

The Bulletin *of the University of* **Minnesota**

The School of Business
Announcement for the Year
1920-1921



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1920							1921														
JULY							JANUARY							JULY							
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	
..	1	2	3	1	1	2
4	5	6	7	8	9	10	2	3	4	5	6	7	8	3	4	5	6	7	8	9	
11	12	13	14	15	16	17	9	10	11	12	13	14	15	10	11	12	13	14	15	16	
18	19	20	21	22	23	24	16	17	18	19	20	21	22	17	18	19	20	21	22	23	
25	26	27	28	29	30	31	23	24	25	26	27	28	29	24	25	26	27	28	29	30	
..	..	..	..	..	..	..	30	31	..	..	..	..	..	31	..	..	..	..	..	..
AUGUST							FEBRUARY							AUGUST							
1	2	3	4	5	6	7	..	..	1	2	3	4	5	..	1	2	3	4	5	6
8	9	10	11	12	13	14	6	7	8	9	10	11	12	7	8	9	10	11	12	13	
15	16	17	18	19	20	21	13	14	15	16	17	18	19	14	15	16	17	18	19	20	
22	23	24	25	26	27	28	20	21	22	23	24	25	26	21	22	23	24	25	26	27	
29	30	31	..	..	..	..	27	28	..	..	..	..	..	28	29	30	31	..	..	..
..	
SEPTEMBER							MARCH							SEPTEMBER							
..	..	..	1	2	3	4	..	..	1	2	3	4	5	..	..	..	..	1	2	3
5	6	7	8	9	10	11	6	7	8	9	10	11	12	4	5	6	7	8	9	10	
12	13	14	15	16	17	18	13	14	15	16	17	18	19	11	12	13	14	15	16	17	
19	20	21	22	23	24	25	20	21	22	23	24	25	26	18	19	20	21	22	23	24	
26	27	28	29	30	..	..	27	28	29	30	31	..	..	25	26	27	28	29	30	..
..	
OCTOBER							APRIL							OCTOBER							
..	..	..	..	..	1	2	..	..	..	..	1	2	..	..	..	..	..	1	2	
3	4	5	6	7	8	9	3	4	5	6	7	8	9	2	3	4	5	6	7	8	
10	11	12	13	14	15	16	10	11	12	13	14	15	16	9	10	11	12	13	14	15	
17	18	19	20	21	22	23	17	18	19	20	21	22	23	16	17	18	19	20	21	22	
24	25	26	27	28	29	30	24	25	26	27	28	29	30	23	24	25	26	27	28	29	
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..
NOVEMBER							MAY							NOVEMBER							
..	1	2	3	4	5	6	1	2	3	4	5	6	7	..	1	2	3	4	5		
7	8	9	10	11	12	13	8	9	10	11	12	13	14	6	7	8	9	10	11	12	
14	15	16	17	18	19	20	15	16	17	18	19	20	21	13	14	15	16	17	18	19	
21	22	23	24	25	26	27	22	23	24	25	26	27	28	20	21	22	23	24	25	26	
28	29	30	..	..	..	..	29	30	31	..	..	..	..	27	28	29	30	..	..	..
..	
DECEMBER							JUNE							DECEMBER							
..	..	..	1	2	3	4	..	..	..	1	2	3	4	..	..	..	..	1	2	3
5	6	7	8	9	10	11	5	6	7	8	9	10	11	4	5	6	7	8	9	10	
12	13	14	15	16	17	18	12	13	14	15	16	17	18	11	12	13	14	15	16	17	
19	20	21	22	23	24	25	19	20	21	22	23	24	25	18	19	20	21	22	23	24	
26	27	28	29	30	31	..	26	27	28	29	30	..	..	25	26	27	28	29	30	31
..	

UNIVERSITY CALENDAR

1920-1921

1920

September	18	Saturday	Payment of fees closes, except for new students
September	20-25		Registration period, College of Science, Literature, and the Arts
September	21-28	Week	Examinations for removal of conditions, and entrance examinations
			Registration period, College of Agriculture, Forestry, and Home Economics
September	27	Monday	First semester evening extension classes begin
September	27-28		Registration days for all colleges not indicated above
September	28	Tuesday	Payment of fees for new students closes
September	29	Wednesday	Fall quarter begins, 8:30 a.m.
October	21	Thursday	Senate meeting, 4:30 p.m.
November	2	Tuesday	Election Day; a holiday
November	25	Thursday	Thanksgiving Day; a holiday
December	16	Thursday	Senate meeting, 4:30 p.m.
December	22	Wednesday	Fall quarter ends, 5:20 p.m.
December	22	Wednesday	Christmas vacation begins, 5:20 p.m.

1921

January	4	Tuesday	Christmas vacation ends, 8:30 a.m.
January	4	Tuesday	Winter quarter begins, 8:30 a.m.
January	21	Friday	First semester evening extension classes close
January	31	Monday	Second semester evening extension classes begin
February	12	Saturday	Lincoln's Birthday; a holiday
February	17	Thursday	Senate meeting, 4:30 p.m.
February	22	Tuesday	Washington's Birthday; a holiday
March	24	Thursday	Winter quarter ends, 5:20 p.m.
March	24	Thursday	Spring vacation begins, 5:20 p.m.
March	30	Wednesday	Spring vacation ends, 8:30 a.m.
March	30	Wednesday	Spring quarter begins, 8:30 a.m.
May	19,	Thursday	Senate meeting, 4:30 p.m.
May	20	Friday	Second semester evening extension classes close
May	30	Monday	Memorial Day; a holiday
June	12	Sunday	Baccalaureate service
June	14	Tuesday	Spring quarter closes, 5:20 p.m.
June	15	Wednesday	Forty-ninth annual commencement
June	17-18		Registration days for summer session
June	20	Monday	Summer session begins
July	30	Saturday	Summer session closes

THE SCHOOL OF BUSINESS

FACULTY

MARION LEROY BURTON, Ph.D., D.D., LL.D., President¹
LOTUS DELTA COFFMAN, Ph.D., President-elect
WILLIAM WATTS FOLWELL, LL.D., President Emeritus
CYRUS NORTROP, LL.D., President Emeritus
GEORGE WILLIAM DOWRIE, Ph.D., Dean of the School of Business
CLARA FRANCES SYKES, B.A., B.S., Secretary of the School of Business
JOHN DONALD BLACK, Ph.D., Professor of Agricultural Economics
ROY GILLESPIE BLAKEY, Ph.D., Professor of Economics
WILLIAM W. CUMBERLAND, Ph.D., Professor of Economics
Z. CLARK DICKINSON, Ph.D., Assistant Professor of Economics
GEORGE WILLIAM DOWRIE, Ph.D., Professor of Economics
FREDERIC B. GARVER, Ph.D., Associate Professor of Economics
NORMAN SCOTT BRIEN GRAS, Ph.D., Professor of Economic History
JOHN HENRY GRAY, Ph.D., Professor of Economics
ALVIN HARVEY HANSEN, Ph.D., Associate Professor of Economics
WILLIAM LEROY HART, Ph.D., Associate Professor of Financial Mathematics
ERNEST ALEXANDER HEILMAN, Ph.D., Assistant Professor of Accounting
CLARENCE LEROY HOLMES, M.A., Assistant Professor of Agricultural Economics
ALBERT CALDER JAMES, B.A., M.B.A., Assistant Professor of Economics
JOHN JACOB BROOKE MORGAN, Ph.D., Assistant Professor of Business Psychology
BRUCE D. MUDGETT, Ph.D., Associate Professor of Economics
HOWARD SCOTT NOBLE, B.A., M.B.A., Assistant Professor of Accounting
CHESSLEY JUSTIN POSEY, M.S., Assistant Professor of Economic Geography
CLARE LEO ROTZEL, C.P.A., Associate Professor of Accounting
*THOMAS HENRY SANDERS, M.Com., Assistant Professor of Accounting
J. WARREN STEHMAN, M.A., Assistant Professor of Economics
HOLBROOK WORKING, M.A., Assistant Professor of Agricultural Economics
JEREMIAH SIMEON YOUNG, Ph.D., Professor of Business Law
JOHN FRANKLIN EBERSOLE, M.A., Ph.B., Professorial Lecturer, Economics
HILDING EDWARD ANDERSON, B.A., Instructor in Agricultural Economics
CLYDE RAY CHAMBERS, M.A., Instructor in Agricultural Economics
HERMAN HOLLIS CHAPMAN, B.A., Instructor in Accounting
JOSEPH EARL CUMMINGS, M.A., Instructor in Economics
PAUL LAIRD MILLER, M.A., Instructor in Agricultural Economics
HARRY J. OSTLUND, B.A., Instructor in Economics
VICTOR H. PELZ, M.A., Instructor in Economics
CLARA FRANCES SYKES, B.A., B.S., Instructor in Office Management

¹ Resigned July 1, 1920.

² Absent on leave, 1920-21.

SPECIAL LECTURERS

- ISABEL C. BACON, Special Agent of Retail Selling, Federal Board for Vocational Education
- R. M. BALCH, Office Manager, Janney, Semple, Hill, and Company
- GEORGE T. BLANDFORD, Mutual Benefit Life Insurance Company
- D. D. CONN, Traffic Manager, Shevlin, Carpenter, and Clarke Company
- S. S. COOK, Cashier, Federal Reserve Bank of Minneapolis
- JOHN CROSBY, Washburn Crosby Company
- A. B. DEAN, Office Manager, Munsingwear Corporation
- MRS. GERHARD DIEDRICKSON, Librarian, Business and Municipal Library of Minneapolis
- JAMES W. FISK, Manager, Bannon Brothers
- H. M. GARDNER, Vice-President and Manager, Civic and Commerce Association, Minneapolis
- C. D. GOULD, City Attorney of Minneapolis
- H. W. HIRSCHHEIMER, La Crosse Plow Company
- W. D. KRUPKE, Personnel Director, Montgomery, Ward, and Company
- C. E. LAWRENCE, Advertising Manager, Finch, Van Slyck, & McConville
- J. J. LOUIS, Personnel Director, The Dayton Company
- C. E. MANN, Credit Manager, Munsingwear Corporation
- J. A. MURPHY, Chief Clerk, First National Bank of Minneapolis
- HENRY NORMAN, Service Manager, Munsingwear Corporation
- WARD OLNSTEAD, Bond Department, Metropolitan National Bank
- R. L. PEARCE, Exporting Department, The Washburn Crosby Company
- E. G. QUAMME, President, Federal Land Bank of St. Paul
- J. L. RECORD, Minneapolis Steel and Machinery Company
- FREDERICK RUEKERT, Travelers Insurance Company, Minneapolis
- IMA WINCHELL STACEY, New York University
- H. C. TAYLOR, Chief of Office of Farm Management, United States Department of Agriculture
- BYRON H. TIMBERLAKE, Superintendent of Agents, Prudential Life Insurance Company, Minneapolis
- G. F. WARREN, Chairman, Department of Rural Economy, Cornell University
- THEODORE WOLD, Vice-President, Northwestern National Bank
- ROY YOUNG, Governor, Federal Reserve Bank of Minneapolis

GENERAL INFORMATION

PURPOSE

The School of Business recognizes the professional status of the business executive. It aims to give prospective executives thorough training for the work they are to undertake. Professional education rather than detailed drill in narrow technical processes is the object toward which instruction is directed. Scientific method in analyzing business data, trained intelligence in dealing with the human relationships of which business is made up, and a well-developed sense of moral responsibility will be the foundations of business effectiveness in the future. The School of Business combines with a well-rounded university education the kind of training that will prepare students to analyze business situations accurately and to bring together results of analysis into practical working plans.

INSTRUCTION

The educational, as distinguished from informational, emphasis in the work of the school determines the selection of subjects. The student in the pre-business course will have learned in some measure to use those common intellectual tools needed for his later study and his business dealings. He should also have acquired an approach to scientific method and some insight into the relation of business to society as a whole. After entrance into the School of Business, elective courses will offer opportunity for continuing work in fields like economics, political science, law, and other subjects which constitute a part of the executive's general equipment. In the two-year course leading to the degree of Bachelor of Science in Business, the student will proceed to a more intensive study of business and later to specialization in particular branches of business, such as organization and management, accounting, finance, merchandising, selling, production, employment, and other subjects which have to do with specialized business functions.

The faculty of the School of Business is made up primarily of persons who are devoting themselves to the scientific study of business; it also includes men in various departments of the University whose fields of study comprise fundamental material which forms an essential part of education for a business career. The School of Business aims to make all the resources of the University available for its students.

LOCATION AND EQUIPMENT

The University of Minnesota is well situated with respect to education for business. With the business districts of the Twin Cities on either side, the opportunities for observing business processes and for effective field work and research are unequalled. The cordial support of business organizations and individual concerns in the Twin Cities is a large factor in making the resources of the metropolitan district available for developing and presenting subject-matter in every field of study covered. Equally valuable is the support of business men throughout the

state. The close contact which members of the faculty have with the business of the Northwest greatly enhances the opportunities that students in the School of Business enjoy. Coöperation with the College of Agriculture, Forestry, and Home Economics brings the School of Business into contact with the agricultural background of many business problems. This coöperation is especially exemplified in the joint provision in the two schools for work in agricultural economics. Coöperation with engineering, law, and various departments of the College of Science, Literature, and the Arts is also an important factor in bringing many viewpoints to bear upon the business problems with which the student has to deal.

The library and laboratory facilities of the University are of a sort to contribute effectively to the success of the work which the School of Business is undertaking.

ADMISSION TO THE PRE-BUSINESS COURSE

Admission is either by certificate or by examination. Candidates must have completed the equivalent of a four-year high-school course and must present:

1. Four units of English; or three units of English and four units of a foreign language; or three units of English and two units in each of two foreign languages.
2. One unit of algebra and one unit of plane geometry.
3. Enough additional work to make in all fifteen units, of which not more than four may be in Group F.

A detailed statement of admission requirements may be found in the bulletin of general information.

Attention is called to the following rules governing students entering with advanced standing:

Credits of advanced standing are to be provisional and finally adjusted upon the following basis: Any student who, after one year's residence, has failures in at least six hours' work shall lose all advanced credit except in those courses which have been continued in this University with a grade of at least C. Credits forfeited in this way can be secured only by special examination.

Students entering with advanced standing must earn an average of one honor point per credit hour for all work taken in this University which is to be counted toward a degree.

THE PRE-BUSINESS COURSE

The pre-business course in the College of Science, Literature, and the Arts, required for admission to the School of Business, is made up as follows:

1. Ten credits in economic history
2. Fifteen credits in English-rhetoric
3. Ten credits in *one* of the following social sciences: anthropology, history, political science, sociology
4. Ten credits in mathematics or in *one* of the laboratory sciences, (animal biology, botany, chemistry, physics)
5. Four years of one language in preparatory school or 20 credits in one language in college or the continuance of a language begun in preparatory school according to the following schedule:

AMOUNT PRESENTED FOR ENTRANCE	AMOUNT REQUIRED IN THE PRE-BUSINESS COURSE
Four years of one language.....	None
Three years of one language.....	5 credits in same language
Two years of one language.....	10 credits in same language
Less than 2 years of one language.....	20 credits in one language
6. Six credits in psychology	
7. Ten credits in the principles of economics	
8. Eight credits in the principles of accounting	
9. Five credits in business organization	
10. Five credits in statistics	
11. A total of at least 90 credits and at least one honor point for each credit.	

SPECIAL PREPARATORY COURSE FOR AGRICULTURAL BUSINESS

Students who wish to prepare for some branch of business which relates to agriculture, such as the marketing of farm products, farm finance, farm implements, farm real estate, country merchandising, and the like, will find it to their interest to include courses in agriculture as part of their pre-business training. This may be arranged in two ways, as follows:

A. Register in the College of Agriculture, Forestry, and Home Economics and take the following courses:

	Hours
General Inorganic Chemistry.....	10 or 12
Types and Breeds of Livestock.....	5
Soils	2
Tree Crops	1
Rhetoric	9
Personal Hygiene	1
General Botany	5 or 10
Economic History and Geography of Agriculture.....	10
Elements of Dairying.....	5
General Economics	5
Agricultural Economics	3
General Zoology	10
Farm Crops	3
Principles of Accounting.....	8
Farm Engineering	5
*Argumentation or Public Speaking.....	5
General Horticulture, or Principles of Fruit Culture.....	3
Agricultural Statistics	5
Business Organization	5
*Agricultural Physics (for those not presenting a year of high-school physics)	10
*†Commerce Algebra or Applied Mathematics (for those not presenting a half-year of high-school higher algebra).....	5
*Bacteriology	4
*Agricultural Biochemistry	10
*Mechanical Drawing	3
Non-credit course in physical education, military drill, etc.	

Students considering this group of courses should consult the bulletin of courses in agriculture for further particulars as to courses, registration, etc.

* This course may be omitted if the student has 102 credits without it.

† Commerce Algebra is prerequisite to Math. 20, Mathematics of Investment.

B. Register in the College of Science, Literature, and the Arts and substitute for the regular requirements of the pre-business course of the College of Science, Literature, and the Arts the following:

- Econ. 20-21 for Econ. 1-2
- Econ. 5 and 6 for Econ. 3-4
- Econ. 13 for Econ. 14
- Political Science 1 for item number 3, Pre-Business Course
- Twenty credits in chemistry or animal biology and botany for item number 4
- At least 5 credits in technical agricultural subjects should be selected in addition to the regular 90 hours.

ADMISSION TO THE SCHOOL OF BUSINESS

For admission to the School of Business a student must have satisfied the requirements of the pre-business course in the College of Science, Literature, and the Arts or the special preparatory course for agricultural business. However, students entering from other colleges and universities of recognized standing may be admitted if deficient in not more than two of the following: accounting, business organization, psychology, or statistics, provided (1) that this deficiency is removed during the first year in the School of Business, and (2) that a minimum of 90 credits and 90 honor points is granted by the University Examiner for the work done elsewhere.

SPECIAL STUDENTS

A limited number of high-school graduates who have reached the age of twenty-four and can furnish evidence to the effect that they have had at least three years of successful business experience in an executive capacity may be admitted as special students. They will be required to maintain a C average and must not elect more than 12 hours of work per quarter. If later they decide to become candidates for a degree they must complete the requirements of the pre-business course.

STUDENTS IN OTHER SCHOOLS OR COLLEGES OF THE UNIVERSITY

Regularly enrolled students in other schools or colleges of the University may be admitted to such courses in the School of Business as are authorized by the faculties of the School of Business and the school or college concerned. Such students are urged to select their business subjects in accordance with a definite plan, and as far as possible to complete a systematic course of business study. Only those courses in the School of Business are open to students of other schools or colleges of the University which are announced in the bulletin of that school or college.

ADVANCED STANDING

Appropriate credit in the School of Business may be given for work of a similar character done in other approved colleges and universities, but no student may become a candidate for a degree in the School of Business who has not completed the senior year under the faculty of that school.

College credits for admission or for advanced standing and high-school credits for admission to the pre-business course in the College of Science, Literature, and the Arts must be forwarded direct to the

registrar of the University by the principal or the registrar of the institution from which the credit is presented. Proper blanks will be forwarded by the University registrar on request.

CREDITS

Requirements for graduation are expressed in credit hours, indicating amount of work done, and in honor points, indicating grade of work. Honor points are computed as follows: Each credit hour with the grade of A carries 3 honor points; each credit hour with the grade of B, 2 honor points; each credit hour with the grade of C, 1 honor point.

For admission to the School of Business, students must have a standing equivalent to 90 credits and at least one honor point for each credit.

No regular student will be permitted to elect more than 17 nor less than 13 hours of work in any one quarter unless he receives special permission by petition to the Students' Work Committee.

No student registered in the School of Business who can not earn one honor point per credit hour during a quarter will be permitted to continue his work.

Candidates for the degree of Bachelor of Science in Business must have earned a minimum of 180 credits and 180 honor points.

REGISTRATION

The dates of registration for students already registered in the School of Business, and for pre-business sophomores now registered in the College of Science, Literature, and the Arts, will be announced in the official daily bulletin. Prior to the date of registration all pre-business sophomores should report at the office of the dean of the School of Business for assignment to a faculty adviser and for an appointment with the faculty adviser. Students now registered in the School of Business should make appointments for registration with their respective faculty advisers.

New students will register on September 27 and 28. These students should secure, from the University registrar a statement of their academic standing and present it at the office of the dean of the School of Business. Upon presentation of this statement and a statement showing that the fees have been paid, the student will be assigned to a faculty adviser.

In 1920-21 there will be but one registration for the entire year.

Students must petition the Students' Work Committee for permission to change their registration.

DEGREES

Bachelor of Science in Business

Candidates who have met the conditions for entrance to the School of Business, having satisfactorily completed the work covered in the pre-business course at the University of Minnesota, should normally be able to qualify for the degree of Bachelor of Science in Business at the end of the two full academic years of study in the School of Business.

If within a reasonable time after admission to the school, a student's work does not give promise of effectiveness in the business field, he will be discouraged from continuing the course, even tho he may have received passing grades in the subjects taken. It is expected that students will meet the requirements imposed with the same professional spirit and measure of precision demanded in well-regulated business houses, and students who fail to come up to this standard will not be recommended for the degree. The degree is not awarded merely as the result of pursuing a specified number of courses.

Master of Science in Business

Students who have completed the course of study required for the degree of Bachelor of Science in Business or its equivalent may enroll in the Graduate School and become candidates for the degree of Master of Science in Business. Emphasis will be laid on individual work under the direction of particular members of the faculty rather than upon class instruction, and the student must present evidence of at least six months of successful experience in a responsible business position.

The general requirements for the Master's degree may be found in detail in the annual announcement of the Graduate School.

NATIONAL CITY BANK FELLOWSHIP

The National City Bank of New York offers to a group of American college students a year's course of training for international banking. Each year the faculty of the School of Business chooses several candidates and from this group the bank selects one or more men for its intensive training course. A sufficient stipend is paid to cover cost of travel to and from New York, together with living expenses incurred while in training. Those who have pursued the course successfully will be given the preference for positions in the bank's foreign branches.

For additional information concerning scholarships, loans, and prizes, students should consult the bulletin of general information.

FEEES AND EXPENSES

Tuition

Quarterly tuition fee, resident.....	\$30.00
Quarterly tuition fee, non-resident.....	40.00

Special Fees

Minnesota Union membership (required of men), a quarter..	0.70
Shevlin Hall fee (required of women), a quarter.....	0.50
Health fee (required of every one), a quarter.....	2.00

For information concerning living expenses, students are referred to the bulletin of general information.

The School of Business does not encourage students to enter entirely without funds. The intensive work required in the school will make it highly desirable for a person to devote his time and energy to his studies.

EMPLOYMENT FOR STUDENTS

Although the School of Business does not promise to secure positions for its graduates, every effort is made to find positions for those students who have made a good record. Many business men have expressed a desire to coöperate with the school in placing the students both for summer work and in permanent positions.

STUDENT ACTIVITIES

The Commerce Club

The Commerce Club was organized by the students of the School of Business in the fall of 1919. The purpose of the club is to bring the men of the school together in an informal way for the purpose of promoting a serious interest in business problems. Some prominent business man addresses the students at each meeting. Membership is confined to the students and faculty of the School of Business and to pre-business students in the College of Science, Literature, and the Arts.

Sigma Beta Gamma

This organization serves the same purpose among the women students in the School of Business and the pre-business course as does the Commerce Club in the case of the men.

SUGGESTED COURSES OF STUDY

In the School of Business great stress is laid upon the adaptation of a student's curriculum to his future plans. In order to make this aim effective, every student is assigned to an adviser who makes a study of his needs and helps him frame a program which will most nearly meet them. The programs of study here given will therefore be varied as each particular case dictates. In some cases the student will be advised to elect courses entirely outside the School of Business in order to obtain the best preparation for his prospective career.

I. THE GENERAL COURSE IN BUSINESS

This course is recommended to those persons who desire a well-balanced training in the important fields of business education or for those who are not yet able to decide upon a specialized field of study.

JUNIOR YEAR

	Hours		Hours		Hours
Money and Banking...	5	Money and Banking...	5	Corporation Finance...	3
Business Law.....	3	Business Law.....	3	Business Law.....	3
Marketing of Manufactured Products.....	3	Marketing of Manufactured Products.....	3	Economic Geography...	5
Marketing of Farm Products	5	Electives	3 to 6	Electives	3 to 6

SENIOR YEAR

	Hours		Hours		Hours
Labor Problems.....	3	Investments	3	Business Cycles.....	3
Value and Distribution	3	Value and Distribution	3		
Econ. of Transportation	3	Industrial Relations...	3		
Electives	5 to 8	Electives	5 to 8	Electives	11 to 14

RECOMMENDED ELECTIVES

	Hours
Accounting Practice and Procedure.....	9
Cost and Industrial Accounting.....	9
Business and Government.....	3
Fire Insurance	3
Public Finance	6
Employment Management.....	3
Agricultural Economics.....	3
Modern Business Corporation.....	3
Commercial Policies.....	3
Railway Traffic and Rates.....	3
Problems in Agricultural Economics.....	3
Life Insurance	3

II. ACCOUNTING

The program in accounting is designed to meet the needs of those persons who are preparing for public accounting, the teaching of accounting, or for positions as accountants in financial or business establishments.

SCHOOL OF BUSINESS

JUNIOR YEAR

Hours	Hours	Hours
Cost Accounting..... 3	Industrial Accounting.. 3	Industrial Accounting.. 3
Accounting Practice and Procedure..... 3	Accounting Practice and Procedure..... 3	Accounting Practice and Procedure..... 3
Business Law..... 3	Business Law..... 3	Business Law..... 3
Electives .....5 to 8	Electives .....5 to 8	Electives .....5 to 8

SENIOR YEAR

Hours	Hours	Hours
Auditing 2	Auditing 2	Auditing 2
Advanced Practice and Procedure 2	Advanced Practice and Procedure 2	Advanced Practice and Procedure 2
Seminar 2	Seminar 2	Seminar 2
Electives .....8 to 11	Electives .....8 to 11	Electives .....8 to 11

RECOMMENDED ELECTIVES

Hours
Money and Banking..... 10
Corporation Finance..... 3
Business and Government..... 3
Public Finance 6
State and Local Taxation..... 3
Marketing of Manufactured Products..... 6
Marketing of Farm Products..... 5
Office Management..... 3
Value and Distribution..... 6
Investments 3
Fire Insurance..... 3

III. AGRICULTURAL BUSINESS

These lines of specialization are intended for students who wish to prepare for some branch of business which relates to agriculture, such as the marketing of farm products, farm finance, farm implements, farm real estate, country merchandising, and the like. The student should also take supplementary courses in technical agriculture. It is recommended that as many as possible of these be taken during the pre-business years. See page 8 of this bulletin under Agricultural Business for special arrangements covering this case.

A. GENERAL COURSE

JUNIOR YEAR

Hours	Hours	Hours
Money and Banking... 5	Money and Banking... 5	Business Law for Ag- ricultural Students... 5
Problems in Agricul- tural Economics.... 3	Farm Management II.. 3	Farm Finance..... 3
Marketing of Farm Products 5	Electives .....6 to 9	Farm Management II. 3
Electives .....1 to 4		Electives .....3 to 6

SENIOR YEAR

Hours	Hours	Hours
Land Economics..... 5	Economics of Agricul- tural Production.... 3	Prices of Farm Prod- ucts 3
Electives .....9 to 12	Railway Traffic and Rates 3	Electives .....11 to 14
	Electives .....8 to 11	

RECOMMENDED ELECTIVES

	Hours
Advanced courses in technical agriculture (See bulletin of courses in agriculture)	
Marketing of Manufactured Products.....	6
Advertising	3
Value and Distribution.....	6
Economics of Consumption.....	3
Commercial Policies.....	3
Foreign Trade.....	3
Public Finance	6
Corporation Finance.....	3
Investments	3

B. MARKETING OF FARM PRODUCTS
JUNIOR YEAR

Hours	Hours	Hours			
Marketing of Farm Products	5	Railway Traffic and Rates	3	Advertising	3
Marketing of Manufactured Products.....	3	Marketing of Manufactured Products.....	3	Practice Course in Marketing	1
Problems in Agricultural Economics.....	3	Electives	8 to 11	Electives	10 to 13
Electives	3 to 6				

SENIOR YEAR

Hours	Hours	Hours			
Money and Banking... 5	Money and Banking... 5	Business Law for Agricultural Students... 5			
Practice Course in Marketing	2	Prices of Farm Products	3		
Electives	8 to 11	Electives	6 to 9	Electives	6 to 9

RECOMMENDED ELECTIVES

	Hours
Advanced courses in technical agriculture dealing with special products (See bulletin of courses in agriculture)	
Corporation Finance.....	3
Farm Finance.....	3
Economics of Transportation.....	3
International Exchange.....	3
Foreign Trade.....	3
Commercial Policies.....	3
Land Economics	5
Economics of Agricultural Production.....	3
Economic Geography.....	5

IV. BANKING

This program is designed for persons who expect to become connected with banks and bond houses.

JUNIOR YEAR

Hours	Hours	Hours	
Money and Banking... 5	Business Law..... 3	Corporation Finance... 3	
Business Law	3	Business Law..... 3	
Electives	6 to 9	Electives	6 to 9

SCHOOL OF BUSINESS

SENIOR YEAR

Hours	Hours	Hours
Advanced Corporation Finance	Investments	Business Cycles.....
3	3	3
Bank Administration... 3	Senior Seminar..... 2	Senior Seminar..... 2
Senior Seminar..... 2	Electives	Electives
Electives	9 to 12	9 to 12

RECOMMENDED ELECTIVES

	Hours
Cost Accounting.....	3
Industrial Accounting.....	6
Public Finance	6
State and Local Taxation.....	3
Farm Finance.....	3
Economics of Transportation.....	3
Modern Business Corporation.....	3
Foreign Trade.....	3
Commercial Policies.....	3
Marketing of Manufactured Products.....	6
Marketing of Farm Products.....	5
Economic Geography.....	5
Land Economics.....	5
Agricultural Economics.....	3
Life Insurance.....	3

V. MERCHANDISING

The subjects specified in this program are sufficiently fundamental and the freedom of election sufficiently great to include preparation for manufacturing, wholesaling, and retailing businesses.

JUNIOR YEAR

Hours	Hours	Hours
Marketing of Manufactured Products.....	Marketing of Manufactured Products.....	Advertising
3	3	3
Business Law.....	Business Law.....	Business Law.....
3	3	3
Marketing of Farm Products	Psychology of Advertising	Fire Insurance.....
5	3	3
Electives	Electives	Electives
3 to 6	5 to 8	5 to 8

SENIOR YEAR

Hours	Hours	Hours
Money and Banking... 5	Money and Banking... 5	Corporation Finance... 3
Economics of Transportation	Railway Traffic and Rates	Economic Geography... 5
3	3	
Electives	Electives	Electives
6 to 9	6 to 9	6 to 9

A. RECOMMENDED ELECTIVES (GENERAL)

	Hours
Value and Distribution.....	6
Commercial Policies.....	3
Foreign Trade.....	3
International Exchange	3
Industrial Relations.....	3
Technique of Statistical Investigation.....	4
Cost and Industrial Accounting.....	9

	Hours
Accounting Practice and Procedure.....	9
Journalism	3 to 9
Design	2 to 6
Office Management.....	3
Prices of Farm Products.....	3
Agricultural Marketing Problems.....	3
Practice Course in Marketing.....	2
Economics of Consumption.....	3

B. RECOMMENDED ELECTIVES (FOR COMMERCIAL LUMBERING STUDENTS)

Attention of students preparing to enter the lumber business is called to the following courses offered by the College of Agriculture, Forestry, and Home Economics. For description of courses, see bulletin of courses in forestry.

- Forestry 1f, General Forestry
- Forestry 3f-4w, Dendrology (prerequisite Botany 1-2)
- Forestry 6f, Silviculture I (prerequisite Botany 1-2)
- Farm Engineering 3s, Mechanical Drawing
- Forestry 17f-18w, Wood Structure and Identification (prerequisite Botany 1-2)
- Forestry 13w, Logging
- Forestry 19w, Sawmills and Wood Working Machinery
- Forestry 24s, Forestry By-Products
- Forestry 10w, Forest Mensuration

VI. FOREIGN TRADE

This course is designed for persons who plan to associate themselves with exporting houses or with export departments of large manufacturing and mercantile establishments.

JUNIOR YEAR

Hours	Hours	Hours
Marketing of Manufactured Products..... 3	Marketing of Manufactured Products..... 3	Advertising 3
Money and Banking... 5	Money and Banking... 5	Economic Geography... 5
Marketing of Farm Products 5	Railway Traffic and Rates 3	Ocean Transportation.. 3
Electives 1 to 4	Electives 3 to 6	Electives 3 to 6

SENIOR YEAR

Hours	Hours	Hours
Business Law..... 3	Business Law..... 3	Business Law..... 3
Commercial Policies... 3	Foreign Trade..... 3	International Exchange 3
International Law.... 3	International Law.... 3	Resources and Trade.. 3
Electives 5 to 8	Electives 5 to 8	Electives 5 to 8

RECOMMENDED ELECTIVES

	Hours
Foreign languages	
Technique of Statistical Investigation.....	4
Value and Distribution.....	6
Financial History.....	3
Public Finance.....	6
Comparative European Government.....	5
Industrial Relations.....	3
Economics of Agricultural Production.....	3
Fire Insurance.....	3

VII. EMPLOYMENT MANAGEMENT

This program offers basic training to (1) prospective heads of personnel in business establishments and (2) to persons who expect to participate as trained experts in the adjustment of matters pertaining to the employment of labor.

JUNIOR YEAR

Hours	Hours	Hours
Employment Management	Labor Movement in Europe	Anthropology
3	3	5
Labor Problems.....	Police Power	Labor and Socialist Movements in America
3	5	3
Employment Psychology 3	Electives	Law of Labor.....
Electives	6 to 9	3
5 to 8		Electives
		3 to 6

SENIOR YEAR

Hours	Hours	Hours
Training Departments..	Industrial Relations...	Economic Motives....
3	3	3
Business Law.....	Business Law.....	Business Law.....
3	3	3
Value and Distribution 3	Value and Distribution 3	Electives
Electives	Electives	8 to 11
5 to 8	5 to 8	

RECOMMENDED ELECTIVES

	Hours
Industrial Management (College of Engineering)	9
Marketing of Manufactured Products.....	6
Life Insurance	3
Marketing of Farm Products.....	5
Social Insurance.....	3
Money and Banking.....	10
Corporation Finance.....	3
Methods of Americanization.....	3
Sociology	5
Educational Psychology.....	3
Economics of Agricultural Production.....	3
Farm Management.....	6

VIII. COMMERCIAL ORGANIZATION SECRETARYSHIP

This course is designed for the training of secretaries to commercial clubs and other similar organizations. The large organizations in the Twin Cities extend to the student the opportunity of gaining experience while he is taking his course at the University. In order to have a general understanding of the problems which he must meet as a community secretary, the student should do some work in each of the recommended groups.

JUNIOR YEAR

Hours	Hours	Hours
Business Law.....	Business Law.....	Business Law.....
3	3	3
Public Speaking.....	Public Speaking.....	Public Speaking.....
3	3	3
Marketing of Manufactured Products.....	Marketing of Manufactured Products.....	Advertising
3	3	3
Marketing of Farm Products	Electives	Electives
5	5 to 8	5 to 8
Electives		
0 to 3		

COURSES OF STUDY

19

SENIOR YEAR

	Hours		Hours		Hours
Public Finance.....	3	Public Finance.....	3	State and Local Taxation	3
Economics of Transportation	3	Railway Traffic and Rates	3	Public Utilities.....	3
Labor Problems.....	3	Industrial Relations... ..	3	Electives	8 to 11
Electives	5 to 8	Electives	5 to 8		

RECOMMENDED ELECTIVES

POLITICAL SCIENCE	AGRICULTURAL ECONOMICS	SOCIOLOGY
Hours	Hours	Hours
American Government.	Agricultural Economics	Introduction
5	3	5
State and Local Government	Problems in Agricultural Economics.....	Rural Sociology.....
5	3	3
Municipal Government.	Land Economics.....	Housing Problems....
5	5	3
Municipal Problems...	Farm Finance.....	Community Organization
3	3	2
Municipal Engineering.	Prices of Farm Products	Charitable Administration
3	3	3
Police Power.....	EDUCATION	Methods of Social Investigation
5	Hours	3
Rural Government.....	Social Aspects	
3	3	
Law of Municipal Improvement	The American School.. . . .	
3	3	
	School Curricula.....	
	6	
	Secondary Education Movements	
	3	

IX. SECRETARIAL WORK

The following program contains the fundamental courses which an executive secretary should have. In addition to these subjects the student should select, with the aid of his adviser, courses which will best fit him for the special kind of secretaryship he expects to fill: e.g. Legal secretaries, medical secretaries, secretaries to bankers, insurance men, manufacturers, merchants, philanthropic and educational institutions should acquire a reasonable degree of familiarity with these respective fields of specialization.

JUNIOR YEAR

	Hours		Hours		Hours
Business Law.....	3	Business Law.....	3	Business Law.....	3
Money and Banking...	5	Money and Banking...	5	Secretarial Administration	3
Office Organization...	3	Secretarial Administration	3	Electives	8 to 11
Electives	3 to 6	Electives	3 to 6		

SENIOR YEAR

	Hours		Hours		Hours
Seminar in Secretarial Administration	2	Seminar in Secretarial Administration	2	Seminar in Secretarial Administration	2
Electives	12 to 15	Electives	12 to 15	Electives	12 to 15

RECOMMENDED ELECTIVES

	Hours
Corporation Finance	3 to 6
Insurance	3 to 6
Transportation	3 to 6
Value and Distribution.....	3 to 6

	Hours
Public Speaking.....	9
Sociology	5 to 10
Additional Psychology.....	3 to 9
Advertising	3
Additional Statistics.....	6 to 10
Additional Accounting	3 to 9
Advanced Business Finance Courses.....	3 to 12
Labor Courses.....	3 to 9
Foreign Trade.....	3
Commercial Policies	3
Marketing of Manufactured Products....	6
Marketing of Farm Products.....	5

Fundamental courses in law, agriculture, medicine, etc., according to field chosen.

A FIVE-YEAR COURSE IN TRAINING FOR DIPLOMATIC AND CONSULAR SERVICE¹

The degree of Bachelor of Arts is conferred at the end of four years. Students whose programs satisfy the requirements of the Graduate School may receive the degree of Master of Arts at the end of the fifth year.

JUNIOR COLLEGE

First Year

	Credits
Rhetoric-English	15
Modern language	15
History	10
American Government	5
	45

Second Year

	Credits
Comparative European Government.....	5
Language	10
Economics	10
Natural science.....	10
Electives	10
	45

SENIOR COLLEGE

In the Senior College the student will take major sequence E in political science and such additional work in economics, history, and law, not exceeding 30 credits, as may be prescribed by the major adviser and the committee in charge of the course.

In foreign languages 15 credits, or at least a minor sequence. A speaking knowledge of one language is required and a thoro reading knowledge of a second.

Electives to make up a total of not less than 90 credits in this college.

The selection of these courses will be made under the direction of the major adviser and the committee in charge of the course.

GRADUATE SCHOOL

In the fifth year the student will take the following work:

Research in economics or political science for the consular service.

Research in history or political science for the diplomatic service.

¹ Given under the direction of the Department of Political Science, College of Science, Literature, and the Arts.

Additional starred courses in history, economics, law, or political science, under the direction of the Graduate School and the committee in charge of the course.

A FIVE-YEAR COURSE OF TRAINING FOR STATE AND FEDERAL ADMINISTRATION¹

The degree of Bachelor of Arts is conferred at the end of four years. Students whose programs satisfy the requirements of the Graduate School may receive the degree of Master of Arts at the end of the fifth year.

JUNIOR COLLEGE

First Year

	Credits
Rhetoric-English	15
History	10
American Government	5
Modern language sufficient to fulfill the Junior College requirements; electives sufficient to make up 45 credits for the first year	15
	45

Second Year

	Credits
Natural science	10
General Economics	10
State and Local Government or Municipal Government.....	5
Electives	20
	45

SENIOR COLLEGE

In the Senior College the student will take major sequence A or F in political science.

In economics, 18 credits selected from the following courses: Public Finance, State and Local Taxation, Labor Problems, Economics of Transportation, Statistics, Business and Government, Public Utilities, and Financial History of the United States.

In history, 9 credits selected from Economic History of the United States, Recent American History, History of Minnesota, and Constitutional History of the United States.

Electives to make up a total of not less than 90 credits in this college.

The selection of these courses will be made under the direction of the major adviser and the committee in charge of the course.

GRADUATE SCHOOL

In the fifth year the student will take the following work:

Research in the field of American government or administration.

Additional starred courses in history, economics, law or political science to be selected by the student under the direction of the Graduate School and the committee in charge of the course.

¹ Given under the direction of the Department of Political Science, College of Science, Literature, and the Arts.

A FIVE-YEAR COURSE OF TRAINING FOR MUNICIPAL ADMINISTRATION AND ENGINEERING¹

The degree of Bachelor of Science is conferred at the end of four years. Students whose programs satisfy the requirements of the Graduate School may receive the Master's degree at the end of the fifth year.

FIRST YEAR

	Credits
Rhetoric-English	15
Modern language	10
Engineering Mathematics	10 or 15
American Government.....	5
Electives	5 or 0
	45

SECOND YEAR

	Credits
Municipal Government.....	5
General Economics.....	10
History	10
Physics	10
Drawing	5
Electives	5
	45

THIRD AND FOURTH YEARS

POLITICAL SCIENCE	ENGINEERING
Municipal Corporations ²	Surveying ²
Municipal Problems ³	Highways and Pavements ²
Research in Municipal Administration ²	Water Supply ²
Business Law	Sanitary Engineering ²
Police Power	Applied Electricity (51-52)
Government of Minnesota	Heat and Ventilating for Architects
State Constitutional Law	
	OTHER COURSES
ECONOMICS	General Bacteriology ²
Principles of Accounting ²	Public Health ²
Public Finance ²	
State and Local Taxation ²	OTHER ELECTIVES
Public Utilities ²	SOCIOLOGY
Labor Problems	Sociology I
Business Organization and Management	Housing Problems
Government and Business	Social Statistics and Survey
Transportation	
Statistics	

FIFTH YEAR

In this year the student will carry such courses, not completed in the preceding years, as seem in the opinion of his adviser to be necessary for the completion of his training. In addition to this he will conduct in the Twin Cities or vicinity, a practical research in municipal government and administration, supplementing this work by work in the library and in the research bureau. The year will thus consist of about equal proportions of class work and research and reference bureau work. If desirable, the student will be allowed to take courses not mentioned above.

¹ Given under the direction of the Department of Political Science, College of Science, Literature, and the Arts.

² Required work.

DESCRIPTION OF COURSES

ECONOMICS

- 1f-2w. INTRODUCTION TO ECONOMIC HISTORY WITH SPECIAL EMPHASIS ON THE UNITED STATES. Lectures and section work. A general survey of the development of agriculture, manufacture, transportation, storage, and exchange of goods; economic crises; land, capital, management, and labor; the interplay of economic and political forces. GRAS, MUDGETT, DICKINSON, and others.
- 3-4. PRINCIPLES OF ECONOMICS. Principles that underlie the present industrial order. Application of principles to economic problems such as labor, insurance, finance, transportation, industrial combination, government control. HANSEN, JAMES, and others.
- 5f,w.¹ GENERAL ECONOMICS. (Agriculture.) The usual basic principles of economic science interpreted in terms of agriculture and forestry as well as of other industries. HOLMES, WORKING, MILLER.
- 6f,w,s.¹ AGRICULTURAL ECONOMICS. The special body of economic principles that have been developed for agricultural production, exchange, and distribution, together with the application of these principles to agricultural problems. HOLMES, WORKING.
- 7w,s.¹ GENERAL ECONOMICS. (Home economics.) The principles of economics with more than the usual emphasis upon consumption. CHAMBERS.
- 8f-9w-10s. GENERAL ECONOMICS. (Engineering.) Principles of economics with special emphasis upon their application to current problems such as money, banking, conservation, insurance, international commerce, monopolies, transportation, labor, socialism, public ownership, and finance. BLAKEY and others.
- 13s.¹ AGRICULTURAL STATISTICS. Statistical methods applied to agricultural data. BLACK.
- 14s. ELEMENTS OF STATISTICS. Elementary principles of classification, analysis, and presentation of statistical materials, with primary emphasis on economic data. Lectures, readings, and laboratory work. MUDGETT.
- 18f.¹ PROBLEMS IN AGRICULTURAL ECONOMICS. Application of the principles of agricultural economics to a number of the major agricultural problems. HOLMES.
- 20w-21s.¹ ECONOMIC HISTORY AND GEOGRAPHY OF AGRICULTURE. (1) The evolution of modern agricultural production, tenure systems, and

¹ Given on agricultural campus.

market distribution. (2) The forces determining past and present localization of agricultural products, types of agricultural production and agricultural markets. HOLMES, CHAMBERS.

23f. PRINCIPLES OF ORGANIZATION AND MANAGEMENT (FOR ENGINEERS). (See 23w for description.)

23w,s. PRINCIPLES OF ORGANIZATION AND MANAGEMENT. Types of operating organization; specialization; coordination of men and departments; planning; delegation of authority; means of control; establishment and maintenance of standards for materials, operations, machinery; determination of business policies; personnel problems. PELZ.

25f-26w. PRINCIPLES OF ACCOUNTING. Purpose and principles of account classification; capital and revenue; accruals; valuation; depreciation; preparation and interpretation of balance sheets, income accounts, and other statements; introduction to partnership and corporation accounts. A laboratory course with supplementary lectures. HEILMAN, NOBLE, and others.

25w-26s. (See 25f-26w. Two sections only.) HEILMAN, NOBLE, and others.

27s. PRINCIPLES OF ACCOUNTING (FOR ENGINEERS). The purpose and principles of account classification; capital and revenue; accruals; valuation; depreciation; preparation and interpretation of balance sheets, income accounts, and other statements. Three hours of lecture and one laboratory period a week. OSTLUND.

28s.¹ PRINCIPLES OF ACCOUNTING (Agricultural). Principles of general and cost accounting presented in somewhat abridged form. NOBLE.

41s. FINANCIAL HISTORY OF THE UNITED STATES. A study of the development of the main features of our systems of money, banking, tariffs, and public finance including a consideration of war financing and financial cycles. BLAKEY.

51f-52w-53s. BUSINESS LAW. Principles governing ordinary business transactions. Contracts—formation, operation, interpretation, breach, and discharge. Agency and service. Negotiable instruments. Business associations—partnerships and private corporations. Property—personal and real. YOUNG.

54s. CORPORATION FINANCE. The organizing, financing, and managing of corporations. A study of corporate securities for purposes of promotion and reorganization and of facilities for marketing them. STEHMAN.

¹ Given on agricultural campus.

- 55f. **ADVANCED CORPORATION FINANCE.** A study of the financial history of certain typical corporations with special reference to their promotion and reorganization. STEHMAN.
- 57w. **BUSINESS FINANCE (FOR ENGINEERS).** A study of the principles of financing business concerns. Banking facilities from the viewpoint of the business man. Organization and financial management of corporations with special reference to the various types of corporate securities. STEHMAN.
- 59f. **LIFE INSURANCE.** Life insurance companies; types of policies and their uses; premiums, reserve, surrender values, dividends, and rights and obligations of the policy holder. Brief discussion of accident and health insurance. JAMES.
- 60s. **FIRE INSURANCE.** Basic theory and critical examination of the fire insurance policy. Study of organization of stock and mutual companies, agency system; reserves, rate making and fire prevention. Special attention to laws of Minnesota. JAMES.
61. **PROPERTY INSURANCE.** A study of basic principles and critical analysis of marine insurance, plate glass window, burglary, credit, boiler and factory mutuals. (Not offered in 1920-21.) JAMES.
- 62w. **SOCIAL INSURANCE.** Discussion of wage earners' problem in securing adequate insurance protection. Analysis of industrial and group insurance, pensions, old age, sickness and unemployment insurance. Study of state insurance funds in United States. JAMES.
- 72f. **ECONOMICS OF TRANSPORTATION.** The theory and practice of rate-making. Government regulation, the conflict between state and federal authorities, and suggested improvements in control of transportation agencies. CUMMINGS.
- 73w. **RAILWAY TRAFFIC AND RATES.** Railway transportation from the standpoint of the business man and shipper. Freight shipping documents. Classification and tariffs, time and preference freight, private car lines, industrial trackage and terminal service, express rates and service, special passenger rates. CUMMINGS.
- 74s. **WATER TRANSPORTATION.** History and present status of inland waterway and ocean transportation in the United States with some reference to present development in representative foreign countries. Problems peculiar to water transportation in the United States. CUMMINGS.
- 85f-86w. **MARKETING OF MANUFACTURED PRODUCTS.** Organization of distributive channels; marketing of basic raw materials and manufactured products; relations, selling problems, and methods of manufacturers, wholesalers, retailers, and other factors in the distributive system; price policies; price maintenance. PELZ.

- 88s. **ADVERTISING.** Planning and executing campaigns; commodity and market analysis; planning and preparation of copy; selection and use of media; trade marks; display, outdoor and direct advertising; relations of advertiser, agency, and publisher; social and economic aspects. PELZ.
- 89f.² **MARKETING OF FARM PRODUCTS.** Study of the principles relating to the distribution of farm products; types of markets, middlemen, market organizations; costs; prices; coöperative marketing. ANDERSON.
- 94f. **OFFICE ORGANIZATION.** Development of the office; organization; interrelation of departments; correlation of records; standardization of office practice. Study of actual office organizations with especial attention to factors which have influenced their development. Observation, reading, reports. SYKES.
- 95w-96s. **SECRETARIAL ADMINISTRATION.** Duties and problems of secretaries to executives. Principles underlying the study of one's position, the construction of record systems, correspondence methods, filing, editing manuscript, equipping an office. Laboratory practice, observation, reading, reports. SYKES.
- 97f-98w-99s. **SEMINAR IN SECRETARIAL ADMINISTRATION.** Study of particular field into which student expects to enter, from the point of view of the secretary. Laboratory practice in offices of Twin City business and professional firms. (Not offered in 1920-21.) SYKES.
- 103f-104w. **VALUE AND DISTRIBUTION.** An advanced course in economic theory devoted chiefly to the study of recent theories of wages, interest, rent, and profits. Assigned readings and reports on current problems in distribution. GARVER.
- 105s. **HISTORY OF ECONOMIC IDEAS.** History of economic thought; scope and logical methods, relation to other social sciences; methods of investigation and instruction. Assigned readings, reports, and class discussion. GARVER.
- 107f.¹ **LAND ECONOMICS.** A study of several problems arising out of the land basis of civilization, such as property in land, land utilization, land classification, land settlement, status of the agricultural classes, farm labor, farm ownership and tenancy. BLACK.
- 108w.¹ **FARM MARKETING PROBLEMS.** Studies of the problems and methods of marketing selected farm products with special reference to the Twin City markets. BLACK, ANDERSON.

¹ Given on agricultural campus.

² Given on both main and agricultural campuses.

- 109w.¹ ECONOMICS OF CONSUMPTION. Nature of human wants; standards of living; cost of living; income, administration of income; nature of demand; demand and price; relation of consumption and the population problem. BLACK.
- 110s-111f.¹ PRACTICE COURSE IN MARKETING. Eight to twelve weeks of experience as an employee in central or local markets. Careful study and observation of methods. Written plans and reports. BLACK, ANDERSON.
- 112f-113w. TECHNIQUE OF STATISTICAL INVESTIGATION. Primary and secondary investigations; statistical units, preparation, filling, and editing of schedules; classification and tabulation of returns; presentation of results. Readings, field work, and reports. MUGGET.
- 116w.¹ ECONOMICS OF AGRICULTURAL PRODUCTION. Detailed analysis of the economic principles underlying agricultural production; economic characteristics and functions of the factors of production; proper combinations of factors; selection of enterprises. HOLMES.
- 117s.¹ PRICES OF FARM PRODUCTS. Price determination in the various markets for various classes of farm products; analysis of forces determining prices. WORKING.
- 118f-119w-120s. ECONOMIC HISTORY OF EUROPE AND THE UNITED STATES, 1750 TO THE PRESENT. The industrial revolution and significant results for transportation, agriculture, tariff, and labor. GRAS.
- 121f-122w-123s. ECONOMIC HISTORY OF EUROPE, 1300-1750. The chief interests are the manor; the town; the metropolis; national economic regulations; developments in agriculture, commerce, manufacture, and economic thought, leading up to the industrial revolution. (Not offered in 1920-21.) GRAS.
- 125f. INDUSTRIAL MANAGEMENT. See Engineering Course 225.3f.
- 126f-127w-128s.¹ SPECIAL RESEARCH PROBLEMS IN AGRICULTURAL ECONOMICS. Intensive individual research work on problems not being studied in the seminar during the quarter. BLACK, HOLMES, WORKING.
- 131f. COST ACCOUNTING. General principles of cost accounting; elements of cost; methods of arriving at costs and of distribution of overhead; application of cost accounting principles to selling, banking, mining, farming, etc. NOBLE.
- 132w-133s. INDUSTRIAL ACCOUNTING. Continuation of cost accounting with attention on factory accounting; a critical study of various cost systems and their application to particular types of industry; practical experience through constructive problems. NOBLE.

¹ Given on agricultural campus.

- 134f-135w-136s. **AUDITING.** Preparation for and conduct of an audit; the auditor's report and certification, and legal responsibilities. Text-book, assigned readings, class discussions, and lectures. ROTZEL.
- 137f-138w-139s. **ACCOUNTING PRACTICE AND PROCEDURE.** Intensified study of numerous subjects discussed in Principles' course. First quarter treats partnerships, municipal accounts, bankruptcy, etc.; second quarter, corporation accounts in all phases; third quarter, retail, wholesale, department store, branch, commission and consignment accounts. HEILMAN.
- 140f-141w-142s. **ADVANCED ACCOUNTING PRACTICE AND PROCEDURE.** A course involving practical problems which arise in a variety of businesses. Analysis is made of conditions prevailing in each business. The course gives the student a broad acquaintance in the field of accounting. ROTZEL.
- 143f-144w. **MONEY AND BANKING.** Relation to industrial system. Monetary principles with special reference to United States. American banking and bank organization, principles of commercial banking, non-commercial banking, relation of government to banking, comparative study of leading foreign systems. DOWRIE, EBERSOLE, STEHMAN.
- 145s. **INTERNATIONAL EXCHANGE.** Theory of international exchange, pars of exchange with gold, silver, and paper standard countries; the rates of exchange; financing imports and exports; bankers' bills; futures, arbitrage; specie movements; the present foreign exchange situation. DOWRIE.
- 146w,s. **INVESTMENTS.** Sources of demand and supply of capital; bond houses and stock exchanges as marketing media, criteria for personal selection of prime investments; government, municipal, corporation, and real estate loans; and the use of bond tables. EBERSOLE.
- 147f. **BANK ADMINISTRATION.** The modern commercial bank from the manager's point of view. Legal problems, department functions, profit-making methods, credits. Adjustment of bank policy to prospective business conditions. Lectures and laboratory work in local banks. EBERSOLE.
- 149s. **BUSINESS CYCLES.** American business conditions since 1890 with regard to the great cycles of alternate prosperity and depression, and financial panics. Critical examination of all the available business barometers designed to forecast similar conditions. EBERSOLE.
- 150s.¹ **FARM FINANCE.** The financial needs of typical farmers. Present facilities for supplying them; institutions, their organization and operation, interest rates, defects, and proposed remedies. The financing

¹ Given on agricultural campus.

