlying meteorological study, weather map analysis and construction; also local meteorological observation. (Prerequisite: algebra and high school physics)

Valasek, 3 credits, \$21, texts \$9.50

- 35. Photography.** An elementary course on the science and technique of photographic reproduction in monochrome and in color. Emphasis will be on the physical principles which are the basis for the operation or use of cameras, lenses, shutters, enlargers, filters, exposure meters, and sensitive materials used in black-and-white and in color photography. It is expected that those

registered for the course possess and use some kind of photographic equipment. However, there will not be any assigned laboratory projects, but some will be recommended for those who wish to improve their photographic skill or learn new procedures. Essentially a course in physics on the college freshman level dealing with selected topics which have important applications in the science and practice of photography. (Prerequisite: high school algebra and geometry)

Valasek, 3 credits, \$21, texts \$7

POLISH (Plsh)

Kristina Trendota, Ph.D., Instructor, Oberlin College

- 1. Beginning Polish I.** An introduction to the Polish language. Students will acquire a working knowledge of the structure of the language and facility in reading selected works of Polish prose. There are two 12-inch, 78 rpm recordings that accompany the course. The first is required, the other recommended. These cover basic pronunciation. The same material is available on phonotapes at about half the cost of records. (No prerequisite)

Trendota, 5 credits, \$35, texts \$2.50, records \$3.50 each

POLITICAL SCIENCE (Pol)

Lennox A. Mills, Ph.D., Professor of Political Science
 Harold S. Quigley, Ph.D., Professor Emeritus of Political Science
 John E. Turner, Ph.D., Associate Professor of Political Science
 George Warp, M.A., Associate Professor of Political Science
 Dorothy Dodge, Ph.D., Assistant Professor of Political Science, Macalester College
 William A. Hambley, M.A., Teaching Assistant in Political Science
 William L. Hathaway, B.A., Teaching Assistant in Political Science

(See Public Administration Certificate, page 13)

- 1. American Government and Politics I.** Designed to provide an intelligent understanding of certain fundamental features of our national government: the nature of the constitution, the protection of individual rights and liberties, political parties, public opinion, nominations, and elections. (No prerequisite)
 Hambley, 3 credits, \$21, texts \$10
- 2. American Government and Politics II.** Gives the student knowledge 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. Problems related to all branches of the government will be considered. (No prerequisite)
 Hambley, 3 credits, \$21, texts same as Pol 1
- 4(c). The United Nations.** For students, community leaders, teachers, and others interested in learning more about the functions and activities of the United Nations. The 12 lessons give a comprehensive survey of the economic, political, and social programs of the UN—their successes and failures. The course is useful also for discussion or study groups. (No prerequisite)
 Dodge, 2 Extension credits only, \$14, texts \$1.50
- 7(c). Comparative European Governments.** Deals with the governmental systems and politics of Great Britain, France, Soviet Russia, Germany, and Sweden. Emphasis is placed on the institutional structures, political customs, ideologies, problems of administration, and crisis government. (No prerequisite)
 Turner, 3 credits, \$21, texts \$6
- 10(c). Survey of American Government and Politics.** Designed to give the student an understanding of the fundamental principles and practices of national, state, and local government in the United States. 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; not open for credit to those who have completed Pol 1 and 2)

Hathaway, 4 credits, \$28, texts \$10

- 25. World Politics.** The world since 1914. Explains 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, and of domestic politics on foreign policy, imperialism, armaments and international organizations including the League of Nations and the United Nations. The effect of world events on American interests. (No prerequisite)

Mills, 3 credits, \$21, texts \$7

- 60. Introduction to Public Administration.** Study of administrative organization and management, emphasizing formal and informal organization structure, intergovernmental administrative relations, current reorganization theory, and administrative powers and responsibility. (No prerequisite)

Warp, 3 credits, \$21, text \$7

- 62. Public Personnel Administration.** Survey of personnel administration on all levels of government. Organization, position classification, pay standardization, recruitment, training, employee relations, employee conduct, working conditions, efficiency ratings, separation, and retirement. (No prerequisite)

Warp, 3 credits, \$21, texts \$6

- 89. Japanese Government and Politics.** A survey of political development in Japan, with emphasis upon the postwar period. Topics included are the emperor, cabinet and civil service, the parliament, the courts, political parties and elections, and local government. Deals with the transition from feudalism to constitutional government, the struggle between democratic elements and militarism, the reforms of the postwar occupation, and recent changes. (No prerequisite)

Quigley, 3 credits, \$21, texts \$5

- 94. The Far East in International Relations.** World War II expanded our conception of the "Far East," adding to China, Japan, and Korea, Thailand and the new states which were regarded formerly as parts of colonial Southeast Asia. This course, therefore, includes the postwar position and foreign policies of Japan, the two "Chinas," Korea, the Philippines, Vietnam, Malaya, Burma, Thailand, and Indonesia. (No prerequisite)

Quigley, 3 credits, \$21, texts \$7

PSYCHOLOGY (Psy)

Wendell White, Ph.D., Associate Professor of Psychology

Dorothy M. Bird, Ph.D., Instructor in Psychology (Correspondence Study)

- 1a(c). Application of Psychology to Living.** Devoted to psychology in personal relationships and in the achievement of mental health. Centers, for the most part, around our fundamental needs—the source of all our actions and satisfactions—and presents principles highly applicable in the life of every person. (No prerequisite; may be taken with the same satisfaction before or after Psy 1-2)

White, 3 credits, \$21, texts \$4.50

- 1. General Psychology I.** The study of the beginnings of behavior, its development, and the factors that influence its development. Methods of investigation. Individual differences. (No prerequisite)

White, 3 credits, \$21, texts \$6.50

- 2. General Psychology II.** Further study of some of the topics taken up in course 1, and orientation of the student to problems of psychology in general. (Prerequisite: Psy 1)

White, 3 credits, \$21, texts same as Psy 1 plus \$2

- 144. Abnormal Psychology I.** A comparison of normal and abnormal behavior. The nature of personality maladjustments with emphasis on the dynamics and social determinants of behavioral disorders. Study of the functional psychoses. (Prerequisite: 9 credits in psychology, or 6 credits in psychology with either 10 credits in zoology or 12 credits in social science, or consent of instructor)

Bird, 3 credits, \$21, texts \$12.50

- 145. Abnormal Psychology II.** Continuative study of abnormal behavior, with emphasis on the psychoneuroses, organic psychoses, and associated personality disorders. Consideration of therapeutic methods. (Prerequisite: Psy 144 or consent of instructor)

Bird, 3 credits, \$21, texts same as Psy 144

Note—Students using Psy 144 and 145 for credit in a degree program at the University of Minnesota *must complete both* courses; that is, 6 credits must be earned in abnormal psychology.

Child Psychology. See page 25.

Psychology of Adolescence. See page 25.

Social Psychology. See page 55.

PUBLIC HEALTH

(See page 40)

READING

Louise Klohn, M.A., Instructor in English (Correspondence Study)

- 1(c). Home Reading Course.** The 8 lessons in this course provide 8 lists of books on subjects of current interest, such as science, history, sociology, fine arts, government, etc. The student reads at least two books from each list and reports on them. The aim is to follow a systematic plan of reading that will help the average person to become better informed. Particularly designed for members of the Federation of Women's Clubs who are anxious to qualify for the Epsilon Sigma Omicron reading award. Course is available on an individual lesson basis. Write for introduction that will give topic for each lesson. (No prerequisite and no credit toward university degree or certificate programs)

Klohn, \$8, or \$1 per lesson, no texts

ROMANCE LANGUAGES

(See pages 38, 44, 56)

RUSSIAN (Russ)

Pearl C. Niemi, Ph.D., Assistant Professor of Slavic Languages

- 1. Beginning Russian I.** Prepares for a reading and writing knowledge of the Russian language. Will acquaint the student with the Russian script; pronunciation; the essentials of grammar; translations from Russian and into Russian; interpretation of easy Russian short stories. (No prerequisite)

Niemi, 5 credits, \$35, texts \$6

2. Beginning Russian II. A continuation of Beginning Russian I. (Prerequisite: Russ 1)

Niemi, 5 credits, \$35, texts same as Russ 1

SALESMANSHIP

Steele S. Stanchfield, B.A., Instructor in Business (Correspondence Study)

1(c). Salesmanship. A course in the art and techniques of effective salesmanship. Major emphasis placed on practical aspects with various case histories presented.

Stanchfield, 3 Extension credits only, \$21, texts \$15.50

SCANDINAVIAN LANGUAGES

(See pages 48, 58)

SLAVIC (Slav)

Thomas F. Magner, Ph.D., Associate Professor and Chairman, Department of Slavic Languages

A pronunciation record (33 $\frac{1}{3}$ rpm) covering basic Serbo-Croatian is available for \$8. Each side will run for about 13 minutes. A tape recording of the same material is also available from the Correspondence Study Department. The recording is not required but is strongly recommended.

1. Beginning Serbo-Croatian. An introduction to the Serbo-Croatian language. Objectives of the course will be the mastery of the essentials of grammar, facility in reading easy texts in both the Cyrillic and the Latin alphabet, and the ability to write simple themes in Serbo-Croatian. (No prerequisite)

Magner, 5 credits, \$35, texts \$4.50

Other Slavic and Oriental languages. See pages 26, 54.

SOCIOLOGY (Soc)

Elio D. Monachesi, Ph.D., Professor and Chairman, Department of Sociology

Arnold M. Rose, Ph.D., Professor of Sociology

George H. Weber, Ph.D., Chief, Division of Diagnosis and Treatment, Minnesota Youth Conservation Commission

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. 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)

Monachesi, 3 credits, \$21, texts \$6.50

3. Social Problems. A study of the structure of modern society and the on-going changes in it that create problems. The approach is two-fold: (a) a study of the sociological and social psychological theories that explain social problems; and (b) an attempt to find practical solutions of modern social problems within a carefully defined framework of values.

Rose, 3 credits, \$21, texts \$10

53. Elements of Criminology. This course is a general survey of the field of criminology that analyzes the factors associated with the development of

criminal behavior and reviews the methods of treating the adult offender. Affiliated problems of crime control and prevention are also considered. (Prerequisite: Soc 1 or consent of instructor)

Weber, 3 credits, \$21, texts \$6.50 (registrations accepted October 1, 1958)

- 120. Social Psychology.** An analysis of the social aspects of personality growth and personality interaction. Personality motivation and adjustment in the group situation. Prejudice, public opinion, propaganda, leadership are analyzed. Psychological aspects of social problems such as personality disorganization, crowd behavior, social control, family adjustment, and war. (Prerequisite: Soc 1 or consent of instructor)

Rose, 3 credits, \$21, texts \$5

- 123. Intergroup Relations.** A consideration of historical and psychological factors in group prejudice; the concept of minority group, Caucasoid immigrant groups; non-Caucasoid groups in the United States with special reference to the Negro; adjustment and action programs. (Prerequisite: Soc 1 or consent of instructor)

Rose, 3 credits, \$21, texts \$10 (registrations accepted July 1, 1958)

- 141. The Family.** Origin of family life; variability and change of family institutions and mating customs; contemporary parent-child relationships; adolescence; mate finding; marital adjustments; divorce and other family problems; prediction of marital success; theories of family reform. (Prerequisite: Soc 1 or consent of instructor)

Rose, 3 credits, \$21, texts \$6.50

SPANISH (Span)

Emmert M. Brackney, Ph.D., Associate Professor of Romance Languages

James Cuneo, Ph.D., Associate Professor of Romance Languages

Herbert Willging, Ph.D., Associate Professor of Foreign Language, St. Thomas College

Two 12-inch, 78 rpm records have been prepared covering basic Spanish pronunciation. The first gives the pronunciation of vowels, consonants, diphthongs, and triphthongs. The second record gives pronunciation exercises in Spanish with some translation. Two voices are used, and each record will run 10 minutes. The cost of each record is \$4. The same material is available on tapes for about half the cost.

Tape recordings covering basic Spanish pronunciation, stress, linkage, and Spanish-American songs are available at the State Department of Education, State Office Building, St. Paul. Refer to their bulletin, *Tapes for Teaching*.

- 1A(c). Spanish in Slow Motion.** A new and somewhat experimental course based on eight 30-minute tape-lessons. The sounds of Spanish are presented through a series of words, phrases, and sentences, each pronounced slowly and repeated by authoritative native voices. The principles of pronunciation are introduced one at a time, with extensive practice of each new sound or principle. The course has been planned to make maximum use of the aural-oral approach, and the written assignments will be based on information gained from the tapes. Write for special booklet describing this course. (No prerequisite)

Willging, 3 credits, \$21, tapes \$30 (\$15 refunded if tapes returned in good condition)

- 1. Beginning Spanish I.** Grammar and reading. Stress will be laid upon grammar, accurate translation, and composition. (No prerequisite)

Cuneo, 5 credits, \$35, texts \$5

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

Cuneo, 5 credits, \$35, texts \$4

- 3. Intermediate Spanish I.** Review of grammar; composition, reading of modern Spanish text. (Prerequisite: Span 2 or equivalent)
Brackney, 5 credits, \$35, texts \$4
- 4(c). Intermediate Spanish II.** Continuation of 3, which is prerequisite.
Brackney, 5 credits, \$35, texts \$5
- 7. Latin-American Culture** (in English). 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 20 countries of Latin America. Readings in English; Spanish not necessary. (No prerequisite)
Cuneo, 3 credits, \$21, texts \$6.50
- 52. Spanish Commercial Correspondence.** Specialized material in Spanish commercial correspondence. Gives the student sufficient knowledge of commercial Spanish to enable him to understand and to handle commercial correspondence in Spanish. 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, telegrams and cablegrams, Spanish abbreviations used in Spanish correspondence, and business vocabulary. Is 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: Span 3)
Cuneo, 5 credits, \$35, texts \$5.50
- 53. Elementary Spanish Composition.** Connected prose composition dealing with everyday life in Spain. The aim is the ability to write Spanish. (Prerequisite: Span 4 or equivalent)
Cuneo, 3 credits, \$21, texts \$6
- 60. Advanced Spanish Composition.** Continuation of 53, which is prerequisite.
Cuneo, 3 credits, \$21, texts \$5

SPEECH AND THEATER ARTS (Spch)

Kenneth L. Graham, Ph.D., Professor of Speech and Theater Arts
David W. Thompson, Ph.D., Professor of Speech and Theater Arts
Louise Klohn, M.A., Instructor in English (Correspondence Study)

Survey of Dramatic Literature. See page 35.

- 1(c). Vocabulary Building.** A practical course designed to increase the student's speaking and reading vocabulary. The lessons and exercises will stimulate interest and afford practice in the proper use of words, provoke word collecting and suggest substitutes for overworked words. (No prerequisite; course cannot be used for credit toward a teacher's certificate; see page 5)
Klohn, 3 Extension credits only, \$18, texts \$1.50 without and \$6.50 with dictionary
- 115. Playwriting.** Reading assignments as an introduction to dramatic form and content. Practice in writing dramatic plots, characters, themes, and dialogue. The writing exercises will include scenario, rough draft, and final revision of a one-act play (approximately 15 typed pages or 30 minutes in playing time). (Prerequisite: Spch 31 or consent of instructor)
Thompson, 3 credits, \$21, no texts
- 180(c). Independent Playwriting.** Specifically designed for advanced students. The student is given complete freedom. Plays in any stage of development will receive detailed criticism. If the student has not taken Spch 115, he should

submit a sample of his playwriting for the approval of the instructor before actually registering for the course.

16 lessons (2 full-length plays or approximately the same amount of writing made up of shorter dramatic forms), 3 Extension credits only, \$21, no texts, Thompson

184(c). Independent Playwriting for Children's Theater. For advanced students who are interested in writing plays for child audiences. Long or short plays will be given detailed criticism. The student should submit a sample of his playwriting for approval of the instructor before registering for the course.

16 lessons (2 full-length plays or approximately the same amount of writing made up of shorter forms), 3 Extension credits only, \$21, no texts, Graham

SWEDISH (Swed)

Alrik Gustafson, Ph.D., Professor and Chairman, Department of Scandinavian

A Swedish pronunciation record (78 revolutions per minute) prepared by the Scandinavian Department and the Correspondence Study Department may be purchased for \$4. Not required but recommended.

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

Gustafson, 5 credits, \$35, texts \$4

8. Beginning Swedish II. Continuation of 7, which is prerequisite.

Gustafson, 5 credits, \$35, texts \$7

Special Courses

CITIZENSHIP

John M. Huebner, B.A., Instructor in Citizenship (Correspondence Study)

Citizenship. Given by the Extension Division of the University of Minnesota in co-operation with the public schools and the Immigration and Naturalization Service. Course is intended to assist the foreign-born applicant for citizenship in acquiring a better understanding of the American Constitution and Government, and is primarily designed for the rural alien to whom a class in such citizenship instruction is not available. Enrollment is limited to applicants for naturalization. All persons wishing to enroll should write to the Correspondence Study Department, University of Minnesota.

Huebner, 21 lessons, no credit, \$4

High School Courses

These courses are more completely described in a special high school bulletin. Write for a copy.

Each $\frac{1}{2}$ unit has 20 lessons and is equivalent to 1 semester of resident high school work.

BOOKKEEPING

1. Bookkeeping

Lund, $\frac{1}{2}$ unit, \$22.50, texts \$4.50

ENGLISH

1. Ninth Grade English, Parts A and B

Part A, Grassl, $\frac{1}{2}$ unit, \$22.50, texts \$5

Part B, Grassl, $\frac{1}{2}$ unit, \$22.50, texts same as Part A

2. Tenth Grade English, Parts A and B

Part A, Grassl, $\frac{1}{2}$ unit, \$22.50, texts \$6

Part B, Grassl, $\frac{1}{2}$ unit, \$22.50, texts same as Part A

3. Eleventh Grade English, Parts A and B

Part A, Grassl, $\frac{1}{2}$ unit, \$22.50, texts \$7

Part B, Grassl, $\frac{1}{2}$ unit, \$22.50, texts same as Part A

4. Twelfth Grade English, Parts A and B

Part A, Grassl, $\frac{1}{2}$ unit, \$22.50, texts \$7.50

Part B, Grassl, $\frac{1}{2}$ unit, \$22.50, texts same as Part A

MATHEMATICS

1. Elementary Algebra A

Stochl, $\frac{1}{2}$ unit, \$22.50, texts \$3

2. Elementary Algebra B

Stochl, $\frac{1}{2}$ unit, \$22.50, texts same as Part A

3. Plane Geometry A

Jackson, $\frac{1}{2}$ unit, \$22.50, texts \$3

4. Plane Geometry B

Jackson, $\frac{1}{2}$ unit, \$22.50, texts same as Part A

9. Higher Algebra

Loye, $\frac{1}{2}$ unit, \$22.50, texts \$4

10. Solid Geometry

Fischer, $\frac{1}{2}$ unit, \$22.50, texts \$3

SOCIAL STUDIES**1. Problems of American Democracy, Parts A and B**

Part A, Johnson, ½ unit, \$22.50, texts \$4

Part B, Johnson, ½ unit, \$22.50, texts \$3.50

2. American History, Parts A and B

Part A, Gardner, ½ unit, \$22.50, texts \$4.50

Part B, Gardner, ½ unit, \$22.50, texts same as Part A

3. World History, Parts A and B

Part A, Gardner, ½ unit, \$22.50, texts \$4.50

Part B, Gardner, ½ unit, \$22.50, texts same as Part A

LANGUAGES**French****Beginning French I and II**

Pallister, 1 unit each, \$35 per unit, texts \$4.50

German**Beginning German I, II, and III**

Ramras, 1 unit each, \$35 per unit, texts \$4

Latin**Beginning Latin I and II**

Forbes, 1 unit each, \$35 per unit, texts \$5.50 and \$7

Norwegian**Beginning Norwegian I and II**

Nelson, 1 unit each, \$35 per unit, texts \$3 and \$2.50

Spanish**Beginning Spanish I and II**

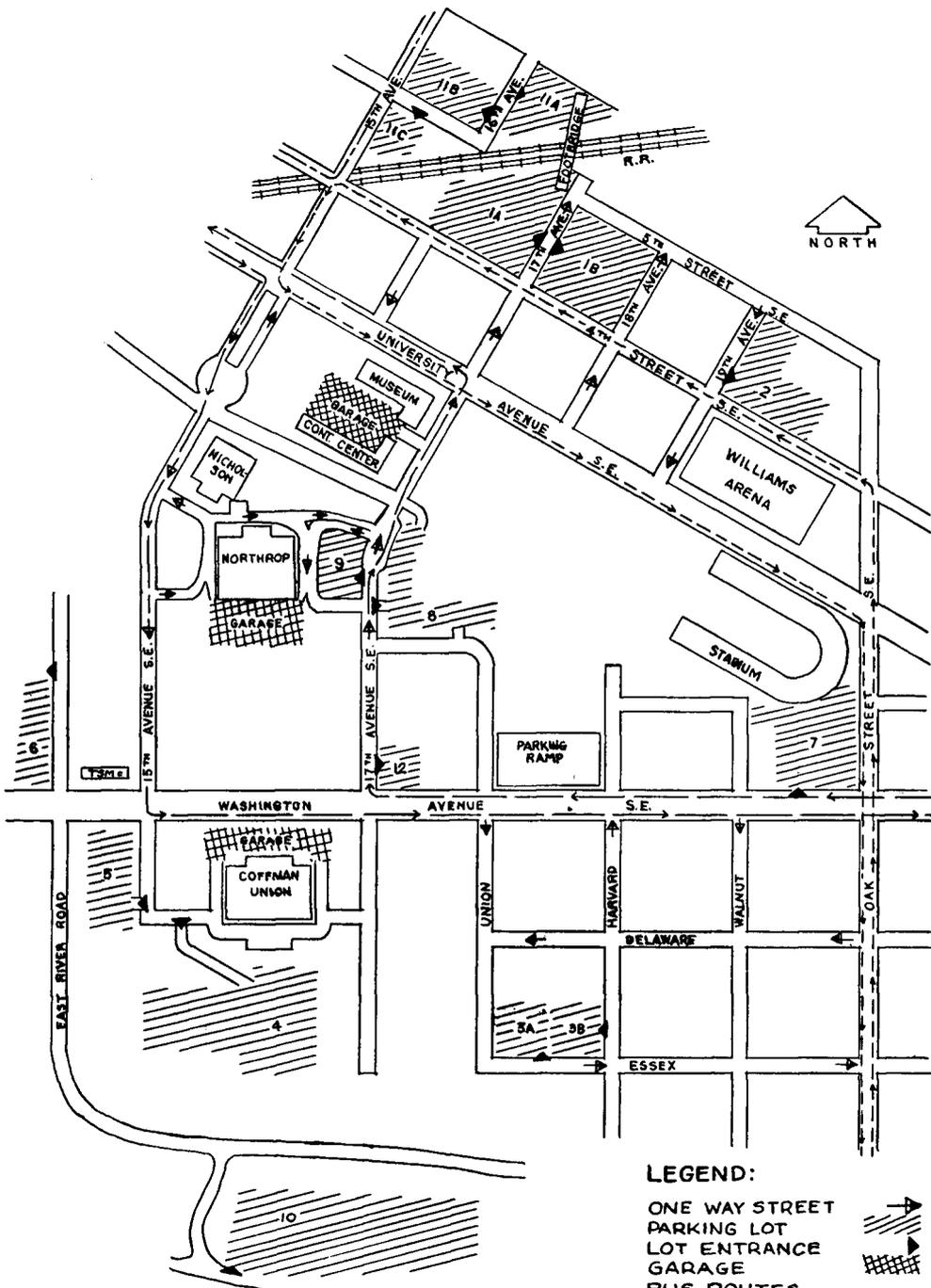
Cuneo, 1 unit each, \$35 per unit, texts \$5.50 and \$4

Swedish**Beginning Swedish I and II**

Gustafson, 1 unit each. \$35, texts \$4 and \$7

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PARKING AND BUS ROUTES

Other Services of the General Extension Division . . .

Audio-Visual Extension Service

operates a large library of films available on a rental basis to schools, organizations, and individuals, and provides advisory service for audio-visual institutes and workshops. For information, contact: Audio-Visual Extension Service, 115 TSMa, University of Minnesota, Minneapolis 14.

Center for Continuation Study

presents institutes and short courses in professional and postgraduate, business, and cultural fields. For information, contact: Center for Continuation Study, University of Minnesota, Minneapolis 14.

Evening and Special Classes

is a department offering more than 400 collegiate and special interest courses for residents of the Twin Cities area and Duluth. Courses are provided for those interested in degrees, certificates, occupational advancement, and hobbies. The part-time arrangement makes Extension evening classes attractive to the adult population. A current bulletin is available from: General Extension Division, 54 Nicholson Hall, University of Minnesota, Minneapolis 14.

Municipal Reference Bureau

co-operates with the League of Minnesota Municipalities in supplying information about city and village affairs to civic officials and others interested. For information, contact: Municipal Reference Bureau, 15 Library, University of Minnesota, Minneapolis 14.

Radio and Television Broadcasting (KUOM)

broadcasts educational musical, news, and sports programs to the Upper Midwest; its staff produces educational telecasts which may be shown on educational or commercial stations. For a schedule, contact: KUOM, 1 Eddy Hall, University of Minnesota, Minneapolis 14.

State Organization Service

assists voluntary nonprofit associations on a community or state-wide basis by supplying them with secretarial, mimeograph, mailing, and general organizational services, subject matter aid, and space. For information, contact: State Organization Service, 15th and Washington Avenues Southeast, University of Minnesota, Minneapolis 14.

University Program Service

brings concerts, lectures, and assembly programs to audiences of the area and maintains a drama advisory service and loan play library. For information, contact: University Program Service, 229 Northrop Memorial Auditorium, University of Minnesota, Minneapolis 14.



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Bulletin of the

UNIVERSITY OF MINNESOTA

Evening and
Special Classes

Twin Cities Area, 1958-1959

UNIVERSITY OF MINNESOTA

Board of Regents - 10

The Board of Regents is composed of The Honorable Ray J. Quinlivan, St. Cloud, First Vice President and Chairman; The Honorable George W. Lawson, St. Paul, Second Vice President; The Honorable James F. Bell, Minneapolis; The Honorable Edward B. Cosgrove, Le Sueur; The Honorable Daniel C. Gainey, Owatonna; The Honorable Richard L. Griggs, Duluth; The Honorable Marjorie J. Howard, Excelsior; The Honorable Lester A. Malkerson, Minneapolis; The Honorable Charles W. Mayo, Rochester; The Honorable Karl G. Neumeier, Stillwater; The Honorable A. J. Olson, Renville; and The Honorable Herman F. Skyberg, Fisher.

Administrative Officers - 10

James Lewis Morrill, B.A., LL.D., L.H.D., President
Malcolm M. Willey, Ph.D., L.H.D., LL.D., Vice President, Academic Administration
William T. Middlebrook, B.A., M.C.S., Vice President, Business Administration
Robert Edward Summers, M.S.(Ch.E.), M.E., Dean of Admissions and Records
Edmund G. Williamson, Ph.D., Dean of Students

GENERAL EXTENSION DIVISION - 10

Administration for Evening and Special Classes

Julius M. Nolte, B.A., LL.B., Dean of University Extension
Huntington Miller, B.A., LL.B., Assistant Dean; Chairman of Committee on Student Scholastic Standing
Albert M. Fulton, Ph.M., Co-ordinator for Curriculum Development; Head of Extension Veterans' Affairs
James E. Spear, M.S., Manager of Minneapolis Extension Office
Harold J. Alford, M.A., Manager of St. Paul Extension Center
Gilford W. Remington, M.A., Manager of Duluth Extension Office
Eleanor M. Salisbury, M.A., Assistant to the Dean; Co-ordinator of Scholastic and Counseling Services; Secretary of Committee on Student Scholastic Standing

The Committee on Student Scholastic Standing of the General Extension Division consists of the following: Huntington Miller, *chairman*, Harold J. Alford, Albert M. Fulton, F. Lloyd Hansen, Gilford W. Remington, Eleanor M. Salisbury, and James E. Spear.

GENERAL EXTENSION DIVISION OFFICES - 10

University Campus: Southeast entrance, Nicholson Hall, University of Minnesota, Minneapolis 14, Federal 8-8791.

Minneapolis: 690 Northwestern Bank Building, Marquette Avenue and Sixth Street South, Minneapolis 2, Federal 2-0624

St. Paul: Second floor, 555 Wabasha Street, St. Paul 2, Capital 2-6175.

Duluth: 110 New Garrick Building, 128 West First Street, Duluth 2, Randolph 2-1745.

TWIN CITIES OFFICE HOURS - 10

The University campus office hours are as follows: Monday through Thursday, 8 a.m. to 12 noon and 1 p.m. to 8 p.m.; Friday, 8 a.m. to 12 noon and 1 p.m. to 5 p.m.; closed Saturday. During the Christmas recess and the spring recess, the office will close at 5 p.m. daily. During the summer recess, the office is open Monday through Friday from 7:45 a.m. to 12 noon and from 1 p.m. to 4:30 p.m.

The Minneapolis and St. Paul office hours are as follows: Monday through Friday, 8 a.m. to 1 p.m. and 2 p.m. to 4:30 p.m.; closed Saturday. Either office may be closed without notice for short periods of time during the summer.

Special hours are in effect at all offices during semester registration periods (see Calendar).

GENERAL EXTENSION DEPARTMENT HEADS AND DIRECTORS

Audio-Visual Extension Service, Erwin C. Welke, 121 First Temporary, South of Mines

Center for Continuation Study, Fred E. Berger, Center for Continuation Study Building

Correspondence Study, F. Lloyd Hansen, 251 Nicholson Hall

Evening and Special Classes, Huntington Miller, 54 Nicholson Hall

Municipal Reference Bureau, Clarence C. Ludwig, 15 Library Building

Radio and Television Broadcasting (KUOM), Burton Paulu, 1 Eddy Hall

State Organization Service, William C. Rogers, 104 Third Temporary, South of Mines

University of Minnesota Program Service, James S. Lombard, 229 Northrop Memorial Auditorium

CALENDAR -10

1958

September	15	Monday	Fall quarter and semester registration begins. (Special office hours: weekdays, 12:30 p.m. to 8 p.m.; Saturday, 9 a.m. to 3 p.m.)
September	24	Wednesday	Registration closes; all fees due. Special fees for late registration in effect at 8 p.m.; mail registrations postmarked after midnight liable for late fee.
September	25-27	Thursday, Friday, Saturday	Registration offices closed; no registrations accepted.
September	29	Monday	Fall quarter and semester classes begin. (All offices resume regular hours, listed on page 3.)
November	11	Tuesday	Veterans' Day, holiday.
November	27	Thursday	Thanksgiving Day, holiday.
December	15-19	Monday-Friday	Final examination for fall quarter.
December	20	Saturday	Fall quarter closes; Christmas recess begins for all classes.
December	29	Monday	Winter quarter registration begins. (Office hours: December 29-31, January 2, all offices, 8 a.m. to 5 p.m.; January 5-9, campus and St. Paul offices, 8 a.m. to 8 p.m.; January 5-9, Minneapolis office, 8 a.m. to 5 p.m.)

1959

January	1	Thursday	New Year's Day, holiday.
January	5	Monday	Winter quarter classes begin; fall semester classes resume.
January	9	Friday	Winter quarter registration closes; all fees due. Special fees for late registration in effect at 8 p.m.; mail registrations postmarked after midnight liable for late fee.
February	2	Monday	Spring semester registration begins. (Special office hours: weekdays, 12:30 p.m. to 8 p.m.; Saturday, 9 a.m. to 3 p.m.)
February	2-6	Monday-Friday	Final examinations for fall semester.
February	7	Saturday	Fall semester closes; semester recess begins for semester classes only.
February	11	Wednesday	Spring semester registration closes; all fees due. Special fees for late registration in effect at 8 p.m.; mail registrations postmarked after midnight liable for late fee.
February	12	Thursday	Lincoln's Birthday, holiday.
February	12-14	Thursday, Friday, Saturday	Registration offices closed; no registrations accepted.
February	16	Monday	Spring semester classes begin. (All offices resume regular hours, listed on page 3.)
March	16-20	Monday-Friday	Final examinations for winter quarter.
March	21	Saturday	Winter quarter closes; spring recess begins for quarter classes only.
March	23	Monday	Spring quarter registration begins. (Office hours: March 23-26, all offices, 8 a.m. to 5 p.m.; March 30 to April 3, campus and St. Paul offices, 8 a.m. to 8 p.m.; March 30 to April 3, Minneapolis office, 8 a.m. to 5 p.m.)
March	27	Friday	Good Friday, holiday.
March	30	Monday	Spring quarter classes begin.
April	3	Friday	Spring quarter registration closes; all fees due. Special fees for late registration in effect at 8 p.m.; mail registrations postmarked after midnight liable for late fee.
June	8-12	Monday-Friday	Final examinations for spring quarter and spring semester.
June	13	Saturday	Spring quarter and semester close; summer recess begins.

Classes meet on all holidays not designated in the calendar, unless instructor advises to the contrary. Opening and closing dates for classes on other than semester or quarter basis are indicated below description of each class. Registration should be made during the 2 weeks preceding the opening of such classes. See pages 21 to 23 for registration regulations.

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(Also see Index, pages 126-128)

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Twin Cities Area) 12

(An index will be found on pages 126, 127, 128)

I. Information) 14

This bulletin is organized in two major sections. The first section includes general information, registration regulations, special information for veterans, and special services for all evening class students. The second section or main body of the bulletin lists the course offerings under 6 headings: Agriculture and Home Economics, Arts and Sciences, Business Administration, Education, Engineering and Technical Sciences, Recreation. Faculty, quarter class listing, index, and maps will be found at the back of the bulletin.

GENERAL INFORMATION) 10

Admission Requirements) 10

There are no entrance or residence requirements for admission into the General Extension Division; however, for registration in specific programs or classes there may be prerequisite courses or experience. See Prerequisites, page 19. Service veterans may register under Public Laws 550 and 894. See Special Information for Veterans and Members of the Armed Forces, page 24.

A student who has had university or college work any place and who intends to work on a degree or certificate program should submit a transcript of his record to the secretary of the Committee on Student Scholastic Standing. This must be done at least 3 weeks in advance of the opening of a registration period if the student wants help in planning a program. Obtain transcripts from the registrar of an institution previously attended. Korean veterans, see page 25 for special instructions.

University Degree Programs

It is possible through evening classes (sometimes in combination with correspondence study) to meet all of the requirements for the following regular University undergraduate degrees: the associate in liberal arts (A.L.A.), the bachelor of arts (B.A.), the bachelor of science in business (B.S.B.), the bachelor of science in economics (B.S.E.), and the bachelor of business administration (B.B.A.). See below.

In addition to the above degrees, which may be taken in their entirety through the General Extension Division, courses are offered in other programs

as well, approaching total requirements in varying measure in the professional and preprofessional areas: dentistry, education, engineering, law, medicine, nursing, pharmacy, etc.

As soon as a student has decided that he wishes to pursue a degree program, he should contact a member of the Extension Committee on Student Scholastic Standing, who will assist him in:

1. Determining the student's status in relation to the degree program;
2. Obtaining proper forms necessary to initiate admission, both to the University of Minnesota and to the college in which the student will be a degree candidate;
3. Program counseling at the Lower Division level and securing a counselor at the Upper Division level in the appropriate college.

Degree candidates are warned that in addition to University residence requirements, which are met by attendance in evening classes, there are specific college residence requirements, which are met only by attendance in classes following formal admission to the college granting the degree. Therefore, a student considering a degree program *must* consult a member of the Scholastic Committee early in consideration of such a program.

Candidates for graduate degrees are referred to the section on Graduate Degrees, page 18.

Bulletins of the various colleges of the University can be obtained by telephoning Federal 2-8158, Extension 6281, and asking for the Service Bureau.

Listed below, in abbreviated form, are basic requirements for the freshman and sophomore years of some selected degree programs.

College of Science, Literature, and the Arts) 10

The B.A. degree (180 credits) and the A.L.A. degree (90 credits) are available from the College of SLA through evening classes.

Course Requirements for Admission to Upper Division) 9

A. Freshman English: Engl A-B-C or Engl 1a-2a-3a or Engl 1b-2b-3b or Comm 1-2-3 or exemption.

B. Foreign Language: from 0-15 credits according to the following schedule:

<i>Amount presented from high school</i>	<i>Additional amount required in college</i>
None	15 credits in 1 language
1 year	(a) 10 credits in same language or (b) 15 credits in different language
2 years in 1 language	(a) 5 credits in same language or (b) 10 credits in different language
3 or more years in 1 language	No college requirement if the high school work is validated by the appropriate college department
2 years in each of 2 languages	No college requirement if 1 language is validated at the 2-year level by the appropriate college department

C. Courses in Social Science Departments: At least 15 credits in 2 or more of the following departments. At least 5 credits must be offered in a department to count.

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Anthropology 2. Economics 3. Geography 4. History | <ol style="list-style-type: none"> 5. Political Science 6. Psychology 7. Sociology 8. Social Science (in Interdisciplinary Studies Department) |
|---|--|

Evening and Special Classes

D. Courses in Natural Science Departments: At least 15 credits (of which a minimum of 8 must include laboratory^{††}) from 2 or more of the following groups. At least 5 credits must be offered in a department to count.

1. Biological sciences: botany, psychology, zoology, General Biology (NSci 7-8-9).
2. Physical sciences: astronomy, chemistry, geology, physics, Physical World (NSci 4-5-6).
3. Mathematics (except 1, H, 8, 20, 21, 40a).
4. Orientation in the Natural Sciences (NSci 1-2-3) (a student presenting credits in only NSci 1-2 must take his additional work in other than group D2).

E. Courses in Humanistic Departments: At least 15 credits from 2 or more of the following categories. At least 5 credits must be offered from 1 category to count.

- | | |
|-----------------------|--|
| 1. Art | 6. Mathematics (except 1, H, 6, T, 8, 20, 21, 40a) |
| 2. English literature | 7. Music |
| 3. Foreign literature | 8. Philosophy |
| 4. History | 9. Speech and theater arts (except 3, 6, 9, 39) |
| 5. Humanities | |

F. Course in Health: PubH 2 or PubH 3 or equivalent.

G. Electives: Additional credits to make a total of 90.

Requirements for the A.L.A. Degree

1. You must earn at least 90 credits, exclusive of quality credits. Honor points are not a factor in this degree.

2. You must earn the degree in not more than 7 quarters of University residence. If you enter the college with advanced standing, you must spend the last 3 quarters before graduation in residence and must earn at least 45 of the required credits in residence. (A student taking the majority of his work on this degree through Extension may, upon petition to SLA, have the 7-quarter requirement waived. But he must be admitted to SLA before completing the final 45 credits of the degree.)

3. You must meet the requirements (listed above as Upper Division admission requirements) in English (A) and at least 3 of the other 4 group requirements: Foreign Language (B); Social Science (C); Natural Science (D); and Humanistics (E). (If you were admitted to SLA before June 1, 1957, you may petition the Scholastic Committee to substitute the old Plan I or Plan II in meeting these requirements.)

School of Business Administration

The bachelor of science in business (B.S.B.) and the bachelor of science in economics (B.S.E.) are available from business administration through evening classes. The bachelor of business administration (B.B.A.) is also available for a limited time.

Students entering the University prior to the fall of 1958 or entering the School of Business Administration prior to the fall of 1960 may choose to meet the requirements of either the B.S.B., the B.S.E., or the B.B.A. degrees. Those entering the University in the fall of 1958 or thereafter or entering the School

^{††} Introductory natural science courses which count toward the laboratory requirement are: Bot 1-2-3; InCh 4-5, 24-25; Geol 1 with A, 2 with B, 8 with A, 23-24-25; NSci 4-5-6, 7-8-9; Phys 1-2-3 with 1a-2a-3a, 4-5-6, 7-8-9, 12-13; Psy 1-2 with 4-5; Zool 1-2-3, 14-15. Nonlaboratory courses include Ast 11, 20; Bot 10, 12, 14; Geol 1, 2, 8; Math 6, T, 7, 10, 15-16, 40; NSci 1-2-3; Phys 1-2-3, 11; Psy 1-2.

of Business Administration in the fall of 1960 or thereafter may not choose the B.B.A. degree, which is being discontinued.

For all 3 degree programs, the first 90 credits (of the 180 total credit requirement) are taken in the College of Science, Literature, and the Arts.

Prebusiness Course Requirements for the B.S.B. Degree) 9

1. **Business and Economics:** BA 1, Business and the American Economy; BA 5, Elements of Statistics; BA 24-25-26, Principles of Accounting; Econ 1-2, Principles of Economics.
2. **Freshman English:** Engl A-B-C; or Engl 1a-2a-3a; or Engl 1b-2b-3b; or Comm 1-2-3; or GC 31A, 31B, and 31C or 31D (with required score); or exemption.
3. **Mathematics:** Math 10 or equivalent (college algebra level).
4. **Social Sciences:** 15 credits†† in 2 or more of the following departments (at least 5 credits taken in a department to count): anthropology, geography, history, political science, psychology, sociology (except Soc 45). SSci 1-2-3 and 5 credits in 1 of the above departments will satisfy this requirement.
5. **Natural Sciences:** 9 to 15 credits†† divided between the following two groups (at least 5 credits taken in a department to count):
 - a. Biological sciences: botany, psychology, zoology, NSci 7-8-9 (General Biology)
 - b. Physical sciences: chemistry, geology, physics, NSci 4-5-6 (Physical World)All courses must include laboratory to meet this requirement.
6. **Humanities:** 9 to 15 credits†† in 2 or more of the following departments (at least 5 credits taken in a department to count): art, English literature, foreign literature, history, humanities, music, philosophy, speech and theater arts (except Spch 3, 6, 9 and 39), 1 foreign language.
7. **Electives:** Sufficient to complete the minimum of 90 credits required for admission.