- of the various farmers' organizations. The farmer as an investor. DOWRIE.
- 153W. THE MODERN BUSINESS CORPORATION. Social and legal aspects of the corporation. The development of the trust and the regulatory policy of the government. GRAY.
- 154S. PUBLIC UTILITIES. Economic and legal bases of classification. Relative advantages of public ownership and regulation. Central and municipal regulation compared. The basis of rates; relative rates; rates and service. Summary of the theories of valuation. GRAY.
- 155W-156S. VALUATION. The instructor will direct investigation on special topics, emphasis on public service industries. Physical property, intangibles, original cost, investment, unearned increment, surplus, gifts, price levels, appreciation, depreciation. Value for expropriation, taxation. Capitalization, rate-making. GRAY.
- 157W. POLICE POWER. Nature of police power; constitutional aspects of social and economic legislation, including safety, order, morals, and protection against business fraud and oppression; the fundamental rights under the police power. (Not offered in 1920-21.) YOUNG.
- 158W. GOVERNMENT AND BUSINESS. Protection against business fraud and oppression; restraint of trade and manipulation of prices; protection of debtors; business affected with a public interest; compulsory benefits; conservation of natural wealth; vested rights; confiscatory legislation; reaction of war emergency measures on permanent policy. YOUNG.
- 160S. ECONOMIC MOTIVES. Psychological approach to certain problems of economic theory, e.g., analysis of wants and consumption, "desire for wealth," valuation, pecuniary and other motives of producers—savers, inventors, entrepreneurs, laborers. Possibilities of redirecting motives. DICKINSON.
- 161f. LABOR PROBLEMS AND TRADE UNIONISM. Origin of the labor problem; conditions of labor in American industries; structure, aims, policies, and methods of trade and industrial unionism and employers' associations; collective bargaining and shop committees; mediation and arbitration; injunctions; labor legislation. HANSEN.
- 162W. THE LABOR MOVEMENT IN AMERICA. The conditions, class alignments and philosophies underlying American labor movements from 1820 to 1920; the historical development of various labor organizations, labor parties and labor programs; the single-tax movement; reconstruction proposals. HANSEN.
- 166f. EMPLOYMENT AND PERSONNEL MANAGEMENT. Organization and routine of employment department; methods of selecting employees,

- records, follow-ups; standardization of labor requirements; problems of labor turn-over; service and welfare features, as safety, education, recreation. Study of practice in representative establishments. Written reports. DICKINSON.
- 167w. INDUSTRIAL RELATIONS. Broader problems of labor policy, from standpoint of management. Wage systems, labor cost, profit-sharing; scientific management and labor; collective bargaining, works councils or shop committees, their relations to trade unions. Studies of practice, written reports. DICKINSON.
- 169s. THE LABOR AND SOCIALIST MOVEMENT IN EUROPE. A theoretical analysis and historical survey of utopian socialism, Marxian socialism, evolutionary socialism, anarchism, syndicalism, sovietism, guild socialism, state socialism, coöperation, and labor parties, especially as found in Germany, France, England, and Russia. HANSEN.
- 175f. LAW OF LABOR. Constitutional aspects of laws for the protection of labor; regulation of hours and wages; legal restraints on labor; legality of strikes, boycotts, picketing, etc. Legal aspects of settlement of labor disputes. CUSHMAN.
- 176f. COMMERCIAL POLICIES. Theory of international commerce; free trade, reciprocity, subsidies, preferential treatment, the open door, international finance, commercial treaties, foreign politics, and other governmental and organized efforts to affect trade. American problems emphasized. BLAKEY.
- 177w. FOREIGN TRADE. Nature and methods of foreign trade. Character of the foreign trade of the United States and leading countries of the world; organization for foreign trade. BLAKEY.
- 180f-181w-182s. ACCOUNTING SEMINAR. An opportunity for students to contribute papers of advanced character on problems in accounting. Discussion will take place on each paper, occasion will be taken to afford students a view of practical accounting conditions. ROTZEL.
- 183f. SEMINAR IN BUSINESS STATISTICS. Use of statistical method in analysis of markets, sales records, advertising results, or other phases of a business that may be studied quantitatively. MUDGETT.
- 184w. SEMINAR IN BUSINESS BAROMETERS. Study and analysis of various indices for forecasting the probable trend of business conditions. MUDGETT.
- 191f-192w. PUBLIC FINANCE. National government revenues, expenditures, and debts. This includes a study of the principles and various forms of taxation, budgetary legislation and control, war and emergency financing, the shifting and incidence of taxes and fiscal reforms. BLAKEY.

- 193s. STATE AND LOCAL TAXATION. Principles and problems, e.g., state and local taxation of lands, mineral resources, forests, corporation, incomes, inheritances: also studies of classification, separation, local option, exemption, double taxation, evasion, assessment, centralized administration. BLAKEY.
- 195f-196w-197s. SEMINAR IN BUSINESS FINANCE. The various unsettled monetary and banking problems of the United States will furnish topics for individual investigation. DOWRIE, EBERSOLE, STEHMAN.
- 203f-204w-205s. SEMINAR IN ECONOMIC THEORY. Intensive study of a limited field in economic theory. Individual investigation, reports, and group discussion. The subject for 1920-21 will be the theory of value. GARVER.
- 210f-211w-212s. SEMINAR IN ECONOMIC HISTORY. Some limited field or single topic in American or English economic history. Intended primarily as a training course in the methods and problems of economic history. GRAS.
- 219f-220w-221s.¹ SEMINAR IN AGRICULTURAL ECONOMICS. Subjects for group study selected from the following: competition of types of farming; markets and transportation of farm products; farmers' coöperation; prices of farm products; rural credit; land valuation; land settlement; land taxation. BLACK, HOLMES, WORKING.
- 261f-262w-263s. SEMINAR FOR GRADUATES EXCLUSIVELY. Research to be arranged with individual instructors in the various fields of economics.

ECONOMIC GEOGRAPHY²

- 116f. GEOGRAPHY OF SOUTH AMERICA. Regional geography of the South American countries; their geology, topography, climate, natural resources, and people. Trade relations between South American countries and the United States given special attention. POSEY.
117. RESOURCES AND TRADE. Major commodities typical of the different sorts of national resources will be selected and a detailed study of their occurrence, production, manufacture, and exchange made. POSEY.
- 118w. GEOGRAPHY OF EUROPE. Regional geography of Europe; the geology, topography, climate, natural resources, people, industries, and trade of these countries. POSEY.
- 36s. GEOGRAPHY OF NORTH AMERICA. The regional geography of the United States and Canada; their physiography, climate, natural resources, and peoples. The utilization and conservation of natural resources emphasized. POSEY.

¹ Given on agricultural campus.

² Given in the College of Science, Literature, and the Arts.

- 37s. ECONOMIC AND COMMERCIAL GEOGRAPHY. A study of world production and of the influencing factors; world trade and the important trade routes. POSEY.

BUSINESS MATHEMATICS¹

8. COMMERCE ALGEBRA. Selected topics in college algebra with emphasis on logarithms and on those phases of the subject which are of most importance in applications to business problems. Prerequisites, Mathematics I or its equivalent. HART.
20. THE MATHEMATICS OF INVESTMENT. First principles of the mathematical theory of interest, annuities certain, amortization, sinking funds, etc. Brief treatment of life annuities and their application in life insurance problems. Prerequisites, Mathematics 8, or Mathematics 6 and 7. HART.

BUSINESS PSYCHOLOGY

- 8s. APPLICATIONS OF PSYCHOLOGY TO BUSINESS. An introduction to business psychology. MORGAN.
- 156w. PSYCHOLOGY OF ADVERTISING. Psychology as applied to advertising. Psychological analysis of advertisements followed by experimental investigation of the value in advertising of such factors as interest, attention, suggestion, and memory. MORGAN.
- 160f. EMPLOYMENT PSYCHOLOGY. Psychology as applied to employment problems. Standardization of the personal interview; the principles and development of test methods; personnel classification methods. Independent investigations required of each student. MORGAN.

THE EXTENSION DIVISION

EVENING COURSES

The General Extension Division of the University offers courses in the Twin Cities, Duluth, and elsewhere. The curriculum covers work in economic principles, banking, finance, transportation, management, advertising, and salesmanship. These courses are designed to meet the needs of mature persons already employed in business. Applicants must be at least eighteen years of age and must present evidence of sufficient experience and training to pursue the work with profit. The courses of the Extension Division are open to day students only on petition.

CORRESPONDENCE COURSES

Persons who are unable to attend the day or evening classes in business may enroll with the correspondence study department and receive instruction in certain business subjects.

Further information with regard to evening or correspondence work may be had by applying to R. R. Price, Director of University Extension, University of Minnesota.

¹ Given in the College of Science, Literature, and the Arts.

PROGRAM*

1920-21

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w	Introduction to Economic History.... (10; pre-bus., fr., and majors in economics, soph., jr., sr.; none)				
	Lecture	III	TThS	CB Aud	Gras, Mudgett, Dickinson
	Section 1	V	TTh		
	2	VI	TTh		
	3	VI	TTh		
	4	VII	TTh		
	5	V	WF		
	6	VI	WF		
	7	I	WF		
	8	I	WF		
	9	II	WF		
	10	II	WF		
	11	III	WF	202MA	
	12	III	WF	306D	
	13	III	WF	308D	
	14	III	WF		
	15	IV	WF		
	16	IV	WF		
3f-4s	Principles of Economics..... (10; soph., jr., sr.; none)				
	Lecture	II	T	CB Aud	Hansen et al.
	Section 1	I	MWThF	209MA	
	2	I	MWThF	109MA	
	3	II	MWThF	209MA, spring	
	4	III	MWThF		
	5	III	TThFS		
	6	IV	MWFS	109MA	
	7	V	MWThF	102MA	
	8	V	MWThF	109MA	
	9	VI	MWThF	109MA	
	10	VI	MWThF	306D	
3f-4w	Principles of Economics..... (10; pre-bus., soph.; jr., sr. by petition; none)	VII	MTWThF	202MA	James
4f	Principles of Economics (Continuation of 3s, 1919-20)..... (5; soph., jr., sr.; none)				
	Lecture	II	T	CB Aud	Hansen et al.
	Section 1	I	MWThF	109MA	
	2	I	TThFS	209MA	

* Each course has in parentheses an abbreviated statement of credits and prerequisites. Thus (5; jr., sr., grad.; 3-4) means that the course carries 5 credits, is offered to juniors, seniors, and graduates, and demands Course 3-4 in the same department as a prerequisite.

SCHOOL OF BUSINESS

No.	Title	Hour	Day	Bldg.	Instructor
	3	I	MWThF	112Lib	
	4	II	MWThF	306D	
	5	II	MWThF	308D	
	6	II	MWThF		
	7	III	TThFS	306D	
	8	III	TThFS	308D	
	9	IV	MWFS	102MA	
	10	IV	MWFS	109MA	
	11	V	MWThF	109MA	
	12	V	MWThF	306D	
	13	V	MWThF	308D	
	14	V	TWThF	302D	
	15	VI	MWThF	306D	
	16	VI	TWThF	308D	
	17	V	MWThF	213F	
5f ¹	General Economics				
	(5; 20-21 or soph. rank)				
	Section 1	I	MWThFS	Farm	Working
	2	II	MWThFS	Farm	Working
5w ¹	General Economics	I	MTWThF	Farm	Working
	(5; 20-21 or soph. rank)				
6f ¹	Agricultural Economics				
	(3; soph., jr., sr.; 3-4, or 5)				
	Section 1	I	MWF	Farm	Holmes,
	2	II	MWF	Farm	Working
6w ¹	Agricultural Economics				
	(3; soph., jr., sr.; 3-4 or 5)				
	Section 1	I	MWF	Farm	Holmes,
	2	II	MWF	Farm	Working
6s ¹	Agricultural Economics	II	MWF	Farm	Holmes
	(3; soph., jr., sr.; 3-4 or 5)				
7w ¹	Principles of Economics (Home Econ.)	III	MTWFS	Farm	Chambers
	(5; soph., jr., sr.; none)				
7s ¹	Principles of Economics (Home Econ.)	II	MTWFS	Farm	Holmes
	(5; soph., jr., sr.; none)				
8f-9w-10s	General Economics (For Engineers)...	See Engineering Bulletin			Blakey
	(9; jr.; none)				
13s ¹	Agricultural Statistics	Ar	Ar	Farm	Black
	(5; soph., jr., sr.; 3-4, or 5 and 6, or 7)				
14s	Statistics				
	(5; soph., jr., sr.; 3-4, or 5 and 6)				
	Lecture	IV	MWF	Lit.Th.	Mudgett
	Section 1	VII-VIII	TTh	301MA	
	2	VII-VIII	WF	301MA	
	3	III-IV	TS	301MA	
	4	I-II	MW	301MA	
	5	I-II	TTh	301MA	
	6	V-VI	MW	301MA	
	7	V-VI	TTh	301MA	
18f ¹	Problems in Agricultural Economics...	II	TThS	Farm	Holmes
	(3; soph., jr., sr.; 3-4 or 5 and 6, or 7)				
20w-21s ¹	Economic History and Geography of				
	Agriculture	Ar	Ar	Farm	Holmes,
	(10; all; none)				Chambers

¹ Given on agricultural campus.

PROGRAM

No.	Title	Hour	Day	Bldg.	Instructor
23f	Principles of Organization and Management (For Engineers).....	See Engineering Bulletin			Pelz
	(3; sr. without prerequisites or jr. with 8-9-10 or equivalent)				
23w	Principles of Organization and Management				
	(5; pre-bus. soph.; 3-4, or 5 and 6)				
	Lecture	IV	MWF	Lit.Th.	Pelz
	Section 1	I	MW	102MA	
	2	II	MW	109MA	
	3	III	MW		
	4	I	TTh	102MA	
	5	II	TTh		
	6	III	TTh	209MA	
	7	V	MW		
	8	VI	MW		
	9	V	TTh	202MA	
	10	VI	TTh	202MA	
23s	Principles of Organization and Management				
	(5; soph., jr., sr.; 3-4, or 5 and 6)				
	Lecture	VI	MWF		Pelz
	Section 1	I	TTh		
	2	II	TTh		
	3	III	TTh		
25f-26w	Principles of Accounting.....				Heilman, Noble, et al.
	(8; soph., jr., sr.; none)				
	(8 cr. for lect. and lab. combined; no separate credits)				
	Section 1	I	MWF	301MA	
	2	II	MWF	301MA	
	3	II	MWF	303MA	
	4	III	MWF	301MA	
	5	IV	MWF	301MA	
	6	V	MWF	303MA	
	7	I	TThS	301MA	
	8	II	TThS	303MA	
	9	III	TThS	109MA	
	10	VII	MWF	109MA	
25f-26w	Accounting Laboratory.....				
	(To be given with Principles of Accounting)				
	Section 1	V-VI	M	301MA	
	2	VI-VII	M	303MA	
	3	III-IV	T	303MA	
	4	V-VI	T	301MA	
	5	VI-VII	T	303MA	
	6	VII-VIII	T	301MA	
	7	V-VI	W	301MA	
	8	VI-VII	W	303MA	
	9	II-III	Th	301MA	
	10	V-VI	Th	301MA	
	11	V-VI	Th	303MA	
	12	VII-VIII	Th	301MA	
	13	V-VI	F	301MA	
	14	VI-VII	F	303MA	
	15	VII-VIII	F	301MA	
	16	III-IV	S	303MA	

SCHOOL OF BUSINESS

No.	Title	Hour	Day	Bldg.	Instructor
25w-26s	Principles of Accounting.....				
	Section 1	II	MWF		Heilman,
	2	IV	MWF		Noble, et al.
25w-26s	Accounting Laboratory.....				
	(To be given with Principles of Accounting)				
	Section 1	V-VI	M		
	2	II-III	Th		
	3	V-VI	F		
27s	Principles of Accounting (For Engineers)	II	MWF		Ostlund
	(4; sr.; none)				
28s ¹	Principles of Accounting (Agricultural)	Ar	Ar	Farm	Noble
	(5; soph., jr., sr.; 3-4, or 5 and 6, or 7)				
41s	Financial History of United States....	I	MWF	202MA	Blakey
	(3; soph., jr., sr.; 3-4, or 5 and 6)				
51f-52w-53s	Business Law	II	MWF		See political science
	(9; jr., sr.; 10 cr. in economics or political science or 5 in each)				
54s	Corporation Finance				
	(3; jr., sr.; 3-4, or 5 and 6)				
	Lecture	II	S		Stehman
	Section 1	II	TTh	109MA	
	2	III	TTh	109MA	
	3	III	MW	209MA	
	4	IV	MW		
	5	V	TTh	202MA	
	6	VI	TTh	102MA	
55f	Advanced Corporation Finance.....	II	TThS	209MA	Stehman
	(3; jr., sr.; 54)				
57w	Business Finance (For Engineers)....				See Engineering Bulletin
	(3; sr. without prerequisites or jr. with 8-9-10 or equivalent)				Stehman
59f	Life Insurance.....	III	TThS	202MA	James
	(3; jr., sr.; 3-4, or 5 and 6)				
60s	Fire Insurance.....	III	TThS	202MA	James
	(3; jr., sr.; 3-4, or 5 and 6)				
61s	Property Insurance.....				James
	(Not offered 1920-21)				
62w	Social Insurance.....	III	TThS	202MA	James
	(3; jr., sr.; 3-4, or 5 and 6)				
72f	Economics of Transportation.....	V	MWF	202MA	Cummings
	(3; jr., sr.; 54)				
73w	Railway Traffic and Rates.....	V	MWF	202MA	Cummings
	(3; jr., sr.; 3-4, or 5 and 6)				
74s	Water Transportation.....	V	MWF	202MA	Cummings
	(3; jr., sr.; 3-4, or 5 and 6)				
85f-86w	Marketing of Manufactured Products..				
	(6; jr., sr.; 3-4, or 5 and 6, and 9 other credits in Economics)				
	Section 1	VI	MWF	202MA	Pelz
	2	I	TThS	202MA	
88s	Advertising	I	TThS	202MA	Pelz
	(3; jr., sr.; 85-86, Psychology 156)				
89 ²	Marketing of Farm Products.....				
	(5; soph., jr., sr.; 3-4, 5 and 6 or 7)				
	Section 1	III	MTWFS	Farm	Anderson
	2	V	MTWThF		Anderson

¹ Given on agricultural campus.² Given on both main and agricultural campuses.

PROGRAM

No.	Title	Hour	Day	Bldg.	Instructor
94f	Office Organization..... (3; jr., sr.; 3-4, 23, 25-26)	V-VI	TTh	102MA	Sykes
95w-96s	Secretarial Administration..... (6; jr., sr.; 94, Shorthand and typewriting. Class limited to 8 persons admitted by instructor)	V-VI	TTh	Ar	Sykes
97f-98w-99s	Seminar in Secretarial Administration.. (6; jr., sr.; 95-96, 3 months' experience or equivalent and permission of instructor; not given 1920-21)				Sykes
103f-104w	Value and Distribution..... (6; jr., sr., grad.; 3-4 or 5 and 6)	VII	MWF	102MA	Garver
105s	History of Economic Ideas..... (3; jr., sr., grad.; 103-104)	VII	MWF	102MA	Garver
107f ¹	Land Economics (5; jr., sr., grad.; 18)	Ar	Ar	Farm	Black
108w ¹	Farm Marketing Problems..... (3; jr., sr., grad.; 89)	II	MWF	Farm	Black, Anderson
109w ¹	Economics of Consumption..... (3; jr., sr., grad.; 3-4 or 5 and 6 or 7)	Ar	Ar	Farm	Black
110s-111f ¹	Practice Course in Marketing..... (3; jr., sr., grad.; 89)	Ar	Ar	Farm	
112f-113w	Technique of Statistical Investigation.. (6; jr., sr., grad.; 14)	II	MWF		Mudgett
116w ¹	Economics of Agricultural Production.. (3; jr., sr., grad.; 18)	II	TThS	Farm	Holmes
117s ¹	Prices of Farm Products..... (3; jr., sr., grad.; 3-4 or 5 and 6 or 7)	II	TThS	Farm	Black, Working
118f-119w-120s	Economic History of Europe and the United States, 1750 to present.... (9; jr., sr., grad.; 15 cr. in economics or history or economics and history combined) See History 113-114-115	II	TThS		Gras
121f-122w-123s	Economic History of Europe..... (Not offered 1920-21)				Gras
125f	Industrial Management (3; jr., sr., grad; consultation with instructor)	See Engineering Bulletin Course 225.3f			
126f-127w-128s ¹	Special Research Problems in Agricultural Economics (9; jr., sr., grad.; consult instructor)	Ar	Ar	Farm	Black, Holmes, Working, Noble
131f	Cost Accounting..... (3; jr., sr.; 25-26)				
	Section 1	II	TThS		
	Section 2	III	TThS		
132w-133s	Industrial Accounting (6; jr., sr.; 131)				Noble
	Section 1	II	TThS		
	Section 2	III	TThS		
134f-135w-136s	Auditing (6; jr., sr., grad.; 137-138-139) (Evening)	Ar	Ar		Rotzel
137f-138w-139s	Accounting Practice and Procedure.... (9; jr., sr.; 25-26)				Heilman
	Section 1	III	MWF		
	Section 2	VI	MWF	102MA	

¹ Given on agricultural campus.

No.	Title	Hour	Day	Bldg.	Instructor
140f-141W-142s	Advanced Accounting Practice and Procedure	Ar	Ar	Ar	Rotzel
	(6; jr., sr., grad.; 137-138-139)				
143f-144W	Money and Banking.....				Dowrie, Ebersole, Stehman
	(10; jr., sr., grad.; 3-4 or 5 and 6)				
	Lecture	IV	TS		
	Section 1	II	TThS	202MA	
	2	III	MWF	209MA	
	3	IV	MWF	209MA	
	4	VII	MTW	209MA	
	5	V	MWF	209MA	
	6	VI	MWF		
145s	International Exchange	II	TThS	202MA	Dowrie
	(3; jr., sr., grad.; 143-144)				
146w	Investments	VIII	MTW	209MA	Ebersole
	(3; jr., sr., grad.; 54, 143-144; School of Business students only)				
146s	Investments	VII	MTW	209MA	Ebersole
	(3; jr., sr., grad.; 54, 143-144)				
147f	Bank Administration.....	VIII	MTW	209MA	Ebersole
	(3; jr., sr., grad.; 143-144)				
149s	Business Cycles	VIII	MTW	209MA	Ebersole
	(3; sr., grad.; 143-144, 54 or 146)				
150s ¹	Farm Finance	II	MWF	Farm	Dowrie
	(3; soph., jr., sr.; 3-4 or 5 and 6)				
153w	Modern Business Corporation.....	III	MWF	202MA	Gray
	(3; jr., sr., grad.; 3-4)				
154s	Public Utilities.....	III	MWF	202MA	Gray
	(3; jr., sr., grad.; 54)				
155w-156s	Valuation	IV	MWF	102MA	Gray
	(6; jr., sr., grad.; 18 cr. in economics)				
157w	Police Power				Young
	(Not offered 1920-21)				
158w	Government and Business.....	III	TThS	102MA	Young
	(3; jr., sr., grad.; 13 cr. in economics or political science)				
160s	Economic Motives.....	VI	MWF		Dickinson
	(3; jr., sr., grad.; 3-4 or 5 and 6 and Psychology 1-2-3 or the equivalent)				
161f	Labor Problems and Trade Unionism..	IV	MWF	202MA	Hansen
	(3; jr., sr., grad.; 3-4 or 5 and 6)				
162w	The Labor Movement in America.....	IV	MWF	202MA	Hansen
	(3; jr., sr., grad.; 161)				
166f	Employment and Personnel Management	II	TThS	109MA	Dickinson
	(3; jr., sr., grad.; 3-4 or 5 and 6 and Psychology 1-2-3 or equivalent)				
167w	Industrial Relations	II	TThS	109MA	Dickinson
	(3; jr., sr., grad.; 3-4 or 5 and 6, and 23)				
169s	Labor and Socialist Movement in Europe	IV	MWF	209MA	Hansen
	(3; jr., sr., grad.; 161)				
175f	Law of Labor.....	V	MWThF		Cushman
	(4; jr., sr., grad.; 13 cr. in economics or political science)				
176f	Commercial Policies	I	MWF	202MA	Blakey
	(3; jr., sr., grad.; 3-4 or 5 and 6)				
177w	Foreign Trade.....	I	MWF	202MA	Blakey
	(3; jr., sr., grad.; 176)				

¹ Given on agricultural campus.

PROGRAM

No.	Title	Hour	Day	Bldg.	Instructor
180f-181w-182s	Accounting Seminar..... (6; jr., sr., grad.; 132-133-134; 137-138-139) (Evening)	Ar	Ar	Ar	Rotzel
183f	Seminar in Business Statistics..... (2; jr., sr., grad.; 112-113 or may be concurrently taken)	Ar	Ar	Ar	Mudgett
184w	Seminar in Business Barometers..... (2; jr., sr., grad.; 112-113 or may be concurrently taken)	Ar	Ar	Ar	Mudgett
191f-192w	Public Finance (6; jr., sr., grad.; 3-4 or 5 and 6)	III	MWF	109MA	Blakey
193s	State and Local Taxation..... (3; jr., sr., grad.; 191-192)	III	MWF	109MA	Blakey
195f-196w-197s	Seminar in Business Finance..... (6; sr., grad.; 18 cr. in economics including 143-144)	VII-VIII	Th	213MA	Dowrie, Ebersole, Stehman
203f-204w-205s	Seminar in Economic Theory..... (9; grad.; 103-104)	VII- $\frac{1}{2}$ VIII	TTh	102MA	Garver
210f-211w-212s	Seminar in Economic History..... (6; grad.; ar.)	Ar	Ar	Ar	Gras
219f-220w-221s ¹	Seminar in Agricultural Economics.... (9; grad.; ar.)	Ar	Ar	Farm	Black, Holmes, Working
261f-262w-263s	Seminar for Graduates Exclusively.... (6; grad.; 12 cr. in advanced courses in Economics)	Ar	Ar		

¹ Given on agricultural campus

NOTE: Classes are held every week-day except Saturday afternoon. Recitation periods are fifty minutes long and begin at eight-thirty (I); nine-thirty (II); ten-thirty (III); eleven-thirty (IV); one-thirty (V); two-thirty (VI); three-thirty (VII); four-thirty (VIII). A general assembly of faculty and students is held at eleven-thirty on certain Thursdays.

The Bulletin *of the University of* *Minnesota*

The Summer Session
Announcement of Courses
June 21 to July 31
1920



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THE SUMMER SESSION

FACULTY

ADMINISTRATION

MARION LeROY BURTON, Ph.D., D.D., LL.D., President¹
WILLIAM WATTS FOLWELL, LL.D., President Emeritus
CYRUS NORTROP, LL.D., President Emeritus
LOTUS D. COFFMAN, Ph.D., Director of the Summer Session, Dean of the
College of Education
EDWARD M. FREEMAN, Ph.D., Vice-Director of the Summer Session, Col-
lege of Agriculture
EDWARD E. NICHOLSON, M.A., Dean of Student Affairs
GUY STANTON FORD, Ph.D., Dean of the Graduate School
JESSIE S. LADD, Dean of Women

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

FRANK M. ANDERSON, Ph.D., (Dartmouth College) Professor of History
GERTRUDE M. BAKER, Instructor in Physical Education for Women
RALPH M. BARTON, B.A., Assistant Professor of Mathematics
JOSEPH W. BEACH, Ph.D., Associate Professor of English
WILLIAM O. BEAL, M.A., M.S., Assistant Astronomer
CAROLINE BEDFORD, B.A., Supervisor of Field Work
LUTHER L. BERNARD, Ph.D., Associate Professor of Sociology
FRANK J. BRUNO, B.A., B.D., Lecturer in Sociology
SOLON J. BUCK, Ph.D., Associate Professor of History
OSCAR C. BURKHARD, Ph.D., Assistant Professor of German
WILLIAM H. BUSSEY, Ph.D., Associate Professor of Mathematics
BERTHA W. CLARK, M.A., Instructor in Americanization
ELBRIDGE COLBY, M.A., Instructor in Rhetoric
ROBERT V. CRAM, B.A., Instructor in Latin
ROBERT E. CUSHMAN, Ph.D., Associate Professor of Political Science
JAMES DAVIES, Ph.D., Assistant Professor of German
MARIE DENEEN, B.A., Instructor in Latin
LYNWOOD G. DOWNS, M.A., Instructor in German
ELIAS J. DURAND, B.A., D.Sc., Professor of Botany
MANUEL C. ELMER, Ph.D., Associate Professor of Sociology
HENRY A. ERIKSON, Ph.D., Professor of Physics
GEORGE FAIRCLOUGH, Instructor in Music
DONALD N. FERGUSON, B.A., Assistant Professor of Music
ROSS L. FINNEY, Ph.D., Assistant Professor of Educational Sociology
JOHN A. FITCH, B.A., (New York School of Special Work) Special Lec-
turer in Sociology
WILLIAM S. FOSTER, Ph.D., Associate Professor of Psychology
FREDERICK B. GARVER, Ph.D., Associate Professor of Economics

¹Resigned July 1, 1920.

- ISAAC W. GEIGER, Ph.D., Assistant Professor of Chemistry
 M. M. GUHIN, (State Director of Americanization for South Dakota)
 Special Lecturer in Americanization
- LAWRENCE M. HENDERSON, Ph.D., Assistant Professor of Chemistry
 LEWIS B. HESSLER, Ph.D., Instructor in Rhetoric
 WILLIAM W. HODSON, B.A., LL.D., (Director Children's Bureau, State
 Board of Control) Special Lecturer in Sociology
- DAVID H. HOLBROOK, M.A., (Director Department Civilian Relief, Ameri-
 can Red Cross) Special Lecturer in Sociology
- MARION S. IRWIN, Instructor in Animal Biology
 ALBERT C. JAMES, M.B.A., Assistant Professor of Economics
 ALBERT E. JENKS, Ph.D., Professor of Americanization
 HARRISON W. JOHNSON, Instructor in Music
 OSCAR W. JUNEK, Ph.D., Assistant Professor of Americanization
 SAMUEL KROESCH, Ph.D., Assistant Professor of German
 IRVILLE C. Lecompte, Ph.D., Professor of Romance Languages
 CHARLES F. LINDSLEY, M.A., Instructor in Rhetoric
 CHARLES E. LIVELY, M.A., Instructor in Sociology
 RUPERT C. LODGE, M.A., Assistant Professor of Philosophy
 FRANK H. MACDOUGALL, Ph.D., Associate Professor of Chemistry
 ROBERT M. MATHEWS, B.A., Instructor in Mathematics
 WALTER R. MYERS, Ph.D., Assistant Professor of German
 ANNE M. NICHOLSON, Ph.D., (Public Schools, San Francisco) Special Lec-
 turer in Americanization
- EVERETT W. OLMSTED, Ph.D., Professor of Romance Languages
 CHESLEY J. POSEY, M.S., Assistant Professor of Geography
 FRANK M. RARIG, M.A., Associate Professor of English
 WILLIAM D. REEVE, B.S., Instructor in Mathematics
 LLOYD H. REYERSON, M.A., Instructor in Chemistry
 ADOLPH RINGOEN, Ph.D., Instructor in Animal Biology
 CARL B. ROEMER, Instructor in Physical Education for Men
 MARTIN B. RUUD, Ph.D., Assistant Professor of Rhetoric
 CHARLES A. SAVAGE, Ph.D., Professor of Greek
 KARL SCHEURER, Instructor in Music
 CARLYLE M. SCOTT, Professor of Music
 LESTER B. SHIPPEE, Ph.D., Assistant Professor of History
 EDWARD H. SIRICH, Ph.D., Assistant Professor of Romance Languages
 W. C. SMITH, Special Lecturer in Americanization
 M. CANNON SNEED, Ph.D., Associate Professor of Chemistry
 GEORGE M. STEPHENSON, Ph.D., Instructor in History
 EMERSON G. SUTCLIFFE, Ph.D., Instructor in Rhetoric
 JOHN T. TATE, Ph.D., Professor of Physics
 MARION A. TEBBETTS, B.A., Supervisor of Field Work
 JOSEPHINE E. TILDEN, M.S., Professor of Botany
 MASON W. TYLER, Ph.D., Assistant Professor of History
 ANTHONY L. UNDERHILL, Ph.D., Assistant Professor of Mathematics
 HOWARD T. VIETS, M.A., Instructor in Rhetoric

FACULTY

5

BERT A. WALLACE, B.A., Instructor in Economics
H. T. WALLER, (Akron, Ohio) Special Lecturer in Americanization
GUY H. WOOLLETT, Ph.D., Instructor in Chemistry
JEREMIAH S. YOUNG, Ph.D., Professor of Political Science
ANTHONY ZELENY, Ph.D., Professor of Physics

COLLEGE OF EDUCATION

EARL BAKER, (Public Schools, Minneapolis) Instructor in Public School Music
MARIE B. DENEEN, B.A., Instructor in Teachers' Course in Latin
ROSS L. FINNEY, Ph.D., Assistant Professor of Educational Sociology
ALBERT GULLETTE, (Public Schools, Minneapolis) Special Lecturer in Education
MELVIN E. HAGGERTY, Ph.D., Professor of Educational Psychology
REWEY BELLE INGLIS, B.A., Instructor in Teachers' Course in English
LEONARD V. KOOS, Ph.D., Professor of Secondary Education
JAMES F. MACKELL, B.A., Instructor in Teachers' Course in Physics
WILFORD S. MILLER, Ph.D., Associate Professor of Education
ARTHUR F. PAYNE, Ph.B., Assistant Professor of Trade and Industrial Education
CHARLES A. PROSSER, Ph.D., (Dunwoody Institute), Special Lecturer in Trade and Industrial Education
ALBERT W. RANKIN, B.A., Professor of Education
WILLIAM D. REEVE, B.S., Instructor in Teachers' Course in Mathematics
RAYMOND W. SIES, Ph.D., Professor of Education
GERTRUDE DUNCAN ROSS, Instructor in Art Education
HOMER J. SMITH, Ph.B., Assistant Professor of Trade and Industrial Education
LYNNE E. STOCKWELL, Instructor in Manual Training
FLETCHER H. SWIFT, Ph.D., Professor of History of Education
MARVIN J. VAN WAGENEN, Ph.D., Assistant Professor of Educational Psychology

UNIVERSITY HIGH SCHOOL

WILFORD S. MILLER, Ph.D., Principal
RUBY M. COON, B.S., Instructor in Domestic Science
MARIE B. DENEEN, B.A., Instructor in Latin
SOPHIA A. HUBMAN, M.A., Instructor in German
REWEY BELLE INGLIS, B.A., Instructor in English
FRANCES M. MOREHOUSE, M.A., Instructor in History
FRED E. PERKINS, Instructor in Manual Training
SAMUEL R. POWERS, M.A., Instructor in Science
WILLIAM D. REEVE, B.S., Instructor in Mathematics
W. RAY SMITH, B.A., Instructor in Mathematics

COLLEGE OF ENGINEERING AND ARCHITECTURE

WILLIAM E. BROOKE, B.C.E., M.A., Professor of Mathematics and Mechanics

- HANS H. DALAKER, B.A., Assistant Professor of Mathematics
 ROBERT W. FRENCH, B.S. in C.E., Assistant Professor of Drawing and Descriptive Geometry
 WILLIAM F. HOLMAN, Ph.D., Associate Professor of Mathematics and Mechanics
 WILLIAM H. KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry
 FREDERICK M. MANN, M.S. in Arch., C.E., Professor of Architecture
 HENRY MARTINSON, Assistant in Mechanical Engineering
 GEORGE C. PRIESTER, B.E., M.S., Assistant Professor of Mathematics and Mechanics
 GEORGE H. PRUDDEN, B.S. in Arch., Instructor in Architecture
 WILLIAM H. RICHARDS, Instructor in Shop and Manual Training
 S. CARL SHIPLEY, M.E., Assistant Professor of Shop and Manual Training

THE MEDICAL SCHOOL

- MOSES BARRON, B.S., M.D., Assistant Professor of Pathology
 LEE W. BARRY, M.D., Assistant Professor of Obstetrics
 ELEXIOUS T. BELL, B.S., M.D., Associate Professor of Pathology
 EDGAR D. BROWN, Phm.D., M.D., Associate Professor of Pharmacology
 JOHN BUTLER, M.D., Assistant Professor of Medicine
 J. FRANK CORBETT, M.D., Associate Professor of Surgery
 LLOYD B. DICKEY, B.S., M.D., Instructor in Anatomy
 CHARLES A. ERDMANN, M.D., Associate Professor of Anatomy
 ESTHER M. GREISHEIMER, Ph.D., Instructor in Physiology
 ARTHUR T. HENRICI, M.D., Assistant Professor of Bacteriology
 ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology
 CLARENCE M. JACKSON, M.S., M.D., Professor of Anatomy
 FRANCIS B. KINGSBURY, Ph.D., Assistant Professor of Physiologic Chemistry
 THOMAS G. LEE, B.S., M.D., Professor of Anatomy
 JESSE B. McCLENDON, Ph.D., Associate Professor of Physiology
 GUSTAVE J. NOBACK, B.S., Instructor in Anatomy
 CHAUNCEY J. V. PETTIBONE, Ph.D., Assistant Professor of Physiological Chemistry
 ANDREW T. RASMUSSEN, Ph.D., Assistant Professor of Neurology
 HARRY P. RITCHIE, Ph.B., M.D., Associate Professor of Surgery
 HAROLD E. ROBERTSON, B.A., M.D., Professor of Pathology
 RICHARD E. SCAMMON, Ph.D., Professor of Anatomy
 FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Professor of Physiology
 THEODORE H. SWEETSER, B.S., M.D., Instructor in Pathology
 ROOD TAYLOR, M.D., Assistant Professor of Pediatrics
 MARGARET WARWICK, B.S., M.D., Instructor in Pathology

GENERAL INFORMATION

The University of Minnesota offers each year a considerable list of courses for summer work. They are planned for college students, for experienced teachers, and for other men and women who seek the advantage of advanced study. This year courses will be offered by the Colleges of Agriculture, Dentistry, Education, Engineering, Science, Literature, and the Arts, the Medical School, and the Graduate School.

ENTRANCE REQUIREMENTS

Statements of the entrance requirements of the various colleges offering work in the summer session will be found in this bulletin in connection with the general announcement of each college.

LOCATION

These summer courses, with the exception of those in agriculture and in home economics, are given on the main campus in Minneapolis and the full equipment of the University in buildings, libraries, laboratories, observatory, and museums is at the service of students, who may in addition, under certain restrictions, use other large public and semi-public libraries both in St. Paul and in Minneapolis.

The climate of the city is especially favorable for summer residence, and in addition the vicinity offers much that is worthy the attention of visitors and students. The neighborhood of the Twin Cities is rich in natural beauty, while the cities themselves, with their parks, lakes, public buildings, libraries, and art galleries, afford students ample opportunities for the profitable use of leisure hours. Numerous personally conducted excursions will be arranged.

ORGANIZATION

The summer session will retain the form of organization in use during the regular college year and all the courses offered will be of college grade. Students will be required to register in colleges in exactly the same manner as during the regular year. Special announcements describing the courses in agriculture and in home economics may be secured by addressing the Secretary, College of Agriculture, University Farm, St. Paul.

For the summer quarter the Related Art Section of the Division of Home Economics offers courses in related art for Smith-Hughes schools.

These courses aim to show the relationship of art principles to everyday life, and to train teachers to a practical working knowledge of these principles so that they may lead their students to realize the place of design in everything they handle. Courses covering the following subject-matter will be given:

Drawing and design
 Costume and interior design
 Art appreciation and history
 House planning and furnishing
 Decorative needlework and other crafts
 Textiles
 Clothing construction courses
 Millinery

COURSES OPEN TO WHOM

The summer courses are arranged not merely for college students, but also for the benefit of experienced teachers.

Courses of special interest to superintendents, principals, and supervisors, and to normal school and college teachers of education are being offered by the College of Education.

All of the courses offered carry university credit, and they amount to much more than the total number of hours required for the Bachelor's degree. By taking advantage of these opportunities teachers and others who have not finished their university work may be enabled to meet a considerable part of the requirements for graduation. Earnest and capable college students, by combining summer study with the courses of the academic year, may with no great difficulty gain in three years the necessary credits for the Bachelor's degree.

GENERAL OFFICES

The office of the director of the summer session is Room 103, Education Building. During registration days the director and members of the faculty may be found in the Library Building. The offices of the registrar and the cashier are on the first floor of the Library Building.

The offices at the College of Agriculture are in Room 209, Administration Building.

ADMISSION

The courses of the summer session are open to all men and women who after consultation with the respective instructors are found qualified to pursue the chosen work to advantage.

Students desiring advanced standing will be expected to file a petition with the Committee on Relations to Other Institutions, showing the credits that they have earned in other institutions.

REGISTRATION

Saturday, June 19, and Monday, June 21, are regular registration days. Students may register on any preceding day. Students should complete registration and be ready for class work before 8 a.m., Tuesday, June 22. After Monday, June 21, students may register by special permission only. No student will be permitted to register after Monday, June 28. To complete registration, fees must be paid the same day.

Those who desire to enroll in arts, education, engineering, dentistry, or medicine will secure their registration blanks in the entrance lobby of the Library Building. They should bring with them their credentials showing from what schools they have been graduated, including particularly their diplomas from high schools, normal schools, or colleges, or their certificates of admission to, and work done in, each of those grades of schools.

Students desiring to enroll in agriculture will secure their registration blanks of the registrar at University Farm.

Any modification of the prescribed program must be made by petition. Undergraduate students seeking admission after Monday, June 21, may be admitted only by petition. These petitions must be filed and approved by Dean E. E. Nicholson, Room 239, Chemistry Building.

CREDITS

A course that recites ten hours a week for six weeks will carry five quarter credits. A course that recites eight hours a week for six weeks will carry four quarter credits, etc. The plan is shown by the following table:

5Q=2 (5x6)=60	recitation hours
4Q= 8 x 6 =48	recitation hours
3Q= 6 x 6 =36	recitation hours
2Q= 4 x 6 =24	recitation hours
1Q= 2 x 6 =12	recitation hours

No student may secure more than nine quarter credits in the six weeks period except by special permission.

DAILY PROGRAM

The hour schedule will be as follows:

I Hour	8:30- 9:20
II Hour	9:30-10:20
III Hour	10:30-11:20
IV Hour	11:30-12:20
V Hour	1:30- 2:20
VI Hour	2:30- 3:20
VII Hour	3:30- 4:20
VIII Hour	4:30- 5:20

GENERAL LECTURES

A series of popular lectures open to the students, faculty, and the general public will be announced in the daily bulletins.

EXERCISE AND RECREATION

The gymnasium, swimming pool, track, and field will be available for men students during the summer session. Arrangements for voluntary instruction may be made with Mr. C. B. Roemer, 204 Armory. No credit will be allowed for this work. A special fee of fifty cents for soap, towels, and lockers will be charged.

SUMMER SESSION

For courses in physical education for women, see page 27 of this bulletin.

FEES

Students are required to pay fees as follows:

Registration fee.....	\$5.00
Tuition fee per credit hour.....	2.00
Additional fee for each laboratory course.....	1.50
Deposit fee.....	5.00
Health fee.....	1.00

Every student will be required to pay at least \$10, including the registration fee of \$5. The unused balance of the deposit fee will be returned at the close of the summer session. All of the courses in medicine and dentistry, and a few courses in other colleges, require special fees.

REFUNDS

The five dollars registration fee is not refunded under any conditions. Students cancelling their registration during the first week of the session may receive a pro rata refund of the credit hour and laboratory fees. Such refund shall not exceed five sixths of the amount paid on these items, and must be approved by the director of the summer session.

No refunds whatsoever shall be made to students who attend more than one week.

EXPENSES

The living expenses for students at the University are never very high, and this is true especially for the summer session. Good accommodations for room and board may be had from \$7 to \$12 per week. A list of boarding places, stating location and prices, will be sent to any address on application to the registrar. It will usually be found more satisfactory to engage accommodations after arrival than to reserve them in advance. Several good restaurants are to be found in the immediate vicinity of the University.

SANFORD HALL

Sanford Hall is situated on the corner of Eleventh Avenue and University Avenue Southeast. It is divided into two distinct houses, East Sanford and West Sanford. East Sanford contains 17 single and 12 double rooms, and accommodates 41 students. West Sanford has 20 single and 13 double rooms, and accommodates 46 students. The building is lighted with electricity, and each room is provided with hot and cold water. Each double room has two closets.

The furniture consists of a cot, with mattress and bedding, one double blanket, a dresser, study table, chair, and rug for each student. Students must supply towels, bureau scarf, couch cover, and extra blanket.

Applications for rooms should be addressed to Miss Helen F. Jackson, Director of Sanford Hall, and will be considered in the order in which they are received. No application will be recorded until a deposit fee of \$2 (to apply on residence fee) is received. This deposit will hold

the room until the day after the opening day of the summer session. A rate of \$2.50 per week is charged for each single room, and \$1.50 per week for each person occupying a double room. Room rent is refunded if notice is received before June 1. Residence fee for remaining time is refunded if the vacancy is taken by some other student.

Regulations.—No articles shall be tacked or fastened in any way to the walls. Pictures and other ornaments must be suspended from the picture moulding. Alcohol lamps and chafing dishes are forbidden. Any use of gasoline, naphtha, or benzine in the building is forbidden. Trunks are not allowed in rooms. Trunk rooms are provided.

Reservations should be made early, certainly not later than May 30.

MINNESOTA UNION

The Minnesota Union will open its building for both men and women of the summer session of 1920. Three meals a day will be provided following the plan which obtains during the regular University year with corresponding prices. The usual facilities offered by the Minnesota Union will be available for all men of the summer session, and special rest rooms, with a matron in charge, will be set aside for the women students.

EXAMINATIONS

At the close of the summer session, examinations for the state professional certificate will be conducted at the state normal schools and at the University of Minnesota by the State Examining Board.

UNIVERSITY POST-OFFICE

The University Post-Office, through which mail addressed to the University is distributed, is in the Mechanic Arts Building. Students are assigned post-office boxes at the time of registration, and should leave forwarding addresses with the postmaster at the close of the session.

KEY TO BUILDINGS

The following abbreviations are used in this bulletin: A, Armory; AB, Animal Biology; C, Chemistry Building; Ed, Education Building; F, Folwell Hall; IA, Institute of Anatomy; Lib, Library Building; MA, Mechanic Arts; ME, Main Engineering Building; Mech E, Mechanical Engineering Building; MH, Millard Hall; Mu, Music Building; P, Pillsbury Hall; Ph, Physics Building; Psy, Psychology Building; WGm, Women's Gymnasium.

For buildings at the University Farm: Ad, Administration Building; Ch, Chemistry Building; DH, Dairy Hall; HE, Home Economics Building; Hr, Horticulture; PP, Plant Pathology Building; St, Stock Pavilion; Ve, Veterinary Building.

INFORMATION

Correspondence with reference to the summer session and requests for circulars and additional information may be addressed to the Registrar, University of Minnesota, Minneapolis, Minnesota.

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

ENTRANCE REQUIREMENTS

1. English, four units, or three units of English accompanied by either four units of one foreign language, or two units each of two foreign languages.

2. Mathematics: elementary algebra, one unit; plane geometry, one unit.

3. Enough additional work to make in all fifteen units, of which not more than four may be in vocational and miscellaneous studies.

Graduates of the advanced graduate course of a Minnesota State Normal School are admitted with advanced standing equivalent to one year's credit, and receive the degree of Bachelor of Arts upon completing in this college one hundred and thirty-five quarter credits, provided they comply with the usual requirements for graduation.

Individual graduates of the advanced Latin course (five years) or of the advanced English course (five years) of a Minnesota State Normal School, who, on the basis of maturity and ability, present from the president of the normal school certificates of special fitness, will be admitted with advanced standing under the same regulations.

Unclassed students.—(1) Persons of mature years engaged in teaching or other occupation, but registered in this college without having satisfied the entrance requirements in full; (2) all others who have been permitted to register for less than eleven hours of work. Only by permission of the Administrative Board and upon the presentation of satisfactory reasons for not taking the regular course will an applicant be admitted as an unclassified student.

For specific and detailed information concerning entrance requirements, consult the bulletin of the College of Science, Literature, and the Arts.

EXPLANATION OF COURSE NUMBERS

All undergraduate courses are numbered from 1 to 100. All courses open to undergraduates and graduates are numbered from 101 to 200. Strictly graduate courses are numbered from 201 up.

STARRED COURSES

Courses marked with an asterisk (*), called starred courses, are courses which are open only to juniors, seniors, and graduate students, and which have at least nine prerequisite credits if the department offers work in the freshman year, and at least six prerequisite credits if the department offers no work in the freshman year. It is provided, however, that courses in foreign languages for which there is a prerequisite of five years in secondary school and college, at least one year of which is in college, shall be starred courses.

For graduation a student must secure during the junior and senior years thirty credits in starred courses.

AMERICANIZATION TRAINING AND ANTHROPOLOGY

Professor ALBERT E. JENKS; Assistant Professor OSCAR W. JUNEK; Instructors BERTHA W. CLARK; Special Lecturers M. M. GUHIN, ANNA M. NICHOLSON, W. C. SMITH, H. T. WALLER.

The object of the extended americanization training course in the University of Minnesota is to equip its students thoroly, both theoretically and practically, for specialized americanization work with adults, primarily with immigrants.

But during the summer session courses are offered to meet the needs of special students who desire to pursue short courses of study. In these courses workers or teachers of experience may secure the knowledge and practical training needed to meet particular phases of americanization work. Special practical courses are also offered for volunteer workers who desire to undertake local americanization service.

COURSES

No. Credit	Title	Offered to	Prerequisite courses
41su 2	Slavic Oral Language..... V MTWTh	Jr., sr. 15F	40 Junek
*114su 3	The Newer Immigrants..... II MTWThFS	Jr., sr., grad. 15F	*113 Jenks, Nicholson
*115su 3	Americanism and Assimila- tion III MTWThFS	Jr., sr., grad. 15F	*114 Jenks
†132su Ar	Supervised Practical Ameri- canization Work..... Ar Ar	Jr., sr., grad. Ar	*113, *114 Clark
38su 3	Race Leaders and Programs. I MTWThFS	Jr., sr. 15F	*113, *114 Clark
*44su 1½	Industrial Americanization... IV MTWThFS (June 21 to July 10)	Jr., sr. Ar	Two courses Waller
*45su 1½	Community Americanization.. IV MTWThFS (July 12 to July 31)	Jr., sr. Ar	Two courses Waller
*51su ½	State Americanization..... VII MTWThFS (June 28 to July 3)	Jr., sr. Ar (South Dakota)	Two courses Guhin
*51su ½	State Americanization..... VII MTWThFS (July 5 to July 10)	Jr., sr. Ar (New York, Pennsylvania, Massachusetts)	Two courses Smith
*155su 3	Americanization Technique and Method VI MTWThFS	Jr., sr., grad. Ar	Two courses Nicholson

† During the summer session this course will not carry graduate credit.

41SU. SLAVIC ORAL LANGUAGE. Slavic linguistic families. A speaking knowledge of a Slavic language is taught, illustrating the methods and technique of teaching our language to adult foreigners in America. JUNEK.

- *114su. THE NEWER IMMIGRANTS. Characteristics, contributions, and distribution of the newer immigrant peoples in America, their modification and importance to us. JENKS.
- *115su. AMERICANISMS AND ASSIMILATION. Essential and unique historical americanisms, and their value and virility for the future in America. Conditions and facts of assimilation. JENKS.
- *132su. SUPERVISED AMERICANIZATION WORK. Practical field work among foreign peoples in our vicinity. CLARK.
- *38su. RACE LEADERS AND PROGRAMS. Studies of racial or national leaders. Preparation of programs, in English, from racial data as means of contact for mutual understanding between Americans and various racial groups in America. CLARK.
- *44su. INDUSTRIAL AMERICANIZATION. The technique, methods, and organization employed in industrial-plant americanization. WALLER.
- *45su. COMMUNITY AMERICANIZATION. The technique, methods, and organization employed in community americanization. WALLER.
- *51su. STATE AMERICANIZATION. The unique and characteristic problems of official state americanization (South Dakota). GUHIN.
- *51su. STATE AMERICANIZATION. The unique and characteristic problems of official state americanization (New York, Pennsylvania, Massachusetts). SMITH.
- *155su. AMERICANIZATION TECHNIQUE AND METHOD.

For courses in Anatomy, see pages 55 to 57, Medical School.

ANIMAL BIOLOGY

Instructors MARION S. IRWIN, ADOLPH RINGOEN.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	5	General Zoology (first half)...	All	None
		I-IV MTWThF	212, 101AB	Irwin
2su	5	General Zoology (second half)...	All	None
		I-IV MTWThF	313, 101AB	Ringoen

GENERAL ZOOLOGY. A survey of the animal kingdom, emphasizing the principles of development and structure in relation to functions and habit, heredity and evolution, and the animals of economic importance. Lecture, laboratory, and quizzes.

ASTRONOMY

Assistant Astronomer WILLIAM O. BEAL.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
11su	5	Descriptive Astronomy III MTWThF V MTWThF	Soph., jr., sr. 124F	None Beal
25su	3	Stellar Astronomy IV MTWThFS	Soph., jr., sr. 124F	11 Beal
62su	3	Elements of Pract. Astronomy. Ar Ar	Jr., sr. 124F	1 yr. math. and 3 cr. in astronomy Ar

11su. DESCRIPTIVE ASTRONOMY. A course of lectures and recitations on the general principles of astronomy, illustrated by lantern slides and by the use of the telescope. BEAL.

25su. STELLAR ASTRONOMY. Review of present state of knowledge concerning the stars. Positions, proper motions, parallaxes, spectra, radial velocities, group and stream motions, brightness, color, and temperatures of the stars. Binaries. Variables. Clusters. Nebulae. Theories of stellar evolution. BEAL.

*62su. ELEMENTS OF PRACTICAL ASTRONOMY. Theory and use of astronomical instruments in determining time, latitude, longitude, azimuth, and positions of heavenly bodies. BEAL.

For courses in Bacteriology, see page 60, Medical School.

BOTANY

Professors ELIAS J. DURAND, JOSEPHINE E. TILDEN.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	3	General Botany Lect. I TWThF Lab. II-III TWThF	All P	None Durand
2su	3	General Botany Lect. V TWThF Lab. VI-VII TWThF	All P	None Durand
123su	3	Algae: Blue-green I-II MTWThF	Jr., sr., grad.	15 cr. Tilden
124su	3	Algae: Green III-IV MTWThF	Jr., sr., grad.	15 cr. Tilden

1su. GENERAL BOTANY. The general morphology of the flowering plants. DURAND.

2su. GENERAL BOTANY. General anatomy and physiology of the flowering plants. DURAND.

123su. MORPHOLOGY AND TAXONOMY OF THE ALGAE, MYXOPHYCEAE. Advanced studies in selected groups of the blue-green algae. Lectures, reports, discussion of current literature, and laboratory work. TILDEN.

124su. MORPHOLOGY AND TAXONOMY OF THE ALGAE, PHAEOPHYCEAE. Advanced studies in selected groups of green algae. Lectures, reports, discussions of current literature, and laboratory work. TILDEN.

CHEMISTRY

Associate Professors FRANK H. MACDOUGALL, M. CANNON SNEED; Assistant Professors ISAAC W. GEIGER, LAWRENCE M. HENDERSON; Instructors LLOYD H. REYERSON, GUY H. WOOLLETT.

COURSES

No.	Credit	Title		Prerequisite courses
1su, 2su	4	Gen. Inorganic Chem.		None
		Lect. II MTWThFS	225C	Henderson
4su, 5su	4	Gen. Inorganic Chem.		High-school chemistry
		Lect. II MTWThFS	325C	Reyerson
6su, 7su	5	Gen. Inorganic Chem.		None
		Lect. II MTWThFS	225C	Henderson
9su, 10su	5	Gen. Inorganic Chem.		High-school chemistry
		Lect. II MTWThFS	325C	Reyerson
11su	4	Qualitative Analysis		3 or 5
		Lect. II MTWThFS	111C	Sneed
12su	5	Qualitative Analysis		8 or 10
		Lect. II MTWThFS	111C	Sneed
19su	3	Teachers' Course		
		IV MTWThFS	315C	Geiger
20su	3	Quantitative Analysis		11 or 12
		Lect. V T	315C	Geiger
31su, 32su	4	Organic Chemistry		11 or 12
		Lect. I MTWThF	111C	Woollett
40su	4	Physical Chemistry		31-32
		Lect. I MTWThF	225C	MacDougall
		Lab. II-IV MTWTh	117C	

*1su, 2su. GENERAL INORGANIC CHEMISTRY. For those who have had no high-school chemistry. General laws of chemistry and of the non-metals and their compounds. 2su. Continuation of Course 1su. Either course may be taken separately. Six lectures or recitations, and eight hours of laboratory work per week. HENDERSON.

*4su, 5su. GENERAL INORGANIC CHEMISTRY. Designed for those who have had one year of high-school chemistry. A study of the general laws of chemistry and of the non-metals and their compounds. 5su. Continuation of Course 4su. Either course may be taken separately. Six lectures or recitations and eight hours of laboratory work per week. REYERSON.

- *6su, 7su. GENERAL INORGANIC CHEMISTRY. For those who have had no high-school chemistry. General laws of chemistry and of the non-metals and their compounds. 7su. A continuation of Course 6su. Either course may be taken separately. Six lectures or recitations and twelve hours of laboratory work per week. HENDERSON.
- *9su, 10su. GENERAL INORGANIC CHEMISTRY. Designed for those who have had one year of high-school chemistry. General laws of chemistry and non-metals and their compounds. More intensive than 6su and 7su. 10su. Metals and their compounds. Either course may be taken separately. Six lectures or recitations and twelve hours laboratory work weekly. REYERSON.
- 11su. QUALITATIVE CHEMICAL ANALYSIS. Laboratory work in systematic qualitative analysis with lectures on solutions, ionizations, chemical and physical equilibrium, oxidation and reduction, etc. For students who satisfy the requirements of general chemistry. Six lectures or recitations and eight hours of laboratory work per week. SNEED.
- 12su. QUALITATIVE CHEMICAL ANALYSIS. Laboratory work in systematic qualitative analysis with lectures on solutions, ionization, chemical and physical equilibrium, oxidation and reduction, etc. For students who satisfy the requirements of general chemistry. Six lectures or recitations and twelve hours of laboratory work per week. SNEED.
- 19su. TEACHERS' COURSE. Consideration of the fundamental principles of chemistry with particular reference to the teaching of chemistry in the high school. Discussion of such topics as training of the teacher, laboratory equipment, etc. Six lectures per week. GEIGER.
- 20su. QUANTITATIVE CHEMICAL ANALYSIS. Introductory courses covering the general principles and methods both gravimetric and volumetric. Typical problems will be assigned and attention given to proper laboratory practice. One lecture, fifteen hours laboratory work per week. GEIGER.
- †31su, 32su. ORGANIC CHEMISTRY. Intended primarily for students who wish to take work corresponding to Chemistry 31 and 32. Five lectures, two recitations, and eighteen hours laboratory work per week for ten weeks. Either course may be taken separately. WOOLLETT.
- 40su. PHYSICAL CHEMISTRY FOR MEDICAL STUDENTS. Four credits. Five lectures, twelve hours laboratory weekly for six weeks. For sophomore pre-medical students in place of first quarter's work in freshman year of Medical School. Limited to forty students. Credits may be applied only to course in Medical School. MACDOUGALL and Assistant.

†Given the second term of the summer quarter.

SUMMER SESSION

ECONOMICS

SCHOOL OF BUSINESS

Associate Professor FREDERICK B. GARVER; Assistant-Professor ALBERT C. JAMES; Instructor BERT A. WALLACE.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
3su	3	Principles of Economics..... Sec. 1, I MTWThFS	Jr., sr. 209MA	None
		Sec. 2, III MTWThFS	209MA	
4su	3	Principles of Economics..... II MTWThFS	Soph., jr., sr. 202MA	3
85su	3	Principles of Marketing..... III MTWThFS	Jr., sr. 202MA	3-4
104su	3	Advanced Economics II MTWThFS	Sr., grad. 209MA	3-4
161su	3	Labor Problems I MTWThFS	Jr., sr., grad. 202MA	3-4

3su. PRINCIPLES OF ECONOMICS. (Elementary course.) Principles that underlie the present industrial order with reference to production and consumption. Application of these principles to corporations and trusts, with a brief study of money and banking. WALLACE.

†4su. PRINCIPLES OF ECONOMICS. (Elementary course continued.) A study of principles with reference to value and distribution. Application of these principles to current economic problems—railways, public ownership, taxation. JAMES.

85su. PRINCIPLES OF MARKETING. Principles of marketing. Domestic merchandising method of manufacturers. Problems of wholesalers and commission men; distributing system and market organization. Price policies. JAMES.

Ec.104su. ADVANCED ECONOMICS. An advanced course in economic theory devoted chiefly to the study of recent theories of wages, interest, rent, and profits. GARVER.

Ec.161su. LABOR PROBLEMS. The principal topics are: The present wage system, woman and child labor, the minimum wage, labor legislation, labor unions, boycotts, conciliation, arbitration, recent labor movements. GARVER.

†Students who have already completed 3s or its equivalent may elect 4su and complete prerequisites Economics 3-4.

ENGLISH, RHETORIC, AND PUBLIC SPEAKING

Associate Professors JOSEPH W. BEACH, FRANK M. RARIG; Assistant Professor MARTIN B. RUUD; Instructors ELBRIDGE COLBY, LEWIS B. HESSLER, CHARLES F. LINDSLEY, EMERSON G. SUTCLIFFE, HOWARD T. VIETS.

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS 19

COURSES IN ENGLISH

No.	Credit	Title	Offered to	Prerequisite courses
4su	4	Old English	Soph., jr., sr.	1-2-3 or A-B-C
		I MTWThFS	205F	Beach
8su	4	Beginning Shakespeare	Soph., jr., sr.	1-2-3 or A-B-C
		II MTWThFS	204F	Sutcliffe
53su	4	Seventeenth Century Lyrists....	Soph., jr., sr.	1-2-3 or A-B-C
		I MTWThFS	204F	Ruud
58su	4	Nineteenth Century Prose.....	Soph., jr., sr.	1-2-3 or A-B-C
		IV MTWThFS	204F	Beach
107su	4	Eighteenth Century Prose.....	Soph., jr., sr.,	1-2-3 (or A-B-C) and 8
			grad.	cred. in courses num-
				bered below 10
		III MTWThFS	204F	Ruud

4su. OLD ENGLISH. The language, with reading of representative selections of Old English prose and poetry. The relation to modern English is particularly emphasized. BEACH.

8su. SHAKESPEARE. An introductory study of Shakespeare's work as poet and dramatist up to *King Lear*, with reading of representative plays. SUTCLIFFE.

53su. SEVENTEENTH CENTURY LYRISTS. The tradition of Elizabethan lyric traced in the work of the metaphysical and cavalier schools of poetry. RUUD.

58su. NINETEENTH CENTURY PROSE. Studies in the more important prose writers of the nineteenth century, with reference to their styles, personalities, opinions, and relations to their period. Readings by students, and essays on approved topics. BEACH.

107su. EIGHTEENTH CENTURY PROSE. The rise of naturalism and romanticism. Lectures on eighteenth century prose and prose writers from Defoe to Richardson, with special reference to the rise and growth of naturalism and romanticism. RUUD.

COURSES IN RHETORIC

No.	Credit	Title	Offered to	Prerequisite courses
Asu	3	Freshman English (1st quarter)		
		I MTWThF and		
		III MTWThF	305F	Colby
Bsu	3	Freshman English (2d quarter)		
		II MTWThFS and		
		VI TWThF	303F	Hessler
5su	3	Composition for Technical Students (2nd quarter) (Continuation of Rhet. 1 or Rhet. 4)		
		I MTWThFS	306F	Viets
12su	3	Descriptive Writing		A-B-C or 1-2-3 or 4-5-6
		III MTWThFS	306F	Viets
111su	3	Biographical Essay		11-12-13 or 15-16-17
		II MTWThFS	305F	Sutcliffe

Asu. FRESHMAN ENGLISH. The study of the fundamental principles of composition; training in the art of writing; an historical survey of

the classics of English literature. This course carries university credit for the first quarter of English-Rhetoric A-B-C. COLBY.

BSU. FRESHMAN ENGLISH. A continuation of ASU. This course carries university credit for second quarter of English-Rhetoric A-B-C. HESSLER.

5SU. COMPOSITION AND RHETORIC. Practical training in the art of writing, study of principles of structure, analysis of specimens of good prose. This course carries university credit for second quarter of Rhetoric 4-5-6, or of Rhetoric 1-2-3 of preceding years. VIETS.

12SU. DESCRIPTIVE WRITING. The study and imitation of selected specimens of various forms of descriptive writing, with original work in the form of short themes and longer essays. Open to those who have credit for Rhetoric A-B-C, 1-2-3, or 4-5-6. This course carries university credit for the second quarter of Rhetoric 11-12-13. VIETS.

*111SU. BIOGRAPHICAL ESSAY. Portrayal of contemporary and historical figures. Themes; exercises; analysis of specimens. Open to those who have credit for Rhetoric 11-12-13 or 15-16-17. This course carries university credit for the first quarter of Rhetoric 111-112-113. SUTCLIFFE.

COURSES IN PUBLIC SPEAKING

No.	Credit	Title	Offered to	Prerequisite courses
41su	3	Public Speaking (1st quarter)..		
		II MTWThFS	308F	Rarig
		III MTWThFS	308F	Lindsley
42su	3	Public Speaking (2d quarter)..		
		I MTWThFS	308F	Lindsley
81su	3	Interpretative Reading		
		IV MTWThFS	308F	Rarig

41SU. PUBLIC SPEAKING. Fundamentals of effective speaking; breathing, voice production, enunciation, action; delivery of extracts from works of well-known writers and speakers; principles underlying speech-making applied in oral and written compositions. Limited to twenty-five. For those having credit for Rhetoric 1-2-3, or A-B-C. Carries university credit for first quarter of Public Speaking 41-42-43. RARIG, LINDSLEY.

42SU. PUBLIC SPEAKING. This course is a continuation of 41. Open to those who have had the equivalent of the first quarter of 41-42-43. It carries university credit for the second quarter of 41-42-43. LINDSLEY.

81SU. INTERPRETATIVE READING. The interpretation and oral expression of the various forms of literature, such as the essay, the short story, lyric and narrative poetry, and the drama. Open to juniors and seniors who have credit in Rhetoric 1-2-3, or A-B-C, and Public Speaking 41-42-43, or their equivalent. This course carries university credit for the first quarter of Public Speaking 81-82-83. RARIG.

GEOLOGY

Assistant Professor CHESLEY J. POSEY.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
37su	3	Economic and Commercial Geog. I MTWThFS	All 210P	None Posey
118su	3	Geography of Europe..... III MTWThFS	All 210P	None Posey

37su. ECONOMIC AND COMMERCIAL GEOGRAPHY. A study of the world production of food stuffs and of the methods used in manufacture; the factors of environment influencing production and trade; and the more important trade routes. Carries university credit. POSEY.

118su. GEOGRAPHY OF EUROPE. Regional geography of Europe; the geology, topography, climate, natural resources, people, industries, and trade of European countries. Carries university credit. POSEY.

GERMAN

Assistant Professors OSCAR C. BURKHARD, JAMES DAVIES, SAMUEL KROESCH, WALTER R. MYERS; Instructor LYNWOOD G. DOWNS.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	5	Beginning		None
		I and II MTWThF	207F	Myers
2su	5	Beginning, Intermediate		Course 1, or 5, or 1 yr. prep
		I and II MTWThF	209F	Kroesch
3su	5	Beginning, Advanced.....		Course 2 or 7
		I and II MTWThF	212F	Davies
10su	5	Rapid Reading		Course 3 or 2 yrs. prep.
		I and II MTWThF	213F	Downs
31su	3	Medical German		Course 10 or Course 12
		I and II MWF	209½F	Burkhard
32su	3	Medical German, continued....		Course 31
		I and II TThS	209½F	Ar
150su	3	Graduate (Novelle)		
		Ar Ar	210F	Burkhard

1su. BEGINNING. Pronunciation, grammar, conversation, and composition; selected readings in easy prose and verse.

2su. BEGINNING, INTERMEDIATE. Continuation of Course 1.

3su. BEGINNING, ADVANCED. Selected texts from modern writers.

10su. RAPID READING. Modern narrative prose.

31su. MEDICAL GERMAN. Readings from general works on physiology, anatomy, and bacteriology.

32su. MEDICAL GERMAN. Continuation of Course 31.

SUMMER SESSION

150su. DIE NOVELLE. A study of the technique and development. Assigned readings and reports.

GREEK

Professor CHARLES A. SAVAGE.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
60su	2	Greek Sculpture	All	None
		II MTWTh	114F	Savage
62su	2	Greek Literature and Life....	All	None
		III MTWTh	114F	Savage
63su	2	Greek Mythology	All	None
		IV MTWTh	114F	Savage

Courses open to all. No knowledge of Greek required.

60su. GREEK SCULPTURE. Development of Greek sculpture from its beginnings will be traced; famous statues, friezes, reliefs, and monuments will be shown and described; the personalities of the great sculptors, and their special contributions to art, will be considered.

62su. GREEK LITERATURE AND LIFE. Lectures, textbook work, illustrative and assigned readings. The character and influence of Greek culture, especially in literature, philosophy, and art, will be discussed; the whole course will be richly illustrated with the stereopticon.

63su. GREEK MYTHOLOGY. Lectures, readings, and textbook work dealing with the legends which appear in the literature and art of ancient Greece; stereopticon illustrations. The myth will be presented and interpreted; its origin, evolution, and influence will be discussed.

HISTORY

Professor FRANK M. ANDERSON; Associate Professors SOLON J. BUCK, LESTER B. SHIPPEE, MASON W. TYLER; Instructor GEORGE M. STEPHENSON.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
2Asu	2½	Modern World	All	None
		MTWThF	Lib	Stephenson
2Bsu	2½	Modern World	All	None
		MTWThF	Lib	Anderson
15su	3	United States since 1865....	Soph., jr., sr.	None
		MTWThFS	Lib	Shippee
*109su	3	Imperialism	Jr., sr., grad.	15 cred. in hist. or pol. sci. or both
		MTWThFS	Lib	Tyler
*113	3	American Immigration.....	Jr., sr., grad.	15 credits
		MTWThFS	Lib	Stephenson
*114su	3	United States, 1787-1815....	Jr., sr., grad.	15 credits
		MTWThFS	Lib	Shippee

No.	Credit	Title	Offered to	Prerequisite courses
*118su	3	World Politics MTWThFS	Jr., sr., grad. Lib	15 credits Anderson
*166su	3	Select Topics, Amer. History Ar	Sr., grad. Ar	See statement Shippee
*167su	3	Select Topics, Immigration.. Ar	Sr., grad. Ar	See statement Stephenson
*168su	3	Select Topics, European Hist. Ar	Sr., grad. Ar	See statement Anderson, Tyler
*170su	3	Select Topics, Minn. History Ar	Sr., grad. Ar	See statement Buck

2ASU. MODERN WORLD, 1789-1848. An historical survey dealing chiefly with those political, social, and economic movements which have combined to create the present-day world. STEPHENSON.

2BSU. MODERN WORLD, 1848-1920. A survey of the past three quarters of a century, touching political, social, and economic currents. ANDERSON.

NOTE. History 2A and 2B may be taken as separate courses. Those desiring to complete a quarter's work in an elementary course of the department may take both History 2A and 2B simultaneously. The combination is open both to those who have taken and those who have not taken History I in regular course; the latter may take History I at a later date.

15SU. UNITED STATES SINCE THE CIVIL WAR. A general survey of the period from 1865 to the present. SHIPPEE.

*109SU. IMPERIALISM WITH SPECIAL REFERENCE TO THE FAR EAST. A study of the motives and course of European imperialism with especial reference to the Far East. Lectures and discussions. A reading knowledge of French or German will be useful but not necessary.

*113SU. HISTORY OF AMERICAN IMMIGRATION. European background and causes of emigration; European and American legislation with reference to emigration and immigration: political, social, economic, and religious activity of important racial stocks; the American attitude toward the foreign-born. STEPHENSON.

*114SU. UNITED STATES HISTORY, 1787 to 1815. A study of the inauguration of the constitutional period, the republican revolution and the political, social, and economic factors leading to the War of 1812, and the situation during the war. SHIPPEE.

*118SU. WORLD POLITICS SINCE 1870. A consideration of the international situation in Europe beginning with the Franco-Prussian War, with especial reference to Anglo-French relations. ANDERSON.

*166SU. SELECT TOPICS IN AMERICAN HISTORY, 1787-1815. An intensive course open to advanced students who will be guided through conferences and criticism in the investigation of assigned topics. Students will be required to attend meetings of History *114su. SHIPPEE.

- *167su. SELECTED TOPICS IN THE HISTORY OF IMMIGRATION. An intensive course open to advanced students who will be guided through conferences and criticism in the investigation of assigned topics. Students will be required to attend meetings of History *113su. STEPHENSON.
- *168su. SELECT TOPICS IN EUROPEAN HISTORY, 1870-1920. An intensive course open to advanced students who will be guided through conferences and criticism in the investigation of assigned topics. Students will be required to attend meetings of History *118su or *109su. ANDERSON, TYLER.
- *170su. SELECT TOPICS IN MINNESOTA HISTORY. An intensive course open to advanced students who will be guided through conferences and criticism in the investigation of assigned topics. BUCK.

LATIN

Instructors ROBERT V. CRAM, MARIE B. DENEEN.

COURSES

No.	Credit	Title		Prerequisite courses
1su	4	†Beginning Latin		None
		I	MTWTh	109F Cram
11su	2	Selections		2 to 4 yrs. prep. of Latin
		II	MTWTh	109F Cram
81su	3	Teachers' Course		Without credit 4 yrs. high-school Latin. With credit, Courses 51-53 or equiv.
		II	MTWThFS	101Ed Deneen
211su	Ar	Graduate Seminar		Advanced prep.
		Ar	Ar	Ar Cram

- †I. BEGINNING LATIN. The first part of the course is spent in mastering forms. The remainder is devoted to the reading of easy Latin and the study of elementary syntax. CRAM.
- 11su. SELECTIONS. Work will be selected to meet the needs of the individual students who register for the course. CRAM.
- 81su. TEACHERS' COURSE. Methods of presenting difficult points in syntax. Reports on supervised study, direct method, derivatives. Comparison of Caesar's Gallic War and the modern war. Making of Latin scrapbook. DENEEN.
- 211su. GRADUATE SEMINAR. Special supervised work will be provided for students with advanced standing. CRAM.

†Students who select this course are advised to reserve the II and III hours as study periods.

For courses in Manual Training see statement on page 39 and 40, College of Education.

MATHEMATICS

Associate Professor WILLIAM H. BUSSEY; Assistant Professors RALPH M. BARTON, ANTHONY L. UNDERHILL; Instructors ROBERT M. MATHEWS, WILLIAM D. REEVE.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	5	Higher Algebra III, IV MTWThF	125F	1 yr. elem. alg. Barton, Mathews
2su	5	College Algebra I, II MTWThF	102F	1 or prep. higher algebra Mathews
6su	5	Trigonometry III, IV MTWThF	104F	1 or prep. higher algebra Bussey
30su	5	Analytic Geometry I, II MTWThF	125F	2 and 6 Barton
50su	5	Calculus I II, III MTWThF	101F	30 Underhill
54su	4	Teachers' Course V, VI TWThF	113Ed	50 Reeve
70su	2	Hist. of Elem. Mathematics.. I TWThF	101F	30 Bussey
165su	3	Selected Topics in Adv. Math. Ar Ar Ar	Ar	See statement Bussey, Underhill

1su. HIGHER ALGEBRA. A review and a collegiate treatment of the topics of elementary algebra for those who have had one year of elementary algebra. Not open to those who presented higher algebra for entrance. BARTON, MATHEWS.

2su. COLLEGE ALGEBRA. Quadratic equations, equations in the quadratic form, simultaneous quadratic equations, graphical representation, progressions, mathematical induction, the binomial theorem, permutations, combinations, probability, determinants, and the theory of equations with special reference to graphical methods. MATHEWS.

6su. TRIGONOMETRY. Logarithms and plane trigonometry. BUSSEY.

30su. ANALYTIC GEOMETRY. The elements of plane analytic geometry including the geometry of the conic sections, with a brief introduction to solid analytic geometry. BARTON.

50su. CALCULUS I. Differential calculus. UNDERHILL.

54su. TEACHERS' COURSE. For students preparing to become teachers of secondary school mathematics. Lectures, readings, discussions, methods of presentation, assignments, lesson plans, examinations, plans for beginning courses in elementary algebra and plane geometry. Aims and outcomes of education. REEVE.

70su. HISTORY OF ELEMENTARY MATHEMATICS. A brief course in the history of arithmetic, algebra, and geometry intended primarily for those who are preparing to teach high-school mathematics. BUSSEY.

165su. SELECTED TOPICS IN ADVANCED MATHEMATICS. An intensive course open to seniors and graduates who will be guided through conferences and criticisms in the study of assigned topics. Differential and integral calculus are prerequisites. BUSSEY, UNDERHILL.

MUSIC

Professor CARLYLE M. SCOTT; Assistant Professor DONALD N. FERGUSON; Instructors EARL L. BAKER, GEORGE FAIRCLOUGH, HARRISON W. JOHNSON, KARL SCHEURER.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	3	Harmony		
		Ar	Ar	Ferguson
3su	3	Harmony		1W-2S
		Ar	Ar	.....
75su	3	Public-School Music.....		
		I, II	MTW	Baker
78su	3	Adv. Public-School Music....		
		III, IV	MTW	Baker
39su	2	Piano		
		Ar	Ar	Johnson
63su	2	Voice		
		Ar	Ar	.....
51su	2	Violin		
		Ar	Ar	Scheurer
100su	2	Organ		
		Ar	Ar	Fairclough

1su. HARMONY. The study of chords, their construction, relations and progressions. Written exercises on basses, the harmonization of given melodies. FERGUSON.

3su. HARMONY. Advanced harmony. Study of suspensions, modulations, etc.

75su. PUBLIC-SCHOOL MUSIC. See statement under Education.

78su. ADVANCED PUBLIC-SCHOOL MUSIC. See statement under Education.

39su. PIANO. Open to those who have mastered technical difficulties of the degree of Czerny's *School of Velocity* and the easier Haydn and Mozart sonatas. (Two lessons a week.) (Fee, \$24.) JOHNSON.

63su. VOICE. Thoro training in relaxation and breath control, the foundation of tone production. Advantages offered to advanced singers in study of the best in vocal literature, songs, oratorio, and opera. (Two lessons a week.) (Fee, \$24.)

51su. VIOLIN. Open to students who are qualified to play the first ten of Kreutzer's *Forty Etudes*, and the easier Handel and Mozart sonatas. (Two lessons a week.) (Fee, \$24.) SCHEURER.

100SU. ORGAN. Open to students who play piano music of an intermediate grade. (Two lessons a week.) (Fee, \$24.) FAIRCLOUGH.

All courses offered in the Music Department are open to juniors and seniors, who are not registered as regular music students.

PHILOSOPHY

Assistant Professor RUPERT C. LODGE.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
*20SU	3	Present-Day Philosophy	Jr., sr.	10 credits in phil. or psych. 1-2-3
		I MTWThFS	322F	.....
*135SU	3	Philosophy of Plato.....	Jr., sr., grad.	10 credits in phil. or psych. 1-2-3
		II MTWThFS	316F	.....

*20SU. PRESENT-DAY PHILOSOPHY. An untechnical discussion of the most important types of contemporary philosophy. Among the men and movements included are: Royce, James, Eucken, Bradley, Bergson, Neo-Realism, Instrumentalism.

*135SU. THE PHILOSOPHY OF PLATO. The reading and discussion of the principal dialogs (in English) with a view to understanding the problem and method of Greek philosophy as illustrated in the writings of Plato.

PHYSICAL EDUCATION FOR WOMEN

Instructor GERTRUDE M. BAKER.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1SU	1	Physical Training for Elementary Children	All	None
		I MTWThFS	WGm	Baker
2SU	1	Physical Training for Secondary Children.....	All	None
		II MTWThFS	WGm	Baker
3SU	0	Beginning and Adv. Swimming	All	None
		VII, VIII TTh	WGm	Baker
4SU	0	General Swimming	All	None
		VII, VIII MWF	WGm	.....
		Ar TTh.		

1SU. GYMNASTICS, GAMES AND FOLK DANCING FOR ELEMENTARY CHILDREN. Suitable for schoolrooms, halls, and playgrounds. Methods of teaching. Gymnasium shoes required, gymnasium costumes recommended. BAKER.

- 25SU. GYMNASIACS, GAMES, AND FOLK DANCING FOR SECONDARY CHILDREN. Suitable for schoolrooms, halls, and playgrounds. Methods of teaching. Gymnasium suits and shoes required. BAKER.
- 3SU. BEGINNING AND ADVANCED SWIMMING. Technique of various simple strokes and dives. Fee \$3, including towels and bath sheets. BAKER.
- 4SU. GENERAL SWIMMING. Fee, one ticket for fifteen cents, seven tickets for \$1, including towels and bath sheets.

PHYSICS

Professors HENRY A. ERIKSON, JOHN T. TATE, ANTHONY ZELENY; Instructor JAMES F. MACKELL.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
21 <u>SU</u>	3	Elements of Mechanics..... Lect. I WF Rec. I-II TThS	30Ph 17Ph	Pl. trig. Tate Tate
22 <u>SU</u>	1	Mechanics Lab. Practice..... Lab. III-IV WF	23Ph	21 or reg. in 21 Tate
61 <u>SU</u>	3	Magnetism and Electricity.... Lect. I TTh Rec. I-II MWF	30Ph 17Ph	21 Zeleny Zeleny
62 <u>SU</u>	1	Magnetism and Elec. Lab..... Lab. III-IV TTh	32Ph	22, 61, or reg. in 61 Zeleny
91 <u>SU</u>	3†	Teachers' Course V-VI MWF		Mackell
171 <u>SU</u>	3	Radioactivity I-II MWF		12 credits in physics Erikson
181 <u>SU</u>	3	Advanced Physical Measure- ments V-VII MWF		12 credits in physics Erikson

† See statement page 38, College of Education.

- 21SU. ELEMENTS OF MECHANICS. Mechanics of solids, liquids, and wave motion. Study of the simple fundamental principles. The first part of the general Course 21, 41, 51, 61. Course 22 should be taken in conjunction with this course. Part of the required work in physics in the pre-medical and engineering courses. TATE.
- 22SU. MECHANICS LABORATORY PRACTICE. Measurements in the mechanics of solids, liquids, and wave motion. The laboratory part supplementing Course 21. TATE.
- 61SU. MAGNETISM AND ELECTRICITY. A study of the principles underlying magnetic and electrical phenomena. Course 62 should be taken in conjunction with this course. This course is a part of the required work in physics in the pre-medical and engineering courses. ZELENY.
- 62SU. ELECTRICAL MEASUREMENTS. The laboratory part supplementing Course 61. ZELENY.

91su. See statement under Education, Department of Theory and Practice of Teaching, page 39 of this bulletin.

171su. RADIOACTIVITY. Lectures, experimental and descriptive; the various theories and methods of investigation. ERIKSON.

181su. ADVANCED PHYSICAL MEASUREMENTS. Individual work in the laboratory on topics specially chosen to serve the best needs and capacity of each student. ERIKSON.

For courses in Physiology see statement on pages 57 to 58, Medical School.

POLITICAL SCIENCE

Professor JEREMIAH S. YOUNG; Associate Professor ROBERT E. CUSHMAN.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	4	American Government III, V MTWTh	All 102MA	None Young
7su	4	State and Local Government. IV, VI MWThF	Soph., jr., sr. 102MA	1 or 18 Cushman
*51su	2	Business Law	Soph., jr., sr.	10 cr. in pol. sci. or 10 cr. in ec. or 5 cr. in each or consent of in- structor
		IV MTWTh	104MA	.....
*157su	2	American Social Problems and the Constitution	Jr., sr., grad.	13 cr. in pol. sci. or eco- nomics or sociology or consent of instr. Cushman
		V MWThF	104MA	

1su. AMERICAN GOVERNMENT. Preparation for advanced course in political science, teaching in secondary schools, and good citizenship. Organization and actual workings of national government. Recent tariff act, new financial and banking legislation, trade commission act. Carries university credit for Political Science 1. YOUNG.

7su. STATE AND LOCAL GOVERNMENT. A comparative study of American state governments. The adoption and amendment of constitutions; organizations, powers, and methods of the three departments; problems of administrative reorganization. This course carries university credit for Political Science 7. CUSHMAN.

*51su. BUSINESS LAW. Contracts (the fundamental subject in business law). Essentials in their formation, classification, interpretation, breach, discharge, and practical application. Special attention to teaching business law in high schools. Carries part credit for Political Science *51. YOUNG.

*157su. AMERICAN SOCIAL PROBLEMS AND THE CONSTITUTION. Nature of police power; limitations upon power of state and nation to legislate to protect public health, morals, and safety; constitutionality of labor

legislation; government control of industry. Carries part credit for Political Science *157. CUSHMAN.

PSYCHOLOGY

Associate Professor WILLIAM S. FOSTER.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	4°	General Psychology	Soph., jr., sr.	None
		II MTWThF	211Psy	.....
		IV MWF		
10su	2	Memory and Learning.....	Soph., jr., sr.	Elem. psych.
		III MTWTh	115Psy	.....

1SU. GENERAL PSYCHOLOGY. The fundamental facts and laws of mental life, with emphasis upon the results of experimental method. Demonstrations and class experiments, illustrative in character. (Counts one half credit toward the University Teachers' Certificate.) FOSTER.

10SU. MEMORY AND LEARNING. Sensitivity; reflex and instinctive tendencies; habit, attention, and interest; association and imagination; the experimental methods of investigating learning; the economy and training of memory; memory "systems," abnormal memories; the psychology of testimony and report. FOSTER.

ROMANCE LANGUAGES

Professors EVERETT W. OL MSTED, IRVILLE C. LE COMPTE; Assistant Professor EDWARD H. SIRICH.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
4su	4	Beginning Course in French..	Beginners	None
		I, II TWThF	226F	LeCompte
7su	4	Intermediate Course in French		Begin. French
		I, II TWThF	202F	Sirich
19su	2	Elem. Conversation and Com- position in French.....		Begin. and Inter. Fr.
		V TWThF	226F	LeCompte
31su	4	Beginning Course in Spanish.	Beginners	None
		III, IV TWThF	201F	Olmsted
33su	4	Intermed. Course in Spanish.		Begin. Spanish
		III, IV TWThF	202F	Sirich
43su	2	Elem. Conversation and Com- position—Spanish		Begin. and Inter. Sp.
		Ar Ar	201F	Olmsted
111su	Ar	Research in Romance Lang..	Grad.	Adv. preparation
		Ar Ar	203F	Olmsted, LeCompte

Hours may be changed to meet unusual circumstances and with the approval of the director of the summer session.

Each of the undergraduate courses announced above will be considered substantially equivalent to one quarter's work, and students may complete the second quarter's work during the academic year of 1920-21.

FRENCH

4su. BEGINNING COURSE. For beginners in French. Attention given to teaching of pronunciation by aid of phonetic symbols, to systematic presentation of grammar, to conversation, to reading, and to methods of teaching. Modified direct method used throughout course. **LECOMPTE.**

7su. INTERMEDIATE COURSE. Reading and discussion in French, of representative modern authors, and composition. **SIRICH.**

19su. ELEMENTARY FRENCH CONVERSATION AND COMPOSITION. Practical training in speaking and writing French. Open to those who have had or are taking intermediate French. **LECOMPTE.**

SPANISH

31su. BEGINNING COURSE. This course is intended for beginners in Spanish. Particular attention will be given to pronunciation, thorough grammar drill, reading of selected prose, and methods of teaching. Modified direct method will be used throughout the course. **OLMSTED.**

33su. INTERMEDIATE COURSE. Nineteenth century Spanish and Spanish-American authors. Spanish conversation and commercial correspondence. **SIRICH.**

43su. ELEMENTARY SPANISH CONVERSATION AND COMPOSITION. Practical training in speaking and writing Spanish. Commercial terms, etc. Open to those who have had or are taking intermediate Spanish. **OLMSTED.**

111su. RESEARCH IN ROMANCE LANGUAGES. Graduate students with necessary preparation may undertake research in some selected field. **OLMSTED, LECOMPTE.**

SOCIOLOGY AND SOCIAL WORK

Acting Chairman **FRANK J. BRUNO**; Associate Professors **LUTHER L. BERNARD**, **MANUEL C. ELMER**; Assistant Professor **ROSS J. FINNEY**; Instructor **CHARLES E. LIVELY**; Special Lecturers **JOHN A. FITCH**, **WILLIAM W. HODSON**, **DAVID H. HOLBROOK**; Supervisors of Field Work **CAROLINE BEDFORD**, **MARION A. TEBBETS.**

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	3	Introduction to Sociology...	Soph., jr., sr.	None
		II	5F	Lively
		IV	5F	Lively
6su	3	Modern Social Reform Movements	Soph., jr., sr.	I
		III	5F	Finney
14su	3	Rural Sociology	Jr., sr.	I
		I	5F	Bernard

SUMMER SESSION

No. Credit	Title	Offered to	Prerequisite courses
*51su 3	Family Case Work..... V-VI MWF	Jr., sr. 9F	1 Bruno
*56su 1	Hospital Social Service (field work) Hours by arrangement	Sr., grad.	Consent of director Tebbets
*61su 2	Legal Protection of the Child. VIII MTWTh	Jr., sr., grad. 5F	Consent of director Hodson
*108su 3	Social Psychology II MTWThFS	Jr., sr., grad. 9F	1, and psych. 1-2-3 Bernard
*122su 3	Methods of Social Investiga- tion I MTWThFS	Jr., sr., grad. 9F	3 courses Elmer
*124su 1	Visiting Teaching, Its Scope and Methods VII MTWTh (July 12 to July 31)	Jr., sr., grad. 9F	3 courses, one of which may be in educ., and one in psych. Holbrook
*125su 1	Some Essentials of the Labor Problem VII MTWTh (June 21 to July 10)	Jr., sr., grad. 9F	Consent of director Fitch
*200su Ar	Research Seminar Individual problems of investigation under joint direction of instruc- tors in this department. Time, place, and credit arranged by consul- tation. Open to qualified graduate students only.		

1su. INTRODUCTION TO SOCIOLOGY. Origin and development of human societies; various agencies which have determined types of social life; social organization, social institutions, social progress; the individual and the group; bearing of sociology upon other social sciences and arts. LIVELY.

6su. MODERN SOCIAL REFORM MOVEMENTS. A review of the causes and trends of a century's movement for social and industrial betterment. FINNEY.

14su. RURAL SOCIOLOGY. Survey of field of rural sociology, methods and problems; consideration of religious, educational, and social ideals of rural people; rural environment; effects of immigration; rural institutions and their adaptability to current welfare needs; rural progress. BERNARD.

*51su. FAMILY CASE WORK. The extent and nature of poverty and mental defectiveness; efforts made for their amelioration and prevention. (Six hours' field work per week required.) BRUNO.

*56su. FIELD WORK IN HOSPITAL SOCIAL SERVICE. A course open only to students who are properly grounded in case work and who wish to specialize in this field. TEBBETS.

*61su. LEGAL PROTECTION OF THE CHILD. A study of the relation of law to child welfare. A survey of existing children's protective legislation, of its administration and its future development. HOBSON.

- *108su. SOCIAL PSYCHOLOGY. The social attitudes; their development and modification under social pressures; the interactions of individuals and groups. BERNARD.
- *122su. METHODS OF SOCIAL INVESTIGATION. Methods of gathering and presenting community facts; social statistics; social surveys. Lectures, problems, and field work. ELMER.
- *124su. VISITING TEACHING, ITS SCOPE AND METHODS. This course is intended for teachers and social workers who are interested in a better interpretation of the relations between home, school, and industry in the cities and villages of Minnesota. Field work by arrangement. HOLBROOK.
- *125su. SOME ESSENTIALS OF THE LABOR PROBLEM. This course is designed to assist social workers and others interested to understand what is going on in the industrial field and to interpret the actions of employers and workers from the standpoint of motive. FITCH.
- *200su. RESEARCH SEMINAR. Individual research on special problems in sociology and social work. Open only to graduates after consultation with, and approval of, instructors. Designed to offer the opportunity for investigation of special problems under supervision. Credit will be assigned according to the amount and quality of work done. BRUNO, BERNARD, ELMER.

COLLEGE OF EDUCATION

The courses offered by the College of Science, Literature, and the Arts are accepted by the College of Education.

ENTRANCE REQUIREMENTS

Applicants for admission to this college must present credentials showing:

1. The completion of a regular four-year high-school course.
2. The completion of two full years of college work, (not less than ninety quarter credits) in Science, Literature, and the Arts at this or some other college or university of equal rank.

Graduation from advanced graduate normal courses (two years beyond the high school), is considered equivalent to (1) and (2) above.

Graduates of a five-year normal course, if individually recommended by the normal school president, are allowed sixty-three credits and are admitted to the college as unclassified students pending the completion of twenty-seven additional credits.

Teachers in service unable to carry full work, teachers preparing for examination for the First Grade Professional Certificate, but who are unable to meet the regular requirements for admission, and certain other classes of students are also admitted to the College of Education as unclassified students. Each case must, however, be dealt with individually as the result of formal application to the dean of the College of Education.

For specific and detailed information concerning entrance requirements, consult the bulletin of the College of Education.

Graduate students.—Students wishing to work upon problems immediately concerned with the writing of a graduate thesis are advised to consult with the dean of the College of Education.

Undergraduates.—Students holding a teachers' certificate may register for the degree of Bachelor of Arts in Education in the College of Education without complying with the requirements of the University for a teachers' certificate.

The College of Education requires twenty-two quarter credits of all university students who are candidates for the University State Teachers' Certificate, and that they be distributed as follows: History of Education, five credits; Technique of Teaching, three credits; Social Aspects of Education, Its Organization and Administration, three credits; Special Methods totaling at least three credits; Elementary Educational Psychology, three credits; Practice Teaching, five credits. Reference to the courses named below, supplemented by conference with the instructors will make clear how these requirements may be fulfilled during the summer session. An introductory course in psychology will be required as a prerequisite for all courses in education.

DEPARTMENT OF ART EDUCATION

Instructor HAZEL M. SMALL.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
32su	1	Sketch		
		V, VI, VII	MF 404F	Small
33su	1	Still Life		
		V, VI, VII	W 404F	Small
35su	1	Clay		
		V, VI, VII	T 411F	Small
36su	1	Book-binding and Paper Construction		
		V, VI, VII	Th ArF	Small

To obtain 1 credit, 6 laboratory hours a week are necessary.

Students may take: 3 hours sketch and 3 still life (1 credit), arranged on MWF V, VI, VII to fit their programs; 3 hours clay and 3 hours book-binding and paper construction (1 credit); or 6 hours clay (TTh V, VI, VII); or 6 hours book-binding and paper construction (TTh V, VI, VII).

DEPARTMENT OF SCHOOL ADMINISTRATION AND SUPERVISION

Professor LEONARD V. KOOS, ALBERT W. RANKIN; RAYMOND W. SIES; Assistant Professor ROSS L. FINNEY.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
3su	3	Social Aspects of Education..	Jr.,sr.	9 cr. in psychol. of which 3 may be in educ. psychol.
		IV MTWThFS	102Ed	Finney
113su	3	High-School Curriculum	Jr., sr., grad.	
		III MTWThFS	111Ed	Koos
121su	3	School Organ. and Admin....	Sr., grad.	Ed. 1 or 101-102-103 & 3
		II MTWThFS	102Ed	Rankin
141su	3	School Sanitation	Jr., sr. grad.	Gen. psychol.
		I MTWThFS	102Ed	Rankin
161su	3	Theory of Supervision.....	Sr., grad.	Ed. 11 or equiv.; Grad. and exp. teachers without prereq. consult instructor
		III MTWThFS	112Ed	Sies
167su	3	Junior High School.....	Jr., sr., grad.	
		IV MTWThFS	111Ed	Koos
205su	3	Seminar in Admin. and Sup.	Grad.	121, 161-162
		IV MTWThFS	112Ed	Sies

3su. SOCIAL ASPECTS OF EDUCATION. The school as a community factor; the present peculiar relation of the school to social problems; the function of the school in these relations. FINNEY.

113su. HIGH-SCHOOL CURRICULUM. Types of curricula, constants and variables, sequences, time limits, distribution of subject-matter by years and by units. Koos.

- 121su. SCHOOL ORGANIZATION AND ADMINISTRATION. An introductory course in school administration for students of teaching experience and for those looking forward to work as principals and superintendents. RANKIN.
- 141su. SCHOOL SANITATION. A course in school hygiene in its broader aspects. Designed for all teachers and supervisors who are responsible for the health of school children. Treats of medical supervision and other problems arising from school environment. RANKIN.
- 161su. THEORY OF SUPERVISION. The problems involved in the training of teachers in service; studies of qualities of merit in teachers; factors in service; factors in selecting teachers; the distribution of subject-matter by grades; time allotment of studies. SIES.
- 167su. JUNIOR HIGH SCHOOL. The history of the junior high school movement, its purposes and results. Changes in curriculum and methods of instruction, special groups appealed to, modification in plant and equipment. Koos.
- 205su. SEMINAR IN ADMINISTRATION AND SUPERVISION. An advanced course with major emphasis upon measurements and statistical methods for superintendents and supervisors. Individual studies and reports. SIES.

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

Professor MELVIN E. HAGGERTY; Assistant Professor MARVIN J. VAN WAGENEN.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
55su	3	Elementary Educ. Psychol....	Jr., sr.	9 cr. in psychol. of which 3 may be in educ. psychol.
		I MTWThFS	Psy	Haggerty
107su	3	Psychology of Learning.....	Sr., grad.	55 or equivalent
		I MTWThFS	Psy	Van Wagenen
111su	3	Educational Diagnosis	Sr., grad.	55 or equivalent
		II MTWThFS	Psy	Van Wagenen
134su	3	Mental Diagnosis	Sr., grad.	55 or equivalent
		II, III MTWThF	Psy	Haggerty

55su. ELEMENTARY EDUCATIONAL PSYCHOLOGY. A survey of fundamental facts of human behavior involved in educational activities open to seniors, juniors, and qualified students in sophomore year upon advice of instructor. HAGGERTY.

107su. PSYCHOLOGY OF LEARNING. Methods of measuring rate of learning; study of learning experiments and an examination of the conditions of the most economic learning. VAN WAGENEN.

111su. EDUCATIONAL DIAGNOSIS. The typical educational problems involving educational scales and standard tests. Nature of tests,

methods of use, analysis of results obtained, and programs of remedial educational procedure based on the results of the tests. VAN WAGENEN.

134su. MENTAL DIAGNOSIS. Study of mental variation in children, its nature, degree, causes, and effects. Methods of treating superior and subnormal children in the schools. HAGGERTY.

HISTORY AND PHILOSOPHY OF EDUCATION

Professor FLETCHER H. SWIFT.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
5su	3	Public Education in the United States III MTWThFS	Jr., sr. 205Ed	Swift
103su	3	History of Modern Elementary Education IV MTWThFS	Jr., sr., grad. 205Ed	Swift

5su. PUBLIC EDUCATION IN THE UNITED STATES. A brief survey of the factors determining the problem of public education in the United States, followed by a study of existing educational institutions and systems. SWIFT.

103su. HISTORY OF MODERN ELEMENTARY EDUCATION. Institutions of modern elementary education, current educational theories and problems in the light of their history. Emphasis upon the rise of state systems and modern educational reform. SWIFT.

DEPARTMENT OF THEORY AND PRACTICE OF TEACHING

Associate Professor WILFORD S. MILLER; Assistant Professor ISAAC W. GEIGER; Instructors EARL L. BAKER, MARIE B. DENEEN, SOPHIA HUBMAN, REWEY BELLE INGLIS, JAMES F. MACKELL, WILLIAM D. REEVE; Special Lecturers ALBERT GULLETTE, ANNE M. NICHOLSON.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
11su	3	Technique of Teaching..... I MTWThFS	Jr., sr. 205Ed	Ed. 55 Miller
15su	5	Practice Teaching..... Ar Ar (2 hours a day, five days a week)	Sr., grad. Ar Ar	Consult instructor Miller

Special Methods

Americanization

155su	3	Americanization Technique and Method VI MTWThFS	Jr., sr., grad. Ar	2 courses Nicholson
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Chemistry

19su	3	Teachers' Course IV MTWThFS	Jr., sr. 315C	General chem. Geiger
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No.	Credit	Title	Offered to	Prerequisite courses
Education				
16su	3	Technique of Teaching Sub-normal Children II MTWThFS	Jr., sr. 205Ed	Gullette
English				
80su	4	Teachers' Course I, II TWThF	Jr., sr. 206Ed	Inglis
German				
71su	3	Teachers' Course Ar Ar Ar	Jr., sr.	Ger. 52 and 55 and six starred credits Hubman
Latin				
81su	3	Teachers' Course II MTWThFS (For teachers' courses in manual training, see statement of courses in manual training on page 39 of this bulletin)	101Ed	Without credit 4 yrs. high- school Latin. With credit Courses 51-53 or equiv. Deneen
Mathematics				
54su	4	Teachers' Course V, VI TWThF	113Ed	Course 50 Reeve
Music				
75su	3	Public-School Music for Grades I, II MTW Mu		Baker
Music				
78su	3	Public-School Music for High School III, IV MTW Mu		Baker
Physics				
91su	3	Teachers' Course V, VI MWF Ph		Mackell

11su. **TECHNIQUE OF TEACHING.** Types of classroom exercises; preparation of teaching plans; hygiene of instruction; classroom management; the professional ethics of teaching; observation of high-school work. MILLER.

15su. **PRACTICE TEACHING.** Teaching under supervision in the University High School in all subjects which are offered in the high school, during the six weeks' summer session. MILLER.

SPECIAL METHODS

Americanization 155su. **TECHNIQUE AND METHOD.** NICHOLSON.

Chemistry 19su. **TEACHERS' COURSE IN CHEMISTRY.** A consideration of the fundamental principles of chemistry with particular reference to the teaching of chemistry in the high school. Discussion of such topics as training of the teacher, laboratory equipment, etc. GEIGER.

Education 16su. **TECHNIQUE OF TEACHING SUBNORMAL CHILDREN.** A course for those preparing to become teachers of subnormal children. GULLETTE.

English 80su. **TEACHERS' COURSE IN ENGLISH.** Analysis of some of the problems in teaching English literature and composition with suggestions toward their solution. Open to all juniors and seniors who have credit for English 1, 2, 3, and Rhetoric 11, 12, 13, or 15, 16, 17. INGLIS.

Latin 81su. **TEACHERS' COURSE IN LATIN.** Methods of presenting difficult points in syntax. Reports on supervised study, direct method, derivatives. Comparison of Caesar's Gallic War and the modern war. Making of Latin scrapbook. DENEEN.

Mathematics 54su. **TEACHERS' COURSE IN MATHEMATICS.** For students preparing to become teachers of secondary-school mathematics. Lectures, readings, discussions, methods of presentation, assignments, lesson plans, examinations, plans for beginning courses in algebra and plane geometry. Aims and outcomes of education. REEVE.

Public-School Music. 75su. **FIRST-YEAR METHODS.** Grade methods. BAKER.

Public-School Music. 78su. **HIGH-SCHOOL METHODS.** Second-year methods. This is to include general methods, four hours weekly, orchestra, two hours weekly, and appreciation, two hours weekly. BAKER. (Practice and visiting in summer schools for both courses.)

Physics 91su. **TEACHERS' COURSE IN PHYSICS.** Intended to embrace fundamental conceptions of methods of teaching high-school physics. Special emphasis put upon laboratory side of subject. One year of college physics will be considered as a prerequisite for this course. MACKELL.

MANUAL TRAINING

Instructor LYNNE E. STOCKWELL.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
11su	1	Teachers' Course in Primary Grade Wood Work..... IV MTW	24Ed	Stockwell
12su	2	Teachers' Course in Elementary Wood Work..... II, III MTWTh	24Ed	Stockwell
13su	2	Organization and Supervision of Manual Training..... I MTWTh	115Ed	Stockwell

11su. **TEACHERS' COURSE IN PRIMARY GRADE WOOD WORK.** The work is divided into three parts. The first part is coping saw work; the second, knife work; the third, a combination of the first two. This is applicable to grades four to six inclusive. STOCKWELL.

12su. **TEACHERS' COURSE IN ELEMENTARY WOOD WORK.** Uses and care of tools, tool processes; uses and care of wood-working machinery. Special emphasis upon methods of presenting work to pupils. Demonstrations by members of the class will be an important phase of the work. STOCKWELL.

13su. **ORGANIZATION AND SUPERVISION OF MANUAL TRAINING.** The history of manual training, aims and values, selection and installation of

equipment, supplies, courses of study for grade- and high-school manual training, and methods of presenting manual training to grade- and high-school pupils. STOCKWELL.

VOCATIONAL EDUCATION

DEPARTMENT OF TRADE AND INDUSTRIAL EDUCATION SMITH-HUGHES LAW TEACHER-TRAINING CLASSES

Assistant Professor ARTHUR F. PAYNE; Special Lecturers CHARLES A. PROSSER, HOMER J. SMITH.

The following is a tentative and preliminary program.

Students are advised to consult the final and complete program in the special bulletin of this department, which will be issued about May 1. The State Board for Vocational Education will grant credit toward teachers' certificates for all courses outlined below.

No student will be admitted to any course for credit that is numbered above 100 unless he has had at least three vocational education lecture courses.

COURSES

No. Credit	Title	Offered to	Prerequisite courses
V177su 2	Administration of Vocational Education VII WF	112Ed Field work ar.	Prosser
V1su 2	The Economics and Sociology of Vocational Education. VIII WF	Field work ar.	Prosser
V49su 2	Methods of Teaching Trade Subjects VI TWThF	202Ed and Dunwoody Institute	Payne
V51su 2	Methods of Establishing and Conducting Part-Time Schools and Classes..... IV TWThF	Ar Ed	Payne
V50su 2	Analysis and Classification of Trade Knowledge, Arrangement of Courses..... VII-VIII TTh	202Ed and Dunwoody Institute	Payne
V176su 2	Problems in Vocational Educ. II TWThF	Assisted by federal and state board officials 111Ed	Payne
V65su 2	Teaching of Related Vocational Subjects I-II MS	112Ed and Dunwoody Institute	Smith
V80su 2	History and Literature of Vocational Education..... V MTWTh	102Ed	Smith
V82su 2	Vocational Mathematics..... III MThFS	102Ed	Smith
V83su 2	Vocational English IV MTWTh		Smith
V84su 2	Industrial Hygiene and Safety First II TWThF	Ar Ed	Smith
V61su 2	Elementary Vocational and Educational Guidance I TWThF	111Ed	Smith

For the program of more than fifty shop and laboratory courses for men and women to be offered in the shops and laboratories of Dunwoody Institute, the College of Agriculture, Forestry, and Home Economics, the University High School, and the College of Engineering and Architecture, consult the special bulletin of the Department of Trade and Industrial Education.

TEACHERS OF SUBNORMAL CHILDREN

In coöperation with the city schools of Minneapolis and St. Paul, the course of study described below has been prepared for the training of teachers of subnormal children. Students desiring a teachers' certificate in this course should register in it at the beginning of the junior year. Summer session students will be privileged to carry those courses for which they are qualified on the basis of experience or previous work. It is recommended, however, that they register for the course in mental diagnosis and for cadet teaching in the city schools. A number of special classes for observation and practice will be maintained in Minneapolis. No student, however, will be permitted to enter either of these classes except upon the recommendation of Professor M. E. Haggerty of the Department of Educational Psychology and Mr. Albert Gullette, principal of the Sumner School of Minneapolis.

Summer session students completing this course may be granted a special certificate by the State Department of Education to teach in such schools the following year.

The arrangement with the city schools of Minneapolis and St. Paul provides for a limited number of cadetships open to students only during the regular college year. Each cadetship will require that the student devote part of his time to study at the University and part to field service in the subnormal classes of Minneapolis and St. Paul schools. Each cadetship will pay a stipend of \$60 a month. Students desiring to apply for a cadetship are requested to file their applications with Mr. B. B. Jackson, superintendent of schools, Minneapolis, Mr. E. C. Hartwell, superintendent of schools, St. Paul, and with Mr. L. D. Coffman, dean of the College of Education, University of Minnesota.

COURSE OF STUDY

Junior Year

FIRST QUARTER

	Credits
Psychology 131	Child Mind (Lowell)..... 3
Education 134	Mental Tests (Haggerty)..... 2
Education 37f	Elementary Weaving, etc. (Marr)..... 2
Physical Education 31	Plays and Games (Kissock)..... 0
Education 16	Technique of Teaching Subnormal Children (Gullette) 3
	Cadet teaching 12½ hours..... 5

SUMMER SESSION

SECOND QUARTER

		Credits
Psychology 132	Child Mind (Lowell).....	3
Education 135	Mental Tests (Haggerty).....	2
Manual Training 12w	Wood Work (Stockwell).....	2
Physical Education 32	Plays and Games (Kissock).....	0
Sociology 1	General Sociology (Finney).....	5
Handicrafts Art Educ. 36w or su	Paper Cutting (Small).....	1
	Cadet teaching 12½ hours.....	2

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THIRD QUARTER

		Credits
Psychology 133	Child Mind (Lowell).....	3
Education 136	Mental Tests (Haggerty).....	2
Manual Training 11s	Teachers' Course (Stockwell).....	2
Physical Education 33	Plays and Games (Kissock).....	0
Physical Education 18	Teachers' Course in Play (Kissock).....	3
Education 3	Social Aspects of Education (Finney).....	3
	Cadet teaching 12½ hours.....	2

15

Senior Year

FIRST QUARTER

		Credits
Handicrafts 35f or su	Clay Modeling (Small).....	1
Education 149	Adv. Technique of Teaching Subnormal Children..	3
Sociology 137	Psycho-Educational Clinic (Haggerty, Dealey)....	3
Sociology 51	Mental Case Work (Dawley).....	3
	Background of Dependency (Bruno).....	3
	Cadet teaching 12½ hours.....	2

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SECOND QUARTER

		Credits
*Education 150	Psycho-Educational Clinic (Haggerty, Dealey)....	3
*Home Economics 70w	Food Preparation (Lindquist).....	3
Sociology 138	Mental Case Work (Dawley).....	3
*Sociology 52	Treatment of Dependents and Defectives (Bruno)	3
Agricultural Education 68w	Home and School Gardening.....	2
	Cadet teaching 12½ hours.....	2

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THIRD QUARTER

		Credits
*Education 151	Psycho-Educational Clinic (Haggerty, Dealey)....	3
*Home Economics 11	Garment Making (Phelps).....	3
Sociology 139	Mental Case Work (Dawley).....	3
*Sociology 54	Child Welfare (Bruno).....	3
Sociology 130	Technique of Family Treatment (Bruno).....	2
Education 111	Educational Diagnosis (Van Wagenen).....	2
Agricultural Educ. 69s	Home and School Gardening.....	2
	Remedial Gymnastics.....	
	Home Care of the Sick.....	

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* These courses are required.

CONSOLIDATED-SCHOOL PRINCIPALS

The curriculum outlined below is for consolidated-school principals. This curriculum leads to a degree and certificate in the College of Education. No change or deviations from the curriculum will be permitted except upon petition. Petition blanks may be secured at the office of the dean of the College of Education, or at the office of the registrar on either campus. In every case the petition must be approved by the department or division concerned, and by the dean of the College of Education, before any changes or substitutions can be made.

Registration for this curriculum will be made at the farm campus. Students are requested to see Dean E. M. Freeman concerning the academic subjects in the curriculum, or Professor A. M. Field concerning educational subjects, or the dean of the College of Education.

Since the law requires the principal of a consolidated school to teach agriculture, that subject has been made the major. To this has been added a minor in manual training (farm shop work), and a minor in education. The specific courses in this major and these minors follow:

MAJOR IN AGRICULTURE

	Credits	Credits
*66. Fundamentals of Agriculture (condensed course).....		3
ANIMAL HUSBANDRY		
*1. Types and Breeds of Livestock.....	5	
†8. Elements of Feeding.....	3	8
DAIRY HUSBANDRY		
*1. Elements of Dairying.....		5
ENTOMOLOGY AND ECONOMIC ZOOLOGY		
3. Elements of Economic Entomology.....		3
HORTICULTURE		
†90. General Horticulture.....		3
PLANT PATHOLOGY		
1. Plant Pathology.....	5	
†6. Plant Pest Control.....	3	8
POULTRY HUSBANDRY		
1. Poultry.....		3
AGRONOMY AND FARM MANAGEMENT		
*1. Farm Crops.....	3	
†*101. Farm Management.....	3	
122. Corn and Potato Crops.....	3	9
SOILS		
†1. Soils.....		5
Total.....		47

MINOR IN MANUAL TRAINING
(FARM SHOP WORK)

		Credits	Credits
COLLEGE OF EDUCATION			
M.T. 13	Organization and Supervision of Manual Training.....		3
*M.T. 12	Teachers' Course in Elementary Wood Work.....	3	
	or		

† Not offered in 1920 Summer Session.

SUMMER SESSION

		Credits	Credits
COLLEGE OF AGRICULTURE—Division of Farm Engineering			
*F. Eng. 5	Carpentry	3	3
*F. Eng. 15	Mechanics Laboratory		2
F. Eng. 3	Mechanical Drawing		3
Total			11

MINOR IN EDUCATION

		Credits	Credits
COLLEGE OF EDUCATION			
Ed. 3	Social Aspects		3
Ed. 55	Elementary Educational Psychology.....		3
Ed. 111	Educational Diagnosis		3
Ed. 11	Technique of Teaching.....	3	
	or		
Ag. Educ. 131X	Methods of Teaching Agriculture.....		3
*Ed. 121	Organization and Administration.....	3	
	or		
*Ag. Educ. 53	Consolidated Rural Schools.....	3	3
*Ag. Educ. 75	Visual Presentation		3
Ed. 161	Supervision		3
*Ag. Educ. 54	Rural Education and Community Life with special reference to the interrelation- ships of the two.....		3
Total			26

ADDITIONAL REQUIREMENTS

Sociology 14—Rural Sociology.

General electives to complete the number of hours for graduation.

THE UNIVERSITY HIGH SCHOOL

The University High School will conduct a summer session this year of six weeks' duration, beginning and ending at the same time as the University summer session.

The character of the work to be done will be on the same level as that of the work regularly done through the year and all of the general regulations of the school as set forth in the handbook of the high school hold good for the summer session.

Each subject taught will be given two hours daily for five days of each week, except in the case of the laboratory subjects, where extra time must be given. The daily sessions begin at the same time as the University sessions and close at noon after two class periods.

The high school reserves the right to discontinue a course if less than six students are registered for it, and all classes will be limited to twenty students.

One half of a year's credit will be given in each subject successfully carried.

Practice teaching will be permitted in the summer session of the high school.

No auditors in the high school courses will be permitted except by permission of the principal.

The tuition fee for each student in the summer session will be \$12 for the six weeks or \$6 per subject.

MATHEMATICS

MATHEMATICS I. The last part of the year's work. This course will be largely algebra with the function and the equation the unifying principle. Abundant applications and graphic methods to illustrate the algebra will be furnished.