Students planning to enter the accounting program are required to complete the following courses in addition to those specifically listed above: Comp 27, Advanced Writing; Math 40, Mathematical Analysis I, or equivalent.

Prebusiness Course Requirements for the B.B.A. Degree) 9

1. **Freshman English:** Engl A-B-C or Engl 1a-2a-3a or Engl 1b-2b-3b or Comm 1-2-3 or exemption.
2. **Mathematics:** Math 10 or equivalent (college algebra level).
3. **Natural Sciences:** 9 credits in mathematics or 1 of the following laboratory sciences: botany, chemistry, geology, physics, zoology, psychology with laboratory; or NSci 1-2-3; or NSci 4-5-6; or NSci 7-8-9.
4. **Social Sciences:** 8 credits in 1 of the following: anthropology, geography, history, political science, sociology; or SSci 1-2-3.
5. **Economics:** Econ 1-2, Principles of Economics; BA 5, Elements of Statistics; BA 24-25-26, Principles of Accounting.
6. **Electives:** Additional credits to make a total of 90. (In selecting electives, students should include such courses as may be prerequisite to advanced courses required in special sequences in the School of Business Administration.)

Prebusiness Course Requirements for the B.S.E. Degree) 7

1. **Freshman English:** Engl A-B-C or Engl 1a-2a-3a or Engl 1b-2b-3b or Comm 1-2-3 or exemption.
2. **Mathematics:** *Economics major*—10 credits, including Math 10 or equivalent (college algebra level). *Statistics major*—mathematics through Math 40 or equivalent (analytic geometry level).
3. **Political Science or History:** 9 credits.
4. **Philosophy:** Phil 1 or 2.

†† If courses in history or psychology are used to satisfy the requirements in one area, courses from the same department may not be used to satisfy the requirements in a second area. Courses in interdisciplinary studies (humanities, natural science, and social science) may be used to satisfy requirements in only 1 of the 3 areas, 4, 5, and 6.

Evening and Special Classes

5. **Economics:** Econ 1-2; Principles of Economics; BA 5, Elements of Statistics.
6. **Additional Requirements:** *Economics major only*—10 credits additional mathematics or laboratory science; *Statistics major only*—BA 24-25-26, Principles of Accounting.
7. **Electives:** Additional credits to make a total of 90.

Extension Certificate Programs) 10

The General Extension Division awards certificates for the satisfactory completion of approved programs of study. The work may be done in evening classes, correspondence study courses (see page 20), or both. Day school or Summer Session credits from the University of Minnesota are approved where applicable. A student may also transfer credits from other accredited institutions provided a minimum of 25 per cent of the credits required for the certificate is earned at the University of Minnesota. For advice or information on programs of study leading to certificates, including *transfer of credits*, consult a member of the Committee on Student Scholastic Standing.

Certificates are awarded to students who complete with a C average any of the following programs of study, upon the application of the student and the recommendation of the Committee on Student Scholastic Standing. In any of the certificate programs, the "core requirement" must be fulfilled by all applicants. These courses need not, however, be taken in order, except as prerequisites make it necessary.

Students are urged to make application for the certificate programs as soon as they have determined that they are pursuing such programs.

Students expecting to receive certificates at the conclusion of any evening class term must so notify the Committee on Student Scholastic Standing on a Certificate Application form available from any Extension office at the *beginning* of such term. Ninety-credit certificates are awarded at regular University commencement exercises three times during the academic year. All certificates are dated as of a University commencement date.

Liberal Arts Certificate) 10

English requirement:

Engl 1b-2b-3b; or Comm 1-2-3; or exemption

Spread requirement (18 credits): at least 6 credits in each of the following fields:

Humanities: English composition (beyond Freshman English) or literature, fine arts, foreign languages, humanities, philosophy, speech

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

Social Sciences: anthropology, economics, geography, history, political science, sociology

Concentration requirement: at least 12 credits in 1 subject, or in approved related liberal arts subjects, in addition to the credits earned in that subject under the spread and English requirements above.

Electives: additional liberal arts courses approved by the Committee on Student Scholastic Standing to make a minimum of 45 credits for the certificate.

Public Administration Certificate

Core requirement:

Pol 1-2—American Government and Politics
Pol 60—Organization and Management

Pol 62—Public Personnel Administration
Pol 63—Public Financial Administration

Spread requirement: at least 15 credits in the following courses:

- | | |
|--|--------------------------------------|
| Pol 58—Governmental Accounting | Pol 73—City and County Planning |
| Pol 61—Municipal Law and Administration | Pol 76—Business and Government |
| Pol 64—Employee Training Techniques | Pol 77—Administrative Regulation |
| Pol 66—Practice of Public Administration | Pol 78—Administrative Responsibility |
| Pol 67—Administrative Analysis | Jour 78—Public Relations |
| Pol 68—Administrative Communication | BA 5—Elements of Statistics |
| Pol 69—Problems in Tax Administration | |

Concentration requirement: at least 15 credits in 1 of the following fields†† or in any approved combination thereof to make a minimum of 45 credits for the certificate:

- | | |
|-------------------------------|----------------------------|
| Accounting | Nursing Education |
| Child Development and Welfare | Political Science |
| Economics and Finance | Psychology |
| Engineering | Recreation |
| Industrial Relations | Social Work |
| Insurance | Sociology |
| | Traffic and Transportation |

Secretarial Certificate

The Secretarial Certificate is awarded to those who, in addition to the necessary skills and experience in typewriting and shorthand, have completed a selection of courses appropriate to a background in business administration, such as needed for qualifying for Certified Professional Secretary examinations. Candidates for the certificate must take a test in transcription under the supervision of the secretarial faculty in the School of Business Administration.

Core requirement:

- | | |
|--|---|
| Review of Business English and Business Correspondence; or Comp 58, Business Reports and Letters | BA 58, 88—Business Law |
| Econ 1-2—Principles of Economics | BA 79A-79B—Administrative Secretarial Studies |
| BA 24-25—Principles of Accounting | BA 99—Survey of Office Management |
| BA 36—Office Procedures | Psy 1-2—General Psychology |

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

- | | |
|--------------------------------|----------------------------|
| Communication in Management | BA 53—Insurance Principles |
| BA 5—Elements of Statistics | Econ 67—Money and Banking |
| BA 26—Principles of Accounting | BA 78, 98—Business Law |

Business Administration Certificates

Junior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 12 credits, including 6 credits in economics or business administration courses, at the University of Minnesota.

Core requirement:

- | | |
|---|--------------------------------------|
| Review of Business English; or Business Correspondence; or Engl 1b; or Comm 1; or exemption | BA 5—Elements of Statistics |
| Econ 1-2—Principles of Economics | BA 24-25-26—Principles of Accounting |
| | BA 58—Business Law |

†† Other subject matter fields are not necessarily excluded, but may be approved upon petition to the Committee on Student Scholastic Standing.

Evening and Special Classes

Spread requirement (9 credits): at least one 3-credit course in 3 of the following 5 fields, in addition to credits earned under core requirement:

1. Industrial Management
2. Distribution: Marketing and Merchandising, Traffic and Transportation
3. Economics, Finance, and Statistics
4. Industrial Relations
5. Business Law

Concentration requirement: at least 9 credits in 1 of the following fields, in addition to credits earned under core and spread requirements:

Accounting	Insurance
Economics, Finance, and Statistics	Marketing and Merchandising
Industrial Management	Real Estate
Industrial Relations	Traffic and Transportation

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 45 credits for the certificate.

Senior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 24 credits, including 12 credits in economics or business administration courses, at the University of Minnesota.

Core requirement:

Business English (6 cr); or Engl 1b-2b-3b; or Comm 1-2-3; or exemption	BA 24-25-26—Principles of Accounting
Econ 1-2—Principles of Economics	BA 58—Business Law
BA 5—Elements of Statistics	Econ 67—Money and Banking

Spread requirement: at least 12 credits from the following courses:

- BA 50—Production Management (or) BA 99—Survey of Office Management
- BA 52—Modern Industrial Relations: Labor Marketing
- BA 54—Transportation I: Principles
- BA 56—Corporation Finance
- BA 57—Principles of Marketing
- Econ 65, 66—Intermediate Economic Analysis
- Econ 68—Elements of Public Finance
- Econ 69—Government Regulation of Business
- BA 78 or 88—Business Law (not both)

Concentration requirement: at least 18 additional credits in 1 or 2 of the following fields, in addition to credits earned under core and spread requirement:

- Accounting
- Economics, Finance, Statistics, and Insurance
- Industrial Management and Industrial Relations
- Marketing and Merchandising
- Real Estate
- Traffic and Transportation

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 90 credits for the certificate. Some courses in the liberal arts field are recommended as electives.

Industrial Relations Certificate

Core requirement:

- Econ 1-2—Principles of Economics
- BA 52—Modern Industrial Relations: Labor Marketing
- BA 72—Modern Industrial Relations: Manpower Management
- Econ 172—Public Policy: Labor Relations
- Econ 182—Economic Security
- Psy 1-2—General Psychology
- Psy 4-5—Introductory Laboratory Psychology
- Psy 122-123—Vocational and Personnel Psychology

- One course from the following:
 - Survey of Current Problems in Industrial Relations
 - BA 182B—Intermediate Manpower Management
 - BA 262-272-282—Graduate Topics in Industrial Relations
- One course from the following:
 - BA 142—Settlement of Industrial Relations Disputes
 - Econ 152—Labor Movements
 - Econ 162—Union Government and Policies

Electives (any two courses from the following):

- BA 50—Production Management
- BA 99—Survey of Office Management
- Pol 64—Employee Training Techniques
- Pol 68—Administrative Communication
- Psy 125-126—Psychology of Individual Differences
- Psy 144-145—Abnormal Psychology
- Soc 120—Social Psychology
- Soc 146—Industrial and Occupational Sociology

- Supervision I, II, III
- Economics of Collective Bargaining
- Problems of Union Administration
- Personnel Methods
- Human Relations
- Work Simplification
- Work Measurement
- Industrial Engineering and Management
- Layout Engineering and Materials Handling Systems

General Engineering Certificates

Junior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 12 credits, including at least 6 credits in engineering courses, at the University of Minnesota.

Core requirement:

- Basic Technical Writing I: or Engl 1b; or Comm 1; or exemption
- ITM 11—College Algebra and Trigonometry I
- ITM 12—College Algebra and Trigonometry II
- ITM 13—Analytic Geometry
- (or) ITM 13a—Calculus I: Analytic Geometry and Calculus

- ITM 24—Calculus I: Differential
- (or) ITM 24a—Calculus II: Analytic Geometry and Calculus
- ITM 25—Calculus II: Integral
- (or) ITM 25a—Calculus III: Analytic Geometry and Calculus
- Draw 14-15—Engineering Graphics

Electives: additional courses from engineering or the physical sciences approved by the Committee on Student Scholastic Standing to make a minimum of 45 credits for the certificate.

Senior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 24 credits, including at least 12 credits in engineering courses, at the University of Minnesota.

Core requirement:

- Basic Technical Writing I-II; or Engl 1b-2b-3b; or Comm 1-2-3; or exemption
- ITM 11—College Algebra and Trigonometry I
- ITM 12—College Algebra and Trigonometry II
- ITM 13—Analytic Geometry
- (or) ITM 13a—Calculus I: Analytic Geometry and Calculus
- ITM 24—Calculus I: Differential

- (or) ITM 24a—Calculus II: Analytic Geometry and Calculus
- ITM 25—Calculus II: Integral
- (or) ITM 25a—Calculus III: Analytic Geometry and Calculus
- MM 26—Engineering Statics
- MM 127—Engineering Dynamics
- (or) MM 128—Engineering Solid Mechanics
- Draw 14-15-16—Engineering Graphics

Evening and Special Classes

Concentration requirement: at least 30 additional credits in 1 of the following fields, or approved combination thereof:

Aeronautical Engineering
Agricultural Engineering
Chemical Engineering
Chemistry
Civil Engineering

Electrical Engineering
Mathematics
Mechanical Engineering
Mining Engineering
Physics

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 90 credits for the certificate. Courses in liberal arts and business administration are recommended.

Industrial Engineering Certificates

Junior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 12 credits, including at least 6 credits in industrial engineering courses, at the University of Minnesota.

Core requirement:

Basic Technical Writing I; or Engl 1b; or
Comm 1; or exemption
ITM 11—College Algebra and Trigonometry I
ITM 12—College Algebra and Trigonometry II
Draw 14-15—Engineering Graphics

Machine Tool Operation I
Econ 1-2—Principles of Economics
Industrial Engineering and Management
Work Simplification
Work Measurement

Electives: additional courses to be selected from the list of requirements or recommended electives for the senior certificate to make a minimum of 45 credits for the certificate.

Senior Certificate

Students transferring credits from other institutions to this certificate program must take a minimum of 24 credits, including at least 12 credits in industrial engineering courses, at the University of Minnesota.

Core requirement:

Basic Technical Writing I-II; or Engl 1b-2b-3b; or Comm 1-2-3; or exemption
ITM 11—College Algebra and Trigonometry I
ITM 12—College Algebra and Trigonometry II
ITM 13—Analytic Geometry
(or) ITM 13a—Calculus I: Analytic Geometry and Calculus
Draw 14-15-16—Engineering Graphics
Machine Tool Operation I
Econ 1-2—Principles of Economics
BA 5—Elements of Statistics
(or) ITM 90—Elementary Engineering Statistics

BA 52—Modern Industrial Relations: Labor Marketing
BA 72—Modern Industrial Relations: Manpower Management
Industrial Engineering and Management
Inventory and Production Control
Work Simplification
Work Measurement
Layout Engineering and Materials Handling Systems
Statistical Quality Control
Manufacturing Cost Analysis

Electives: additional courses approved by the Committee on Student Scholastic Standing to make a minimum of 90 credits for the certificate. The following courses are recommended:

Psy 1-2—General Psychology
Soc 146—Industrial and Occupational Sociology
BA 55C—Managerial Costs

Supervision I, II, III
Industrial Safety and Health
Process Engineering
Advanced Statistical Quality Control

Methods-Time Measurement
Advanced Layout Engineering and Materials
Handling Systems

Beginning Practical Speech Making
Basic Salesmanship

Engineering Aide Program

The Engineering Aide program has been developed by the General Extension Division in co-operation with the Institute of Technology, the Relations with Industry Committee of the American Society for Engineering Education, and the Minnesota Highway Department. It is a terminal program, leading to a Basic Engineering Aide Certificate and to three Senior Engineering Aide Certificates, designed to qualify the student as an engineering technician capable of performing responsible design or supervisory assignments in his field of

A student who is working, or who plans to work, for an Engineering Aide Certificate must fill out an application blank for admission to the program in order that records may be kept up to date. These blanks are available in any Extension office. He should also consult an Extension Division counselor before registering, to insure that courses are taken in the most effective sequence in relation to his schedule. When possible a program of study for the full school year should be planned. These procedures are meant to assist the student and will in no way restrict him from dropping or changing to another program.

specialization. Persons interested in the program who are already employed or seeking employment in a Twin Cities area industry utilizing engineering aide technicians should consult their company's training or personnel officer for program counseling and registration information. Employees of the Minnesota Highway Department interested in supplementary education should consult the Personnel Director of the Minnesota Highway Department. Others may obtain program counseling and registration information from any General Extension Division office.

Basic Engineering Aide Certificate

(47 credits)

Prerequisite: high school graduate or equivalent, higher algebra, solid geometry, satisfactory completion of the English Placement Test and the Placement Examination in High School Algebra.

The Basic Engineering Aide Certificate program is designed to provide the student with the fundamentals of mathematics, drawing, physics, and English which will enable him to handle basic engineering drafting assignments in any engineering field and will give him the necessary background for more specialized or advanced study. All classes in the Basic Engineering Aide Certificate program carry degree credits and provide an opportunity for persons interested in engineering work who are unable to pursue full-time day study to complete, in the evening, approximately one-fifth of the required course work for an engineering degree.

Evening and Special Classes

Students who complete the Basic Engineering Aide Certificate should plan either to continue in one of the Senior Engineering Aide programs, which are offered in the evening, or to make application for admission to the Institute of Technology and, if qualified, continue work in day school toward a degree in engineering.

The requirements for the Basic Engineering Aide Certificate program are listed below. No electives or substitutions are permitted in this program, nor will any prerequisite be waived. Credits earned in day school applicable to this program can be transferred. Transcripts of credits earned at other institutions of higher learning will be evaluated by the Committee of Advanced Standing of the University of Minnesota. Transfer of approved credits will be permitted. The Basic Engineering Aide Certificate may reasonably be completed in 2½ years of 2 to 3 evenings' class attendance per week. Certificates are awarded to students who complete with a minimum C average the prescribed program of study.

ITM 11—College Algebra and Trigonometry I
ITM 12—College Algebra and Trigonometry II
ITM 13a—Calculus I: Analytic Geometry and
Calculus (formerly ITM 13)

Draw 14-15-16—Engineering Graphics
Phys 11-12—General Physics for Engineers
GE 70—Slide Rule
Engl 1b-2b-3b—Freshman English

Senior Engineering Aide Certificates

Prerequisite: Basic Engineering Aide Certificate (47 credits).

The Senior Engineering Aide Certificate program is a terminal program. It provides for a continuation of the Basic Certificate work in mathematics, physics, and communication, and for a concentration in civil, electrical, or mechanical engineering. Its purpose is to train technicians capable of performing responsible design and supervisory assignments as a member of an engineering team. While credits in some of the mathematics, physics, and communication classes may be used toward an engineering degree, most of the requirements have been specially developed for the terminal technical program, and credits earned in such courses are not transferable to, nor is the course of study designed to provide the necessary background for, an engineering degree. The Senior Engineering Aide program, therefore, is not a short cut or stepping stone for students who have a professional engineering degree objective, but is, rather, an intensive, complete course of study at the technical and design level.

The Senior Engineering Aide Certificate work may reasonably be completed in 5 years of 2 to 3 evenings' class attendance per week. Senior Certificates are awarded to students who complete with a minimum C average the prescribed program of study and are presented at regular University commencement exercises during the academic year.

Senior Civil Engineering Aide

(Concentration: Hydraulics, 99½ credits; Structural, 97½ credits; Highways, 100 credits)

Core requirement:

ITM 24a—Calculus II: Analytic Geometry
and Calculus (formerly ITM 24)
ITM 25a—Calculus III: Analytic Geometry
and Calculus (formerly ITM 25)
Draw 22-23—Applied Graphics: Concrete and
Steel

Phys 13—General Physics for Engineers
MM 26—Engineering Statics
Beginning Practical Speech Making
Engl 85—Advanced Technical Communication

Concentration option: a student may select one of the following concentration sequences. No electives or substitutions permitted once a concentration has been selected.

Hydraulics

- CE 18-19—Surveying
- MM 128—Engineering Solid Mechanics
- Hydr 103—Fluid Mechanics
- CE 160—Applied Hydraulics
- CE 161—Hydrology

Structural

- CE 18-19—Surveying

MM 128—Engineering Solid Mechanics

CE 31-32-33—Elementary Structural Analysis and Design

Highways

- CE 18-19-20—Surveying
- Highways and Pavements I-II
- Plain Concrete
- Highway Design

Senior Mechanical Engineering Aide

(101 credits)

- ITM 24a—Calculus II: Analytic Geometry and Calculus (formerly ITM 24)
- ITM 25a—Calculus III: Analytic Geometry and Calculus (formerly ITM 25)
- Draw 21—Applied Graphics: Mechanical Engineering
- Phys 13—General Physics for Engineers

- MM 26—Engineering Statics
- MM 127—Engineering Dynamics
- MM 128—Engineering Solid Mechanics
- Machine Design I-II
- Thermodynamics
- Beginning Practical Speech Making
- Engl 85—Advanced Technical Communication

Senior Electrical Engineering Aide

(102 credits)

- ITM 24a—Calculus II: Analytic Geometry and Calculus (formerly ITM 24)
- ITM 25a—Calculus III: Analytic Geometry and Calculus (formerly ITM 25)
- Phys 13—General Physics for Engineers
- MM 26—Engineering Statics
- MM 27—Engineering Dynamics
- Elements of Electric Circuits

- Elements of Electric Machines and Control Systems (formerly Elements of Electric Machines)
- Elements of Electronics I (formerly Elements of Electronics)
- Elements of Electronics II (formerly Electronic Devices)
- Beginning Practical Speech Making
- Engl 85—Advanced Technical Communication

Credits

The credits listed in the class descriptions are quarter credits. However, most evening classes are of semester length.

All credits are clearly labeled as to use: "degree credit" means that a course carrying such a designation may be used on a degree program at the University of Minnesota, provided certain other conditions are met; "certificate credit" means that the course so marked may be used in appropriate Extension certificate programs (certificate credits usually are not usable in teacher certification); "entrance credit" designates a course which can be used to meet University admission requirements; "no credit" means that no credit is given for the course indicated.

Occasionally a course may carry less degree credit in evening classes than in day classes. If it carries the same course number as the day course, it will satisfy the same requirements met by the day course.

Class Numbering—Courses carrying degree credit are numbered as follows: Lower Division courses, numbered 1 through 49, are intended primarily for freshmen and sophomores; Upper Division courses, numbered 50 through 99, are intended primarily for juniors and seniors; courses numbered 100 through 199 are considered Upper Division and graduate level; courses numbered above

Evening and Special Classes

200 are graduate level only. If you wish to take a course numbered above 100 and get graduate credit for it, be sure to ask at the registration office for the appropriate form at the time of registration.

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 a member of the Committee on Student Scholastic Standing of the General Extension Division.

Established by Special Examination—A student who, by independent study or by experience, has gained knowledge which is equivalent to that covered by a particular evening class may establish credit for such class by passing a special examination on the subject matter covered by the class, provided he is an Extension student at the time he takes the examination. A student may establish credit for work done at a nonaccredited institution in the same way.

If a grade of C or better is earned in the examination, the course and the credit will be entered on the student's record; if the examining committee so indicates, the grade will also be entered. If a grade of C or better is not earned, no entry is made on the record. Credit by special examination is not residence credit.

The examination is administered by the department in which the course is offered. It may be a typical final examination, an oral test, written papers or projects, or any combination of these, or other work.

A student wishing to take a special examination should request a Special Examination Form at the campus office of the Extension Division. He will take the form to the department in which he expects to take the examination, where he will be advised as to the wisdom of his taking it. If it is determined that he should take an examination, he shall arrange the time for examining with the department concerned and pay a fee of \$5 to the General Extension Division. He may then take the examination.

Residence—Credits earned in undergraduate evening classes in Minneapolis, St. Paul, and Duluth are "residence" credits. They may be used to satisfy the residence requirements of the University of Minnesota. They do not, however, meet the residence requirements of individual colleges of the University, until a student who is working on a degree program is formally admitted to the college from which he expects to get a degree. See University Degree Programs, page 7.

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 6 quarter credits under Plan A or 9 quarter credits under Plan B in courses numbered 100 and above. (Under Plan A for the Master's degree in certain fields of engineering, 9 credits taken in Extension may be allowed.) Such courses must be taught by regularly approved members of the graduate faculty (for this information, consult the chairman of the Committee on Student Scholastic Standing). A student registering for graduate credit must ask at the registration office for the appropriate special form at the time of registration. Petition to transfer is limited to credits earned in evening classes since September, 1943. Such transfer of credits will not give graduate residence credit.

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

Prerequisites

Prerequisites are stated for information, not as obstacles. Some advanced evening classes are of such a nature that they cannot be carried through without certain previous study. Prerequisites, therefore, are listed for these classes. Students who have had a reasonable equivalent of study, training, or experience related to the course desired may be exempted from prerequisites upon consultation with the instructor. If you are in doubt as to your qualifications for a course, but believe you are qualified, register for the course and consult the instructor at the first class session. If the instructor decides that you are not qualified, or that the course does not meet your needs, your class card properly endorsed to this effect on the back, by the instructor, will permit you to transfer to another class or to cancel (see Cancellations and Refunds, page 23). A prerequisite course may not usually be taken for credit after the advanced course has been satisfactorily completed.

Grades

There are four permanent passing grades, A (highest), B, C, and D (lowest), which are acceptable for the completion of a course.

There is a permanent grade of F (failure), indicating noncompletion or unsatisfactory completion of a course. A student who cancels officially or drops out of a class and is failing at the time shall receive an F.

There is a temporary grade of I (incomplete), indicating that insufficient work has been completed for assignment of a permanent grade. An I which is not turned into a permanent grade within 1 year from the time it is assigned shall become an F at such time as the student indicates his intention of applying his credits to a degree or certificate or other University of Minnesota program, or of transferring his credits to another institution. An extension of time may be permitted for removal of an I grade upon recommendation of the instructor concerned and approval of the Extension Scholastic Committee. If an extension of time is granted, a special examination fee of \$5 will be required.

There is a symbol X, which may be reported in continuation courses in which a grade cannot be determined until the sequence is completed. Upon completion, a separate grade is submitted for each X.

There is a registration symbol W, indicating official cancellation without grade.

There is a registration symbol V (visitor), indicating registration as an auditor or visitor.

Grade Reports—Reports of students' grades are sent them by the University Office of Admissions and Records and cannot be furnished by the Extension offices. Students are asked to allow a month's time from the close of a term for the record office to get grades to them. A student who needs a grade sooner than that may leave a self-addressed postcard with his instructor, who will mail it to him as soon as his grade is determined. Requests for complete transcripts of records may be made by telephoning the University, Federal 2-8158, and asking for the Transcripts Department.

Grade Point Average—For purposes of determining scholarship, grade points are assigned to the permanent grades as follows: A, 4 grade points; B, 3 grade points; C, 2 grade points; D, 1 grade point; F, 0 grade points. A student's scholastic average is determined by dividing the sum of grade points by the sum of credits, both passed and failed.

Evening and Special Classes

For Extension certificates, grade points are used usually only to ascertain whether a student has the required C average; they are not used to reduce the number of credits required for a certificate except upon special action of the Committee on Student Scholastic Standing. Students in evening classes who are seeking degrees should consult the bulletin of the college in which the degree is sought regarding the status of grade points in that college.

Probation

Students taking classes for credit, *including all veteran students*, who consistently fail to maintain a C average, may be placed upon probation. This means that their registrations and work loads come under the surveillance of the Committee on Student Scholastic Standing.

Auditors

A student who does not expect to do all the required work of a class may register as an *auditor* by writing "Aud." in the credit column of the registration form, or by asking his instructor to record him as an auditor not later than the *ninth* week of a semester class or the *sixth* week of a quarter class, provided he is doing passing work at the time of the request. Auditor's status carries no credit. One may not later take for credit a course which has been audited; exceptions to this ruling may be allowed upon consultation with an adviser in the college or school concerned. Auditors pay the same fee as other students. No *veteran* may audit any class under Public Laws 550 or 894. No *military personnel* may audit any class under Off-Duty Academic Instruction or Tuition Assistance Programs.

These regulations apply to all classes listed in this bulletin.

Committee on Student Scholastic Standing

There is a Scholastic Committee in each college and school of the University and in the General Extension Division. It is a committee of the faculty, chaired by an administrative officer. Its purpose is to interpret and enforce regulations and to make exception to those regulations when they may do an educational disservice to the student. An Extension student working on a degree program must consult the Scholastic Committee of the college from which he intends to get his degree.

Special Classes and Short Courses

In addition to the regularly scheduled classes found in this bulletin, the department offers a variety of special classes and short courses. They may be organized at any time of the year and may be of any duration.

Correspondence Study Courses

A large selection of correspondence study courses is available. Much of the work required for Extension certificates and for some University degrees may be earned through correspondence study. Bulletins are available from

any Extension office or from Director, Correspondence Study Department, 254 Nicholson Hall, University of Minnesota, Minneapolis 14.

REGISTRATION REGULATIONS AND FEES

The following regulations apply to veteran as well as nonveteran students, unless otherwise indicated. In addition, all service veterans and military personnel should read the Special Information for Veterans and Members of the Armed Forces section starting on page 24.

Registration dates, offices, and office hours are indicated on pages 3 and 4; registration may also be made by mail except where specified and *except by veterans and military personnel*. Registration forms will be sent by any Extension office, upon request.

Any exception to the regulations governing registration will be allowed only upon personal interview with a member of the Committee on Student Scholastic Standing and will be subject to fees as determined by that committee.

Business firms may register their employees in evening classes by special arrangement with the General Extension Division. Instructions for such an arrangement are available from any Extension office.

How to Use This Bulletin for Registering

The listing of each class in this bulletin should in most cases give you all the information you need for filling out your registration forms. Most classes appear under their appropriate department or subject heading; where several classifications are possible, cross references will usually be given. There is an index at the back of the bulletin for your convenience.

The first line or two of the listing gives the class number, if any, the title, the number of credits, and the tuition per term (semester, quarter, or special), plus special fees, if any. With the exception of certain elementary mathematics courses, all arabic-numbered listings are degree credit classes and are the same as those of corresponding day classes or have been approved for evening class use by the department concerned. Other classes are indicated as for certificate credit; any of these classes may be applicable toward an appropriate Extension certificate (see Credits, page 17).

The description of the course content follows. Such regulations as prerequisites, class size limitations, number of meetings, etc., will be found in the parenthetical statement following the course description. (See Prerequisites, page 19.)

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

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

Evening and Special Classes

Symbols

The following symbols will be used throughout the Course Offerings section of this bulletin and will carry no page footnote. Their explanation is as follows:

- A hyphen between numbers indicates a sequence course, the units of which must be taken in order, unless otherwise indicated.
- * Limited class. Registration must be made, individually, in person.
- † To receive credit, all courses listed before dagger must be completed.
- ‡ A sequence course, which may be taken out of order.
- § No credit is given if credit has been received for equivalent course listed after section mark.
- ¶ Means "concurrent registration in" (i.e., course must be taken simultaneously).
- # A sharp sign means "consent of instructor."
- ** Course carries alternative numbers and may be taken at the level for which the student is qualified, provided consent of instructor is obtained, together with approval of the Committee on Student Scholastic Standing of the General Extension Division.
- ## Prerequisite may be equivalent experience, with consent of instructor.

Registration Periods

All registrations should be made and fees paid during the official registration period preceding the opening of a term. Late registration may be permitted through the first 2 weeks of a semester, quarter, or special term, subject to regulations and fees as indicated. (See Late Registrations and Additions, page 23.)

Present or Former University Day-School Students

A student who is regularly registered for day class work in any unit of the University may register for Extension classes only with the permission of the college office where he is basically enrolled. Ask for appropriate form at registration office.

A student who has been dropped from any unit of the University or placed on probation should clear with his College before registering for Extension classes.

Work Load

Any person wishing to carry more than 12 credits must have permission from a member of the Committee on Student Scholastic Standing.

Tuition and Fees

The tuition for each class is designated in the listing of the class in this bulletin. Special fees, such as laboratory and materials fees, may be added to the tuition for some courses. Fees do not cover books.

The full amount of the tuition and other special fees is payable at the time of registration. No arrangements for partial payment can be made. Checks or money orders must be drawn for the exact amount due and made payable to the University of Minnesota. Students in need of special financial assistance see Extension Student Loan Fund, page 29.

A student is not registered until his fees are paid.

Late Registrations and Additions

All registrations, whether initial or added, received after the close of the registration period, will be considered late registrations and will be subject to the late fee. Through the first week following the close of the registration period, the late fee will be \$3; through the second week, \$4.

The late fee applies whether a class carries degree credit, certificate credit, or no credit. The time of registration by mail will be determined by the postmark. These special fees are not included in the privileges of Public Laws 550 and 894, military personnel on Off-Duty Academic Instruction or Tuition Assistance Programs. They must be paid by the student personally.

There are no exceptions to payment of late fees.

Transfers

Students may transfer without penalty through the first week of classes; there will be a fee of \$3 for transferring through the second week.

See also regulations concerning Limited Classes, below.

Limited Classes

In order to supply the instruction or equipment needed in certain courses, some evening classes are limited to a specific number of students.

Registration in limited classes is subject to the following conditions:

1. Registration must be made individually, in person, at any Extension office.
2. No refunds or transfers may be made after the close of the registration period, except for reasons beyond the control of the student, in which case the student must petition on a special form provided for that purpose. No refunds will be considered after the fourth week of classes. If a refund is made, a registration fee of \$3 will be retained.

Cancellations and Refunds

For limited class regulations, see above.

Cancellation of registrations must be made in writing or in person at any Extension office. No cancellations will be accepted by telephone. *No instructor is authorized to accept cancellation of any registration.* The effective date of cancellation will be the day on which the cancellation is received in any Extension office, regardless of date of last attendance.

In case of cancellation before the opening date of each semester, quarter, or special term, a registration fee of \$3 will be retained, regardless of the amount of tuition.

No cancellation will be accepted during the final 2 weeks of any term.

Full refunds of all tuition and special fees will be made only under special circumstances, as follows:

1. When a class is canceled by the Extension Division.
2. When the hour, day, or location of the class is changed by the Extension Division, after a student has registered in it.

Evening and Special Classes

3. When, in the opinion of the instructor, the student does not have the necessary prerequisites or the class does not meet the student's needs. In this case, the student should:

- a. Ask the instructor for his copy of the student's class card with an appropriate statement on the back, endorsed by the instructor.
- b. Present this class card, together with the fee statement and application for cancellation, at any Extension Office before the end of the second week of the term.

Partial refunds of tuition and special fees will be made as follows (privilege fees for late registration, additions, and transfers are not refundable):

During any semester, quarter, or special term of 10 or more weeks:

<i>Cancellation received</i>	<i>Refund granted</i>
First week	75%
Second week	75%
Third week	50%
Fourth week	25%
After the fourth week	No refund

If, for reasons completely beyond his control, a student must cancel after the opening date of a term, he may petition the Committee on Student Scholastic Standing for a full refund of tuition and special fees, except the registration fee of \$3. No such petition will be accepted after the fourth week of the term.

Veterans and military personnel cannot cancel classes without permission of the Extension Veterans Office. Please refer to the section on Special Information for Veterans and Members of the Armed Forces.

SPECIAL INFORMATION FOR VETERANS AND MEMBERS OF THE ARMED FORCES

Regulations and information applicable to military personnel and veteran enrollment and educational training are published below. In addition, all military personnel and veterans are urged to familiarize themselves with the General Information and Registration Regulations and Fees sections of this bulletin. University regulations and procedures apply to all students unless stated to the contrary.

Military Personnel

All branches of the Armed Services now provide Off-Duty Academic Instruction or Tuition Assistance Programs for military personnel on active duty. Under these programs, eligible military personnel may be entitled to payment of 75 per cent of tuition for approved classes. The remaining 25 per cent tuition and all fees must be paid by military personnel. Interested members of the Armed Services are urged to contact the educational officer or commanding officer of their Command for proper authorization to participate in these programs. Written authorization designating classes and amount of tuition to be paid by Army, Navy, Air Force, or Marine Corps should be presented at time of registration at which time payment of remainder of tuition and fees must be made. Registration must be made in person at the Veterans Office, 56 Nicholson Hall, Minneapolis Campus, Federal 8-8791.

World War II Veterans

Educational benefits under P.L. 346 were terminated July 25, 1956.

State of Minnesota Department of Veterans Affairs

World War II and Korean veterans, previously eligible for educational benefits under P.L. 346 and P.L. 550 respectively, who have not completed their educational objective may be eligible for tuition assistance from the State of Minnesota Department of Veterans Affairs (State Aid). For further information write to Mr. C. R. Alexander, Commissioner of Veteran Affairs, State of Minnesota, St. Paul 1.

Korean War Veterans

A Korean veteran who wishes to initiate his educational training, resume his educational training, or make changes in his educational training program under Public Law 550 is urged to keep the following information in mind: (a) A Korean veteran initiating his training for the first time must be actually enrolled in and attending classes on or before his delimiting date, which date is 3 years from his date of separation from active duty. The Veterans Administration makes no exception to this rule. The mere registration for classes does not constitute initiation of a training program. (b) A Korean veteran can interrupt his educational program for a period not to exceed 12 calendar months. He must re-enroll so that he will be actually attending class 12 months from the last day of the last semester, quarter, or term in which he enrolled except that if his delimiting date has not been reached the interruption may be extended to the delimiting date. This means that if a term closed June 14, 1958, a veteran must be enrolled in and attending class on or before June 14, 1959. The Veterans Administration makes no exception to this rule. The mere registration for classes does not satisfy the re-enrollment requirement. (c) Any Korean veteran who has initiated his educational training and then decides that he would like to change his objective can do so without restriction if the change is requested and the new program initiated prior to his delimiting date. However, if he has not used his one change in objective, a new educational objective may be approved after his delimiting date provided it involves no material loss of time or credit. The Veterans Office, 56 Nicholson Hall, should be consulted regarding such a proposed change in objective.

Recent changes in the Korean Veteran Educational Bill, Public Law 550, now permit Korean veterans to initiate their educational training in correspondence courses and change to evening or day time classes or vice versa without penalty or change in objective.

They cannot, however, be enrolled in correspondence courses and evening or day time classes concurrently.

Registrations—All registrations by Korean veterans must be made in person at the Veterans Office, 56 Nicholson Hall, Minneapolis Campus, Federal 8-8791. No Korean veteran registration can be accepted at either the St. Paul

Evening and Special Classes

or Minneapolis Extension offices. Consult the Registration section of this bulletin for exact dates.

Korean veterans are urged to use the facilities of the Veterans Office of the General Extension Division in completing original and supplemental applications for educational training. Such applications can be made at time of registration. Counselors will help designate the proper educational objective. Official VA forms will be available in this office. No evidence of discharge or separation from military service is necessary in applying for original certificate for educational training when permanent mailing address *was in state of Minnesota* at time of discharge or separation. When permanent mailing address was *not* in state of Minnesota a copy or photostat (not original) of DD214 Separation from Military Service is required for VA purposes.

Original Certificate for Educational Training—A Korean veteran who has not applied previously for educational training under Public Law 550 should contact the Veterans Office, General Extension Division, 56 Nicholson Hall, for all information regarding his application, objective, and registration at the University of Minnesota.

A Korean veteran who has applied previously for a Certificate for Education and Training (VA Form 7-1993) must present this certificate at the time of initial registration for evening classes or submit evidence that such application has been made.

A Certificate for Education and Training filed with the General Extension Division can be used by the veteran until his educational objective has been reached or his entitlement exhausted, provided he does not attend any other educational institution.

Supplemental Certificate for Educational Training—The Korean veteran who has previously used his educational benefits under P.L. 550 at some institution of higher learning other than the University of Minnesota is urged to contact the Veterans Office of General Extension Division for help in completing his application for additional training (VA Form 7-1995).

Korean veterans previously enrolled at the University of Minnesota may not need to file VA Form 7-1995. Consult the following paragraph.

Korean Veterans Previously Enrolled in the University of Minnesota—Korean veterans previously enrolled at the University of Minnesota may enroll in correspondence courses, evening or day time classes on the Minneapolis or St. Paul campuses or at UMD without penalty and without filing VA Form 7-1995 upon presentation of U of M Form A19a at time of registration. This form can be secured from the Veterans Office within the University of Minnesota which accepted your last registration under P.L. 550.

Educational Requirements—There are no special entrance or residence requirements for Korean veterans. See Admission Requirements, page 6. However, all Korean veterans previously enrolled at any institution of higher learning must present a transcript of such work for evaluation to the Veterans Office, 56 Nicholson Hall, on or before time of registration.

Tuition and Fees—A Korean veteran must pay personally at the time of registration the full amount of the tuition and other special fees for evening classes. This money will be refunded to the veteran by the Veterans Administration if the enrollment is for less than ½-time work load. If the enrollment is for more than a ½-time work load an educational allowance will be paid to the veteran. (See following chart, also Monthly Certifications section.)

Books, Supplies, and Equipment—All books, supplies, and required equipment must be purchased personally by the Korean veteran at a bookstore of his own choosing. The Veterans Administration will not refund the cost of these materials.

Monthly Educational Allowance—When a Korean veteran enrolls for a minimum ½-time credit or credit equivalent work load in evening or day time classes he will be paid a monthly educational allowance on the basis of monthly certifications (see paragraph on Monthly Certifications). All entrance credit classes carry a credit equivalent for purposes of determining monthly educational or tuition refunds. Enrollment in correspondence courses does not entitle a Korean veteran to a monthly educational allowance (see following section on Tuition Refund by the Veterans Administration).