MATHEMATICS II. Designed to cover the last part of the year's work in plane geometry. Emphasis on practical applications and some simple work in trigonometry will be offered. Algebra will be used wherever it is necessary.

SOLID GEOMETRY. This course is open to all students who have had freshman algebra and plane geometry. It will cover the work on lines and planes in space, and the measurement of geometric solids.

LATIN

FRESHMAN LATIN. The last part of the year's work. Smith's *Latin Lessons* beginning page 108. Special emphasis will be placed on infinitives, subjunctives, participles, deponent verbs and ablative absolutes.

HOME ECONOMICS

FOOD PREPARATION AND MEAL PLANNING. Discussion of kinds of foods included in a meal. Actual preparation of such dishes. Emphasis on method of combination, number served, etc. Grouping of foods and actual serving of meals.

CLOTHING. Content to depend on class. Making of underwear and a tailored wash dress, or textiles and the construction of one simple garment, or textiles and millinery, or making one garment and millinery.

SCIENCE

PHYSICS. Mechanics. Suitable for anyone beginning the subject, or for anyone who has had the other courses; emphasis upon the practical, about half of the time being given to laboratory projects.

PHYSICS. Elementary considerations of sound, light, electricity, and magnetism. Half the time in electricity and magnetism given to theory and half to practice with motors, dynamos, lighting and heating, batteries, telegraph, telephone, etc.

CHEMISTRY. 1. Beginning chemistry. 2. Advanced chemistry. Open to students who have had high-school chemistry; a study of the applications of chemistry to Twin City industries.

GENERAL SCIENCE. First course. An elementary study of the use and production of light, heat, and refrigeration, and elementary study of conditions affecting the weather.

GENERAL SCIENCE. Second course. An elementary study of ventilation, foods and nutrition, micro-organism, and hygiene.

HISTORY

UNITED STATES HISTORY. General survey from 1787 to 1918.

ANCIENT HISTORY. The most important facts about Egypt, Mesopotamia, Palestine, Greece, and Rome. Course for beginners.

MECHANICAL DRAWING AND MANUAL TRAINING

ELEMENTARY MECHANICAL DRAWING. Lettering; conventions; free-hand sketching (a) perspective, (b) orthographic; working drawings; tracing; blue printing.

ELEMENTARY ARCHITECTURAL DRAWING. First quarter's work; architectural lettering, details.

ELEMENTARY CABINET-MAKING. Review of common joints; small project involving mortise and tenon and cross lap joints.

ADVANCED CABINET-MAKING. Making larger projects involving the tool processes; mortise and tenon joint, paneling and drawer construction.

MUSIC

MUSIC. A course including the essentials of musicianship—ear training, sight reading, rythm, technique, keyboard harmony, memory training, and pieces for recreation. Planned for the needs of the average student who has had no training.

ENGLISH

ENGLISH I. Composition, oral and written. Special work on grammar, punctuation, and spelling. Literature: study of narrative poems, short stories, collateral reading.

ENGLISH II. Composition, oral and written. Emphasis on unity and coherence. Literature: *Silas Marner*, *Vision of Sir Launfal*, and *Rime of the Ancient Mariner*. Collateral reading.

ENGLISH III. Public speaking. Principles of effective speaking. Open to juniors and seniors.

COLLEGE OF DENTISTRY

Students contemplating courses in animal biology, chemistry, rhetoric, anatomy, histology and embryology, physiology, bacteriology, or pathology are referred to the announcements in the respective departments, as published in this bulletin. The courses in technique and practice in the College of Dentistry are planned as follows, and will be given in case ten or more students apply:

*Oral Anatomy, Courses I, II, III.....	Damon
*Dental Prosthesis, Courses I and II.....	Damon
Dental Prosthesis, Courses III to VIII.....	Ar.
Crown and Bridge, Courses I to VI.....	Ar.
Operative Dentistry, Courses III to IX.....	Ar.
Orthodontia, Courses III to VI.....	Ar.
Oral Surgery, Courses I and II.....	Holliday

Hours for technique courses, MTWThF, 8:00 to 12:00 a.m., 2:00 to 5:00 p.m. Hours for clinical courses, MTWThF, 9:00 to 12:00 a.m., 2:00 to 5:00 p.m.

FEEES

Dental Anatomy I, II, III, and Dental Prosthesis I and II, full-time, \$30. All other courses, half-time, \$15, full-time, \$30. Fees for continuation courses to be arranged.

* Courses will be extended beyond the regular summer session of six weeks for completion.

COLLEGE OF ENGINEERING AND ARCHITECTURE

ARCHITECTURE

Professor FREDERICK M. MANN; Instructor GEORGE H. PRUDDEN.

COURSES

The purpose of these courses is to give those who plan to enter the course in architecture with advanced standing an opportunity to make up elementary courses in architecture.

- 31.1. ELEMENTS OF ARCHITECTURE. Exercises in instrumental drawing and architectural lettering. Theory and practice of wash rendering. Lectures and library research. PRUDDEN.
- 31.2. ELEMENTS OF ARCHITECTURE. Original problems in the architectural treatment of walls, floors, windows, and mouldings. Lectures and library research. PRUDDEN.
- 31.3. ELEMENTS OF ARCHITECTURE. Study of the elements, forms, and principles of architecture. Original problems in their use in elementary architectural design. Lectures and library research. PRUDDEN.
- 32.1, 32.2. ARCHITECTURAL DESIGN. Original problems dealing in general with elements of elevation and their composition into simple architectural units. Sketch problems dealing with elementary plan compositions. Individual criticism and library research. PRUDDEN.

DRAWING AND DESCRIPTIVE GEOMETRY

Professor WILLIAM H. KIRCHNER; Assistant Professor ROBERT W. FRENCH.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	2½	Engineering Drawing	Fr.	Solid geometry
2su	2½	Engineering Drawing	Fr.	1
3su	2½	Descriptive Geometry	Fr.	2
6su	..	Solid Geometry	All	Plane geom.
21su	2	Drafting	Soph. C.E.	3
22su	2	Drafting	Soph. C.E.	21
23su	2	Drafting	Soph. C.E.	22
24su	2	Drafting	Soph. M.E.&E.E.	3
25su	2	Drafting	Soph. M.E.&E.E.	24
26su	2	Drafting	Soph. M.E.&E.E.	25
51su	2	Technical Drawing.....	Pre-dental & S.L.A.	None

1su. ENGINEERING DRAWING. The elements of drafting including an introductory course in the science of representation and constructive

- geometry. Sketching, lettering, projections, working drawings, conventions, standards, tracing, and blue printing. KIRCHNER and Assistant.
- 29SU. ENGINEERING DRAWING. A continuation of Course 1. KIRCHNER and Assistant.
- 39SU. DESCRIPTIVE GEOMETRY. An elementary course in the methods of representation, correlated in part with analytical geometry, lectures, demonstrations, and drawing-room exercises. KIRCHNER and Assistant.
- 69SU. SOLID GEOMETRY. Subject-matter of books VI-IX of American texts in solid geometry. Points and lines in space, polyhedrons, cylinders, cones, sphere. For those preparing for examination towards state professional certificate. Meets entrance requirements of University. KIRCHNER.
- 219SU. DRAFTING. (For sophomore civil engineers.) Drawing of structures and machines. Detail, assembly, and construction drawings. The solution of problems of simple structures. FRENCH and Assistant.
- 229SU. DRAFTING. A continuation of Course 21. FRENCH and Assistant.
- 239SU. DRAFTING. A continuation of Course 22. FRENCH.
- 249SU. DRAFTING. (For electrical and mechanical engineers.) The application of descriptive geometry to drafting-room problems in sheet metal work, belting, conveyors, and connections. Working drawings and tracings. KIRCHNER and Assistant.
- 259SU. DRAFTING. A continuation of Course 24. KIRCHNER and Assistant.
- 269SU. DRAFTING. A continuation of Course 25. KIRCHNER and Assistant.
- 519SU. TECHNICAL DRAWING. A general course in the theory and practice of drawing. Sketching, lettering, tracing, blue-printing, and mechanical drawing. The use of instruments, projections (constructive geometry), and working drawings. KIRCHNER and Assistant.

MATHEMATICS AND MECHANICS

Professor WILLIAM E. BROOKE; Associate Professor WILLIAM H. HOLMAN; Assistant Professors HANS H. DALAKER, GEORGE C. PRIESTER.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
11.3	5	Applied Math. and Mech.... Sec. 1 Sec. 2	Fr. Eng., Arch., Chem.	M. and M. 11.2 Priester Brooke
12.3	5	Applied Math. and Mech.... Sec. 1 Sec. 2	Soph. Eng. Chem.	M. and M. 12.2 Holman Dalaker

11.3. APPLIED MATHEMATICS AND MECHANICS. General equation of the second degree. Transformation of coördinates. Polar coördinates, parametric equations. Geometry of three dimensions, forces in space, spherical trigonometry. Elementary applied mechanics with laboratory. BROOKE, PRIESTER.

12.3. APPLIED MATHEMATICS AND MECHANICS. Application of the calculus to concrete problems. Some differential equations. Applied mechanics with laboratory. HOLMAN, DALAKER.

ENGINEERING SHOP AND MANUAL TRAINING

Assistant Professor S. CARL SHIPLEY; Instructor WILLIAM H. RICHARDS.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1su	2-5	Engineering Shop Work..... 8-1 MTWThFS	Fr., soph., teachers MechE	Shipley, Richards
2a-su	2	Teachers' Course in Wood Work 8-1 MTWThFS	All MechE	Richards
2b-su	2	Teachers' Course in Wood Work 8-1 MTWThFS	All MechE	Richards
3su	2-5	Machine Work 8-1 MTWThFS	Soph., jr., teachers MechE	Shipley
4su	3	Teachers' Course in Metal Work 8-1 MTWThFS	All MechE	Shipley

1su. ENGINEERING SHOP WORK. Pattern making, joinery, wood working, (use of tools, lathe, and bench work). SHIPLEY, RICHARDS.

2a-su. TEACHERS' COURSE IN WOOD WORK. Manual training, joinery, wood carving, and wood turning. Care and adjustment of tools and wood-working machines. RICHARDS.

2b-su. TEACHERS' COURSE IN WOOD WORK. Wood finishing, staining, filling, varnishing, and polishing. RICHARDS.

NOTE: Course 2a-su and 2b-su are designed with special reference to the needs of teachers of manual training.

3su. MACHINE WORK. Machine and bench work with tool and machine construction. Engineer sophomores and juniors or teachers of manual training with previous experience in machine shop work, may select required work to a maximum of five credits. SHIPLEY.

4su. TEACHERS' COURSE IN METAL WORK. Elementary machine and bench work—soldering, brazing, autogenous welding, to meet needs of manual-training teachers. Bench and vise work in metal shipping, filling, scraping, fitting; machine tool work in metals—turning, planing, threading, drilling, milling. SHIPLEY.

SUMMER SESSION

NOTE: Each of the above subjects will require thirty-six hours actual shop practice for one credit. Students taking machine work for credit in the College of Engineering will be given lectures throughout the course, which are included in the thirty-six hours specified.

SHIPLEY.

THE MEDICAL SCHOOL

THE SUMMER QUARTER—TERMS

The first term of the summer quarter will extend from June 21 to July 31; the second, from August 2 to September 4. Students may attend either or both terms.

CLINICAL YEARS

The Medical School offers full courses for the first and third quarters of the junior year, and the second quarter of the senior year. In order to receive credit toward the Doctor of Medicine degree in this institution, students must be matriculated in the Medical School; see the annual bulletin for requirements for admission and regulations governing advanced standing. Medical students from other schools who desire to enter for the summer only may do so as unclassified students, receiving subject credit only. Such students may take one of the programs listed below or make up a special program from the courses offered, so far as hour schedules will permit. Students in the clinical years may pay the regular tuition fee of \$60 per quarter (\$70 for non-residents of Minnesota), or the regular hour fee of \$2 per clock hour per quarter for courses elected.

LABORATORY YEARS

No regular programs for freshman or sophomore medical students are offered, but many of the courses of these years will be given under the summer school plan (see departmental statements for description of courses, hours and fees). These courses may be taken by properly prepared students from other institutions, as unclassified students, without matriculation. But students who desire to secure time credit toward the Doctor of Medicine degree in this school must matriculate in the regular way (see requirements in the annual bulletin).

OPPORTUNITIES FOR PRACTITIONERS

All the courses offered are open to physicians, who will be registered as special students, paying a fee of \$30 per quarter (non-residents, \$35). Laboratory courses and such work as cadaver surgery and animal surgery may be taken by physicians for the above fee. In this case a special charge for animals, cadavers, and expensive laboratory supplies is made.

The regular clinics in the University Hospital and Dispensary, the Minneapolis City Hospital, and the St. Paul City and County Hospital will go on as usual during the summer quarter and will be open to physicians who may obtain visitors' cards from the dean's office without expense.

GRADUATE STUDENTS

Properly prepared students desiring to work toward advanced degrees in the clinical or laboratory departments will find excellent opportunities

during the summer quarter. (See the bulletin of the Graduate School for requirements, etc.) Students are advised to consult, also, the head of the department in which they wish to specialize.

PROGRAM FOR CLINICAL YEARS

The hour schedules for lecture courses, clinics and elections will be published later (see Medical School summer program).

The following are the required clinical courses to be offered and total hours of credit:

Junior Medical Year

First clinical quarter—didactic period

		Hours
Pharm. 105su	Pharmacology and Therapeutics (Hirschfelder-Brown)	22
Pharm. 111su	Prescription Writing (Brown).....	11
Med. 51su	Lectures in General Medicine (White et al.).....	22
Med. 53su	Physical Diagnosis, Disp. (Schaaf, et al.).....	50
Med. 54su	Clin. Chem. and Micr. (A. Beard).....	66
Med. 55su	Physical Diagnosis, Lectures (Schaaf).....	11
Med. 57su	Medical Clinic (Rizer).....	11
Med. 79su	Dermatology (Butler).....	11
Surg. 51su	Principles (Corbett)	22
Surg. 59su	Diagnostic Clinic (Johnson).....	11
Obs. 51su	Obstetrics (Barry).....	33
Obs. 53su	Gynecology (Litzenberg).....	11
Section exercises	Med. 59su, 71su, Obs. 55su, Ped. 100su, 104su....	44
Electives	Average	66

Third Clinical Quarter—Clerkship Period

		Hours
Pharm. 111su	Prescription Writing (Brown).....	11
Med. 56su	Practical Therapy (McKinlay).....	11
Med. 63su	Clinic (White, et al.).....	11
Surg. 53su	Regional Surgery (Ritchie).....	22
Obs. 56su	Gynecology (Litzenberg-Adair)	22
Ped. 101su	Children's Diseases (Sedgwick).....	33
O. and O. 79su	Ophthalmology (Murray).....	22
Clerkship, etc.	Surg. 63, 65, 70, 71, 77su; Med. 65, 75, 83su; Obs. 57, 58; Ped. 106, 107su; O. and O. 85, 87, 89	242
Electives	Average	66

Senior Medical Year

Fifth Clinical Quarter; Student Internship Period

		Hours
Pharm. 107su	Therapeutic Conference (Hirschfelder).....	11
Med. 63su	Clinic (White, et al.).....	11
Med. 70su	Psychiatry (Hamilton).....	11
Obs. 102su	Obstetrics and Gynecology (Litzenberg).....	22
O. and O. 80su	Otology (Newhart)	11
	Student internship or special clerkships and elec- tives	341

ANATOMY

Professors CLARENCE M. JACKSON, THOMAS G. LEE, RICHARD E. SCAMMON; Associate Professors CHARLES A. ERDMANN, ANDREW T. RASMUSSEN; Instructors LLOYD B. DICKEY, GUSTAVE J. NOBACK; Assistants (to be appointed).

COURSES

FIRST TERM

No.	Credit	Title	Offered to	Prerequisite courses
5su	9	Gross Human Anatomy..... Quiz. I MTWThFS Lab. II, III, IV MTWThFS Lab. V, VI, VII TTh	3d-yr. med. 304IA 306IA 306IA	An. Biol. 1-2 Erdmann and Assistant
9-10su	10	Gross Anatomy Lect. I MTWThFS Lab. II, III, IV MTWThFS Lab. V, VI, VII MWF	2d-yr. dent. 102IA 301IA 301IA	An. Biol. 1-2 Jackson and Assistant
14su	6	Histology and Embryology... Lect. I MTWThFS Lab. II, III, IV MTWThFS	2d-yr. dent. 106IA 106IA	An. Biol. 1-2, Anat. 9 Scammon, Noback, and Assistant
103su	9	Human Histology Lect. I MTWThFS Lab. II, III, IV MTWThFS Lab. V MWF	3d-yr. med. 104IA 107IA 107IA	An. Bi. 1-2, Anat. 5-6 Scammon, Noback, and Assistant
111su	6	Human Neurology Lect. V MWF and I TTh Lab. VI, VII MWF Lab. II, III, IV T, and Lab. II, III Th	4th-yr. med. 108IA	Anat. 103, 107 Rasmussen
126su	1½	Advanced Histology Lab. V, VI, VII TTh or Ar	4-5-6 yr. med.	Anat. 103 Noback
156su	Ar	Advanced Anatomy Ar	Grad. and 4-5-6 yr. med. Ar	Permission by Jackson, Rasmussen, or Scammon
163su	Ar	Seminar in Growth of Children Ar	Educ. and med. 126IA	Permission by Scammon
204su	Ar	Research in Anatomy..... Ar	Grad. and 4-5-6 yr. med. Ar	Permission by Jackson, Rasmussen, or Scammon

SECOND TERM

No.	Credit	Title	Offered to	Prerequisite courses
6su	9	Gross Human Anatomy..... Lect. I MTWThFS Lab. II, III, IV MTWThFS Lab. V, VI, VII TTh	3d-yr. med. 304IA 306IA	Anat. 5 Erdmann and Assistant
11su	5	Gross Anatomy Lect. I MTWThFS Lab. II, III, IV MTWThFS	2d-yr. dent. 304IA	Anat. 9-10 Erdmann and Assistant
107su	6	Human Embryology Lect. I MTWTaFS Lab. II, III MTWThFS Lab. IV MW	3d-yr. med. 102IA	Anat. 103 Lee and Assistant

No.	Credit	Title	Offered to	Prerequisite courses
126su	1½	Advanced Histology Lab. V, VI, VII, TTh or Ar	4-5-6 yr. med. Ar	Anat. 103 Dickey
133su	2	Anat. of Fetus and Child. Lect. V TTh Lab. VI, VII TTh	Grad. or 4-5-6 yr. med. 126IA 14IA	Anat. 107 Scammon
135su	1	Phys. Develop. of Childhood. Ar Ar	Educ. and 4-5-6 yr. med. 126IA	Scammon
140su	Ar	Implantation and Placentation Ar Ar	Grad. and 4-5-6 yr. med. Ar	Permission by Lee
156su	Ar	Advanced Anatomy Ar Ar	Grad. and 4-5-6 yr. med. Ar	Permission by Lee or Scammon
204su	Ar	Research in Anatomy. Ar Ar	Grad. Ar	Permission by Lee or Scammon

5su. GROSS HUMAN ANATOMY. Dissection of abdomen and lower extremity. Disarticulated skeletons issued for study of osteology. Fee, \$36.

6su. GROSS HUMAN ANATOMY. Continuation of 5su. Dissection of head, neck, thorax, and upper extremity. Fee, \$36.

9-10su. GROSS ANATOMY. Human osteology and splanchnology, with dissection of the pig fetus. Fee, \$40.

11su. GROSS ANATOMY. Dissection of the human head and neck. Fee, \$20.

14su. HISTOLOGY AND EMBRYOLOGY. Minute structure and development of the tissues and organs, with special emphasis upon the oral region and digestive tract. Fee, \$24.

103su. HUMAN HISTOLOGY. Minute structure of the various tissues and organs. Fee, \$36.

107su. HUMAN EMBRYOLOGY. Development of the human body. Fee, \$25.

111su. HUMAN NEUROLOGY. Morphology of the central nervous system and sense organs. Fee, \$24.

126su. ADVANCED HISTOLOGY. Laboratory study of special preparations, including practice in the identification of unknown specimens. Fee, \$6.

133su. ANATOMY OF THE FETUS AND CHILD. A survey of prenatal and postnatal development. Fee, \$8.

135su. PHYSICAL DEVELOPMENT OF CHILD. Lectures, with illustrative material. Primarily for students in the College of Education; open to medical students by permission of instructor. Fee, \$4.

140su. IMPLANTATION AND PLACENTATION. A study of the implantation of the ovum, formation of the placenta, and the earlier stages in the embryonic development of man and mammals. Fee, \$4 per credit.

156su. **ADVANCED ANATOMY.** Individual problems in gross anatomy, histology, embryology, or neurology. Includes advanced work for clinical graduate students. Fee, \$4 per credit.

163su. **SEMINAR IN GROWTH OF CHILDREN.** A study with graphic analysis of data on physical development of children of school age. Primarily for students in the College of Education; open to medical students by special permission. Fee, \$4 per credit.

204su. **RESEARCH IN ANATOMY.** Research work in gross or microscopic anatomy, histology, embryology, or neurology. Fee, \$5.

PHYSIOLOGY

Professor FREDERICK H. SCOTT; Associate Professor JESSE F. McCLENDON; Assistant Professors CHAUNCEY J. V. PETTIBONE, FRANCIS B. KINGSBURY; Instructor ESTHER M. GREISHEIMER; Assistant

Laboratories open 8 a.m. to 5 p.m., Saturday 8 a.m. to 12 m.

COURSES

FIRST TERM

No.	Credit	Title	Offered to	Prerequisite courses
4su	5	Human Physiology	H.E., Dent., and others	Chem. and Biol.* Greisheimer
		Lect. I	MTWThF	
		Lab. II-IV	MWF	
		Rec. II	TTh	
100-101-102				
Isu†	6	Physiol. Chemistry	All	Org. chem.
(1st half)				
		II, III, IV	MTWThF	
103su	8	Physiol. of Cells, Muscles, etc.	310MH	Pettibone
		Lect. I	All	Org. chem. and an. biol.
		Lab. and Rec.	214MH	
		II, III, IV	MTWThF	McClendon, Greisheimer
113su	1 or Ar	Problems in Physiol.....	301MH	Physiol. 103, 104
		VI, VII, VIII TTh or Ar	All	McClendon or Greis- heimer
			301MH	
153su	1 or Ar	Adv. Physiol. Chem.....	All	Physiol. chem.
		VI, VII, VIII TTh or Ar	310MH	Pettibone
203su	Ar	Research in Physiol.....	Ar hrs.	McClendon
205su	Ar	Research in Physiol. Chem.	Ar hrs.	Pettibone

SECOND TERM

No.	Credit	Title	Offered to	Prerequisite courses
100-101-102				
Isu†	6	Physiol. Chemistry	All	Org. chem.
(2d half)				
		I-IV	MTWThF	
104su	8	Physiol. of Nerv. Sys., etc.	310MH	Kingsbury
		I-IV	All	Org. chem.; an. biol.
			301MH	Scott

* Prerequisites waived for public-school teachers.

† Either term or both may be elected by properly prepared students.

No. Credit	Title	Offered to	Prerequisite courses
113su 1 or Ar	Problems in Physiol..... VI, VII, VIII TTh or Ar	All 301MH	Physiol. 103, 104 Scott
153su 1 or Ar	Adv. Physiol. Chem..... VI, VII, VIII TTh or Ar	All 310MH	Physiol. chem. Kingsbury
203su Ar	Research in Physiol.....	Ar hrs. & cr.	Scott
205su Ar	Research in Physiol. Chem.	Ar hrs. & cr.	Kingsbury
4su. HUMAN PHYSIOLOGY. Sophomore dental students, home economics, and others. Fee, \$10.			
100-101-102Isu. PHYSIOLOGIC CHEMISTRY, first term. Chemistry of carbohydrates, fats, and proteins. Fee, \$24.			
100-101-102IIsu. PHYSIOLOGIC CHEMISTRY, second term. Digestion, metabolism, blood, urine. Fee, \$24.			
103su. PHYSIOLOGY OF CELLS, MUSCLE, NERVE, BLOOD, CIRCULATION, RESPIRATION, DIGESTION. Fee, \$32.			
104su. PHYSIOLOGY OF NERVOUS SYSTEM, SENSES, RESPIRATION, METABOLISM, EXCRETION. Fee, \$32.			
113su. PROBLEMS IN PHYSIOLOGY. Each student will be assigned a topic for special laboratory study. Fee, \$4 per credit.			
153su. ADVANCED PHYSIOLOGIC CHEMISTRY. Course arranged by instructors with qualified students for special work. Fee \$4 per credit.			
203su. RESEARCH IN PHYSIOLOGY. Fee, \$5.			
205su. RESEARCH IN PHYSIOLOGIC CHEMISTRY. Fee, \$5.			

PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor EDGAR D. BROWN.

COURSES

No. Credit	Title	Offered to	Prerequisite courses
104su 3 (66 hrs.)	Experimental Pharmacology I, II, III, IV First term (not given for less than 5 students)	4th-yr. med. and others 322MH MWF	Physiol. 103, 104 Hirschfelder
106su 22 hrs.	General Pharmacology and Therapeutics	5th-yr. med.	Pharm. 102
107su 11 hrs. (66 hrs.)	Both terms. (See Medical School summer program) Therapeutic Conference Both terms. (See Medical School summer program)	6th-yr. med.	Hirschfelder, Brown Hirschfelder
109su* 2 or Ar (66 hrs.)	Exp. Pharmacology VI, VII, VIII TTh or Ar	5-6-yr. med. Ar	Pharm. 102, 104 Hirschfelder, Brown
110su* 2 or Ar	Poisons VI, VII, VIII TTh or Ar	5-6-yr. med. Ar	Pharm. 102, 104 Hirschfelder, Brown

No.	Credit	Title	Offered to	Prerequisite courses
111su	11 hrs.	Prescription Writing	5-6-yr. med.	Pharm. 102
		Second term. For hours see	clinical schedule.	Brown
203su*	Ar	Research in Pharmacology..	5-6-yr. med. and grad.	Permission of Hirschfelder, Brown
		Ar hours and days	Ar	

* Either or both terms.

104su. EXPERIMENTAL PHARMACOLOGY. Exercises illustrating the preparation and action of medicines, their relation to chemical structure, and their mode of administration. Fee, \$12.

106su. GENERAL PHARMACOLOGY AND THERAPEUTICS. A more detailed study of drugs important in clinical practice, covering the relations of chemical structure to physiologic and therapeutic action and modes of application in clinical medicine. Fee, \$8.

107su. THERAPEUTIC CONFERENCE. Fee, \$4.

109su. EXPERIMENTAL PHARMACOLOGY. Special investigation and experimental study of one or more subjects in pharmacology, in which the student is given an opportunity of choice of topics. Fee, \$4 per credit.

110su. POISONS. Their detection, action, and antidotes. Fee, \$4 per credit.

111su. PRESCRIPTION WRITING. The principles of prescription writing; study of the flavoring, coloring, and incompatibilities of drugs. Fee, \$4.

203su. RESEARCH IN PHARMACOLOGY. Fee, \$5.

PATHOLOGY

Professor HAROLD E. ROBERTSON; Associate Professor ELEXIUS T. BELL; Assistant Professor MOSES BARRON; Instructors MARGARET WARWICK, THEODORE H. SWEETSER; Teaching Fellow WILLIAM R. SHANNON.

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
4su	6	Pathology	Dent.	Anat., hist., bact.
First term		I, II, III MTWThF	104IA	Robertson, Warwick, Sweetser
		I S		
111su†	Ar	Autopsies	Med. and grad.	Path. 101, 102
		Hrs. and cr. Ar	IA	Staff
113su†	Ar	Applied Pathology	Med. and grad.	Path. 101, 102
		Hrs. and cr. Ar	IA	Robertson, Bell
114su*	3	Path. of Dis. of Children..	Med. and grad.	Path. 101, 102
		VI, VII, VIII TTh	104IA	Shannon, Warwick
115su†	Ar	Examination of Spinal Fluid	Med. and grad.	Path. 101, 102
		Hrs. and cr. Ar	IA	Warwick

* Continues through quarter.

† Either or both terms may be elected.

No.	Credit	Title	Offered to	Prerequisite courses
117su†	1½	Diagnosis of Tumors..... VI, VII, VIII	Med. and grad. TTh IA	Path. 101, 102 Bell, Sweetser
119su†	Ar	Clin. Path. Conf. VIII	Med. and grad. F	Path. 101, 102 Staff

† First term only.

45su. PATHOLOGY for students in Dentistry. Fee, \$24.

111su. AUTOPSIES. Fee, \$4 per credit.

113su. APPLIED PATHOLOGY. Fee, \$4 per credit.

114su. PATHOLOGY OF DISEASES OF CHILDREN. Fee, \$12.

115su. EXAMINATION OF SPINAL FLUID. Fee, \$4 per credit.

117su. DIAGNOSIS OF TUMORS. Fee, \$6.

119su. CLINICAL PATHOLOGICAL CONFERENCE. Fee, \$4 per credit.

BACTERIOLOGY

Assistant Professor ARTHUR T. HENRICI; Assistant

COURSES

No.	Credit	Title	Offered to	Prerequisite courses
1st term				
104su	6	General Bacteriology	All	Gen. chem. and bot. or zool.
		V, VI, VII	MTWThF	201MH
				Henrici and Assistant
2d term				
105su	5	Special Bacteriology	4th-yr. med. and others	Gen. bact.
		I, II, III	TTh	201MH
		V, VI, VII	MWF	Henrici and Assistant
114su*	2	Adv. Bact. (not over 10 students)	Med. or grad.	Gen. and spec. bact.
or Ar		VI, VII, VIII	TTh or Ar	MH
201su*	Ar	Research in Bacteriology....	Med. or grad.	Gen. and spec. bact.
		Hours and days Ar	MH	Henrici

* Either or both terms.

104su. GENERAL BACTERIOLOGY. The preparation of culture media; the morphology of bacteria; methods of staining and identification; anaerobic bacteria; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries. Fee, \$10.

105su. SPECIAL BACTERIOLOGY. The study of pathogenic bacteria, especially in relation to definite diseases; bacteriological methods in clinical diagnosis; principles of infection and immunity, with practical application of serum reactions. Fee, \$20.

114su. ADVANCED BACTERIOLOGY. Fee, \$4 per credit.

201su. RESEARCH IN BACTERIOLOGY. Fee, \$5.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

OFFICERS OF ADMINISTRATION

MARION LEROY BURTON, Ph.D., D.D., LL.D., President¹
ROSCOE W. THATCHER, M.A., D.Agr., Dean of the Department of Agriculture
LOTUS D. COFFMAN, Ph.D., Director of the Summer Session
EDWARD M. FREEMAN, Ph.D., Vice-Director of the Summer Session and
Dean of the College of Agriculture, Forestry, and Home Economics
RODNEY M. WEST, B.A., Secretary

FACULTY

MARION LEROY BURTON, Ph.D., D.D., LL.D., President¹
WILLIAM WATTS FOLWELL, LL.D., President Emeritus
CYRUS NORTHRUP, LL.D., President Emeritus
ROSCOE W. THATCHER, B.S., M.A., Dean of the Department of Agriculture
LOTUS D. COFFMAN, Ph.D., Director of the Summer Session
EDWARD M. FREEMAN, Ph.D., Vice-Director of the Summer Session and
Dean of the College of Agriculture, Forestry, and Home Economics
RODNEY M. WEST, B.A., Secretary
WILLIAM H. ALDERMAN, B.S.A., Professor of Horticulture
CLYDE H. BAILEY, M.S., Associate Professor of Agricultural Biochemistry
LOUIS B. BASSETT, Associate Professor of Farm Management
ALICE BIESTER, M.A., Associate Professor of Nutrition
CLARA M. BROWN, B.A., Assistant Professor of Home Economics
LEROY CADY, B.S., in Agr., Associate Professor of Horticulture
ROYAL N. CHAPMAN, Ph.D., Assistant Professor of Animal Biology
R. ADAMS DUTCHER, M.S., M.A., Associate Professor of Agricultural Biochemistry
WILLIAM P. DYER, B.A., Assistant Professor of Agricultural Education
ALBERT M. FIELD, M.S., Assistant Professor of Agricultural Education
EDWARD M. FREEMAN, Ph.D., Professor of Botany and Plant Pathology
HARRIET I. GOLDSTEIN, Associate Professor of Drawing and Design
ROSS A. GORTNER, Ph.D., Professor of Agricultural Biochemistry
CLARENCE L. HOLMES, M.A., Assistant Professor of Agricultural Economics
FRANCIS JAGER, Professor of Bee Culture
JOSEPH R. KEITHLEY, M.S. in Agr., Professor of Dairy Husbandry
HARRY H. KNIGHT, Ph.D., Assistant Professor of Entomology
PAUL B. LAWSON, Associate Professor of Entomology
FORREST W. MCGINNIS, M.S., Assistant Professor of Agronomy

¹ Resigned July 1, 1920.

WILLIAM MOORE, B.A., Associate Professor of Entomology
CLARENCE A. MORROW, B.S., Ph.D., Assistant Professor of Agricultural
Biochemistry

AMY MORSE, B.A., Assistant Professor of Home Management
OSCAR W. OESTLUND, Ph.D., Assistant Professor of Animal Biology
LEROY S. PALMER, Associate Professor of Agricultural Biochemistry
E. MAUDE PATCHIN, B.S., Assistant Professor of Textiles and Clothing
WILLIAM A. RILEY, Ph.D., Professor of Entomology and Economic
Zoology

ARTHUR G. RUGGLES, M.A., Associate Professor of Entomology
ELVIN C. STAKMAN, Ph.D., Professor of Plant Pathology
ARTHUR C. SMITH, Professor of Poultry
C. C. SWAIN, Inspector of Rural Schools
MILDRED WEIGLEY, B.S., Professor of Home Economics
MARION WELLER, B.A., Associate Professor of Textiles and Clothing
HALL B. WHITE, B.S., in Agr., Assistant Professor of Farm Buildings
JOHN J. WILLAMAN, M.S., Assistant Professor of Plant Chemistry
ARTHUR K. ANDERSON, M.S., Instructor of Agricultural Biochemistry
JOHN V. ANKENEY, B.S., Assistant Professor of Agricultural Education
CARLOTTA BROWN, Instructor in Millinery
NORRIS K. CARNES, B.S., Instructor in Animal Husbandry
ALICE CHILD, M.A., Instructor in Foods and Cookery
RUBY N. COON, B.S., Instructor in Home Economics
CHESTER A. DAHLE, Assistant in Dairy Husbandry
J. GRANT DENT, Instructor in Mechanics Laboratory
VETTA GOLDSTEIN, Instructor in Drawing and Design
MAURICE G. JACOBSON, Instructor in Drawing
FRANCES E. KELLEY, M.A., Instructor in Home Management
WYLLIE McNEAL, B.S., Instructor in Home Economics
FREDERICK H. STEINMETZ, B.S. in Agr., Assistant Professor of Farm Crops
WILLIAM T. TAPLEY, B.S., Assistant in Horticulture

GENERAL INFORMATION

The work of the land grant colleges of the United States is now finding expression in three great fields of educational activity, viz., instruction, experimentation, and extension.

Two of these, experimentation and extension, are serving the people throughout the entire year, and the conviction is growing that the great plant, equipment, organization, and faculty of these institutions should likewise be utilized for instruction during more than the nine months of the college year.

In response to this demand the summer session is established in order that the field plots, orchards, livestock, libraries, laboratories, museums, shops, machinery, classrooms, instruction, and other facilities used by students during the regular college year shall be available to those who for any reason find it more convenient to attend during the summer months.

The work offered seeks to meet the needs of graduates of arts colleges and normal schools, teachers of secondary schools, principals of schools (especially of consolidated schools), superintendents of schools, and others who desire courses in agriculture or home economics, and who wish to obtain therefor college credit, as well as to meet the needs of students seeking to complete the undergraduate college work.

The work also furnishes an opportunity for graduates of other colleges of agriculture to improve their knowledge of Minnesota agriculture, preparatory to teaching in this state.

COURSES AND CREDITS

The courses offered are selected from those offered during the regular college year, in which the same amount of work will be done and for which the same credit will be given.

As the summer session (six weeks) is one half the length of a regular college quarter (twelve weeks), the number of recitations and amount of work per week for each credit hour will be approximately *twice that required each week during the college year*. Nine quarter-hour credits constitute standard work.

FACULTY

The summer session faculty will consist of members of the regular college faculty aided by specialists from other institutions who are of known efficiency in their fields of labor.

COURSES OFFERED

Preparations have been made to offer such of the following courses as are applied for by a sufficient number of students, six regular students being the minimum for which a class will be organized.

AGRICULTURAL BIOCHEMISTRY

- 3, Types of Carbon Compounds
- *101-102, Agricultural Quantitative Analysis
- *111-112, Phytochemistry
- †113-114, Biochemical Laboratory Methods
- †116, Chemistry of "Vitamines" and Deficiency Diseases
- †118, Laboratory Problems in Biochemistry
- †201, Seminar
- †203, Research Problems
- †206, Colloids

AGRICULTURAL EDUCATION

- 11, Principles of Vocational Education
- 41, Teaching
- 42, Teaching
- 53, Consolidated Rural Schools
- 54, Rural Community Leadership
- 66, Fundamentals of Agriculture
- 75, Visual Presentation
- 131, Methods in Teaching Agriculture
- 201, Advanced Seminar
- 221, Graduate Problems

AGRONOMY AND FARM MANAGEMENT

- 1, Farm Crops
- 11, Farm Machinery
- 121, Cereal Crops
- 122, Corn and Potato Crops

ANIMAL HUSBANDRY

- 1, Breeds and Types of Livestock
- 6, Livestock Feeding

BEE CULTURE

- 1, Elements of Beekeeping
- 5, Queen Bee Raising

DAIRY HUSBANDRY

- 1, Elements of Dairying

ECONOMICS

- 6, Agricultural Economics
- 7, Principles of Economics

ENTOMOLOGY AND ECONOMIC ZOOLOGY

- *1-2, Introductory Entomology
- 3, Elementary Economic Entomology
- *44-45, Animal Parasites and Parasitism
- 197, Introduction to Research

* This course will be offered from June 21 to August 27, but credit will be given upon completion of first half.

† This course continues through to August 27.

FARM ENGINEERING

- 3, Mechanical Drawing
- 5, Carpentry
- 15, Mechanics Laboratory

HOME ECONOMICS

- 3, Textiles
- 11, Garment-Making
- 13, Dressmaking
- 17, Advanced Clothing Construction
- 18, Commercial Clothing Manufacture
- 19, Millinery
- 21, Foods and Cookery
- 22, Food Economics
- 25, Special Problems in Foods and Cookery
- 35, Home Management Laboratory
- 36, Home Management Lecture
- 42, Special Methods of Teaching Home Economics
- 43, Organization and Methods for Related Art Teaching
- 51, Drawing and Design
- 52, Art History and Appreciation
- 53, Advanced Design
- 103, Dietetics
- 108, Nutrition II
- 122, Advanced Textiles
- 123, Clothing Economics
- 131, Home Equipment

HORTICULTURE

- 32, Vegetable Gardening
- 71, Landscape Gardening
- 90, General Horticulture

PLANT PATHOLOGY AND BOTANY

- 1, Plant Pathology
- 14, Plant Disease Control
- 111, Diseases of Field Crops
- 112, Diseases of Fruit and Vegetable Crops

POULTRY HUSBANDRY

- 1, Poultry
- 2, Poultry Judging

CONSOLIDATED SCHOOL PRINCIPALS

The curriculum outlined below is for consolidated school principals. This curriculum leads to a degree and certificate in the College of Education. No change or deviations from the curriculum will be permitted except upon petition. Petition blanks may be secured at the office of the dean of the College of Education or at the office of the registrar on

either campus. In every case the petition must be approved by the department or division concerned, and by the dean of the College of Education, before any changes or substitutions can be made.

Registration for this curriculum will be made at the farm campus. Students are requested to see Dean E. M. Freeman concerning academic subjects in the curriculum or Professor A. M. Field concerning educational subjects, or the dean of the College of Education.

Since the law requires the principal of a consolidated school to teach agriculture, that subject has been made the major. To this has been added a minor in manual training (farm shop work), and a minor in education. The specific courses in this major and these minors follow:

<i>Major in Agriculture</i>		Credits
*66. Fundamentals of Agriculture (condensed course).....		3
ANIMAL HUSBANDRY		
*1. Types and Breeds of Livestock.....		5
†8. Elements of Feeding.....		3
DAIRY HUSBANDRY		
*1. Elements of Dairying.....		5
ENTOMOLOGY AND ECONOMIC ZOOLOGY		
3. Elements of Economic Entomology.....		3
HORTICULTURE		
90. General Horticulture.....		3
PLANT PATHOLOGY		
1. Plant Pathology.....		5
†6. Plant Pest Control.....		3
POULTRY HUSBANDRY		
1. Poultry.....		3
AGRONOMY AND FARM MANAGEMENT		
*1. Farm Crops.....		3
†*101. Farm Management.....		3
122. Corn and Potato Crops.....		3
SOILS		
†1. Soils.....		5
Total		47

Minor in Manual Training
(Farm Shop Work)

COLLEGE OF EDUCATION		
M.T. 13. Organization and Supervision of Manual Training.....		3
*M.T. 12. Teachers' Course in Elementary Wood Work.....		3
or		
COLLEGE OF AGRICULTURE—DIVISION OF FARM ENGINEERING		
F. Eng. 3. Mechanical Drawing.....		3
*F. Eng. 5. Carpentry.....		3
*F. Eng. 15. Mechanics Laboratory.....		2

Minor in Education

COLLEGE OF EDUCATION		
Ed. 3. Social Aspects.....		3
Ed. 55. Elementary Educational Psychology.....		3
Ed. 111. Educational Diagnosis.....		3

* Required courses.

† Not offered, summer session 1920.

		Credits
Ed. 11.	Technique of Teaching.....	3
	or	
Ag. Educ. 131.	Methods of Teaching Agriculture.....	3
*Ed. 121.	Organization and Administration.....	3
	or	
*Ag. Educ. 53.	Consolidated Rural Schools.....	3
*Ag. Educ. 75.	Visual Presentation	3
Ed. 161.	Supervision	3
*Ag. Educ. 54.	Rural Education and Community Life with special refer- ence to the interrelationships of the two.....	3

Additional Requirements

Sociology 14. Rural Sociology.

General electives to complete the number of hours for graduation.

* Required courses.

FEES

A fee of \$5 is charged for registration. In addition, \$2 is charged for each credit hour for which the student registers and a further \$1.50 for each laboratory course.

A deposit of \$5 is also required to cover unusual breakage and safe return of apparatus and books. This deposit will be returned at the close of the session, less charges for breakage and losses. All fees are payable at the time of completing registration.

A health insurance fee of \$1 is charged for which the student receives the privileges offered by the University Health Service.

The registration fee (\$5) is not refunded under any conditions. Students cancelling their registration during the first week of the session may receive a pro rata refund of the credit hour and laboratory fees. Such refund shall not exceed five sixths of the amount paid on these items and must be approved by the vice-director of the summer session.

No refunds whatsoever shall be made to students who attend more than one week.

ADMISSION

The courses of the summer session are open to all mature men and women who are considered qualified to pursue the chosen work to advantage, but college credit will be given only when college entrance requirements have been fulfilled.

If you have not registered in the College of Agriculture, Forestry, and Home Economics heretofore and wish to receive college credit for work done in the summer session, you should send to the secretary, on a suitable blank, a properly certified copy of your preparatory credits.

A blank for this purpose can be procured from the principal of your high school or from the secretary, University Farm, St. Paul.

REGISTRATION

Saturday, June 19 and Monday, June 21, are regular registration days. Students may register on any preceding day after May 1. Students should complete registration and be ready for class work before 8 a.m.

Tuesday, June 22. After Monday, June 21, students will register by special permission only.

LOCATION

From St. Paul or Minneapolis, take a Como-Harriet car. One fare (5 cents) takes you to Doswell Avenue. A short walk to the northeast brings you to the Administration Building, University Farm, where you register. If you wish to ride the entire distance, change at Eustis Avenue from the Como car to the intercampus car, which takes you, for an additional fare, into the University Farm grounds. Walk west to the Administration Building, the third on your left. There are no intercampus cars after 6 p.m., nor on Sundays or holidays.

Altho the college is located in the country and has all the advantages of the quiet and the fresh air of the country, yet it is close enough to the Twin Cities to get all the benefits of these large centers. No more beautiful spot between the two cities could have been selected for such a school. Situated on picturesque hills, overlooking Midway and the two cities, the buildings are grouped conveniently about the undulating campus. Nature has done much to make this a beauty spot, and the landscape artist has added to the beauty by the arrangement of paths and the replacing of trees and shrubs with many varieties suited to the climate.

ACCOMMODATIONS

Those taking regular work at the summer session may obtain rooms in the dormitories. Rooms will be assigned at the time of registration. The dormitories contain a very few single rooms; other rooms are intended to accommodate two or three persons. The rooms are furnished with necessary bedding. A change of linen is made twice each week, and of towels every day. Students residing in the Twin Cities will not be given dormitory rooms. Those who do not expect to remain at the school for the entire six weeks should obtain rooms outside the dormitories. Good board and room may be obtained within a short distance from the college for \$6 per week and upward. Dormitories will be opened Saturday, June 22.

A cafeteria with reasonable charges is maintained on the campus.

Expenses in Dormitories

Room rent, use of bedding, and laundering of the same		
One student in a room, \$2.00 per week.....		\$12.00
More than one student in a room, 1.50 per week.....		9.00
Post-office box .....		.20
		<hr/>
Total		\$9.20 or \$12.20

In addition to the above each student will be expected to pay, at the same time, the amount of his fees, according to the provisions on page 66. Entire amount is to be paid in advance at time of registration.

In order to facilitate registration and to avoid delay and inconvenience to yourself, come prepared to pay your fees in cash or by bank draft, postal money order, or certified check drawn for the exact amount you

are to pay. One issued for a larger amount will not be accepted for payment of fees. Travelers' checks are recommended. They will be accepted as cash.

The cashier is not required to cash checks, drafts, or other negotiable papers and has a right to demand identification or guarantee, or to refuse payment. Bank drafts, post-office money orders, and certified checks are more easily negotiated than are personal checks.

BAGGAGE

Baggage will be carried between either city and University Farm by the service section for a uniform charge of fifty cents for each piece. Delivery will be made as promptly as the limited facilities of the section will permit. Those wishing special attention or quick delivery are advised to arrange with city express or transfer companies for delivery of their baggage and for the charges for the same. Students wishing to have their baggage handled by the service section should hand the checks in at the general service office, near the post-office, promptly after arrival so as to avoid, as far as possible, charges for storage.

MAIL

Mail for students may be sent to University Farm, St. Paul. Post-office boxes are assigned to all students and a charge of 20 cents made therefor. As soon as your post-office box has been assigned, notify your correspondents to put the number of your box on your mail. This will facilitate distribution and enable you to receive your mail more promptly.

At the end of the session be sure to leave a forwarding address with the post-master or at the secretary's office.

LIBRARY

Good library facilities, including books, bulletins, reports, and papers on agriculture and home economics, will be available to all students in the library, in the Administration Building.

EXCURSIONS

The vicinity of the Twin Cities abounds in objects of geologic and physiographic interest, such as rock formations, old river gorges, and glacial moraines; while the cities themselves, with their parks, lakes, buildings, libraries, and art galleries, afford students every opportunity for profitable use of their leisure hours.

The campus, in connection with the experiment station farms, gives the best of opportunity to study agricultural problems and nature.

ROUND TABLE DISCUSSIONS

Home Economics.—Round table discussions in home economics will be held once a week covering such topics as courses of study, part-time work, problems in supervision, etc.

Agriculture.—Round table discussions in agriculture will be held once a week. Topics for discussion will be announced later.

CONSULTATIONS

Opportunity will be given for conference with the members of the faculty on subjects of special interest to individual students.

SWIMMING-POOL

The swimming-pool in the gymnasium will be open to the use of men and women during stated periods throughout each week for a very moderate fee to cover actual expenses. A skilled man will be in charge during the time the men are using the pool and a skilled woman will be in attendance during those hours in which the use of the pool is devoted to the women.

LIBRARY TRAINING SCHOOL

Agricultural Engineering Building, Room 102, 103

Staff

CLARA F. BALDWIN, Director. Library Director, Minnesota Department of Education.

HARRIET A. WOOD, Supervisor of School Libraries, Minnesota Department of Education.

ALMA PENROSE, Associate Librarian, Carleton College, Northfield, Minn.

ETHEL R. SAWYER, Director of Training Class, Library Association, Portland, Oregon.

ELIZABETH SCRIPTURE, Librarian, East High School, Minneapolis, Minn.

This course is under the direction of the Library Division of the State Department of Education and is open to librarians of public and school libraries.

Since the course was omitted in 1919, accommodations for a large attendance will be provided. Those who are now occupying library positions are expected to take advantage of the opportunity offered by the state to qualify for this special work.

Students must have at least a high-school education or its equivalent, and those preparing for work in school libraries must have the same educational qualifications as teachers in such schools.

Outline of course.—The course will comprise lectures and practice work on the technical phases of library work, including cataloging and classification; book selection, reference, work with children, administration of school and public libraries, and instruction in the use of books and libraries.

Book selection.—Special emphasis will be given to the fundamental problem of book selection. A course of thirty lectures continuing through the course will be given by Miss Ethel R. Sawyer, director of the training class, Library Association, Portland, Oregon. In order to allow time for book examination, the technical work and practical work will be reduced to the minimum, but every student will be supplied with rules and forms necessary to the proper organization of any library.

Two weeks' special course.—A special course of one week each in fiction and poetry will be given by Miss Sawyer during the weeks of July 12-23. This course will be open to librarians and teachers, and will offer a supplementary course of unusual interest to former students of the school.

For application blank and fuller announcement, address the Library Division, Department of Education, Historical Building, St. Paul, Minn.

INTENSIVE TRAINING COURSE FOR TEACHERS OF VOCATIONAL AGRICULTURE

Two types of courses will be given during the regular summer session at the University Farm. The first, a six weeks' course in the regular summer session of the University of Minnesota, where those who have not had the required amount of professional work to qualify for the state teacher's certificate may make up this deficiency and at the same time do some work that may give credit toward a higher degree. The second, a two weeks' intensive training course designed particularly for men now teaching vocational agriculture. In the latter course, part of the time is to be devoted to regular classroom work in methods of teaching high-school agriculture, rural sociology, and farm machinery. Special lectures and laboratory work will be given in animal husbandry, horticulture, entomology, farm management, bees, plant diseases, and animal diseases. A part of each afternoon will be devoted to conferences where the various problems of the agriculture teacher will be thoroly discussed.

SUMMER COURSES IN OTHER COLLEGES OF THE UNIVERSITY

From June 21 to July 30 the University of Minnesota also maintains on the Minneapolis campus courses in the colleges of Education, Dentistry, Engineering and Architecture, and Science, Literature, and the Arts, and the Medical School. Those interested may obtain information from the registrar, University of Minnesota, Minneapolis.

INFORMATION

For information regarding the summer session of the College of Agriculture, Forestry, and Home Economics, address the secretary, University Farm, St. Paul.

DESCRIPTION OF COURSES

Note.—Since there are only one half as many weeks in the summer session as in the regular quarter, each course will require approximately twice as many hours per week as in a regular quarter. One credit hour is equivalent to (1) 12 lecture or recitation periods requiring two hours of preparation each; (2) 24 periods of laboratory work requiring one-half hour of preparation each; or (3) 36 hours of laboratory work with no preparation.

KEY TO BUILDINGS, UNIVERSITY FARM

Ad—Administration	En—Agricultural Engineering
PP—Plant Pathology	HE—Home Economics
Ch—Chemistry	Hr—Horticulture
DB—Dairy Barn	St—Stock Pavilion
DH—Dairy Hall	Ve—Veterinary
DiH—Dining Hall	WH—Women's Hall

AGRICULTURAL BIOCHEMISTRY

Professor ROSS A. GORTNER; Associate Professors CLYDE H. BAILEY, R. ADAMS DUTCHER, LEROY S. PALMER; Assistant Professors CLARENCE A. MORROW, JOHN J. WILLAMAN; Instructor ARTHUR K. ANDERSON.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3	6	Types of Carbon Compounds I, II MTWThFS	Soph., jr., sr. 201Ch	Chem. 1 yr. Anderson

GRADUATE COURSES

The following courses will be given for an entire summer quarter of eleven weeks provided that five or more students desire the course. Students intending to register for one or more of these courses should notify the Division of Agricultural Biochemistry of such intention at as early a date as possible.

No.	Credits	Title	Offered to	Prerequisite courses
101-102	6*	Agri. Quant. Analysis... V, VI, VII, VIII MTWThF	Jr., sr., grad. 7Ch	Quant. analysis Morrow
111-112	6*	Phytochemistry I, II MWF	Sr., grad. 251Ch	Biol. 10 cr., Org. chem. Morrow
113-114	4	Biochem. Lab. Methods. (I, II, III, IV TTh) (III, IV MW)	Sr., grad. 7Ch	Quant. anal. parallel 111-112 Morrow
116	3 or 5	Chem. of "Vitamines" and Deficiency Diseases Ar Ar	Sr., grad. Ar Ar	111-112, 113-114 or physiol chem. Dutcher

* Three credits allowed for first six weeks.

No.	Credits	Title	Offered to	Prerequisite courses
118	3 or 5	Lab. Prob. in Biochem..	Sr., grad.	111-112, 113-114; or 103 or 110
		Ar	Ar	.....
201	1	Seminar	Grad.	.....
		IV	F	201Ch
				Gortner
203	3 or 5	Research Problems	Grad.	.....
		Ar	Ar	.....
206	3	Colloids	Grad.	111-112 or phys. chem.
		III	MWF	201Ch
				Gortner

3. TYPES OF CARBON COMPOUNDS. An elementary study of the different groups of carbon compounds, with special reference to their relationships and their occurrence in plant and animal materials used as food. ANDERSON.

101-102. AGRICULTURAL QUANTITATIVE ANALYSIS. Includes estimation of inorganic and organic constituents of biological products, proximate analysis of foods and feeding stuffs, use of the polariscope, immersion refractometer, colorimeter, and nephelometer, viscosimeter, and other special apparatus. MORROW.

111-112. PHYTOCHEMISTRY. An advanced course dealing with the colloidal state, and the chemistry of proteins, carbohydrates, glucosides, tannins, fats, plant acids, enzymes and pigments, and their physico-chemical relations to the vital processes involved in growth and nutrition. MORROW.

113-114. BIOCHEMICAL LABORATORY METHODS. A laboratory course paralleling the lectures in 111-112, using recent methods for the investigation of biologically important compounds with especial reference to the detection and estimation of such compounds in cells or tissues. MORROW.

116. THE CHEMISTRY OF "VITAMINES" AND DEFICIENCY DISEASES. Lectures, consultations, and library work on special nutritional problems accompanied by chemical and biological studies of food materials from the standpoint of their "vitamine" content. DUTCHER.

118. LABORATORY PROBLEMS IN BIOCHEMISTRY. Special laboratory work in the preparation and isolation of pure compounds which occur in living cells, in the study of biochemical reactions, and in special methods of identification or determination of biochemical products. GORTNER, BAILEY, PALMER, DUTCHER, MORROW, or WILLAMAN.

201. SEMINAR. Regular meetings for the discussion of methods of research, formulation of research problems, and reviews of current literature. Required of all majoring in this division and of all minor-ing for the Doctor's degree. GORTNER.

203. RESEARCH PROBLEMS. Special work on particular research problems other than the student's major thesis. Facilities are provided for biochemical investigations and for advanced studies in plant, animal, or human nutrition. GORTNER, BAILEY, PALMER, DUTCHER, MORROW, WILLAMAN.
206. COLLOIDS. Lectures dealing with the colloidal state, the preparation and properties of colloidal solutions, and the relation of these to biochemical processes. GORTNER.

AGRICULTURAL EDUCATION

Assistant Professors JOHN V. ANKENY, WILLIAM P. DYER, ALBERT M. FIELD; Inspector of Rural Schools C. C. SWAIN.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
11	3	Principles of Vocational Educ. I MTWThFS	Jr., sr. 307Ad	None Ankeny
41	2	Teaching	Sr.	131, Agron. 121, 122, 123, see course de- scription
42	3	Ar Ar Teaching	Ar Ar Sr.	Field, Dyer 131, Agron. 121, 122, 123, see course de- scription
53	3	Ar Ar Consolidated Rural Schools... III MTWThFS	All 317Ad	None Dyer, Swain
54	3	Rural Educ. and Com. Life.. IV MTWThFS	Sr. 317Ad	None Dyer, Swain
*66	3	Fundamentals of Agriculture Lect. IV MTWTh Lab. V, VI TTh	Jr., sr. 307Ad 307Ad	None Field
75	3	Visual Presentation	Jr., sr. 317Ad	None Ankeny
*131	3	Lect. VII T Lab. VII, VIII MWF Methods of Teaching Agri... II MTWThFS	Jr., sr. 317Ad	11 Field
201		Advanced Seminar	Sr. Ar Ar	Field
221		Ar Ar Graduate Problems	Ar Ar	Field

* Special course for consolidated school principals.