The Veterans Administration classifies all credit work loads in terms of quarter-length classes. Most evening classes are a semester in length. For this reason misinformation, confusion, and misunderstanding have resulted in determining the credit work load of the Korean veteran registered for evening classes. The following chart shows how payments are determined by the Veterans Administration.

	Semester Classes (Minimum Credits)	Quarter Classes (Minimum Credits)	Educational Allowance		
			Single	One De- pendent	Two De- pendents
Full Work Load	21	14	\$110	\$135	\$160
¾ Work Load	15	10	80	100	120
½ Work Load	10½	7	50	60	80

Tuition Refund by the Veterans Administration—When a Korean veteran enrolls in correspondence courses or for less than a ½-time credit or credit equivalent work load in either evening or day time classes, he will be refunded tuition and fees only. These refunds will be prorated monthly on the basis of monthly certifications (see paragraphs on Monthly Certifications).

Satisfactory Completion of Classes—A Korean veteran must complete all classes in which he is enrolled and maintain a minimum grade average of C. (See Delinquent Attendance, below.)

Delinquent Attendance—Under the new grading system of the University the grades of Y and Z have been eliminated. This means that any veteran who fails to *officially* cancel his registration for any class in which he cannot continue will receive a grade of F (Fail) or I (Incomplete) whichever is appropriate. If the grade of F or I is received because of delinquent attendance or failure to take the final examination, the Veterans Office will automatically notify the Veterans Administration of the last day of attendance as stated by the instructor concerned on "Delinquent Attendance" forms provided for this purpose. If the veteran has signed monthly certifications (VA Form 7-1996a) subsequent to that date, he will be required to make reimbursement for such overpayment of tuition refund or educational allowance as may be determined by the Veterans Administration.

Monthly Certifications—All refunds of tuition and fees and/or payments of educational allowances are paid monthly by the Veterans Administration directly to the veteran. These payments are made on the basis of joint monthly

Evening and Special Classes

certification made by the veteran and the Veterans Office of the General Extension Division. Any veteran who fails to sign such certifications for 2 consecutive months will have his registration terminated by the Veterans Administration. Full details regarding these certifications will be given at the time of registration.

A Korean veteran who drops out of any class must officially cancel his registration as of the date of last attendance and must indicate this date on the appropriate monthly certification (VA Form 7-1996a).

Korean veterans are strongly advised to remember that signing monthly certifications is not a mere perfunctory act. Since all monies paid a Korean veteran by the Veterans Administration are based on said monthly certification, the General Extension Division emphasizes that by signing a certification a Korean veteran is making a legal affidavit that he is still in attendance and completing assignments in all classes in which originally enrolled unless there has been an official cancellation submitted to the Veterans Office, 56 Nicholson Hall. No instructor is authorized to accept cancellations.

Cancellations, Transfers, and Additions

Cancellation of any class, or transfer from or addition to an initial registration, must be made in person on official forms at the Veterans Office, 56 Nicholson Hall.

Counseling

The Veterans Office, 56 Nicholson Hall, Minneapolis Campus, Federal 8-8791, should be consulted on all problems related to Veterans Administration authorizations for educational training, transfers, interruptions, or cancellations, as well as Extension Division registration procedures. Extension veterans are warned that advice or information given by any other source may not satisfy Veterans Administration and University regulations which are peculiar to educational training requirements of the General Extension Division. Do not hesitate to use the services of the Veterans Office, General Extension Division, whenever your educational training benefits are involved.

SPECIAL SERVICES FOR STUDENTS

Program Advising and Personal Counseling

Members of the evening class staff are available at all offices *by appointment* throughout the year for general advisory services on the selection of classes, programs of study, certificate and degree requirements, etc. The Committee on Student Scholastic Standing in the campus office assists students in arranging programs of study leading to University degrees, and handles evaluations of transcripts for advanced standing, satisfaction of prerequisites, special examinations, and other academic matters. Appointments for the testing and counseling services of the University Student Counseling Bureau may also be arranged through the Committee on Student Scholastic Standing. The Counseling Bureau's fee for regularly enrolled evening students is \$4.

During the special registration periods before the fall and spring semesters, advisers will be on duty from 1 to 5 p.m. and from 6:30 to 8 p.m., Monday through Friday, and from 9 a.m. to 3 p.m. on Saturday in all Extension offices.

Program advisers from the College of Science, Literature, and the Arts, the College of Education, the School of Business Administration, and the Institute of Technology will be scheduled at the campus office for specific evening and Saturday morning hours during these special registration periods. A student wishing to see such an adviser should telephone for information as to the schedule and *make an appointment*.

Extension Student Loan Fund

Extension students who are able to demonstrate that attendance at the University would be very difficult without financial assistance are eligible for loans limited to \$50 a term or \$100 for the year from the Staff and Employees Extension Student Loan Fund. Applications for loans must be made not later than *1 week preceding* the beginning of the term in which the student desires to enroll. Inquiries concerning applications, eligibility, as well as attendant financial problems, may be made at any Extension office.

Aids for Handicapped Students

"Rehabilitation funds" for the education of disabled persons are available through the State Department of Education. Applications for aid from these funds should be sent to the Division of Vocational Rehabilitation, State Office Building, St. Paul 1.

University Library

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

Coffman Memorial Union

The facilities of the student union building are open to evening class students. The cafeteria on the ground floor is usually open in the evenings; hours are posted outside the door.

Convocations

University convocations are open to the public. They are usually held on Thursday mornings at 11:30 in Northrop Memorial Auditorium.

University Theater, Artists Course, and Special Lectures

Events of an educational and cultural nature are constantly being offered on the University campuses. Many of them are open to the student body and to the public without charge; for others there are admission charges. For information, telephone the University and ask for the Theater office, the Artists Course office, or the Department of Concerts and Lectures.

Evening and Special Classes

Minneapolis Symphony Orchestra

Special rates for season tickets to the regular concert season are available to students registered for at least 5 credits in evening classes.

Athletic Facilities and Season Tickets

Recreational activities for men and women are listed in this bulletin. In addition, certain recreational facilities of the University may be used by Extension students on terms available on request from the evening class department or the departments concerned: men and women may use the golf course, the ice-skating rink, and the tennis courts; men may use the gymnasium and swimming pool.

Any student enrolled for at least 5 credits of evening classes, with a minimum fee of \$35, may purchase 1 student athletic season ticket book at \$11. Married students may purchase a second book, for use by *spouse only*, at \$14.50. All ticket books are nontransferable. If classes are canceled, athletic books must be returned to athletic office. Books may be bought at the special student athletic ticket sale headquarters on campus the week before classes begin. The ticket sale schedule will be as follows:

9 a.m.-4:30 p.m.—Williams Arena Lobby

Wednesday, September 24

Friday, September 26

Tuesday, September 30

Wednesday, October 1

9 a.m.-9 p.m.—Williams Arena Lobby

Thursday, September 25

Monday, September 29

Ticket books will be issued in Williams Arena Lobby on Friday, October 3, and Saturday, October 4, from 9 a.m. to 4:30 p.m. Regulations governing purchase, transfer, and cancellation of these books are available on request to the Athletic Ticket office.

II. Course Offerings

AGRICULTURE AND HOME ECONOMICS

Students who travel by bus can reach the agriculture buildings on the St. Paul Campus by taking the intercampus buses that leave the Minneapolis Campus at 5:50 and 6:10 p.m.

Home Economics (HE)

Special Topics in Food and Nutrition. No credit. \$14.

Lectures and discussion of selected topics dealing with food preparation, experimental cookery, nutrition, and diet therapy of particular interest to home economists in business. (Prerequisite: 5 credits in organic chemistry and 15 credits in food and nutrition, or ##) Ten weeks beginning September 30.

September 30–December 2

T 7:00-9:00, Ford 180, Gordon, Gormican

Textiles. No credit. \$14 plus \$1 materials fee.

A class for consumers and for those making or selling clothing and home furnishings. Woven and knitted fabrics of cotton, linen, wool, silk, rayon, and the new fibers; manufacturing and finishing processes; qualities, tests, uses, maintenance; explanation of technical terms and of characteristics determining comparative values; application to men's, women's, and children's apparel as well as to household items such as draperies, rugs, upholstery fabrics, blankets, linens. The content of the course is somewhat flexible depending upon the needs and interests of the students enrolled. (No prerequisite)

October 1–November 19

W 7:00-9:30, Ford 70, Carlson

Horticulture (Hort)

10. Home Floriculture and Gardening. 3 degree credits. \$21.

A practical course in the science of house plant growing, propagation and care of plants; and special emphasis on autumn gardening activities; growing bulbs in the garden and in pots for the home in winter. Student projects in growing plants from cuttings; and growing and forcing bulbs for winter house plants. Although this course is especially designed for beginning gardeners, it is comprehensive enough to interest the advanced amateurs as well as professional gardeners. An opportunity for gardeners to participate actively in plant culture throughout the year. (No prerequisite)

Fall Semester

T 6:20-8:00, Horticulture 102, St. Paul Campus, Phillips

24. Home Landscaping Planning. 3 degree credits. \$21.

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

Symbols explained on page 22.

Evening and Special Classes

will find this course especially helpful in accomplishing his ideal, which is a well-planned house and well-planned and planted grounds and gardens. (No prerequisite)

Fall Semester

Th 6:20-8:00, Horticulture 102, St. Paul Campus, Phillips

25. Home Landscape Planting and Construction. 3 degree credits. \$21.

More or less a continuation of the course in Home Landscape Planning; however, a beginning student may take this course without being handicapped. Special emphasis is placed upon the recognition and use of plant materials in securing artistic landscape compositions and the planning and planting of ornamental gardens. An art course in landscaping and gardening presented in a practical way for the home owner, the landscape gardener, the student of art and nature. (No prerequisite)

Spring Semester

Th 6:20-8:00, Horticulture 102, St. Paul Campus, Phillips

51. Garden Flowers and Home Gardening. 3 degree credits. \$21.

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

Spring Semester

T 6:20-8:00, Horticulture 102, St. Paul Campus, Phillips

Symbols explained on page 22.

ARTS AND SCIENCES- 12

Anthropology (Anth) - 12

1A.‡ Introduction to Anthropology: Prehistoric Man and Culture. 3 degree credits, §old course 2. \$21.

Origins of man and development of modern races. Growth and differentiation of the cultures of man from the Dawn Stone Age of early glacial times through the Old and New Stone Ages to the dawn of civilization in the Bronze and Iron Ages. (No prerequisite)

Fall Semester - 7/21/45

T 8:05-9:45, Ford 130, Tefft

2A.‡ Introduction to Anthropology: Cultural Anthropology. 3 degree credits, §old course 1. \$21.

The varieties and range of human behavior as revealed through the study of primitive societies in all parts of the world. A scientific analysis of the way in which primitive men organize their lives, directed toward a deeper and broader understanding of human capacities and purposes. (No prerequisite)

Spring Semester

T 8:05-9:45, Ford 130, Reining

165. Culture and Personality. 3 degree credits. \$21.

Role of culture in the formation of personality. Problems of individual adjustments to the demands of culture. Psychological approach to culture. (No prerequisite)

Fall Semester

Th 8:05-9:45, Ford 130, Reining

Art (Art)

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

1. Introduction to Art. 3 degree credits. \$21 plus \$1 laboratory fee.

An illustrated lecture course designed to give the student an understanding of art, including painting, sculpture, architecture, and the industrial arts. This understanding is based on the study of the principles involved in their creation, and recognition of the place of art in its social setting. Particular emphasis will be given to original works of art in Twin Cities art galleries and current exhibitions. (No prerequisite)

Fall Quarter

Winter Quarter

Spring Quarter

T 7:30-9:45, Jones 207b, Eitner T 7:30-9:45, Jones 207b, Wald- T 7:30-9:45, Jones 207b, Eitner fogel

Symbols explained on page 22.

Evening and Special Classes } 10

3. Principles of Renaissance and Modern Art. 3 degree credits. \$21 plus \$1 laboratory fee.

Second course of a series on introduction to the principles of art criticism. A selected number of monuments for the general study of Renaissance, Baroque, and modern art and culture. (Prerequisite: 1)

Fall Quarter

Th 7:30-9:45, Jones 207b, Eitner

Art 10. Basic Photography I. See page 58.

Art 11. Basic Photography II. See page 58.

***23-24-25. First Year Drawing and Painting.** 2 degree credits each semester. \$21 plus \$3 laboratory fee.

An introduction to materials and techniques; still life, figures, and landscape. (No prerequisite for 23; for 24 and 25, #. Each section limited to 30 students)

Fall Semester

T 6:20-8:50, Jones 10, Young
T 7:00-9:30, Walker Art Center, Kilbride
Th 6:20-8:50, Jones 10, Young

Spring Semester

T 6:20-8:50, Jones 10, Young
T 7:00-9:30, Walker Art Center, Kilbride
Th 6:20-8:50, Jones 10, Young

***30-31-32. Commercial Drawing.** 2 degree credits each semester. \$21 plus \$3 laboratory fee.

Elementary and advanced commercial art: design, lettering, layouts, posters in pen and ink, pencil, color, or other mediums. Solutions of practical problems stressed. (No prerequisite for 30; for 31 and 32, #. Class limited to 30 students)

Fall Semester

M 7:30-10:00, Jones 104, Dietrichsen

Spring Semester

M 7:30-10:00, Jones 104, Dietrichsen

40-41-42. Sculpture I (or 80-81-82, Sculpture II, see page 35). 2 degree credits each semester. \$21 plus \$5 laboratory fee.

40: Beginning course. An intensive study of structure in nature with emphasis on accurate observation. Life drawing prepares the student for each sculpture problem. The sculpture medium is clay. Some instruction in plaster casting. 41: Integrates basic principles examined in 40. Natural form is studied for its sculptural possibilities. A more imaginative approach to the study of nature is encouraged. In addition to clay, direct plaster construction is the principal medium. Drawing from life precedes each problem. 42: Design Workshop. Free exploration of wood, metal, and ceramics. Emphasis is placed on abstract application of structural principles. Fundamental hand and machine tools are introduced. (Prerequisite: 1 or 11 or # for 40; 40 or ## for 41; 1 or # for 42)

Fall Semester

W 7:00-9:30, Holman 154, Townsend

Spring Semester

W 7:00-9:30, Holman 154, Eldred

***45-94. Ceramics.** 2 degree credits each semester. \$21 plus \$5 laboratory fee.

Introduction to materials, forming methods, and production processes. Model making by hand and machine methods. Problems in product design, such as dinnerware. Experience in industrial methods of forming, such as slip casting, jiggering, and pressing. Fundamentals of pottery including handbuilding and wheel throwing. (No prerequisite. Class limited to 20 students)

Fall Semester

W 6:20-8:45, Holman 134, MacKenzie

Spring Semester

W 6:20-8:45, Holman 134, MacKenzie

Symbols explained on page 22.

Course Offerings—Arts and Sciences

60-61-62. Second Year Drawing and Painting.** (**Art 150-151-152) 2 degree credits each semester. \$21 plus \$3 laboratory fee.

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

Fall Semester

Th 7:00-9:30, Jones 200, Rollins

Spring Semester

Th 7:00-9:30, Jones 200, Rollins

67. Modern Art: Realism and Impressionism. 3 degree credits. \$21.

Painting, sculpture, and architecture during the second half of the 19th century with particular emphasis on the schools of Paris, their influence and parallels in England, Germany, and the United States. (May not be credited toward an art major. Prerequisite: 1 or 50 or ##)

Winter Quarter

M 7:30-9:45, Jones 207b, Torbert

68. Modern Art: Contemporary Art in Europe and America. 3 degree credits. \$21.

Development of painting, sculpture, and architecture in Europe and the United States during the 20th century. (May not be credited toward an art major. Prerequisite: 1 or 50 or ##)

Spring Quarter

M 7:30-9:45, Jones 207b, Waldfoegel

80-81-82. Sculpture II. 2 degree credits each semester. \$21 plus \$5 laboratory fee.

Direct carving in stone and wood with attention given to possibilities of materials and sculptural design. Experimental work in metal, plastics, and combinations of sculptural materials. Some direct modeling in plaster. (Prerequisite: 42 or ## for 80; previous unit or ## for 81 and 82)

Fall Semester

W 7:00-9:30, Holman 154, Townsend

Spring Semester

W 7:00-9:30, Holman 154, Eldred

***83A. Interior Design I.** 3 degree credits. \$21 plus \$1 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. (No prerequisite. Each section limited to 50 students, accepted in order of registration. Repeated spring semester)

Fall Semester

T 6:20-8:00, Nicholson 209, Lewis
W 6:20-8:00, Nicholson 209, Lewis
Th 8:05-9:45, Nicholson 209, Lewis

Spring Semester

M 6:20-8:00, Nicholson 209, Lewis
Th 6:20-8:00, Nicholson 209, Lewis

84A. Interior Design II. 3 degree credits. \$21 plus \$1 laboratory fee.

Trends in decorative fabrics and floor coverings including new fiber combinations in curtain, drapery, upholstery fabrics are studied. How to estimate is explained. Major accessories such as picture selection, ceramics, and use of metals in interiors are important.

Symbols explained on page 22.

Evening and Special Classes

Planning room color schemes and window treatments are considered throughout the course. Talks by buyers from loop stores and an optional field trip add interest. (Prerequisite: 83A)

Spring Semester

T 6:20-8:00, Nicholson 209, Lewis

W 6:20-8:00, Nicholson 209, Lewis

***103A-104A. Seminar in Interior Design.** 3 degree credits. \$21.

A further expansion of subjects studied in Art 83A-84A. Students will work on individual projects under supervision. (Prerequisite: For 103A, 84; for 104A, 103A. Class limited to 20 students. No auditors)

Note—Properly qualified students may register for graduate credit. Consult chairman of Art Department.

Fall Semester

M 6:20-8:00, Nicholson 107, Lewis

143-144-145. Design in Industry. 3 degree credits each semester. \$21.

Analysis of products designed for industrial production, and a historical survey of design in industry, combined with practical workshop problems. Acquaints the student with the ways in which industrial processes and production techniques affect conceptions of design in contemporary society. 143: Historical development of industrial design. Evaluation, by means of research problems of the relationship between design, function, and manufacturing processes. 144: Continued research and field trips investigating design in industry and the effects of mass production on the product. Practical laboratory problems in design for industry. 145: A continuation of 144. Leads to a final experimental problem. (Prerequisite: 44 or ## for 143; 143 for 144; 144 for 145)

Fall Semester

M 6:30-9:30, TNCE 100, Sekely

Spring Semester

M 6:30-9:30, TNCE 100, Sekely

Architectural Drafting. See page 49.

Art Education. See page 95.

Engineering Drawing. See page 102.

Gardening and Landscaping. See page 31.

Modern Home Planning. See page 49.

COURSES AT MINNEAPOLIS SCHOOL OF ART

Registrations for University credit for these courses will be taken only at one of the Extension offices. The Minneapolis School of Art is located at 200 East 25th Street.

15A-B. Lettering. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

The study and practice of free and constructed lettering. Special emphasis is placed upon the relationship of lettering to all other visual elements which make up a total composition or layout. (No prerequisite)

Fall Semester

A Th 7:00-9:30, Mpls School of Art,
De Cosse

February 9-June 4

B Th 7:00-9:30, Mpls School of Art,
De Cosse

Symbols explained on page 22.

Course Offerings—Arts and Sciences

20A-B. Basic Drawing. 4 degree credits each semester. \$42 plus \$6 laboratory fee.

Emphasis is placed on the basic principles of perspective drawing and composition. Some life drawing included. Wide variety of mediums used. (No prerequisite. Fall semester students who have taken 20B without 20A, who now wish to take 20A, must register in the second listed section on MW. Spring term students who wish to take 20B without 20A must register in the second listed section on MW)

Fall Semester

A MW 7:00-9:30, Mpls School of Art,
Jenkyn
A MW 7:00-9:30, Mpls School of Art
A TTh 7:00-9:30, Mpls School of Art,
Dietrichsen

February 9-June 4

B MW 7:00-9:30, Mpls School of Art,
Jenkyn
B MW 7:00-9:30, Mpls School of Art,
Dietrichsen
B TTh 7:00-9:30, Mpls School of Art,
Dietrichsen

21A-B. Life Drawing. 2 degree credits. \$21 plus \$3 laboratory fee.

Drawing and composition from the figure. Special emphasis on surface anatomy and shape characteristics of the individual model. (No prerequisite)

Fall Semester

A T 7:00-9:30, Mpls School of Art,
Kappel
A W 7:00-9:30, Mpls School of Art,
Jenkyn

February 9-June 4

B T 7:00-9:30, Mpls School of Art,
Kappel
B W 7:00-9:30, Mpls School of Art,
Jenkyn

22A-B. Still Life Painting. 2 or 4 degree credits each semester. \$21 or \$42 plus \$3 or \$6 laboratory fee.

An introductory class in oil painting designed to acquaint the student with the medium and its uses. Emphasis is placed upon craftsmanship and the basic principles of picture making. There are assigned problems in color harmony, tone relationship, and shape organization. (Prerequisite: 20A-B)

Fall Semester

A M 7:00-9:30, Mpls School of Art,
Bradley
A W 7:00-9:30, Mpls School of Art,
Bradley

February 9-June 4

B M 7:00-9:30, Mpls School of Art,
Bradley
B W 7:00-9:30, Mpls School of Art,
Bradley

40A-B. Sculpture. 4 degree credits each semester. \$42 plus \$6 laboratory fee.

Figure modeling. (Prerequisite: 21A-B or #)

Fall Semester

A TTh 7:00-9:30, Mpls School of Art,
Soderlind

February 9-June 4

B TTh 7:00-9:30, Mpls School of Art,
Soderlind

50A-B. Painting II. 2 or 4 degree credits each semester. \$21 or \$42 plus \$3 or \$6 laboratory fee.

This class follows the Still Life Painting class. Work in oil composition with continued stress on tone relationship and shape organization. (Prerequisite: 22A-B)

Fall Semester

A T 7:00-9:30, Mpls School of Art,
Hendler
A Th 7:00-9:30, Mpls School of Art,
Hendler

February 9-June 4

B T 7:00-9:30, Mpls School of Art,
Hendler
B Th 7:00-9:30, Mpls School of Art,
Hendler

Symbols explained on page 22.

Evening and Special Classes

54A-B. Life Drawing. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

Continuation of head and figure study; construction interpretation, movement. Figure composition. (Prerequisite: 21A-B)

Fall Semester

February 9-June 4

A Th 7:00-9:30, Mpls School of Art, Larkin B Th 7:00-9:30, Mpls School of Art, Larkin

54C-D. Portrait. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

Head study, using various media, stressing discovery of each model's individual qualities. (Prerequisite: 21A-B)

Fall Semester

February 9-June 4

C M 7:00-9:30, Mpls School of Art, Sussman D M 7:00-9:30, Mpls School of Art, Sussman

55A-B. Life Drawing. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

An advanced class designed to acquaint the student with the relationships between abstract and realistic forms as related to those observed shapes in the human figure. (Prerequisite: 54A-B Life Drawing)

Fall Semester

February 9-June 4

A T 7:00-9:30, Mpls School of Art, Mousseau B T 7:00-9:30, Mpls School of Art, Mousseau

60A-B. Watercolor. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

A broadly designed class in watercolor painting covering a wide range of subject material. (Prerequisite: 20A-B or #)

Fall Semester

February 9-June 4

A M 7:00-9:30, Mpls School of Art B M 7:00-9:30, Mpls School of Art

62A-B. Life Painting. 4 degree credits each semester. \$42 plus \$6 laboratory fee.

An oil painting class designed to cause the student to see and use natural forms in pictorial organization. Form and form relationships are shown as they occur in the human figure. (Prerequisite: 21 and 22)

Fall Semester

February 9-June 4

A MW 7:00-9:30, Mpls School of Art, Quick B MW 7:00-9:30, Mpls School of Art, Quick

74A-B. Fashion Illustration. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

Specialized fashion illustrations in black and white from the costumed model. Class is designed for students wishing to enter newspaper and magazine fashion illustration fields. (Prerequisite: 21)

Fall Semester

February 9-June 4

A T 7:00-9:30, Mpls School of Art, New-house B T 7:00-9:30, Mpls School of Art, New-house

Symbols explained on page 22.

Course Offerings—Arts and Sciences

75A-B. Graphic Arts (Layout). 2 degree credits each semester. \$21 plus \$3 laboratory fee.

An introduction to the problems of the commercial art field. The organization and composition of visual elements as used in newspaper, magazine, poster, and brochure presentation are stressed. (Prerequisite: 20 or 21 and 15)

Fall Semester

February 9–June 4

A Th 7:00-9:30, Mpls School of Art, Mason B Th 7:00-9:30, Mpls School of Art, Mason

COURSES AT ST. PAUL GALLERY AND SCHOOL OF ART

Registrations will be taken only at Extension offices. The facilities of the Gallery will be available to students in certain courses who wish to use them for unsupervised studio work. Consult St. Paul Gallery for arrangements. The St. Paul Gallery is located at 476 Summit Avenue.

23-24-25. First Year Drawing and Painting. 2 degree credits each semester. \$21 plus \$3 laboratory fee. **Studio workshop**—See note above.

An introduction to a variety of art experiences in drawing and painting. Students are encouraged to explore in a number of mediums such as: pencil, charcoal, water colors and oil paints. In addition to creative expression from imaginative sources the classes will provide the discipline of drawing directly from the model and still life. (No prerequisite)

Fall Semester

Spring Semester

T 7:00-9:30, StP Gallery, Safer

T 7:00-9:30, StP Gallery, Safer

33-34-35. Textile Design: Weaving. 2 degree credits each semester. \$21 plus \$3 laboratory fee.

33: Basic course in weaving offering explorations in texture, color, and spacing and experience in all the processes involving the two-harness loom, including the designing and weaving of the finished fabric. (No prerequisite). 34: Continuation of beginning course 33 into four-harness weaving including the designing and weaving of the finished fabric. 35: Extension of course 34 with emphasis on the designing and weaving of four-harness; overshot patterns. (Prerequisites: 33, no prerequisite; 34 and 35, previous unit or ##)

Fall Semester

Spring Semester

T 7:00-9:30, StP Gallery, Kolb

T 7:00-9:30, StP Gallery, Kolb

45-94-95. Ceramics. 2 degree credits each semester. \$21 plus \$5 laboratory fee. **Studio workshop**—See note above.

Introduction to materials, forming methods, and production processes. Fundamentals of pottery including handbuilding, wheel throwing, decorative techniques in slip and glaze, glazing and firing. (No prerequisite)

Fall Semester

Spring Semester

W 7:00-9:30, StP Gallery, Kolb

W 7:00-9:30, StP Gallery, Kolb

Th 7:00-9:30, StP Gallery, Kolb

Th 7:00-9:30, StP Gallery, Kolb

Studio workshop T 7:00-9:30, StP Gallery

Studio workshop T 7:00-9:30, StP Gallery

49. General Crafts (Metal Design). 3 degree credits. \$21 plus \$3 laboratory fee.

An introduction to the use of tools and basic material working techniques. Emphasis is placed upon individual solution of design problems in jewelry and other decorative metal work. The student will work in base and precious metals and supplementary material such as rare wood and gem stones. (No prerequisite)

Fall Semester

Spring Semester

W 7:00-9:30, StP Gallery, Schmidt

W 7:00-9:30, StP Gallery, Schmidt

Symbols explained on page 22.

Evening and Special Classes

60-61-62. Second Year Drawing and Painting. 2 degree credits each semester. \$21 plus \$3 laboratory fee. **Studio workshop**—See note on page 39.

Still life and figure problems to be carried out in charcoal, chalk, water color, and oil. Study of problems related to drawing and painting through experiments designed to suit the needs and purposes of the individual student. (Prerequisite: 20-21-22 or ##)

Fall Semester

T 7:00-9:30, StP Gallery, Kramer
W 7:00-9:30, StP Gallery, Kramer

Spring Semester

T 7:00-9:30, StP Gallery, Kramer
W 7:00-9:30, StP Gallery, Kramer

89. Textile Design: Weaving. 2 degree credits. \$21 plus \$3 laboratory fee.

Advanced weaving with explorations in areas to be determined by the student in consultation with instructor. (Prerequisite: 35 or ##)

Fall Semester

T 7:00-9:30, StP Gallery, Kolb

Spring Semester

T 7:00-9:30, StP Gallery, Kolb

101-102. Ceramics. 2 degree credits each semester. \$21 plus \$5 laboratory fee.

Continuation of basic courses with advanced problems in same areas.

Fall Semester

W 7:00-9:30, StP Gallery, Kolb
Th 7:00-9:30, StP Gallery, Kolb

Spring Semester

W 7:00-9:30, StP Gallery, Kolb
Th 7:00-9:30, StP Gallery, Kolb

Astronomy (Ast)

13. Practical and Stellar Astronomy. 3 degree credits. \$21.

A detailed description of the constellations and individual stars, and structure of the sidereal universe, determination of time from the stars; extended opportunity for the use of the telescope and the observation of the heavenly bodies, supplemented by use of the Spitz Projection Planetarium. (No prerequisite)

Spring Semester

(Special dates: Feb. 11-June 3)

W 6:20-8:00, Physics 133, Luyten

Child Development and Welfare

See Education Courses, page 95.

English

English Placement Tests

Admission to English classes (Engl 1b-2b-3b and Comm 1-2-3) is based on satisfactory score in the English Placement Test or satisfactory completion of Preparatory Composition. *Please note:* (a) if you are uncertain regarding your eligibility but desire to be enrolled, *register for Engl 1b or Comm 1*; (b) if you took the Placement Test in a Minnesota high school within the last 2 years, you must, at least 1 week before the first meeting of the class, contact the campus office of the General Extension Division giving your name, the name of your high school, and the date of your graduation. *You need not take the test again.*

Symbols explained on page 22.

Course Offerings—Arts and Sciences

(c) If you have not taken the test, or if you took the test more than 2 years ago, report for testing at one of the following times and places.

Fall Quarter

7:00 Thursday, September 18, Nicholson 211
7:00 Tuesday, September 23, Nicholson 211
7:00 Tuesday, September 23, St. Paul Extension Center 206

Winter Quarter

7:00 Monday, January 5, Nicholson 211

Spring Quarter

7:00 Wednesday, March 25, Nicholson 211

COMPOSITION (Comp)

Grammar Review. 3 certificate credits. \$21 plus \$1 materials fee.

An intensive review of grammar (parts of speech, inflections, syntax), punctuation, and spelling for those who want a "refresher" before going into other English courses or who feel the need of a basic course in the fundamentals of English usage; designed to develop the ability to compose correct and effective sentences. (No prerequisite. This is not a substitute for Preparatory Composition—see English Placement Tests, page 40. Repeated spring semester)

Fall Semester

W 6:20-8:00, Folwell 105, Alford

Spring Semester

W 6:00-7:40, StP Ext Center 205, Alford

Preparatory Composition. No credit. \$21 plus \$1 materials fee.

Intensive drill on grammatical forms, structure, and theme writing. (No prerequisite. Note Engl 1b-2b-3b below and Comm 1-2-3, pages 42, 49. Repeated winter and spring quarters)

Fall Quarter

W 6:20-8:50, Folwell 104
F 6:00-8:30, StP Ext Center
204

Winter Quarter

W 6:20-8:50, Folwell 104
F 6:00-8:30, StP Ext Center
204

Spring Quarter

W 6:20-8:50, Folwell 104

***English as a Second Language.** No credit. \$25.

A course designed for students whose ability in speaking and writing English is limited. There will be a practical review of English grammar with practice in conversation and writing. The purpose of this class is to help the student (a) to understand both verbal and written American English vocabulary and (b) to converse freely in American English. (Prerequisite: Little or no knowledge of the English language. Class limited to 15 students. Repeated spring semester. All registrations must be made in person and approved in Room 56 Nicholson Hall)

Fall Semester

T 6:20-8:00, Folwell 226, Narváez

Spring Semester

T 6:20-8:00, Folwell 226, Narváez

Writing Projects. 3 certificate credits. \$21.

A course for those who are interested in writing fiction or book-length nonfiction but who lack the necessary prerequisites for the advanced composition courses or are not interested in accumulating credits for a degree. Class discussion will center on the novel and short story, with reference to biography and other nonfiction forms as appropriate. There will be individual and group criticism of work in progress. Students may submit projects already begun or may develop new projects during the semester. (No prerequisite. Repeated spring semester)

Fall Semester

Th 6:20-8:00, Folwell 110, Alford

Spring Semester

Th 6:20-8:00, Folwell 110, Alford

Symbols explained on page 22.

Evening and Special Classes

27-28. Advanced Writing. 3 degree credits each semester. \$21.

Offers training in the fundamentals of creative writing, through lectures and the criticism of manuscripts. 27: Deals with expository writing; articles, essays, criticism, etc. 28: Deals with description and narration. (Prerequisite: Engl 1b-2b-3b, or #. Students may enter either semester)

Fall Semester

27 W 6:20-8:00, Folwell 207, Macdonald

Spring Semester

28 W 6:20-8:00, Folwell 205, Macdonald

65. The Writing of Research Papers and Articles. 3 degree credits. \$21.

A course in scientific writing for students and professional people in the biological, physical, and social sciences, and for students in the humanities. The subjects treated are: the organization of data from observation and from printed sources; literature searching; abstracting; the development of a lucid, mature, articulate style; meeting the format requirements of specific types of publication. Students are encouraged to undertake investigations which are related to their professional interests. Much of the instruction is done in conference. (Prerequisite: Engl 1b-2b-3b or #. Repeated spring semester)

Fall Semester

Th 6:20-8:00, Johnston 106, Lufkin

Spring Semester

Th 6:20-8:00, Johnston 126, Lufkin

101-102. Seminar in Writing (Advanced Short Story). 3 degree credits each semester. \$21.

For advanced and professional students who write with facility and desire personal direction. Criticism of manuscripts submitted. (Prerequisite: #)

Fall Semester

101 T 6:20-8:00, Folwell 205, Macdonald

Spring Semester

102 T 6:20-8:00, Folwell 205, Macdonald

LITERATURE (Engl)

1b-2b-3b. Freshman English. 4 degree credits each quarter. \$28.

A combined course in composition (9 cr) and literature (3 cr). It concentrates upon developing the student's skill in writing exposition, with an introduction to literary types as the chief means of providing subject matter for writing. It satisfies the group A requirement for graduation. (Prerequisite: Preparatory Composition or satisfactory score in English Placement Test, explained on page 40)

Fall Quarter

1b W 6:20-9:50, Folwell 107
F 6:00-9:30, StP Ext
Center 201

2b T 6:20-9:50, Folwell 107

3b Th 6:20-9:50, Folwell 107

Winter Quarter

1b W 6:20-9:50, Folwell 113
F 6:00-9:30, StP Ext
Center 201

2b W 6:20-9:50, Folwell 107

F 6:00-9:30, StP Ext
Center 206

3b T 6:20-9:50, Folwell 107

Spring Quarter

1b W 6:20-9:50, Folwell 113
2b W 6:20-9:50, Folwell 107
F 6:00-9:30, StP Ext

Center 206

3b W 6:20-9:50, Folwell 110

F 6:00-9:30, StP Ext
Center 201

22-23. Introduction to Literature. 5 degree credits each semester. \$35.

A chronological study of English literature with historical background. An introduction to types of literature and literary ideas. 22: The Restoration and the 18th century. Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding, and Sheridan. 23: The Romantic Movement and the Victorians. Wordsworth, Byron, Shelley, Keats, Carlyle, Tennyson,

Symbols explained on page 22.

Course Offerings—Arts and Sciences

Browning, and Arnold. (Prerequisite: A-B-C or 1b-2b-3b or Comm 1-2-3, or exemption from requirement)

Fall Semester

22 Th 6:20-8:50, Folwell 213

Spring Semester

23 Th 6:20-8:50, Folwell 213

55-56. Shakespeare. 3 degree credits each semester. \$21.

55: The reading of plays from Shakespeare's early and middle periods—*Richard II, A Midsummer Night's Dream, The Merchant of Venice, Much Ado About Nothing*, and 2 or 3 other plays selected by the instructor. 56: The reading of plays from Shakespeare's middle and later periods—*Twelfth Night, Hamlet, Macbeth, The Tempest*, and 2 other plays selected by the instructor. (Prerequisite: 1b-2b-3b, or Comm 1-2-3, and 6 additional credits; or A-B-C; or 10 credits in 21-22-23. Students may take 56 before 55 if necessary)

Fall Semester

55 M 6:20-8:00, Folwell 207

Spring Semester

56 M 6:20-8:00, Folwell 207

French (Fren)

There are 2 sequences of courses in beginning French from which the prospective student may choose the 1 best suited to his needs. 1C-2C-3C, *Beginning French*, carrying 5 degree credits per unit, comprises the regular standard course in first-year French. The principal aim is to provide a solid foundation for the comprehension of the written and spoken language. Sufficient training in grammar is included to enable the student to acquire elementary skills in conversation and composition. This sequence is recommended for those planning to continue the study of French or wishing to satisfy college language requirements. 1-2-3-4, *Beginning French*, carrying 3 degree credits per unit, is the same sequence of courses formerly listed in evening classes as: 1-2, *Beginning French* and 3-4, *Intermediate French*. This sequence is recommended for those who desire a general introduction to the language but who wish to proceed at a slower pace than that required for the standard 5-credit units, with more time for study and preparation.

1C-2C. Beginning French. 5 degree credits each semester. \$35.

Grammar, pronunciation, reading, and practice in speaking. See note above. (No prerequisite for 1C; for 2C, 1C or evening course 2, or 1 year preparatory French)

Fall Semester

1C M 6:20-9:20, Folwell 204, Burks

Spring Semester

2C M 6:20-9:20, Folwell 204, Burks

3C. Beginning French. 5 degree credits. (Offered in 1959-60)

1-2. Beginning French. 3 degree credits each semester. \$21.

Grammar, pronunciation, reading, and practice in speaking. See note above. (No prerequisite for 1; for 2, 1)

Fall Semester

1 W 6:20-8:00, Folwell 201, Sullivan
1 W 7:50-9:30, StP Ext Center 201
2 W 6:20-8:00, Folwell 202

Spring Semester

1 W 6:20-8:00, Folwell 202
2 W 7:50-9:30, StP Ext Center 201
2 W 6:20-8:00, Folwell 201, Sullivan

Symbols explained on page 22.

Evening and Special Classes

3-4. Beginning French. 3 degree credits each semester. \$21.

Reading from modern authors, review of essential grammar, emphasis on spoken French. (Prerequisite: for 3, 2 or 1 year of preparatory French or #; for 4, 3 or #)

Fall Semester

3 M 6:20-8:00, Folwell 203, Falk

Spring Semester

4 M 6:20-8:00, Folwell 203, Falk

17a-b. French for Graduate Students. No credit. \$25.

Fundamentals of grammar; reading of appropriate prose. Prepares for examinations in French. (No prerequisite for 17a; for 17b: 17a or 2 years of French in high school or #)

Fall Semester

17a M 6:20-8:00, Folwell 201, Brackney

17b M 6:20-8:00, Folwell 104

Spring Semester

17a M 6:20-8:00, Folwell 302

17b M 6:20-8:00, Folwell 201, Brackney

54-55. French Conversation. 3 degree credits each semester. \$21.

Informal discussion of current affairs and everyday topics. (Prerequisite: 3-4, or #)

Fall Semester

54 W 6:20-8:00, Folwell 206, Rydell

Spring Semester

55 W 6:20-8:00, Folwell 206, Rydell

Geography (Geog)

1. Geography of Natural Resources. 5 degree credits. \$35.

Physical characteristics and geographic distribution of the world's natural resources; major regional differences in the problems of physical resource development. (No prerequisite)

Spring Semester

Th 6:20-9:20, Ford 185, Meeks

41. Geography of Primary Production. 5 degree credits. \$35.

An introductory course in economic geography with special emphasis on commodities of commercial significance. Particular attention is given to the world patterns of raw material occurrence and production, as well as to the associated centers of industrial fabrication. (No prerequisite)

Note: This course is a requirement for the General Sequence in business administration. Students needing this course should register this year as it cannot be offered annually.

Fall Semester

T 6:20-9:20, Ford 185, Lukermann

Geology (Geol)

1-2. General Geology. 3 degree credits each semester. \$21 each semester.

1: Physical geology: consists of an introductory treatment of the materials of the earth and the geologic processes; principles of earth sculpture, glaciation, volcanic activity, mountain building, etc.; geologic occurrence of gems, ores, and other economic mineral resources. 2: Historical geology: a résumé of the theories as to the origin of the earth, its geologic history and the changes in its plant and animal life throughout the ages. (No prerequisite)

Fall Semester

1 T 6:20-8:00, Pillsbury 110, Sloan

Spring Semester

2 T 6:20-8:00, Pillsbury 110, Sloan

Symbols explained on page 22.

A-B. General Geology Laboratory. 2 degree credits each semester. \$14 each semester.

A: Physical laboratory: physical properties of common minerals and rocks; interpretation of topographic maps. B: Historical laboratory: identification of fossils; interpretation of geologic map. (Prerequisite: for A, 1 or 8 or ¶1; for B, A and 2 or ¶2)

Fall Semester

A T 8:05-9:45, Pillsbury 22

Spring Semester

B T 8:05-9:45, Pillsbury 22

23a-24a. Mineralogy. 3 degree credits each semester. \$21 each semester.