11. PRINCIPLES OF VOCATIONAL EDUCATION. The fundamental principles upon which education is based. Emphasis is placed on those phases which are most closely related to vocational education. ANKENY.
- 41-42. TEACHING. Observation of regular classes; interpretation of class practices; preparation of lesson plans and actual teaching of classes under careful supervision in recitation and laboratory; criticism and discussion of plans, methods, and results of student's teaching. Students are admitted to this course only when recommended by the

- faculty of the division in which they are specializing and when accepted by the Division of Agricultural Education. FIELD, DYER.
53. CONSOLIDATED RURAL SCHOOLS. Building arrangements, selection of teachers, equipment, transportation of pupils, health supervision, home-project work, and other problems in organization and management of consolidated rural schools from the viewpoint of the special needs of rural life. DYER, SWAIN.
54. RURAL EDUCATION AND COMMUNITY LIFE. Special attention given to those features which are desirable in a rural community for educational, recreational, ethical, and esthetic purposes and the ways and means to organize the same about the school as a center. DYER, SWAIN.
66. FUNDAMENTALS OF AGRICULTURE. Essential for principals and superintendents of schools in which agriculture is taught, and valuable for students of other colleges whose time for agriculture is limited. Agricultural college experts will give work in their special fields. FIELD.
75. VISUAL METHOD OF PRESENTATION. To acquaint students with the various visual aids, their preparation, source, and use in the teaching process. Actual laboratory practice is given in the preparation and operation of various mediums. ANKENY.
131. METHODS OF TEACHING AGRICULTURE. Fundamentals of method in teaching agriculture in public schools. Selecting, organizing, and presenting subject-matter. Equipment, illustrative material, laboratory work, field trips. Special emphasis on the home project as a method in teaching agriculture. FIELD.
201. ADVANCED SEMINAR. A departmental seminar devoted to an intensive, critical, and constructive study of the boarder administrative problems and policies in the field of agricultural education. Designed especially for supervisors and teacher-trainers. Opportunity for independent investigation and research. FIELD.
221. GRADUATE PROBLEMS. Making investigations, gathering data, and formulating plans regarding agricultural education. FIELD.

AGRONOMY AND FARM MANAGEMENT

Associate Professor LOUIS B. BASSETT; Assistant Professor FORREST MCGINNIS; Instructor FREDERICK H. STEINMETZ.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	3	Farm Crops I, II MTWThFS	All 2Ad	None Steinmetz
11	3	Farm Machinery V, VI, VII TWThF	Jr., sr. Basement Ad	None Bassett
*121	3	Cereal Crops III, IV MTWThFS	Jr., sr. 2Ad	1, bot. 10 cred. McGinnis
*122	3	Corn and Potato Crops..... III, IV MTWThFS	Jr., sr. 2Ad	1, bot. 10 cred. McGinnis.

* Course 121 or Course 122 will be given but not both. Choice by the class enrolled will be permitted.

- I. FARM CROPS. An elementary study of the important field crops of the United States with emphasis upon those of local importance; distribution, economic importance, agricultural classification, cultural methods, and principles of improvement. STEINMETZ.
11. FARM MACHINERY. Lectures and laboratory work covering classification, mechanical construction, adjustment, and operation of the different kinds of farm machinery. BASSETT.
121. CEREAL CROPS. An advanced study of the cereal crops. Structure, group classification, improvement, growing, and utilization. Brief score-card practice and a limited amount of placing on intrinsic value included. MCGINNIS.
122. CORN AND POTATO CROPS. A study of the corn and potato crops similar to that outlined for Course 121. MCGINNIS.

ANIMAL HUSBANDRY

Instructor NORRIS K. CARNES.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	5	Types and Breeds of Livestock III, IV MTWThF V, VI MTWThF	All West Arena, St	None Carnes
6	5	Livestock Feeding I, II MTWThF	St. 3St	Agri. Biochem. 15 Carnes

1. TYPES AND BREEDS OF LIVESTOCK. The types as related to performance or production in horses, beef cattle, sheep, and swine, and the origin, history, characteristics, and economic importance of the breeds, classified according to type. CARNES.
6. LIVESTOCK FEEDING. Feeding livestock under farm conditions; efficiency and economy in growing and fattening meat animals; feeding draft horses and colts. Consideration of experimental work and present practice. Practical feeding problems. Only three credits allowed to those who have completed Course 8. CARNES.

BEE CULTURE

Professor FRANCIS JAGER.

COURSES				
No.	Credits	Title	Offered to	Prerequisite courses
1	3	Elements of Beekeeping..... IV	Jr., sr. MWF	None
		Lab. Ar	Ar	Jager
5	3	Queen Bee Raising..... Ar	Jr., sr. Ar	1 Jager

1. ELEMENTS OF BEEKEEPING. Fundamentals of bee behavior and bee practice throughout the cycle of the year. JAGER.
5. QUEEN BEE RAISING. Theory and practice of bee-breeding in connection with our queen-raising station at Zumbra Heights. Course limited to five students. JAGER.

DAIRY HUSBANDRY

ANIMAL HUSBANDRY GROUP

Professor JOSEPH R. KEITHLEY; Assistant CHESTER A. DAHLE.

COURSES				
No.	Credits	Title	Offered to	Prerequisite courses
1	5	Elements of Dairying..... (Lect.) I (Lab.) II, III, MTWTh	All 39DH 39DH	None Keithley Dahle

1. ELEMENTS OF DAIRYING. Composition of milk. Causes of variation in composition; milk constituents and their uses in dairy manufactures and as food; Babcock test; sanitary handling of milk and cream on the farm; cream separating and farm buttermaking. KEITHLEY, DAHLE.

ECONOMICS

Assistant Professor CLARENCE L. HOLMES.

COURSES				
No.	Credits	Title	Offered to	Prerequisite courses
6	3	Agricultural Economics..... IV	Soph., jr., sr. 215En MWFThFS	5 Holmes
7	5	Principles of Economics..... II, III	Soph., jr., sr. 203HE MTWThF	7 Holmes

6. AGRICULTURAL ECONOMICS. Principles of agricultural economics with special emphasis upon production. HOLMES.
7. PRINCIPLES OF ECONOMICS. Fundamentals of economic theory, with more than the usual amount of emphasis upon consumption. HOLMES.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

Professor WILLIAM A. RILEY; Associate Professors PAUL B. LAWSON, WILLIAM MOORE, ARTHUR G. RUGGLES; Assistant Professors ROYAL N. CHAPMAN, HARRY H. KNIGHT, OSCAR W. OESTLUND.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1-2	10	Introductory Entomology Lect. and Lab. I, II, III, IV MWF Additional lab. hrs. to be arranged individually	All 306Ad	An. biol. 1 yr. Riley, Ruggles
3	3	Elem. Economic Entomology. Lect. and Lab. VI, VII, VIII MTWTh	All 306Ad	None Lawson
*44-45	6	Animal Parasites and Parasitism Lect. and Lab. VI, VII, VIII MTWTh	All 321Ad	An. biol. 1 yr. Riley

* Credit allowed for first half of course for first six weeks.

1. **INTRODUCTORY ENTOMOLOGY.** Lectures, laboratory, and field work on the characteristics and habits of insects. Introductory to Course 2, Economic Entomology, and required of all students planning to specialize in entomology. RILEY, RUGGLES.
2. **ECONOMIC ENTOMOLOGY.** The life histories, habits and methods of control of the insect pests of orchard, field, and garden. Laboratory work in the determination of the more important forms. RUGGLES.
In case there is sufficient demand Course 2 will be offered as a continuation of Course 1, for the five weeks following the summer session.
3. **ELEMENTARY ECONOMIC ENTOMOLOGY.** A brief course dealing with the characteristics and habits of insect pests and methods of control. Not open for credit to students planning advanced work in entomology. LAWSON.
44. **ANIMAL PARASITES.** A study of the more common animal parasites of man and domestic animals, and of methods of avoidance and control. Additional advanced work for those prepared to undertake it. RILEY.
45. **RELATIONS OF INSECTS TO DISEASE.** The causation and transmission of disease by insects and other arthropods. Life histories, habits, and methods of control of hominoxious species. RILEY.
In case there is sufficient demand, Course 45 will be offered as a continuation of Course 44, for the five weeks following the summer session.

COURSES PRIMARILY FOR GRADUATE STUDENTS

197. INTRODUCTION TO RESEARCH. Preparation for investigational work in lines of entomology and parasitology. Advanced laboratory, field, and library work; training in the preparation of bibliographies and manuscripts; special problems.

The following lines of work are open:

Systematic Entomology, OESTLUND, KNIGHT

General Economic Entomology, RUGGLES

Insect Ecology, CHAPMAN

Insecticides, MOORE

Insect Morphology; Parasitology, RILEY

- RESEARCH. Ample opportunity for research work in various phases of entomology and parasitology will be afforded properly qualified students. This work will be individual and it is advised that students planning to undertake special problems correspond with the division relative to methods of collection and preparation of material.

FARM ENGINEERING

AGRICULTURAL ENGINEERING GROUP

Assistant Professor HALL B. WHITE; Instructors J. GRANT DENT, MAURICE G. JACOBSON.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3	3	Mechanical Drawing	All	None
		III, IV MTWThFS	303En	Jacobson
5	3	Carpentry	All	None
		III, IV MTWThFS	48En	White
15	2	Mechanics Laboratory	All	None
		V, VI, VII, VIII TTh	101En	Dent

3. MECHANICAL DRAWING. Mechanics of drawing. Exercises in the use of drawing instruments, lettering, and water colors. The mechanics of working drawings with their practical value. JACOBSON.
5. CARPENTRY. The use of carpentry tools and methods of farm building construction. WHITE.
15. MECHANICS LABORATORY. Exercises in harness repair, knots and rope-splicing, belt-lacing, soldering, babbiting, pipe-fitting, drilling, and work with cold metals. DENT.

HOME ECONOMICS

Professor MILDRED WEIGLEY; Associate Professors ALICE BIESTER, HARRIET I. GOLDSTEIN, MARION WELLER; Assistant Professors CLARA M. BROWN, AMY MORSE, E. MAUDE PATCHIN; Instructors ALICE CHILD, VETTA GOLDSTEIN, FRANCES E. KELLEY, WYLLE McNEAL.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3	5	Textiles	All	None
		I, II, V, VI MTWThF	307HE	Clara Brown
11	3	Garment-Making	All	None
		III, IV MTWThFS	304HE	.....
*13	5	Dressmaking	Soph., jr., sr.	3, 11, 51, Home pract. in garment-making
		II, III, IV MTWThFS	305HE	.....
17	3	Adv. Clothing Construction... III, IV MTWThFS	Jr., sr. 303HE	13, 52, 53 Patchin
*18	3	Commercial Clothing Mfg.... V, VI, VII TWThF	Sr. 304HE	17 Patchin
19	1	Millinery	Jr., sr. 112HE	13, 53 Carlotta Brown
*21	5	Foods and Cookery..... IV, V, VI, VII MTWThF	Soph., jr., sr. 209, 203HE	Chem. 5 cred., Physiol. 3 or parallel
*22	5	Food Economics	Soph., jr., sr. 209HE	21
25	3	Special Problems in Foods and Cookery	Sr. 207HE	22, 108 Child
		I, II, III MTWTh	Jr., sr. Ar	22, Econ. 3 Kelley
35	6	Home Management Lab..... Ar Ar	Jr., sr. Ar	22, Econ. 3 Kelley
*36	3	Home Management Lecture.. II MTWThFS	Jr., sr. 106HE	22, Econ. 3 Kelley
*42	3	Special Methods of Teaching Home Economics	Jr., sr. 213HE	13, 22, Psychol. 1 McNeal
		IV MTWThFS		
43	2	Organization and Methods for Related Art Teaching..... II TWThF	Consent of instructor	H. Goldstein
51	3	Drawing and Design..... V, VI, VII TWThF	All 400HE	None V. Goldstein
52	3	Art History and Appreciation I MTWThFS	Jr. sr. 401HE	51 V. Goldstein
53	3	Advanced Design	Jr. sr. 400HE	51 H. Goldstein
		III, IV MTWThFS		
103	5	Dietetics	Sr. 106, 107HE	108 Biester
		V, VI, VII, VIII, MTWThF		
108	5	Nutrition II	Jr., sr. 211, 213HE	22, 23, Bact. 6, Agr. Biochem. 3
		I, II, III MTWThFS		
122	3	Advanced Textiles	Jr., sr. 211, 305HE	3, 51 Weller
		V, VI MTWThF		
123	3	Clothing Economics	Jr., sr. 309HE	13, 52, 53, Econ. 3-4 Weller
		III MTWThFS		
131	5	Home Equipment	Sr. 401HE	52, 53 Morse
		V, VI, VII, VIII, MTWThF		

* Prerequisites waived for teachers of home economics.

3. TEXTILES. A study of textile fibers, their structure, properties, and chemical reactions; of fabrics, their structure and process of manufacture; of art and economic considerations in selection and purchase of materials for clothing and household furnishing. CLARA BROWN.

11. **GARMENT MAKING.** Instruction and laboratory practice in hand-sewing; reading and adaptation of commercial patterns; construction and use of the sewing machine; designing, cutting, and making simple outer garments from washable materials. ———.
13. **DRESSMAKING.** Consideration of quality, suitability, and cost of materials adapted to technique involved in construction of simple wool and silk dresses; adaptation of art principles in selection of designs; instruction and practice in methods of construction. ———.
17. **ADVANCED CLOTHING CONSTRUCTION.** Laboratory problems in costume modeling and construction. **PATCHIN.**
18. **COMMERCIAL CLOTHING MANUFACTURE.** A study of the organization of the clothing trades and industries; of wages and standards of efficiency in workmanship. Laboratory practice upon a commercial basis, measured by trade standards. **PATCHIN.**
19. **MILLINERY.** A study of the processes and materials used in millinery; designing, making, and trimming hats. **CARLOTTA BROWN.**
21. **FOODS AND COOKERY.** (a) Production, manufacture, chemical composition of typical foods; their classification into food principles; changes in digestion; function in nutrition. (b) Fundamental science principles from chemistry, physics, biology, bacteriology, and their application in typical cookery processes. ———.
22. **FOOD ECONOMICS.** Cost and nutritive value of typical foods; the study of dietaries; preparation and serving of meals, the cost bearing a definite relation to the family budget. ———.
25. **SPECIAL PROBLEMS IN FOODS AND COOKERY.** An advanced course in food preparation in which the problems are undertaken from an experimental point of view. **CHILD.**
35. **HOME MANAGEMENT: OPERATION AND MAINTENANCE, LABORATORY PRACTICE.** (a) Six weeks' experience as manager and helper in a household of twenty members. (b) A dietary study covering a period of one month in the above household. **KELLEY.**
36. **HOME MANAGEMENT: OPERATION AND MAINTENANCE, LECTURES.** The family budget for varying incomes, and for the "Home Management House"; household accounts. **KELLEY.**
42. **SPECIAL METHODS FOR TEACHING HOME ECONOMICS.** Curricula, equipment, methods of teaching for Home Economics. **MCNEAL.**
43. **ORGANIZATION AND METHODS FOR RELATED ART TEACHING.** Organization of a related art course and methods of teaching art principles as applied to familiar objects and processes. **H. GOLDSTEIN.**

51. DRAWING AND DESIGN. Composition, perspective, color theory, and color harmonies applied to costume design and interiors; harmony, balance, rhythm, in line and area design. V. GOLDSTEIN.
52. ART HISTORY AND APPRECIATION. The historical development of art, architecture decoration, furniture and costume studied with special emphasis on design and influence upon modern styles. V. GOLDSTEIN.
53. ADVANCED DESIGN. Problems in design for costume and for house furnishing. H. GOLDSTEIN.
103. DIETETICS. The fundamental principles of human nutrition as applied to the feeding of individuals and groups under conditions of health, and under such pathological conditions as are chiefly dependent upon dietetic treatment. BIESTER.
108. NUTRITION II. A study of the chemistry and physiology of metabolism, involving a qualitative examination of the organic food stuffs and of the body tissues. ———.
122. ADVANCED TEXTILES. A more intensive study of textile fibers and fabrics; organization of laboratory problems leading to the establishment of a basis for standardization by the general consumer and for a demand for pure textiles. WELLER.
123. CLOTHING ECONOMICS. General consideration of economic function of women with reference to clothing and textiles in the home and in industry; study of clothing budget, hygiene and standardization of dress. WELLER.
131. HOME MANAGEMENT: HOUSE PLANNING AND EQUIPMENT. House-planning, house-furnishing and equipment, and construction and furnishing budgets. Types of domestic architecture; site; floor-plans; building materials; details of construction; heating; ventilating; lighting; plumbing; walls; rugs; furniture; color; hangings; pictures; gardens. MORSE.

HORTICULTURE

Professor WILLIAM H. ALDERMAN; Associate Professor LEROY CADY;
Instructor WILLIAM T. TAPLEY.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
32	3	Vegetable Gardening	Soph., jr., sr.	Bot. 10 cred.
		Lect. I MTWTh	20Hr	Tapley
		Lab. III, IV MW	11Hr	
71	3	Landscape Gardening	All	None
		Lect. III MTWTh	20Hr	Cady
		Lab. V, VI TTh	11Hr	
90	3	General Horticulture	All	None
		Lect. II MTWTh	20Hr	Alderman
		Lab. V, VI MW	11Hr	

32. **VEGETABLE GARDENING.** The principles of vegetable growing for home and market, including all important vegetable crops from seed to harvest. Lectures, recitations, references, laboratory work, and excursions. **TAPLEY.**
71. **LANDSCAPE GARDENING.** The practice and principles of landscape gardening as applied to the home and community. Lectures and field trips to parks and private grounds. **CADY.**
90. **GENERAL HORTICULTURE.** A general survey of horticulture with a consideration of the elementary principles of fruit-growing, vegetable-gardening, floriculture, landscape-gardening, and plant propagation. **ALDERMAN.**

PLANT PATHOLOGY AND BOTANY

Professor **ELVIN C. STAKMAN.**

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	5	Plant Pathology	Jr., sr. 2PP	Bot. 10 cred. Stakman
		I, II, III, IV TWThF		
14	5	Plant Disease Control.....	Jr., sr. 1, 2PP	1, Ent. 1 or 3
		V, VI, VII, VIII, TWThF		
111	3	Diseases of Field Crops.....	Jr., sr. 1, 2PP	1
		Ar Ar		
112	3	Diseases of Fruit and Vegetable Crops.....	Jr., sr. 1, 2PP	1
		Ar Ar		

COURSES

1. **PLANT PATHOLOGY.** Elementary study of plant diseases due to fungi, bacteria, and slime molds; life histories and preventive methods. Lectures, laboratory, and reference. Not open to those who have completed 10. **STAKMAN.**
14. **PLANT DISEASE CONTROL.** A detailed study of methods of controlling diseases of plants of parasitic origin. Spray materials and spray machinery. Practical applications. Not open to those who have completed 6. _____
111. **DISEASES OF FIELD CROPS.** Special detailed study of diseases of cereal and forage crops, including symptomology, etiology, and practical methods of control. Laboratory, lecture, and greenhouse work. _____
112. **DISEASES OF FRUIT AND VEGETABLE CROPS.** Special study of diseases of fruit and vegetable crops, especially of Minnesota crops, including diseases of crops raised under glass. Laboratory, lecture, and greenhouse work. _____

POULTRY HUSBANDRY

ANIMAL INDUSTRY GROUP

Professor ARTHUR C. SMITH.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	3	Poultry	All	None
		IV MTWThFS	104VE	Smith
2	3	Poultry Judging	All	I
		V, VI, VII MTWTh	104VE	Smith

1. **POULTRY.** A study of the poultry industry; best methods of care and management of fowls, turkeys, ducks, and geese, and the most important breeds of each. SMITH.
2. **POULTRY JUDGING.** The history, standard requirements, and common defects of the leading commercial standard breeds and varieties, and determination and standard values by the score-card and comparison methods. SMITH.

LIST OF SUBJECTS OFFERED IN THE SUMMER SESSION

In the following table are indicated: (a) all the courses offered in the Summer Session; (b) the colleges whose students may elect the respective courses; (c) the pages where the information appropriate to each course may be found. For example:

Americanization 41su, Slavic*Oral Language....S., L., & A..... 13

indicates that Americanization 41su, whose descriptive title is Slavic Oral Language, is open to students in the Colleges of Science, Literature, and the Arts, and Education. Information concerning this course is found on page 13.

Agr.—Agriculture
Dent.—Dentistry
Educ.—Education
Eng.—Engineering
Grad.—Graduate
H.E.—Home Economics
Med.—Medicine
S., L., & A.—Science, Literature, and the Arts

<i>Subject</i>	<i>Offered to</i>	<i>Page</i>
Agricultural Biochemistry 35u, Types of Carbon Compounds	Agr.	72
Agricultural Biochemistry 101-102su, Agricultural Quantitative Analysis.....	Agr.	72
Agricultural Biochemistry 111-112su, Phytochemistry	Agr.	72
Agricultural Biochemistry 113-114su, Biochemical Laboratory Methods.....	Agr.	72
Agricultural Biochemistry 116su, The Chemistry of "Vitamines" and Deficiency Diseases.....	Agr.	72
Agricultural Biochemistry 118su, Laboratory Problems in Biochemistry.....	Agr.	72
Agricultural Biochemistry 201su, Seminar.....	Grad.	72
Agricultural Biochemistry 203su, Research Problems	Grad.	73
Agricultural Biochemistry 206su, Colloids.....	Grad.	73
Agricultural Education 11su, Principles of Vocational Education.....	Agr.	73
Agricultural Education 41-42su, Teaching.....	Agr.	73
Agricultural Education 53su, Consolidated Rural Schools	Agr.	74
Agricultural Education 54su, Rural Education and Community Life.....	Agr.	74
Agricultural Education 66su, Fundamentals of Agriculture	Agr.	74
Agricultural Education 75su, Visual Method of Presentation	Agr.	74
Agricultural Education 131su, Methods of Teaching Agriculture.....	Agr.	74

SUBJECTS OFFERED

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<i>Subject</i>	<i>Offered to</i>	<i>Page</i>
Agricultural Education 201su, Advanced Seminar....	Agr.	74
Agricultural Education 221su, Graduate Problems....	Grad.	74
Agronomy and Farm Management 1su, Farm Crops	Agr.	75
Agronomy and Farm Management 111su, Farm Machinery	Agr.	75
Agronomy and Farm Management 121su, Cereal Crops	Agr.	75
Agronomy and Farm Management 122su, Corn and Potato Crops.....	Agr.	75
Americanization 41su, Slavic Oral Lang.....	S., L., & A., Educ.....	13
Americanization 114su, The Newer Immigrants.....	S., L., & A., Educ.....	13
Americanization 115su, Americanization and As- similation	S., L., & A., Educ.....	13
Americanization 132su, Supervised Practical Ameri- canization Work.....	S., L., & A., Educ.....	13
Americanization 38su, Race Leaders and Programs..	S., L., & A., Educ.....	13
Americanization 44su, Industrial Americanization...	S., L., & A., Educ.....	13
Americanization 45su, Community Americanization...	S., L., & A., Educ.....	13
Americanization 51su, State Americanization.....	S., L., & A., Educ.....	13
Americanization 155su, Americanization Tech. and Method	S., L., & A., Educ.....	13
Anatomy, see also Oral Anatomy, 48.		
Anatomy 5su, Gross Human Anatomy.....	Med.	55
Anatomy 9-10su, Gross Anatomy.....	Dent.	55
Anatomy 14su, Histology and Embryology.....	Dent.	55
Anatomy 1035h, Human Histology.....	Med.	55
Anatomy 111su, Human Neurology.....	Med.	55
Anatomy 126su, Advanced Histology.....	Med.	55
Anatomy 156su, Advanced Anatomy.....	Med.	55
Anatomy 163su, Seminar in Growth of Child.....	Med., Educ.....	55
Anatomy 204su, Research in Anatomy.....	Med.	55
Anatomy 6su, Gross Human Anatomy (2nd Term)...	Med.	55
Anatomy 11su, Gross Anatomy (2nd Term).....	Dent.	55
Anatomy 107su, Human Embryology.....	Med.	55
Anatomy 126su, Adv. Histology (2nd Term).....	Med.	56
Anatomy 133su, Anat. of Fetus and Child.....	Med.	56
Anatomy 135su, Physical Development of Childhood..	Educ., Med.....	56
Anatomy 140su, Implantation and Placentation.....	Med.	56
Anatomy 156su, Advanced Anatomy.....	Med.	56
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Animal Biology 1su, General Zoology.....	S., L., & A., Educ., Dent..	14
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Animal Husbandry 1su, Types and Breeds of Livestock	Agr.	75
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Architecture 31.1, Elements of Arch.....	Arch.	49
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Art Education 32su, Sketch	Educ.	35
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Bacteriology 114su, Advanced Bacteriology.....	Med.....	60
Bacteriology 201su, Research in Bacteriology.....	Med.....	60
Bee Culture 1su, Elements of Bee Keeping.....	Agr.....	76
Bee Culture 5su, Queen Bee Raising.....	Agr.....	76
Biology. See Animal Biology pages 14, 15.		
Botany 1su, General Botany.....	S., L., & A., Educ.....	15
Botany 2su, General Botany.....	S., L., & A., Educ.....	15
Botany 123su, Algae: Blue-green.....	S., L., & A., Educ.....	15
Botany 125su, Algae: Brown.....	S., L., & A., Educ.....	15
Chemistry 1su, 2su, Gen. Inorganic Chem.....	S., L., & A., Educ.....	16
Chemistry 4su, 5su, Gen. Inorganic Chem.....	S., L., & A., Educ.....	16
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Chemistry 9su, 10su, Gen. Inorganic Chem.....	S., L., & A., Educ.....	16
Chemistry 11su, Qualitative Analysis.....	S., L., & A., Educ.....	16
Chemistry 12su, Qualitative Analysis.....	S., L., & A., Educ.....	16
Chemistry 19su, Teachers' Course in Chem.....	S., L., & A., Educ.....	16, 37
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Chemistry 31su, Organic Chemistry.....	S., L., & A., Educ.....	16
Chemistry 4su, Physical Chemistry.....	Med.....	16
Consolidated School Principals' Curriculum.....	Educ.....	43, 44
Course for Teachers of Sub-normal Children.....	Educ.....	41, 42
Crown and Bridge Work.....	Dent.....	48
Dairy Husbandry 1su, Elements of Dairying.....	Agr.....	76
Dental Prosthesis.....	Dent.....	48
Drawing and Descriptive Geometry 1su, Engineer- ing Drawing.....	Eng.....	49
Draw. & Des. Geom. 2su, Engineer. Drawing.....	Eng.....	49
Draw. & Des. Geom. 3su, Descript. Geometry.....	Eng.....	49
Draw. & Des. Geom. 6su, Solid Geometry.....	S., L., & A., Educ., Eng.....	49
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Draw. & Des. Geometry 22su, Drafting.....	Eng.....	49
Draw. & Des. Geometry 23su, Drafting.....	Eng.....	49
Draw. & Des. Geometry 24su, Drafting.....	Eng.....	49
Draw. & Des. Geometry 25su, Drafting.....	Eng.....	49
Draw. & Des. Geometry 26su, Drafting.....	Eng.....	49
Draw. & Des. Geometry 51su, Technical Draw.....	Eng.....	49
Economics 3su, Principles of Economics.....	S., L., & A., Educ.....	18
Economics 4su, Principles of Economics.....	S., L., & A., Educ.....	18
Economics 6su, Agricultural Economics.....	Agr.....	76
Economics 7su, Principles of Economics.....	Agr.....	76
Economics 8su, Principles of Marketing.....	S., L., & A., Educ.....	18
Economics 104su, Advanced Economics.....	S., L., & A., Educ.....	18
Economics 161su, Labor Problems.....	S., L., & A., Educ.....	18
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Education 15su, Practice Teaching.....	S., L., & A., Educ.....	37
Education 103su, Hist. of Modern Elem. Educ.....	S., L., & A., Educ.....	37
Education 113su, High School Curriculum.....	S., L., & A., Educ.....	35
Education 121su, School Organ. & Admin.....	S., L., & A., Educ.....	35
Education 141su, School Sanitation.....	S., L., & A., Educ.....	35
Education 167su, Theory of Supervision.....	S., L., & A., Educ.....	35
Education 167su, Junior High School.....	S., L., & A., Educ.....	35
Education 205su, Seminar in Admin. & Superv.....	Grad.....	35
Education 55su, Elem. Educ. Psychology.....	S., L., & A., Educ.....	36
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Education 134su, Mental Diagnosis.....	S., L., & A., Educ.....	36
Education 16su, Technique of Teaching Sub-normal Children	Educ.	38
Education, Special Curricula		
Course for Consolidated School Principals Educ., see pages 43, 44.		
Course for Teachers of Sub-normal Child. Educ., see pages 41, 42.		
For Methods Courses, see Dept. of Theory and Practice of Teaching, pages 37, 38.		
For Teachers' Courses in Manual Training, see Man. Train., pages 39, 40.		
For Vocational Education, see special bulletin and pages 40, 41.		
Engineering Mathematics and Mechanics 11.3, Ap- plied Math. and Mech.....	Eng., Arch., Chem.....	50
Engineering Mathematics and Mechanics 12.3, Ap- plied Math. and Mech.....	Eng., Chem.....	50
Engineering Shop and Manual Training 1su, En- gineering Shop Work.....	Eng., Educ.....	51
Eng. Shop and Man. Train. 2A-su, Teachers' Course in Wood Work.....	Eng., Educ.....	51
Eng. Shop and Man. Train., 2B-su, Teachers' Course in Wood Work.....	Eng., Educ.....	51
Eng. Shop and Man. Train. 3su, Machine Work.....	Eng.	51
Eng. Shop and Man. Train. 4su, Teachers' Course in Metal Work.....	Eng., Educ.....	51
English 4su, Old English.....	S., L., & A., Educ.....	19
English 8su, Begin. Shakespeare.....	S., L., & A., Educ.....	19
English 53su, Seventh. Cent. Lyrist.....	S., L., & A., Educ.....	19
English 58su, 19th Cent. Prose.....	S., L., & A., Educ.....	19
English 107su, 18th Cent. Prose.....	S., L., & A., Educ.....	19
Entomology and Economic Zoology 1su, Introduc- tory Entomology.....	Agr.	77
Entomology and Economic Zoology 2su, Economic Entomology	Agr.	77
Entomology and Economic Zoology 3su, Elementary Economic Entomology.....	Agr.	77
Entomology and Economic Zoology 44su, Animal Parasites	Agr.	77
Entomology and Economic Zoology, 45su, Relations of Insects to Disease.....	Agr.	77
Entomology and Economic Zoology 197su, Intro- duction to Research.....	Grad.	78
Farm Engineering 3su, Mechanical Drawing.....	Agr.	78
Farm Engineering 5su, Carpentry.....	Agr.	78
Farm Engineering 15su, Mechanics Laboratory.....	Agr.	78
French, see Romance Languages pages 30 and 31.		
Geology 37su, Economic and Commercial Geog.....	S., L., & A., Educ.....	21
Geology 118su, Geography of Europe.....	S., L., & A., Educ.....	21
German 1su, Beginning German.....	S., L., & A., Educ.....	21
German 2su, Beginning and Intermed. German.....	S., L., & A., Educ.....	21
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German 10su, Rapid Reading.....	S., L., & A., Educ.....	21
German 31su, Medical German.....	Premedics	21
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German 150su, Die Novelle.....	S., L., & A., Educ.....	21
Greek 60su, Greek Sculpture.....	S., L., & A., Educ.....	22
Greek 62su, Greek Lit. and Life.....	S., L., & A., Educ.....	22
Greek 63su, Greek Mythology.....	S., L., & A., Educ.....	22
History 2A-su, Modern World.....	S., L., & A., Educ.....	22
History 2B-su, Modern World.....	S., L., & A., Educ.....	22

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History 109su, Imperialism.....	S., L., & A., Educ.....	22
History 113su, American Immigration.....	S., L., & A., Educ.....	22
History 114su, U. S., 1787-1815.....	S., L., & A., Educ.....	22
Home Economics 3su, Textiles.....	H. E.....	79
Home Economics 11su, Garment Making.....	H. E.....	80
Home Economics 13su, Dressmaking.....	H. E.....	80
Home Economics 17su, Advanced Clothing Construction	H. E.....	80
Home Economics 18su, Commercial Clothing Manufacture	H. E.....	80
Home Economics 19su, Millinery.....	H. E.....	80
Home Economics 21su, Foods and Cookery.....	H. E.....	80
Home Economics 22su, Food Economics.....	H. E.....	80
Home Economics 25su, Special Problems in Foods and Cookery.....	H. E.....	80
Home Economics 35su, Home Management. Laboratory Practice.....	H. E.....	80
Home Economics 36su, Home Management. Lectures	H. E.....	80
Home Economics 42su, Special Methods for Teaching Home Economics.....	H. E.....	80
Home Economics 43su, Organization and Methods for Related Art Teaching.....	H. E.....	80
Home Economics 51su, Drawing and Design.....	H. E.....	81
Home Economics 52su, Art History and Appreciation	H. E.....	81
Home Economics 53su, Advanced Design.....	H. E.....	81
Home Economics 103su, Dietetics.....	H. E.....	81
Home Economics 108su, Nutrition II.....	H. E.....	81
Home Economics 122su, Advanced Textiles.....	H. E.....	81
Home Economics 123su, Clothing Economics.....	H. E.....	81
Home Economics 131su, Home Management.....	H. E.....	81
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Horticulture 71su, Landscape Gardening.....	Agr.....	82
Horticulture 90su, General Horticulture.....	Agr.....	82
Latin 1su, Beginning Latin.....	S., L., & A., Educ.....	24
Latin 11su, Selections.....	S., L., & A., Educ.....	24
Latin 81su, Teachers' Course in Latin.....	S., L., & A., Educ.....	24, 38
Latin 211su, Graduate Seminar.....	Grad.....	24
Manual Training 11su, Teachers' Course in Primary Wood Work.....	Educ.....	39
Manual Training 12su, Teachers' Course in Elem. Wood Work.....	Educ.....	39
Manual Training 13su, Organ. and Superv. of Man. Train.	Educ.....	39
Mathematics 1su, Higher Algebra.....	S., L., & A., Educ.....	25
Mathematics 2su, College Algebra.....	S., L., & A., Educ.....	25
Mathematics 6su, Trigonometry.....	S., L., & A., Educ.....	25
Mathematics 30su, Analytic Geometry.....	S., L., & A., Educ.....	25
Mathematics 50su, Calculus I.....	S., L., & A., Educ.....	25
Mathematics 54su, Teachers' Course in Math.....	S., L., & A., Educ.....	25, 38
Mathematics 70su, History of Elem. Math.....	S., L., & A., Educ.....	25
Mathematics 165su, Selected Topics in Adv. Mathematics	S., L., & A., Educ.....	25
Music 1su, Harmony.....	S., L., & A., Educ.....	26
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Music 75su, Public School Music.....	S., L., & A., Educ.....	26, 38

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Music 51su, Violin	S., L., & A., Educ.	26
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Operative Dentistry, III to IX	Dent.	48
Oral Anatomy, I, II, III	Dent.	48
Oral Surgery, I, II	Dent.	48
Orthodontia, III-VI	Dent.	48
Pathology 4su, Pathology	Dent.	59
Pathology 111su, Autopsies	Med., Grad.	59
Pathology 113su, Applied Pathology	Med., Grad.	59
Pathology 1114su, Pathology of Dis. of Child.	Med., Grad.	59
Pathology 115su, Exam. of Spinal Fluid	Med., Grad.	59
Pathology 117su, Diagnosis of Tumors	Med., Grad.	59
Pathology 119su, Clinical Pathological Conf.	Med., Grad.	59
Pharmacology 104su, Exp. Pharm.	Med.	58
Pharmacology 106su, Gen. Pharm. & Therapeutics	Med.	58
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Physical Education for Men, see page 9.		
Physical Education for Women 1su, Phys. Train- ing for Elem. Children	S., L., & A., Educ.	27
Physical Education for Women 2su, Phys. Train- ing for Second. Children	S., L., & A., Educ.	27
Physical Education for Women 3su, Begin. and Advanced Swimming	S., L., & A., Educ.	27
Physical Education for Women 4su, General Swim- ing	S., L., & A., Educ.	27
Physics 21su, Elements of Mech.	S., L., & A., Educ., Eng.	28
Physics 22su, Mechanics Lab. Practice	S., L., & A., Educ., Eng.	28
Physics 61su, Magnetism and Electricity	S., L., & A., Educ., Eng.	28
Physics 62su, Magnetism and Elec. Lab.	S., L., & A., Educ., Eng.	28
Physics 91su, Teachers' Course in Physics	S., L., & A., Educ.	28, 38
Physics 171su, Radioactivity	S., L., & A., Educ.	29
Physics 181su, Adv. Physical Measurements	S., L., & A., Educ.	29
Physiology 4su, Human Physiology	H. E., Dent., Educ., S., L., & A.	57
Physiology 100-101-102, Physiol. Chem.	S., L., & A., Med.	57
Physiology 103, Physiology of Cells, Muscles, etc.	S., L., & A., Med.	57
Physiology 113su, Problems in Physiol.	S., L., & A., Med.	57
Physiology 153su, Adv. Physiol. Chem.	S., L., & A., Med.	57
Physiology 203su, Research in Physiol.	Grad., Med.	57
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Physiology 104su, Physiol. of Nerv. System	S., L., & A., Med.	57
Plant Pathology and Botany 1su, Plant Pathology	Agr.	82
Plant Pathology and Botany 14su, Plant Disease Control	Agr.	82
Plant Pathology and Botany 111su, Diseases of Field Crops	Agr.	82
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Political Science 1su, American Government	S., L., & A., Educ.	29

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Political Science 7su, State and Local Government...	S., L., & A., Educ.	29
Political Science 51su, Business Law.....	S., L., & A., Educ.	29
Political Science 157su, American Social Problems and the Constitution.....	S., L., & A., Educ.	29
Poultry Husbandry 1su, Poultry.....	Agr.	83
Poultry Husbandry 2su, Poultry Judging.....	Agr.	83
Psychology 1su, General Psychology.....	S., L., & A., Educ.	30
Psychology 10su, Memory and Learning.....	S., L., & A., Educ.	30
Public Speaking 41su, Public Speaking.....	S., L., & A., Educ.	20
Public Speaking 42su, Public Speaking.....	S., L., & A., Educ.	20
Public Speaking 81su, Interpretative Read.....	S., L., & A., Educ.	20
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Rhetoric B-su, Fresh. English.....	S., L., & A., Educ.	19
Rhetoric 5su, Comp. for Technical Students.....	S., L., & A., Educ.	19
Rhetoric 12su, Descript. Writing.....	S., L., & A., Educ.	19
Rhetoric 111su, Biographical Essay.....	S., L., & A., Educ.	19
Romance Languages 4su, Begin. Course in French.....	S., L., & A., Educ.	30
Romance Languages 7su, Intermed. Course in French.....	S., L., & A., Educ.	30
Romance Languages 19su, Elem. Conv., & Comp. in French.....	S., L., & A., Educ.	30
Romance Languages 31su, Begin. Course in Spanish.....	S., L., & A., Educ.	30
Romance Languages 33su, Intermed. Course in Spanish.....	S., L., & A., Educ.	30
Romance Languages 43su, Elem. Conv. and Comp. Spanish.....	S., L., & A., Educ.	30
Romance Languages 111su, Research in Ro- mance Lang.....	S., L., & A., Educ., Grad...	30
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Sociology and Social Work 51su, Family Case Work..	S., L., & A., Educ.	32
Sociology and Social Work 56su, Hospital Social Service.....	S., L., & A., Educ.	32
Sociology and Social Work 61su, Legal Protection of Children.....	S., L., & A., Educ.	32
Sociology and Social Work 108su, Social Psy- chology.....	S., L., & A., Educ.	32
Sociology and Social Work 122su, Methods of Social Invest.....	S., L., & A., Educ.	32
Sociology and Social Work 124su, Visiting Teach- ing, Its Scope and Method.....	S., L., & A., Educ.	32
Sociology and Social Work 125su, Some Essen- tials of the Labor Prob.....	S., L., & A., Educ.	32
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The Bulletin *of the University of* **Minnesota**

Announcement of Courses in
Trade and Industrial Education
Summer Session
June 21 - July 31,
1920



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COURSES IN VOCATIONAL EDUCATION, TRADE AND
INDUSTRIAL EDUCATION, SMITH-HUGHES
LAW TEACHER-TRAINING CLASSES

SUMMER SESSION

June 21 to July 31, 1920

ANNOUNCEMENTS

In addition to the wide variety of regular University courses, there will be offered during the summer session of the University of Minnesota, courses in trade and industrial education, especially planned for men and women who are either administering, supervising, or teaching in any of the various types of schools or classes as organized under the Smith-Hughes law.

ORGANIZATION

The State Board of Vocational Education in 1918, designated the University of Minnesota as the center for the preparation of teachers of vocational education.

Courses are offered throughout the year by the Department of Trade and Industrial Education of the College of Education during the regular session of the University of Minnesota, through extension courses, through correspondence courses, and in the regular summer session.

The regular bulletin of the Department of Trade and Industrial Education presents a tentative outline for a four-year course, leading to the Bachelor of Science degree, majoring in vocational education. All summer session courses carry credits which may be counted toward this degree.

Any adult not a candidate for a degree may enter any of the courses offered, regardless of previous education, upon satisfying the head of the department that he is able to pursue the courses with profit.

It is the purpose of this supplementary bulletin to announce the courses in trade and industrial education to be offered during the summer session, June 21 to July 31, 1920.

PLAN OF COÖPERATION BETWEEN DUNWOODY INSTITUTE AND THE
UNIVERSITY OF MINNESOTA

The Department of Trade and Industrial Education announces that the following plan of coöperation was approved by the Board of Regents of the University, April 14, 1920, thereby making the benefits of this plan available for summer session students:

Agreement and Plan of Coöperation between the University of Minnesota and the William Hood Dunwoody Industrial Institute, Both of Minneapolis, Minnesota.

It is hereby agreed by the above mentioned parties, both subscribing to this agreement and plan of coöperation.

(1) That the special field of the University Department of Trade and Industrial Education is the training of trade and industrial teachers for the types of schools and classes under the Smith-Hughes Act; also, the training of teachers of manual training, industrial arts, and pre-vocational education.

That the special field of Dunwoody Institute is the training of mechanics and technicians of various kinds.

(2) That it is desirable, whenever possible, that there be an exchange of teachers between the two institutions.

(3) That all students taking teacher-training courses registered in the College of Education of the University, students in methods of teaching trade subjects, methods of teaching related subjects, and other similar courses may spend a portion of their class time at Dunwoody Institute.

(4) That arrangements shall be made whereby the University students in Methods of Teaching Trade Subjects, Methods of Teaching Related Subjects, and other similar courses may spend a portion of their class time at Dunwoody Institute.

(5) That so far as possible, Dunwoody Institute shall be used as the observation and practice teaching school for practice students in the Department of Trade and Industrial Education of the University. This includes day, evening, and special classes.

(6) That ten scholarships each quarter shall be awarded the faculty of Dunwoody Institute, these scholarships good only for regular courses offered by the College of Education.

(7) That any classes given at any time at Dunwoody Institute in teacher training under the Smith-Hughes Act of Education shall be considered as regular College of Education classes and the members of these classes registered as such.

(8) That the purpose and spirit of this agreement is that both institutions may cooperate in every possible way in the development of all forms of trade and industrial education in this part of the country.

REPRESENTATIVES OF THE FEDERAL AND STATE BOARD FOR VOCATIONAL EDUCATION

Through the State Board for Vocational Education, arrangements have been made with the Federal Board for Vocational Education, of Washington, D. C., that certain of their representatives shall be present during the summer session to give lectures and hold conferences with the students taking courses in this department.

Dr. Charles A. Prosser, director of Dunwoody Institute, formerly director of the Federal Board for Vocational Education, will conduct two full credit courses during the summer session.

REGISTRATION

Saturday, June 19, and Monday, June 21, are regular registration days. Students may register on any preceding day. Students should complete registration and be ready for class work before 8:00 a.m., Tuesday, June 22. After Monday, June 21, students may register by special permission only. No student will be permitted to register after Monday, June 28. To complete registration, fees must be paid the same day.

GENERAL OFFICES

The office of the director of the summer session is Room 103, Education Building. During registration days the director and members of the faculty may be found in the Library Building. The offices of the registrar and the cashier are on the first floor of the Library Building.

ADMISSION

The courses of the summer session are open to all men and women who after consultation with the respective instructors are found qualified to pursue the chosen work to advantage.

GENERAL INFORMATION

The University of Minnesota, with its large and beautiful campus, is located in the city of Minneapolis on the banks of the Mississippi River. It is connected by two main trolley lines and an automobile bus line with the business section of Minneapolis, which is only a short distance away, and with the city of St. Paul. There is also a private trolley line connecting the agricultural college campus with the University campus.

The Twin Cities with cool, invigorating summer climate, the numerous and famous lakes, with bass and pickerel fishing, canoeing, camping, and swimming, free public golf links, all within easy trolley distance of the University campus, make the summer session of the University of Minnesota ideal for work, for inspiration, and for recreation.

The University gymnasium, tennis courts, swimming-pools, track and athletic field will be available for summer session students. Arrangements for voluntary instruction may be made with Mr. C. B. Roemer, Room 204, University Armory.

A series of popular lectures, sight-seeing trips, visits to schools, hikes, picnics, etc., will be announced in the regular official daily bulletin furnished free to all students.

MINNESOTA UNION

The Minnesota Union will open its building for both men and women of the summer session of 1920. Three meals a day will be provided, following the plan which obtains during the regular University year and with corresponding prices. The usual facilities offered by the Minnesota Union will be available for all men of the summer session, and special restrooms, with a matron in charge, will be set aside for the women students.

UNIVERSITY POST-OFFICE

The University Post-Office, through which mail addressed to the University is distributed, is in the Mechanic Arts Building. Students are assigned post-office boxes at the time of registration, and should leave forwarding addresses with the postmaster at the close of the session.

HEALTH SERVICE

The Health Service, including an examination, advice, and simple medicines, is maintained by the University at Pillsbury Hall. This service is free to summer session students.

APPOINTMENT BUREAU

The College of Education maintains an Appointment Bureau in Room 103, Education Building, for those students who desire to avail themselves

of its service. The demand for teachers, particularly in trade and industrial education, is always very much larger than can be filled. This service is free to all summer session students.

KINDS OF TRADE AND INDUSTRIAL TEACHERS NEEDED

1. Directors, supervisors, and principals of industrial schools
2. Teachers of shop subjects
3. Teachers of related subjects
4. Teachers of non-vocational subjects
5. Teachers in part-time schools established under the new Minnesota law
6. Teachers in general continuation classes
7. Instructors in evening classes
8. Training directors in factories and stores

Directors, supervisors, and teachers of industrial schools.—Schools and classes in industrial subjects are being established as fast as properly qualified teachers can be found. A four-year course is outlined under Courses of Study for Vocational Teachers. This course leads to the degree Bachelor of Science in Education and to a teacher's certificate in vocational education. In order that the industrial school may serve the ends for which it is organized, its teachers must have, besides the necessary trade experience, an understanding of educational theory and principles relating to industrial education and also a grasp of the industrial, economic, and social problems that have led up to the establishment of vocational education.

Teachers of shop subjects.—Shop teachers must be masters of their trades; they must possess a fair technical knowledge; and, in addition, they must have the ability to deal with mature people as well as with boys and girls. The course for shop teachers is outlined under Course of Study.

Teachers of related subjects.—There is a scarcity of properly qualified teachers to teach mathematics, drawing, physics, mechanics, chemistry and hygiene as related and applied to specified trades, such as mathematics for machinists, etc. Besides a two-year technical course, trade contact sufficient to enable them to make practical application of the subject-matter to the various trades is required of all teachers of related subjects. A course for related subject teachers is outlined under Courses of Study.

Teachers of non-vocational subjects.—It is not required that teachers of history, general mathematics, English, general science, and civics in vocational classes possess other than their high-school teachers' certificate, but it is well that they have at least a layman's knowledge of the trades that their pupils are studying. A short course for teachers of non-vocational subjects is outlined under Course of Study.

Teachers in part-time and general continuation classes.—Teachers of these classes should possess the qualifications necessary for teaching in a junior high school. In addition to this, the teacher should have some natural mechanical ability and an interest in things industrial. Under

general continuation classes are included the classes for salesmanship, commercial work, and the related subjects in the junior nurses training course. Teachers of the commercial classes should have had special preparation in the various commercial lines that they expect to teach.

Instructors in evening schools.—The purpose of the evening industrial school is to give to the worker a further knowledge of his particular trade. The men and women conducting short-unit courses in evening classes must have a thoro knowledge of their particular trades and also the ability to impart this knowledge to others.

Training directors in factories and stores.—The development of training departments in industrial and commercial organizations has opened a new field of activities for trained administrators of vocational education. Training departments are now accepted as a vital part of any well-organized factory or department store. Training directors must be persons of wide experience in both practice and theory.

PART-TIME POSITIONS

By agreement with the director of Vocational Education of the Minneapolis Public Schools, arrangements have been made whereby students in the Department of Trade and Industrial Education, who desire to continue their studies throughout the year 1920-21 may teach part of the time and study in the University part of the time. Any one interested in any of these positions should consult with Professor Arthur F. Payne, Room 207, in the College of Education.

REGISTRATION AND FEES

Friday and Saturday, June 18 and 19, are the regular registration days. Students may register on any preceding day. Students should complete registration and be ready for class work before their classes on Monday, June 21. All students are required to pay fees as follows:

Registration fee	\$5.00
Tuition fee per credit	2.00
Additional fee for laboratory courses.....	1.50
Health fee	1.00
Deposit fee	5.00

The unused balance of the deposit fee will be returned at the close of the summer session.

COURSES IN VOCATIONAL EDUCATION
DAILY PROGRAM

The hour schedule will be as follows:

I 8:30- 9:20	VI 2:30-3:20
II 9:30-10:20	VII 3:30-4:20
III 10:30-11:20	VIII 4:30-5:20
IV 11:30-12:20	IX 7:30-8:20
V 1:30- 2:20	X 8:30-9:20

THE DEPARTMENT OF TRADE AND INDUSTRIAL EDUCATION, SMITH-HUGHES LAW TEACHER-TRAINING CLASSES

Assistant Professors ARTHUR F. PAYNE, HOMER J. SMITH; KATHARINE A. BALL, University Vocational Adviser; Special Lecturer CHARLES A. PROSSER. Assisted by the regular members of the teaching staff of the College of Engineering, and of the College of Agriculture, Forestry, and Home Economics, by the faculty of Dunwoody Institute, and by members of the Federal and State Boards for Vocational Education.

The State Board for Vocational Education will grant credit toward teachers' certificates for all courses outlined below.

No students will be admitted to any course numbered above 100, unless they have had at least three other vocational educational lecture courses.

No.	Credits	Title	Hour	Day	Room	Instructor
V177su	2	Administration of Vocational Education	IV	WF	112Ed	Prosser
		Field Work 2 hours				
V176su	2	Problems of Vocational Education	II	TWThF	111Ed	Payne and members of the federal board
V175su	2	Economics and Sociology of Vocational Education.....	III	WF		Prosser
		Field Work 2 hours				
V84su	2	Industrial Hygiene and Safety First.....	II	TWThF		Smith
V83su	2	Vocational English.....	IV	MTWTh		Smith
V82su	2	Vocational Mathematics.....	III	MTThF		Smith
V80su	2	History and Literature of Vocational Education.....	V	MTWTh		Smith
V65su	2	Teaching of Related Vocational Subjects.....	I	MTWTh	112Ed	Smith and Dunwoody faculty
V61su	2	Vocational and Educational Guidance	I	TWThF		Ball
V51su	2	Methods of Establishing and Conducting Part-Time Schools and Classes.....	IV	TWThF		Payne
V50su	2	Trade Analysis and Arrangement of Courses....	VII-VIII	TTh		Payne and Dunwoody faculty
V49su	2	Methods of Teaching Trade Subjects	VI	TWThF		Payne and Dunwoody faculty

Saturday mornings will be reserved by instructors for conferences with students.

- V177su. ADMINISTRATION OF VOCATIONAL EDUCATION. A course designed for those who are engaged or expect to become engaged in the administration of vocational education. An intensive study will be made of the Smith-Hughes law, the Minnesota plan, and methods of administering various types of vocational schools and classes.
- V176su. PROBLEMS OF VOCATIONAL EDUCATION. A general course dealing with specific problems of vocational education, designed for administrators or teachers who aspire to supervising or administrative positions. Students may present their particular problems for discussion and possible solution.
- V175su. ECONOMIC AND SOCIOLOGIC BACKGROUND OF VOCATIONAL EDUCATION. This is a general course covering the economic and sociological background of the vocational education movement. A study is made of the forces back of the movement and its relationship to other factors of our evolving social order.
- V84su. INDUSTRIAL HYGIENE AND SAFETY. A study is made of the most recent devices and methods employed to promote safety and the best possible health conditions among industrial workers.
- V83su. TEACHING OF VOCATIONAL ENGLISH. A survey is made of this new field of English teaching. An intensive study is made of textbooks, courses are arranged, presented, and new sources of material explored.
- V82su. SHOP MATHEMATICS FOR VOCATIONAL TEACHERS. This course presupposes some form of shop experience or technical training. This new field of applied mathematics will be developed, textbooks reviewed, and special methods of presenting mathematical problems to vocational classes will be discussed.
- V80su. HISTORY AND LITERATURE OF VOCATIONAL EDUCATION. A study will be made of the historical development of the present movement of vocational education, and the causes for the evolution of our present systems of vocational schools and classes. The entire field of the literature of vocational education will be surveyed.
- V65su. TEACHING OF RELATED VOCATIONAL SUBJECTS. The organization of teaching outlines for mechanical drawing, mathematics, science, and other subjects closely related to shop courses and trade work. Special teaching methods based on the needs of specific groups of students will be presented.
- V61su. VOCATIONAL AND EDUCATIONAL GUIDANCE. This is a course for the special benefit of classroom teachers, principals, and supervisors who desire a better understanding of the relationship between the school, the home, and industry as developed by vocational and educational guidance. A survey will be made of records and forms used in various cities and the development of vocational guidance tests.
- V51su. METHODS OF ESTABLISHING AND CONDUCTING PART-TIME SCHOOLS AND CLASSES. This course is designed for teachers who are interested in the problems of the part-time school as outlined in the Smith-Hughes

law and especially in the new Minnesota law. Some of the topics treated are social and economic backgrounds of the part-time school, methods of organizing classes, methods of conducting classes, courses of study, etc.

V50SU. TRADE ANALYSIS AND ARRANGEMENT OF COURSES. A course for men and women with trade experience who wish to prepare for the teaching of shop work in all-day, part-time, or evening schools. Students will analyze completely one trade, classify the trade knowledge and outline courses for specified conditions; teaching material will be organized.

V49SU. METHODS OF TEACHING TRADE SUBJECTS is a course for men and women who wish to improve their knowledge of the scientific and standardized methods of teaching trade subjects. Among the topics studied will be organization of teaching materials, methods of outlining lesson plans, methods of presenting trade subjects, study of the various forms of lessons, project analysis, etc.

VOCATIONAL SHOP COURSES OFFERED AT DUNWOODY INSTITUTE IN COÖPERATION WITH THE UNIVERSITY OF MINNESOTA

All teacher-training students desiring to take shop courses at Dunwoody Institute must register and pay fees at the regular time and place at the University.

Students sent from the University to Dunwoody Institute during the summer for teacher training will be classified at Dunwoody for purposes of instruction into two large groups, the practice-teaching group and the technique group. The practice-teaching group will be made up of those who go to get instruction and practice in the teaching of trade processes or related studies pertaining to trades. The technique group will be made up of those who come to the institution for the purpose of improving or enlarging their skill in processes.

Students in the practice-teaching group will be required to give a minimum of 8 hours per week for 6 weeks to this work, for which they will receive at the University not less than 3 credits, the number of credits to be awarded being decided by the University. This 8 hours of instruction will be given in two half-days of 4 hours each. Students will be required to give a total of 48 hours during the 6 weeks to practice teaching instruction. Time lost by either avoidable or unavoidable absence must be made up to secure credit. The Dunwoody Institute faculty having to do with this particular group will be as follows:

Dr. C. A. PROSSER, Director
H. W. KAVEL, Assistant Director
R. T. CRAIGO, Principal of Day Schools
W. R. BASS, Principal of Evening Schools

Students of the technique group will be required to give a minimum of 8 hours to the work, or a total of 48 hours during the 6 weeks, and the requirement will hold with regard to making up of lost time for any cause. While it is necessary that such students should follow as far as possible a regular schedule, the 8 hours per week for the group will not be required in two half-days of 4 hours each. In other words, students will have a much wider range of choice as to hours, since it will be easy to fit them into the regular shop organization for training on processes at any time between 8:30 in the morning and 4:00 in the afternoon.

Students will not be allowed to split or divide the minimum of 8 hours between practice teaching and technique. Any student, however, in the practice-teaching group desiring training in processes as well, may secure it by electing and registering for an additional number of hours. Likewise students taking training in processes may elect the practice-teaching work, in which case they must give 8 hours weekly to instruction, as it is not believed that they could profit by the practice-teaching work unless they give full time to it.

The heads of the departments having particularly to do with the improvement of technique are as follows:

PAUL PEDERSON, Machine Shop Practice
 E. G. ROBB, Printing
 J. C. SUMMERS, Baking
 E. R. DRINKALL, Electricity
 WALTER S. MILNER, Auto Repair and Construction
 J. R. PETERSON, Building Construction

COLLEGE OF ENGINEERING AND ARCHITECTURE SHOP COURSES

All of the following courses are offered in the shops of the College of Engineering and Architecture on the main University campus.

ENGINEERING SHOP AND MANUAL TRAINING

Assistant Professor S. CARL SHIPLEY; Instructor WILLIAM H. RICHARDS.

No.	Credits	Title	Hour	Day	Instructor
1su	2-5	Engineering Shop Work.....		MTWThFS	Shipley,
2a-su	2	Teachers' Course in Wood Work	VIII-I	MTWThFS	Richards
3su	2-5	Machine Work	VIII-I	MTWThFS	Shipley
2b-su	2	Teachers' Course in Wood Work	VIII-I	MTWThFS	Richards
4su	3	Teachers' Course in Metal Work	VIII-I	MTWThFS	Shipley

1su. ENGINEERING SHOP WORK. Pattern-making, joinery, wood-working, (use of tools, lathe, and bench work). SHIPLEY, RICHARDS.

2a-su. TEACHERS' COURSE IN WOOD WORK. Manual training, joinery, wood-carving, and wood-turning. Care and adjustment of tools and wood-working machines. RICHARDS.

2b-su. **TEACHERS' COURSE IN WOOD WORK.** Wood-finishing, staining, filling, varnishing, and polishing. RICHARDS.

NOTE: Courses 2a-su and 2b-su are designed with special reference to the needs of teachers of manual training.

3su. **MACHINE AND BENCH WORK WITH TOOL AND MACHINE CONSTRUCTION.** Engineer sophomores and juniors or teachers of manual training with previous experience in machine shop work may select required work to a maximum of five credits. SHIPLEY.

4su. **TEACHERS' COURSE IN METAL WORK.** Elementary machine and bench-work—soldering, brazing, autogenous welding, to meet needs of manual-training teachers. Bench and vise work in metal-chipping, filing, scraping, fitting; machine tool work in metals—turning, planing, threading, drilling, milling. SHIPLEY.

NOTE: Each of the above subjects will require 36 hours of actual shop practice for one credit. Students taking machine work for credit in the College of Engineering will be given lectures throughout the course which are included in the 36 hours specified. SHIPLEY.

TECHNICAL DRAWING COURSES

The following courses in drawing are offered in the Main Engineering Building on the main campus.

Professor WILLIAM H. KIRCHNER; Assistant Professor ROBERT W. FRENCH.

No.	Credits	Title	Prerequisite courses
1su	2½	Engineering Drawing.....	Solid geometry
2su	2½	Engineering Drawing.....	1
21su	2	Drafting	3
22su	2	Drafting	21
23su	2	Drafting	22
51su	2	Technical Drawing.....	None

1su. **ENGINEERING DRAWING.** The elements of drafting including an introductory course in the science of representation and constructive geometry. Sketching, lettering, projections, working drawings, conventions, standards, tracing, and blue printing. KIRCHNER and Assistants.

2su. **ENGINEERING DRAWING.** A continuation of Course 1. KIRCHNER and Assistant.

21su. **DRAFTING.** (For sophomore civil engineers.) Drawing of structures and machines. Detail, assembly, and construction drawings. The solution of problems of simple structures. FRENCH and Assistant.

22su. **DRAFTING.** A continuation of Course 21. FRENCH and Assistant.

23su. **DRAFTING.** A continuation of Course 22. FRENCH.

51su. **TECHNICAL DRAWING.** A general course in the theory and practice of drawing. Sketching, lettering, tracing, blue-printing, and mechanical drawing. The use of instruments, projections (constructive geometry), and working drawings. KIRCHNER and Assistant.

MATHEMATICS AND MECHANICS

The following courses in applied mathematics and mechanics are offered in the College of Engineering and Architecture.

Professor WILLIAM E. BROOKE; Associate Professor WILLIAM H. HOLMAN; Assistant Professors HANS H. DALAKER, GEORGE C. PRIESTER.

No.	Credits	Title	Offered to	Prerequisite courses
11.3	5	Applied Math. and Mech. Sec. 1	Fr. eng., arch., chem. Priester	M. and M. 11.2
		Sec. 2	Brooke	
12.3	5	Applied Math. and Mech. Sec. 1	Soph. eng., chem. Holman	M. and M. 12.2
		Sec. 2	Dalaker	

LABORATORY

VOCATIONAL COURSES FOR WOMEN TEACHERS

In addition to the above courses in theory, administration, and methods in vocational education, the following courses of special interest to women teachers are offered. These courses are given on the campus of the College of Agriculture in the Home Economics Building. The University trolley line connecting the two campuses gives free service to the summer session students.

Associate Professor MARION WELLER; Assistant Professors CLARA M. BROWN, E. MAUD PATCHIN.

No.	Credits	Title	Hour	Day	Room	Instructor
3a,b	5	Textiles	I, II	MTWThF	307HE	Brown
122	3	Advanced Textiles.....	V, VI	MTWThF	305HE	Weller
11a,b	3	Garment-Making	III, IV	TWThF		
13a,b	5	Dressmaking	II, III, IV	MTWFS	305HE	
17a,b	3	Adv. Clothing Constr.....	III, IV	TWThF	303HE	Weller, Patchin
18a	3	Commercial Clothing Mfg...	V, VI, VII	MTWThF	112HE	Brown
19a,b	1	Millinery	II, III	MW		

TEACHERS' COURSES IN MANUAL TRAINING

The following courses will be of special interest to manual training teachers. These courses will be offered in the University High School shops.

Instructor LYNNE E. STOCKWELL.

No.	Credits	Title	Hour	Day	Room	Instructor
11su	1	Teachers' Course in Primary Grade Wood Work.....	IV	MTW	24Ed	Stockwell
12su	2	Teachers' Course in Element- ary Wood Work.....	II, III	MTWTh	24Ed	Stockwell
13su	2	Organization and Supervision of Manual Training.....	I	MTWTh	115Ed	Stockwell

11su. TEACHERS' COURSE IN PRIMARY GRADE WOOD WORK. The work is divided into three parts. The first part is coping saw work; the second, knife work; the third, a combination of the first two. This is applicable to grades four to six inclusive. STOCKWELL.

12SU. TEACHERS' COURSE IN ELEMENTARY WOOD WORK. Uses and care of tools, tool processes; uses and care of wood-working machinery. Special emphasis upon methods of presenting work to pupils. Demonstrations by members of the class will be an important phase of the work. STOCKWELL.

13SU. ORGANIZATION AND SUPERVISION OF MANUAL TRAINING. The history of manual training, aims and values, selection and installation of equipment, supplies course of study for grade and high-school manual training, and method of presenting manual training to grade and high-school pupils. STOCKWELL.

MANUAL TRAINING AND FARM SHOP WORK

The following courses will be given in the shops and laboratory of the College of Agriculture, Forestry, and Home Economics.

		Credits
M.T. 13	Organization and Supervision of Manual Training.....	3
M.T. 12	Teachers' Course in Elementary Wood Work.....	3
F.Eng. 5	Carpentry	3
F.Eng. 15	Mechanics Laboratory	2
F.Eng. 3	Mechanical Drawing	3

REGULAR SUMMER SESSION BULLETIN

Students are advised to obtain a copy of the regular session bulletin which announces a wide variety of regular University courses. Courses of special interest and value to those specializing in trade and industrial education are as follows:

No.	Credits	Title	Prerequisite courses
44SU	1½	Industrial Americanization..... IV	Two courses Waller
		MTThFS	

EC. 16ISU. LABOR PROBLEMS. The principal topics are: The present wage system, woman and child labor, the minimum wage, labor legislation, labor unions, boycotts, conciliation, arbitration, recent labor movements. GARVER.

37SU. ECONOMIC AND COMMERCIAL GEOGRAPHY. A study of the world production of food-stuffs and of the methods used in manufacture; the factors of environment influencing production and trade; and the more important trade routes. Carries university credit. POSEY.

No.	Credits	Title	Hour	Day	Instructor
91SU	3	Teachers' Course in Magnetism and Electricity.....	V-VI	MWF	Mackell
125SU	1	Some Essentials of the Labor Problem	VII	MTWTh	Consent of director Fitch Consent of director

For any further information regarding the courses in trade and industrial education offered in the summer session, write to Professor Arthur F. Payne, Room 207, or to Dean Lotus Coffman, Room 103, College of Education, University of Minnesota, Minneapolis, Minnesota.

The Bulletin
of the University of
Minnesota

Department of Agriculture
Summer Session

at

University Farm
June 21 to July 30
1920



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SUMMER SESSION

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

OFFICERS OF ADMINISTRATION

- MARION LEROY BURTON, Ph.D., D.D., LL.D., President¹
ROSCOE W. THATCHER, M.A., D.Agr., Dean of the Department of Agriculture
LOTUS D. COFFMAN, Ph.D., Director of the Summer Session
EDWARD M. FREEMAN, Ph.D., Vice-Director of the Summer Session and
Dean of the College of Agriculture, Forestry, and Home Economics
RODNEY M. WEST, B.A., Secretary

FACULTY

- MARION LEROY BURTON, Ph.D., D.D., LL.D., President¹
WILLIAM WATTS FOLWELL, LL.D., President Emeritus
CYRUS NORTROP, LL.D., President Emeritus
ROSCOE W. THATCHER, B.S., M.A., Dean of the Department of Agriculture
LOTUS D. COFFMAN, Ph.D., Director of the Summer Session
EDWARD M. FREEMAN, Ph.D., Vice-Director of the Summer Session and
Dean of the College of Agriculture, Forestry, and Home Economics
RODNEY M. WEST, B.A., Secretary
WILLIAM H. ALDERMAN, B.S.A., Professor of Horticulture
CLYDE H. BAILEY, M.S., Associate Professor of Agricultural Biochemistry
LOUIS B. BASSETT, Associate Professor of Farm Management
ALICE BIESTER, M.A., Associate Professor of Nutrition
CLARA M. BROWN, B.A., Assistant Professor of Home Economics
LEROY CADY, B.S., in Agr., Associate Professor of Horticulture
ROYAL N. CHAPMAN, Ph.D., Assistant Professor of Animal Biology
R. ADAMS DUTCHER, M.S., M.A., Associate Professor of Agricultural Biochemistry
WILLIAM P. DYER, B.A., Assistant Professor of Agricultural Education
ALBERT M. FIELD, M.S., Assistant Professor of Agricultural Education
EDWARD M. FREEMAN, Ph.D., Professor of Botany and Plant Pathology
HARRIET I. GOLDSTEIN, Associate Professor of Drawing and Design
ROSS A. GORTNER, Ph.D., Professor of Agricultural Biochemistry
CLARENCE L. HOLMES, M.A., Assistant Professor of Agricultural Economics
FRANCIS JAGER, Professor of Bee Culture
JOSEPH R. KEITHLEY, M.S. in Agr., Professor of Dairy Husbandry
HARRY H. KNIGHT, Ph.D., Assistant Professor of Entomology
PAUL B. LAWSON, Associate Professor of Entomology
FORREST W. MCGINNIS, M.S., Assistant Professor of Agronomy

¹ Resigned July 1, 1920.

FACULTY

3

WILLIAM MOORE, B.A., Associate Professor of Entomology
CLARENCE A. MORROW, B.S., Ph.D., Assistant Professor of Agricultural
Biochemistry
AMY MORSE, B.A., Assistant Professor of Home Management
OSCAR W. OESTLUND, Ph.D., Assistant Professor of Animal Biology
LEROY S. PALMER, Associate Professor of Agricultural Biochemistry
E. MAUDE PATCHIN, B.S., Assistant Professor of Textiles and Clothing
WILLIAM A. RILEY, Ph.D., Professor of Entomology and Economic
Zoology
ARTHUR G. RUGGLES, M.A., Associate Professor of Entomology
ELVIN C. STAKMAN, Ph.D., Professor of Plant Pathology
ARTHUR C. SMITH, Professor of Poultry
C. C. SWAIN, Inspector of Rural Schools
MILDRED WEIGLEY, B.S., Professor of Home Economics
MARION WELLER, B.A., Associate Professor of Textiles and Clothing
HALL B. WHITE, B.S., in Agr., Assistant Professor of Farm Buildings
JOHN J. WILLAMAN, M.S., Assistant Professor of Plant Chemistry
ARTHUR K. ANDERSON, M.S., Instructor of Agricultural Biochemistry
JOHN V. ANKENY, B.S., Assistant Professor of Agricultural Education
CARLOTTA BROWN, Instructor in Millinery
NORRIS K. CARNES, B.S., Instructor in Animal Husbandry
ALICE CHILD, M.A., Instructor in Foods and Cookery
RUBY N. COON, B.S., Instructor in Home Economics
CHESTER A. DAHLE, Assistant in Dairy Husbandry
J. GRANT DENT, Instructor in Mechanics Laboratory
VETTA GOLDSTEIN, Instructor in Drawing and Design
MAURICE G. JACOBSON, Instructor in Drawing
FRANCES E. KELLEY, M.A., Instructor in Home Management
WYLLE MCNEAL, B.S., Instructor in Home Economics
FREDERICK H. STEINMETZ, B.S. in Agr., Assistant Professor of Farm Crops
WILLIAM T. TAPLEY, B.S., Assistant in Horticulture

GENERAL INFORMATION

The work of the land grant colleges of the United States is now finding expression in three great fields of educational activity, viz., instruction, experimentation, and extension.

Two of these, experimentation and extension, are serving the people throughout the entire year, and the conviction is growing that the great plant, equipment, organization, and faculty of these institutions should likewise be utilized for instruction during more than the nine months of the college year.

In response to this demand the summer session is established in order that the field plots, orchards, livestock, libraries, laboratories, museums, shops, machinery, classrooms, instruction, and other facilities used by students during the regular college year shall be available to those who for any reason find it more convenient to attend during the summer months.

The work offered seeks to meet the needs of graduates of arts colleges and normal schools, teachers of secondary schools, principals of schools (especially of consolidated schools), superintendents of schools, and others who desire courses in agriculture or home economics, and who wish to obtain therefor college credit, as well as to meet the needs of students seeking to complete the undergraduate college work.

The work also furnishes an opportunity for graduates of other colleges of agriculture to improve their knowledge of Minnesota agriculture, preparatory to teaching in this state.

COURSES AND CREDITS

The courses offered are selected from those offered during the regular college year, in which the same amount of work will be done and for which the same credit will be given.

As the summer session (six weeks) is one half the length of a regular college quarter (twelve weeks), the number of recitations and amount of work per week for each credit hour will be approximately *twice that required each week during the college year*. Nine quarter-hour credits constitute standard work.

FACULTY

The summer session faculty will consist of members of the regular college faculty aided by specialists from other institutions who are of known efficiency in their fields of labor.

COURSES OFFERED

Preparations have been made to offer such of the following courses as are applied for by a sufficient number of students, six regular students being the minimum for which a class will be organized.

AGRICULTURAL BIOCHEMISTRY

- 3, Types of Carbon Compounds
- *101-102, Agricultural Quantitative Analysis
- *111-112, Phytochemistry
- †113-114, Biochemical Laboratory Methods
- †116, Chemistry of "Vitamines" and Deficiency Diseases
- †118, Laboratory Problems in Biochemistry
- †201, Seminar
- †203, Research Problems
- †206, Colloids

AGRICULTURAL EDUCATION

- 11, Principles of Vocational Education
- 41, Teaching
- 42, Teaching
- 53, Consolidated Rural Schools
- 54, Rural Community Leadership
- 66, Fundamentals of Agriculture
- 75, Visual Presentation
- 131, Methods in Teaching Agriculture
- 201, Advanced Seminar
- 221, Graduate Problems

AGRONOMY AND FARM MANAGEMENT

- 1, Farm Crops
- 11, Farm Machinery
- 121, Cereal Crops
- 122, Corn and Potato Crops

ANIMAL HUSBANDRY

- 1, Breeds and Types of Livestock
- 6, Livestock Feeding

BEE CULTURE

- 1, Elements of Beekeeping
- 5, Queen Bee Raising

DAIRY HUSBANDRY

- 1, Elements of Dairying

ECONOMICS

- 6, Agricultural Economics
- 7, Principles of Economics

ENTOMOLOGY AND ECONOMIC ZOOLOGY

- *1-2, Introductory Entomology
- 3, Elementary Economic Entomology
- *44-45, Animal Parasites and Parasitism
- 197, Introduction to Research

FARM ENGINEERING

- 3, Mechanical Drawing
- 5, Carpentry
- 15, Mechanics Laboratory

HOME ECONOMICS

- 3, Textiles
- 11, Garment-Making
- 13, Dressmaking
- 17, Advanced Clothing Construction
- 18, Commercial Clothing Manufacture
- 19, Millinery
- 21, Foods and Cookery
- 22, Food Economics
- 25, Special Problems in Foods and Cookery
- 35, Home Management Laboratory
- 36, Home Management Lecture
- 42, Special Methods of Teaching Home Economics
- 43, Organization and Methods for Related Art Teaching
- 51, Drawing and Design
- 52, Art History and Appreciation
- 53, Advanced Design
- 103, Dietetics
- 108, Nutrition II
- 122, Advanced Textiles
- 123, Clothing Economics
- 131, Home Equipment

HORTICULTURE

- 32, Vegetable Gardening
- 71, Landscape Gardening
- 90, General Horticulture

PLANT PATHOLOGY AND BOTANY

- 1, Plant Pathology
- 14, Plant Disease Control
- 111, Diseases of Field Crops
- 112, Diseases of Fruit and Vegetable Crops

POULTRY HUSBANDRY

- 1, Poultry
- 2, Poultry Judging

* This course will be offered from June 21 to August 27, but credit will be given upon completion of first half.

† This course continues through to August 27.

CONSOLIDATED SCHOOL PRINCIPALS

The curriculum outlined below is for consolidated school principals. This curriculum leads to a degree and certificate in the College of Education. No change or deviations from the curriculum will be permitted except upon petition. Petition blanks may be secured at the office of the dean of the College of Education or at the office of the registrar on

either campus. In every case the petition must be approved by the department or division concerned, and by the dean of the College of Education, before any changes or substitutions can be made.

Registration for this curriculum will be made at the farm campus. Students are requested to see Dean E. M. Freeman concerning academic subjects in the curriculum or Professor A. M. Field concerning educational subjects, or the dean of the College of Education.

Since the law requires the principal of a consolidated school to teach agriculture, that subject has been made the major. To this has been added a minor in manual training (farm shop work), and a minor in education. The specific courses in this major and these minors follow:

Major in Agriculture

	Credits
*66. Fundamentals of Agriculture (condensed course).....	3
ANIMAL HUSBANDRY	
*1. Types and Breeds of Livestock.....	5
†8. Elements of Feeding.....	3
DAIRY HUSBANDRY	
*1. Elements of Dairying.....	5
ENTOMOLOGY AND ECONOMIC ZOOLOGY	
3. Elements of Economic Entomology.....	3
HORTICULTURE	
90. General Horticulture.....	3
PLANT PATHOLOGY	
1. Plant Pathology	5
†6. Plant Pest Control.....	3
POULTRY HUSBANDRY	
1. Poultry	3
AGRONOMY AND FARM MANAGEMENT	
*1. Farm Crops	3
†*101. Farm Management	3
122. Corn and Potato Crops.....	3
SOILS	
†1. Soils	5
Total	47

Minor in Manual Training

(Farm Shop Work)

COLLEGE OF EDUCATION	
M.T. 13. Organization and Supervision of Manual Training.....	3
*M.T. 12. Teachers' Course in Elementary Wood Work.....	3
or	
COLLEGE OF AGRICULTURE—DIVISION OF FARM ENGINEERING	
F. Eng. 3. Mechanical Drawing	3
*F. Eng. 5. Carpentry	3
*F. Eng. 15. Mechanics Laboratory	2

Minor in Education

COLLEGE OF EDUCATION	
Ed. 3. Social Aspects	3
Ed. 55. Elementary Educational Psychology.....	3
Ed. 111. Educational Diagnosis	3

* Required courses.

† Not offered, summer session 1920.

GENERAL INFORMATION

7

		Credits
Ed. 11.	Technique of Teaching.....	3
	or	
Ag. Educ. 131.	Methods of Teaching Agriculture.....	3
*Ed. 121.	Organization and Administration.....	3
	or	
*Ag. Educ. 53.	Consolidated Rural Schools.....	3
*Ag. Educ. 75.	Visual Presentation	3
Ed. 161.	Supervision	3
*Ag. Educ. 54.	Rural Education and Community Life with special refer- ence to the interrelationships of the two.....	3

Additional Requirements

Sociology 14. Rural Sociology.

General electives to complete the number of hours for graduation.

* Required courses.

FEES

A fee of \$5 is charged for registration. In addition, \$2 is charged for each credit hour for which the student registers and a further \$1.50 for each laboratory course.

A deposit of \$5 is also required to cover unusual breakage and safe return of apparatus and books. This deposit will be returned at the close of the session, less charges for breakage and losses. All fees are payable at the time of completing registration.

A health insurance fee of \$1 is charged for which the student receives the privileges offered by the University Health Service.

The registration fee (\$5) is not refunded under any conditions. Students cancelling their registration during the first week of the session may receive a pro rata refund of the credit hour and laboratory fees. Such refund shall not exceed five sixths of the amount paid on these items and must be approved by the vice-director of the summer session.

No refunds whatsoever shall be made to students who attend more than one week.

ADMISSION

The courses of the summer session are open to all mature men and women who are considered qualified to pursue the chosen work to advantage, but college credit will be given only when college entrance requirements have been fulfilled.

If you have not registered in the College of Agriculture, Forestry, and Home Economics heretofore and wish to receive college credit for work done in the summer session, you should send to the secretary, on a suitable blank, a properly certified copy of your preparatory credits.

A blank for this purpose can be procured from the principal of your high school or from the secretary, University Farm, St. Paul.

REGISTRATION

Saturday, June 19 and Monday, June 21, are regular registration days. Students may register on any preceding day after May 1. Students should complete registration and be ready for class work before 8 a.m.

Tuesday, June 22. After Monday, June 21, students will register by special permission only.

LOCATION

From St. Paul or Minneapolis, take a Como-Harriet car. One fare (5 cents) takes you to Doswell Avenue. A short walk to the northeast brings you to the Administration Building, University Farm, where you register. If you wish to ride the entire distance, change at Eustis Avenue from the Como car to the intercampus car, which takes you, for an additional fare, into the University Farm grounds. Walk west to the Administration Building, the third on your left. There are no intercampus cars after 6 p.m., nor on Sundays or holidays.

Altho the college is located in the country and has all the advantages of the quiet and the fresh air of the country, yet it is close enough to the Twin Cities to get all the benefits of these large centers. No more beautiful spot between the two cities could have been selected for such a school. Situated on picturesque hills, overlooking Midway and the two cities, the buildings are grouped conveniently about the undulating campus. Nature has done much to make this a beauty spot, and the landscape artist has added to the beauty by the arrangement of paths and the replacing of trees and shrubs with many varieties suited to the climate.

ACCOMMODATIONS

Those taking regular work at the summer session may obtain rooms in the dormitories. Rooms will be assigned at the time of registration. The dormitories contain a very few single rooms; other rooms are intended to accommodate two or three persons. The rooms are furnished with necessary bedding. A change of linen is made twice each week, and of towels every day. Students residing in the Twin Cities will not be given dormitory rooms. Those who do not expect to remain at the school for the entire six weeks should obtain rooms outside the dormitories. Good board and room may be obtained within a short distance from the college for \$6 per week and upward. Dormitories will be opened Saturday, June 22.

A cafeteria with reasonable charges is maintained on the campus.

Expenses in Dormitories

Room rent, use of bedding, and laundering of the same		
One student in a room, \$2.00 per week.....		\$12.00
More than one student in a room, 1.50 per week.....		9.00
Post-office box .....		.20
Total		<u>\$9.20 or \$12.20</u>

In addition to the above each student will be expected to pay, at the same time, the amount of his fees, according to the provisions on page 66. Entire amount is to be paid in advance at time of registration.

In order to facilitate registration and to avoid delay and inconvenience to yourself, come prepared to pay your fees in cash or by bank draft, postal money order, or certified check drawn for the exact amount you

are to pay. One issued for a larger amount will not be accepted for payment of fees. Travelers' checks are recommended. They will be accepted as cash.

The cashier is not required to cash checks, drafts, or other negotiable papers and has a right to demand identification or guarantee, or to refuse payment. Bank drafts, post-office money orders, and certified checks are more easily negotiated than are personal checks.

BAGGAGE

Baggage will be carried between either city and University Farm by the service section for a uniform charge of fifty cents for each piece. Delivery will be made as promptly as the limited facilities of the section will permit. Those wishing special attention or quick delivery are advised to arrange with city express or transfer companies for delivery of their baggage and for the charges for the same. Students wishing to have their baggage handled by the service section should hand the checks in at the general service office, near the post-office, promptly after arrival so as to avoid, as far as possible, charges for storage.

MAIL

Mail for students may be sent to University Farm, St. Paul. Post-office boxes are assigned to all students and a charge of 20 cents made therefor. As soon as your post-office box has been assigned, notify your correspondents to put the number of your box on your mail. This will facilitate distribution and enable you to receive your mail more promptly.

At the end of the session be sure to leave a forwarding address with the post-master or at the secretary's office.

LIBRARY

Good library facilities, including books, bulletins, reports, and papers on agriculture and home economics, will be available to all students in the library, in the Administration Building.

EXCURSIONS

The vicinity of the Twin Cities abounds in objects of geologic and physiographic interest, such as rock formations, old river gorges, and glacial moraines; while the cities themselves, with their parks, lakes, buildings, libraries, and art galleries, afford students every opportunity for profitable use of their leisure hours.

The campus, in connection with the experiment station farms, gives the best of opportunity to study agricultural problems and nature.

ROUND TABLE DISCUSSIONS

Home Economics.—Round table discussions in home economics will be held once a week covering such topics as courses of study, part-time work, problems in supervision, etc.

Agriculture.—Round table discussions in agriculture will be held once a week. Topics for discussion will be announced later.

CONSULTATIONS

Opportunity will be given for conference with the members of the faculty on subjects of special interest to individual students.

SWIMMING-POOL

The swimming-pool in the gymnasium will be open to the use of men and women during stated periods throughout each week for a very moderate fee to cover actual expenses. A skilled man will be in charge during the time the men are using the pool and a skilled woman will be in attendance during those hours in which the use of the pool is devoted to the women.

LIBRARY TRAINING SCHOOL

Agricultural Engineering Building, Room 102, 103

Staff

CLARA F. BALDWIN, Director. Library Director, Minnesota Department of Education.

HARRIET A. WOOD, Supervisor of School Libraries, Minnesota Department of Education.

ALMA PENROSE, Associate Librarian, Carleton College, Northfield, Minn.

ETHEL R. SAWYER, Director of Training Class, Library Association, Portland, Oregon.

ELIZABETH SCRIPTURE, Librarian, East High School, Minneapolis, Minn.

This course is under the direction of the Library Division of the State Department of Education and is open to librarians of public and school libraries.

Since the course was omitted in 1919, accommodations for a large attendance will be provided. Those who are now occupying library positions are expected to take advantage of the opportunity offered by the state to qualify for this special work.

Students must have at least a high-school education or its equivalent, and those preparing for work in school libraries must have the same educational qualifications as teachers in such schools.

Outline of course.—The course will comprise lectures and practice work on the technical phases of library work, including cataloging and classification; book selection, reference, work with children, administration of school and public libraries, and instruction in the use of books and libraries.

Book selection.—Special emphasis will be given to the fundamental problem of book selection. A course of thirty lectures continuing through the course will be given by Miss Ethel R. Sawyer, director of the training class, Library Association, Portland, Oregon. In order to allow time for book examination, the technical work and practical work will be reduced to the minimum, but every student will be supplied with rules and forms necessary to the proper organization of any library.

Two weeks' special course.—A special course of one week each in fiction and poetry will be given by Miss Sawyer during the weeks of July 12-23. This course will be open to librarians and teachers, and will offer a supplementary course of unusual interest to former students of the school.

For application blank and fuller announcement, address the Library Division, Department of Education, Historical Building, St. Paul, Minn.

INTENSIVE TRAINING COURSE FOR TEACHERS OF VOCATIONAL AGRICULTURE

Two types of courses will be given during the regular summer session at the University Farm. The first, a six weeks' course in the regular summer session of the University of Minnesota, where those who have not had the required amount of professional work to qualify for the state teacher's certificate may make up this deficiency and at the same time do some work that may give credit toward a higher degree. The second, a two weeks' intensive training course designed particularly for men now teaching vocational agriculture. In the latter course, part of the time is to be devoted to regular classroom work in methods of teaching high-school agriculture, rural sociology, and farm machinery. Special lectures and laboratory work will be given in animal husbandry, horticulture, entomology, farm management, bees, plant diseases, and animal diseases. A part of each afternoon will be devoted to conferences where the various problems of the agriculture teacher will be thoroly discussed.

SUMMER COURSES IN OTHER COLLEGES OF THE UNIVERSITY

From June 21 to July 30 the University of Minnesota also maintains on the Minneapolis campus courses in the colleges of Education, Dentistry, Engineering and Architecture, and Science, Literature, and the Arts, and the Medical School. Those interested may obtain information from the registrar, University of Minnesota, Minneapolis.

INFORMATION

For information regarding the summer session of the College of Agriculture, Forestry, and Home Economics, address the secretary, University Farm, St. Paul.

DESCRIPTION OF COURSES

Note.—Since there are only one half as many weeks in the summer session as in the regular quarter, each course will require approximately twice as many hours per week as in a regular quarter. One credit hour is equivalent to (1) 12 lecture or recitation periods requiring two hours of preparation each; (2) 24 periods of laboratory work requiring one-half hour of preparation each; or (3) 36 hours of laboratory work with no preparation.

KEY TO BUILDINGS, UNIVERSITY FARM

Ad—Administration	En—Agricultural Engineering
PP—Plant Pathology	HE—Home Economics
Ch—Chemistry	Hr—Horticulture
DB—Dairy Barn	St—Stock Pavilion
DH—Dairy Hall	Ve—Veterinary
DiH—Dining Hall	WH—Women's Hall

AGRICULTURAL BIOCHEMISTRY

Professor ROSS A. GORTNER; Associate Professors CLYDE H. BAILEY, R. ADAMS DUTCHER, LEROY S. PALMER; Assistant Professors CLARENCE A. MORROW, JOHN J. WILLAMAN; Instructor ARTHUR K. ANDERSON.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3	6	Types of Carbon Compounds I, II MTWThFS	Soph., jr., sr. 201Ch	Chem. 1 yr. Anderson

GRADUATE COURSES

The following courses will be given for an entire summer quarter of eleven weeks provided that five or more students desire the course. Students intending to register for one or more of these courses should notify the Division of Agricultural Biochemistry of such intention at as early a date as possible.

No.	Credits	Title	Offered to	Prerequisite courses
101-102	6*	Agri. Quant. Analysis... V, VI, VII, VIII MTWThF	Jr., sr., grad. 7Ch	Quant. analysis Morrow
111-112	6*	Phytochemistry I, II MWF	Sr., grad. 251Ch	Biol. 10 cr., Org. chem. Morrow
113-114	4	Biochem. Lab. Methods. (I, II, III, IV TTh) (III, IV MW)	Sr., grad. 7Ch	Quant. anal. parallel 111-112 Morrow
116	3 or 5	Chem. of "Vitamines" and Deficiency Diseases Ar	Sr., grad. Ar	111-112, 113-114; or physiol chem. Dutcher.

* Three credits allowed for first six weeks.

DESCRIPTION OF COURSES

No.	Credits	Title	Offered to	Prerequisite courses
118	3 or 5	Lab. Prob. in Biochem..	Sr., grad.	III-112, 113-114 or 103 or 110
		Ar	Ar	.....
201	1	Seminar	Grad.	
		IV	F	
203	3 or 5	Research Problems	201Ch	Gortner
		Ar	Ar	.....
206	3	Colloids	Grad.	III-112 or phys. chem.
		III	MWF	201Ch Gortner

3. TYPES OF CARBON COMPOUNDS. An elementary study of the different groups of carbon compounds, with special reference to their relationships and their occurrence in plant and animal materials used as food. ANDERSON.

101-102. AGRICULTURAL QUANTITATIVE ANALYSIS. Includes estimation of inorganic and organic constituents of biological products, proximate analysis of foods and feeding stuffs, use of the polariscope, immersion refractometer, colorimeter, and nephelometer, viscosimeter, and other special apparatus. MORROW.

111-112. PHYTOCHEMISTRY. An advanced course dealing with the colloidal state, and the chemistry of proteins, carbohydrates, glucosides, tannins, fats, plant acids, enzymes and pigments, and their physico-chemical relations to the vital processes involved in growth and nutrition. MORROW.

113-114. BIOCHEMICAL LABORATORY METHODS. A laboratory course paralleling the lectures in 111-112, using recent methods for the investigation of biologically important compounds with especial reference to the detection and estimation of such compounds in cells or tissues. MORROW.

116. THE CHEMISTRY OF "VITAMINES" AND DEFICIENCY DISEASES. Lectures, consultations, and library work on special nutritional problems accompanied by chemical and biological studies of food materials from the standpoint of their "vitamine" content. DUTCHER.

118. LABORATORY PROBLEMS IN BIOCHEMISTRY. Special laboratory work in the preparation and isolation of pure compounds which occur in living cells, in the study of biochemical reactions, and in special methods of identification or determination of biochemical products. GORTNER, BAILEY, PALMER, DUTCHER, MORROW, or WILLAMAN.

201. SEMINAR. Regular meetings for the discussion of methods of research, formulation of research problems, and reviews of current literature. Required of all majoring in this division and of all minor- ing for the Doctor's degree. GORTNER.

203. RESEARCH PROBLEMS. Special work on particular research problems other than the student's major thesis. Facilities are provided for biochemical investigations and for advanced studies in plant, animal, or human nutrition. GORTNER, BAILEY, PALMER, DUTCHER, MORROW, WILLAMAN.
206. COLLOIDS. Lectures dealing with the colloidal state, the preparation and properties of colloidal solutions, and the relation of these to biochemical processes. GORTNER.

AGRICULTURAL EDUCATION

Assistant Professors JOHN V. ANKENY, WILLIAM P. DYER, ALBERT M. FIELD; Inspector of Rural Schools C. C. SWAIN.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
11	3	Principles of Vocational Educ. I MTWThFS	Jr., sr. 307Ad	None Ankeny
41	2	Teaching	Sr.	131, Agron. 121, 122, 123, see course de- scription Field, Dyer
42	3	Ar Ar Teaching	Ar Ar Sr.	131, Agron. 121, 122, 123, see course de- scription Field, Dyer
53	3	Ar Ar Consolidated Rural Schools... III MTWThFS	Ar All 317Ad	None Dyer, Swain
54	3	Rural Educ. and Com. Life.. IV MTWThFS	Sr. 317Ad	None Dyer, Swain
*66	3	Fundamentals of Agriculture Lect. IV MTWTh Lab. V, VI TTh	Jr., sr. 307Ad 307Ad	None Field
75	3	Visual Presentation	Jr., sr. 317Ad	None Ankeny
*131	3	Lect. VII T Lab. VII, VIII MWF Methods of Teaching Agri... II MTWThFS	Jr., sr. 317Ad Sr.	11 Field
201		Advanced Seminar	Sr.	Field
221		Ar Ar Graduate Problems	Ar Ar	Field

* Special course for consolidated school principals.

- II. PRINCIPLES OF VOCATIONAL EDUCATION. The fundamental principles upon which education is based. Emphasis is placed on those phases which are most closely related to vocational education. ANKENY.
- 41-42. TEACHING. Observation of regular classes; interpretation of class practices; preparation of lesson plans and actual teaching of classes under careful supervision in recitation and laboratory; criticism and discussion of plans, methods, and results of student's teaching. Students are admitted to this course only when recommended by the

- faculty of the division in which they are specializing and when accepted by the Division of Agricultural Education. FIELD, DYER.
53. CONSOLIDATED RURAL SCHOOLS. Building arrangements, selection of teachers, equipment, transportation of pupils, health supervision, home-project work, and other problems in organization and management of consolidated rural schools from the viewpoint of the special needs of rural life. DYER, SWAIN.
54. RURAL EDUCATION AND COMMUNITY LIFE. Special attention given to those features which are desirable in a rural community for educational, recreational, ethical, and esthetic purposes and the ways and means to organize the same about the school as a center. DYER, SWAIN.
66. FUNDAMENTALS OF AGRICULTURE. Essential for principals and superintendents of schools in which agriculture is taught, and valuable for students of other colleges whose time for agriculture is limited. Agricultural college experts will give work in their special fields. FIELD.
75. VISUAL METHOD OF PRESENTATION. To acquaint students with the various visual aids, their preparation, source, and use in the teaching process. Actual laboratory practice is given in the preparation and operation of various mediums. ANKENEY.
131. METHODS OF TEACHING AGRICULTURE. Fundamentals of method in teaching agriculture in public schools. Selecting, organizing, and presenting subject-matter. Equipment, illustrative material, laboratory work, field trips. Special emphasis on the home project as a method in teaching agriculture. FIELD.
201. ADVANCED SEMINAR. A departmental seminar devoted to an intensive, critical, and constructive study of the boarder administrative problems and policies in the field of agricultural education. Designed especially for supervisors and teacher-trainers. Opportunity for independent investigation and research. FIELD.
221. GRADUATE PROBLEMS. Making investigations, gathering data, and formulating plans regarding agricultural education. FIELD.

AGRONOMY AND FARM MANAGEMENT

Associate Professor LOUIS B. BASSETT; Assistant Professor FORREST MCGINNIS; Instructor FREDERICK H. STEINMETZ.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	3	Farm Crops	All	None
		I, II MTWThFS	2Ad	Steinmetz
11	3	Farm Machinery	Jr., sr.	None
		V, VI, VII TWThF	Basement Ad	Bassett
*121	3	Cereal Crops	Jr., sr.	1, bot. 10 cred.
		III, IV MTWThFS	2Ad	McGinnis
*122	3	Corn and Potato Crops.....	Jr., sr.	1, bot. 10 cred.
		III, IV MTWThFS	2Ad	McGinnis

* Course 121 or Course 122 will be given but not both. Choice by the class enrolled will be permitted.

- I. FARM CROPS. An elementary study of the important field crops of the United States with emphasis upon those of local importance; distribution, economic importance, agricultural classification, cultural methods, and principles of improvement. STEINMETZ.
11. FARM MACHINERY. Lectures and laboratory work covering classification, mechanical construction, adjustment, and operation of the different kinds of farm machinery. BASSETT.
121. CEREAL CROPS. An advanced study of the cereal crops. Structure, group classification, improvement, growing, and utilization. Brief score-card practice and a limited amount of placing on intrinsic value included. MCGINNIS.
122. CORN AND POTATO CROPS. A study of the corn and potato crops similar to that outlined for Course 121. MCGINNIS.

ANIMAL HUSBANDRY

Instructor NORRIS K. CARNES.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	5	Types and Breeds of Livestock	All	None
		III, IV MTWThF	West Arena, St	Carnes
		V, VI MTWThF		
6	5	Livestock Feeding	Sr.	Agri. Biochem. 15
		I, II MTWThF	3St	Carnes

1. TYPES AND BREEDS OF LIVESTOCK. The types as related to performance or production in horses, beef cattle, sheep, and swine, and the origin, history, characteristics, and economic importance of the breeds, classified according to type. CARNES.
6. LIVESTOCK FEEDING. Feeding livestock under farm conditions; efficiency and economy in growing and fattening meat animals; feeding draft horses and colts. Consideration of experimental work and present practice. Practical feeding problems. Only three credits allowed to those who have completed Course 8. CARNES.

DESCRIPTION OF COURSES

BEE CULTURE

Professor FRANCIS JAGER.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	3	Elements of Beekeeping..... IV	Jr., sr. MWF	None
		Lab. Ar	Ar	Jager
5	3	Queen Bee Raising..... Ar	Jr., sr. Ar	Jager

- ELEMENTS OF BEEKEEPING. Fundamentals of bee behavior and bee practice throughout the cycle of the year. JAGER.
- QUEEN BEE RAISING. Theory and practice of bee-breeding in connection with our queen-raising station at Zumbra Heights. Course limited to five students. JAGER.

DAIRY HUSBANDRY

ANIMAL HUSBANDRY GROUP

Professor JOSEPH R. KEITHLEY; Assistant CHESTER A. DAHLE.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	5	Elements of Dairying..... (Lect.) I	All MTWThFS	None
		(Lab.) II, III, MTWTh	39DH 39DH	Keithley Dahle

- ELEMENTS OF DAIRYING. Composition of milk. Causes of variation in composition; milk constituents and their uses in dairy manufactures and as food; Babcock test; sanitary handling of milk and cream on the farm; cream separating and farm buttermaking. KEITHLEY, DAHLE.

ECONOMICS

Assistant Professor CLARENCE L. HOLMES.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
6	3	Agricultural Economics..... IV	Soph., jr., sr. 215En	5 Holmes
7	5	Principles of Economics..... II, III	Soph., jr., sr. 203HE	7 Holmes

- AGRICULTURAL ECONOMICS. Principles of agricultural economics with special emphasis upon production. HOLMES.
- PRINCIPLES OF ECONOMICS. Fundamentals of economic theory, with more than the usual amount of emphasis upon consumption. HOLMES.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

Professor WILLIAM A. RILEY; Associate Professors PAUL B. LAWSON, WILLIAM MOORE, ARTHUR G. RUGGLES; Assistant Professors ROYAL N. CHAPMAN, HARRY H. KNIGHT, OSCAR W. OESTLUND.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1-2	10	Introductory Entomology Lect. and Lab. I, II, III, IV MWF Additional lab. hrs. to be arranged individually	All 306Ad	An. biol. 1 yr. Riley, Ruggles
3	3	Elem. Economic Entomology. Lect. and Lab. VI, VII, VIII MTWTh	All 306Ad	None Lawson
*44-45	6	Animal Parasites and Parasitism Lect. and Lab. VI, VII, VIII MTWTh	All 327Ad	An. biol. 1 yr. Riley

* Credit allowed for first half of course for first six weeks.

1. **INTRODUCTORY ENTOMOLOGY.** Lectures, laboratory, and field work on the characteristics and habits of insects. Introductory to Course 2, Economic Entomology, and required of all students planning to specialize in entomology. RILEY, RUGGLES.
2. **ECONOMIC ENTOMOLOGY.** The life histories, habits and methods of control of the insect pests of orchard, field, and garden. Laboratory work in the determination of the more important forms. RUGGLES.
In case there is sufficient demand Course 2 will be offered as a continuation of Course 1, for the five weeks following the summer session.
3. **ELEMENTARY ECONOMIC ENTOMOLOGY.** A brief course dealing with the characteristics and habits of insect pests and methods of control. Not open for credit to students planning advanced work in entomology. LAWSON.
44. **ANIMAL PARASITES.** A study of the more common animal parasites of man and domestic animals, and of methods of avoidance and control. Additional advanced work for those prepared to undertake it. RILEY.
45. **RELATIONS OF INSECTS TO DISEASE.** The causation and transmission of disease by insects and other arthropods. Life histories, habits, and methods of control of hominioxious species. RILEY.
In case there is sufficient demand, Course 45 will be offered as a continuation of Course 44, for the five weeks following the summer session.

COURSES PRIMARILY FOR GRADUATE STUDENTS

197. INTRODUCTION TO RESEARCH. Preparation for investigational work in lines of entomology and parasitology. Advanced laboratory, field, and library work; training in the preparation of bibliographies and manuscripts; special problems.

The following lines of work are open:

Systematic Entomology, OESTLUND, KNIGHT.

General Economic Entomology, RUGGLES

Insect Ecology, CHAPMAN

Insecticides, MOORE

Insect Morphology; Parasitology, RILEY

RESEARCH. Ample opportunity for research work in various phases of entomology and parasitology will be afforded properly qualified students. This work will be individual and it is advised that students planning to undertake special problems correspond with the division relative to methods of collection and preparation of material.

FARM ENGINEERING

AGRICULTURAL ENGINEERING GROUP

Assistant Professor HALL B. WHITE; Instructors J. GRANT DENT, MAURICE G. JACOBSON.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3	3	Mechanical Drawing	All	None
		III, IV MTWThFS	303En	Jacobson
5	3	Carpentry	All	None
		III, IV MTWThFS	48En	White
15	2	Mechanics Laboratory	All	None
		V, VI, VII, VIII TTh	101En	Dent

3. MECHANICAL DRAWING. Mechanics of drawing. Exercises in the use of drawing instruments, lettering, and water colors. The mechanics of working drawings with their practical value. JACOBSON.

5. CARPENTRY. The use of carpentry tools and methods of farm building construction. WHITE.

15. MECHANICS LABORATORY. Exercises in harness repair, knots and rope-splicing, belt-lacing, soldering, babbiting, pipe-fitting, drilling, and work with cold metals. DENT.

HOME ECONOMICS

Professor MILDRED WEIGLEY; Associate Professors ALICE BIESTER, HARRIET I. GOLDSTEIN, MARION WELLER; Assistant Professors CLARA M. BROWN, AMY MORSE, E. MAUDE PATCHIN; Instructors ALICE CHILD, VETTA GOLDSTEIN, FRANCES E. KELLEY, WYLLE MCNEAL.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
3	5	Textiles	All	None
		I, II, V, VI MTWThF	307HE	Clara Brown
11	3	Garment-Making	All	None
		III, IV MTWThFS	304HE	.....
*13	5	Dressmaking	Soph., jr., sr.	3, 11, 51, Home pract. in garment-making
		II, III, IV MTWThFS	305HE	.....
17	3	Adv. Clothing Construction...	Jr., sr.	13, 52, 53
		III, IV MTWThFS	303HE	Patchin
*18	3	Commercial Clothing Mfg....	Sr.	17
		V, VI, VII TWThF	304HE	Patchin
19	1	Millinery	Jr., sr.	13, 53
		III, IV MW	112HE	Carlotta Brown
*21	5	Foods and Cookery.....	Soph., jr., sr.	Chem. 5 cred., Physiol. 3 or parallel
		IV, V, VI, VII MTWThF	209, 203HE	.....
*22	5	Food Economics	Soph., jr., sr.	21
		I, II, III MTWThFS	209HE	.....
25	3	Special Problems in Foods and Cookery	Sr.	22, 108
		I, II, III MTWTh	207HE	Child
35	6	Home Management Lab.....	Jr., sr.	22, Econ. 3
		Ar Ar	Ar	Kelley
*36	3	Home Management Lecture..	Jr., sr.	22, Econ. 3
		II MTWThFS	106HE	Kelley
*42	3	Special Methods of Teaching Home Economics	Jr., sr.	13, 22, Psychol. 1
		IV MTWThFS	213HE	McNeal
43	2	Organization and Methods for Related Art Teaching.....	Consent of instructor	
		II TWThF	H. Goldstein	
51	3	Drawing and Design.....	All	None
		V, VI, VII TWThF	400HE	V. Goldstein
52	3	Art History and Appreciation I MTWThFS	Jr. sr. 401HE	51 V. Goldstein
53	3	Advanced Design	Jr. sr.	51
		III, IV MTWThFS	400HE	H. Goldstein
103	5	Dietetics	Sr.	108
		V, VI, VII, VIII, MTWThF	106, 107HE	Biester
108	5	Nutrition II	Jr., sr.	22, 23, Bact. 6, Agr. Biochem. 3
		I, II, III MTWThFS	211, 213HE	.....
122	3	Advanced Textiles	Jr., sr.	3, 51
		V, VI MTWThF	211, 305HE	Weller
123	3	Clothing Economics	Jr., sr.	13, 52, 53, Econ. 3-4
		III MTWThFS	309HE	Weller
131	5	Home Equipment	Sr.	52, 53
		V, VI, VII, VIII, MTWThF	401HE	Morse

* Prerequisites waived for teachers of home economics.

3. TEXTILES. A study of textile fibers, their structure, properties, and chemical reactions; of fabrics, their structure and process of manufacture; of art and economic considerations in selection and purchase of materials for clothing and household furnishing. CLARA BROWN.

11. **GARMENT MAKING.** Instruction and laboratory practice in hand-sewing; reading and adaptation of commercial patterns; construction and use of the sewing machine; designing, cutting, and making simple outer garments from washable materials. ———.
13. **DRESSMAKING.** Consideration of quality, suitability, and cost of materials adapted to technique involved in construction of simple wool and silk dresses; adaptation of art principles in selection of designs; instruction and practice in methods of construction. ———.
17. **ADVANCED CLOTHING CONSTRUCTION.** Laboratory problems in costume modeling and construction. **PATCHIN.**
18. **COMMERCIAL CLOTHING MANUFACTURE.** A study of the organization of the clothing trades and industries; of wages and standards of efficiency in workmanship. Laboratory practice upon a commercial basis, measured by trade standards. **PATCHIN.**
19. **MILLINERY.** A study of the processes and materials used in millinery; designing, making, and trimming hats. **CARLOTTA BROWN.**
21. **FOODS AND COOKERY.** (a) Production, manufacture, chemical composition of typical foods; their classification into food principles; changes in digestion; function in nutrition. (b) Fundamental science principles from chemistry, physics, biology, bacteriology, and their application in typical cookery processes. ———.
22. **FOOD ECONOMICS.** Cost and nutritive value of typical foods; the study of dietaries; preparation and serving of meals, the cost bearing a definite relation to the family budget. ———.
25. **SPECIAL PROBLEMS IN FOODS AND COOKERY.** An advanced course in food preparation in which the problems are undertaken from an experimental point of view. **CHILD.**
35. **HOME MANAGEMENT: OPERATION AND MAINTENANCE, LABORATORY PRACTICE.** (a) Six weeks' experience as manager and helper in a household of twenty members. (b) A dietary study covering a period of one month in the above household. **KELLEY.**
36. **HOME MANAGEMENT: OPERATION AND MAINTENANCE, LECTURES.** The family budget for varying incomes, and for the "Home Management House"; household accounts. **KELLEY.**
42. **SPECIAL METHODS FOR TEACHING HOME ECONOMICS.** Curricula, equipment, methods of teaching for Home Economics. **MCNEAL.**
43. **ORGANIZATION AND METHODS FOR RELATED ART TEACHING.** Organization of a related art course and methods of teaching art principles as applied to familiar objects and processes. **H. GOLDSTEIN.**

51. **DRAWING AND DESIGN.** Composition, perspective, color theory, and color harmonies applied to costume design and interiors; harmony, balance, rhythm, in line and area design. V. GOLDSTEIN.
52. **ART HISTORY AND APPRECIATION.** The historical development of art, architecture decoration, furniture and costume studied with special emphasis on design and influence upon modern styles. V. GOLDSTEIN.
53. **ADVANCED DESIGN.** Problems in design for costume and for house furnishing. H. GOLDSTEIN.
103. **DIETETICS.** The fundamental principles of human nutrition as applied to the feeding of individuals and groups under conditions of health, and under such pathological conditions as are chiefly dependent upon dietetic treatment. BIESTER.
108. **NUTRITION II.** A study of the chemistry and physiology of metabolism, involving a qualitative examination of the organic food stuffs and of the body tissues. ———.
122. **ADVANCED TEXTILES.** A more intensive study of textile fibers and fabrics; organization of laboratory problems leading to the establishment of a basis for standardization by the general consumer and for a demand for pure textiles. WELLER.
123. **CLOTHING ECONOMICS.** General consideration of economic function of women with reference to clothing and textiles in the home and in industry; study of clothing budget, hygiene and standardization of dress. WELLER.
131. **HOME MANAGEMENT: HOUSE PLANNING AND EQUIPMENT.** House-planning, house-furnishing and equipment, and construction and furnishing budgets. Types of domestic architecture; site; floor-plans; building materials; details of construction; heating; ventilating; lighting; plumbing; walls; rugs; furniture; color; hangings; pictures; gardens. MORSE.

HORTICULTURE

Professor WILLIAM H. ALDERMAN; Associate Professor LEROY CADY;
Instructor WILLIAM T. TAPLEY.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
32	3	Vegetable Gardening	Soph., jr., sr.	Bot. 10 cred.
		Lect. I MTWTh	20Hr	Tapley
		Lab. III, IV MW	11Hr	
71	3	Landscape Gardening	All	None
		Lect. III MTWTh	20Hr	Cady
		Lab. V, VI TTh	11Hr	
90	3	General Horticulture	All	None
		Lect. II MTWTh	20Hr	Alderman
		Lab. V, VI MW	11Hr	

- 32. **VEGETABLE GARDENING.** The principles of vegetable growing for home and market, including all important vegetable crops from seed to harvest. Lectures, recitations, references, laboratory work, and excursions. **TAPLEY.**
- 71. **LANDSCAPE GARDENING.** The practice and principles of landscape gardening as applied to the home and community. Lectures and field trips to parks and private grounds. **CADY.**
- 90. **GENERAL HORTICULTURE.** A general survey of horticulture with a consideration of the elementary principles of fruit-growing, vegetable-gardening, floriculture, landscape-gardening, and plant propagation. **ALDERMAN.**

PLANT PATHOLOGY AND BOTANY

Professor **ELVIN C. STAKMAN.**

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	5	Plant Pathology	Jr., sr. 2PP	Bot. 10 cred. Stakman
		I, II, III, IV TWThF		
14	5	Plant Disease Control.....	Jr., sr. 1, 2PP	1, Ent. 1 or 3
		V, VI, VII, VIII, TWThF		
111	3	Diseases of Field Crops.....	Jr., sr. 1, 2PP	1
		Ar Ar		
112	3	Diseases of Fruit and Vegetable Crops.....	Jr., sr. 1, 2PP	1
		Ar Ar		

COURSES

- I. **PLANT PATHOLOGY.** Elementary study of plant diseases due to fungi, bacteria, and slime molds; life histories and preventive methods. Lectures, laboratory, and reference. Not open to those who have completed 10. **STAKMAN.**
- 14. **PLANT DISEASE CONTROL.** A detailed study of methods of controlling diseases of plants of parasitic origin. Spray materials and spray machinery. Practical applications. Not open to those who have completed 6. _____
- 111. **DISEASES OF FIELD CROPS.** Special detailed study of diseases of cereal and forage crops, including symptomology, etiology, and practical methods of control. Laboratory, lecture, and greenhouse work. _____
- 112. **DISEASES OF FRUIT AND VEGETABLE CROPS.** Special study of diseases of fruit and vegetable crops, especially of Minnesota crops, including diseases of crops raised under glass. Laboratory, lecture, and greenhouse work. _____

POULTRY HUSBANDRY

ANIMAL INDUSTRY GROUP

Professor ARTHUR C. SMITH.

COURSES

No.	Credits	Title	Offered to	Prerequisite courses
1	3	Poultry	All	None
		IV MTWThFS	104VE	Smith
2	3	Poultry Judging	All	I
		V, VI, VII MTWTh	104VE	Smith

1. **POULTRY.** A study of the poultry industry; best methods of care and management of fowls, turkeys, ducks, and geese, and the most important breeds of each. SMITH.
2. **POULTRY JUDGING.** The history, standard requirements, and common defects of the leading commercial standard breeds and varieties, and determination and standard values by the score-card and comparison methods. SMITH.

The Bulletin *of the University of* **Minnesota**

General Extension Division
Announcement of Evening Courses
1920-1921



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CALENDAR

1920-1921

1920

September	20-25	Week	Registration week
September	27	Monday	Regular class work begins
November	25	Thursday	Thanksgiving; a holiday
December	18	Saturday	Christmas recess begins
December	27	Monday	Class work resumed

1921

January	17-21	Week	Examination week, first semester
January	21	Friday	First semester ends
January	31	Monday	Second semester begins
May	16-20	Week	Examination week, second semester
May	20	Friday	Second semester ends

GENERAL EXTENSION DIVISION

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neering, General Extension Division
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STANLEY B. HOUCK, LL.M., Instructor in Business Law

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 ROSSITER HOWARD, Instructor in Art Appreciation
 SIGURD E. HUSTVEDT, Ph.D., Instructor in Rhetoric
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 JOHN B. JOHNSTON, Ph.D., Professor of Comparative Neurology
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 SAMUEL KROESCH, Ph.D., Assistant Professor of German
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 RUPERT C. LODGE, M.A., Assistant Professor of Philosophy
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 FREDERICK M. MANN, M.S. in Arch., C.E., Professor of Architecture
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 EVERETT W. OLMSTED, Ph.D., Litt.D., Professor of Romance Languages
 BENJAMIN W. PALMER, M.A., LL.B., Instructor in Business Law
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 ARTHUR F. PAYNE, M.A., Assistant Professor of Trade and Industrial
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 CHARLES H. PRESTON, B.A., Associate Professor of Business Administration,
 General Extension Division
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 WILLIAM H. RICHARDS, Instructor in Carpentry and Pattern Work
 CLARE L. ROTZEL, B.C.S., C.P.A., Associate Professor of Accounting, Gen-
 eral Extension Division
 FRANK B. ROWLEY, M.E., Associate Professor of Experimental Engineering
 MARTIN B. RUUD, Ph.D., Assistant Professor of Rhetoric
 WILLIAM T. RYAN, E.E., Associate Professor of Electrical Engineering
 CHARLES A. SAVAGE, Ph.D., Professor of Greek
 COLBERT SEARLES, Ph.D., Professor of Romance Languages

¹ Retired, June 30, 1920.