A study of the physical and chemical characteristics of minerals; occurrence, genesis, and uses. Determinative work and identification of minerals by physical tests. (No prerequisite for 23a; for 24a, 23a or #)

Fall Semester

23a Th 6:20-8:00, Pillsbury 100, McGannon

Spring Semester

24a Th 6:20-8:00, Pillsbury 100, McGannon

German (Ger)

There are 2 sequences of courses in Beginning German from which the prospective student may choose the 1 best suited to his needs. 1-2-3, Beginning German, carrying 5 credits per unit, comprise the regular standard course in first-year German. The principal aim is to provide a solid foundation for the comprehension of the written and spoken language. Sufficient training in grammar is included to enable the student to acquire elementary skills in conversation and composition. This sequence is recommended for those planning to continue the study of German or wishing to satisfy college language requirements. 1b-2b-3b-4b, Beginning German, carrying 3 degree credits per unit, is the same sequence of courses formerly listed in evening classes as: 1-2, Beginning German and 3-4, Intermediate German. This sequence is recommended for those who desire a general introduction to the language but who wish to proceed at a slower pace than that required for the standard 5-credit units, with more time for study and preparation.

1-2. Beginning German. 5 degree credits each semester. \$35.

Standard course in first-year German. See note above. (Prerequisite: No prerequisite for 1; for 2, 1 or former evening courses 1 and 2, or 1 year high school German)

Fall Semester

1 M 6:20-9:20, Folwell 208, Ramras

Spring Semester

2 M 6:20-9:20, Folwell 208, Ramras

3. Beginning German. 5 degree credits. (Offered 1959-60)

1b-2b. Beginning German. 3 degree credits each semester. \$21.

The objectives of the course are to provide the foundation of a reading knowledge adequate for cultural or professional purposes; and to encourage an understanding of the nature of the language by systematic comparison between German and English. See note above. (No prerequisite for 1b; for 2b, 1b or former evening course 1)

Fall Semester

1b M 6:20-8:00, Folwell 209, Weiss

Th 6:20-8:00, Folwell 209, Wood

2b M 6:20-8:00, Folwell 209½, Prottegeier

Spring Semester

1b M 6:20-8:00, Folwell 226, Wood

2b M 6:20-8:00, Folwell 209, Weiss

Symbols explained on page 22.

Evening and Special Classes

3b. Beginning German. 3 degree credits. \$21.

Readings from modern authors, review of essential grammar, with practice in spoken German. See note above. (Prerequisite: former evening course 2, or 1 year high school German)

Fall Semester

M 6:20-8:00, Folwell 209½, Prottingeier

Spring Semester

M 6:20-8:00, Folwell 209½, Prottingeier

4b. Beginning German. 3 degree credits. \$21.

Modern narrative prose. See note above. (Prerequisite: former evening course 3 or 4)

Spring Semester

M 6:20-8:00, Folwell 209½, Prottingeier

17a-b. German for Graduate Students. No credit. \$25.

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: 2 years German in high school, or equivalent)

Fall Semester

17a M 6:20-8:00, Folwell 205, Menze
17b M 6:20-8:00, Folwell 105

Spring Semester

17a M 6:20-8:00, Folwell 104, Menze
17b M 6:20-8:00, Folwell 205

History (Hist)

1-2-3.‡ Civilization of the Modern World. 3 degree credits each quarter. \$21 each quarter.

1: The rise of the European state system as framework within which Western civilization developed, and the economic, cultural, political, intellectual, and religious implications of the emerging system. 2: The struggle for control over the Western states system, and the emergence of liberal democracy in the modern world. 3: The impact of industrialism upon Western and world civilization in the 20th century. (No prerequisite)

Fall Quarter

1 T 6:20-8:50, Ford 115,
Wright

Winter Quarter

2 (same schedule as fall)

Spring Quarter

3 (same schedule as fall)

14-15-16.‡ History of Ancient Civilization. (**Hist 50-51-52) 3 degree credits each quarter. \$21 each quarter.

14: A survey of the rise of civilization in the Ancient Near East from the earliest times to 500 B.C. Emphasis is placed upon the origin of culture and its development in complexity from the primitive to the civilized stage. Special attention is given to the civilizations of Babylonia, Egypt, Indus Valley, Syria, Palestine, and Crete. (No prerequisite) 15: The history of the rise and flowering of the Greek civilization from the earliest times to the death of Alexander the Great in 323 B.C. Special emphasis is placed on Greek civilization in the fifth century (Age of Pericles) with attention to the political, social, literary, artistic, and philosophic achievements of that period. (No prerequisite, but student will find 14 helpful in providing a background) 16: The climax of ancient civilization during the Hellenistic Age (323-133 B.C.) and the Roman Imperial Period followed by the decline of Rome and of ancient civilization (to about A.D. 300). The three main topics to be considered are (a) the civilization of the ancient world at its peak, (b) the rise and flowering of Roman culture, and (c) the reasons for the decline of ancient civilization. Special attention will be

Symbols explained on page 22

Course Offerings—Arts and Sciences

paid to political institutions, art, literature, economics and society, philosophy, and ancient science. (No prerequisite, but it is suggested that 16 be preceded by 14 and 15 in order that student may acquire a background for the history of the Roman period)

<i>Fall Quarter</i>	<i>Winter Quarter</i>	<i>Spring Quarter</i>
14 Th 5:30-8:00, Ford 115, Jones	15 (same schedule as fall)	16 (same schedule as fall)

20-21-22.‡ American History. 4 degree credits each semester. \$28 each semester.

A survey of the political, economic, and social history of the United States, with emphasis on the forces that resulted in the emergence of modern America. 20: Colonial and early national period. 21: Sectionalism and national development. 22: Modern America. (No prerequisite)

<i>Fall Semester</i>		<i>Spring Semester</i>	
20 M 5:45-8:00, Ford 115, Beatty	21 M 5:45-8:00, Ford 115, Beatty	20 Th 5:30-7:45, StP Ext Center 201, Noble	21 Th 5:30-7:45, StP Ext Center 201, Noble

79-80.‡ American History Since 1900. 3 degree credits each semester. \$21 each semester.

A concentrated study of the social, political, economic, and cultural development of the United States since 1900 and of the rise of the United States as a world power. 79: The Spanish-American War and America's overseas empire; the rise of big business; problems of the city; the Progressive Era of Reform; America in World War I. 80: Social and intellectual crises of the 1920's; prosperity and depression; the New Deal; the rise of organized labor; from isolation to intervention; the post-war scene. (No prerequisites)

<i>Fall Semester</i>		<i>Spring Semester</i>	
79 Th 6:20-8:00, Ford 130, Chambers	80 Th 6:20-8:00, Ford 130, Chambers		

94-95.‡ American Diplomatic History. 3 degree credits each semester. \$21 each semester.

94: Period of National development, 1848-1898. 95: The United States as a world power. (No prerequisites)

<i>Fall Semester</i>		<i>Spring Semester</i>	
94 M 8:05-9:45, Ford 115, Beatty	95 M 8:05-9:45, Ford 115, Beatty		

100b-101b-102b.‡ History of Rome. 3 degree credits each quarter. \$21 each quarter.

100b: The Last Century of the Roman Republic, 133-30 B.C. An analysis of the reasons for the disintegration of the Roman Republic from the time of the Gracchi to the defeat of Antony and Cleopatra; special attention will be paid to all aspects (political, cultural, economic, social) of the age of Cicero and Caesar. 101b: The Principate (Early Roman Empire), 30 B.C.-A.D. 285. The establishment of the empire by Augustus; developments in political, social, economic, cultural affairs under the early emperors, with special attention to the climax of ancient civilization in the second century A.D. 102b: The Decline and Fall, A.D. 285 to the end of the Roman Empire. The development of the Later Roman Empire, or Autocracy, under Diocletian and Constantine; the triumph of Christianity. All phases of life and culture in this later period will be considered in detail: government, religious developments, art, law, literature, economics, society. (No prerequisites)

<i>Fall Quarter</i>	<i>Winter Quarter</i>	<i>Spring Quarter</i>
100b W 5:30-8:00, Ford 115, Jones	101b (same schedule as fall)	102b (same schedule as fall)

Symbols explained on page 22.

Evening and Special Classes

109-110.‡ Europe in the 20th Century. 3 degree credits each semester. \$21 each semester.

109: The years 1900-1918. From 1918 to present. Background and causes of World War I; history of Europe during 4 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 World War II. (No prerequisites)

Fall Semester

109 W 6:20-8:00, Ford 180, Deutsch

Spring Semester

110 W 6:20-8:00, Ford 180, Deutsch

134-135.‡ History of World War II. 3 degree credits each semester. \$21 each semester.

134: Origins and backgrounds; the principal powers and their relationships; the rise to totalitarian ideologies and systems; international relations of the 1930's; how the war came; the period of Axis preponderance. 135: The breakdown of Nazi-Soviet relations; war in the East and at sea; decline of Axis fortunes; the United States entry; interrelation of European and Far Eastern wars; inter-allied relations; the battles of France and Germany; liquidation of the War; occupation problems and policies; affairs of the United Nations; relations of the victor powers and the peace settlements. (No prerequisites)

Fall Semester

134 W 8:05-9:45, Ford 180, Deutsch

Spring Semester

135 W 8:05-9:45, Ford 180, Deutsch

137a. American History 1850-1865. 3 degree credits. \$21.

Begins a 3-semester sequence, 137a-138a-139a, covering the period 1850-1900. 137a covers the story from the Compromise of 1850 to Appomattox. (No prerequisite)

Spring Semester

T 6:20-8:00, Ford 185, Loehr

146a-147a.‡ History of the South. 3 degree credits each semester. \$21 each semester.

146a: 1607-1840. 147a: 1840-1890. (No prerequisite)

Fall Semester

146a Th 7:50-9:30, StP Ext Center 201,
Noble

Spring Semester

147a Th 7:50-9:30, StP Ext Center 201,
Noble

148. American Economic and Social History. 3 degree credits. \$21.

Economic and social developments since 1860. (No prerequisite)

Fall Semester

T 6:20-8:00, Ford 150, Loehr

Survey of Current Architecture. See page 99.

Interior Design. See page 35.

Building Material Estimating. See page 105.

Symbols explained on page 22.

Home Economics (HE)

Special Topics in Food and Nutrition. See page 31.

Textiles. See page 31.

Housing (Hous)

Planning Your Modern Home. No credit. \$21 plus 50 cents laboratory fee.

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

Fall Semester

W 8:05-9:45, Ford 85, Gingold

Architectural Drafting I-II-III-IV. 3 certificate credits each semester. \$21.

A basic course for those needing training for work in architecture. In general the main objectives for each unit will be: I: Drafting techniques. II: Construction details, house plans. III: Pictorial presentation, perspective. IV: Calculations for beams. Fall semester will include concrete beams, columns, floor slabs, 1- and 2-way construction. Spring semester will include all types of stresses including trusses. (Students may register for any unit in any semester, with \$)

Fall Semester

T 7:00-9:30, Main Engineering 225, Johnson

Spring Semester

T 7:00-9:30, Main Engineering 225, Johnson

Interdisciplinary Studies

COMMUNICATION (Comm)

1-2-3. Communication. 4 degree credits each quarter. \$28 each quarter.

A practical course intended to prepare the student to meet more effectively the various vocational and social demands, to write and talk to others, and to receive communication from them. Constant practice in writing and speaking is uniquely based upon some understanding of how language functions to convey meaning. 1: The fundamental patterns of meaning in English, word meaning, social meaning, good usage. 2: The use of language to influence human behavior. 3: Mass communication of press, film, and radio, and how to receive it with critical discrimination. The sequence is accepted by the University as meeting all requirements which are satisfied by Engl 1b-2b-3b, Freshman English. (Prerequisite: Preparatory Composition or satisfactory score on English Placement Test, as explained on page 40. Two extra class meetings will be arranged each quarter at a time to be selected by the class after the first regular meeting)

Fall Quarter

1 Th 5:30-9:00, TNM 106,
O'Hara

Winter Quarter

2 (same schedule as fall)

Spring Quarter

3 (same schedule as fall)

FAMILY LIFE (FL)

1A. Preparation for Marriage. 3 degree credits. \$21 plus \$1 materials fee.

The course is designed to clarify what modern marriage requires of the individual and to help men and women gain a clearer picture of their own assets as marriage partners,

Symbols explained on page 22.

Evening and Special Classes

through the discussion of such topics as values in family life today, problems of dating and courtship, selection of a marriage partner, marriage adjustments, planning for the family, income management, and others. Illustrative films and case materials are used. (No pre-requisite. Repeated spring semester)

Fall Semester

M 6:20-8:00, TNM 115, Torbett

Spring Semester

T 6:20-8:00, TNM 115, Torbett

HUMANITIES (Hum)

1. Humanities in the Modern World I. (**Hum 51) 3 degree credits. \$21.

An introduction to the study of the humanities in the modern world, including the old regime, the revolution, neoclassicism and romanticism, from about 1740 to 1820. Materials used are history, prose criticism, literature, poetry, and art. Authors: Pope, Voltaire, Rousseau, Burke, Goethe, Tolstoy. (No prerequisite)

Fall Semester

T 8:05-9:45, Johnston 114, Blum
Th 6:20-8:00, Johnston 114, Kliger
Th 8:05-9:45, Johnston 114, Sharma

2. Humanities in the Modern World II. (**Hum 52) 3 degree credits. \$21.

The industrial revolution, liberalism and socialism, the psychology of individualism. Period covered is from 1776 to 1890. Authors: Carlyle, Mill, Marx, Smith, Malthus, Ibsen, Dostoyevsky. (No prerequisite)

Spring Semester

T 8:05-9:45, Johnston 114, Blum
Th 6:20-8:00, Johnston 114, Kliger
Th 8:05-9:45, Johnson 114, Sharma

3. Humanities in the Modern World III. (**Hum 53) 3 degree credits. \$21.

The impact of science and evolution; religion and morals in a changing world, from about 1840 to 1914. Authors: the evolutionists, Kierkegaard, Nietzsche, Chekhov, Thomas Mann. (No prerequisite)

Fall Semester

T 6:20-8:00, Johnston 114, Kliger
W 6:00-7:40, StP Ext Center 201, Vogelbaum

4. Humanities in the Modern World IV. (**Hum 54) 3 degree credits. \$21.

Civilization between two wars: the impact of psychoanalysis, communism, 20th-century liberalism, new problems of human value and authority. Authors: Freud, Lenin, T. S. Eliot, Kafka, and others. (No prerequisite)

Spring Semester

T 6:20-8:00, Johnston 114, Kliger
W 6:00-7:40, StP Ext Center 201, Vogelbaum

*131-132-133. Proseminar in Religion and Art. 3 degree credits. \$21.

What is the relation between the interior, spiritual vision and the exterior, material manifestation? Materials for comparison will be drawn from: *fall quarter*, the age of monastic reform (11th and 12th centuries) and the Gothic flowering (13th century); *winter quarter*, the Conciliar Movement and the 15th-century Florentine Renaissance; *spring quarter*, the Lutheran and Catholic Reforms (16th century) and the Art of the Baroque. Every

Symbols explained on page 22.

Course Offerings—Arts and Sciences

student will write a research paper and give an oral report sometime during the year. (Prerequisite: 6 credits of humanities or #. Class limited to 20 students)

<i>Fall Quarter</i>		<i>Winter Quarter</i>		<i>Spring Quarter</i>	
131	W 6:20-8:00, Johnston 114, Ames	132	W 6:20-8:00, Johnston 114, Ames	133	W 6:20-8:00, Johnston 114, Ames

PERSONAL ORIENTATION (PO)

*1. How to Study. 2 degree credits (see below). \$21.

Practical assistance to the student in developing efficient methods of study and concentration, organizing material, preparing for examinations, and improving reading ability. Attention to the orientation of students in their attitudes and motivation, and the relation of these to satisfactory performance. (No prerequisite. Class limited to 20 students. Repeated spring semester. Students intending to use this course in a degree program should consult an adviser before registering)

<i>Fall Semester</i>		<i>Spring Semester</i>	
W 6:20-8:00, Johnston 306		W 6:20-8:00, Johnston 306	
W 8:05-9:45, Johnston 306		W 8:05-9:45, Johnston 306	

SOCIAL SCIENCE (SSci)

1, 2. Introduction to Social Science. 4 degree credits each semester. \$28 each semester.

An integrated study of the factors—historical, political, economic, social, psychological, and cultural—that influence and are influenced by man's conduct. 1: Development of personality. 2: Work as a central aspect of modern life. (No prerequisite)

<i>Fall Semester</i>		<i>Spring Semester</i>	
1	W 5:45-8:00, Johnston 115, Boskin	2	W 5:45-8:00, Johnston 115, Chenoweth

Italian (Ital)

1a-2a. Beginning Conversational Italian. 3 degree credits each semester. \$21.

Conversational approach. (No prerequisite for 1a; for 2a, 1a or #)

<i>Fall Semester</i>		<i>Spring Semester</i>	
1a	T 6:20-8:00, Folwell 201, Haigh	2a	T 6:20-8:00, Folwell 201, Haigh

3a-4a. Conversational Italian. 3 degree credits each semester. \$21.

A continuation of Ital 1a-2a.

<i>Fall Semester</i>		<i>Spring Semester</i>	
3a	T 6:20-8:00, Folwell 202, Dini	4a	T 6:20-8:00, Folwell 202, Dini

Journalism (Jour)

10. Basic Photography I. See page 58.

11. Basic Photography II. See page 58.

Symbols explained on page 22.

Evening and Special Classes

13. Introduction to Journalistic Writing. 3 degree credits. \$21.

Lectures and assignments in journalistic mediums and audiences; fundamentals of fact-gathering and fact-writing for newspapers, periodicals, broadcasting, and advertising. (Prerequisite: Engl 1b-2b-3b or ##. Repeated spring semester)

Fall Semester

W 6:20-8:00, Murphy 212, Newhall

Spring Semester

W 6:20-8:00, Murphy 212, Lindsay

18. Principles of Advertising. 3 degree credits. \$21.

Theory, principles, and function of advertising; its role in the economic, social, and marketing structure. Newspapers, magazines, radio, and other advertising mediums. (Prerequisite: 13 and Comp 28; or ##)

Fall Semester

T 6:20-8:00, Murphy 311, Mindak

*55. Typography for Publications and Advertising. 3 degree credits. \$21 plus \$5 laboratory fee.

Study of type faces in current usage. Choosing type faces for headline forms and text. Copyfitting projects. Layout problems. Practice in layout, copyfitting, and composition in typography laboratory. (Prerequisite: 18 or #. Class limited to 20 students)

Spring Semester

M 6:20-8:00, Murphy 315-320, Wilson

*65. Graphic Processes and Layout Techniques for Publications and Advertising. 3 degree credits. \$21 plus \$5 laboratory fee.

Study of letterpress, offset, gravure, and silk screen printing by demonstration and movie. Evaluation of processes. Use of engravings, art, and illustration techniques in publications and advertising. Practice in layout. (Prerequisite: #. Class limited to 20 students)

Fall Semester

M 6:20-8:00, Murphy 212, Wilson

*69. Business News and Feature Writing. 3 degree credits. \$21.

For persons planning to specialize in advertising. Gathering material and writing of news stories, feature articles, and other types of copy in the business-advertising field. Audiences in this field; mediums. (Prerequisite: Engl 1b-2b-3b, or ##. Class limited to 18 students. Repeated spring semester)

Fall Semester

T 8:05-9:45, Murphy 212, Bush

Spring Semester

T 8:05-9:45, Murphy 212, Bush

*73. Magazine Writing I. 3 degree credits. \$21.

The theory and techniques of the nonfiction magazine article for general and specialized periodicals; subjects and materials, practice assignments, manuscript criticism, editorial principles, basic instruction for beginners in this field of writing. (Prerequisite: Engl 1b-2b-3b, or ##. Class limited to 18 students. Repeated spring semester)

Fall Semester

T 6:20-8:00, Murphy 212, Bush

Spring Semester

T 6:20-8:00, Murphy 212, Bush

78. Public Relations. 3 degree credits. \$21.

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

Symbols explained on page 22.

Course Offerings—Arts and Sciences

communications mediums, to employer and employee, consumer, and citizen. The production of public relations programs and campaigns for business and industry, social work agencies, educational institutions, and government. (Prerequisite: 13 or #2)

Fall Semester

W 8:05-9:45, Murphy 308, Emery

*79. Advertising Copy Writing. 3 degree credits. \$21.

Techniques of writing retail and national advertising copy. Application of psychological principles relating to approach, appeals and response. Use of pre-testing, post-testing and creative research findings. (Prerequisite: 18 or #2. Class limited to 18 students)

Spring Semester

Th 6:20-8:00, Murphy 212, Winter

Library Science (Lib)

53. School Library Management. 3 degree credits. \$21.

Intended only for those working toward certification as school librarians. (No prerequisite)

Winter Quarter

W 6:30-9:00, Library 4A, Callahan

55. Library Administration. 3 degree credits. \$21.

Introduction to principles of library administration, organization, and management. To orient students in the library profession and help them discover the principles of library administration. (No prerequisite)

Fall Quarter

MW 4:30-6:00, Library 4A, Berninghausen

62. Reference I. 3 degree credits. \$21.

General reference tools and theory and practice of reference work. A prerequisite for graduate study and required for certification as a school librarian. (No prerequisite)

Winter Quarter

M 6:30-9:00, Library 4A

70. Selection of Library Materials. 3 degree credits. \$21.

Techniques, standards for selection of books, magazines, pamphlets, phonograph records, films, etc. (No prerequisite)

Fall Quarter

Th 6:30-9:00, Library 4A, Wezeman

74. Library Materials in the Classroom. 2 degree credits. \$14.

For College of Education students or postgraduates working for certification as school librarians. (No prerequisite)

Fall Quarter

T 4:30-6:10, Library 4A

Spring Quarter

T 4:30-6:10, Library 4A, Callahan

Symbols explained on page 22.

Evening and Special Classes

83. Cataloguing and Classification. 3 degree credits. \$21.

A beginning course, required as a prerequisite for work toward the M.A. degree. Can also be counted as an elective toward certification as a school librarian. (No prerequisite)

Spring Quarter

M 6:30-9:00, Library 4A, Simonton

157. School Library Problems. 3 degree credits. \$21.

Various problems that arise in the organization and management of school libraries. Includes: library objectives in relation to educational objectives, larger units of school service, value and effect of standards. (Prerequisite: 55 or #)

Winter Quarter

TTh 4:30-6:00, Library 4A, Callahan

171. Reading Guidance for Children. 3 degree credits. \$21.

This course may be counted toward the graduate requirements for the M.A. degree, or it may be counted as one of the required courses in the certification program for a school librarian. (Prerequisite: 70 or #)

Fall Quarter

W 6:30-9:00, Library 4A

Music (Mus)

Individual instruction in music 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. A \$4 registration fee will be charged for each applied music course in addition to the regular tuition and fees. The usual fee for late registrations will also be charged.

Applied Music

Private lessons are given in piano, organ, voice, violin, trumpet, and all other orchestral instruments. Registration is made through the office of the Department of Music, 107 Scott Hall. Time and place of lessons are also arranged through the music office. The courses offered, and their fees, will be found in the program of classes for the College of Science, Literature, and the Arts in the *Class Schedule*. For further information consult any office of the General Extension Division or the office of the Department of Music.

Enjoying Music. No credit. \$14 each quarter.

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. (No prerequisite)

Fall Quarter

M 6:20-8:00, Scott 4, Ivory

Winter Quarter

(same schedule as fall)

Spring Quarter

(same schedule as fall)

American Jazz. No credit. \$14 each quarter.

A course designed primarily for the "amateur" who would like to know more about jazz in order to understand it better and enjoy it more. What is and isn't jazz? What should we listen for; what are the different styles—"Dixie," "swing," etc.? The place of jazz in today's culture: how it has affected American popular and classical music.

Symbols explained on page 22.

Course Offerings—Arts and Sciences

Extensive use of records and tape recordings in conjunction with informal class discussions. No previous musical training or experience necessary. (No prerequisite. Repeated winter and spring quarters)

<i>Fall Quarter</i>	<i>Winter Quarter</i>	<i>Spring Quarter</i>
Th 6:20-8:00, Nicholson 111, Caswell	(same schedule as fall)	(same schedule as fall)

1T-2T-3T. Music Theory. 3 degree credits each quarter. \$21.

Development of musicianship through both auditory and visual perception; basic rudiments; exercises in part-writing and harmonization of chorales in the style of Bach; ear training, sight singing. (No prerequisite for 1T; prerequisite for 2T and 3T: the previous quarter)

<i>Fall Quarter</i>	<i>Winter Quarter</i>	<i>Spring Quarter</i>
1T M 6:20-8:50, Scott 103, Fetler	2T (same schedule as fall)	3T (same schedule as fall)

*Piano Playing for Pleasure (Group Piano) I-II. 2 certificate credits each semester. \$21.

Practical piano for the classroom teacher and the person who wishes to play the piano for pleasure. Emphasis on sight reading, transposition, harmonization, improvisation, accompanying. Student will learn to chord and to play simple tunes. (No prerequisite for I; prerequisite for II is I or ♯. Each section limited to 15 students)

<i>Fall Semester</i>	<i>Spring Semester</i>
I T 7:00-9:00, MusEd 103, Duckworth	II T 7:00-9:00, MusEd 103, Duckworth
	I Th 7:00-9:00, MusEd 103, Duckworth

40-41-42. University Symphony Orchestra. 1½ degree credits each semester. \$10.50.

Standard orchestral literature performed. Open to players of orchestral instruments from Twin Cities area. Those enrolled with consent of chairman of Music Department are given the opportunity of rehearsing with the University Symphony and participating in three annual concerts given in Northrop Auditorium. (Prerequisite: ♯)

<i>Fall Semester</i>	<i>Spring Semester</i>
40-41 W 7:00-9:30, Northrop Aud, Oberg	41-42 W 7:00-9:30, Northrop Aud, Oberg

43. University Chorus. 1 degree credit each quarter. \$7.

Performances of major symphonic-choral works with the Minneapolis Symphony Orchestra, University Symphony Orchestra, and University Concert Band. (Students may register only with ♯)

<i>Fall Quarter</i>	<i>Winter Quarter</i>	<i>Spring Quarter</i>
T 7:30-9:30, Nicholson Aud	(same schedule as fall)	(same schedule as fall)

73-74-75. Introduction to Opera. 3 degree credits each semester. \$21.

Designed to give an understanding of classical and romantic opera; centered on the weekly broadcasts of the Metropolitan Opera Company, and important presentations in the Twin Cities, including Minneapolis Symphony Orchestra performances, St. Paul Civic Opera productions, and the spring season of the Metropolitan in Northrop Auditorium. (No prerequisite. For nonmusic majors)

<i>Fall Semester</i>	<i>Spring Semester</i>
73-74 W 6:20-8:00, Scott 4	74-75 W 6:20-8:00, Scott 4

Symbols explained on page 22.

Evening and Special Classes

Natural History (NatH)

*Birds of Minnesota. No credit. \$21.

A laboratory and field class in identifying and enjoying the birds of this region. Early meetings will make use of collections of the Museum of Natural History, but as soon as weather permits the class will meet in field locations on *Sunday mornings at 7:30*. (No prerequisite. Class limited to 20 students)

Spring Semester

Th 6:20-8:00, Museum of Natural History 309,
Breckenridge, Gunderson

Nursing

NURSING (Nurs)

101. Nursing in Disaster. 3 degree credits. \$21.

Nursing responsibilities in disaster; development of essential skills through in-service education; organization of nursing service for disaster situations; utilizing community resources in disaster planning. (Open to registered professional nurses)

Spring Quarter

M 6:00-8:30, Millard 118, Poole

NURSING ADMINISTRATION (NuAd)

58. Introduction to Ward Administration. 3 degree credits. \$21.

Place of the head nurse in the hospital organization; basic principles of maintaining nursing service; analyzing patients' needs and directing activities of ward personnel. (Open to registered professional nurses)

Fall Quarter

T 6:00-8:30, Owre 111, Grainger

85. Fundamentals of Nursing Service Administration. 3 degree credits. \$21.

Principles of administration applied to nursing service; organization; administrative relationships, personnel policies, practices; relationships; staff education; income and expenditure, budgeting, salary schedules; public relations; records and reports. (Open to registered professional nurses)

Spring Quarter

T 6:00-8:30, Millard 116, Miller

Philosophy (Phil)

1. Problems of Philosophy. 3 degree credits. \$21.

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

Fall Semester

Th 8:05-9:45, Johnston 115, Allen

Spring Semester

T 6:20-8:00, Johnston 115, Potter

Symbols explained on page 22.

Course Offerings—Arts and Sciences

2. Logic. 3 degree credits. \$21.

A study of the difference between logical and fallacious reasoning; the functions and uses of language; rules of good definitions and sound argument. (No prerequisite)

Fall Semester

T 6:20-8:00, Johnston 115, Terrell
W 8:05-9:45, Johnston 115, Maxwell

Spring Semester

T 6:20-8:00, Johnston 113, Terrell

3. Ethics. 3 degree credits. \$21.

An examination of the problems which arise when human beings attempt to think systematically about conduct and values (are there absolute standards?); the problem of free will; and a survey of historical views about the right and the good. (No prerequisite)

Spring Semester

Th 6:20-8:00, Johnston 115, Raab

50A. Ancient Philosophy. 3 degree credits. \$21.

The origin of Greek thought, from Thales to Aristotle, with special emphasis on Plato and Aristotle. (No prerequisite. This course is a somewhat abridged counterpart of 50, which carries 5 credits. It may be offered in fulfillment of the requirement for a major in philosophy or as prerequisite for advanced courses *only* under exceptional circumstances and by special arrangement with the Department of Philosophy)

Fall Semester

Th 6:20-8:00, Johnston 115, Allen

52A. Modern Philosophy. 3 degree credits. \$21.

Rise and development of modern philosophy. The scientific revolution of Copernicus and Galileo; attempts at a new philosophy by Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume; criticism of these earlier attempts by Kant and Hegel. (No prerequisite. This course is a somewhat abridged counterpart of 52, which carries 5 credits. It may be offered in fulfillment of the requirement for a major in philosophy or as prerequisite for advanced courses *only* under exceptional circumstances and by special arrangement with the Department of Philosophy)

Spring Semester

W 6:20-8:00, Johnston 113, Mason

87. Readings in Religious Classics. 3 degree credits. \$21.

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

Fall Semester

W 6:20-8:00, Johnston 106, Mason

Ortl 75. India. See page 66.

Symbols explained on page 22.

Photography (Phot)

Students in all photography classes must furnish their own cameras.

***Art 10. Basic Photography I.** (Same as Jour 10) 3 degree credits. \$21 plus \$5 laboratory fee.

A course for beginners, with little or no experience in photography. The course will include lectures and demonstrations dealing with basic photographic equipment and materials, general camera and darkroom techniques, history, and criticism. There will be some laboratory work in use of the camera, in contact printing, and enlarging. This class is of interest to people who need a working knowledge of photography in professions other than photography, and for those who want to know how to use a camera efficiently. (No prerequisite. Repeated spring semester. Limited to 24 students)

Fall Semester

M 6:20-8:00, Jones 2, Liebling

Spring Semester

M 6:20-8:00, Jones 2, Liebling

***Art 11. Basic Photography II.** (Same as Jour 11) 3 degree credits. \$21 plus \$5 laboratory fee.

A course for amateurs with some experience and familiarity with special photographic equipment and techniques. Work will include some assigned projects, lectures, and demonstrations, but special attention will be given to individual interests and requirements. (Prerequisite: Art 10 or equivalent with $\frac{1}{2}$. Repeated spring semester. Limited to 24 students)

Fall Semester

W 6:20-8:00, Jones 2

Spring Semester

W 6:20-8:00, Jones 2

Color Photography I. 3 certificate credits. \$21 plus \$5 laboratory fee.

A foundation course in the growing field of color photography, designed to provide you with practical knowledge and experience in basic color work. Course includes: (a) lecture demonstrations of equipment, color processes, and techniques; and (b) supervised camera assignments in the studio and on outdoor field trips. (Experience or instruction in black and white photography is desirable, but not a prerequisite. Repeated spring semester)

Fall Semester

W 6:20-8:00, Wesbrook 202, Webb

Spring Semester

T 6:20-8:00, Wesbrook 202, Webb

Color Photography II. 3 certificate credits. \$21 plus \$5 laboratory fee.

A workshop course in which the student participates in supervised group projects. Course includes lecture demonstrations, field trips, and attention to such subjects as color portraiture, darkroom techniques, color experiments, and special problems. (Prerequisite: Color Photography I)

Spring Semester

W 6:20-8:00, Wesbrook 202, Webb

***Motion Picture Production I.** 3 certificate credits. \$21 plus \$5 laboratory fee.

A basic course designed to give the businessman and beginning film producer a well-rounded foundation in the several phases of motion picture production. Exercises in script writing, cinematography, editing, sound recording, and laboratory procedures provide a basis for producing educational and industrial films in your various institutions. (No prerequisite. Class limited to 25 students)

Fall Semester

T 6:20-8:00, Wesbrook 50, Cain

Symbols explained on page 22.

***Motion Picture Production II.** 3 certificate credits. \$21 plus \$7.50 laboratory fee.

An advanced course in motion picture production techniques designed to put into practice the theory learned the previous semester. The course includes group experiments offering a wider opportunity for practical experience with the tools and equipment of 16mm film production. (Prerequisite: Motion Picture Production I or #)

Spring Semester

T 6:20-8:00, Wesbrook 50, Cain

Political Science (Pol)

1-2.† American Government and Politics: Parts I and II. 3 degree credits each semester. \$21 each semester.

1: The impact of international events upon the American system of government and the tremendous part that government plays in our lives. This course is designed to provide an intelligent understanding of certain fundamental features of our governmental system: the nature of our Constitution, the protection of individual rights and liberties, political parties, public opinion, nominations, and elections. Special attention will be given throughout to current developments. 2: Recognizing that the American citizen must have an understanding of our system of government if he is to play an active and intelligent part in helping it meet the problems of the future, this course is designed to provide a description, analysis, and evaluation of the legislative, executive, and judicial branches of our government (national, state, and local) with special attention to current developments. (No prerequisite)

Fall Semester

1 M 6:20-8:00, Ford 185, Christensen

Spring Semester

2 M 6:20-8:00, Ford 185, Christensen

25. World Politics. 3 degree credits. \$21.

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

Fall Semester

W 6:20-8:00, Ford 185, McLaughlin

50. Political Behavior. (Pol 167)** 3 degree credits. \$21.

An introduction to political behavior, which considers such questions as the following: What are the main influences on the formation of political attitudes and opinions? What factors determine party preference and the outcome of elections? How are political leaders chosen and what distinguishes leaders from the led? What is the nature of organization and how does it affect political life in practice? What is the role of public opinion, campaigns, pressure groups, and the mass media in politics? (No prerequisite)

Fall Semester

T 6:20-8:00, Ford 175, McClosky

51. Political Behavior. (Pol 168)** 3 degree credits. \$21.

This course considers other political behavior topics not taken up in Pol 50. Special attention is given to psychological factors in politics; the influence of personality on political belief and affiliation; the sources of political "extremism" and deviation; role and personality factors influencing the behavior of legislators, judges, and administrators, etc. (No prerequisite)

Spring Semester

T 6:20-8:00, Ford 175, McClosky

Symbols explained on page 22.

Evening and Special Classes

52. American Political Parties. (Pol 137) 3 degree credits. \$21.**

Role and functions of the party in American government; party composition and organization; process of nomination and policy formulation; regulation of party organization and activities. (No prerequisite)

Fall Semester

M 8:05-9:45, Ford 175, Flom

55. Government of the Soviet Union. (Pol 143, Government of the U.S.S.R. and Adjacent States) 3 degree credits. \$21.**

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

Spring Semester

M 6:20-8:00, Ford 175, Turner

65. Government of Minnesota. 3 degree credits. \$21.

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

Spring Semester

Th 6:00-7:40, StP Ext Center 207, Mitau

75. Local Government in the United States. (Pol 116, Local Government) 3 degree credits. \$21.**

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

Th 6:00-7:40, StP Ext Center 207, Mitau

Spring Semester

Th 6:20-8:00, Ford 175, Flom

98. Diplomacy. (Pol 175) 3 degree credits. \$21.**

A survey of traditional and modern systems of diplomacy, and of factors which have produced change. Diplomatic methods in career diplomacy, political conferences, international organizations. Status of diplomatic agents. (No prerequisite)

Spring Semester

W 6:20-8:00, Ford 175, McLaughlin

100. The Constitution and Social Change. 3 degree credits. \$21.

Constitutional problems involved in the use of political authority to carry on social and economic organization; attention will be given to the historical background of these problems, with emphasis on recent trends in constitutional interpretation. (No prerequisite)

Fall Semester

W 8:05-9:45, Ford 175, Chase

Symbols explained on page 22.

PUBLIC ADMINISTRATION COURSES

The General Extension Division, in co-operation with the Public Administration Center of the Political Science Department, offers a Certificate in Public Administration for the satisfactory completion of approved programs of study. The course program for this award is outlined in detail on page 10 of this bulletin. The completed program represents the equivalent of 1 academic year of full-time study at university level.

58. Governmental Accounting. (See BA 185C, page 79) 3 degree credits. \$21.

A course in the principles and procedures of governmental accounting including: fund accounting; budgetary accounting as it relates to preparation and control of appropriation and program budgets, and control of periodic allotments; revenues, expenditures, assets, and liabilities; account classification; organizational and administrative aspects including systems and simplification techniques; financial reporting; principles of governmental cost accounting. (No prerequisite. Qualified students may register for BA 185C. Consult instructor)

Fall Semester

Th 6:20-8:00, Ford 160, Magraw

60. Organization and Management. (**Pol 131, Public Administration) 3 degree credits. \$21.

Study of administrative organization and management, emphasizing formal and informal organization structure, current reorganization theory, policy formulation, planning, decision-making, direction, and responsibility. (No prerequisite)

Fall Semester

M 8:05-9:45, Ford 244, Warp

62. Public Personnel Administration. 3 degree credits. \$21.

Development and significance of the public service; organization for personnel management; classification of positions; pay standardizations and administration; recruitment, examination, and placement; in-service training, evaluation of performance, conditions of employment; separation; human relations and morale; employee organization; obligations and responsibilities of public employees; retirement systems. (No prerequisite)

Spring Semester

W 6:20-8:00, Ford 185, Jackson

63. Public Financial Administration. 3 degree credits. \$21.

Survey of purchasing, contracting, revenues, taxation, special assessments, service charges, borrowing, expenditures, budgeting, accounting, cost accounting, auditing, and reporting. Emphasis on state and municipal practice. (No prerequisite)

Fall Semester

M 6:20-8:00, Ford 175, Robertson

67. Administrative Analysis. (See BA 145C, page 78) 3 degree credits. \$21.

A study of the techniques of analyzing the organization and methods of administrative agencies. Topics include organization surveys, work simplification, space and equipment layouts, evaluation of forms, preparation of procedural manuals, and problems of control, delegation, and co-ordination. (No prerequisite)

Spring Semester

Th 6:20-8:00, Ford 160, Magraw

Symbols explained on page 22.

Evening and Special Classes

73. City and County Planning. 3 degree credits. \$21.

Purpose and nature of planning; organization of planning agencies; citizen participation in planning; the master plan; zoning; housing; urban redevelopment; fiscal planning, the capital budget and program; planning for various municipal functions; intergovernmental relationships in planning. (No prerequisite)

Fall Semester

W 6:20-8:00, Ford 175, Engelen

76. Business and Government. (**Pol 126, Government and the Economic Order) 3 degree credits. \$21.

A survey of the impact of government economy. Topics dealt with include factors conditioning the role of government, the problem of depressions, labor and government, government and agriculture, monopoly and giantism, public utility regulation, financial controls, conservation, public ownership, and national economic planning. Attention is focused on current major economic issues. (No prerequisite)

Spring Semester

T 6:20-8:00, Ford 170, Warp

78. Administrative Responsibility. 3 degree credits. \$21.

Analysis of the multiple and sometimes conflicting responsibilities of American government officers and employees to their concept of the public interest, their superiors, the legislature, and the public. Special emphasis will be placed on a critical analysis of the powers and practices exercised by superiors, the legislature, and the courts in their efforts to promote and procure administrative responsibility. (No prerequisite)

Spring Semester

W 8:05-9:45, Ford 185, Chase

Psychology (Psy)

1a. Application of Psychology to Living. 3 degree credits. \$21.

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. (No prerequisite; may be taken with the same satisfaction before or after Psy 1-2. Elective credit in S.L.A. Not to be confused with Elementary Psychology A. Repeated spring semester)

Fall Semester

M 6:20-8:00, Nicholson 213, White
T 6:00-7:40, StP Ext Center 201, White
Th 8:05-9:45, Nicholson 216, White

Spring Semester

M 8:05-9:45, Nicholson 216, White
T 6:00-7:40, StP Ext Center 201, White
Th 6:20-8:00, Nicholson 216, White

1-2.† General Psychology. 3 degree credits each semester. \$21.

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

Fall Semester

1 W 6:20-8:00, Nicholson Aud, White
1 Th 6:00-7:40, StP Ext Center 305,
Kjeldergaard
2 T 6:20-8:00, Nicholson 216, Meier

Spring Semester

2 W 6:20-8:00, Nicholson Aud, White
2 Th 6:00-7:40, StP Ext Center 305,
Kjeldergaard
1 T 6:20-8:00, Nicholson 216, Meier

Symbols explained on page 22.

***4-5.† Introductory Laboratory Psychology.** 2 degree credits each semester. \$21.

Experiments illustrating the subject matter of contemporary psychology. Included are human and animal learning, problem solving, visual perception, measurement of general and special abilities and personality traits. Supplies the laboratory science requirement in the Lower Division. (Prerequisite: 1-2 or ¶1-2. Sections limited to 36 students)

Fall Semester

4 T 8:05-9:45, Psychology 211, Davenport
W 8:05-9:45, Psychology 211, Quiggle
Th 7:50-9:30, StP Ext Center 303, Horton

Spring Semester

5 T 8:05-9:45, Psychology 211, Davenport
W 8:05-9:45, Psychology 211, Quiggle
Th 7:50-9:30, StP Ext Center 303, Horton

70. Principles of Psychological Measurement. 3 degree credits. \$21.

Designed to present statistical methods necessary to the practical application of psychological concepts. Especially useful to persons who work with psychological tests or with any sort of objective evaluation technique. Special emphasis is given to psycho-physical methods and to techniques of attitude scaling, directed toward the needs of persons engaged in analysis of public opinion or in market research. Topics discussed include presentation and arrangement of data, measures of central tendency and dispersion, attitude scaling techniques (including the Likert, Thurstone, and Guttman methods), psycho-physical methods, sampling methods and problems of forecasting, tests of significance of differences, and correlation analysis. (Prerequisite: 1-2 or ‡)

Fall Semester

T 6:20-8:00, Johnston 106, Dunnette

119. Psychology of Personality. 3 degree credits. \$21 plus \$1 laboratory fee.

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

Spring Semester

W 8:05-9:45, Psychology 115, Stopol

122-123.† Vocational Development and Personnel Psychology. 3 degree credits each semester, §Psy 160. \$21 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. (Prerequisite: ‡)

Fall Semester

122 M 6:20-8:00, Psychology 211, Longstaff

Spring Semester

123 M 6:20-8:00, Psychology 211, Longstaff

125-126. Psychology of Individual Differences. 3 degree credits each semester. \$21.

Quantitative studies of such factors as age, sex, race and nationality, physical traits, family heredity, and environment in the causation of individual differences in abilities and temperament. (Prerequisite: 1-2, 4-5, or 5 credits in statistics; 125 must precede 126)

Fall Semester

125 T 6:20-8:00, Johnston 122, Dawis

Spring Semester

126 T 6:20-8:00, Johnston 122, Dawis

Symbols explained on page 22.

Evening and Special Classes

144-145.† Abnormal Psychology. 3 degree credits each semester. \$21.

Normal and abnormal behavior contrasted. Dynamics, and particularly the social determinants, of personality and maladjustments. (Prerequisite: 9 credits in psychology, or 6 credits in psychology with either Zool 1-2-3 or 12 credits in social science)

Fall Semester

144 Th 6:20-8:00, Psychology 115, Stieper

Spring Semester

145 Th 6:20-8:00, Psychology 115, Stieper

155. Industrial Psychology. 3 degree credits. \$21.

Psychological problems in industrial production, biomechanics (the adaptation of the machine to the capacities and limitations of the operator), work and effort, and the role of communication in an industrial organization. (Prerequisite: 1-2, and Math 15-16 or equivalent or 10 credits of statistics)

Fall Semester

T 8:05-9:45, Johnston 115, Dunnette

156. Psychology of Advertising. 3 degree credits. \$21.

Psychological analysis of the basic principles underlying advertising and selling. Consumer research is stressed. Research techniques for investigating advertising problems and the analysis of consumer wants are considered in detail. (Prerequisite: 1-2 and Econ 1-2)

Spring Semester

W 6:20-8:00, Johnston 122, Booman

Public Health (PubH)

50. Personal and Community Health. 3 degree credits, §PubH 3, 4, 51, 52, 100 or GC 10C. \$21.

Fundamental principles of health conservation and disease prevention. (No prerequisite)

Fall Semester

T 6:20-8:00, Owre 113, Thomson

53. Introduction to Public Health. 5 degree credits. \$35.

Occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; maternal and child health. (Prerequisite: 3 or 50 and course in bacteriology)

Fall Semester

T 7:00-9:30, St Joseph's Nursing Home, Room 4,
436 Main Street, StP, Schuman

58. Maternal and Child Hygiene. 3 degree credits. \$21.

Health care during maternity cycle and through preschool years; problems, programs, and community facilities. (Prerequisites: Nurse; 62 and 100)

Spring Quarter

T 6:00-8:30, Mayo 125, Stocking

59. Health of the School Child. 3 degree credits. \$21.

Disease control; health appraisal; emotional problems; school environment; accident prevention and emergency care. (Not open to public health nurses) (Prerequisites: 3a and 4,

Symbols explained on page 22

Course Offerings—Arts and Sciences

or 3a and 51, or GC 10C and 4, or GC 10C and 51, or 50, or 52, or 100; exemption from 3a or 3b on basis of military service not acceptable as substitute)

Winter Quarter

T 5:30-8:00, Mayo 1205, Wallace

69. The Nurse in the School. 3 degree credits. \$21.

Organization and administration of school health programs; health in school curriculum; nursing functions. (Prerequisites: 62, 63 or 62a-63a, or 100, 133 or #)

Fall Quarter

T 6:00-8:30, Mayo 1250, Stocking

74. Industrial Safety and Health. See page 107.

75. Introduction to Environmental Sanitation. 3 degree credits. \$21.

Principles of urban and rural sanitation relating to water, food, wastes, housing, air, insects, rodents. (Prerequisite: 3 credits in public health)

Spring Semester

M 6:20-8:00, Mayo 1250, Stauffer

127. Occupational Health Programs: Cardiovascular Disease Nursing. 3 degree credits. \$21.

Review of cardiovascular diseases and relationship to occupational nursing responsibilities; organization and administration of nursing service in industrial health programs. (Prerequisite: limited to occupational nurses)

Fall Quarter

Th 6:00-8:30, Mayo 125, Henriksen (co-ordinator)

133. Mental Health. 3 degree credits. \$21.

Emotional factors underlying wholesome family relations or interfering with successful adjustment in family and community. (Prerequisite: 62, or experience in public health nursing, or #)

Fall Quarter

M 6:00-8:30, Mayo 125, Cline

Scandinavian (Scan)

1-2. Beginning Norwegian. 3 degree credits each semester. \$21.

This course, intended for students who have little or no previous knowledge of Norwegian, stresses spoken Norwegian, but provides in addition the essentials of grammar and some practice in simple composition. (No prerequisite for 1; for 2, 1)

Fall Semester

1 W 6:20-8:00, Folwell 12, Nelson

Spring Semester

2 W 6:20-8:00, Folwell 12, Nelson

3-4. Intermediate Norwegian. 3 degree credits each semester. \$21.

Designed for students with some theoretical and practical knowledge of Norwegian. Provides a rapid review of grammar and considerable practice in conversation and composition. Readings in Norwegian. (Prerequisite: for 3, 2; for 4, 3)

Fall Semester

3 M 6:20-8:00, Folwell 12, Nelson

Spring Semester

4 M 6:20-8:00, Folwell 12, Nelson

Symbols explained on page 22.

Evening and Special Classes

7-8. Beginning Swedish. 3 degree credits each semester. \$21.

Intended primarily for beginners in Swedish. A minimum of grammar, with emphasis on simple composition and conversation, and some reading of elementary Swedish prose. (No prerequisite for 7; for 8, 7)

Fall Semester

Spring Semester

7 T 6:20-8:00, Folwell 12, Gustafson

8 T 6:20-8:00, Folwell 12, Gustafson

11-12. Advanced Swedish. 3 degree credits each semester. \$21.

Designed for students who have had 1 year of Swedish or more, the course will include some review of grammar together with exercises in reading, writing, and speaking present-day Swedish. (Prerequisite: Scan 8 or #)

Fall Semester

Spring Semester

11 T 8:05-9:45, Folwell 12, Gustafson

12 T 8:05-9:45, Folwell 12, Gustafson

17-18. Beginning Finnish. 3 degree credits each semester. \$21.

Intended for beginners with little or no previous knowledge of Finnish; stresses fundamentals of grammar, correct pronunciation, reading, practice in conversation and simple composition. (No prerequisite for 17; for 18, 17)

Fall Semester

Spring Semester

17 T 6:20-8:00, Folwell 208, Halonen

18 T 6:20-8:00, Folwell 208, Halonen

Slavic and Oriental Languages

JAPANESE (Jap)

1-2. Beginning Modern Japanese. 3 degree credits each semester. \$21.

An introductory course to modern written and spoken Japanese intended to provide a basis for developing a modest reading and conversational ability. (No prerequisite)

Fall Semester

Spring Semester

1 M 6:20-8:00, Folwell 305½, Copeland

2 M 6:20-8:00, Folwell 305½, Copeland

61-62. Japanese Literature in Translation. 3 degree credits each semester. \$21.

A chronological survey of Japanese literature from the eighth century A.D. to the present. Lectures and readings in poetry and prose. (Knowledge of Japanese is not required)

Fall Semester

Spring Semester

61 W 6:20-8:00, Folwell 305½, Copeland

62 W 6:20-8:00, Folwell 305½, Copeland

ORIENTAL (Ortl)

75. India. 3 degree credits. \$21 plus \$2 materials fee.

An introduction to the civilization of India. The main aspects of Indian life and culture, illustrated by motion pictures, slides, records, and selected readings. The approach will emphasize the relationship of contemporary Indian life to the cultural history of pre-Muslim India. Lectures on the history, political structure, social structure, religion, literature, art, music, geography, and languages of India. (No prerequisite)

Fall Semester

T 6:20-8:00, Johnston 205, Potter

Symbols explained on page 22.

Course Offerings—Arts and Sciences

RUSSIAN (Russ)

3-4. Intermediate Russian. 3 degree credits each semester. \$21.

Readings from 19th-century authors, review of essential grammar, practice in spoken Russian. (Prerequisite: 1-2)

Fall Semester

3 W 6:20-8:00, Folwell 302, Niemi

Spring Semester

4 W 6:20-8:00, Folwell 302, Niemi

Social Work (SW)

*51. The Social Welfare Scene. 3 degree credits. \$21.

A comprehensive picture of the work of social agencies, their organization, program, policies, and philosophies. This course is designed to provide over-all acquaintance with welfare services for practical use, in referral or collaboration with other agencies. (Prerequisite: current employment in a social agency, leisure time and informal program, parish work or youth leadership in a religious setting and/or professionally dealing with individuals or groups who frequently meet social problems or #. Class limited to 25 students)

Fall Semester

W 10:00 a.m.-11:40 a.m., Ford 244, Guzie

70. Dynamics of Human Behavior. 3 degree credits. \$21.

A consideration of the dynamics of human behavior, based on psychoanalytic theory. A study of the social-psychological-biological factors of human development. The purpose of the course is to provide for social workers a working understanding of psychoanalytic theory as it relates to social work practice. (Prerequisite: current practice in a social work agency or related institution or #)

Fall Semester

W 6:20-8:00, Ford 150, Thorsen

*91. Interviewing. 3 degree credits. \$21.

A course on interviewing method as applied to its use in service professions and occupations. Designed for people in social work, public health nursing, speech pathology, etc. (Prerequisite: currently professionally engaged in interviewing in a service profession or occupation or #. Class limited to 25 students)

Fall Semester

M 6:20-8:00, Ford 244, Saloshin

*93. Skills in Working with Groups. 3 degree credits. \$21.

Social group work principles as applied to day-by-day tasks of working with groups in leisure time, informal education, and recreation programs, or in institutional or religious settings. (Prerequisite: current employment in a social agency, religious setting, or related institution or #. Class limited to 25 students)

Spring Semester

W 10:00 a.m.-11:40 a.m., Ford 244, Maier

101. Emotional Problems of Children. 3 degree credits. \$21.

An analysis of the common emotional problems of childhood and the implications thereof for social work practice. (Prerequisite: current employment in a social agency or related institution or #)

Spring Semester

W 6:20-8:00, Ford 170, Thorsen

Symbols explained on page 22.

Evening and Special Classes

***165. Practical Problems in the Casework Process.** 3 degree credits. \$21.

This course is designed for the social caseworker who is currently employed by a social agency. The emphasis will be on application of principles and concepts of social casework. There will be a consideration of case material and a use of this material in relating the basic concepts and principles to practice. (Prerequisite: current employment in a social agency or #. Class limited to 25 students)

Spring Semester

Th 6:20-8:00, Ford 170, Compton

Sociology (Soc)

1. Introduction to Sociology. 3 degree credits. \$21.

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. (No prerequisite. Repeated spring semester)

Fall Semester

M 6:20-8:00, Ford 180, Forster
W 7:50-9:30, StP Ext Center 207

Spring Semester

M 6:20-8:00, Ford 180, Forster

3. Social Problems. (Formerly Soc 49) 3 degree credits. \$21.

A survey course in contemporary social problems with special emphasis on personal demoralization and social disorganization. (No prerequisite. Repeated spring semester)

Fall Semester

Th 6:20-8:00, Ford 170, Johnson

Spring Semester

W 7:50-9:30, StP Ext Center 207

120. Social Psychology. 3 degree credits. \$21.

Research and theory regarding the relation of the individual to social groups. Emphasis on the socialization processes; effects of social interaction and isolation; individual behavior under conditions of social organization and disorganization; cultural influence and its limits. (Prerequisite: 1 or ##)

Fall Semester

M 6:20-8:00, Ford 130, Francis

141. The Family. 3 degree credits. \$21.

The evolution of the family: development of family unity or disunity, the roles of the several members of the family, methods of investigation of the family. (Prerequisite: 1 or ##)

Spring Semester

Th 6:20-8:00, Ford 244, Johnson

171. Social Life and Cultural Change. 3 degree credits. \$21.

Examination of theories of social change, with particular attention to their methodological problems. Materials drawn from the comparative social thought and structure of antiquity utilized as basic data for analysis. (Prerequisite: 1 or ##)

Spring Semester

M 6:20-8:00, Ford 244, Francis

Symbols explained on page 22.

Spanish (Span)

There are 2 sequences of courses in beginning Spanish from which the prospective student may choose the 1 best suited to his needs. 1C-2C-3C, Beginning Spanish, carrying 5 degree credits per unit, comprises the regular standard course in first-year Spanish. The principal aim is to provide a solid foundation for the comprehension of the written and spoken language. Sufficient training in grammar is included to enable the student to acquire elementary skills in conversation and composition. This sequence is recommended for those planning to continue the study of Spanish or wishing to satisfy college language requirements. 1-2-3-4, Beginning Spanish, carrying 3 degree credits per unit, is the same sequence of courses formerly listed in evening classes as: 1-2, Beginning Spanish and 3-4, Intermediate Spanish. This sequence is recommended for those who desire a general introduction to the language but who wish to proceed at a slower pace than that required for the standard 5-credit units, with more time for study and preparation.

1C-2C. Beginning Spanish. 5 degree credits each semester. \$35.

Grammar, pronunciation, reading, and practice in speaking. See note above. (No prerequisite for 1C; for 2C, 1C or evening course 2, or 1 year preparatory Spanish)

Fall Semester

1C M 6:20-9:20, Folwell 206, Narváez

Spring Semester

2C M 6:20-9:20, Folwell 206, Narváez

3C. Beginning Spanish. 5 degree credits. (Offered in 1959-60)

1-2. Beginning Spanish. 3 degree credits each semester. \$21.

Grammar, pronunciation, reading, and practice in speaking. See note above. (No prerequisite for 1; for 2, 1)

Fall Semester

1 M 6:20-8:00, Folwell 202, Grismer

1 M 6:00-7:40, StP Ext Center 204,
Mousolite

1 Th 6:20-8:00, Folwell 202, Rundorff

2 Th 6:20-8:00, Folwell 204

Spring Semester

1 Th 6:20-8:00, Folwell 203, Rundorff

2 M 6:00-7:40, StP Ext Center 204,
Mousolite

2 M 6:20-8:00, Folwell 202, Grismer

3-4. Beginning Spanish. 3 degree credits each semester. \$21.

Review, composition, readings from modern authors. Attention to correspondence and commercial practice if desired. (Prerequisite: for 3, 2 or 1 year of preparatory Spanish or #; for 4, 3 or #)

Fall Semester

3 M 7:50-9:30, StP Ext Center 204,

Mousolite
3 W 6:20-8:00, Folwell 204

Spring Semester

4 M 7:50-9:30, StP Ext Center 204,

Mousolite
4 W 6:20-8:00, Folwell 204

55a-55b. Spanish Conversation. 3 degree credits each semester. \$21.

Informal discussion of current affairs and everyday topics. (Prerequisite: 4 or #)

Fall Semester

55a W 6:20-8:00, Folwell 205

Spring Semester

55b W 6:20-8:00, Folwell 205

Symbols explained on page 22.

Evening and Special Classes

67a-67b. Survey of Contemporary Spanish Literature. 3 degree credits each semester. \$21.

This course deals with social, philosophical, and aesthetic questions relating to modern Spanish life as reflected in the drama, novel, essay, and poetry of contemporary writers. Readings will include works by Unamuno, Azorin, Baroja, Benavente, Martinez Sierra, Pérez de Ayala, Ortega y Gasset, Antonio and Manuel Machado, and García Lorca. Lectures conducted entirely in Spanish. (Prerequisite: 4 or #)

Fall Semester

67a M 6:20-8:00, Folwell 213, Floripe

Spring Semester

67b M 6:20-8:00, Folwell 213, Floripe

73. A Trip to Latin America and Spain. 3 degree credits. \$21.

This course offers profitable information in English about the Spanish-speaking nations as well as half an hour of basic, simple Spanish language in each class period. No previous preparation in Spanish is required. Each student will prepare a notebook containing the Spanish vocabulary generally needed by travelers and a restricted number of practical grammar rules. Thus while enriching his mind with important and useful information on the geography, climate, art, music, places to visit, etc., of each of the Spanish-speaking countries, the student will acquire a beginning knowledge of the Spanish language. (No prerequisite)

Fall Semester

W 6:20-8:00, Folwell 203, Cuneo

Speech and Theater Arts (Spch)

*Beginning Practical Speech Making. 3 certificate credits. \$21 plus \$5.50 materials and laboratory fee.

This course is designed particularly for the adult student who wants a practical application of the fundamentals of speech to his professional, business, and social needs. The primary purpose of the course is to develop confidence and effectiveness in speaking situations. Individual attention will be given to cases of nervousness, embarrassment, inadequacy, inferiority, and stage fright. Each student speaks before the class each meeting. Voice recordings and an analysis of the speaking voice will be made. (No prerequisite. Each section limited to 20 students. Repeated spring semester)

Fall Semester

M 8:05-9:45, Folwell 5, Fulton

W 6:20-8:00, Folwell 5, Fulton

Th 6:00-7:40, StP Ext Center 206, Seymour

Spring Semester

M 6:20-8:00, Folwell 5, Fulton

M 8:05-9:45, Folwell 5, Fulton

W 6:20-8:00, Folwell 5, Fulton

Th 6:00-7:40, StP Ext Center 206, Seymour

*Advanced Practical Speech Making. 3 certificate credits. \$21 plus \$5.50 materials and laboratory fee.

An advanced speech course designed particularly for the adult student who wishes to develop skill in sound argumentative and effective persuasive speaking. The primary purpose of the course is to present the rules of logic and the impelling motives of conduct in a practical manner. Topics of current interest will be analyzed and discussed. Each student speaks before the class each meeting. (Prerequisite: Beginning Practical Speech Making, or #. Class limited to 15 students)

Fall Semester

M 6:20-8:00, Folwell 10, Fulton

Symbols explained on page 22.

Course Offerings—Arts and Sciences

1-2†-3. Fundamentals of Speech. 3 degree credits each semester. \$21 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 for 1; for 2, 1; for 3, 2)

Fall Semester

1 M 6:20-8:00, Folwell 306, Fletcher
2 M 6:20-8:00, Folwell 305, Scott
3 M 6:20-8:00, Folwell 305, Scott

Spring Semester

1 M 6:20-8:00, Folwell 306, Fletcher
2 M 6:20-8:00, Folwell 305, Scott
3 M 6:20-8:00, Folwell 305, Scott

31. Introduction to the Theater. 3 degree credits. \$21.

An orientation in the great dramatic tradition through a consideration of plays and playwrights from Sophocles to Tennessee Williams. It covers the history of theatrical customs, conventions and traditions as they affect modern stage production, and includes a view of the highlights of theater, architecture, scenic design, stagecraft, lighting, costumes, make-up, and special effects. (No prerequisite)

Fall Semester

W 6:20-8:00, Shevlin 110, Sturcken

32. Beginning Acting: Creative Approach. 3 degree credits. (Offered 1959-60)

The creative approach to acting. Emphasis is placed upon honest and effective response to imaginary situations. Students examine the basic texts of Stanislavsky, Boleslavsky, and McGaw, and present original scenes and skits. Freedom from self, sensitivity to environment, and appreciation of the arts of acting are the primary objectives. (Prerequisite: 31)

*39. Parliamentary Procedures. 2 degree credits. \$21.

Training for group leadership; emphasis is placed on a working knowledge of parliamentary procedures for chairmen and participants as well as informal approaches to group management. The course stresses the learning-by-doing approach with each student given several opportunities to practice the various skills and techniques presented. (No prerequisite. Class limited to 20 students. Repeated spring semester)

Fall Semester

T 6:20-8:00, Folwell 206, Shapiro

Spring Semester

T 6:20-8:00, Folwell 206, Shapiro

*65. Radio and Television Speech. 3 degree credits. \$21 plus \$2 laboratory fee.

Speech and psychology of radio and television; voice, diction, articulation, pronunciation, speech personality. Specific projects in radio and television situations. Several voice recordings will be made. (Prerequisite: 1-2, or ‡. Class limited to 25 students)

Fall Semester

T 6:20-8:00, Murphy 302, Barer

*66. Radio and Television Drama. 3 degree credits. \$21 plus \$2 laboratory fee.

A study of the methods and techniques involved in the production of dramatic and other programs in the radio and television field. Students participate in all phases, including production, direction, acting, script analysis, sound effects, selection of music. Several projects are carried out under actual radio and television conditions. (Prerequisite: 65 or ‡. Class limited to 25 students)

Spring Semester

T 6:20-8:00, Murphy 302, Gross

Symbols explained on page 22.

Evening and Special Classes

*Speech for the Foreign-Born. No credit. \$25 plus \$1 laboratory fee.

A course in speech improvement for persons with foreign-dialect speech. The purpose of the course is to (a) provide information about the peculiarities of American English speech, (b) increase the student's awareness of the important differences between his own speech and American speech, (c) supply supervised drill designed to alter existing speech patterns, and (d) establish the foundation for a program of continuing self-training following termination of the course. (Prerequisite: conversational ability in the English language. Repeated spring semester. All registrations must be made in person and approved in Room 56 Nicholson Hall)

Fall Semester

Th 6:20-8:00, Folwell 404, Fletcher

Spring Semester

Th 6:20-8:00, Folwell 404, Fletcher

Study Skills (SSk)

*Rhet 47. Efficient Reading. 3 certificate credits (may be used on degree program by petition: 1 credit in S.L.A. or Bus., 3 credits in Educ., I.T., or Ag.). \$21 plus \$2 materials fee.

Designed for students, business, or professional people of up-to-average reading ability who wish to improve their reading speed and comprehension. Emphasis is on reading techniques of particular use in achieving or maintaining superior scholastic or professional status. Maximum use is made of the tachistoscope and the Harvard Reading Films, two recently developed visual aids. Parallels Efficient Listening and is a suggested follow-up for How to Study. (No prerequisite. Class limited to 32 students. Repeated spring semester)

Fall Semester

M 6:00-7:40, StP Ext Center 201, Mondale
M 7:50-9:30, StP Ext Center 201, Mondale
M 6:20-8:00, Ford 15, Seymour
M 8:05-9:45, Ford 15, Seymour
T 6:20-8:00, Ford 15, Wright
T 8:05-9:45, Ford 15, Wright
W 8:05-9:45, Ford 15, Brown
W 6:20-8:00, Ford 15, Cashman

Spring Semester

M 6:00-7:40, StP Ext Center 201, Mondale
M 7:50-9:30, StP Ext Center 201, Mondale
M 6:20-8:00, Ford 15, Seymour
M 8:05-9:45, Ford 15, Seymour
T 6:20-8:00, Ford 15, Wright
T 8:05-9:45, Ford 15, Wright
W 8:05-9:45, Ford 15, Brown
W 6:20-8:00, Ford 15, Cashman

Efficient Listening. 3 certificate credits. \$21.

The primary emphasis in this course is upon efficient listening to instructive and directive speech. Of particular value to those who wish to improve concentration when listening to lectures, dictated material, instructions orally presented. Half of each class session is occupied with lectures on such topics as inefficient listening and its causes, the desire to learn and learning economy, the elements of concentration, speech structuralization, comprehension of main points, four usable systems of note-taking, and emotional adjustment of the speaker and his thesis. The other half of each class session is devoted to student performance. (No prerequisite. Repeated spring semester)

Fall Semester

W 8:05-9:45, Ford 60, Cashman

Spring Semester

W 8:05-9:45, Ford 60, Cashman

Vocabulary Building: How to Expand Your Word Power. 3 certificate credits. \$21 plus 25 cents materials fee.

A class designed to extend the range and increase the quality of one's vocabulary for social and business purposes and for the benefit of one's intellectual development in general. The core of the course consists of the study of 150 word elements which form the basis of thousands of English words. This approach not only enables an individual to enlarge his speaking, writing, and reading vocabulary in a short space of time but also provides him with the means of independently continuing that process indefinitely. Recommended as

Symbols explained on page 22.

Course Offerings—Arts and Sciences

background for other courses in the communication field. (No prerequisite. Repeated spring semester)

Fall Semester

M 6:00-7:40, StP Ext Center 201, Kurak
T 6:20-8:00, Nicholson 207, Sheldon
W 8:05-9:45, Nicholson 207, Stockdale

Spring Semester

M 6:00-7:40, StP Ext Center 201, Kurak
T 6:20-8:00, Nicholson 207, Sheldon
W 8:05-9:45, Nicholson 207, Stockdale

Grammar Review. See English, page 41.

How to Study. See Interdisciplinary Studies, page 51.

English as a Second Language. See English, page 41.

Speech for the Foreign-Born. See Speech and Theater Arts, page 72.

Zoology (Zool)

1-2.† General Zoology. 5 degree credits each semester. \$35.

Structure, physiology, embryology, classification, and evolution of animals. One hour of lecture and 2 hours of laboratory each evening. (No prerequisite for 1; for 2, 1)

Fall Semester

1 MW 6:20-9:20, Zoology 313

Spring Semester

2 MW 6:20-9:20, Zoology 313

Symbols explained on page 22.

BUSINESS ADMINISTRATION

The School of Business Administration has re-numbered most of its courses, effective with the fall term, 1958. Listed below, for the convenience of former students, are the old number designations and their new equivalents. In many instances, titles have also changed. Only the new titles are listed.

Old Numbers	New Numbers and Titles (Fall, 1958)
Econ 1-2	Econ 1-2—Principles of Economics (no change)
Econ 5	BA 5—Elements of Statistics
Econ 24-25-26	BA 24-25-26—Principles of Accounting
Econ 50	BA 53—Insurance Principles
BA 51	BA 58—Business Law: Contracts
BA 52	BA 78—Business Law: Agency, Partnership, and Corporations
BA 53	BA 88—Business Law: Sales and Negotiable Instruments
BA 54-55	BA 55A-55B—Elementary Accounting
BA 56	BA 98—Business Law: Property Rights and Obligations
Econ 57	Econ 67—Money and Banking
BA 58	Econ 68—Elements of Public Finance
BA 65	BA 55D—Analysis of Financial Statements
BA 66	BA 55C—Managerial Costs
BA 71	BA 54—Transportation I: Principles
Econ 73	BA 52—Modern Industrial Relations: Labor Marketing
Econ 74	BA 51—Business Statistics
Econ 75	BA 56—Corporation Finance
BA 76	BA 87—Credits and Collections
BA 77	BA 57—Principles of Marketing
Econ 80	Econ 66—Intermediate Economic Analysis: Income and Employment
Econ 81	Econ 65—Intermediate Economic Analysis: The Firm
Econ 84	Econ 160—Comparative Economic Systems
Econ 85	Econ 69—Government Regulation of Business
BA 86	BA 99—Survey of Office Management
BA 89	BA 50—Production Management
BA 91	BA 89B—Tabulating Equipment Applied to Business
BA 113	BA 117—Sales Management
BA 118	BA 125—Auditing Principles
BA 129	BA 184A—Highway Transportation
Econ 129	Econ 150A—Current Economic Issues
BA 134A-134B	BA 135A-135B—Income Tax Accounting
BA 135	BA 185B—Public Accounting
BA 136	BA 175C—Controllership Functions and Procedures
BA 146	BA 176—Investments
BA 148	BA 186—The Securities Market
Econ 149	Econ 157—Business Cycles
BA 150A-150B-150C	BA 105A-105B-105C—Intermediate Accounting
BA 152-153	BA 115A-115B—Cost Accounting
BA 154	BA 175D—Budgetary Control
BA 156	BA 76—Finance Management
BA 158	BA 185C—Governmental Accounting
BA 159	BA 185A—Advanced Accounting
Econ 161	BA 152—Principles of Industrial Relations: Labor Marketing
Econ 162	Econ 152—Labor Movements
Econ 163	Econ 162—Union Government and Policies
Econ 164	Econ 172—Public Policy: Labor Relations
Econ 166	BA 142—Settlement of Industrial Relations Disputes
BA 167	BA 72—Modern Industrial Relations: Manpower Management
BA 168	BA 182B—Intermediate Manpower Management
Econ 169	Econ 182—Economic Security
BA 174	BA 174—Transportation II: Traffic Management (no change)
Econ 176	Econ 104—International Economics
BA 180D-181D-182D	BA 262-272-282—Graduate Topics in Industrial Relations
BA 180I-181I	BA 194A-194B—Topics in Transportation: Advanced Traffic Management I-II
BA 181A	BA 145B—Internal Auditing
BA 182A	BA 145C—Systems and Procedures
BA 184	BA 70—History of Management Thought

Accounting

FIRST YEAR ACCOUNTING COURSES

BA 24-25-26 (formerly Econ 24-25-26), Principles of Accounting, is the first-year introductory course. It is designed to meet the needs of three groups of students: (a) those who plan to use accounting information for business management purposes; (b) those who intend to be practicing accountants (and who expect, therefore, to continue with the second-year and advanced accounting courses); (c) those who wish an introduction to the "language of business" as part of a liberal education. It is not designed to train students to be bookkeepers.

Persons with prior background or training may receive credit in one or more of these courses by passing an advanced standing examination. These examinations will be given at the following times in Room 307, Vincent Hall.

BA 24	Wednesday	September 24	7:00
	Wednesday	October 1	7:00
	Friday	January 2	7:00
	Thursday	February 12	7:00
BA 25	Thursday	September 25	7:00
	Thursday	October 2	7:00
	Friday	February 13	7:00
BA 26	Friday	September 26	7:00
	Friday	October 3	7:00

The three courses are scheduled on three plans.

- Regular semester class schedule for 3 credits each of 3 semesters for full first-year course
For students who wish regular class periods in order to take two classes the same evening or who do not wish to spend the time necessary for the more concentrated scheduling.
- Quarter basis, 2½-hour classes, 3 credits each quarter, course completed in 1 year
For students who wish to complete the entire course in 1 year of 3 quarters of 11 weeks each. Students who find this schedule too rapid are in a position to change to the semester basis.
- Combined course, meeting twice weekly in 2½-hour sessions, spring semester only, 1 year course covered in 1 semester
For those who wish to concentrate on completion of the course in the spring semester in order to begin advanced courses in the following quarter.

BA 24-25-26. Principles of Accounting. (Formerly Econ 24-25-26 or BA 54-55) 3 degree credits each semester, §BA 55A-55B. \$21 each unit.

Methods of recording, reporting, and interpreting business events. Use of accounting as a tool of business management. (No prerequisite for 24; for 25 and 26, previous unit. See page 75 for advanced standing examinations)

Fall Semester

24	M	6:00-7:40, StP Ext Center 307, Creviere
24	T	6:20-8:00, Vincent 306, Kerns
25	Th	6:20-8:00, Vincent 306, Nilsen
26	M	7:50-9:30, StP Ext Center 307, Creviere
26	Th	6:20-8:00, Vincent 307, Thorsen

Spring Semester

24	T	6:20-8:00, Vincent 307
25	M	6:00-7:40, StP Ext Center 307, Creviere
25	T	6:20-8:00, Vincent 306, Kerns
26	Th	6:20-8:00, Vincent 306, Nilsen

Symbols explained on page 22.

Evening and Special Classes

BA 24-25-26. Principles of Accounting. (Formerly Econ 24-25-26 or BA 54-55) 3 degree credits each quarter, §BA 55A-55B. \$21 each unit.

Methods of recording, reporting, and interpreting business events. Use of accounting as a tool of business management. (No prerequisite for 24; for 25 and 26, previous unit. See page 75 for advanced standing examinations)

<i>Fall Quarter</i>		<i>Winter Quarter</i>	<i>Spring Quarter</i>
24	M 5:30-8:00, Ford 30, Urban, Cummings	25 (same schedule as fall)	26 (same schedule as fall)
24	W 5:15-7:45, StP Ext Center 307, Mackey, Powell		

BA 24-25-26. Principles of Accounting (Combined). (Formerly Econ 24-25-26 or BA 54-55) 9 degree credits, §BA 55A-55B. \$21 each unit.

This course covers 24-25-26 complete in 1 semester. (No prerequisite. Registrations will be accepted for the entire course only)

<i>Spring Semester</i>	
MF	6:20-8:50, Vincent 306, Lund
MF	6:00-8:30, StP Ext Center 207

SECOND YEAR ACCOUNTING COURSES

BA 55C. Managerial Costs. (Formerly BA 66) (To be offered 1959-60)

BA 55D. Analysis of Financial Statements. (Formerly BA 65 or BA 150C) 3 degree credits, §BA 105C. \$21.

A course in the use of financial statements by creditors, investors, and executives. The material is approached from the viewpoint of the reader of statements, and is not concerned with accounting technicalities. Reports of commercial, industrial, public utility, and railroad companies are used as basic material for the course. (Prerequisite: new BA 26 or old Econ 26. See page 75 for advanced standing examinations)

<i>Spring Semester</i>	
W	7:50-9:30, StP Ext Center 302, Johnson
Th	8:05-9:45, Vincent 306, Nilsen

BA 105A-105B-105C. Intermediate Accounting. (Formerly BA 150A-150B-150C) 3 degree credits each semester, §BA 55D or BA 65. \$21 each unit.

Second year accounting for students intending to specialize in accounting or in business finance. 105A: Review of accounting processes, measurement of income, accounting treatment of inventory and plant. 105B: Accounting treatment of cash, receivables, investments, intangible assets and applications of actuarial mathematics. 105C: Accounting treatment of stockholders' equity, interpretation and analysis of financial statements. (Prerequisites: for 105A, new BA 26 or old Econ 26 [see page 75 for advanced standing examinations]; for 105B, new BA 105A or old BA 150A; for 105C, new BA 105B or old BA 150B)

<i>Fall Semester</i>		<i>Spring Semester</i>	
105A	W 6:00-7:40, StP Ext Center 305, Johnson	105B	W 6:00-7:40, StP Ext Center 305, Johnson
105A	Th 6:20-8:00, Vincent 1, Lund, Nelson	105B	Th 6:20-8:00, Vincent 301, Nelson
105C	M 6:20-8:00, Vincent 307		
	W 7:50-9:30, StP Ext Center 302, Johnson		

Symbols explained on page 22.

Course Offerings—Business Administration

BA 115A-115B. Cost Accounting. (Formerly BA 152-153) 3 degree credits each semester, \$BA 55C or BA 66. \$21 each unit.

115A: Practices, principles and procedures of handling production costs for use in inventory valuation and income determination. An examination of job order, process, and standard cost systems. A brief introduction to standard cost as a tool of cost control. 115B: An analysis of the use of cost information in managerial decision making. (Prerequisites: for 115A, new BA 26 or old Econ 26 [see page 75 for advanced standing examinations]; for 115B, new BA 115A or old BA 152)

Fall Semester

115A T 8:05-9:45, Vincent 307, Gibson
115A W 7:50-9:30, StP Ext Center 305,
Tuttle

Spring Semester

115B T 8:05-9:45, Vincent 307, Gibson
115B W 7:50-9:30, StP Ext Center 305,
Tuttle

SPECIAL INTEREST AND ADVANCED ACCOUNTING COURSES

Business Data Processing by Electronics. No credit. \$42.

A course designed to introduce the programming and procedures necessary for different types of equipment. The first half of the course is descriptive of equipment, processing and programming for limited and flexible high-speed electronic equipment. The second half of the course will be devoted to a series of case studies of applications to sales, billing, inventory, payrolls, and adjustments for permanent records. This course should be of special interest to systems development personnel, statisticians, accountants, and others concerned with present and prospective planning and operation of electronic machine installations. (No prerequisite)

Fall Semester

M 7:00-9:30, Johnston 113, Locks

Elementary Functional Wiring for Punched Card Equipment. 3 certificate credits. \$21.

A course for those interested in different procedures for different types of machine operation. Major emphasis on different specialized equipment each semester. (Prerequisite: #)

Fall Semester

M 6:20-8:00, Ford 70

BA 89B. Tabulating Equipment Applied to Business. (Formerly BA 91) 2 degree credits plus 1 certificate credit. \$21.

Punched card methods and standard procedures as applied to accounting and statistical records. Card and code designs. For those who understand wiring and operation of standard equipment. (Prerequisite: #)

Spring Semester

M 6:20-8:00, Ford 160, Bonney

BA 125-185B. Auditing Principles and Procedures and Public Accounting. (Formerly BA 118-135) 3 certificate credits each semester. (6 degree credits on completion of both courses consecutively). \$21 each unit.

An introduction to auditing principles and procedures. (Prerequisite: new BA 105C or #105C or old BA 150C for BA 125; BA 125 for BA 185B).

Fall Semester

125 W 6:20-8:00, Vincent 307

Spring Semester

185B W 6:20-8:00, Vincent 307

Symbols explained on page 22.

Evening and Special Classes

BA 135A-135B. Income Tax Accounting. (Formerly BA 134A-134B) 3 certificate credits each semester (4 degree credits on completion of both courses consecutively). \$21.

Principles involved in determining taxable net income and computation of federal and state income taxes for individuals, partnerships, and corporations. (Prerequisite: new BA 105A or old BA 150A)

Fall Semester

135A M 8:05-9:45, Vincent 301, Rapoport
135A T 6:00-7:40, StP Ext Center 307, Daly

Spring Semester

135B M 8:05-9:45, Vincent 301, Rapoport
135B T 6:00-7:40, StP Ext Center 307, Daly

BA 145B. Internal Auditing. (Formerly BA 181A) 3 degree credits. \$21.

Comprehensive course in auditing taught jointly with members of the Twin Cities Chapter of the Institute of Internal Auditors. The principles of internal auditing, organization of the internal auditors' functions, and detailed discussion of the performance of particular activities will be covered. (Prerequisite: 6 degree credits in Upper Division accounting)

Fall Semester

Th 6:20-8:00, Vincent 301, Meyers and others

BA 145C. Systems and Procedures. (Formerly BA 182A) (See Pol 67, page 61) 3 degree credits. \$21 plus \$2 laboratory fee.

This course is a survey course of systems and procedures. It is a joint offering of Business Administration and Public Administration and is sponsored by the Twin Cities Chapter, Systems and Procedures Association. Topics include techniques of management surveys, evaluation of organization structure, charting, forms design and control, integrated data processing, office work measurement and quality control, preparation of reports, use of costs and statistics in systems analysis, evaluation of reporting systems, administration of a systems program. Instructors include University faculty members and members of the Systems and Procedures Association. (Prerequisite: #)

Spring Semester

Th 6:20-8:00, Ford 160, Magraw and others

BA 175C. Controllership Functions and Procedures. (Formerly BA 136) 3 degree credits. \$21.

Place and functions of controller and internal auditor in business enterprises. Examination of accounting systems and methods related to such functions as internal check and audit control of routine transactions. (Prerequisite: new BA 115B or old BA 153)

Spring Semester

T 6:20-8:00, Vincent 205, Gibson

BA 175D. Budgetary Control. (Formerly BA 154) 3 degree credits. \$21.