FACULTY

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GEORGE D. SHEPARDSON, D.Sc., M.E., Professor of Electrical Engineering

LESTER B. SHIPPEE, Ph.D., Assistant Professor of History

CHARLES F. SHOOP, B.S., Associate Professor of Experimental Engineering

EDWARD H. SIRICH, Ph.D., Assistant Professor of Romance Languages

WILLIAM C. SMILEY, LL.M., Instructor in Business Law, General Extension
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NORMAN WILDE, Ph.D., Professor of Philosophy

²HERBERT WOODROW, Ph.D., Associate Professor of Psychology

JEREMIAH S. YOUNG, Ph.D., Professor of Political Science

OTTO S. ZELNER, B.S. in C.E., Assistant Professor of Surveying

² Absent on leave, 1920-21.

EXTENSION SERVICE

The Extension Service of the University of Minnesota is organized to include:

- A. Evening classes, in Minneapolis, St. Paul, Duluth, and other cities.
 - 1. Courses leading to credit in the College of Science, Literature, and the Arts, in the College of Education, and in the School of Business.
 - 2. Courses in business administration, accountancy, and finance.
 - 3. Practical courses in engineering and in industrial subjects.
- B. Correspondence courses.
- C. Extension lectures, singly or in groups, and lyceum lectures, concerts, and entertainments.
- D. The Municipal Reference Bureau, which compiles and furnishes to city officials information pertaining to municipal government and administration.
- E. The Bureau of Visual Instruction, through which loan collections of lantern slides and films are furnished to schools and clubs.
- F. Drama Service, through which dramatic clubs and school societies are given advice about the production of amateur theatricals, and copies of plays are lent for reading and selection.
- G. Community Service, through which the elements making up a community and its trading fringe are given advice and assistance for bringing together all the social forces into an organization whose purpose shall be to make the people healthy and wealthy and wise.
- H. Agricultural Extension, including lectures, demonstrations, institutes, and short courses under the direction of the College of Agriculture, Forestry, and Home Economics.

EVENING EXTENSION COURSES

GENERAL INFORMATION

ADMISSION TO COURSES

It is not intended that any regulation should debar from the privileges of these courses any person who can pursue them profitably. Those persons desiring credit toward a university degree must of course comply with the regulations laid down by the college in which credit is desired. Those not desiring such credit may be admitted, provided they are sufficiently mature (more than eighteen years of age) and can satisfy the departments in which they wish to study that they are able to carry the work profitably to themselves and without hindrance to the classes.

CREDIT FOR EXTENSION COURSES

Credit toward a degree will be given students who satisfy the entrance requirements of the college in which credit is desired and who successfully complete any of the extension courses of university grade. This applies to all the courses listed under academic or collegiate courses, unless otherwise specified. It also applies to nearly all the business courses. A few courses listed under engineering carry credits. Credit in any extension course will be awarded only to those students who pass the final examinations of that course. Such credits will be recorded upon matriculation in the University. Courses requiring one evening (two hours) a week for recitation normally carry 2 semester credits. Those requiring more time usually carry correspondingly more credit. In the Extension Division credits are still reckoned on the semester, not the quarter, basis. The school year is divided into two semesters of sixteen weeks each, with an extra week devoted to examinations. Normally each class meets one night a week for two hours.

The statement concerning credit for the Certificates in Accountancy, in Finance, and General Business will be found on pages 24, 25, and 26.

Students *must indicate at the time of registration whether or not they desire university credit in the courses pursued.*

Regulations concerning Credit in the College of Science, Literature, and the Arts

1. All courses for which credit is given in the College of Science, Literature, and the Arts must be authorized with the credits by the Advisory Committee. But credit shall be given only to those extension courses which are conducted in essentially the same manner as the corresponding courses in the University and which are carried on under similar conditions as to attendance, term's work, quizzes, and examinations.

2. Each credit course shall be directly in charge of a member of the faculty.

3. Any regularly enrolled University student successfully completing an approved course shall receive the appropriate credit.

4. Any person shall receive a certificate upon satisfactorily completing an approved course. The certificates entitle the holder to the corresponding

University credits whenever he has earned 30 credits in residence. The registrar or the Students' Work Committee, shall in all cases pass upon the qualifications of the student.

5. The maximum credit towards a degree for work done in extension courses shall not exceed one half the unit hours required for graduation.

6. Credit for an amount not exceeding one quarter of the unit hours required for graduation may be given at the University of Minnesota to students of such other extension schools or departments as may be approved by the Advisory Committee, provided that such credit shall be subject to the same provisions as govern credits in the General Extension Division of the University of Minnesota.

RESIDENT STUDENTS

1. No University student may enroll for extension courses for the purpose of removing a condition or failure.

2. No University student may enroll for an extension course if this would increase his credit hours beyond what the rules allow.

3. Any University student who wishes to enroll for an extension course must first obtain the approval of the dean of his college.

FEEES

Collegiate courses meeting one evening a week require a fee of from \$5 to \$7.50 a semester of sixteen weeks. For collegiate courses meeting two evenings a week, the fee is from \$10 to \$15 a semester.

The fee for business and engineering courses is \$45 per year, payable \$22.50 each semester, when registering for three subjects; or \$30 per year, payable \$15 per semester, when registering for two subjects. The fee for a single subject is \$7.50 per semester, with the exception of a few advanced or technical courses, for which the fee is \$10 a semester. This does not include materials.

The fee does not include the cost of texts or materials. The cost of these items varies from \$1 to \$3 per course.

All fees are payable at the time of registration, and registration should not be deferred longer than the second meeting of class. Checks should be made payable to the University of Minnesota.

Special arrangements are made with organizations, clubs, and business concerns, whereby instruction may be given to groups of students within the organization at a sum which will somewhat reduce the individual rate per member.

REFUNDS

No fee will be refunded on account of withdrawal from any course. Exceptions to this rule will be made only in case of (a) removal from the city or (b) illness or physical disability as attested by the certificate of a reputable physician. Application for pro rata refund on the above conditions *will not be considered later than fifteen days after registration.*

PLACES FOR CONDUCTING CLASSES

Most of the classes in engineering will be held in the Main Engineering Building, Electrical Engineering Building, the Mechanical Engineering, or the Experimental Engineering Building.

Other classes in Minneapolis are conducted at the University, at the Public Library, at the City Hall, and in some of the public schoolhouses. Definite locations for each class will be announced in a circular to be published about September 15.

In St. Paul the work will be carried on at the City Hall, and the Public Library. Additional accommodations will be provided for in some cases.

NUMBER FOR WHOM CLASSES WILL BE ORGANIZED

Classes will not be organized for a smaller enrollment than twelve, and in some courses a larger registration will be required.

TIME OF MEETING

Classes ordinarily meet at 7:30 and dismiss at 9:30. Classes in business subjects frequently meet at 6:30.

ENROLLMENT

Registration for the first semester takes place during the week preceding the organization of classes (September 20-25). Students may also register with the instructor at the first meeting of the class.

RULE REGARDING ABSENCES

The attention of students and faculty is called to the following rule regarding absences:

"No student whose absences exceed three (3) of the regular scheduled sessions of the course for a semester shall be admitted to the final examination of the course without special permission of the director of University Extension."

PROGRAM OF CLASSES

Folders will be issued about September 15, giving the program of classes and schedules of meeting places. It should be understood that *not all the courses listed in this bulletin are given in any one year*. Final announcement may be found in the special folder. Folders will be issued for the collegiate courses, the business courses, and the engineering courses. Separate bulletins are also issued for each of these groups of courses.

LOCATION OF EXTENSION OFFICES

The offices of the General Extension Division may be found on the ground floor of the Main Engineering Building, on Washington Avenue and Church Street Southeast. To telephone the office call N. W. Dinsmore 2760 or Gladstone 1811 and ask the University central for the General Extension Division.

COURSES OF INSTRUCTION

The courses of instruction naturally group themselves into three divisions, viz., (1) those corresponding to the regular college courses given in the College of Science, Literature, and the Arts, and conveying credit toward a degree from that college; (2) those furnishing a preparation for business (most of which also carry credit toward a degree from the School of Business); (3) engineering or industrial courses. A separate bulletin of each of these groups may be obtained on request. The description of courses will therefore be grouped in this order. The first group will be designated collegiate courses.

DEPARTMENT OF COLLEGIATE INSTRUCTION

The following courses are offered extension students with two purposes in view: First, an opportunity is afforded those who are candidates for degrees, but who are unable to pursue their entire college course in regular residence, to complete a part of their work while otherwise occupied during the day.

Second, the advantage of university training in cultural subjects is offered those who can devote one or more evenings a week to such work, regardless of any desire for university credit.

The General Extension Division is now prepared to offer the following evening courses. Others will be given provided a sufficient registration is assured, usually twelve. Those interested in forming such classes are advised to correspond with the director.

A special folder announcing specific dates and places for holding classes will be issued early in September. This folder, containing the class program, will be sent to all requesting it.

FEEES

Each course listed as a collegiate course requires a fee of \$5 for the semester of sixteen weeks, the class meeting one evening a week for two hours. A few advanced courses require a fee of \$7.50. For collegiate courses meeting two evenings a week the fee is \$10 a semester, with the exception already noted.

RULE REGARDING ABSENCES

The attention of students and faculty is called to the following rule regarding absences:

"No student whose absences exceed three (3) of the regular scheduled sessions of the course for a semester shall be admitted to the final examination of the course without special permission of the director of University Extension."

CREDIT

Credit in any extension course will be awarded only to those students who pass the final examination of the course.

PUBLIC AFFAIRS

From time to time people have asked the University to offer in an evening extension class a course which should not be confined to the subject-matter dealt with in any one University department, but on the contrary should cover the whole field of live topics in which the well-informed and thoughtful citizen, whether man or woman, might be expected to take an interest. This might be called a course in Current Topics, or a course in Public Affairs. For its subject-matter and content it would levy on the fields of economics, political science, law, sociology, philosophy, and English. The Extension Division now announces such a course, which will be conducted during the two semesters of 1920-21 under the title Public Affairs. By attending this class for one night a week a citizen may attain the purpose of acquiring a reasonable amount of general information on public questions, and will thereby be in touch with the latest thought on the leading issues of the day.

The course will consist of lectures and open forum discussions, with assigned readings on each topic. It does not carry university credit.

PUBLIC AFFAIRS, PART I.—The following subjects will be discussed during the first semester:

- A. Political science and government
- B. Economics and business.
- C. Sociology and industrial relations
- D. International relations.

No credit; one evening a week; first semester.

PUBLIC AFFAIRS, PART II.—The work of the second semester is a continuation of that of the first semester with a discussion of the following subjects:

- A. Public information
- B. Americanization
- C. Philosophy and modern life
- D. Science and progress
- E. Literature and current thought.

No credit; one evening a week; first semester.

AMERICANIZATION TRAINING AND ANTHROPOLOGY

THE AMERICAN PEOPLE

- 1 (113). OLDER IMMIGRANTS. Characteristics, contributions, and distribution of the older immigrant peoples in America, their modification and importance to us. Two credits (one evening a week); first semester.
JENKS.
- 2 (114). NEWER IMMIGRANTS. Characteristics, contributions, and distribution of the newer immigrant peoples in America, their modification and importance to us. Two credits (one evening a week); second semester.
JENKS.

- 3 (115). AMERICANISMS AND ASSIMILATION. Essential and unique historical americanisms, and their value and virility for the future in America. Conditions and facts of assimilation. Two credits (one evening a week); second semester. JENKS.

ART

1. ART APPRECIATION—ANCIENT AND MEDIEVAL. This is a cultural rather than a technical course, leading to the appreciation of architecture, sculpture, and painting as an expression of the civic and intellectual activities of the time in which the artist lived. Sixteen two-hour lectures illustrated with lantern slides. One hour required reading to supplement each lecture. Two College of Education credits (one evening a week); first semester. HOWARD.
2. ART APPRECIATION—RENAISSANCE AND MODERN. This is a cultural rather than a technical course, leading to the appreciation of architecture, sculpture, and painting as an expression of the civic and intellectual activities of the modern period. Sixteen two-hour lectures, illustrated with lantern slides. One hour required reading to supplement each lecture. Two College of Education credits (one evening a week); second semester. HOWARD.

CHEMISTRY

1. GENERAL INORGANIC CHEMISTRY—THE NON-METALS. A study of the common non-metallic elements and their principal compounds, with discussions of the laws and theories of chemistry. One lecture, one recitation, and three hours laboratory work per week. (TTh 7:30-10:00.) First semester. GEIGER.
2. GENERAL INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS—THE METALS AND QUALITATIVE ANALYSIS. A study of the common metallic elements and their principal compounds, with a further discussion of the laws and theories of chemistry, and systematic qualitative analysis. One lecture, one recitation, and three hours laboratory work per week. Open to students who have completed Course 1 or its equivalent. Second semester. GEIGER.

NOTE: The work of both semesters is equivalent to 6 semester or 9 quarter credits. Students desiring credit in the College of Science, Literature, and the Arts can earn 10 quarter credits by doing extra work by assignment.

EDUCATION

- 1 (1a). BRIEF HISTORY OF EDUCATION. The origin and development of schools, more particularly in the modern period, as a preparation for the understanding of the educational systems, theories, and practices

- of the present. Ranks as a junior and senior course in the University. Open to teachers and prospective teachers who have met the college entrance requirements. Two credits (one evening a week); first semester. SWIFT.
- 2 (3a). SOCIAL ASPECTS OF EDUCATION. This course deals with conditions within the school itself,—such as the socialized recitation and the social activities of students. It also discusses educational activities outside the school, including the various institutions which influence society. It treats of the necessity of coördinating the social activities within and without the school so that each may become more effective. Two credits (one evening a week); first semester. RANKIN.
 - 3 (119). THE SCHOOL CURRICULA. An attempt is made to discover fundamental principles governing the material and methods of education in a democracy. To this end it discusses the nature of what we mean by a democratic society. The aims and methods of the enterprise of education are considered from this point of view. Two credits (one evening a week); second semester. RANKIN.
 - 4 (5). PUBLIC EDUCATION IN THE UNITED STATES. A general survey of the social and political ideals and factors determining the problem of public education in the United States, followed by an account of the educational institutions established for the purpose of solving this problem. This course is designed to present a comprehensive view of the present educational situation, including the most significant current movements and institutions. Two credits (one evening a week). SWIFT.
 5. ADMINISTRATION OF VILLAGE AND CONSOLIDATED SCHOOLS. A course designed for the principals of small schools. The technic of school administration and supervision is specifically applied to the small system. An effort is made not only to acquaint the student with progressive movements in education, but also to help him adjust himself to conditions as he actually finds them. Two credits (one evening a week); second semester. FINNEY.

VOCATIONAL AND INDUSTRIAL

1. METHODS OF ESTABLISHING TRAINING DEPARTMENTS IN FACTORIES AND STORES. This is a course for foremen, superintendents, and other executives in the organization and establishment of training departments and "vestibule schools" as a part of scientific management and the employment system. This course will be so arranged that each member of the class will at the end of the course be in possession of the complete data necessary for the establishment of such courses in his own organization. No credit (one evening a week); first semester. PAYNE.
2. SHEET-METAL PATTERN DRAFTING FOR TINSMITHS AND SHEET-METAL WORKERS. This is a practical course of real problems and development of patterns and of forms and types of sheet-metal work. For boiler-makers, coppersmiths, tinsmiths, and automobile-body men. The course

- is divided into the following progressive units: (1) development of patterns by orthographic projection; (2) by the use of parallel lines; (3) by means of radial lines; (4) by triangulation; (5) approximation; (6) templates. Students will be encouraged to bring in practical problems from their every-day work. No credit (one evening a week); first semester. PAYNE.
3. SCIENTIFIC METHODS OF HANDLING AND TESTING LABOR. This is a practical course covering the development of scientific methods in handling and testing labor. A complete study will be made of the three groups of tests used. Practical illustrations from plants using these tests. The students of this class will be encouraged to apply the classwork to their own particular situations. No credit (one evening a week); second semester. PAYNE.
 4. CAUSES OF AND CURES FOR INDUSTRIAL UNREST. An analytical study is made of the fundamental causes of various types of industrial unrest and the remedial measures that have been taken by various organizations. The work of this class will be from the standpoint of the administrator and executive. No political panaceas will be discussed. No credit (one evening a week); second semester. PAYNE.

ENGLISH

- 1 (8). SHAKESPEARE. An introductory study of Shakespeare's development as a poet and dramatist up to *King Lear*, with reading of representative plays. Two credits (one evening a week); second semester. RARIG.
- 2 (44). AMERICAN LITERATURE. Lectures on American literature with extensive readings from the principal poets and prose writers of the United States. Two credits (one evening a week); second semester. NICHOLS.
- 3 (109-110). THE ROMANTIC POETS. A study of the Romantic School of poets from Wordsworth to Keats, and the influence of the French Revolution upon them. Two credits (one evening a week); first semester. RUUD.
- 4 (133). ENGLISH AND SCOTTISH POPULAR BALLADS. The study of a large number of traditional ballads, English and foreign, and the study of ballad style and origins. Two credits (one evening a week); second semester. HUSTVEDT.

GERMAN

1. BEGINNING GERMAN. Pronunciation, grammar, conversation, and composition; selected reading in easy prose and verse. Eight credits (two evenings a week); both semesters. Open to all who have had no German. Both semesters must be completed before credit is given for the first semester. DAVIES.

2. PROSE AND POETRY. Geography, history, and legend. Review of German grammar throughout the year. Open to all with two years of German. Not open to those who have obtained credit in Course 2. Both semesters must be completed before credit is given for the first semester. Eight credits (two evenings a week); both semesters. KROESCH.
3. ELEMENTARY CONVERSATION. Conversation on topics of every-day life, aiming at fluency in the use of idiom. Not a course in composition. Organized on the laboratory basis—one hour credit with two hours recitation and at least one hour of outside preparation. Intended for those who have had at least one year of German. Two credits (one evening a week); both semesters. BURKHARD.
4. RAPID READING. Short stories and dramas by Storm, Heyse, Baumbach, Lessing, Goethe, Schiller, Hebbel, and Sudermann. Class work and discussions are conducted in German. Open to all who have had at least one year of German. Four credits (one evening a week); both semesters. DOWNS.
5. COMMERCIAL GERMAN. Oral use of the language. Practical vocabulary. In the second semester attention will be given to business correspondence. Open to all with two years German. Both semesters must be completed before credit is given for the first semester. Eight credits (two evenings a week). MYERS.

GREEK IN ENGLISH

1. GREEK MYTHOLOGY. No knowledge of Greek is required for this course. A course of lectures and readings dealing with the legends and myths which appear in the literature and art of ancient Greece. The quaint and beautiful stories of Greek gods and heroes found in Homer and in the tragic and lyric poets will be presented and interpreted, and the whole course will be richly illustrated with the stereopticon. The origin and evolution of the myth, its relations to Greek literature, philosophy, and religion, and its influence upon later literature, will also be touched upon. Two credits (one evening a week); first semester. SAVAGE.
2. GREEK LITERATURE AND LIFE. This is a course dealing with the literature, life, and art of the ancient Greeks, for which no knowledge of Greek is required. The course consists of lectures and illustrative readings by the instructor and assigned readings in translation and textbook work by the class; conferences and informal discussions will also be held. The character and influence of Greek culture, especially along the lines of literature, philosophy, and art, will be discussed; and the whole course will be richly illustrated with the stereopticon. Especially designed for those interested in language and literature. Two credits (one evening a week); second semester. SAVAGE.

HISTORY

- 1 (1). EUROPEAN HISTORY I. The development of Europe from 800 to about A. D. 1500 with special emphasis upon the political, social, and economic institutions of the period. Open to all. Two credits (one evening a week); first semester. KREY.
- 2 (2). EUROPEAN HISTORY II. The development of Europe from c. 1500 to 1789. In this period are treated the Reformation, religious wars, and the causes of the French Revolution. The political growth of the nations of Europe is especially emphasized. Two credits (one evening a week); second semester. KREY.
3. EUROPEAN HISTORY III. The development of Europe from 1789 to the present time. Political history especially emphasized. Social and economic problems are treated in their international aspects. Two credits (one evening a week); second semester. KREY.
4. RECENT AMERICAN HISTORY. A study of the political, social, and economic movements in the United States beginning with the later years of the nineteenth century. Considerable attention will be paid to international relations during this period. Two credits (one evening a week); first semester. SHIPPEE.
5. THE FOUNDATIONS OF THE MODERN WORLD. A study of the history of the last half-century, and especially of the historical development of the greater international problems of to-day. The course will be primarily historical in scope, studying such questions as the Near East, the conflict of imperialism in the Far East, the development of the present situation in Russia. Emphasis will however be laid on the factors that are especially important at the present moment. Two credits (one evening a week); first semester. TYLER.

HOME ECONOMICS

- 1 (H.E. 3). TEXTILES. This course will include a discussion of those points in fabric study that are of value to both the purchaser and seller of fabrics,—fabric structure, fibers employed in their manufacture, methods of substitution and adulteration, tests for quality, art and economic considerations in their purchase for clothing and household purposes. No credit (one evening a week); first semester. WELLER.
- 2 (H.E. 13). DRESSMAKING. A course in the technic of clothing construction that will give practice in the use of commercial patterns, modeling on the dress form, and application of construction processes. Problems: preparation of a dress form, and the making of a wool dress and tailored silk waist. No credit (one evening a week); second semester. WELLER.

PHILOSOPHY

- 1 (20). PRESENT-DAY PHILOSOPHY. A popular discussion of the most important types of contemporary philosophy. Among the men and movements included are: Haeckel, Eucken, Bergson, Nietzsche, pragmatism, idealism, and neo-realism. Two credits (one evening a week); second semester. WILDE.
- 2 (124). POLITICAL AND SOCIAL ETHICS. A study of the ethical basis of society and the state and a consideration of some of the unsettled problems of politics and economics from the ethical point of view. Two credits (one evening a week); first semester. WILDE.

POLITICAL SCIENCE

1. AMERICAN FEDERAL GOVERNMENT. An elementary course in American government and politics designed for those studying the problems of citizenship, and for teachers. The course treats of the origin and nature of the federal system of government; of the political party system; the federal constitution; structure and organization of the national government; powers and functions of Congress; the executive, and the judiciary; the civil service; the regulatory commissions; national finance; the conduct of foreign affairs; war powers of the government. Texts, *American Government and Politics* by C. A. Beard, and *The New American Government and Its Work* by J. T. Young. Two credits (one evening a week); first semester.
2. STATE AND LOCAL GOVERNMENT. A complementary course to 1 preceding. The constitutional basis of state government; relation of the states to the national and local governments, and to the citizen; organization, functions, and actual workings of state governments, and of county, township, and city governments; public opinion and popular control in state governments; nominations and elections, initiative, referendum, and recall; taxation and finance; social and regulatory legislation. Texts, Beard's *American Government and Politics* and *The New American Government and Its Work* by J. T. Young. Two credits (one evening a week); second semester.
- 3 (158). GOVERNMENT AND BUSINESS. Governmental powers; laissez faire versus regulation; protection against fraud and oppression; restraint of trade and manipulation of prices; protection of debtors; business affected with a public interest; qualified property; compulsory benefits; conservation of natural wealth; vested rights; confiscatory legislation; administration of business legislation; reaction of war emergency measures on permanent policy. Two credits (one evening a week); first semester. YOUNG.

PSYCHOLOGY

- 1 (1-2-3). GENERAL PSYCHOLOGY. An introduction to the scientific study of the human mind. Two credits (one evening a week); first semester.
2. APPLIED PSYCHOLOGY. The practical application of psychology, especially in the field of business. Prerequisite: Psychology I. Two credits (one evening a week); second semester. MORGAN.
3. ELEMENTARY EDUCATIONAL PSYCHOLOGY. A survey of fundamental facts of human behavior involved in educational activities. Open to qualified students upon advice of Professor Haggerty. Two credits (one evening a week); first semester. MILLER.

RHETORIC AND PUBLIC SPEAKING

- 1 (1). ENGLISH RHETORIC I. Practical training in writing; exposition, narration, and description. Analysis of prose selections and of compositions written by the class. Two credits (one evening a week); first semester. FORD.
- 2 (2). ENGLISH RHETORIC II. A continuation of the preceding course, open to those who have had a one-half year course in freshman rhetoric, or its equivalent. Two credits (one evening a week); second semester. FORD.
- 3 (11). EXPOSITION AND DESCRIPTION. Analysis of specimens; short themes and fortnightly essays, with emphasis on planning and amplification. Informal exposition during the first half of the first semester, followed by description. Open to those who have completed the equivalent of Course 1-2 in college composition and rhetoric. Two credits (one evening a week); first semester.
- 4 (12). NARRATION. A continuation of Course 3. Open to those who have completed the equivalent of three half-years of college rhetoric. Two credits (one evening a week); second semester.
- 5 (41-42). A GENERAL COURSE IN PUBLIC SPEAKING. The principles of analysis and organization. Extemporaneous speaking based on outlines. Study of model speeches. Attention is given to correctness and effectiveness in delivery. Open to ministers, lawyers, teachers, and others who are able to carry the work. Four credits (one evening a week); both semesters. LINDSLEY.
- 6 (81-82). INTERPRETATIVE READING. Interpretation and oral expression of the various forms of literature, the essay, the short-story, lyric and narrative poetry, and the drama. Open to those who have credit for Course 1-2, college composition and rhetoric, and Public Speaking 5 (41-42). Four credits (one evening a week); both semesters. RARIG, GARNES.

- 7 (83). **ADVANCED PUBLIC SPEAKING.** The distinctive characteristics of oratorical style: analysis of the styles of representative orators. Written and extemporaneous speeches. Individual criticism and direction. Two credits (one evening a week); first semester. RARIG.
- 8 (110). **SHORT-STORY WRITING.** An advanced course in writing for those who have had experience in writing for publication or have had preliminary training in the technic of writing. Open for credit only to those who have had at least two years of college courses in writing or the equivalent. Four credits (one evening a week); both semesters. THOMAS.
9. **STORY-TELLING TO CHILDREN.** (1) Story-telling; its place and value; (2) choice of the story; qualities, desirable and undesirable; (3) preparation of the story; application of the short-story ideals of "singleness of impression" and "dramatic struggle"; reconstruction of the story from the child's viewpoint; (4) the problem of delivery: the group, consciousness, holding attention, self-effacement, vocal and verbal adaptation. No university credit (one evening a week); first semester. GARNS.
10. **PLAY-PRODUCING.** Practical work in stagecraft, study of new lighting systems, color schemes, stage sets, examination of new ideals in acting, putting on of one community play, problems in directing discussed. Analysis of play suitable for high-school and college production. Two credits (one evening a week); first semester. MCNAUGHTON.

ROMANCE LANGUAGES

FRENCH

- 1 (1-2). **BEGINNING FRENCH.** Grammar, pronunciation, reading, and practice in speaking. Open to all. Both semesters must be completed before credit is given for the first semester. Four credits (one evening a week); both semesters. SEARLES, BARTON.
- 2 (3). **INTERMEDIATE FRENCH I.** Reading, grammar, and composition. French grammar review; readings from modern authors. Open to all who enter the University with two years of French. Both semesters must be completed before credit is given for the first semester. Four credits (one evening a week); both semesters. SIRICH.
- 3 (4). **INTERMEDIATE FRENCH II.** Continuation of Course 2. Practical composition and conversation. Informational readings on contemporary France and selected modern texts. Four credits (one evening a week); both semesters. BARTON.
- 4 (13-14, 16-17). **ELEMENTARY FRENCH CONVERSATION AND COMPOSITION.** Four credits (one evening a week); both semesters. Prerequisite, French I. DELSON.

SPANISH

- 1 (1-2). BEGINNING SPANISH. Grammar, pronunciation, reading, and practice in speaking. Open to all. Both semesters must be completed before credit is given for the first semester. Four credits (one evening a week) ; both semesters. OLMSTED.
- 2 (3). INTERMEDIATE SPANISH. Readings from modern authors. Grammar review. Composition work devoted chiefly to correspondence and commercial practice. Spanish will be as largely as possible the language of the classroom. Open to those who have had Spanish 1 (1-2) and are approved by the teacher. Four credits (one evening a week) ; both semesters. HOUSE.
- 3 (20). ELEMENTARY SPANISH CONVERSATION AND COMPOSITION. Prerequisite, Spanish 1. This course is open to students who have completed the course in Intermediate Spanish. Four credits (one evening a week) ; both semesters.

SCANDINAVIAN

1. MODERN NORWEGIAN LITERATURE. Works in the original of Wergelund, Welhaven, Moe, Björnson, Ibsen, Lie, Kielland will be studied. Also the Landsmaal movement. Two credits (one evening a week) ; first semester. BOTHNE.
2. MODERN NORWAY FROM 1814, IN ENGLISH. Lectures and translated works of modern authors. The aim of the course is to make students familiar with modern Norway. One evening a week ; second semester. BOTHNE.
- 3 (10-11). ADVANCED SWEDISH. Review of grammar, a brief survey of the history of Swedish literature and study of selected works of representative authors. Some attention given to the history and mythology of Sweden. Open to those who have had one year of Swedish in the University or its equivalent. Two credits (one evening a week) ; first semester. STOMBERG.
- 4 (107). MODERN SWEDISH LITERATURE. The Swedish novel. Works in the original of Fredrika Bremer, Almquist, Rydberg, Selma Lagerlöf, and Werner von Heidenstam will be studied. Some attention also given to Swedish poetry of the last half-century. Two credits (one evening a week) ; first semester. STOMBERG.

SOCIOLOGY

- 1 (1). INTRODUCTION TO SOCIOLOGY. An examination of the evolution of human society from its earliest beginnings to the present, including a discussion of the fundamental factors involved and the social institutions arising during this process, followed by an analysis of some of the leading social problems of the day and a discussion of the psychic and

biologic factors involved in human association. Lectures, reading, discussion. Prerequisite to all other courses in sociology when taken for university credit. Two credits (one evening a week); first semester. BERNARD.

- 2 (101). SOCIAL ORGANIZATION. A study of the social mind and its communication, the problems of democracy, of class and caste, of social conflict and revolution, and of social organization on a rational and scientific basis for social efficiency and progress. Lectures, reading, discussion. Course 1, prerequisite if university credit is desired. Two credits (one evening a week); second semester. BERNARD.
3. MODERN SOCIAL REFORM MOVEMENTS. A survey of attempts to overcome certain social maladjustments: child labor, the city, bad housing, poverty, degeneracy; movements for public health, industrial democracy, social insurance, protection of infancy and youth, public recreation, etc. Two credits (one evening a week). ELMER.
- 4 (14). RURAL SOCIOLOGY. The background and evolution of country life; rural conveniences, communication, coöperation; rural social institutions, especially the family, school, church, and social center; rural leadership, surveys, organization, social agencies. Two credits (one evening a week); second semester. FINNEY.
- 5 (3). EDUCATIONAL SOCIOLOGY. The school as a community factor; the present peculiar relation of the school to social problems; the function of the school in these relations. Two credits (one evening a week); first semester. FINNEY.

SWIMMING

A course of instruction in swimming will be given in the Women's Gymnasium on the University campus. The classes are open to men and women alike. The course continues through the school year, one hour an evening, and those registering in the first semester will go on with the work the second semester without further registration. These courses carry no university credit.

Persons taking the courses are required to conform to the regular University rules in regard to the gymnasium and the pool.

1. SWIMMING. Family class with children. One evening a week; first and second semesters. FOSTER.
2. SWIMMING. Beginning class for women only. One evening a week; first and second semesters. FOSTER.
3. SWIMMING. Family class. No children. One evening a week; first and second semesters. FOSTER.
4. SWIMMING. Advanced class for women only. One evening a week; first and second semesters. FOSTER.

DEPARTMENT OF BUSINESS INSTRUCTION

The following courses are arranged with a view to meeting the needs of those who desire special training for the higher business positions. Business is rapidly becoming a profession, or rather the business field is opening up several professions, among which are accountancy, banking and finance, advertising, salesmanship, and business management. The University through its General Extension Division is attempting to afford a preparation for these professions, as it has long done for the professions of law, medicine, engineering, and the like.

The time appears to be approaching when it will be just as necessary for one to secure special training for business positions as it is now to secure training for the learned professions. It is recognized, too, that the rewards for those trained for the business professions are fully as great both financially and in a social way as they are for those trained for the so-called learned professions. Moreover, experience is proving that the very people whom the General Extension Division is reaching can, while being actively employed during the day, best comprehend and appreciate the kind of instruction the evening classes afford. These courses in business subjects are conducted under the auspices of the newly-organized School of Business.

The subjects of instruction are divided into three groups of courses of study, viz.: those aiding in the preparation for accountancy, those aiding in the preparation for banking, and those having for their object a general business training. In each of these courses certain fundamental subjects, such as business law, economics, and business English, are required. Upon the completion of one of these courses a University certificate to that effect will be granted.

THE HERBERT C. PALIN ADVERTISING PRIZE

Mr. Herbert C. Palin of Los Angeles, California, has presented a silver loving cup to the advertising class. On this cup is to be inscribed each year the name of the student who, after taking a full year's course in advertising, submits the most constructive plan for an advertising campaign. The cup is to remain in the possession of the winner for one year.

FEEES

The fee for these courses is \$45 per year, payable \$22.50 each semester, when registering for three subjects, or \$30 per year, payable \$15 per semester, when registering for two subjects. The fee for a single subject is \$7.50 per semester. For a few advanced technical courses the fee is \$10 a semester. This does not include materials.

Special arrangements are made with organizations, clubs, and individual business concerns, whereby instruction may be given to groups of students within the organization at a sum which will somewhat reduce the individual rate per member.

RULE REGARDING ABSENCES

The attention of students and faculty is called to the following rule regarding absences:

"No student whose absences exceed three (3) of the regular scheduled sessions of the course for a semester shall be admitted to the final examination of the course without special permission of the director of University Extension."

CREDIT

Credit in any extension course will be awarded only to those students who pass the final examination of the course.

COURSE IN ACCOUNTANCY

This course is designed to meet the needs of two classes of students, namely, those who wish to prepare to take the state C.P.A. examinations with a view to becoming public accountants, and those who aim to fit themselves for responsible positions with private business firms.

For the student who wishes to pursue either object we recommend that he plan to take the regular course herein outlined and thus secure a broad foundation for his work.

Upon the satisfactory completion of this course, the University Certificate in Accountancy will be granted.

Beginning with the year 1917-18 the course requires a total of 30 credits, each one-semester subject counting for 2 credits. Each subject requires one two-hour class recitation per week for one semester of sixteen weeks.

In order to secure the University Certificate in Accountancy, 14 credits in accounting are necessary, including Principles of Accounting A, Principles of Accounting B, Accounting Laboratory A, Accounting Laboratory B, Accounting Practice and Procedure A, and Accounting Practice and Procedure B; 6 credits in business law including Business Law A and Business Law B; 2 credits in economics, and 2 credits in business English. The student may elect subjects to cover the remaining 6 credits.

Students of experience and some maturity may join the class by registering as auditors, in case they do not care to secure credit for the course toward a certificate in accountancy. These students will not be called upon to take part in the discussions nor to turn in work which is required of students registering for credit. In this way the University hopes to make available the benefits of the courses to those who feel they lack the opportunity or time to do the work regularly required in the course.

The following subjects are required for the course:

Principles of Accounting A (2)	Auditing A (2)	} elective
Principles of Accounting B (2)	Auditing B (2)	
Accounting Laboratory A (1)	Cost-Accounting (2)	
Accounting Laboratory B (1)	Business Law A (2)	
Accounting Practice and Procedure A (2)	Business Law B (2)	
Accounting Practice and Procedure B (2)	Business Law C, D or E (2)	
	Economics (2)	
	Business English (2)	
	Elective subjects (6)	

COURSE IN BANKING AND FINANCE

This course is designed to meet the needs of two kinds of students: (1) those who are preparing for, or who are now engaged in, such financial callings as banking, corporation management, stock and bond brokerage, credit work, or financial journalism; and (2) business men who wish to utilize in the upbuilding of their particular business all of the modern scientific knowledge of a practical financial nature.

University Certificate in Finance

Those students who wish to secure a thoro knowledge of finance, and an adequate know'edge of general business for a financial occupation, are urged to arrange their registration so as to obtain the Certificate in Finance as offered by the University.

Beginning with the year 1917-18 this certificate will be granted to those who complete a total of 30 credits distributed as follows:

Principles of Economics (2)	Accounting Laboratory A (1)
Banking Practice (2)	Accounting Laboratory B (1)
Investments and Speculation (2)	Business Law A (2)
Corporation Finance (2)	Business Law B (2)
Business English (2)	Business Law C or D (2)
Principles of Accounting A (2)	Elective subjects (8)
Principles of Accounting B (2)	

The American Institute of Banking

The American Institute of Banking recognizes the evening courses of the General Extension Division at the University of Minnesota as fulfilling all the requirements of its educational department. Students who complete these courses in finance are accredited by the institute without further examinations or formality.

By this arrangement, the members of the Minneapolis, St. Paul, and Duluth chapters of the American Institute of Banking may obtain the A. I. B. Certificate upon completion of economics (2 credits), banking (2 credits), and Business Law A, B, C, and D (8 credits).

The advanced courses in finance coincide with the requirements of those who wish to receive the title of associate from the institute for post-graduate study.

GENERAL BUSINESS COURSE

For the benefit of those students who do not care to specialize in either accounting or in finance, yet wish to secure recognition as having completed a definite group of subjects, the following course is arranged. It is likely that certain of the subjects herein outlined will be more fully developed and later, together with the fundamental subjects, form courses in themselves.

It is planned that each of these courses will furnish a preparation for a definite calling, such as advertising, salesmanship, and sales management, railroad traffic, and office management.

The University Certificate in General Business

Beginning with the year 1917-18 this certificate will be granted to those who successfully complete a total of 30 credits distributed as follows:

Business English (2)	Accounting Laboratory A (1)
Business Law A (2)	Accounting Laboratory B (1)
Business Law B (2)	Elective subjects (16)
Economics A (2)	(These electives should be selected with
Principles of Accounting A (2)	a view to specializing in some particular
Principles of Accounting B (2)	field, as in advertising and selling, in rail- road traffic, and the like.)

DESCRIPTION OF SUBJECTS

ACCOUNTING

The various courses in accounting are designed to subdivide the work in order that there may be proper sequence as well as to make possible sufficient emphasis on each phase of the subject. In the first year the subdivision is as follows: first, a series of lectures and discussions in the principles of accounting; and second, the putting of those principles to practical application by the working out of specific problems. Students not desiring to specialize in accounting may elect to omit this latter course, i.e., Accounting Laboratory A and B, but all taking the laboratory courses are required to take the corresponding courses in accounting principles.

1. INTRODUCTION TO ACCOUNTING. This is a course designed for those who are not prepared by experience or training to enroll immediately in Principles of Accounting, but who nevertheless desire to overcome their deficiencies and pursue the regular accounting courses. The course will take up the purposes of accounting, the use of books of original entry, posting to the ledger, the trial balance, closing the ledger, preparation of simple trading statements. No credit. HOUSTON, BLANDIN.
2. PRINCIPLES OF ACCOUNTING A. Fundamental classification of the balance sheet and operating accounts. The books and records primarily essential to disclose the data necessary for such balance sheets and operating accounts. Special discussions on the trading margins, operating expenses, etc. Various bookkeeping and accounting operations, such as accruals, deferred charges; special systems of handling accounting data, such as departmentization of accounts, imprest cash systems, the treatment of controlling accounts and auxiliary ledgers; preparation of simple working sheets and statements. Two credits (one evening a week); first semester. PRESTON, HARPER, HOUSTON, BLANDIN.
3. PRINCIPLES OF ACCOUNTING B. Continuation of Principles of Accounting A with more special reference to manufacturing and corporation accounts; treatment of good-will and depreciation, accountant's working sheet; adjusting of surplus, sinking funds, and reserve accounts; drafting condensed balance sheets and income statements. Two credits (one evening a week); second semester.

4. ACCOUNTING LABORATORY A. The working out of practical problems covering the subject-matter discussed in Principles of Accounting A, under the guidance of an instructor. One credit (one evening a week); first semester.
5. ACCOUNTING LABORATORY B. Work of a similar kind covering the subject-matter discussed in Principles of Accounting B. One credit (one evening a week); second semester.
6. ACCOUNTING PRACTICE AND PROCEDURE A. An advanced course for the accounting student following the study of accounting principles. The object of the subject is twofold; first, to familiarize the student with the peculiar accounting problems of business; and, second, to afford the student the means to secure that necessary insight and skill which practicing accountants must possess in order to meet the demands made upon them. The subject-matter is presented chiefly by means of a more or less exhaustive study of a representative business. The work consists of the following: (a) a study of the distinctive group of accounting problems which are likely to arise in a business organization through a series of years and the scientific solution of those problems; (b) a study of the accounting problems peculiar to representative business other than manufacturing and selling. The manner of presenting the subject is essentially practical, the students being required to work out for themselves problems similar to the ones studied. Two credits (one evening a week); first semester. ROTZEL, HARPER, WAGNER.
7. ACCOUNTING PRACTICE AND PROCEDURE B. A continuation of Course 6. Two credits (one evening a week); second semester. ROTZEL, HARPER, WAGNER.
8. COST-ACCOUNTING. The elements of cost, i.e., prime cost and indirect expense or burden, kinds of cost-accounting, continuous process and production order costs. The materials ledger. Methods of accounting for labor. Methods of distributing indirect or "overhead" expense. The machine rate method, and when applicable. Methods of compensating labor. Predetermined standard costs, and their relation to "scientific management." The cost ledger and its relation to the general ledger.

Modern industry demands that each plant be equipped with adequate accounting facilities for ascertaining the cost of operation. These costs are necessary to show, first, the profitableness of each branch of the industry so as to enable the management to push the profitable, and to drop the unprofitable, lines, or to place them upon a paying basis; second, the cost of each article as a basis of price-making; third, so far as possible, the cost of each operation, so as to enable the management to plan economies in the operation of the plant. Two credits (one evening a week); first semester.
9. AUDITING A. This course is essentially practical and is intended only for those whose previous training in the principles of accounting has been sufficient to enable them to be benefited by this advanced work.

The chief aim will be to give students the training necessary to enable them to conduct audits and investigations either as private auditors or public accountants; to set up accounts for various purposes as a result of such audits or investigations and to prepare suitable reports thereon. Two credits (one evening a week); first semester. ROTZEL.

10. AUDITING B. A continuation of Course 9. Two credits (one evening a week); second semester. ROTZEL.
11. INCOME-TAX PROBLEMS. Course offered to those who have completed Principles of Accounting A and B for the purpose of familiarizing the accounting student with the accounting ramifications of the federal income-tax law, and its application to various businesses and also to varying business conditions. The purpose of the course also will be to point out possible errors likely to be made in the preparation of the regular tax reports. Lectures, discussions, and working out of problems. Two credits (one evening a week); first semester. PRESTON.

BANKING AND FINANCE

21. BANKING. The documents created by transactions in goods; the function of a bank in aiding industry; the steps in organization of national or state banks; corporate powers, rights, and liabilities of stockholders and directors; bank administration and the various offices and departments; deposits, depositors, and receiving tellers; bank reserves and circulating notes; the clearing-house, handling country checks, and transit departments; collections; domestic exchanges; foreign exchange; discounts and collateral loans; credit department; how profits are made on government deposits, by note issue, in buying and selling exchange, by analysis of depositor's accounts; accounting methods and general balances; examination; supervision and reports; and bank policy from the analysis of local bank reports.

This course aims to explain the various functions of an up-to-date bank and to teach the methods by which its work is accomplished. A careful survey will be made of the economic basis, legal status, accounting methods, and financial problems of banking as carried on by large commercial institutions having a full complement of banking operations including city, country, and foreign business. The method of presentation comprises reading references, lectures, review questions, and use of the blackboard for all computations. Two credits (one evening a week); first semester. EBERSOLE.

22. MONEY AND CREDIT. The origin, evolution, and functions of money; the gold standard, forms of money current in the United States; government paper, bank notes, and deposit currency described and analyzed; credit and its effects; the causes of general price changes; various types of standards and currency systems including bimetallism and the gold exchange standard; discount rates, the problem of securing an elastic currency, and the distribution of the world's gold between the

nation; the problem of securing an ideal money. Textbook and money-market articles in current newspapers will furnish material for discussion.

A thoro understanding of the character and functions of money and of the principles of credit is the cornerstone of modern business intelligence. This course in money and credit constitutes an interesting and scientific treatment of the forces that determine value and prices, of the processes of exchange, and of the many forms of media of payment represented by monetary and credit instruments. Two credits (one evening a week); second semester. EBERSOLE.

- 23 (145). CORPORATION FINANCE. The evolution of the private corporation and its relation to other business units; the organization of a corporation; charters and articles of association; directors and officers, manner of their selection, their functions and responsibilities; forms of corporation stocks and bonds and their respective legal and financial characteristics; the marketing of securities; capital and revenues; intangible values; books and accounts; dissolutions, consolidation, and reorganization; trust and holding companies; the taxing of corporations; corporation statistics; the preparation and analysis of corporation reports; the corporation before the law.

Modern business in all of its major forms is directed through corporate organization. The course in corporation finance is designed to give the student such a knowledge of corporations and their administration as to make clear the general organization of industry and commerce. Texts will be extensively supplemented by informal lectures, class discussions, and topical essays. Two credits (one evening a week); second semester. STEHMAN.

- 24 (142). INVESTMENTS AND SPECULATION. Stocks, bonds, endowments, annuities, and other forms of investment considered with regard to their security, income, and opportunity for rise or fall in value. The social process of saving and investment; the investment fund; various classes of investments; the criteria of a good investment applied to government, corporation, and real estate loans; railroad, industrial, timber, and mining securities compared; the laws of investment values. Stock exchange operations; money market and other influences affecting prices; analysis of present fundamental conditions. The actual operations upon the stock and produce exchanges are used to illustrate the study of speculation, and the course of the markets and the bank rates is closely followed as a basis of deduction in the analysis of cause and effect. Textbook and interpretation of financial quotations and reports. Two credits (one evening a week); second semester. (Not offered in 1920-21.) EBERSOLE.

BUSINESS LAW

NOTE: The subjoined courses in business law give credit toward a University degree only to those students who have earned 6 credits in political science or 6 in economics or three in each. Students who have not met these prerequisites may, however, take these courses for credit toward one of the University certificates in business. Specially qualified and mature extension students may petition for university credit.

31. BUSINESS LAW A—CONTRACTS AND AGENCY. Contracts: definition of a contract; offer and acceptance; special formality; consideration; capacity of parties; contractual powers of minors, or persons mentally deficient, and of married women; reality of consent, mistakes, misrepresentation, fraud, undue influence, legality of object; the operation of contracts; assignment of contracts; interpretation of contracts; methods of discharging contracts.

Agency: methods of forming agencies; methods of terminating agency; the rights and obligations of principals, agents, and third parties. Text, lectures, and cases. Two credits (one evening a week); first semester. SMILEY.

This course is fundamental and must be completed before registration will be accepted for other courses in business law.

32. BUSINESS LAW B—SALES AND NEGOTIABLE INSTRUMENTS. Sales: sales of personal property; definition of a sale and its distinction from a bailment; when the title passes to the buyer; what title passes; rights of the seller (a) to set the contract aside on the ground of fraud, (b) to enforce lien for the purchase money, (c) to obtain stoppage in transit; rights of the purchaser (a) to demand goods of a certain quality, (b) to demand warranty of the purchaser's title.

Negotiable instruments: nature and characteristics: (a) definitions and characteristics, (b) uniform negotiable instrument law; form: (a) what a negotiable instrument must and must not contain, (b) non-essential, (c) effect of blanks and delivery; negotiation: (a) negotiation, indorsement, and delivery, (b) holder in due course and his rights; maker's and acceptor's contract: (a) maker's contract on a promissory note, (b) acceptor's contract on a bill of exchange, (c) presentment of a bill of exchange for acceptance; drawer's and indorser's contract: (a) drawer's contract on a bill of exchange, (b) indorser's contract on a bill or note, (c) presentment for payment, (d) notice of dishonor, (e) protest, (f) checks, (g) position of indorser after liability is fixed. Text, lectures, and cases.

Two credits (one evening a week); second semester. For those who have completed Course 31. SMILEY.

33. BUSINESS LAW C—PARTNERSHIP AND CORPORATIONS. Partnerships: formation of partnership; articles of co-partnership; methods of terminating partnerships; rights and obligations of partner (a) toward his co-partners, (b) as an agent of the firm, (c) toward the firm's creditors, (d) for an accounting; special partners; limited partnerships.

Joint stock companies: how distinguished from ordinary partnerships; how like ordinary partnerships; statutory requirements.

Corporations: formation of corporations of various classes; terminations of corporations; membership in corporations, methods of transferring interest, fraudulent issuance of stock by corporate officers; rights of stockholders (a) to dividends, (b) to inspect and control corporate affairs; liabilities of stockholders (a) on stock subscriptions, (b) to pay assessments, (c) for the corporate debts; the doctrine of ultra vires; rights and obligations of corporate directors; corporate mergers and consolidations; domestic and foreign corporations. Text, lectures, case assignments, and class discussions.

For those who have completed Course 31. Two credits (one evening a week); first semester.

34. BUSINESS LAW D—REAL PROPERTY, MORTGAGES, BANKRUPTCY. Real property: estates in land, estates held jointly or in common, equitable estates, relative rights of adjoining owners, trespass, easements, sales of real property, the contract to sell, conveyances, wills, mortgages, and liens; landlord and tenant, the lease, assignment and subletting, rent, and remedies for non-payment. Insolvency and bankruptcy. Two credits (one evening a week); second semester.

ECONOMICS AND COMMERCE

- 41 (1a). ELEMENTS OF ECONOMICS. Utility and valuation; price and the laws of price as applied to competitive and monopolistic conditions; price and the cost of production; the factors of production; the law of diminishing returns; division of labor and its relation to the development of industry; the forces and factors involved in the concentration of industry, including the difference between the agricultural and the mechanical industries; wages, rent, interest, capitalization, enterprise, and business profits, finally, some attention is given to money, credit, banking, and international trade. Two credits (one evening a week); first semester.

This course aims to ground the student in principles that are basic in all economic discussions. The study naturally centers in value and the laws of valuation under the various applications. DICKINSON, MYERS.

- 42 (3a). PRACTICAL ECONOMIC PROBLEMS (ADVANCED ECONOMICS). Taxation—the tariff, general property tax, corporation taxes, income taxes; labor problems—unionism, trade agreements, strikes and lockouts, law in reference to labor unions, injunctions, employer's liability, workmen's compensation; railway problems—theory of rate-making, state and federal control; monopoly problems—economics of big business, intensive study of U. S. Steel Corporation, Sherman Anti-Trust Act, and important legal decisions relating to restraint of trade. Two credits (one evening a week); second semester.

The aim of this course is to study economic principles in their relation to some of the leading questions of to-day.

43. **PRINCIPLES OF BUSINESS MANAGEMENT.** Principles of organization showing comparative values and uses of line, staff, and combination types. Methods of saving time, money, and energy in the moving of work and materials. Making a scientific analysis of a particular operation, the operation of a department, and the operation of a plant. How to make use of the analysis in reducing waste time, energy, money, and material. Principles underlying the establishment and maintenance of the improved methods and conditions obtained by the above study. These principles include a method of determining upon proper and clearly defined policies and a study of their use and value; the necessity for and proper means of profiting by the experience of others. How to develop business judgment in yourself and your subordinates. The principles governing executive control and the maintenance of discipline; discussion of methods of determining upon a wage scale and legitimate profits; the relation of physical condition to success, and its bearing upon production. Some principles underlying proper management of finances. The relation of home management to industrial and commercial efficiency; the organization and management of the sales department; training the salesman. The general problem of selection of help with a brief outline of a modern system of scientific selection and placement by a study of individual characteristics. No credit toward a degree, 2 credits for certificate in business (one evening a week); first semester. (Not offered in 1920-21.)

51. **ELEMENTARY ADVERTISING.** This course is intended for those who desire sufficient knowledge of the elements of advertising to prepare reasonably satisfactory copy for newspapers, magazines, street car cards, circulars, and booklets. The fundamental elements of display, layout, headings, and copy are carefully outlined and the student is given practice in the preparation of advertisements.

This course is intended to acquaint the student with what may be called "the tools of advertising" before he undertakes either of the two advanced courses in the planning and preparation of advertising campaigns. No credit toward a degree, 2 credits for certificate in business (one evening a week); first semester. MARTIN, assisted by Miss CLEVELAND.

52. **NATIONAL ADVERTISING.** A study of advertising from a new angle. The student puts himself in the place of one having a product for sale, and from the first lesson to the last each lecture is so planned as to give the methods pursued in conducting the many different steps in an advertising campaign.

The student first analyzes the product from the standpoint of its advertisability. He considers the planning of a trademark, the organization of the sales force, the selling points, the prices, and the profits.

He then thoroly analyzes the market, chooses the advertising mediums most adaptable to his particular campaign, and decides on the appropriation.

Students will be furnished with pamphlets for these lectures which will give reference to practically everything which has so far been published on subjects taken in the course. In this way the experience of probably three hundred of the leading advertising men of this country will be available to the student. No credit toward a degree, 2 credits for certificate in business (one evening a week); second semester. MARTIN, assisted by MISS CLEVELAND.

61. SALESMANSHIP. A course for insurance men, specialty men, traveling salesmen. Lectures and demonstrations on the principles underlying successful salesmanship, as follows: the proper approach; securing attention; arousing interest; creating desire; closing the sale; the psychology of salesmanship; the use of suggestion in selling; the use of argument.

The chief feature of the work will be the demonstration sales. So far as possible each student will be given an opportunity to take part in a sufficient number of demonstrations that he may apply the principles laid out in the course. No credit for degree, 2 credits for certificate in business (one evening a week); each semester. (Not offered in 1920-21.)

71. RAILWAY TRAFFIC AND RATES. A practical study of the Act to Regulate Commerce and the other laws and regulations covering the transportation of property, locally and in foreign commerce, both by rail and by water. The student is acquainted with the correct compilation and interpretation of freight tariffs and economical and efficient methods in shipping. The lectures are comprehensive and embrace rate-making bases, the classifying and tracing of freight, the preparation of claims, etc. Rulings of the Interstate Commerce Commission and of the various state commissions are referred to and rates are quoted from current tariffs and classifications. Four credits (one evening a week); both semesters.

ENGLISH AND SPANISH

BUSINESS ENGLISH. Not a lecture course nor a dry, prosy study of technical English grammar and composition, but a new practical course designed for business men and women who recognize the value of a command of English for business and every-day writing and conversation. The main object of the course is to acquaint the student with the various types of business letters, reports, etc., and to teach him how to write and use them effectively. A secondary object of the course is to show students how training in expression—written or oral—is primarily training in thinking and analysis and hence is a very real stimulus to general business efficiency. The types of letters

to be studied include complaint and answer, reminder, acknowledgement, recommendation, application, collection, form, follow-up, sales, interdepartmental, and composite. Students will be expected to write letters and take part in the weekly discussions of actual problems in business correspondence. Ability to write simple, grammatically correct English is a prerequisite to this course. No credit toward a degree, two credits for certificate in business (one evening a week); first semester. Repeated second semester.

83. PUBLIC SPEAKING. For description see Department of Collegiate Instruction. One evening a week; both semesters.
90. SPANISH. For description see Department of Collegiate Instruction. One evening a week; both semesters.

DEPARTMENT OF ENGINEERING INSTRUCTION

The demand for men specially trained in engineering has been steadily increasing each year. Every branch of the profession has been calling for the services of trained men. By trained men is meant those who can plan work and use good engineering judgment in any given project.

President Woodrow Wilson emphasizes this when he says:

"My attention has lately been called in particular to the falling off in the number of engineering students and this has given me a good deal of concern, because it is not only immediately necessary that as many students as possible should prepare themselves for engineering duties in the army and navy, but it is also of the first consequence to the country that there should be an adequate supply of engineers for the period of reconstruction which must follow the war. Not only has technical training become of enormous importance in military operations, but the rôle of the engineer has become more and more important in every process of our industrial life."

To meet this demand the General Extension Division now offers groups of courses in architecture, civil engineering, electrical engineering, and mechanical engineering. These course groups are arranged to be completed in either two- or three-year periods and are planned primarily for workers in industrial establishments.