Fundamentals of establishing and operating a budget. Budgetary control and relationship to break-even analysis. (Prerequisite: new BA 115B or old BA 153)

Fall Semester

T 6:20-8:00, Vincent 301, Gibson

Spring Semester

T 7:50-9:30, StP Ext Center 302, Tuttle

BA 185A. Advanced Accounting. (Formerly BA 159) 3 degree credits. \$21.

Consolidated statements, fiduciary and fund accounting, partnership accounting. (Prerequisite: new BA 105C or 1105C or old BA 150C)

Spring Semester

M 6:20-8:00, Vincent 307

Symbols explained on page 22.

Course Offerings—Business Administration

BA 185C. Governmental Accounting. (Formerly BA 158) (See Pol 58, page 61)
2 degree credits plus 1 certificate credit. \$21.

Government budgets and fund accounting. (Prerequisite: BA 105C or #105C. or old BA 150C)

Fall Semester

Th 6:20-8:00, Ford 160, Magraw

Constructive Accounting and Accounting Systems A-B. 3 certificate credits each semester. \$21 each semester.

Fall: Constructive accounting. 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. *Spring:* Accounting systems. Classification of industry according to types of accounting problems; special features of each, constructive, operative, interpretative features. Case method used. (Prerequisite: #)

Fall Semester

A T 6:00-7:40, StP Ext Center 302, Tuttle

Spring Semester

B T 6:00-7:40, StP Ext Center 302, Tuttle

Business English

Review of Business English. 3 certificate credits. \$21.

For those who have been out of school for a while or who had poor preparation for Business English while in school. Modern, streamlined sentence structure, paragraphing, punctuation, and spelling. Brief introduction to letter form and organization. Emphasis on brevity, accuracy, meaning, and vividness. (No prerequisite)

Fall Semester

T 6:00-7:40, StP Ext Center 303, Lippert
T 8:05-9:45, Main Engineering 4, Lippert
W 6:20-8:00, Main Engineering 4, Lippert

Spring Semester

M 6:20-8:00, Main Engineering 4, Lippert
W 6:20-8:00, Main Engineering 4, Lippert

Business Correspondence. 3 certificate credits. \$21.

A practical class for people recognizing the value of effective expression in business letters. The principal types of letters will be analyzed and the written assignments will emphasize the development of a letter style capable of producing economical, clear, action-getting letters. (No prerequisite. Repeated spring semester)

Fall Semester

M 6:20-8:00, Main Engineering 4, Lippert
W 6:20-8:00, Main Engineering 215, Haga

Spring Semester

T 6:00-7:40, StP Ext Center 303, Lippert
W 6:20-8:00, Main Engineering 215, Haga

Comp 58. (See description and statement in following course, **Communication in Management.**) 3 degree credits. \$21.

Communication in Management. 3 certificate credits. \$21.

Note—On approval of petition by instructor and the School of Business Administration, degree credit (not in excess of 3 credits) applicable for a Business degree will be recognized for Communication in Management in lieu of Comp 58, provided class work has included appropriate supplementary assignments. Consult instructor at beginning of class term.

An advanced course for people working at the administrative level. Reviews and analyzes the forms and styles appropriate in the three major classes of management communication: downward (order-giving), upward (administrative reporting), and horizontal

Symbols explained on page 22.

Evening and Special Classes

(clearance and review). In addition to the class assignments, each student will work out an individual communication project related to his specific job. (No prerequisite)

Fall Semester

W 6:20-8:00, Main Engineering 215, Haga

Spring Semester

W 8:05-9:45, Main Engineering 215, Haga

Business Law

BA 58-78-88, 98. Business Law. (Formerly BA 51-52-53, 56) 3 degree credits each semester. \$21.

Comprehensive course in the fundamental principles of law for the business and professional man. 58: Contracts—formation, operation, transfer, discharge. 78: Business associations—nature, creation and terms of the relation, rights, and liabilities of the parties when doing business through agents, partnerships, and corporations. 88: Law of sales of goods under the Uniform Sales Act and law of commercial paper under the Uniform Negotiable Instruments Law. 98: Nature and classification of real estate; deeds and conveyances; landlord and tenant; recording and abstracting; Torrens titles; liens and mortgages; wills, probating of estates, and duties of administrators and executors. (Prerequisite: BA 58 must precede or be taken in conjunction with either 78 or 88 unless # is obtained for a different sequence)

Fall Semester

58 T 7:50-9:30, StP Ext Center 305,
VanValkenburg
58 W 6:20-8:00, Ford 120, Moss
78 T 6:00-7:40, StP Ext Center 305,
VanValkenburg
78 W 8:05-9:45, Ford 120, Moss
88 T 6:20-8:00, Vincent 113, Thomas

Spring Semester

58 T 6:00-7:40, StP Ext Center 305,
VanValkenburg
58 W 8:05-9:45, Ford 120, Moss
78 T 7:50-9:30, StP Ext Center 305,
VanValkenburg
78 W 6:20-8:00, Ford 120, Moss
88 T 6:20-8:00, Vincent 113, Thomas
98 W 6:20-8:00, Ford 130, Carroll

Common Legal Problems I-II. 3 certificate credits each semester. \$21 plus \$1 materials fee.

The Common Legal Problems courses provide a comprehensive course in everyday legal principles, designed to assist the businessman, layman, and housewife to recognize their legal rights and more intelligently and efficiently manage their personal affairs. Any individual, whether married or single, housewife or businessman, is bound to come up against many legal problems in varied fields during a lifetime. In many cases these problems might never arise or might be considerably minimized if the persons involved could anticipate them and know in advance what are the basic rights and liabilities and what steps should be taken to enforce or guard them, whom to consult, etc. *Part I* will consider legal problems of the following types: the purchase, sale, rental, or lease of homes and other real property; the making of wills and handling of estates; the preparation of income tax returns; the rights of persons injured in accidents and the liability of persons causing accidents; liability for trespass on real property and other negligent conduct; the making of contracts; the sale of personal property. *Part II* will consider the rights and responsibilities of husband, wife, parent and child in their relations with each other; criminal acts and criminal trials; the formation and operation of a small business as a sole proprietorship, partnership or corporation; the right to benefits for disability and to retirement pensions under various legislation such as social security, workmen's compensation and old age assistance; the rules of the road governing operation of automobiles; the garnishment of wages; and the filing of mechanic's liens against real property. (No prerequisite. Either course may be taken first. Repeated spring semester)

Fall Semester

I M 6:20-8:00, Ford 150, Thorfinnson and
Clay
II M 8:05-9:45, Ford 150, Thorfinnson and
Clay

Spring Semester

I M 6:20-8:00, Ford 150, Thorfinnson and
Clay
II M 8:05-9:45, Ford 150, Thorfinnson and
Clay

Symbols explained on page 22.

Parliamentary Law. See page 71.

Economics

Econ B. The Scope, Methods, and Applications of Economics. 3 degree credits. \$21.

Overview of economics for the student who wants to know what the subject is about. Attention is directed to the variety of problems for which a study of economics is relevant. The economist's approach to the various problems is stressed. (No prerequisite)

Fall Semester

Th 6:20-8:00, Vincent 113, Smith

Econ 1-2. Principles of Economics. 3 degree credits each semester. \$21.

A study of the principles underlying economic activity and the way these principles work out through our economic institutions. Topics covered by Econ 1 include demand and supply, competition and monopoly, and the distribution of income. Topics covered in Econ 2 include national income, money and banking, business cycles, and international trade. Econ 1 and 2 are prerequisite for most advanced courses in business administration and economics. (No prerequisite for Econ 1; for Econ 2, Econ 1)

Fall Semester

1 M 6:20-8:00, Vincent 113
1 M 6:00-7:40, StP Ext Center 207
1 T 6:20-8:00, Vincent 1, Borak
1 W 6:20-8:00, Vincent 1
1 W 8:05-9:45, Vincent 1
2 Th 6:20-8:00, Vincent 207

Spring Semester

1 T 8:05-9:45, Vincent 1
1 Th 8:05-9:45, Vincent 1
2 M 6:20-8:00, Vincent 113
2 M 6:00-7:40, StP Ext Center 207
2 T 6:20-8:00, Vincent 207
2 W 6:20-8:00, Vincent 113
2 W 8:05-9:45, Vincent 113

BA 52. Modern Industrial Relations: Labor Marketing. (Formerly Econ 73) See Industrial Relations, page 84.

Econ 65. Intermediate Economic Analysis: The Firm. (Formerly Econ 81) 3 degree credits. \$21.

Examination of the behavior of firms under competitive and monopolistic conditions, with particular attention to factors influencing the firm's decisions regarding production, output, and prices. (Prerequisite: Econ 2)

Fall Semester

W 6:20-8:00, Vincent 6, Delehanty

Econ 66. Intermediate Economic Analysis: Income and Employment. (Formerly Econ 80) 3 degree credits. \$21.

Determinants of national income, employment, and price level, with particular attention to aggregate consumption and investment. (Prerequisite: Econ 2)

Spring Semester

W 6:20-8:00, Vincent 207, Delehanty

Symbols explained on page 22.

Evening and Special Classes

Econ 67. Money and Banking. (Formerly Econ 57) 3 degree credits. \$21.

Historical development, present pattern, and economic role of financial institutions, with special emphasis upon commercial banks, the money supply, and the Federal Reserve System. (Prerequisite: Econ 2)

Spring Semester

Th 6:20-8:00, Vincent 1, Smith

Econ 68. Elements of Public Finance. (Formerly BA 58) 3 degree credits. \$21.

A survey of government expenditures, budgeting, fiscal policy, debts, and taxes in terms of fiscal institutions, impact on business and the economy, and policy issues. (Prerequisite: Econ 2)

Spring Semester

T 6:20-8:00, Vincent 1, Borak

Econ 69. Government Regulation of Business. (Formerly Econ 85) 3 degree credits. \$21.

Economic aspects of public policy affecting the market process. Topics studied include relations between market structure and economic efficiency and welfare, economic origins of monopoly and other business limitations on free competition, and purposes and effects of anti-trust laws and laws relating to "unfair business practices." (Prerequisite: new Econ 65 or old Econ 81 for business or economics majors, suitable background in law or political science for others, or #)

Fall Semester

W 6:20-8:00, Vincent 207, Boddy

Econ 104. International Economics. (Formerly Econ 176) 3 degree credits. (Offered 1959-60)

Econ 150A. Current Economic Issues. (Formerly Econ 129) 3 degree credits. (Offered 1959-60)

Econ 157. Business Cycles. (Formerly Econ 149) 3 degree credits. \$21.

A study of the ups and downs of business: various explanations of the causes, the statistical data on such fluctuations, the relationship of cycles to economic growth, methods of forecasting, and an examination of proposals for economic stabilization. (Prerequisite: new Econ 66 and 67 or old Econ 80 and 57)

Spring Semester

Th 8:05-9:45, Vincent 113, Smith

Econ 160. Comparative Economic Systems. (Formerly Econ 84) 3 degree credits. \$21.

The contribution of economics to a consideration of the issues between capitalism and communism and other economic systems. The theories on which the various systems are based and the way they work out in practice are analyzed in terms of economic principles and the vital economic functions performed in each system. (Prerequisite: Econ 2)

Fall Semester

Th 8:05-9:45, Vincent 113, Smith

Econ 162. See Industrial Relations, page 85.

Symbols explained on page 22.

Econ 172. See Industrial Relations, page 85.

Econ 182. See Industrial Relations, page 85.

Finance

BA 56. Corporation Finance. (Formerly Econ 75) 3 degree credits. \$21.

The corporation in comparison with other types of business units. Organization and capital structure, raising fixed and circulating capital, treatment of corporate earnings, incentives to and forms of combination, trusteeship, and reorganization. (Prerequisite: Econ 1)

Fall Semester

M 6:20-8:00, Vincent 207, Sutton
M 8:05-9:45, Vincent 207

BA 76. Finance Management. (Formerly BA 156) 3 degree credits. \$21.

Duties of the financial manager of a modern business. Various sources from which capital may be secured, best use of a company's funds, and special financial problems which arise in the typical business. (Prerequisite: new BA 56 or old Econ 75)

Spring Semester

M 6:20-8:00, Vincent 207, Sutton

BA 176. Investments. (Formerly BA 146) 3 degree credits. \$21.

A general or "cross cut" survey of the external and internal factors influencing the prices of securities, and of the principles of an investment policy for the individual investor. Objective analysis from source materials of factors explaining price differentiation. (Prerequisite: new BA 56 or old Econ 75 or 155)

Spring Semester

Th 6:20-8:00, Vincent 2

BA 186. The Securities Market. (Formerly BA 148) 3 degree credits. \$21.

Consideration of behavior over time or "longitudinal" analysis of prices of individual and groups of securities. The relationship of economic conditions to security values, particularly the effects of cyclical fluctuation. (Prerequisite: new BA 176 or old BA 146 or ##)

Fall Semester

M 6:20-8:00, Vincent 6

Introduction to Investments. 3 certificate credits. \$21.

A fundamental course for serious investors—lay, business or professional—who wish a general background of information on the investment field. Classroom instruction supplemented by special lectures by men of experience in investment banking, commercial banking, and other related fields. Course covers nature of various kinds of securities; statistical and investment analysis of securities; vocabulary and practices of the securities business; investment practice of various investor groups. (No prerequisite)

Fall Semester

T 6:20-8:00, Johnston 113, Power

Symbols explained on page 22.

Industrial Management and Administration

BA 50. Production Management. (Formerly BA 89) 3 degree credits. \$21.

Introduction to the management of the production function. The techniques, the managerial problems, and the decision-making processes in planning and controlling the production activity. Emphasis is on production as a function of the enterprise rather than as a strictly manufacturing activity. Research and development, the role of standards, physical facilities, systems and procedures analysis, work measurement, materials control, quality control, and production planning and control. (Prerequisite: Econ 2)

Fall Semester

M 6:20-8:00, Johnston 122, Peterson
M 8:05-9:45, Johnston 122, Peterson

Spring Semester

M 6:20-8:00, Johnston 122, Peterson

BA 70. History of Management Thought. (Formerly BA 184) 3 degree credits. \$21.

Origin and development of the movement to apply methods of science to the area of management. Examines the contributions made by outstanding writers and practitioners in the field of management. Evaluates the contributions of management to the individual firm and to society. Projects the role of the manager into the firm and society of the future. (Prerequisite: new BA 50 or 150 or old BA 89)

Spring Semester

M 8:05-9:45, Johnston 122, Peterson

Industrial Relations and Labor Economics

BA 52. Modern Industrial Relations: Labor Marketing. (Formerly Econ 73) 3 degree credits. \$21.

This course deals with: (a) the marketing of manpower resources; (b) the institutional structure of labor markets; (c) economic and social problems arising out of labor marketing processes; (d) methods, procedures, and proposals for solving these problems. (Prerequisite: Econ 1-2)

Note—Qualified students may earn graduate credit in BA 152. For information, consult the Committee on Student Scholastic Standing.

Fall Semester

M 7:50-9:30, StP Ext Center 201, Mahoney
W 6:20-8:00, Vincent 2, Heneman

Spring Semester

T 8:05-9:45, Ford 180, Mahoney

BA 72. Modern Industrial Relations: Manpower Management. (Formerly BA 167) 3 degree credits. \$21.

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: new BA 52 or 152 or old Econ 73 or 161)

Spring Semester

W 6:20-8:00, Vincent 2, Heneman

BA 142. Settlement of Industrial Relations Disputes. (Formerly Econ 166) (To be offered in 1959-60)

Symbols explained on page 22.

Course Offerings—Business Administration

Econ 162. Union Government and Policies. (Formerly Econ 163) 3 degree credits. \$21.

Internal administration and government of unions; economic and social issues; hours, wages, and other conditions of employment. (Prerequisite: new BA 152 or old Econ 161 or ##)

Spring Semester

Th 6:20-8:05, Ford 150

Econ 172. Public Policy: Labor Relations. (Formerly Econ 164) (To be offered in 1959-60)

Econ 182. Economic Security. (Formerly Econ 169) 3 degree credits. \$21.

Origins and development of economic and social problems of the individual worker; executive, legislative, and judicial attempts to deal with these problems; economic and social consequences. Treatment of "protective labor legislation" involving child labor, hours and wages, industrial accidents, illness, old age, and unemployment. (Prerequisite: new BA 152 or old Econ 161 or ##)

Fall Semester

Th 8:05-9:45, Ford 130, Turnbull

BA 182B. Intermediate Manpower Management. (Formerly BA 168) 3 degree credits. \$21.

Advanced analysis of industrial relations in unions and managements. Consideration of mechanisms, practices, and procedures of manpower management, policy determination and review; personnel records and reports; and evaluation of industrial relations programs. (Prerequisite: new BA 72 or old BA 167)

Fall Semester

W 8:05-9:45, Vincent 2, Heneman

Current Problems in Industrial Relations. (To be offered in 1959-60)

Supervision I: Elements of Supervision. 3 certificate credits. \$21 plus \$1 materials fee.

A general discussion of basic principles of supervision in the office and factory. Survey of principles for the handling of day-to-day problems of supervisors with emphasis upon human relations aspects of such problems. Deals with such problems as selection, induction and training of new employees, employee appraisal, giving orders, handling grievances, discipline, and employee morale. Extensive use of class discussion of practical problems drawn from office and plant situations. (No prerequisite. Repeated spring semester)

Fall Semester

M 6:00-7:40, StP Ext Center 206
T 6:20-8:00, Ford 50

Spring Semester

M 7:50-9:30, StP Ext Center 206
T 6:20-8:00, Ford 50

Supervision II: Advanced Techniques of Supervision. 3 certificate credits. \$21.

Emphasizes specialized supervisory techniques based upon principles outlined in Supervision I. Includes discussion of research in supervisory methods and practices and their relative success in application in the office and plant. Methods of supervisory training, morale measurement, job analysis and job evaluation, safety programs, wage and salary administration, principles of organization and communications are among the topics discussed. Extensive use is made of discussion method and case studies. (Prerequisite: Supervision I)

Fall Semester

M 6:20-8:00, Ford 50

Spring Semester

M 6:00-7:40, StP Ext Center 206
T 6:20-8:00, Ford 180

Symbols explained on page 22.

Evening and Special Classes

Supervision III: Techniques of Employee Training. 3 certificate credits. \$21.

Primary emphasis is on the training techniques a line supervisor could make use of in developing his employees. Course content includes discussion of basic principles of training, training on an individual basis, group training, and special problems of orienting the new employee, making use of staff training services, safety training and evaluation of training. Extensive use is made of class discussion, role playing, case studies and demonstrations. (Prerequisite: Supervision II)

Fall Semester

M 8:05-9:45, Ford 50

Economics of Collective Bargaining. 3 certificate credits. \$21.

An analysis of the process of collective bargaining. Appraises the bargaining situation, examines the economic basis of different stands and arguments, and analyzes implications of different bargaining settlements. Consideration is also given to procedural aspects of collective bargaining. Provides a framework and method of analysis of collective bargaining in terms of economic implications. (Prerequisite: new BA 52 or 152 or old Econ 73 or 161 or ##)

Fall Semester

Th 6:20-8:00, Ford 50, Turnbull

Human Relations in Industry. 3 certificate credits. \$21.

Primary emphasis is on the characteristics of the human relations movement in industry today. Designed to answer questions concerning employee motivation, human aptitudes and their measurement, supervision and leadership, problems of plant morale and communications. Biomechanics (fitting the machine to the man) is also considered in lectures and case problems. (No prerequisite)

Spring Semester

T 8:05-9:45, Ford 50, Jerdee

Personnel Statistics. 3 certificate credits. \$21.

Designed to aid in the application of statistical methods to personnel and industrial relations problems. Especially useful to persons in personnel research, selection and placement, training, wage and salary administration, and employee appraisal. Topics discussed include presentation and arrangement of data, measures of central tendency and dispersion, tests of significance of differences, and correlation analysis. (Prerequisite: new BA 72 or old Econ 167 or #)

Spring Semester

W 8:05-9:45, Ford 50, England

Personnel Methods. 3 certificate credits. \$21.

A detailed analysis and evaluation of a limited number of specific technical techniques of professional personnel management—job evaluation, wage surveys, incentive systems, supervisory training, morale surveys, testing. (Prerequisite: new BA 72 or old Econ 167 or #)

Fall Semester

W 8:05-9:45, Ford 50, England

Insurance

BA 53. Insurance Principles. (Formerly Econ 50) 3 degree credits. \$21.

Risk and its adverse economic effects; methods of handling risks; theory of insurance and insurable risks; insurable personal, property, and liability risks; risk management; personal, property, and liability insurance contracts; types of insurers; production, under-

Symbols explained on page 22.

Course Offerings—Business Administration

writing, actuarial, finance, and claims functions of insurers; industry and government regulation; social control. (Prerequisite: Econ 2 or ##)

Fall Semester

M 8:05-9:45, Vincent 6, Williams

Spring Semester

M 8:05-9:45, Vincent 6, Williams

Property and Casualty Insurance Curriculum.

The University of Minnesota co-operates with the Insurance Institute of America and the American Institute for Property and Casualty Underwriters, Inc., by offering an educational program that provides the basic courses needed by those who wish to take the examinations of either or both of the institutes. The Insurance Institute of America courses are considered excellent preparation for the more difficult American Institute courses which lead to the Chartered Property and Casualty Underwriters (CPCU) award. Complete details of the program of training under both institutes are printed in the institutes' annual announcements, copies of which may be obtained from the General Extension Division of the University of Minnesota. (Co-ordinator for CPCU program for 1958-59 will be Bernard C. Bengtson, Ca 4-3737)

I.I.A. Parts A, B, and C. 3 certificate credits each semester. \$21.

Based on the Part A, Part B, and Part C Topical Outlines of the Insurance Institute of America. Provides a background in property and liability insurance and serves as a preparatory course for the CPCU program. *Part A*: Economic and social influences of insurance; risk and insurance; types of risk and kinds of insurance to meet them; legal principles important to property and liability insurance; historical development of insurance; rate making; types of insurers and their organization; underwriting and reinsurance; analysis of insurance contracts; regulation. *Part B*: An intensive study of fire and marine insurance contracts. *Part C*: An intensive study of casualty insurance contracts. It is highly recommended but not required that Part A be taken before Parts B and C.

Fall Semester

A M 6:20-8:00, Vincent 6, Williams

Spring Semester

B-C M 6:20-8:00, Vincent 6, Williams

CPCU Part I. Insurance Principles and Practices, A-B. 3 certificate credits each semester. \$21.

An intensive course in the basic principles of property and casualty insurance, designed as preparation for examination I for the Chartered Property Casualty Underwriter (CPCU) award offered by the American Institute for Property and Casualty Underwriters, Inc. The course will be conducted by a panel of instructors selected from practicing insurance men, co-ordinated and supervised by the University School of Business Administration. (Prerequisite: at least 3 years' *general* experience or the equivalent in formal study and acceptance of special registration application; consult any Extension office)

Fall Semester

A M 6:20-8:00, Ford 120, Bengtson
(co-ordinator)

Spring Semester

B M 6:20-8:00, Ford 120, Bengtson
(co-ordinator)

CPCU Part II. Insurance Principles and Practices, A-B. 3 certificate credits each semester. \$21.

An intensive course in the basic principles of property and casualty insurance, designed as preparation for examination II for the Chartered Property Casualty Underwriter (CPCU) award offered by the American Institute for Property and Casualty Underwriters, Inc. The course will be conducted by a panel of instructors selected from practicing insurance men, co-ordinated and supervised by the University School of Business Administration. (Prerequisite: CPCU Part I or at least 3 years' *general* experience or the equivalent in formal study and acceptance of special registration application; consult any Extension office)

Fall Semester

A M 8:05-9:45, Ford 120, Bengtson
(co-ordinator)

Spring Semester

B M 8:05-9:45, Ford 120, Bengtson
(co-ordinator)

Symbols explained on page 22.

Evening and Special Classes

CPCU Part IV. Law, A-B. 3 certificate credits each semester. \$21.

This course is designed as preparation for examination IV for the Chartered Property Casualty Underwriter (CPCU) award. The subject matter covers (a) the general commercial law pertaining to contracts, agency, partnerships, corporations, personal property, real estate and mortgages, negotiable instruments, bankruptcy, bailments, common and private carriers, negligence; (b) insurance law, including construction of insurance contracts. (Prerequisite: acceptance of special registration application or completion of one or more parts of the CPCU program)

Fall Semester

A Th 6:20-8:00, Ford 120, Peet

Spring Semester

B Th 6:20-8:00, Ford 120, Peet

College of Life Underwriters Curriculum.

In co-operation with the Minneapolis and St. Paul Chapters of the American College of Life Underwriters (CLU). This year the Extension Division is offering Parts I and III of the CLU educational program (see listing below). Many of the regularly listed courses elsewhere in this bulletin may be of assistance to those who are preparing for examination on other parts of the curriculum. Full information on the American College of Life Underwriters study program may be obtained from the annual announcement of CLU which is available at Extension offices or through the Minneapolis or St. Paul chapters of the Chartered Life Underwriters.

Minneapolis—George Murnane, McKnight Building, Fe 9-8127

St. Paul—W. F. Stone, 1300 Pioneer Building, Ca 2-3703

CLU Part I. Fundamentals of Life Insurance and Annuities, A-B (Combined). 6 certificate credits. \$42. (Registrations will be accepted for the entire course only)

This course is designed as preparation for the annual CLU examination in Part I, Fundamentals of Life Insurance and Annuities. The subject matter will cover such topics as: basic life insurance principles, the life insurance contract, functions of life insurance, mortality tables, premiums, selection of risk, types of insurance companies and associations, fundamentals of life insurance and annuity contracts.

For information concerning the CLU educational program and its requirements see notice above.

Fall Semester

A M 4:00-5:40, StP Ext Center 201, Wheeler
A T 4:00-5:40, 430 Oak Grove, Preston

Spring Semester

B M 4:00-5:40, StP Ext Center 201, Wheeler
B T 4:00-5:40, 430 Oak Grove, Preston

CLU Part II. Business Life Insurance, Accident and Sickness Insurance, Group Insurance, and Pensions, A-B (Combined). 6 certificate credits. \$42. (Registrations will be accepted for the entire course only).

This course is designed as preparation for the annual CLU examination in Part II, as conducted by the American College of Life Underwriters. The subject matter will cover life insurance for business purposes, problems of old age, unemployment and disability, accident and sickness insurance, group insurance, pensions, and deferred compensation.

For information concerning the CLU educational program and its requirements see notice above.

Fall Semester

A M 4:00-5:40, NW Bank Bldg 690

Spring Semester

B M 4:00-5:40, NW Bank Bldg 690

CLU Part III. Law, Trusts, and Taxation, A-B (Combined). 6 certificate credits. \$42. (Registrations will be accepted for the entire course only)

This course is designed as preparation for the annual CLU examination in Part III, Law, Trusts, and Taxation, as conducted by the American College of Life Underwriters.

Symbols explained on page 22.

Course Offerings—Business Administration

The subject matter will cover such topics as business law; estates, wills and trusts; and taxation, etc. (Prerequisite: #)

Fall Semester

A T 4:00-5:40, NA Casualty Bldg, Connor

Spring Semester

B T 4:00-5:40, NA Casualty Bldg, Connor

CLU Part IV. Economics and Business and Family Finance, A-B (Combined). 6 certificate credits. \$42. (Registrations will be accepted for the entire course only)

This course is designed as preparation for the annual CLU examination in Part IV, Economics and Business and Family Finance, as conducted by the American College of Life Underwriters. Section A will be devoted to the study of basic principles of economics. Section B will cover family finance and business finance. For details as to the content of the course and for information concerning the CLU educational program and its requirements, see notice above. (No prerequisite for A; for B, previous unit)

Fall Semester

A W 4:00-5:40, 1st Natl Bank Bldg,
Directors Room

Spring Semester

B W 4:00-5:40, 1st Natl Bank Bldg,
Directors Room

Property and Casualty Claims Curriculum.

The Twin City Casualty Claims Managers Council and the General Extension Division periodically offer Property and Casualty Claims courses covering the investigation, adjustment, settlement, and preparation for trial of direct damage and casualty claims. The courses are intended for those actively engaged in insurance claims handling as well as attorneys and others who deal with insurance claims problems in their everyday work. The fields covered will include automobile liability and direct damage, workmen's compensation, public liability, products liability, and other lines of insurance coverage. It is expected that a course in one of these fields will be offered during the spring semester of 1959, the content of the course to be determined at a later date. For information concerning these offerings, write the office of the General Extension Division, 57 Nicholson Hall, after January 1, 1959.

Marketing and Merchandising

BA 57. Principles of Marketing. (Formerly BA 77) 3 degree credits. \$21.

Marketing functions and institutions; channels of distribution; retail and wholesale trade; pricing policies and practices; marketing policies and methods for consumers' goods, producers' goods, and raw materials. (Prerequisite: Econ 2)

Fall Semester

M 6:20-8:00, Vincent 2, Hancock

Spring Semester

W 3:05-9:45, Vincent 6, Harper

BA 87. Credits and Collections. (Formerly BA 76) 3 degree credits. \$21.

Nature and types of credit and of credit instruments and agencies; qualifications and work of the credit manager; valuation and use of financial statements and credit reports; collection methods and correspondence; bankruptcy and adjustments; credit limits and control. (Prerequisite: new BA 57 or old BA 77)

Fall Semester

Th 6:20-8:00, Vincent 6, Kerns

Principles of Credits and Collections II. 3 certificate credits. \$21.

This course is designed to follow BA 87 with emphasis upon analysis of financial statements as a source of credit information; legal remedies used in collection of delinquent

Symbols explained on page 22.

Evening and Special Classes

accounts; handling insolvent accounts and bankruptcies; adjustment problems and the use of adjustment bureaus; credit insurance; activities and services of credit associations; measures of credit department efficiency, and other important phases of credit work. (Prerequisite: new BA 87 or old BA 76 or ##)

Spring Semester

Th 6:20-8:00, Vincent 6, Kerns

BA 117. Sales Management. (Formerly BA 113) 3 degree credits. \$21.

Management of selling activities including sales policies and planning, sales promotion, sales organization, and channels of distribution; selection, training, and compensation of salesmen; control of sales performance including sales budgets and cost control. Case materials. (Prerequisite: new BA 57 or old BA 77)

Fall Semester

M 6:20-8:00, Vincent 205, Lewis

Geography of Primary Production. See page 44.

National Institute of Credit Curriculum

The University of Minnesota co-operates with the Credit and Financial Management Association of Minneapolis and the St. Paul Chapter of the National Association of Credit Men in a program of training leading toward the awards of Associate and Fellow of the National Institute of Credit (the educational branch of the National Association of Credit Men). Those interested in working for these awards should be registered with the National Institute of Credit at the Association office (502 Thorpe Building, Minneapolis; Telephone Fe 6-8356) and should receive advice there as to an approved program of study. Course registrations for evening classes should be made at any of the Extension Division offices, indicated on the inside cover of the Evening Classes bulletin.

The curriculum of the National Institute of Credit, together with selected Extension Division courses, follows. (The suggested Extension courses should prove valuable to those contemplating work toward a University degree or an Extension certificate as well as for the Institute awards.) For further information, consult the Extension Committee on Student Scholastic Standing.)

Institute Curriculum

††Approved Equivalent Extension Courses

Associate Award

Business Economics

Basic Accounting

Business Correspondence

Credit and Collection Principles

Advanced Credits

Econ 1-2, Principles of Economics

BA 24-25-26, Principles of Accounting

Business Correspondence

BA 87, Credits and Collections

Principles of Credits and Collections II

Fellow Award Program (in addition to preceding courses)

Law of Contracts and Agency

Law of Business Transactions or Negotiable Papers

Public Speaking

Salesmanship or Marketing

Credit Management Problems

Financial Statement Analysis

BA 58-78, Business Law

BA 88, Business Law

Beginning Practical Speech Making

Basic Salesmanship, or

BA 57, Principles of Marketing

No equivalent course

BA 55D, Analysis of Financial Statements

†† Electives and substitutions or transfers of credits may be approved on petition to the educational committees of the local association chapters. For further information on this program, please consult Mr. Lindholm in the Association office (Thorpe Building).

Other symbols explained on page 22.

Course Offerings—Business Administration

Psychology (Applied, General, or Business)	Psy 1a, Application of Psychology to Living, or Psy 1-2, General Psychology, or Psy 122-123, Vocational Development and Personnel Psychology
Techniques of Supervision	Supervision I
Office Management or Personnel Management	BA 99, Survey of Office Management
Electives	See †† footnote on page 90

Office Management

Scientific Management in the Office. 3 certificate credits. \$21.

The office as a producing unit; organization and control of clerical services; selection of equipment and supplies; flow of work layout and working conditions; office personnel; relation of the office to operating divisions; work simplification; scientific management as applied to the office. (No prerequisite)

Spring Semester

T 6:20-8:00, Vincent 301, Baillie

BA 99. Survey of Office Management. (Formerly BA 86) 3 degree credits. \$21.

Lectures and conferences in Scientific Management in the Office (see above) plus written case problems in principles of office organization and management; office location and layout; furniture and equipment; flow of work; supplies, correspondence, records; job analysis, personnel training, compensation and promotion; supervision and quality control; work simplification; time measurement; budgets and costs. (Prerequisite: Econ 2)

Spring Semester

T 6:20-8:00, Vincent 301, Donaldson

Business Data Processing by Electronics. See page 77.

Real Estate

The University of Minnesota co-operates with the National Association of Real Estate Boards and with the Real Estate Boards of St. Paul and Minneapolis in a program of educational training leading toward competence in the professional aspects of real estate practice. Instructing staff for each course will be made up of a number of practicing realtors in the Twin Cities. Co-ordinator for the Real Estate Boards: Bernard G. Rice, 616 Third Avenue South, Minneapolis.

Fundamentals of Real Estate Practice. 3 certificate credits. \$21.

Economic functions of the real estate business; fundamental practices of the real estate office and other realtors; real estate valuations; methods of appraising; brokerage; principles of real estate management; ethics of real estate practice. Basic course; should be taken prior to any other courses in real estate curriculum. (No prerequisite)

Fall Semester

M 6:20-8:00, Ford 20, Rice (co-ordinator)

Symbols explained on page 22.

Evening and Special Classes

Real Estate Financing and Insurance. 3 certificate credits. \$21.

A study of financing methods and practice relating to conventional, FHA, VA, and combination loans; secondary financing; special loans on leases, farms, industrial and commercial properties; and primary phases of insurance procedures in the average real estate office. (No prerequisite)

Fall Semester

W 6:20-8:00, Ford 20, Rice (co-ordinator)

Real Estate Sales Brokerage. 3 certificate credits. \$21.

A study of the basic principles and practices involved in the conduct of real estate sales from beginning to end; evaluation, listing, advertising, contracts and leases, financing and taxes, property showing, selling techniques, code of ethics. (No prerequisite)

Spring Semester

W 6:20-8:00, Ford 20, Rice (co-ordinator)

Real Estate Appraisal. 3 certificate credits. \$21.

Detailed consideration of principles and practices involved in appraising various types of real property for various purposes. Factors determining valuations; making and reporting appraisals. Appraisals procedures in various legal actions. (No prerequisite)

Spring Semester

M 6:20-8:00, Ford 20, Rice (co-ordinator)

Real Estate Law (BA 98, Business Law). See Business Law, page 80.

Planning Your Modern Home. See page 49.

Building Material Estimating. See page 105.

Salesmanship

Basic Salesmanship. 3 certificate credits. \$21.

Selling principles that influence people to buy; why people spend money for something. Presentation of the product or service; magic words, descriptive words; types of buyers; resistances that cause failures; the buyer's mind at time of close, closing techniques. (No prerequisite. Repeated spring semester)

Fall Semester

M 6:20-8:00, Ford 170, Stanchfield
Th 6:00-7:40, StP Ext Center 304, Stanchfield

Spring Semester

M 6:20-8:00, Ford 170, Stanchfield

***Advanced Salesmanship.** 3 certificate credits. \$21.

Self-management, organizing and planning territorial work, sales routine and office correspondence, finding prospects and getting the interview, individual sales demonstrations, development of potential in the territory, use of advertising. (Prerequisite: Basic Salesmanship or #. Class limited to 35 students)

Spring Semester

Th 6:20-8:00, Ford 180, Stanchfield

Symbols explained on page 22.

Secretarial

Refresher Course in Business Theory for Secretaries. No credit. 4 units; each unit, \$12.

This course is designed as a refresher course for secretaries who have some background in business theory. It serves as a review for candidates for the Certified Professional Secretary examinations, and for others who wish a brief survey of the various fields of business theory with which a secretary should be familiar. It will consist of 24 sessions covering the following 4 units of 6 sessions each: Secretarial Procedures and Business English; Secretarial Accounting; Economics and Business Administration; Business Law and Human Relations. The refresher course will begin September 30 and conclude March 31. Unit I will be Secretarial Procedures and Business English; the subjects of the other units will be determined later. Please consult the Extension offices after October 1. Students may take any or all of the four units of the course. Course co-ordinator is Miss Naomi Peterson, Fe 2-8158, ext 296. See also the Secretarial Certificate program, page 11.

T 6:20-8:50, Ford 120, Peterson and staff

- Unit I, September 30 through November 4
- Unit II, November 11 through December 16
- Unit III, January 13 through February 17
- Unit IV, February 24 through March 31

See **BA 99, Office Management**, page 91.

Statistics

BA 5. Elements of Statistics. (Formerly Econ 5) 3 degree credits. \$21.

Elementary concepts in statistical methods. Sources and collection of data; tabular and graphic presentation; frequency distributions; probability; sampling; introduction to statistical estimation and decision-making. (Prerequisite: Math 7 or 8 or 10 or 15 or ITM 11)

Fall Semester

T 6:20-8:00, Vincent 2, Kawar
W 6:20-8:00, Vincent 113, Cramer
W 7:50-9:30, StP Ext Center 207, Kawar

Spring Semester

T 6:20-8:00, Vincent 6, Kawar
W 7:50-9:30, StP Ext Center 207, Kawar

BA 51. Business Statistics. (Formerly Econ 74) 3 degree credits. \$21.

Basic concepts of regression and correlation; statistical estimation and decision-making, with applications to such fields as survey sampling, acceptance sampling, and statistical quality control; introduction to time series analysis and index numbers. (Prerequisite: new BA 5 or old Econ 5)

Spring Semester

T 8:05-9:45, Vincent 6, Antelman

Textiles

See page 31.

Traffic and Transportation

BA 54. Transportation I: Principles. (Formerly BA 71) 3 degree credits. \$21.

Introduction to the roles, interests, and relationships of users of the service, carriers, and regulatory agencies in the transportation field, emphasizing the national transportation

Symbols explained on page 22.

Evening and Special Classes

policy approach. Organization of the transportation industry and administration of the transportation function by users of the service in their business activities. Economic aspects of railway, highway, pipeline, water, and air transportation. Current transportation problems and evaluation of national transportation policy. (Prerequisite: Econ 2)

Fall Semester

M 6:20-8:00, Vincent 1, Nightingale

BA 174. Transportation II: Traffic Management. 3 degree credits. \$21.

Principles of transport control and their application within the industrial (noncarrier) firm; carrier traffic management. Principles governing construction, interpretation, and application of rail, motor, water, express, pipeline, freight forwarder, and air freight classifications and tariffs. Problems involving determination of charges on typical movements within and between major freight rate territories. (Prerequisite: new BA 54 or old BA 71)

Spring Semester

M 6:20-8:00, Vincent 1, Nightingale

BA 184A. Highway Transportation (Formerly BA 129) 3 degree credits. \$21.

Economic aspects of the American highway transportation system and motor transportation; national policy; services, pricing, operations, and management of the motor carrier industry; federal and state regulatory policies and problems, including ICC motor carrier cost studies; intercity and urban passenger operations and problems, including the transit problem of the cities. (Prerequisite: new BA 54 or old BA 71)

Spring Semester

W 6:20-8:00, Vincent 6, Harper

BA 194A-194B. Topics in Transportation: Advanced Traffic Management I-II. (Formerly BA 180I-181I) 3 degree credits each semester. \$21.

Advanced study of transportation rates and transport control practices and applications within the individual firm. Analysis of important current ICC cases and decisions affecting users of the service and carriers. (Prerequisite: BA 174)

Fall Semester

194A M 8:05-9:45, Vincent 1, Nightingale

Spring Semester

194B M 8:05-9:45, Vincent 1, Nightingale

Interstate Commerce Practice and Procedure I-II. 3 certificate credits each semester. \$21.

Advanced study of state and federal regulatory laws and U. S. Supreme Court cases governing rail and highway transportation. Attention to practice and procedure before rate and classification committees, state commissions, and the Interstate Commerce Commission. Preparation of informal, formal, and investigation and suspension cases before regulatory commissions. (Prerequisite: new BA 194A or old BA 180 I or ##)

Fall Semester

I W 6:20-8:00, Vincent 210, Nightingale

Spring Semester

II W 6:20-8:00, Vincent 210, Nightingale

Symbols explained on page 22.

EDUCATION

Prospective Teachers: Persons interested in undergraduate programs preparing them to teach in elementary or secondary schools should make an appointment through the General Extension Division with an adviser in the College of Education. Most professional education courses must be taken in day-school, when schools are in session for observation. However, all programs in the College of Education emphasize the preparation of the teacher in general education and in the teaching subjects. Many evening offerings listed in the Arts and Sciences section of this bulletin may be taken by prospective teachers for later use toward degree programs in the College of Education.

Teachers-in-Service: Many courses in academic fields are available for teachers through evening class registration. Attention is called particularly to offerings listed under Arts and Sciences in this bulletin. Professional education courses available through evening classes are limited because of an extensive offering in the late afternoon and Saturday morning hours as part of the day-school program of the College of Education.

Renewal of Teaching Certificates: Former teachers wishing to renew certificates should check with the State Department of Education concerning their individual requirements. Those who need an additional 8 quarter credits may select courses in education pertinent to their teaching level (elementary or secondary) or courses in the major teaching field. Secondary teachers are especially urged to emphasize current work in the teaching subject itself.

Art Education (ArEd)

17. Pictorial Expression for Elementary Education. 3 degree credits. \$21 plus \$2 materials fee.

Survey of art in life and education. Materials, techniques, and ideas important to children's art expression, relationship to adult expression, and significance in educational growth. (No prerequisite)

Fall Semester

W 6:20-8:00, TSF 259, Gayne

Th 6:00-7:40, StP Ext Center 302, Hegg

18. Design Activities for Elementary Education. 3 degree credits. \$21 plus \$2 materials fee.

Relationship between art and nature. Problems in invention, arrangement and decoration, color, lettering, posters, bulletin board displays, etc. (No prerequisite)

Spring Semester

W 6:20-8:00, TSF 259, Gayne

Th 6:00-7:40, StP Ext Center 302, Hegg

81. Puppetry in Education. 3 degree credits. \$21 plus \$2 materials fee.

Use of simple puppetry as a teaching technique and problems of motivation and correlation with school subjects. Construction, manipulation, and stage techniques related to typical school situations. (No prerequisite)

Fall Semester

Th 6:20-8:00, TSF 259, Cherry

Symbols explained on page 22.

Evening and Special Classes

Child Development and Welfare (CD)

80. Child Psychology. 3 degree credits. \$21.

A survey of the psychology of the young child from the standpoint of development and learning. (Prerequisite: Psy 1-2)

Fall Semester

M 6:20-8:00, Folwell 101, Bassham

Spring Semester

T 6:20-8:00, Folwell 101, Bassham

140. Behavior Problems. 3 degree credits. \$21.

Types, origin, development, and treatment of behavior problems in children and adolescents. (Prerequisite: 12 credits in psychology, educational psychology, or sociology)

Fall Semester

T 8:05-9:45, Folwell 101, Bassham

Spring Semester

T 8:05-9:45, Folwell 101, Bassham

142. Psychology of Atypical Children. 3 degree credits. \$21.

Physical, sensory, and mental deviations and handicaps. Personal, social, and vocational adjustment. (Prerequisite: 12 credits in psychology or ##)

Spring Semester

M 6:20-8:00, Folwell 101

143. Problems of Mental Deficiency. 3 degree credits. \$21.

Diagnosis, care, training; social and vocational problems; legal aspects. (Prerequisite: 12 credits in psychology or ##)

Fall Semester

T 6:20-8:00, Folwell 101, Harris

Curriculum and Instruction (EdCI)

103. Teaching of Science in the Elementary School. 3 degree credits. \$21.

Emphasis on resources and materials and their application to the elementary grades. (Prerequisite: Ed 71A-B or teaching experience)

Fall Semester

M 6:20-8:00, Peik 365, Boeck

Educational Psychology (EPsy)

60. Introduction to Measurement and Statistics. 3 degree credits. \$21.

A study of measures of central tendency, variability and correlation as well as principles of test construction. (Prerequisite: 6 credits in psychology)

Fall Semester

M 6:20-8:00, Johnston 115, Hoyt

Spring Semester

M 6:20-8:00, Johnston 115, Hoyt

159. Personality Development and Mental Hygiene. 3 degree credits. \$21.

This course purports to give the teacher a fresh way of looking at his task and at his relations with students by drawing upon modern concepts of mental health. The thesis

Symbols explained on page 22.

is developed that emotional and intellectual growth in the classroom can best be fostered when the teacher understands and comes to grips with the motives and values which characterize his students. Topics treated include a description of the person in good mental health, an analysis of adjustment processes and of common sources of conflict and anxiety, psychological descriptions of the major grade-range groups in our schools and the mental health implications for dealing with them in the classroom, typical distinctions in the psychological makeup of successful and unsuccessful teachers, examination of sources of frustration in teaching and of behavior conducive to sound mental health in teaching. (Prerequisite: senior, graduate or ‡)

Fall Semester

Th 6:00-7:40, StP Ext Center 307, Borow

Spring Semester

Th 6:20-8:00, Johnston 113, Borow

193. Principles of Psychology of Human Learning. 3 degree credits. \$21.

Application to school situations; motivation; rate of learning and forgetting; teaching of skills, meanings, attitudes; reasoning and problem solving; transfer of learning. (Prerequisite: senior, graduate or ‡)

Spring Semester

T 6:20-8:00, Johnston 106, Kellogg

Nursing Education (NuEd)

68. Construction and Use of Examinations and Other Measurement in Basic Nursing Courses. 3 degree credits. \$21.

Criteria for judging and improving methods of educational measurement; examinations as aids to student progress; relation of examination scores to grading systems; practice in making and scoring course examinations. (Open to registered professional nurses)

Fall Quarter

M 6:00-8:30, Owre 113, Johnston

73. Principles of Education in Nursing. 3 degree credits. \$21.

Identification of principles of learning and teaching; application of principles in a variety of nursing situations; sources and selection of materials and organization for instruction; evaluation of learning. (Open to registered professional nurses)

Fall Quarter

T 6:00-8:30, Millard 118, Dunning

ENGINEERING AND TECHNICAL SCIENCES

Announcing a Special Film Lecture Series . . .

SPACE TECHNOLOGY

Tuesdays 7:00-9:30 p.m., Fall Semester, \$35.

Museum of Natural History Auditorium, Minneapolis Campus, University of Minnesota

It is the aim of this series to provide a sound yet imaginative exposition of fundamental principles of very long range ballistic vehicles, stressing those quantitative laws which are uniquely related to space flight, but avoiding merely sensational and "space-cadet" type of material. The distinguished roster of lecturers includes many laboratory directors, academic departmental heads and men with major responsibilities in the American Satellite project. Each has made major contributions to space technology. The collective effort of such a competent group will help codify the significant laws and point out the important problems for the guidance of engineers, physicists, mathematicians, astronomers and all others concerned with the enormous development of space technology yet to come.

Prerequisite for registration: Bachelor of Science degree or equivalent background in mathematics and the physical sciences.

Presented through the courtesy of the Departments of Engineering and Physical Sciences, University Extension Division, University of California, in co-operation with the Ramo-Wooldridge Corporation.

Aeronautics

Air Pilots' Ground School

The University Extension Division operates continuously (12 months a year) a ground school for pilots who are seeking a private pilot certificate or a commercial pilot certificate or an instrument rating or a flight instructor certificate. The course is open to all pilots and prospective pilots, regardless of their educational background. The full course (4 terms) provides thorough instruction in air navigation (including the use of computers), aeronautical meteorology, flight theory, analysis of flight maneuvers, airplane structures, aircraft engines, civil air regulations, aircraft instruments, radio aids, and related subjects. Three certificate credits are awarded for each term satisfactorily completed.

The primary objective of the course is to prepare students for the Civil Aeronautics Administration's commercial-pilot written examination, but the course also covers most of the subject matter in the CAA written examinations for the instrument rating and the flight-instructor rating. From time to time, depending upon the demand, supplementary short courses are offered for pilots who have completed the commercial-pilot ground-school course, or its equivalent, and who are preparing for the CAA written examination for the instrument rating or the flight instructor rating. Also, when there is sufficient demand, special courses are offered for pilots who are in need of a full course of instruction for the CAA written examination for the instrument rating or the flight instructor rating. Special bulletins are issued whenever such supplementary or special courses are to be offered, listing the tuition fees and other pertinent information.

The CAA written examination for the commercial pilot certificate or the private pilot certificate may be taken at the University at the end of the ground school course.

The University ground school meets all requirements of, and is fully approved by, the CAA as an Approved Advanced Ground School, and offers to its students all of the privileges extended by the CAA to such approved schools. (Flight students should bear in mind that if they have completed their ground training in a CAA Approved Advanced Ground School they may take their CAA written examinations at any time, regardless of how little

Course Offerings—Engineering and Technical Sciences

flight experience they have had. It is to the student's advantage to start his ground-school studies as early as possible in his training program.)

Each term lasts 5 weeks, the class meeting on Tuesday and Thursday evenings, from 7:00 p.m. to 10:00 p.m., in Aeronautical Engineering 316 on the Minneapolis Campus of the University. In addition to these scheduled meetings, there are some extra meetings, by special arrangement, for those who need special help or who are unable to attend all of the regular class meetings. The instructor is Sam R. Hamilton.

A student may enter the ground school at or near the beginning of any term; however, a student entering the ground school at the beginning of Term II is advised to confer with the instructor before enrolling, as the work in Term II is a continuation of the radio and instrument work in Term I. A student may enroll for only 1 term or for any combination of terms, according to his needs. The fee is \$21 per term, making a total of \$84 if all 4 terms are taken. Registration may be made through any of the General Extension Division offices, or through the instructor in the classroom.

The titles of the 4 terms are shown below. For information regarding the various starting dates for each term, or regarding the supplementary or special courses referred to above, consult any Extension Division office, or call Mr. Hamilton at Midway 8-2559.

- Term I:** Radio Aids to Navigation, Aircraft Instruments, and Civil Air Regulations.
Term II: Navigation (other than Radio Navigation) and the Use of Computers.
Term III: Aeronautical Meteorology.
Term IV: Flight Theory, Analysis of Flight Maneuvers, and Aircraft Engine Operation.

Architecture (Arch)

***Survey of Current Architecture.** No credit. \$21.

For professional architects, draftsmen, and designers rather than general students. A weekly review, with discussion period, of aspects of current architecture drawn principally from foreign periodicals not accessible to the average professional. New designs, structures, equipment, and foreign critiques of current American work will be reviewed. (No prerequisite. Class limited to 40 students)

Fall Semester

T 6:20-8:00, Main Engineering 305, Shelley

Spring Semester

T 6:20-8:00, Main Engineering 305, Shelley

Architectural Drafting I-II-III-IV. See page 49.

Chemistry

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

ANALYTICAL CHEMISTRY (AnCh)

51-52: Quantitative Analysis. 2 degree credits each semester. \$14.

Introductory lecture courses covering the general principles and theoretical foundations of quantitative analysis. 51: Gravimetric analysis. 52: Volumetric analysis. (Prerequisite: InCh 26 or 11)

Fall Semester

51 T 6:00-8:00, Chemistry 325, Herr

Spring Semester

52 T 6:00-8:00, Chemistry 325, Herr

Symbols explained on page 22.

Evening and Special Classes

53-54.‡ Quantitative Analysis Laboratory. 3 degree credits each semester. \$21 plus \$5 laboratory fee.

Introductory course covering the methods of quantitative analysis. 53: Gravimetric analysis. 54: Volumetric analysis. (Prerequisite: 51 or ¶51 for 53; 52 or ¶52 for 54)

Fall Semester

53 Th 6:30-10:30, Chemistry 310, Herr

Spring Semester

54 Th 6:30-10:30, Chemistry 310, Herr

57. Quantitative Analysis. 4 degree credits. \$28 plus \$5 laboratory fee.

Introductory course covering the general principles and methods of gravimetric and volumetric analysis. Typical problems are assigned and attention is given to proper laboratory practice. Primarily for premedical students. (Prerequisite: InCh 11 or 26)

Spring Semester

Lect T 8:00-10:00, Chemistry 325, Herr

Lab Th 6:30-10:30, Chemistry 310, Herr

INORGANIC CHEMISTRY (InCh)

4-5.† General Inorganic Chemistry. 5 degree credits each semester. \$35 plus \$5 laboratory fee.

An introduction to chemistry from the standpoint of atomic structure; periodic properties of the elements and compounds derivable from structural considerations; a study of the laws governing the behavior of matter, theories of solutions, acids, bases, and equilibrium. (Prerequisite: Elementary Algebra)

Fall Semester

4 Lab T 7:00-10:00, Chemistry 310, Herr
Lect Th 7:00-9:00, Chemistry 325, Herr

Spring Semester

5 Lab T 7:00-10:00, Chemistry 310, Herr
Lect Th 7:00-9:00, Chemistry 325, Herr

11. Semimicro Qualitative Analysis. 4 degree credits. \$28 plus \$5 laboratory fee.

Laboratory work in systematic qualitative analysis of cations with lectures on solutions, ionization, chemical and physical equilibriums, oxidation and reduction, etc. (Prerequisite: InCh 5 or 25)

Fall Semester

Lect T 8:00-10:00, Chemistry 325, Herr
Lab Th 7:00-10:00, Chemistry 310, Herr

ORGANIC CHEMISTRY (OrCh)

61-62.‡ Elementary Organic Chemistry. 5 degree credits each semester. \$35 plus \$5 laboratory fee.

Discussion of important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. Laboratory work includes the preparation of typical substances. (Prerequisite: 12 to 15 credits in chemistry)

Fall Semester

61 Lect M 6:20-8:00, Chemistry 325,
Rundquist
Lab W 6:20-10:00, Chemistry 317 &
390, Rundquist

Spring Semester

62 Lect M 6:20-8:00, Chemistry 325,
Rundquist
Lab W 6:20-10:00, Chemistry 317 & 390,
Rundquist

Symbols explained on page 22.

Civil Engineering (CE)

18-19. Surveying. 4½ degree credits. \$31.50.

This is the first half of the sequence 18-19-20. Basic theory, instrumentation, and field problems in third order control surveys including measurement of distance, angle, and elevation; adjustments and computations for traverses, triangulation nets, trig-traverses, and level circuits; azimuth determination by magnetic and astronomic observations; simple, spiral, and vertical curves. Some of the class periods at arranged time for field work. (Prerequisite: ITM 12)

Fall Semester

W 6:20-9:40, Main Engineering 217, Fant

19-20. Surveying. 4½ degree credits. \$31.50.

This is the second half of the sequence 18-19-20. Theory and applied problems in route location design and construction, elements of land surveying, and topographic mapping by stadia and photogrammetric methods. Some of the class periods at arranged hours for field work. (Prerequisite: 18-19)

Spring Semester

W 6:20-9:40, Main Engineering 217, Fant

31-32. Elementary Structural Analysis and Design. 4½ degree credits. \$31.50.

This is the first half of the sequence 31-32-33. Algebraic and graphical analysis of structural framework, influence lines. Equivalent loads. Design principles and methods of selecting members and connections. (Prerequisite: Draw 14, MM 26, and MM 128 or 1)

Fall Semester

M 6:20-9:00, Main Engineering 225, Barker

32-33. Elementary Structural Design. 4½ degree credits. \$31.50.

This is the second half of the sequence 31-32-33. Design principles and methods of selecting members and connections and design of timber and steel members and connections. (Prerequisite: 31-32)

Spring Semester

M 6:20-9:00, Main Engineering 225, Barker

Hydr 103. Fluid Mechanics. 5 degree credits. \$35.

Physical fluid properties, fluid statics, energy principle for compressible and incompressible fluids, pressure-momentum principles, elementary principles of turbines and pumps, dimensional analysis, introduction to advanced principles of flow phenomena. (Prerequisite: MM 26 or 84)

Fall Semester

Th 6:20-9:20, Experimental Engineering 193,
Olson

160. Applied Hydraulics. 3 degree credits. \$21.

Pipe flow, compound pipe systems, network analysis. Centrifugal pumps, analysis, and problems. Characteristic curves, pump constants, selection, and economic factors. Open channel flow design, hydraulic elements, varied flow computations, losses, irrigations, and drainage problems. (Prerequisite: Hydr 103)

Spring Semester

Th 6:20-9:20, TSC 220, Olson

Symbols explained on page 22.

Evening and Special Classes

Plain Concrete. 3 certificate credits. \$21.

Properties and tests of concrete aggregate and cements. The design and computation of concrete mixtures, proportions, batch volumes, and costs. Properties of concrete, air-entrained concrete, methods of measuring air, light weight concrete, and construction procedure for unique types of construction. Some laboratory experiments with class participation will be included. (Prerequisite: ITM 11 or equivalent)

Spring Semester

T 6:20-8:00, Experimental Engineering 193,
Thomas

Highway Design. 3 certificate credits. \$21.

A study of the geometric design of highways, intersections, grade separations, and interchanges. (Prerequisite: ITM 12 or equivalent and a knowledge of circular curves)

Fall Semester

T 6:20-8:00, Experimental Engineering 193,
Thomas

Drawing and Descriptive Geometry (Draw)

(Mechanical Engineering Department)

14. Engineering Graphics. 3 degree credits. \$21.

Engineering representation and analysis including systems of projection, co-ordinate system representation and graphic solution of space problems with mathematical correlation. Engineering geometry, shape description, techniques of sketching and pictorial construction. (Prerequisite: ITM 10 or equivalent or ITM 10 or ITM 7 or Draw 2)

Fall Semester

T 6:20-8:20, Main Engineering 101, Engi-
neering Graphics Staff
W 6:20-8:20, Aero Engineering 215, Engi-
neering Graphics Staff
W 7:00-9:00, StP Ext Center 303, Springer

Spring Semester

T 6:20-8:20, Main Engineering 101, Engi-
neering Graphics Staff
W 6:20-8:20, Aero Engineering 215, Engi-
neering Graphics Staff
W 7:00-9:00, StP Ext Center 303, Springer

15. Engineering Graphics. 3 degree credits. \$21.

Engineering representation and analysis. Continuation of graphic solution of space problems with mathematical correlation. Intersections, developments, size description, common devices and application of theory and standard practices to working drawings. (Prerequisite: 14, and ITM 11 or I)

Fall Semester

T 6:20-8:20, Aero Engineering 211, Engi-
neering Graphics Staff
W 6:20-8:20, Main Engineering 101, Engi-
neering Graphics Staff

Spring Semester

T 6:20-8:20, Aero Engineering 211, Engi-
neering Graphics Staff
W 6:20-8:20, Main Engineering 101, Engi-
neering Graphics Staff
W 7:00-9:00, StP Ext Center 303, Springer

16. Engineering Graphics. 3 degree credits. \$21.

Graphical computations including graphic algebra, functional scales, monograph, graphic statics, and calculus. Graphical analysis of engineering problems, representation of data, analysis of empirical data and curve fitting. (Prerequisite: 15, and ITM 12 or I)

Fall Semester

T 6:20-8:20, Main Engineering 18, Engi-
neering Graphics Staff

Spring Semester

W 6:20-8:20, Main Engineering 18, Engi-
neering Graphics Staff

Symbols explained on page 22.

Course Offerings—Engineering and Technical Sciences

21. Applied Graphics (Mechanical Engineering). 3 certificate credits. \$21.

Further applications of graphical theory and representation and drafting techniques. Interchangeable assembly drawings, surface quality specification, standard conventions and practices involved in engineering design. Engineering applications involving surface intersections and development and bending allowance theories. (Prerequisite: 16 or 3 or equivalent)

Spring Semester

T 6:20-8:20, Temporary South Court Engineering 120

22. Applied Graphics (Civil Engineering). 3 certificate credits. \$21.

Graphic theory and methods of representation as applied to various civil engineering problems. Standardized representation forms as used in reinforced concrete engineering and placing drawings. (Prerequisite: 16 or 3 or equivalent)

Spring Semester

T 6:20-8:20, Temporary South Court Engineering 100

23. Applied Graphics (Civil Engineering). 3 certificate credits. (Offered fall semester 1959-60)

Graphic representation as applied to steel and wood structures. Framing plans, details, engineering, and shop drawings. (Prerequisite: 16 or 3 or equivalent)

Art 143-144-145. Design in Industry. See page 36.

Electrical Engineering (EE)

Elements of Electric Circuits. 6 certificate credits. \$42.

Fundamentals of direct and alternating current circuits. Network theorems. Network analysis—single phase and polyphase. Power and energy concepts. Electric and magnetic fields. (Prerequisite: ITM 12; ITM 25 required 1959-60. Repeated spring semester)

Fall Semester

TTh 6:20-8:00, Electrical Engineering 237,
Cartwright

Spring Semester

TTh 6:20-8:00, Electrical Engineering 237,
Cartwright

Elements of Electronics I. 6 certificate credits. \$42.

Electronic emission, conduction through vacuum and gases. Characteristics of vacuum and gas tubes. Amplifier circuits, oscillators. Applications of vacuum and gas tube devices. Semiconductor diodes. (Prerequisite: Elements of Electric Circuits. Repeated spring semester)

Fall Semester

TTh 6:20-8:00, Electrical Engineering 238

Spring Semester

TTh 6:20-8:00, Electrical Engineering 238

Elements of Electronics II. (Formerly Electronic Devices) 6 certificate credits. \$42.

Semiconductor devices and their circuit applications; conduction in semiconductors, transistor characteristics and equivalent circuits; transistor amplifiers, oscillators, and multi-vibrators.

Symbols explained on page 22.

Evening and Special Classes

Lectures, problems, and laboratory demonstration. Knowledge of circuit analysis using complex numbers is required. (Prerequisite: Elements of Electronics I or II. Repeated spring semester)

Fall Semester

TTh 6:20-8:00, Electrical Engineering 137

Spring Semester

TTh 6:20-8:00, Electrical Engineering 335

Elements of Electric Machines and Control Systems. 6 certificate credits. \$42.

Theory of direct and alternating current machines including transformers and magnetic amplifiers. Operating characteristics and applications. Elementary control systems. (Prerequisite: Elements of Electric Circuits)

Spring Semester

TTh 6:20-8:00, Electrical Engineering 137

Engineering English (Engl)

***85(IT). Advanced Technical Communication.** 3 degree credits. \$21.

Technical writing, including reports and manuals, combined with the public speaking required of engineers, technical men, and those in the business and sales end of the technical industries. Stress in writing is on concise, definite, connected style; use of numbers, abbreviations, and illustrations; organization of material; and proper levels of writing for different levels of readers. Stress in speaking is on preparation and organization; getting and holding interest; and on use of visual methods and materials. (Prerequisite: Comp 4-5-6. Limited to 25 students)

Fall Semester

M 8:05-9:45, Main Engineering 4, Lippert

Spring Semester

T 8:05-9:45, Main Engineering 4, Lippert

***86(IT). Advanced Technical Communication.** 3 degree credits. \$21.

Technical and business letter writing combined with conference and interview technique for engineers, technical men, and those in the business and sales end of the technical industries. Letters include inquiry, reply, conference setup, adjustment, letter report, recommendation, and supervisory types (also job application, public relations, sales, and employee relations as the class may elect). Consideration of the technical magazine article. Speech work includes both planning and setting up, participating in, and following up conferences, and technical and supervisory interviews. (Prerequisite: 85 (IT). Limited to 25 students)

Spring Semester

M 8:05-9:45, Main Engineering 4, Lippert

Basic Technical Writing I-II. 3 certificate credits each semester. \$21.

Review of basic English and introduction to technical writing. Designed for people in the technical industries. Includes sentence design, spelling, and punctuation. Covers basic techniques of definition, description, process, procedure, and analysis writing. Organization and correlation into text of tables, diagrams, illustrations. Emphasis on accuracy, brevity, simplicity, and layout. Prepares students to write simple reports, specifications, procedures, material for manuals, supervisory materials, and basic letters of a technical nature. (No prerequisite)

Fall Semester

I W 8:05-9:45, Main Engineering 4, Lippert

Spring Semester

II W 8:05-9:45, Main Engineering 4, Lippert

Business English. See page 79.

Other courses in English. See page 40.

Symbols explained on page 22.

General Engineering (GE)

70. The Slide Rule. 1 degree credit. \$10.50.

Theory and computation practice necessary for those who wish to use the slide rule in ordinary computations. Drills on fundamental processes. (No prerequisite)

Fall Semester

Th 6:00-7:00, Main Engineering 217, Self
Th 7:00-8:00, Main Engineering 217, Self

Spring Semester

Th 7:00-8:00, Main Engineering 217, Self

Building Material Estimating. 3 certificate credits. \$21.

Training in reading detailed blueprints and estimating quantities of materials or cubic yardage in excavations; measurements, picking off blueprints, estimating and figuring total amounts of concrete, brick, timber, and all kinds of steel buildings. This course is intended for the beginner who has no training or experience in reading blueprints or in estimating. Ability to use a slide rule is helpful but not necessary. (No prerequisite)

Fall Semester

Th 8:05-9:45, Main Engineering 217, Self

Industrial Engineering (IE)

Industrial Engineering and Management. (Formerly Elements of Industrial Engineering and Management). 5 certificate credits. \$35.

A survey of the problems and techniques of developing a highly efficient management team for a modern manufacturing concern. Includes discussions on business organization and financing, research and product development, standardization, plant layout and materials handling, production and inventory control, quality control, cost control, labor relations. (No prerequisite. Required for advanced work in industrial engineering. Repeated spring semester)

Fall Semester

M 6:20-9:20, Mechanical Engineering 18,
Lundy

Spring Semester

W 6:20-9:20, Mechanical Engineering 18,
Lundy

Inventory and Production Control. (Formerly Production Planning and Control). 5 certificate credits. \$35.

Development of systems for increasing plant efficiency through effective co-ordination of inventories, manpower, and equipment with sales. Lectures and discussions on sales forecasting, master scheduling, inventory control, work routing, scheduling of operations, dispatching, analysis of equipment requirements. (Prerequisite: Industrial Engineering and Management and ITM 11 or ##)

Fall Semester

M 6:20-9:20, Mechanical Engineering 202, Block

Manufacturing Cost Analysis. 3 certificate credits. \$21.

A survey of sources and uses of cost data to make industrial engineering decisions and to reduce manufacturing costs. Covers basic accounting principles and procedures, accumulation and allocation of costs, and budgeting. (Prerequisite: Industrial Engineering and Management)

Fall Semester

Th 6:20-8:00, Mechanical Engineering 110, Rudell

Symbols explained on page 22.

Evening and Special Classes

***Work Simplification.** (Formerly Elements of Work Simplification). 5 certificate credits. \$35.

Common sense principles combined with systematic analysis to eliminate waste motion and unnecessary effort in all fields of work. Lectures are combined with actual practice in the application of the flow process chart, flow diagram, in the analysis of a job for improvement. The course is designed for personnel who wish to learn the skills of work simplification for direct application to the solution of work problems in their own area. (Prerequisite: Industrial Engineering and Management and ITM 11 or ##. Required for advanced work in industrial engineering. Class limited to 20 students)

Fall Semester

T 6:20-9:20, Mechanical Engineering 102,
Warre
W 6:20-9:20, Mechanical Engineering 102,
Srbich
Th 6:20-9:20, Mechanical Engineering 102,
Mold

Spring Semester

T 6:20-9:20, Mechanical Engineering 102
Th 6:20-9:20, Mechanical Engineering 102,
Mold

***Layout Engineering and Materials Handling Systems.** (Formerly Materials Handling and Packaging). 5 certificate credits. \$35.

Analysis and synthesis of layouts and materials handling systems with emphasis on individual item analyses. Data requirements and sources. The study and application of principles and analytic techniques for optimal integration of production facilities. Analyses of space utilization and the flow and control of materials. (Prerequisite: Work Simplification or ##. Class limited to 25 students)

Fall Semester

W 6:20-9:20, Mechanical Engineering 110,
Lundy

Process Engineering. 3 certificate credits. \$21.

Planning of manufacturing and assembly operations to meet quantity and quality requirements of the product at minimum cost. (Prerequisite: Work Simplification and Machine Tool Operation I or ##)

Fall Semester

T 6:20-8:00, Mechanical Engineering 106,
Arntsen

***Work Measurement.** (Formerly Work Measurement and Production Standards [Time Study]). 3 certificate credits. \$21 plus \$1 laboratory fee.

Principles and techniques of time study to provide factual data for wage incentives, cost accounting and estimating, production scheduling, and management control. Lectures and practice in job standardization, use of stop watch, performance rating, rest and delay allowances, development of standard data, and maintenance of current standards. (Prerequisite: Work Simplification. Class limited to 20 students. Repeated spring semester)

Fall Semester

W 6:20-8:00, Mechanical Engineering 180,
Gunderson

Spring Semester

W 6:20-8:00, Mechanical Engineering 180,
Gunderson

***Advanced Layout Engineering and Materials Handling Systems.** (Formerly Industrial Plant Layout). 5 certificate credits. \$35.

Practice in the analysis and synthesis of layouts and materials handling systems with emphasis on multiple item analyses. Comparative evaluation of alternate systems and fa-

Symbols explained on page 22.

Course Offerings—Engineering and Technical Sciences

ilities. Package engineering. Profit optimization case problems and research. (Prerequisite: Layout Engineering and Materials Handling Systems. Class limited to 25 students)

Spring Semester

M 6:20-9:20, Mechanical Engineering 102,
Lundy

Statistical Quality Control. (Formerly Elements of Quality Control). 5 certificate credits. \$35.

Determination of quality requirements and their relation to manufacturing costs. Establishment of quality control standards; inspection procedures and organization. Use of statistical sampling techniques and control charts for more effective inspection and reduction of costs. For those engaged in quality control and others such as production supervisors, plant managers, and design engineers who are concerned with quality problems. (Prerequisite: ITM 11 or ##)

Fall Semester

M 6:20-9:20, Mechanical Engineering 110,
McElrath

Advanced Statistical Quality Control. (Formerly Advanced Topics in Quality Control). 5 certificate credits. \$35.

Variables acceptance sampling, industrial tests of significance, fundamentals of analysis of variance and design of experiments, linear regression, introduction to sequential analysis of data, some nonparametric statistical methods. (Prerequisite: Statistical Quality Control, or ITM 90, or old BA 74, or ##)

Spring Semester

M 6:20-9:20, Mechanical Engineering 110,
McElrath

***Methods-Time Measurement (M.T.M.).** 5 certificate credits. \$35 plus \$10 special fee.

Methods-Time Measurement is a procedure for analyzing manual work in terms of elemental motions for which standard time have been established. M.T.M. is a valuable tool for simplifying work methods and for setting accurate and consistent time standards for incentive, planning, estimating, and cost control. Lectures, discussions, and demonstrations will be integrated with practice in the application of M.T.M. to factory and office operations. (Prerequisite: training or experience in time study and work simplification, and ITM 11 or ##. Class limited to 15 students)

Spring Semester

Th 6:20-9:20, Mechanical Engineering 180,
Storeygard

Industrial Safety and Health. 3 certificate credits. \$21.

Study of mechanical, electrical, and other hazards frequently found in industrial plants, and means for eliminating hazards and educating employees on safe practices. Field and laboratory methods used in the study and control of occupational disease hazards created by toxic dusts, fumes, gases, vapors, mists, noise, and ionizing radiation. Organization and administration of safety and health programs. (No prerequisite. Qualified students may receive credit in PubH 74 on petition; consult instructor)

Fall Semester

W 6:20-8:00, Mechanical Engineering 106,
Michaelsen

Art 143-144-145. Design in Industry. See page 36.

Symbols explained on page 22.

Mathematics (ITM)

Placement Examination in High School Algebra

All students who wish to register for ITM 11, College Algebra and Trigonometry I, must fill out an application blank at time of registration. Only those students who have satisfactorily completed ITM 9, Higher Algebra, or equivalent and receive a satisfactory score in the Placement Examination in High School Algebra will be permitted to register. Under some conditions, a student is exempt from the placement examination. These conditions are stated in the application blank.

If you have completed ITM 9, Higher Algebra, or equivalent, register for ITM 11, College Algebra and Trigonometry I, and fill out the application blank. If you are not exempt, take the placement examination on one of the dates listed below. You will be advised on or before the first meeting of the class in ITM 11, College Algebra and Trigonometry I, if you must transfer to ITM 9, Higher Algebra. (ITM 9 carries a 5-credit equivalent for purposes of determining a Korean veteran monthly educational allowance or tuition refund by the Veterans Administration). No student will be permitted to remain in ITM 11, College Algebra and Trigonometry I, unless all conditions for admission have been met.

Fall Semester

- 7:00 p.m. Friday, September 19, Nicholson 211
- 7:00 p.m. Wednesday, September 24, Nicholson 211
- 7:00 p.m. Wednesday, September 24, StP Ext Center 206

Spring Semester

- 7:00 p.m. Monday, February 9, Nicholson 211
- 7:00 p.m. Wednesday, February 11, Nicholson 211
- 7:00 p.m. Wednesday, February 11, StP Ext Center 206

5. Basic Mathematics. 5 certificate credits. \$35.

A practical course for anyone needing an elementary background in basic mathematics such as shop men in industry or machine work. It is also valuable as a refresher in elementary secondary mathematics. It includes arithmetic through fractions, decimals, percentage; elementary geometry involving areas of plane figures, proportion, volumes, and weights; elementary algebra; elementary trigonometry and logarithms. (Prerequisite: arithmetic. Repeated spring semester)

Fall Semester

MTh 6:20-7:45, Main Engineering 227, Dolid

Spring Semester

MTh 6:20-7:45, Main Engineering 227, Serbyn

6. Elementary Algebra. (Formerly Elementary Algebra A-B Combined). Entrance credit. \$42.

Elements of algebra to quadratic equations, equivalent to 1 year of ninth grade algebra. (Prerequisite: arithmetic. Repeated spring semester. Entrance requirement for College of Agriculture, Forestry, and Home Economics; College of Veterinary Medicine; College of Science, Literature, and the Arts; and Institute of Technology)

Fall Semester

MW 6:20-8:00, Main Engineering 205, Burgstahler
TTh 6:20-8:00, Main Engineering 205, Jorgensen

Spring Semester

MW 6:20-8:00, Main Engineering 205, Burgstahler
TTh 6:20-8:00, Main Engineering 205, Brown

7. Plane Geometry. (Formerly Plane Geometry A-B Combined). Entrance credit. \$42.

Elements of plane geometry, equivalent to 1 year of high school plane geometry. (Prerequisite: arithmetic. Repeated spring semester. Entrance requirement for College of

Symbols explained on page 22.

Course Offerings—Engineering and Technical Sciences

Agriculture, Forestry, and Home Economics; College of Veterinary Medicine; College of Science, Literature, and the Arts; and Institute of Technology)

Fall Semester

MW 6:20-8:00, Main Engineering 206, Barich

Spring Semester

MW 6:20-8:00, Main Engineering 206, Barich

8. Solid Geometry. (Formerly ITM 10, Solid Geometry). Entrance credit. \$21.

Standard theorems and exercises; practice in special proofs and original exercises. (Prerequisite: plane geometry. Entrance requirement for Institute of Technology. Repeated spring semester)

Fall Semester

Th 6:20-8:00, Main Engineering 206, Barich

Th 7:50-9:30, StP Ext Center 204, Richter

Spring Semester

Th 6:20-8:00, Main Engineering 206, Barich

Th 7:50-9:30, StP Ext Center 204, Richter

9. Higher Algebra. Entrance credit. \$35.

Fundamental operations, linear equations, factoring, fractions, simultaneous linear equations, exponents, radicals, graphical methods, quadratic equations, ratio, variation, binomial theorem, and other topics. (Prerequisite: elementary algebra. Entrance requirement for Institute of Technology. Repeated spring semester)

Fall Semester

MW 6:20-7:45, Main Engineering 104,

Faulkner

TTh 6:20-7:45, Main Engineering 104,

Serbyn

TTh 6:00-7:25, StP Ext Center 204, Polansky

Spring Semester

MW 6:20-7:45, Main Engineering 104,

Walczak

TTh 6:20-7:45, Main Engineering 104, Kirks

TTh 6:00-7:25, StP Ext Center 204, Polansky

11. College Algebra and Trigonometry I. 5 degree credits. \$35.

Review of elementary algebra, factoring, fractions, functions and graphs, linear equations and determinants, exponents and radicals, quadratic equations, inequalities, systems of quadratic equations, proportion and variation, mathematical induction, binomial theorem, trigonometric functions, right triangles, oblique triangles, radian measure, slide rule. (Prerequisite: ITM 9 or equivalent and satisfactory score on placement examination in high school algebra; explained on page 108. Repeated spring semester)

Fall Semester

M 6:20-9:20, Main Engineering 106, Loye

W 6:20-9:20, Main Engineering 106, Culmer

Th 6:20-9:20, Main Engineering 203, Swenson

Th 6:00-9:00, StP Ext Center 205, Braden

Spring Semester

M 6:20-9:20, Main Engineering 215, Johnson

T 6:00-9:00, StP Ext Center 205, Scott

W 6:20-9:20, Main Engineering 203, Rang

Th 6:20-9:20, Main Engineering 203, Nystrom

12. College Algebra and Trigonometry II. 5 degree credits. \$35.

Progressions, logarithms, trigonometric formulas and identities, trigonometric curves, inverse trigonometric functions, trigonometric equations, complex numbers. Theory of equations, permutations, combinations, probability, partial fractions, hyperbolic functions. (Prerequisite: 11. Repeated spring semester)

Fall Semester

M 6:20-9:20, Main Engineering 203, Culmer

M 6:00-9:00, StP Ext Center 205, Polansky

W 6:20-9:20, Main Engineering 203, Rang

Spring Semester

M 6:20-9:20, Main Engineering 106, Loye

W 6:20-9:20, Main Engineering 106, Culmer

Th 6:00-9:00, StP Ext Center 205, Braden

13. Analytic Geometry. Replaced by ITM 13a. (See on page 110)

Symbols explained on page 22.

Evening and Special Classes

13a. Calculus I: Analytic Geometry and Calculus. 5 degree credits. \$35.

Rectangular co-ordinates, straight line, functions and graphs, derivative, limits. Rules of differentiation, continuity, curve tracing, rates, maxima and minima. Locus and equations, conic sections, polar co-ordinates. (Prerequisite: 12. Repeated spring semester)

Fall Semester

T 6:20-9:20, Main Engineering 203, Thompson
W 6:00-9:00, StP Ext Center 205, Wilcox

Spring Semester

M 6:20-9:20, Main Engineering 203, Culmer
M 6:00-9:00, StP Ext Center 205, Polansky

24. Calculus I: Differential. 5 degree credits, §ITM 91. \$35. (Offered last time fall semester 1958)

Limit, derivative, slope, maxima and minima, differentials, rates, radius of curvature, indeterminate forms, partial differentiation. (Prerequisite: 13)

Fall Semester

T 6:20-9:20, Main Engineering 215, Fischer
F 6:00-9:00, StP Ext Center 205, Wilcox

24a. Calculus II: Analytic Geometry and Calculus. 5 degree credits. \$35.

Mean value theorem, indefinite integral, definite integral, area, volumes, lengths, centroids, moments of inertia, hydrostatic pressure, work. Differentiation and integration of transcendental functions. Polar co-ordinates, parametric equations. Vectors, vector calculus. (Prerequisite: 13a)

Spring Semester

T 6:20-9:20, Main Engineering 203, Thompson
T 6:00-9:00, StP Ext Center 207, Wilcox

25. Calculus II: Integral. 5 degree credits, §ITM 91. \$35. (Offered last time spring semester 1959)

Integration, definite integral, geometric applications, liquid pressure, work centroids, moments of inertia, multiple integrals, infinite series, expansion of functions. (Prerequisite: 24)

Fall Semester

T 6:20-9:20, Main Engineering 106, Loye

Spring Semester

T 6:20-9:20, Main Engineering 215, Fischer
F 6:00-9:00, StP Ext Center 205, Wilcox

25a. Calculus III: Analytic Geometry and Calculus. 5 degree credits. \$35. (Offered fall semester 1959)

Methods of integration. Solid analytic geometry treated by vector methods, partial differentiation, geometry of surfaces, differentials, directional derivative, maxima and minima. Multiple integrals, volume, surface area, physical applications. (Prerequisite: 24a)

26a. Calculus IV: Differential Equations and Calculus. 5 degree credits. \$35. (Offered spring semester 1960)

Infinite series: convergence tests, Taylor's formula and expansion of functions. Differential equations; equations of first order; standard methods of solutions; linear equations with constant coefficients, applications; simultaneous equations, integration by series, numerical methods. (Prerequisite: 25a)

Symbols explained on page 22.

Course Offerings—Engineering and Technical Sciences

80. Elementary Differential Equations. 3 degree credits. \$21.

Equations of first order, singular solutions; linear equations with constant coefficients, simultaneous equations, integration in series, numerical solutions. (Prerequisite: 25)

Fall Semester

M 6:20-8:00, Main Engineering 215, Fischer

Spring Semester

T 6:20-8:00, Main Engineering 106, Loye

90. Elementary Engineering Statistics. 3 degree credits. \$21.

Probability, permutations, and combinations. Frequency distributions. Introduction to sampling significance tests, regression charts. (Prerequisite: 25)

Fall Semester

W 6:20-8:00, Main Engineering 227, Johnson

147-148-149. Mathematical Methods in Engineering. 3 degree credits each quarter. \$21 each quarter.

Elements of vector analysis and complex variables, line and surface integrals. Numerical and series solutions of ordinary differential equations, Bessel functions, Legendre polynomials, Fourier series, and solutions of partial differential equations by separation of variables. Determinants, matrices, gamma function, and difference equations. (Prerequisite: 80 for 147; 147 for 148; 148 for 149)

Fall Quarter

147 Th 6:20-9:00, Main Engineering 106

Winter Quarter

148 (same schedule as fall)

Spring Quarter

149 (same schedule as fall)

Mechanical Engineering (ME)

Certificate credit courses offered in the mechanical engineering area in the General Extension Division cannot be substituted for course requirements leading to a mechanical engineering degree.

*Use of Mechanical Engineering Handbooks I-II. 4 certificate credits each semester. \$28 each semester.

The purpose of these courses is to train and acquaint those engaged in industrial work with the technical information available in mechanical engineering handbooks. *Part I* will include a review of the various types of mechanical engineering handbooks and a classification of these as to the type of technical data they contain. The plan of study will include the solution of a wide variety of practical problems with the use of handbook data alone. Typical problems included will be those dealing with material specifications, handbook tables, machine fastenings, standards for fits and screw threads, etc. *Part II* is a continuation of *Part I*. It will include additional work on a variety of problems involved in mechanical work. In addition, the solution of a comprehensive problem requiring the use of a large variety of data in the handbook will be undertaken. The many shortcuts involved in problem solution with the aid of the handbook will be stressed. (Prerequisite: for I, ITM 11 or ##; for II, I. Class limited to 28 students)

Fall Semester

I Th 7:00-9:15, Mechanical Engineering 325, Larsen

Spring Semester

II Th 7:00-9:15, Mechanical Engineering 325, Larsen

Symbols explained on page 22.

Evening and Special Classes

*Instrumentation and Automatic Control. 5 certificate credits. \$35.

The first part of the course will be concerned with the more common types of automatic controls found in residential and commercial usage. These include two-position or on-off and proportional or throttling type control effects. These fundamental control actions will be studied thoroughly in both lecture and laboratory. Both electrical- and air-operated controls are included. The remainder of the course will deal with industrial instruments and automatic controls. The theory of control will be covered mathematically, descriptively, and graphically. Basic modes of control built into commercial industrial controllers such as proportional, automatic reset, and rate response will be covered in detail. Methods of obtaining these responses such as electrically, hydraulically, or pneumatically will be analyzed. Typical industrial control circuits will be investigated. This will involve analysis of all component parts such as the process, measuring means, recording or indicating instrument, controller, and final control elements. (Prerequisite: ITM 11. Class limited to 28 students)

Fall Semester

M 6:20-9:20, Mechanical Engineering 302,
LaJoy

*Servomechanisms. 4 certificate credits. \$28 plus \$3 laboratory fee.

An elementary course covering the basic principles of servomechanisms. A brief review will cover the necessary mathematics. Elementary control systems will be discussed as well as basic error-indicators or follow-up mechanisms, both mechanical and electrical. Detailed analysis will also be made of servo systems with various types of damping. Methods of obtaining desired types of damping and other required system characteristics will be discussed in detail. (Prerequisite: ITM 25. Class limited to 25 students)

Spring Semester

M 7:00-9:15, Mechanical Engineering 302,
LaJoy

Tool Design I-II. 5 certificate credits each semester. \$35 plus \$1 laboratory fee each semester.

Lecture and laboratory course which covers tooling methods, selection of best machine for the manufacturing operation, design of jigs and fixtures, tool making procedures, and tool inspection methods. Analysis of piece part blueprints will be made to determine best sequences of manufacturing operation and estimating machining time to manufacture the part. (Prerequisite: for I, ITM 11 or #; for II, I)

Fall Semester

I T 6:20-9:20, Mechanical Engineering 325,
Crowder

Spring Semester

II T 6:20-9:20, Mechanical Engineering 325,
Crowder

*Machine Tool Operation I-II. 5 certificate credits each semester. \$35 plus \$3 laboratory fee each semester.

Lecture and laboratory course which covers all types of machines for production such as lathes, drill presses, shapers, milling machines, turret lathes, automatic screw machines, surface grinders, cylindrical grinders, centerless grinders, thread grinders, thread milling machines, jig boring machines, gear hobbers, gear shapers, and profile milling machines. All laboratory work on the above machines consists of the manufacture of machined parts to commercial standards necessary to manufacture a 14-inch all-g geared head lathe with quick change gear box. (Prerequisite: for I, ITM 11 or #; for II, I. Class limited to 24 students)

Fall Semester

I M 6:20-9:20, Mechanical Engineering 106,
Crowder

Spring Semester

II M 6:20-9:20, Mechanical Engineering 106,
Crowder

Symbols explained on page 22.

Course Offerings—Engineering and Technical Sciences

Press Working of Metals I-II. 3 certificate credits each semester. \$21 plus \$1 materials fee each semester.

This is a design course dealing with: types of presses and their selection; preliminary steps in die engineering; specifications for selection of sheet materials and die steels; bending, forming, embossing, folding, shaving, burnishing, broaching, and trimming dies; drawing dies; coining, swaging, and cold sizing dies; temporary dies and low-cost tools for limited production; two-step die operations and progressive dies; assembly dies; considerations given to the press working of stainless steels, monel metal, and the nonmetallic materials—fiber, rubber, and rawhide. (Prerequisite: for I, ITM 11 or ##; for II, I)

Fall Semester

I M 6:20-8:00, Mechanical Engineering 214,
Benson

Spring Semester

II M 6:20-8:00, Mechanical Engineering 214,
Benson

Residential Heating and Air Conditioning I-II.† 5 certificate credits each semester. \$35 each semester.

A course designed to present the fundamentals of heating and air conditioning to those interested in designing, installing, selling, or recommending the modern type appliances and systems for residential installations. The subject matter deals with terminology; heat transfer and heat transmission coefficients; sources of heat loss from a structure; vapor transmission problems; design of gravity and mechanical warm air heating systems; design of gravity and forced hot water heating systems; design of wet and dry panel heating systems; fuels and combustion equipment selections and controls; residential cooling loads and design of residential air conditioning systems. (Prerequisite: for I, ITM 11; for II, I)

Fall Semester

I W 6:20-9:20, Mechanical Engineering 214,
Borry

Spring Semester

II W 6:20-9:20, Mechanical Engineering 214,
Borry

Refrigeration and Air Conditioning I-II.† 5 certificate credits each semester. \$35 each semester.

A course for those engaged in the design, construction, maintenance, and sale of refrigeration and air conditioning equipment and systems. Fundamental terms and definitions; air conditioning and refrigeration loads; psychrometry, use of psychrometric chart; air conditioning processes including cooling, dehumidification, heating, and humidification; duct design, centrifugal fans, refrigeration cycles including mechanical compression and absorption; refrigeration equipment including compressors, condensers, evaporators, expansion valves and control; properties of refrigerants; design problems involving estimating requirements and selecting equipment for various air conditioning and refrigeration applications. (Prerequisite: for I, ITM 11; for II, I)

Fall Semester

I Th 6:20-9:20, Mechanical Engineering 208,
Threlkeld

Spring Semester

II Th 6:20-9:20, Mechanical Engineering 208,
Threlkeld

Machine Design I-II. 5 certificate credits each semester. \$35 each semester.

Fundamental principles of design of machine elements: lubrication, theory, and application; friction drives, screws, gears, belts, connectors, flywheels, machine frames, shrink fits, stress concentration, vibration analysis, and application of velocity and acceleration analysis to machine design problems. The course will consist of a series of lectures and problems to be solved in class. Laboratory experiments will be used whenever possible. Special movies will be used. (Prerequisite: for I, ITM 11; for II, I)

Fall Semester

I T 6:20-9:20, Mechanical Engineering 308,
Larsen

Spring Semester

II T 6:20-9:20, Mechanical Engineering 308,
Larsen

Symbols explained on page 22.

Evening and Special Classes

Gas Turbines—Automotive and Aircraft. 3 certificate credits. \$21 plus \$2 laboratory fee.

Basic theory of operation of gas turbines. Design and construction of units used in automobiles, aircraft, industrial, marine, and locomotive service. Characteristics of principal components; compressors, turbines, combustion chambers, regenerators, and inter-coolers. Study of properties of high temperature materials used in hot section of engine. Performance of fuels and lubricants, types of fuel systems, high speed bearings and types of lubrication systems. (Prerequisite: ITM 11)

Spring Semester

Th 6:20-8:00, Mechanical Engineering 321,
Murphy

Automotive Engineering. 3 certificate credits. \$21 plus \$2 laboratory fee.

A study of design and construction of principal parts of the vehicle: engine, transmission, chassis, suspension system, brakes, and body shell. Engine performance as governed by design of cylinder, combustion chamber, induction system, ignition system, carburetion or fuel injection system as well as performance of fuels, lubricants, and coolants. Construction and operation of automatic transmissions. Selection and characteristics of suspension systems and brakes. Styling as related to engineering design. (Prerequisite: ITM 11)

Fall Semester

Th 6:20-8:00, Mechanical Engineering 321,
Murphy

Kinematics and Mechanisms I-II. 3 certificate credits each semester. \$21 each semester.

Part I covers the study of the motions of mechanical linkages with respect to displacements, velocities, accelerations, and forces. Cyclic characteristics of motions of common linkages. Applications of elementary and compound mechanisms to machine design. Part II covers the theory and application of gears and gear trains. Advanced study of mechanical linkages with respect to design of speed reducers, cams, and feeder mechanism. Curve and function generators. Basic mechanical computing devices. (Prerequisite: for I, ITM 11; for II, I)

Fall Semester

I W 6:20-8:00, Mechanical Engineering 302,
Palmer

Spring Semester

II W 6:20-8:00, Mechanical Engineering 302,
Palmer

Fundamentals of Foundry Practice. 5 certificate credits. \$35 plus \$5 laboratory fee.

A lecture and laboratory course dealing with the molding techniques, core making, melting, and cleaning of ferrous and nonferrous castings. Engineering properties of castings, casting design, standard foundry material tests. (Prerequisite: ITM 11 or ##)

Fall Semester

M 6:20-9:20, Mechanical Engineering 102,
Holtby

Beginning Plastics. 4 certificate credits. \$28 plus \$3 materials fee.

A laboratory and lecture course dealing with the materials, equipment, and methods used in the fabrication of plastic products. (Prerequisite: ITM 11 or ##. Repeated spring semester)

Fall Semester

Th 6:20-9:00, Mechanical Engineering 106,
Holtby

Spring Semester

Th 6:20-9:00, Mechanical Engineering 106,
Holtby

Symbols explained on page 22.

Mechanics and Materials (MM)

26. Engineering Statics. 5 degree credits. \$35. (Offered last time spring 1959)

Resolution of force systems, equilibrium of rigid bodies, and analysis of framed structures. Centroids. Graphical methods. Friction. Virtual work. Moments of inertia. (Prerequisite: ITM 25. Repeated spring semester)

Fall Semester

Th 6:20-9:20, Main Engineering 215, Fischer

Spring Semester

T 6:20-9:20, Main Engineering 206, Doeringsfeld

127. Engineering Dynamics. 5 degree credits. \$35. (Offered last time fall 1959)

Kinematics of structural elements. Dynamics of particles and of rigid bodies. Work and energy. Impulse and momentum. Introduction to mechanical vibrations. (Prerequisite: 26. Repeated spring semester)

Fall Semester

Th 6:20-9:20, Experimental Engineering 10, Doeringsfeld

Spring Semester

Th 6:20-9:20, Main Engineering 215, Fischer

128. Engineering Solid Mechanics. 5 degree credits. \$35.

Introduction to static strength properties of structural materials. Stress and strain. Applications to tension and torsion members, beams, columns, and joints. Design considerations. Statically indeterminate members. State of stress at a point, combined stress, and Mohr's circles. (Prerequisite: 26)

Fall Semester

Th 6:20-9:20, Experimental Engineering 130, Miller

Spring Semester

Th 6:20-9:20, Experimental Engineering 130, Miller

Metallurgy (Met)

Physical Metallurgy I-II. 3 certificate credits each semester. \$21 each semester.

I: An introductory course for those engaged in heat treating, metal working, specification writing, inspection or dealing in metal products. The structure of metals and alloys and the effect of working and heat treatment on structure and properties; steels, cast irons, surface hardening. II: Hardenability and weldability: alloy, stainless, and tool steels; aluminum and other nonferrous alloys. This is a lecture course. No laboratory work involved. (Prerequisite: knowledge of chemistry is highly desirable; InCh 24 or equivalent or ¶24 is suggested; otherwise employment in a metal industry and ## for I; I for II or ##)

Fall Semester

I M 6:20-8:00, Appleby 109, Jerabek

Spring Semester

II M 6:20-8:00, Appleby 109, Jerabek

Physics (Phys)

11-12-13. General Physics for Engineers. 5 degree credits each semester. \$35. No laboratory fee for 11. \$5 laboratory fee for 12. \$5 laboratory fee for 13.

11: Mechanics; lecture, discussion or laboratory, and quiz each week. 12: Heat, electricity, and magnetism; lecture and laboratory each week. 13: Wave motion, sound, and light; lecture and laboratory each week. (Prerequisite: for 11, ITM 11 or ¶ITM 11; for 12, ITM 12 and Phys 11; for 13, ITM 13 or 13a and Phys 12)

Fall Semester

11 MW 7:00-9:00, Physics 145, Harris
13 MW 7:00-9:00, Physics 166

Spring Semester

11 MW 7:00-9:00, Physics 166
12 MW 7:00-9:00, Physics 145, Harris

Symbols explained on page 22.

RECREATION

Note that the recreational activities are offered in four groups: for children only, for women only, for men only, and for men and women. Unless otherwise designated, all classes meet for one 45-minute session per week, carry no credit, and require no prerequisite. A health examination will be required in all Extension classes except golf. A physician will be available at Norris Gymnasium for Women at the first class meeting only. The cost of the health examination is 75 cents. Those not receiving this health examination must bring a letter from their own physician stating his approval of swimming or tennis. Information about lockers will be given at first class meeting.

Activities Open to Children

*Swimming for Small Girls. \$13 plus \$2 special fee.

A course in swimming for girls between the ages of 6 and 12 years. Each girl must bring a permit for swimming from her own doctor; no one will be allowed in the pool without permit. First meeting will be for the purpose of classifying swimmers into the following groups: beginners; advanced beginners (those who swim with ease in shallow water); intermediate swimmers (those who swim with ease in deep water). Swimmers may bring their own suits. Caps are required for all swimmers. (Each section limited to 20 girls)

Fall Semester

Beginners
S 8:45-9:30, Norris Gym 51, Lampe
S 11:00-11:45, Norris Gym 51, Lampe
Advanced Beginners
S 9:30-10:15, Norris Gym 51, Lampe
Intermediates
S 10:15-11:00, Norris Gym 51, Lampe

Spring Semester

Beginners
S 8:45-9:30, Norris Gym 51, Lampe
S 11:00-11:45, Norris Gym 51, Lampe
Advanced Beginners
S 9:30-10:15, Norris Gym 51, Lampe
Intermediates
S 10:15-11:00, Norris Gym 51, Lampe

Swimming for Boys. \$13 plus \$2 special fee.

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

Spring Semester

Beginners and Intermediates
S 10:00-10:45, Cooke Hall, Ostrander
Advanced
S 11:00-11:45, Cooke Hall, Mueller

Activities Open Only to Women

Exercise for Conditioning and Fitness—for Women. \$13 plus \$2 special fee.

Class work is of two kinds: Part I—Work on general conditioning, for example, flexibility and stimulation, will be done as a group with music. Part II—Individual programs with individual help to those who have special needs and problems in muscle toning and relaxation.

Fall Semester

T 5:30-6:15, Norris Gym 153, Reiter
T 6:15-7:00, Norris Gym 153, Reiter

*Golf (Beginning)—for Women. \$13 plus \$2 special fee.

For those who have no previous experience. Class and individual instruction in the fundamentals of golf. Motion pictures and slides showing proper form of strokes. Discus-

Symbols explained on page 22.

Course Offerings—Recreation

sion of rules, golf etiquette, and terminology. As much instruction as possible to be given in the spring at University Golf Course, weather permitting. Students furnish own clubs for outdoor play, an indoor practice ball, and one golf ball. (Each section limited to 20 students. Repeated spring semester)

Fall Semester

T 5:30-6:15, Norris Gym 60, Lampe

Spring Semester

T 5:30-6:15, Norris Gym 60, Reiter
T 6:15-7:00, Norris Gym 60, Reiter
W 5:30-6:15, Norris Gym 60, Lampe
W 6:15-7:00, Norris Gym 60, Lampe
Th 5:30-6:15, Norris Gym 60, Lampe
Th 6:15-7:00, Norris Gym 60, Lampe

*Golf (Advanced Beginning)—for Women. \$13 plus \$2 special fee.

For those who have had some experience. Review and improvement of strokes. Motion pictures and slides.

Fall Semester

T 6:15-7:00, Norris Gym 60, Lampe

*Golf (Intermediate)—for Women. \$13 plus \$2 special fee.

A review of the fundamentals (as listed for Beginning Golf) with the work of the class planned to meet individual needs. (Prerequisite: some knowledge of and experience in golf. Each section limited to 20 students)

Spring Semester

T 7:00-7:45, Norris Gym 60, Reiter
W 7:00-7:45, Norris Gym 60, Lampe
Th 7:00-7:45, Norris Gym 60, Lampe

*Swimming (Beginning)—for Women. \$13 plus \$2 special fee.

For those who have had no previous experience in swimming. A health examination will be given at the first class meeting. (Each section limited to 25 students. Repeated spring semester)

Fall Semester

T 6:00-6:45, Norris Gym 51, Larson

Spring Semester

T 5:30-6:15, Norris Gym 51, Tinker
T 6:15-7:00, Norris Gym 51, Larson
W 5:30-6:15, Norris Gym 51, Larson

*Swimming (Advanced Beginning)—for Women. \$13 plus \$2 special fee.

For those able to float and swim slightly but who are not yet at home in deep water. A health examination will be given at the first class meeting. (Each section limited to 25 students. Repeated spring semester)

Fall Semester

T 6:00-6:45, Norris Gym 58, Tinker

Spring Semester

T 6:15-7:00, Norris Gym 58, Tinker
W 6:15-7:00, Norris Gym 58, Larson

*Swimming (Intermediate and Advanced)—for Women. \$13 plus \$2 special fee.

A course for those who know how to swim but wish to learn new strokes or polish up on those they already know. Instruction in diving and elementary water safety included. (Each section limited to 25 students. Repeated spring semester)

Fall Semester

T 6:50-7:35, Norris Gym 51, Larson

Spring Semester

T 5:30-6:15, Norris Gym 58, Larson
T 7:00-7:45, Norris Gym 51, Tinker
W 7:00-7:45, Norris Gym 58, Larson

Symbols explained on page 22.

Evening and Special Classes

***Swimming (Advanced) and Diving—for Women.** No credit. \$13 plus \$2 special fee.

A course for advanced swimmers who want further instruction in diving. (Each section limited to 25 students)

Fall Semester

T 6:50-7:35, Norris Gym 58, Tinker

Tennis (Beginning)—for Women. \$13 plus \$2 special fee.

Group and individual instruction. First 11 weeks of instruction given indoors; last 6 weeks at the University tennis courts. Individual practice for the improvement of strokes; working with tennis robot. Students furnish own tennis rackets and balls. Tennis permits are necessary if University courts are used. (Consult instructor)

Spring Semester

W 5:30-6:15, Norris Gym 151, Reiter
W 6:15-7:00, Norris Gym 151, Reiter

Activities Open Only to Men

Golf—for Men. \$13 plus \$2 special 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 16. Lessons or appointments with competent golf instructors in the golf gymnasium will be scheduled for Tuesday or Wednesday evenings, February 17 to April 1. The last six meetings will be held, weather permitting, at the University Golf Course. The outdoor schedule is adjusted to light. Students will furnish their own clubs.

Spring Semester

M 7:00-7:45, Physics 155, Bolstad and staff

Swimming—for Men. \$13 plus \$2 special fee.

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

Spring Semester

W 8:05-8:50, Cooke Hall, Giles

Activities Open to Men and Women

Badminton Club—for Men and Women. No credit. \$13 plus \$2 special fee.

Two 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.

Fall Semester

M 6:00-7:30, Cooke Hall Gym, Anway
M 7:30-9:00, Cooke Hall Gym, Anway

Symbols explained on page 22.

Faculty

Telephone numbers of faculty members may be obtained from the campus office of the General Extension Division, Federal 8-8791, during office hours, or from the University of Minnesota operator, Federal 2-8158, after office hours.

Harold J. Alford, M.A., Assistant Professor of English
Immanuel C. Fischer, M.S., Assistant Professor of Engineering
Albert M. Fulton, Ph.M., Associate Professor of Speech
Leah M. Lewis, B.S., Assistant Professor of Interior Design
Helen P. Mudgett, M.A., Assistant Professor of Intercultural Education
Wendell White, Ph.D., Associate Professor of Psychology

Owing to uncertainties of some departments as to future staff and unavoidable last minute additions and changes, this list is necessarily incomplete.

Reginald Allen, Ph.D., Instructor in Philosophy
Robert J. Ames, Ph.D., Associate Professor, Interdisciplinary Studies
Gordon R. Antelman, B.S., Instructor in Statistics
Thomas S. Arntsen, B.M.E., Lecturer in Industrial Engineering
Leonard T. Baillie, M.A., Lecturer in Office Management
Bertram Barer, B.S., Teaching Assistant in Speech
Steve S. Barich, M.A., Assistant Professor of Drawing
Richard M. Barker, M.S.C.E., Instructor in Civil Engineering
Robert Bassham, M.A., Instructor in Child Development and Welfare
W. Donald Beatty, Ph.D., Associate Professor of History
Bernard C. Bengtson, B.A., Lecturer in Insurance
Harland Benson, Instructor in Mechanical Engineering
Stanley M. Block, Ph.D., Assistant Professor of Mechanical Engineering
Morgan Blum, M.A., Assistant Professor, Interdisciplinary Studies
Francis M. Boddy, Ph.D., Professor of Economics
Clarence H. Boeck, Ph.D., Instructor in Education
Lester H. Bolstad, B.A., Assistant Professor of Physical Education and Athletics
Joseph B. Bonney, B.S., Lecturer in Accounting
Wesley Booman, Ph.D., Lecturer in Psychology
Arthur M. Borak, Ph.D., Associate Professor of Economics
Henry Borow, Ph.D., Professor of Education
John Borry, M.S.M.E., Lecturer in Mechanical Engineering
Joseph Boskin, M.A., Teaching Assistant in Social Science
Emmert M. Brackney, Ph.D., Professor of Romance Languages
Charles M. Braden, Ph.D., Assistant Professor of Mathematics
Byron Bradley, Lecturer in Art
Walter J. Breckenridge, Ph.D., Director, Museum of Natural History
James I. Brown, Ph.D., Professor of Rhetoric
John A. Brown, B.A., Teaching Assistant in Mathematics
Sylvan Burgstahler, M.S., Instructor in Mathematics
James F. Burks, Ph.D., Instructor in Romance Languages
George S. Bush, M.A., Assistant Professor of Journalism
Donald G. Cain, B.A., Production Manager, Audio-Visual Education Service
Ann P. Callahan, M.A., Assistant Professor, Library School
Mary E. Carlson, M.A., Assistant Professor of Home Economics
John R. Carroll, LL.B., Lecturer in Business Law
Paul A. Cartwright, M.S., Assistant Professor of Electrical Engineering
Paul H. Cashman, Ph.D., Assistant Professor of Rhetoric
Austin B. Caswell, M.A., Instructor in General Arts and Music
Clarke A. Chambers, Ph.D., Associate Professor of History
Harold W. Chase, Ph.D., Associate Professor of Political Science
M. Gene Chenoweth, M.A., Instructor in Social Science
James Cherry, M.Ed., Instructor in Art Education
Asher N. Christensen, B.A., Professor of Political Science
Charles H. Clay, LL.B., Lecturer in Business Law
Nora F. Cline, R.N., B.S., M.L., Assistant Professor of Public Health Nursing
Beulah Compton, M.A.S.W., Instructor in Social Work
Edward M. Copeland, Jr., B.A., Instructor in Slavic and Oriental Languages
John B. Cramer, B.S., Lecturer in Economics
J. Orville Creviere, Lecturer in Accounting

Evening and Special Classes

Bert Crowder, M.S.M.E., Assistant Professor of Mechanical Engineering
William J. Culmer, M.A., Instructor in Mathematics
William Cummings, B.B.A., Lecturer in Accounting
James A. Cuneo, Ph.D., Associate Professor of Romance Languages
Dennis D. Daly, LL.B., Lecturer in Accounting
Donald G. Davenport, B.A., Instructor in Psychology
Rene Dawis, Ph.D., Research Associate in Industrial Relations
Cyril E. DeCosse, Lecturer in Art
John J. Delehanty, B.S., Instructor in Economics
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William Dietrichsen, Lecturer in Art
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Ernestine C. Donaldson, M.A., Associate Professor of Secretarial Training
Gordon Duckworth, M.A., Assistant Professor of Music
Marvin D. Dunnette, Ph.D., Assistant Professor of Psychology
Frances E. Dunning, M.Ed., Assistant Professor of Nursing Education
Lorenz Eitner, Ph.D., Professor of Art
Dale Eldred, B.A., Teaching Assistant in Art
Edwin Emery, Ph.D., Professor of Journalism
Rodney E. Engelen, M.A., Lecturer in Political Science
George W. England, Ph.D., Research Associate and Associate Professor in Industrial Relations
Eugene H. Falk, Ph.D., Professor of Romance Languages
Jesse E. Fant, M.S.C.E., Assistant Professor of Civil Engineering
J. Earl Faulkner, M.S., Instructor in Mathematics
Paul Fetler, Ph.D., Associate Professor of Music
William Fletcher, Ph.D., Associate Professor of Speech
Floyd O. Flom, Ph.D., Assistant Professor of Political Science
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John Forster, M.A., Instructor in Sociology
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Clifton A. Gayne, Jr., Ph.D., Professor of Art Education
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Arne Halonen, M.A., Lecturer in Scandinavian
Robert S. Hancock, Ph.D., Associate Professor of Marketing
Donald V. Harper, B.S., Lecturer in Economics and Marketing
Dale B. Harris, Ph.D., Professor of Child Development and Welfare
J. Merle Harris, M.A., Assistant Professor of Physics
Theron Hegg, M.Ed., Instructor in Art Education
Raymond Hender, Lecturer in Art
Herbert G. Heneman, Jr., Ph.D., Professor of Economics and Assistant Director, Industrial Relations Center
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Julie Jenkyn, Lecturer in Art
Peter Jenkyn, Lecturer in Art
Henry S. Jerabek, Ph.D., Associate Professor of Metallurgy
Thomas Jerdee, M.A., Research Fellow, Industrial Relations Center
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Gerhard H. Weiss, Ph.D., Assistant Professor of German
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Roger Wheeler, C.L.U., Lecturer in Insurance
Hugh B. Wilcox, M.S., Professor of Mathematics
C. Arthur Williams, Jr., Ph.D., Professor of Economics and Insurance
Harold W. Wilson, M.A., Associate Professor of Journalism
Willis L. Winter, Jr., M.S., Instructor in Journalism
Frank H. Wood, Ph.D., Professor of German
Eugene S. Wright, M.A., Instructor in Rhetoric
William E. Wright, Ph.D., Instructor in History
Elmer Young, M.A., Professor of Art
Dwight Zulauf, M.S., Instructor in Accounting

Classes Listed by Quarters

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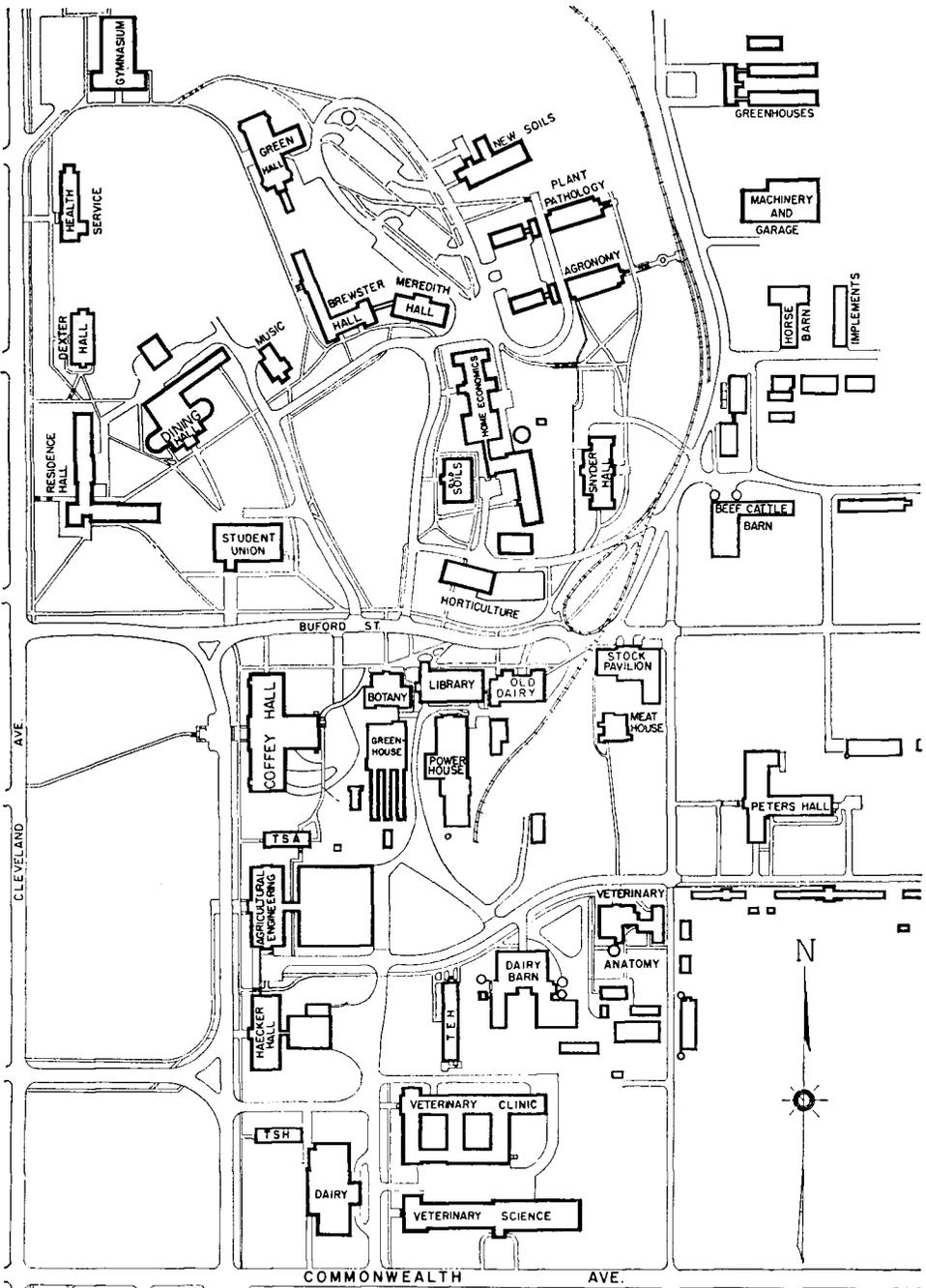
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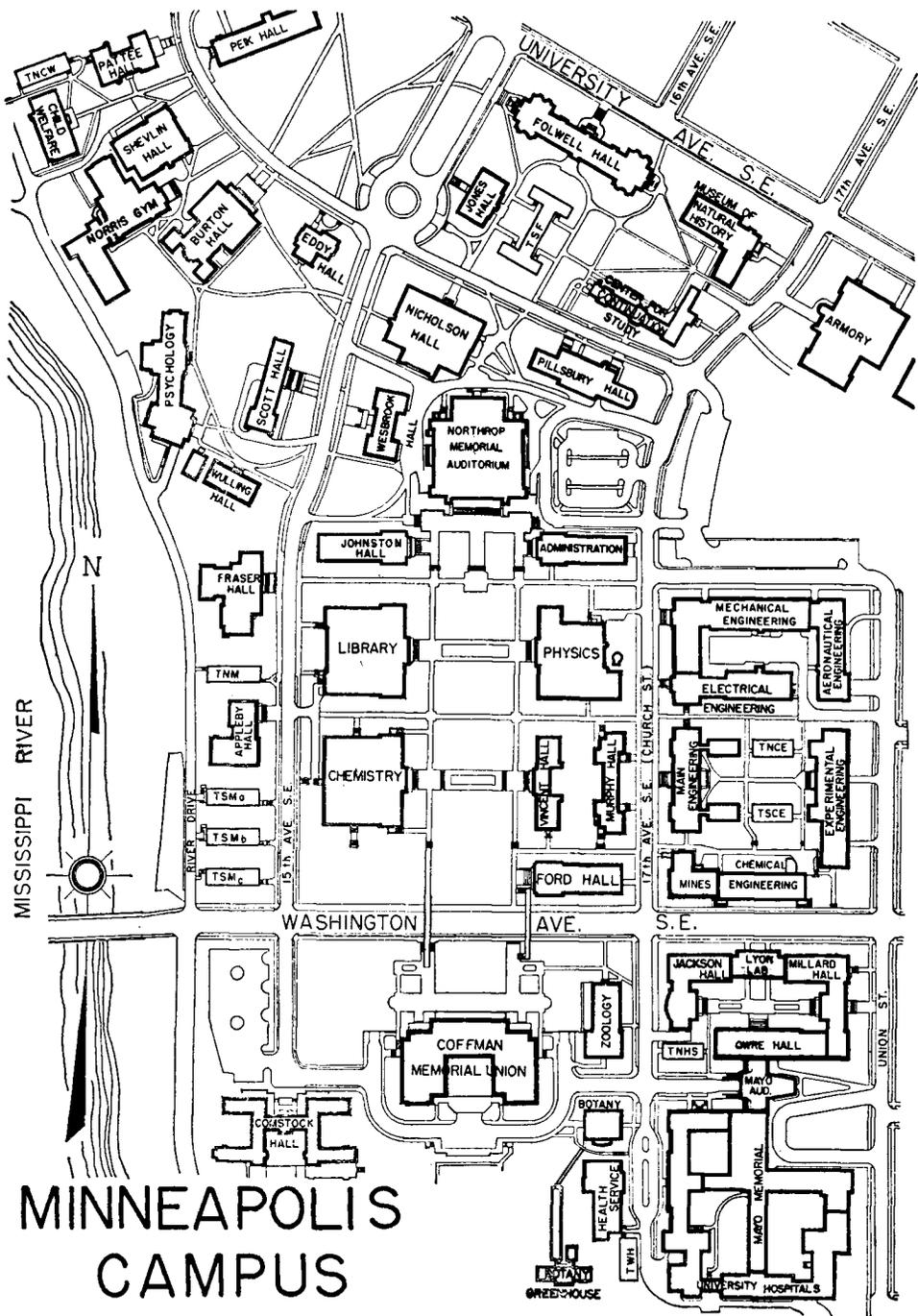
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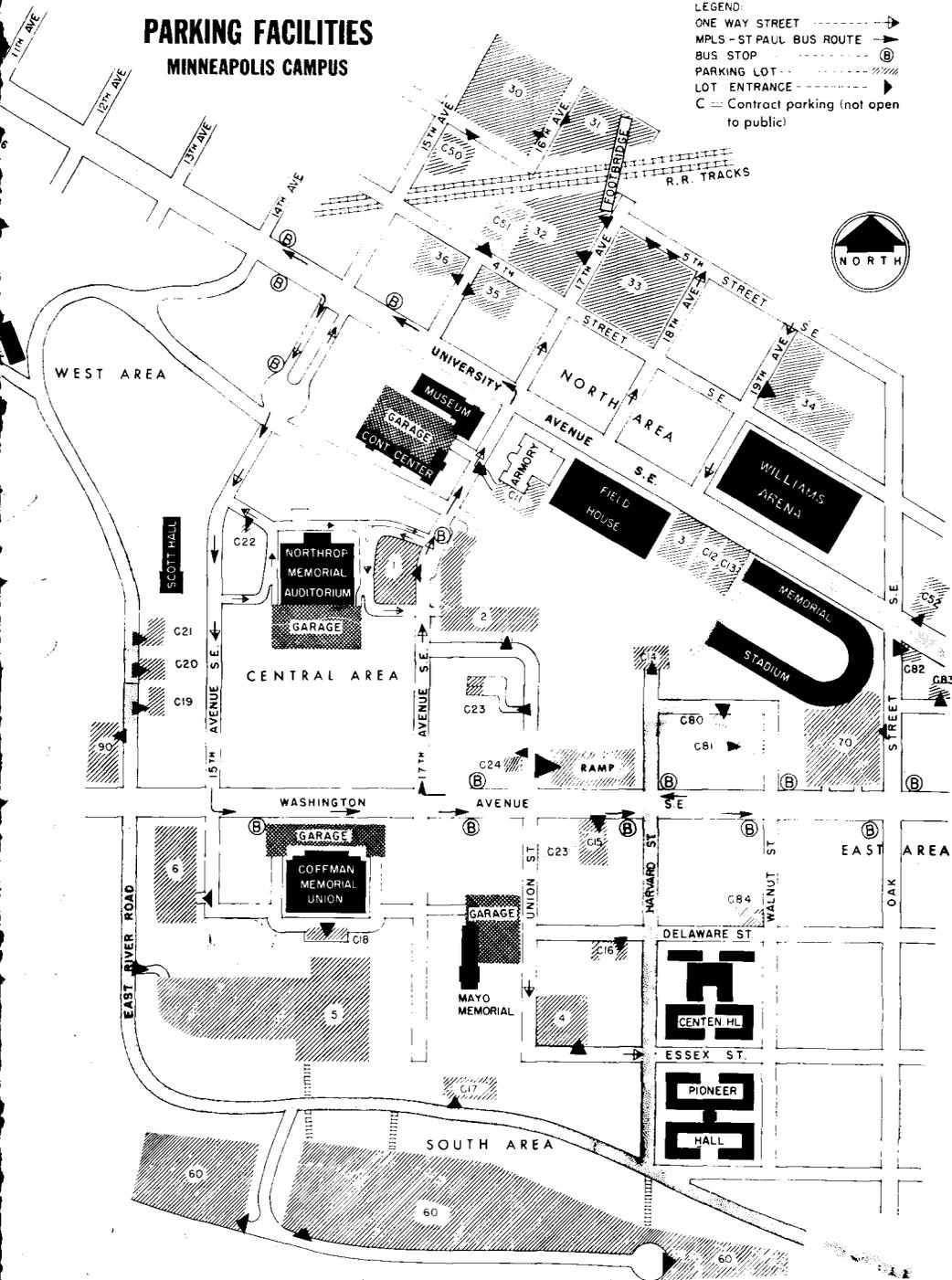
ST. PAUL CAMPUS



MINNEAPOLIS CAMPUS

PARKING FACILITIES MINNEAPOLIS CAMPUS

- LEGEND:
 ONE WAY STREET →
 MPLS - ST PAUL BUS ROUTE →
 BUS STOP ○
 PARKING LOT (B)
 LOT ENTRANCE →
 C = Contract parking (not open to public)



Other Services of the General Extension Division . . .

Audio-Visual Extension Service

operates a large library of films, film strips, and slides available on a rental basis to schools, organizations, and individuals, offers advisory service and conducts institutes and workshops throughout the state. For information, contact: Audio-Visual Extension Service, 115 TSMa, University of Minnesota, Minneapolis 14.

Center for Continuation Study

presents institutes and short courses in professional and postgraduate, business, and cultural fields. For information, contact: Center for Continuation Study, University of Minnesota, Minneapolis 14.

Correspondence Study

offers some 300 high school, collegiate, and general courses by home study, designed to be used toward university degrees or certificates, for occupational advancement, or for development of special interests of the individual. For a bulletin, contact: Correspondence Study Department, 251 Nicholson Hall, University of Minnesota, Minneapolis 14.

Municipal Reference Bureau

co-operates with the League of Minnesota Municipalities in supplying information about city and village affairs to civic officials and others interested. For information, contact: Municipal Reference Bureau, 15 Library, University of Minnesota, Minneapolis 14.

Radio and Television Broadcasting (KUOM)

broadcasts educational, musical, news, and sports programs to the Upper Midwest; its staff produces educational telecasts which may be shown on educational or commercial stations. For a schedule, contact: KUOM, 1 Eddy Hall, University of Minnesota, Minneapolis 14.

State Organization Service

assists voluntary nonprofit associations on a community or statewide basis by supplying them with secretarial, mimeograph, mailing, and general organizational services, subject matter aid, and space. For information, contact: State Organization Service, 15th and Washington Avenues Southeast, University of Minnesota, Minneapolis 14.

University Program Service

brings concerts, lectures, and assembly programs to audiences of the area and maintains a drama advisory service and loan play library. For information, contact: University Program Service, 229 Northrop Memorial Auditorium, University of Minnesota, Minneapolis 14.