The subject of engineering is one that requires very thoro study, and no step should be neglected. These courses have been laid out with great care, and are especially adapted to the needs of men working in shops and other industrial and manufacturing establishments, to the end that such men may have added to their practical training a technical and theoretical knowledge which will enable them to advance more rapidly in their chosen line of work.

It has been found that many persons register who can not take the work with any great profit to themselves because of inadequate preparation. For this reason it is desirable that students should consult with the director of the General Extension Division before taking up any course, so that they may have proper guidance and direction.

Students who have had sufficient preparation need not start at the beginning, but may take up the work at the point where they can pursue it with advantage.

These courses also offer an opportunity to college graduates, who may wish to specialize in some subject not covered in their regular college work.

When the student completes any one of these consecutive courses, a certificate to that effect from the University of Minnesota will be given.

FEEES

The fee for these courses is \$45 per year, payable \$22.50 each semester, when registering for three subjects; or \$30 per year, payable \$15 per semester, when registering for two subjects. The fee for a single subject is \$7.50 per semester. For a few advanced technical courses the fee is \$10 a semester. This does not include materials.

Special arrangements are made with organizations, clubs, and individual business concerns, whereby instruction may be given to groups of students within the organization at a sum which will somewhat reduce the individual rate per member.

RULE REGARDING ABSENCES

The attention of students and faculty is called to the following rule regarding absences:

"No student whose absences exceed three (3) of the regular scheduled sessions of the course for a semester shall be admitted to the final examination of the course without special permission of the director of University Extension."

CREDIT

Credit in any extension course will be awarded only to those students who pass the final examination of the course.

THREE-YEAR COURSE

The following courses are arranged to be completed in three years of two evenings a week. By special arrangements with the General Extension Division some of these courses may be completed in two years of three evenings a week. The work is divided into two semesters per year, and each semester of the engineering extension classes will be sixteen weeks long.

ARCHITECTURE

FIRST YEAR

<i>First Semester</i>	<i>Second Semester</i>
Elementary Architectural Design Shop Mathematics I	Elementary Architectural Design Shop Mathematics II

SECOND YEAR

<i>First Semester</i>	<i>Second Semester</i>
Intermediate Architectural Design Shop Mathematics III	Intermediate Architectural Design Mechanics, Strength of Materials

THIRD YEAR

<i>First Semester</i>	<i>Second Semester</i>
Advanced Architectural Design Structural Design	Advanced Architectural Design Reinforced Concrete

If a class of two or more request it, the two following subjects may be taken during the first year:

Freehand Drawing	Architectural History
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CIVIL ENGINEERING

(For Office Men)

FIRST YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics I Mechanical Drawing	Shop Mathematics II Structural Drafting

SECOND YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics III Applied Mechanics	Strength of Materials Structural Design

THIRD YEAR

<i>First Semester</i>	<i>Second Semester</i>
Reinforced Concrete Theory of Engineering or Roof-Trussed Bridges Design	Reinforced Concrete Design Theory of Engineering or Bridge and Building Design

CIVIL ENGINEERING

(For Field Men)

FIRST YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics I Lettering and Sketching	Shop Mathematics II Mapping

SECOND YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics III Plane-Surveying	Stadia and Topographical Surveys or Plotting and Calculation Curves and Earthwork

THIRD YEAR

<i>First Semester</i>	<i>Second Semester</i>
Highways or Municipal Engineering Theory of Engineering	Railways or Municipal Engineering Theory of Engineering

Students in civil engineering are advised to take up the study of calculus. This course is not required; but it will prove of great advantage to any one who desires to do more advanced work later.

ELECTRICAL ENGINEERING

FIRST YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics I Elementary Electricity I Experimental Electricity	Shop Mathematics II Elementary Electricity II Experimental Electricity

SECOND YEAR

<i>First Semester</i>	<i>Second Semester</i>
Alternating Currents I Shop Mathematics III Mechanical Drawing or Applied Mechanics or Experimental Electricity	Alternating Currents II Shop Mathematics IV Mechanical Drawing or Strength of Materials or Experimental Electricity

THIRD YEAR

<i>First Semester</i>	<i>Second Semester</i>
Direct-Current and Alternating-Current Machinery or Telephony Shop Mathematics V Electrical Machine Design	Central Power Stations or Telephony Shop Mathematics VI Electrical Machine Design

MECHANICAL ENGINEERING

FIRST YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics I	Shop Mathematics II
Mechanical Drawing	Mechanical Drawing

SECOND YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics III	Shop Mathematics IV
Applied Mechanics	Strength of Materials
Mechanical Drawing-Advanced	Mechanical Drawing-Advanced
or	or
Electricity-Elementary	Plumbing
or	or
Heat Engines	Heating and Ventilating

THIRD YEAR

<i>First Semester</i>	<i>Second Semester</i>
Shop Mathematics V	Shop Mathematics VI
Machine Design	Machine Design
or	or
Theory of Engineering	Theory of Engineering
Testing Materials	Steam-Engine Testing
	or
	Gas-Engine Testing

There are certain options allowed the student depending largely upon the work he intends to follow. This information must be furnished the General Extension Division at the time the student registers and his options will then be given him.

DESCRIPTION OF COURSES

1. ARCHITECTURAL HISTORY. Twelve lectures illustrated with lantern slides, covering the ancient and Renaissance periods. One evening a week; second semester. FORSYTHE.
2. ELEMENTARY ARCHITECTURAL DESIGN. Shades and shadows and wash rendering. Architectural elements such as doors, windows, moldings, and the architectural orders; general drawing, exercises, and lectures in the application of these elements to simple problems in design and a survey course of lectures in architectural history illustrated by lantern slides. Open to high-school students who have had mechanical drawing, to those who have had one year or more in an architect's office, and to those who, in the opinion of the instructors, have had equivalent experience. Two evenings a week; both semesters. Monday and Thursday evenings, 7:30-9:30. FORSYTHE.
3. INTERMEDIATE ARCHITECTURAL DESIGN. Regular Class B "Analytique" or order problems of the Society of Beaux Arts Architects, or equivalent designs in architectural problems from the regular course of the University of Minnesota. Open only to those who have completed Course 2, or who have had two years or more in an architect's office, or have had equivalent preparation in an architectural school. Two evenings a week; both semesters. Monday and Thursday evenings, 7:30-10:00. Fee, \$5 a problem, or \$10 a semester. FORSYTHE.

4. **ADVANCED ARCHITECTURAL DESIGN.** Class B, plan problems, and Class A, problems of the Society of Beaux Arts Architects, or equivalent design problems from the regular course in architecture at the University of Minnesota. Open only to those who have completed the required "Analytique" or order problems, or to those who have had one or more years of design in any architectural school. Two evenings a week; both semesters. Monday and Thursday evenings, 7:30-10:00. Fee, \$5 a problem, or \$10 a semester. MANN.
- NOTE: Regular instruction will be given on Monday and Thursday evenings, but students in these classes may work in the drafting rooms of the architectural department on other evenings, except Sunday.
5. **FREEHAND DRAWING.** Drawing from casts and from memory. Details of the figure and architectural ornament in charcoal, pencil, pen and ink. Two evenings a week; both semesters. Tuesday and Friday evenings, 7:30-9:30. Fee, \$7.50 a semester. FORSYTHE.
 6. **MAP-DRAWING.** (a) Farm and city plats. (b) Real-estate display maps. (c) Landscape architect's maps. (d) Topographic and hydrographic symbols. One evening a week; second semester. ZELNER.
 7. **LETTERING AND TITLES FOR ENGINEERS.** Principally freehand Reinhardt lettering. Title lay-outs and lettering. One evening a week; first semester. ZELNER.
 8. **PLANE-SURVEYING.** Elements of plane-surveying relating to method of chain compass, transit and stadia surveys; leveling; methods of keeping field notes; determination of area of irregular plots; computation and plotting of field notes; care, use, and adjustment of instruments; methods of subdivision of the United States public lands. One evening a week; first semester. CUTLER.
 9. **CURVES AND EARTHWORK.** Mathematics of simple, compound, and spiral curves; preliminary and location surveys; plotting or profiles; vertical curves; cross-sectioning and computation of earthwork volume; methods of computation of overhaul; mass diagram, right-of-way and station ground maps. One evening a week; second semester. CUTLER.
 10. **CONCRETE MATERIALS: SELECTION AND TESTS.** This course will cover the selection of materials entering into concrete, their properties and the tests to be applied. A study will be made of the proper combinations to obtain the best mixtures for given constituent materials at the lowest cost. Local materials will be used and those pursuing the course will make their own specimens and perform all the tests. One evening a week; first semester. LAGAARD.
 11. **REINFORCED CONCRETE.** Covers the elements of the theory and practical design of reinforced concrete structures, including floors, roofs, walls, columns, foundations, and retaining walls. One evening a week; both semesters. MANEY.

12. **STRUCTURAL DESIGN.** This course will include a treatment of structural mechanics and stress computation, and the elements of the principles and practice governing the design of tension and compression members, beams, girders, and columns. Prerequisite: an elementary working knowledge of mathematics through trigonometry, and some knowledge of elementary physics. One evening a week; both semesters. MANEY.
13. **ELEMENTARY ELECTRICITY.** This course will start with the simple laws of magnetism, and advance through the theory of direct-current machinery. Special attention will be given to direct-current motors and generators, armature windings, commutators, and wiring diagrams. The course will be of value to those who wish to take up the study of alternating-current machinery and power plants. Experiments will be made throughout the course. One evening a week; both semesters. EDWARDS.
14. **ALTERNATING CURRENTS.** This course will be planned to meet the need for an elementary course on alternating-current electrical circuits and machines. General principles will be closely associated with the machines, the methods, and the facts of present-day practice. Theoretical demonstrations and discussions will be supplemented by a certain amount of laboratory work. The course will cover series and parallel circuits, single and polyphase systems, power and power factor. Transformers, induction motors, alternators, synchronous motors, rotaries, single-phase motors and short transmission lines. One evening a week; both semesters. RYAN.
15. **DIRECT- AND ALTERNATING-CURRENT MACHINERY.** The operation and maintenance of direct- and alternating-current generators, motors, and electrical measuring instruments. A textbook by J. H. Morecroft will be used. One chapter will be taken each week, and a number of experiments will be made throughout the course. One evening a week; second semester. RYAN.
16. **EXPERIMENTAL ELECTRICITY.** This course is provided for those students who have completed the course in elementary electricity. The course consists of experiments that each student should perform for himself, and the laws of electricity and magnetism will be fully developed. One evening a week; both semesters. MARTIN.
17. **POWER-STATION ELECTRICAL APPARATUS.** A study of the problems involved in the operation and maintenance of direct- and alternating-current generators and motors, switchboards, electrical measuring instruments, and storage batteries. This course is designed for men connected with central stations and isolated plants. One evening a week; second semester. RYAN.
18. **ELEMENTS OF TELEPHONY.** Nature of voice sounds, construction and operation of receivers and transmitters, reading blue-prints and circuits, magneto and central-energy circuits, the electro-magnet as used in telephony, batteries, and other generating apparatus, signalling apparatus. Some previous knowledge of alternating currents is desirable.

- but not absolutely necessary. The treatment will be elementary, using only simple mathematics. Experimental illustrations will be given so far as practical. One evening a week; second semester. SHEPARDSON.
19. SHOP MATHEMATICS I. This course is designed to meet the needs of shopmen, and affords an opportunity to take up engineering work of a higher grade. Practical shop problems will be thoroly discussed. This course together with one in drafting is essential for all other engineering branches. It will cover the subject of fractions, decimals, percentage, weights of materials, areas and volumes, thread cutting, gearing, belts and pulleys, the milling machine, and a general drill in equations and the use of formulae. One evening a week; first semester. EDWARDS.
 20. SHOP MATHEMATICS II. This is a continuation of Course I, and will take up the subjects of algebra and geometry. One evening a week; second semester. EDWARDS.
 21. SHOP MATHEMATICS III. TRIGONOMETRY. This course is designed for those who have had the subject of algebra and geometry and wish to pursue civil engineering studies. The solution of right and oblique triangles will be thoroly discussed and practical plane surveying problems will be given special attention. One evening a week; first semester. EDWARDS.
 22. SHOP MATHEMATICS IV. ANALYTIC GEOMETRY. This course is of great importance to the engineering student who wishes to take up the study of calculus. It consists of the study of the straight line, circle, ellipse, parabola, hyperbola, and a few of the higher plane curves met with in practice. One evening a week; second semester. EDWARDS.
 23. SHOP MATHEMATICS V. CALCULUS. This course is open to those who have completed mathematics through analytic geometry. Stress will be laid upon the various derivatives and their application to tangents, normals, evolutes, involutes and maximum and minimum. Engineering examples will be given whenever possible. One evening a week; first semester. EDWARDS.
 24. SHOP MATHEMATICS VI. This is a continuation of Course V and will take up the subject of integration. Important mechanical and electrical problems will be introduced and discussed in class. One evening a week; second semester. EDWARDS.
 25. ELEMENTARY APPLIED MECHANICS. A short, practical course in elementary mechanics designed to meet the needs of students who have had a limited training in mathematics. Numerical calculation, simple graphical calculations, forces, simple machines, work, power, and energy. One evening a week; first semester. BROOKE.
 26. STRENGTH OF MATERIALS. An elementary course on the strength of materials, designed to follow the course in applied mechanics. The subjects to be treated are: the properties of materials, stress and strain,

- elastic and ultimate strength, deformations, principle of moments, moment of inertia, simple stresses, shear, riveted joints, the general elementary theory of beams, columns, and shafts. One evening a week; second semester. BROOKE.
27. TESTING OF MATERIALS. Investigation of the physical properties of various metals and other engineering materials, including the more common grades of commercial steels, wood, cement, concrete, ropes, cables, belting, chains, etc. Supplemented by lessons on the various materials of construction and standard methods of testing. One evening a week; first semester. ROWLEY.
28. STEAM-ENGINE AND POWER-PLANT TESTING. This course is intended for stationary engineers who wish to become more efficient in their line of work. The course will consist of lessons supplemented by experimental demonstrations illustrative of certain portions of the work. Actual problems arising in power-plant testing will be worked out in class with complete explanations and instruction for their solution. The laws of mechanics, heat, power, work, and energy will be applied to engine and power-plant testing. One evening a week; first semester. SHOOP.
29. GAS-ENGINE TESTING. This is a practical laboratory course and the student will perform the tests under various working conditions. The student must supply himself with a notebook and each test must be worked up and recorded in the notebook. One evening a week; second semester. ROWLEY.
30. HEAT ENGINES. This is an elementary course required for all engineering students. It relates especially to the steam engine and boiler, the steam turbine, and the gas engine. Attention is given to the different types of engines, boilers, and gas engines. The general problem of a modern power plant is considered for the benefit of those who do not devote further time to the subject. One evening a week; both semesters. MARTENIS.
31. BOILER-ROOM PRACTICE. This course has been written for the benefit of the persons who have charge of boiler plants. It is important for janitors in charge of schoolhouses and apartment houses as well as factory boiler shops. It will be beneficial to those who are expecting to obtain a license as a boiler inspector. One evening a week; first semester. MARTENIS.
32. ADVANCED BOILER-ROOM PRACTICE. This is a continuation of the preceding course and will take up the subject of the steam engine and its accessories. This course is of interest to those seeking a chief engineer's license. One evening a week; second semester. MARTENIS.
33. PLUMBING. This course is designed to meet the needs of the practical shop man and will cover the principles of plumbing and the best practice in use at the present time. It is hoped that a standard text will be available. One evening a week; second semester. MARTENIS.

34. HEATING AND VENTILATING. The course will cover present heating and ventilating practice and is designed for heating contractors and others desirous of obtaining a fundamental knowledge of the subject. The plan of instruction includes a study of heat; methods employed for heating and ventilating buildings of various kinds; piping systems and temperature regulation. One evening a week; first semester. MARTENIS.
35. ELEMENTARY MECHANICAL DRAWING. This is a beginning course and includes the use of the drawing materials and instruments, lettering, drawing views, dimensioning, reading from blue-prints, making of machine and structural drawings, etc. The various steps are taken up in order and the amount of progress possible is largely dependent on the amount of outside time at the student's disposal. One evening a week; both semesters. FRENCH.
36. TEACHERS' COURSE IN MECHANICAL DRAWING. This is a special course offered to those who teach drawing in the grade and high schools and who wish to acquaint themselves better with standard drafting-room practice. One evening a week; both semesters. FRENCH.
37. MECHANICAL DRAWING FOR WOMEN. This is a special course offered to women students preparing them to meet the recently increased demand for their services in drafting-rooms on tracing work, drawing work, etc. This course will be in part similar to Course 35. One evening a week; both semesters. FRENCH.
38. BLUE-PRINT READING AND SKETCHING. This course is intended for those who wish to get a working knowledge of drawings and blue-print reading without spending the time necessary to learn to make drawings. No instruments will be required. Various types of machine and other drawings will be thoroly discussed in class. Blue-prints under discussion will be in the hands of each member of the class. Determination of quantities from drawings for cost estimates will be illustrated and discussed. The essential theory of drawing for machine-building and other construction purposes will be made clear. Practical sketching for shop and illustrative purposes will be explained. Practice home sketching work will be assigned to any who wish it; but such extra work is not required and will not be necessary to the understanding of subsequent lectures and class work. One evening a week; first semester. FRENCH.
39. ADVANCED MECHANICAL DRAWING. A practical course in drafting and drafting-room methods taking up the detail of machine parts as fastenings, screws, bolts, rivets, and rivet joints; keys, cotters and pins; pipe and pipe fastenings; bearings and journals, pulleys and belting; spur gears, bevel gears, and spiral gears; cams, link motions, etc.; the application of empirical design and the principles of mechanics; assembly, diagrammatic and layout drawings. It is assumed that the student has a previous knowledge of drawing equivalent to Course 35. One evening a week; both semesters. HERRICK.

40. **MACHINE DESIGN.** An elementary course in the calculation and design of machines and machine parts; such as machine frames, shafting, fly wheels, pulleys, riveted and screwed fastenings, bearings, spur gearing, bevel gearing, and helical gearing. Lectures and drawing-room practice of practical problems will be given.

Prerequisite: previous knowledge of drawing equivalent to Course 39 and mathematics through Course 21. A working knowledge of elementary physics, Course 41 and strength of materials, Course 26, is desirable. One evening a week, both semesters. HERRICK.

41. **PRACTICAL PHYSICS.** This is a practical course in general physics designed to meet the needs of engineering students. Stress will be laid primarily on the sections of mechanics, heat, and electricity. Such a course will be of great advantage to the student who wishes to proceed with the subject of technical mechanics, strength of materials, and general electrical problems. One evening a week; both semesters. FRAYNE.

42. **ENGLISH FOR ENGINEERS.** A course in practical English, designed to meet the professional needs of engineering students. The material of this course will include business letters—about twelve types; reports; estimates; instructions, etc. Some attention will be given to oral English. The underlying purpose of this course is to acquaint the student with the various kinds of business letters, reports, etc., and to teach him how to prepare and use them effectively. A secondary purpose is to show the prospective engineer that training in expression—written or oral—is training in clear, straight thinking and hence is a real stimulus to general efficiency. Students will be expected to do a certain amount of writing and take part in the weekly discussions of problems bearing upon the work of the course. Ability to write simple, grammatically correct English is a prerequisite to this course. One evening a week; both semesters. NICHOLS.

43. **THEORY OF ENGINEERING.** A general course given to those students who have had two years' training in engineering work. This course includes the practical application of the fundamentals to engineering problems. Only students who have taken Courses 11, 12, 13, 14, 19, 20, 21, 25, 26, 27, 35, are eligible. Kent's *Mechanical Engineers' Pocket Book*, *Machinery Hand Book*, or Mark's *Mechanical Engineers' Hand Book* will be used as a text. The design of a simple machine will be taken up and discussed. One evening a week; both semesters. EDWARDS.

44. **HIGHWAYS AND PAVEMENTS.** Elementary course with field inspection, relating to the economics, location, construction, and maintenance of highways and pavements. One evening a week; both semesters. LANG.

45. **MUNICIPAL ENGINEERING.** Development of municipal public works. City-planning, transportation, and housing. The principles of public health and sanitation. Public water supplies, sewerage and sewage disposal, refuse collection and disposal, and the sanitation of buildings. One evening a week; both semesters. BASS.

46. WATER POWER AND ELEMENTS OF HYDROLOGY. Types of low, medium, and high-head developments. Details of developments; spillway dams; hollow reinforced concrete dams, arch dams, high masonry dams, movable dams. Turbine settings and characteristics. One evening a week; both semesters. BASS.
47. ADVANCED STRUCTURAL DESIGN. A course in the theory and design of structures planned to meet the needs of graduate students who wish to go into the subject more thoroly. General theory of deflections and statically indeterminate stresses, with applications to the more important structural problems such as continuous girders, rigid frames, arches, secondary stresses. Study of stress distribution in girders, and riveted joints. Built-up compression members; impact and fatigue. Relative economy in design; comparative study of specifications. Considerable latitude will be allowed in the problem work, and the course will be adjusted to the needs of the structural engineer whether interested in steel or reinforced concrete design. One evening a week; both semesters. PARCEL.

TRADE AND INDUSTRIAL TRAINING

1. METHODS OF ESTABLISHING TRAINING DEPARTMENTS IN FACTORIES AND STORES.
2. SHEET METAL DRAFTING FOR TIN SMITHS AND SHEET-METAL WORKERS.
3. SCIENTIFIC METHODS OF HANDLING AND TESTING LABOR.
4. CAUSES AND CURES OF INDUSTRIAL UNREST.

For description of these courses see pages 13 and 14.

CERTIFICATE HOLDERS

CERTIFICATE HOLDERS OF 1917

On May 25, 1917, the following persons were granted University business certificates in the courses indicated:

Certificates in Accounting

Bayley, Charles S., Minneapolis	McHenry, Robert D., Minneapolis
Cottor, Emil F., St. Paul	Schwartz, Solomon, Minneapolis
David, Charles A., Minneapolis	Smith, Arthur V., Minneapolis
Haselbeck, Henry, St. Paul	Wing, Llewellyn F., Minneapolis
Loberg, James M., Minneapolis	Wood, George, Minneapolis

Certificates in General Business

Gruber, J. Jeffrey, St. Paul	Kennedy, Thomas F., Minneapolis
	Rose, Carrol H., Minneapolis

Certificates in Finance

Berry, Harry E., Minneapolis	Johnson, Evan M., Minneapolis
Danielson, Andrew W., St. Paul	Jones, Earl R., Minneapolis

CERTIFICATE HOLDERS OF 1918

On May 28, 1918, the following persons were granted University business certificates in the courses indicated:

Certificates in Accounting

Erblang, Alphonse A., St. Paul	Linnerooth, Sidney, St. Paul
Gustafson, Victoria, Minneapolis	Nimerfroh, Gertrude, Minneapolis
	Welliver, Le Roy, Minneapolis

Certificates in General Business

Corcoran, John J., St. Paul	Melamed, Louis, St. Paul
	Schaffelke, Henry A., St. Paul

Certificates in Finance

Oberg, Ezra, Minneapolis

In Absentia

Hauge, Arthur, Certificate in General Business	Shannon, Thomas, Certificate in Accounting
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CERTIFICATE HOLDERS OF 1919

On May 26, 1919, the following persons were granted University business certificates in the courses indicated:

Certificates in Accounting

Gothe, Oscar E., St. Paul	Melamed, M. L., St. Paul
Johnson, Lillian P., Minneapolis	Schmal, G. P., Minneapolis

Certificates in General Business

Barton, A. D., Minneapolis

Ekblad, E. G., Minneapolis

CERTIFICATE HOLDERS OF 1920

On May 23, 1920, the following persons were granted University business certificates in the courses indicated:

Certificates in Accounting

Anderson, C. A. L., St. Paul

Chailquist, F. R., Minneapolis

Anderson, R. W., Minneapolis

Gadacz, Stanley J., St. Paul

Barton, A. D., Minneapolis

Kulp, Delmar C., Minneapolis

Benson, J. Raymond, Minneapolis

Schilling, P. A., Minneapolis

Certificates in Finance

Haselbeck, Henry, St. Paul

Certificates in General Business

Elmquist, Nan C., St. Paul

REGISTRATION 1920-1921 SIGNIFICANCE OF SYMBOLS

- *Also in St. Paul Business
- **Also in St. Paul Collegiate
- ***Also in Engineering
- †Also in Minneapolis Business
- ‡Also in Minneapolis Collegiate
- ††Also in Minneapolis Collegiate and Minneapolis Business
- °Also in Minneapolis Business and St. Paul Business
- *††Also in Minneapolis Collegiate and St. Paul Business
- ‡†Also in St. Paul Business and St. Paul Collegiate

MINNEAPOLIS—BUSINESS

- | | |
|---|--|
| <p>Adams, F. M., 2431 Blaisdell Ave.
 Adcock, William E., 1800 24th Ave. N.
 Ahlman, Ernest, 530 Collins St., St. Paul
 Albert, Douglas B., 4255 Pleasant Ave.
 Allen, Willis G., 3324 Bryant Ave. So.
 Alstrup, Alfred M., 1838 Quincy St. N.E.
 Alstrup, Harold C., 1838 Quincy St. N.E.
 Altman, George T., 1800 University Ave. S.E.
 Andersch, Goerge J., 821 5th St. S.E.
 Anderson, A. C., 2115 East 32d St.
 Anderson, Carl Alfred, 4712 Nicollet Ave.
 Anderson, Clarence F., 2521 26th Ave. So.
 Anderson, Earl L., 1709 Chicago Ave.
 ††Anderson, Edward R., 3109 Garfield Ave.
 Anderson, Edw. Roland, 315 East 14th St.
 Anderson, Enoch, 4001 Girard Ave. No.
 Anderson, Ernest G., 422 Penn Ave. No.
 Anderson, Godfrey, 3622 Bryant Ave. No.
 Anderson, Leonard W., 3327 Bloomington Ave.
 Anderson, Lloyd, 2444 10th Ave. So.
 Anderson, Magnus B., 3733 Longfellow Ave.
 Anderson, O. A., 937 17th Ave. S.E.
 ††Anderson, Oscar W., 1714 Nicollet Ave.
 Anderson Oswald L., 3528 West 28th St.
 Anderson, Rudolph H., 412 Walnut St. S.E.</p> | <p>*Anderson, R. W., 913 Curtis St., St. Paul
 Anderson, Walter L., 1714 Nicollet Ave.
 Andresen, T. E., 2915 No. Lyndale Ave.
 Andrews, Eva L., 217 Walnut St. S.E.
 Andrews, Frances E., 245 Clifton Ave.
 Angel, Edward, 2628 Colfax Ave. So.
 Armstrong, Philip S., 2618 Fremont Ave. No.
 Arne, H. A., 2928 12th Ave. So.
 Asher, Henry T., 1629 4th St. S.E.
 Asplin, Harold B., 3539 15th Ave. So.
 Asselin, Raymond A., 4334 Nicollet Ave.
 Atchison, Horace H., 3319 University Ave. S.E.
 Auran, Olga, 3715 Bloomington Ave.
 Babb, W. M., 2218 East 35th St.
 Baker, Benjamin, 717 7th St. No.
 Baker, John A., 1413 19th Ave. S.E.
 Baker, O., 5416 Clinton Ave. So.
 Baker, Rita G., Apt. G, 1514 3d Ave. So.
 Ball, Ella D., 102 East 19th St.
 Ball, George W., Jr., 5052 Vincent Ave. So.
 Barbour, Lewis W., 309 Clifton Ave.
 Barlundhaug, Olive, 2218 Emerson Ave. No.
 Barlow, Arthur A., 2508 Como Ave. S.E.
 Barnett, Charles A., 702 Huron St. S.E.
 Barry, A. B., Hopknis, Minn.
 Barry, Harold J., 214 6th Ave. N.E.
 Bauman, H. E. J., 2126 Thomas Ave. No.
 Beck, Frieda, 1900 3d Ave. So., Apt. 35
 Bedell, Emma, 1805 Iglehart Ave., St. Paul</p> |
|---|--|

- Beggs, Truman J., 100 E. Diamond Lake Road
- Belstrom, Chester E., 1110 Summer St. N.E.
- Benton, George B., 4031 Sheridan Ave. So.
- Berg, Arthur B., 2121 East 22d St.
- Berg, Harvey G., 1503 East 22d St.
- Berglund, Harold A., 3224 1st Ave. So.
- Berglund, Leonard, 3224 1st Ave. So.
- Berglund, Wallace Harold, 1902 P. nn Ave. No.
- Bergsland, Lonar F., 511 Ontario St. S.E.
- Berner, T. E., 2715 Buchanan St. N.E.
- Berrisford, B. J., 3628 Stevens Ave.
- Berry, Albert Edw., 1710 1st Ave. So.
- Beveridge, Gladys Anne, 1723 East Lake St.
- Bickwell, Edgar H., 1609 University Ave. S.E.
- Bigelow, Lawrence T., 2432 West 24th St.
- Blomquist, H. E., 1524 Vine Place, Apt. 104
- Boehme Lubin G., 2215 Lyndale Ave. No.
- Bolstad, Alfred C., 1100 12th Ave. S.E.
- Bonesteel, Ralph H., 2404 Lyndale Ave. So.
- Boody, Clyde Bruce, 2225 So. Lyndale Ave.
- Boody, Fitz J., 4277 Sheridan Ave. So.
- Bostwick, Ralph E., 4016 Upton Ave. So.
- ††Boulay, J. A., 428 South 8th St.
- Bowers, Warren C., 520 13th Ave. S.E.
- Boyd, Barry F., 1009 Park Ave.
- Boyd, Roy M., 2121 Commonwealth Ave., St. Paul
- Brandauer, George B., 3109 Garfield Ave.
- Brataas, Carl A., 3320 18th Ave. So.
- Brick, Paul L., 4315 Harriet Ave.
- ††Broderick, Martin J., 603 Delaware St. S.E.
- Brodersen, Edward B., 11 Spruce Place, Apt. 10
- Brown, Florence, 623 East 14th St.
- Brown, Harold C., 4124 Pleasant Ave.
- Brown, Harold L., Y.M.C.A., No. 1013
- Brown, Leslie, 3318 Morgan Ave. No.
- Bryngelson, Paul E., 4637 Nicollet Ave.
- Buchanan, John S., 1816 Stevens Ave.
- Bullis, Harry A., 84 Spruce Place
- Bullis, Irma Alexander, 84 Spruce Place
- Burgi Fred F., 86 Willow St.
- Burke, Christopher J., 1517 Lake St. W.
- Burnes, Diana, 208 W. Grant St.
- Burnes, Grace, 2808 3d Ave. So.
- Butterfield, Clark, care Young-Quinlan Co.
- ††Cady, Byron, 1714 Stevens Ave.
- Caldwell, H. Bradle, Antlers Apts., 1919 Lyndale So.
- Callan, Arthur P., 2701 Fremont Ave. No.
- Calhoun, Mrs. F. D., 223 Oak Grove
- Calvin, Carl, 716 De Sota St., St. Paul
- Carlson, George H., 2810 1st Ave. So.
- Carlson, Harold L., 3121 Oakland Ave. So.
- Carlson, Lawrence R., 619 Delaware St. S.E.
- Carpenter, Francis H., 3845 2d Ave. So.
- Carrington, Harry J., 1801 Vine Place
- Carter, William W., 1682 Lafond St., St. Paul
- Cary, Evan F., 921 University Ave. S.E.
- Cawley, Marie A., 501 East 14th St.
- Chailquist, F. R., 3639 Sheridan Ave. No.
- Chamberlain, C. H., 422 Pierce St. N.E.
- Chaney, Clarence R., 4908 Colfax Ave. So.
- Chapman, A. R., 1001 26th Ave. N.E.
- Chapman, Edward D., 526 8th Ave. N.E.
- Chapman, F. D., 260 Emerald St. S.E.
- Chapman, Herman H., 515 Harvard St. S.E.
- Charney, Maurice, 106 Highland
- Chase, Clarence C., 1931 1st Ave. So.
- Chicken, Fred S., 3319 Washington Ave. No.
- Chier, Morris, 723 Emerson Ave. No.
- Christ, Earl E., 631 East 18th St.
- Christianson, Elmer, 3109 Lyndale
- Christoferson, George, 2223 Fillmore St. N.E.
- Christy, P. L., 2000 Park Ave.
- *Clapp, Warner H., 1882 Ashland Ave., St. Paul
- Clark, Clarence F., 1212 Yale Place
- Clemens, Anthony P., 1413 University Ave. N.E.
- Clements, Stanley H., 1854 Marshall Ave., St. Paul
- Cobb, Marion, 1783 Colfax Ave. So.
- Coe, Edward H., 1306 7th St. S.E.
- ††Cohen, A. V., 208 State St., St. Paul
- Cohen, Solomon, 729 Washington Ave. So.
- Cole, Charles W., 2536 Garfield Ave.
- Comer, Thomas E., 801 Girard Ave. No.
- Condon, W. J., 1220 Soo Line Bldg.
- *Conklin, O. J., 242 Bedford St. S.E.

- Conley, Wayne W., 1901 East 25½ St.
 Connell, Paul J., 617 Ontario St. S.E.
 Conover, A. R., 710 West 46th St.
 Cooper, Robert, 1824 Park Ave.
 Courteau, Walter J., 422 Knox Ave No.
 Crain, Ralph, 1908 Portland Ave.
 Crane, L. S., 2843 Bloomington Ave.
 Crist, C. E., 631 East 18th St.
 Criswell, Henry, 3105 18th Ave.
 Crofts, Gertrude A., 2521 Irving Ave.
 So.
 Crowley, Donald E., 3110 Knox Ave. No.
 Cuddy, James W., 2650 Dupont Ave.
 No.
 Cummings, Harry F., 2502 Sheridan
 Ave. No.
 Cunningham, S. E., Northwestern Na-
 tional Bank
 Curran, Robert S., 1829 5th Ave. So.
 Currie, George Dewey, 3239 No. Bryant
 Ave.
 Cuzner, Dorothy, 1203 Talmage St. S.E.
 Dahl, Owen, 3991 Queen Ave. No.
 Dahl, T. A., 3728 Longfellow Ave.
 Dahlstrom, Carl A., 613 Ontario St. S.E.
 Daniel, Mrs. Edith Robbins, Robbins-
 dale, Minn.
 Danielson, L. N., 2324 Chicago Ave.
 Dann, George Leslie, 2440 Nicollet Ave.
 Dash, Harry B., 1024 University Ave.
 S.E.
 Davis, Katherine G., 116 Oak Grove
 ††Dean, A. B., 2017 Garfield Ave.
 Denny, Charles M., 4106 Queen Ave. So.
 Deschene, Excilda, 511 James Ave. No.
 Devereaux, Margaret, 1004 19th Ave.
 S.E.
 Dickinson, Darrel D., 545 Laurel Ave.,
 St. Paul
 Dietrich, Arthur E., 1801 Morgan Ave.
 No.
 Dixon, N. D., 2519 Emerson Ave. So.
 Doe, Richard H., 404 Dewey Ave., St.
 Paul
 Doerr, Maylon, 1004 East 15th St.
 Doimer, Arne L., 2011½ So. 6th St.
 Dokken, A. O., 2522 South 9th St.
 Dorn, Ann K., 425 10th St. So.
 Drake, Ellis A., 3040 Oakland Ave.
 Duff, Phil S., Hotel Leamington
 Dunn, Eva L., 1705 25th Ave. No.
 Dyer, E. Rowland, 2450 Stevens Ave.
 Eckland, Elmer W., 511 8th Ave. N.E.
 Edlund, Walter H., 3216 Garfield Ave.
 Egbert, George R. 5012 Upton Ave. So.
 Eichhorn, E. W., 606 Washington Ave.,
 S.E.
 Eide, Thorlief, 3315 Johnson St. N.E.
 Einhorn, Harry L., 3323 Newton Ave.
 No.
 Ekblad, E. G., 3112 43d Ave. So.
 Ellefsen, Alvin J., 2014 Dupont Ave. So.
 Ellingson, G. E., 315 10th Ave. S.E.
 Elliott, Warren D., 3904 Richfield Ave.
 Elser, LeRoy B., 2309 Bryant Ave. So.
 Elstad, Christian O., 1995 St. Anthony
 Ave., St. Paul
 Elvig, Norman N., 35 South 13th St.
 Engel, George W., 2721 Emerson Ave.
 So.
 England, D. C., 2613 Portland Ave.
 Engman, F. N., 2446 Chicago Ave.
 Engman, Theo I., 2201 Buchanan St.
 N.E.
 Engstrom, Perry, 759 Fillmore St. N.E.
 *Enstad, Minnie C., 517 Ridgewood
 Ave.
 Erickson, Emil J., 2614 James Ave. No.
 Farr, Frances M., Northwestern Na-
 tional Bank
 Feigal, Lillian, 1518 Girard Ave. No.
 Feldman, Irwin, 262 East Robie, St.
 Paul
 Felstad, Albert E., 1996 Carroll Ave.,
 St. Paul
 Ferrian, Walter S., 130 East 18th St.
 Fewer, Walter J., 1218 2nd St. N.E.
 Figur, Morris, 2111 Chicago Ave.
 Finkle, Merrill, 1316 S.E. 4th St.
 Finnegan, Irene, 2417 Blaisdell Ave.
 Firman, George, 2420 Bloomington Ave.
 Flaten, Hjaridis M., 3505 19th Ave. So.
 Fleming, C. O., 1602 Harmon Place
 ††Fligelman, Henry, 2304 Lyndale Ave.
 So.
 Forsberg, Carroll F., 3149 Pillsbury Ave.
 Foster, Kent, 3032 Grand Ave.
 Fowler, Arthur R., 4312 28th Ave. So.
 Fowler, Harry S., 375 Wilder Ave., St.
 Paul
 Francin, Sigfrid, 134 Highland Ave.
 Friedman, Irving M., 1040 Irving Ave.
 No.
 Frisch, William T., 1019 Knox Ave. No.
 Fristedt, E. H., 2424 7th St. So.
 Fruetel, Elmer W., 522 Sherburne, St.
 Paul
 Fundell, Victor E., 1814 Taylor St. N.E.
 Gadney, Clarence, 3128 Grand Ave.
 Gage, J. F., Jr., 1554 Dayton Ave., St.
 Paul
 Gamelgard, Edward, 2645 3d Ave. So.
 Ganzer, Gertrude E., 736 East 16th St.
 Garth, John N., 3012 Park Ave.

- *††Gates, Cullen C., 928 Y.M.C.A.
 Gates, Edgar B., 665 Marshall Ave., St. Paul
 Gemlo, John, 707 14th Ave. No.
 Gerken, Eva, 3021 Oakland Ave.
 ††Gerth, Edwin P., 1625 University Ave. S.E.
 Gerth, Henry J., 209 East 19th St.
 Gibbs, George V., 2540 Cedar Ave.
 Gibbons, Edgar J., 3112 West Lake St.
 Gibbons, M. J., 2417 Bryant Ave. So.
 Gile, Chester A., 4220 Lyndale Ave. So.
 Gjerde, S. E., 2303 30th Ave. So.
 Glasby, Ward M., 4906 Fremont Ave. So.
 Glover, Mrs. Susan L., 376 Cretin Ave., St. Paul
 Gluek, Arthur L., 2004 Marshall St. N.E.
 Godfrey, Percy E., 1316 5th St. S.E.
 Goldman, Anne, 140 Highland Ave. No.
 Goldstein, Gilbert L., 3125 Fremont Ave. So.
 Gordon, G. R., 735 8th Ave. So.
 Gould, C. R., 24 West 37th St.
 Granding, Ray P., 3438 Columbus Ave.
 Granning, Alvin P., 2347 Upton Ave. No.
 Grant, H. W., 2409 Fremont Ave. So.
 Greisen, Anthony S., 3415 East 40th St.
 Greisen, S. L., 3415 East 40th St.
 Grife, G. R., 2218 Western Ave.
 Grohne, A. F., 4041 Park Ave.
 Gronberg, Eric F., 3452 Lyndale Ave. So.
 Grothen, William B., 1106 Jefferson St. N.E.
 Gruenberg, Morris Z., 1217 5th St. So.
 Guest, J. Eustace, 117 West Grant St.
 Guise, Fred R., 1413 West 34th St.
 Guise, Percy S., 1910 Hawthorne Ave.
 Gulbrandsen, C. A., 225 West 15th St.
 Gustafson, Walter F., 3208 35th Ave. So.
 Haas, Ewald A., 15 East 27th St.
 Hackenberg, Robert A., 3032 10th Ave. So.
 Haeußler, Theo C., 3229 2d Ave. So.
 Hagen, Agnes C., 62 So. St. Albans St., St. Paul
 Hague, A. R., 218 East Grant St.
 Hague, Norman E., 218 East Grant St.
 Hahn, Herbert J., 1403 4th St. S.E.
 Haldorson, John, 4346 1st Ave. So.
 Haling, L. W., 2719 Johnson St. N.E.
 Hall, Percy S., 4728 Blaisdell Ave.
 ††Halsey, Laura, 1115 Logan Ave. No.
 Halsten, Ernest H., 3609 40th Ave. So.
 Halvorson, Lawrence P., 305 Walnut St. S.E.
 Halvorson, Rhoda M., 305 Walnut St. S.E.
 Hamre, Adolph J., 4133 Park Ave.
 Hanley, John B., 2411 Blaisdell Ave.
 Hansen, Haakon, 517 Plymouth Ave. No.
 Harder, Porter E., 1605 Stevens Ave.
 Haselbeck, Henry, 733 E. Jessamine St., St. Paul
 Hasselberg, R. E., 1103 Fillmore St. N.E.
 Hatlested, Leonard, 2621 4th Ave. So.
 Hauge, Arthur W., 4052 10th Ave. So.
 Hayes, H. J., 1999 Ashland Ave., St. Paul
 Hayes, John Leo, 2616 5th Ave. So.
 Heard, S. E., 2828 Chicago Ave.
 Hedberg, Joseph B., 717 16th Ave. S.E.
 Heitkemper, Mae, 425 South 10th St.
 Helfman, Abe L., 1120 Morgan Ave. No.
 ***Heller George, 2737 Garfield Ave.
 Hellier, Janet B., 3635 Fremont Ave. No.
 Helmick, Alexander, 1014 13th Ave. S.E.
 Hengler, Arthur J., 3328 Grand Ave. So.
 Henningsen, W. C., 4021 Oakland Ave.
 Henry, John T., 2702 Fremont Ave. No.
 Hermanson, Ella S., 2911 West 44th St.
 Herulund, Vernon F., 2314 Lincoln St. N.E.
 Herrick, C. A., 2172 St. Anthony Ave., St. Paul
 Herrick, Elmer E., 4238 Harriet Ave. So.
 Herzog, Paul W., 1309 Harmon Place
 Hess, Grant, 4309 Aldrich Ave. So.
 Heywood, Sidney B., 3212 Harriet Ave.
 Hill, Hollis H., 714 Monroe St. N.E.
 Hill, Raymond D., 2641 Girard Ave. So.
 Hillgren, H. A., 3342 Oakland Ave.
 Hillman, P. L., 4017 12th Ave. So.
 Hillstrom, Victor J., 1911 1st Ave. So.
 Himmelman, Lewis, 722 Irving Ave. No.
 Hirscher, B. J., 832 Y.M.C.A. Bldg.
 Holmquist, Clarence E., 917 22nd Ave. N.E.
 Holzer, Mrs. George, 3128 39th Ave. So.
 Hoppe, Albert T., 205 West 58th St.
 Hovland, Melvin, 425 10th St. So.
 Howard, Isabelle, 1514 3d Ave. So.
 Howells, Milton J., 1914 14th Ave. So.
 Howind, Paul W., 1321 Knox Ave. No.
 Huffman, H. H., 2325 Grand Ave.
 Hughes, William H., 1214 East 28th St.
 Hunt, Mrs. C. E., 2081 Roblyn Ave., St. Paul

- Hurst, George, 605 12th Ave. S.E.
Hutchins, John, 2910 James Ave. So.
Ihnet, John G., 1501 6th St. N.E.
Jacobsen, Ivan, 1509 26th Ave. N.E.
Jacobsen, Milton A., 1129 University Ave. S.E.
Jaekel, Gus C., 1508 10th Ave. So.
††Jaffa, Goldie A., 704 Dupont Ave. No.
James, George, 2109 Washington Ave. No.
Janisch, Arthur C., 407 Beacon Ave., St. Paul
Jarboe, J. F., 3348 Colfax Ave. So.
Jenson, Carl J., 680 Asbury Ave., St. Paul
Jenson, Ernest W., 3400 Elliott Ave.
Johanson, Waldemar, 3336 10th Ave. So.
Johnson, Arnold, 3814 Columbus Ave.
Johnson, Arthur R., 2932 Clinton Ave.
Johnson, A. E., 1516 Nicollet Ave.
Johnson, Arthur H., 2900 28th Ave. So.
Johnson, A. R. H., 2325 Fremont Ave. So.
Johnson, A. W., 3233 Lyndale Ave. So.
Johnson, Ernest J., 4109 Chicago Ave. So.
Johnson, Ernest S., 3921 East 50th St.
Johnson, Helmer E., 1823 Cleveland St. N.E.
Johnson, Leander H., 1115 Harmon Court, Flat A 1
Johnson, Louis H., 1753 Iglehart Ave., St. Paul
Johnson Miss M., 2118 Dupont Ave. So.
††Johnson, Percy L., Y.M.C.A., Room 706
Johnson, Philip O., 2515 Lyndale Ave. No.
Johnson, Raymond, 916 East 21st St.
Johnson, Wesley H., 1725 3d St. No.
Johnson, Wilhelm, 1076 25th Ave. S.E.
Johnson, William E., 3160 Chicago Ave.
Johnson, William N., 3432 Pillsbury Ave.
Jones, Allan Tudor, 2732 Bloomington Ave.
Jorgensen, Ernest, 2320 24th Ave. So.
Jost, V. H., 1818 4th Ave. No.
Julicher, George F., 4049 Elliott Ave. So.
Kager, Bertrand N., 2635 Newton Ave. No.
Karst, G. E., 2731 Fremont Ave. So.
Kelly, F. J., 813 Marshall St. N.E.
Kelly, William, 2214 18th Ave. So.
†Kessel, H. J., 1984 Marshall Ave., St. Paul
Kessenich, Walter H., 315 East 14th St.
Kittelsen, Olga, 125 West Grant St.
King, Kenneth W., 3140 Holmes Ave. So.
King, S. E., 2912 Fremont Ave. No.
Kistler, Marie, 148 Highland Ave.
Kjellander, Oscar M., 2013 30th Ave. So.
Kjelsberg, Clara, 3824 Chicago Ave.
Klason, Iver T., 223 South 6th St.
Koepeke, Clemens G., 3208 Colfax Ave. So.
Korb, Mrs. Theodore, West Hotel
Koski, Edward G., 1225 Y.M.C.A.
Koskie, F. O., 1225 Y.M.C.A.
Krieg, Ernest, 4006 Fremont Ave. So.
Kronshnable, Madelia, 4152 40th Ave. So.
Kuehn, Henry Edward, 1831 Irving Ave. No.
††Kulp, Delmar E., 332 Oak Grove St.
La Belle, Roy R., 1312 Marshall St. N.E.
††Lahtinen, Wymen W., 233 Humboldt Ave. No.
Laliberte, Joseph H., 2752 Aldrich Ave. So.
Lamb, Myrtle B., Wayzata, Minn.
Lamb, Ruth J., Wayzata, Minn.
Larsen, Erling A., 3336 10th Ave. So.
††Larson, Eli, 749 Fillmore St. N.E.
Larson, Ernest M., 1410 East 33d St.
Larson, L. G. S., 1411 Vine Place
Larson, Philip J., 1921 19th Ave. N.E.
Larson, Walter L., 22 North 15th St.
Larson, Theo. W., 2641 Taylor St. N.E.
La Valley, Clyde A., 4016 West 44th St.
Lazerowitz, Jacob H., 522 Girard Ave. No.
Leaf, Helmer C., 2106 9th Ave. So.
Lee, Alfred, 3640 16th Ave. So.
Lee, Clara, 2019 Minnehaha Ave.
Lee, Ella, 3211 2nd St. No.
Lee, Grace M., Berkeley Club
Lee, J. A., 5048 42d Ave. So.
Lee, Reynold A., 2024 30th Ave. So.
Leitzman, Fred N., 414 33d Ave. No.
Lenhart, Roy F., 604 5th St. S.E.
Lenmark, Ivar, 3516 14th Ave. So.
Lent, D. Erwin, 3914 Aldrich Ave. No.
Leverentz, Andrew L., 311 30th Ave. No.
Levin, Nathan, 1818 No. 4th St.
Levy, Jay, 88 Spruce Place, Apt. 120
Lexcen, Frank J., 1506 19th Ave. No.
Lexcen, John M., 1506 Chicago Ave.
Lexcen, Joseph Henry, 1506 19th Ave. No.
Lilienthal, Francis M., 2522 James Ave. No.

- Lillgren, L. Theodore, 734 Pierce St. N.E.
- Lind, L. M., 3842 No. 6th St.
- Lindblom, Oscar M., 1484 Van Buren St., St. Paul
- Lindborg, Elmer, 4008 5th St. N.E.
- Lindquist, M. J., 2217 Locust St. So.
- Lonegren, Carl E., 2515 Grand Ave.
- Lonegren, J. L., 309 Wilmac Bldg.
- Long, Edward R., 903 Marshall St. N.E.
- Lowry, Frank A., 2106 25th Ave. No.
- Luick, H. C., 1728 2d Ave. So.
- Lund, Archie, 3833 16th Ave. So.
- Lund, Reuel I., 2211 28th Ave. So.
- Lundberg, R. W., 2808 28th Ave. So.
- Lundgren, Ernest H., 4001 Oakland Ave.
- Luther, Aug. H., 1148 Churchill Ave., St. Paul
- Lystad, Andy, 2518 Portland Ave.
- McBride, Douglas N., 3528 Nicollet Ave.
- McCareins, Ralph M., 104½ Willow St.
- *McCarl, Scott, 404 St. Michael Apts., St. Paul
- McClung, Harrison T., 665 Portland Ave., St. Paul
- McConville, Leo J., 709 4th St. N.E.
- McCormick, Clyde, 2420 Oakland Ave.
- McDonald, Marguerite C., 419 2d St. N.E.
- McDonough, Martin, 2119 Cedar Ave.
- McEwen, Anne, 1130 4th St. S.E.
- McFarland, R. M., 4201 France Ave. So.
- McGinty, Harry E., 101 Cedar Lake Rd.
- McGlynn, J. T., 2009 James Ave. No.
- McGovern, Allan J., 1920 2½ St. So.
- McGuire, C. E., 2013 Columbus Ave.
- McInnes, Thomas, 610 9th St. So.
- McIntire, Ralph B., 1917 Aldrich Ave. So.
- McKirnan, Robert N., Y.M.C.A.
- McLean, J. E., 3810 Pleasant Ave.
- McLeod, Arthur H., 24 Cedar Lake Rd.
- ††McMahon, William Henry, 3407 Minnehaha Ave.
- McMains, James B., 3122 West 43d St.
- McMorrow, M. L., 2022 Queen Ave. No.
- McNickle, Morrow J., 3133 23d Ave. So.
- McPhee, Eugene, 2881 Irving Ave. So.
- MacDonald, E. S., 2817 Holmes Ave. So.
- MacDowell, Eleanor, 512 Delaware St. S.E.
- MacKenzie, D. L., 1920 Franklin Ave. S.E.
- MacLellan, Lee Leslie, Y.M.C.A.
- MacNabb, Arthur W., 3317 Calhoun Blvd.
- Mactavich, Robert F., 2870 Holmes Ave. So.
- Magaw, John T., 3425 Nicollet Ave.
- Magdany, Louis R., 3010 2d Ave. So.
- Magoon, Richard H., 610 West 26th St.
- Malone, Fred T., 3217 Park Ave.
- Mandel, Bessie R., 127 Highland Ave.
- Mandel, David A., 127 Highland Ave.
- Manguay, Dora, 4311 Lyndale Ave. So.
- Mans, Edith E., 4012 Abbott Ave So.
- Marchand, Noah L., 1407 Bryant Ave. No.
- Marcus, S. A., 1327 6th St. No.
- Markkkaen, Henry V., 1328 Vine Place, Apt. 1
- ††Marston, Antoinette, 3842 Vincent Ave. So.
- Martin, S. P., 4138 2d Ave. So.
- Martinson, Annette, 618 East 37th St.
- Mase, Harold E., 3340 Dupont Ave. So.
- Masters, G. E., 4808 Bryant Ave. So.
- Matthews, A. G., 914 West Lake St.
- May, Margaret, 4129 Elliott Ave.
- May, Walter, 3008 Pleasant Ave.
- Mayberg, Marcus N., 2606 Irving Ave. So.
- Meder, Herman P., 2100 6th St. No.
- Mee, Joseph F., 1712 Portland Ave.
- Meehl, George H., 3232 23d Ave. So.
- ††Meeker, Dean W., 5028 Vincent Ave. So.
- Melander, Melvin G., 2916 29th Ave. So.
- Merrill, Frank, 2309 Irving Ave. So.
- Meyer, Arthur K., 4131 Bryant Ave. No.
- Michael, C. Reginald, 3201 Emerson Ave. So.
- Michel, C. B., 1784 Portland Ave., St. Paul
- Miller, Clarence R., 1806 11th Ave. So.
- Miller, George G., 2625 Oliver Ave. No.
- Miller, Henry C., 1609 6th Ave. No.
- Miller, Paul L., 1014 17th Ave. S.E.
- Mindrum, Evan H., 428 Irving Ave. No.
- Mitchell, Raymond L., 401 East 39th St.
- Moak, Floyd R., 2630 Territorial Road, St. Paul
- Moffat, James P., 1325 1st Ave. So.
- Monson, Percy R., 4285 Sheridan Ave. So.
- Montague, G. Douglas, 320 Walnut St. S.E.
- Monty, Jean, 625 East 24th St.
- Moore, Kenneth C., 1073 12th Ave. S.E.
- Morehouse, Bruce L., 723 7th St. S.E.
- Morehouse, Paul, 723 7th St. S.E.
- Morgan, Dwight H., 3249 3d Ave. So.
- Morgan, Fred J., 1600 1st Ave. So.

- Morrison, Agnes, 136 Western Ave., St. Paul
- Muehlberg, Orville H., 125 E. Hennepin Ave., Apt. 5
- Mueller, Robert, 2309 Dupont Ave. No.
- Mulcahy, F. J., 629 East 18th St.
- Mulcahy T. R., 2545 Dupont Ave. So.
- Mullen, Melda V., 2617 3d Ave. So.
- Mulvahill, John E., 1846 East 26th St.
- Murphy, Tressa, 440 2nd St. N.E.
- Murray, J. B., 320 4th St. S.E.
- Nash, Ada B., 511 University Ave. N.E.
- Naumann, Richard, 89 Ash St.
- Naery, Raymond, 716 4th St. S.E.
- Neilson, Myles A., 1720 10th Ave. So.
- Nelsen, Harold, 3027 47th Ave. So.
- Nelsen, Henry C., 3524 17th Ave. So.
- Nelson, Clifford E., 2432 Chicago Ave.
- Nelson, Edwin C., 1000 30th Ave. No.
- ††Nelson, Ernest, 520 8th St. So.
- Nelson, Guy E., 3504 Pleasant Ave.
- Nelson, H. B., 3124 Irving Ave. So.
- *Nelson, H. E., 1784 Carroll Ave., St. Paul
- Nelson, Kenneth R., 1319 3d Ave. So.
- Nelson, Reuben N., 2732 11th Ave. So.
- Nelson, Richard W., 3504 Pleasant Ave.
- Nestor, William E., 3808 Oakland Ave.
- Neville, James E., 4237 France Ave. So.
- Nevin, Genevieve M., 3322 Clinton Ave.
- Nichols, Ralph, 1404 Spruce Place
- Niemackl, W. E., 3441 Portland Ave.
- Nosby Harvey M., 3830 Portland Ave.
- Nygard, Carlton O., 3502 3d St. N.E.
- Nygren, Annabelle, 2100 18th Ave. So.
- O'Donnell, Roy E., 713 East 14th St.
- O'Grady, W. J., 2013 South 9th St.
- O'Hagen, Joseph C., 1019 East 21st St.
- O'Neil, Edward F., 4049 43d Ave. So.
- O'Neil, William H. J., 1520 Harmon Pl.
- Oberg, Ezra N., 2210 Polk St. N.E.
- *††Okland, Herman J., 605 17th Ave. So.
- Olden, Carter N., 2311 17th Ave. So.
- Olien, Ida M., 3402 Portland Ave.
- Oliver, Everett O., 1325 27th Ave. So.
- Olmscheid, Walter J., 4618 Pillsbury Ave.
- Olsen, Arthur, 2700 East 25th St.
- Olsen, Edwin E., 2734 Pleasant Ave.
- Olson, Edward A., 116 Groveland Ave.
- Olson, Erwin A., 1009 13th Ave. So.
- Olson, Helmer E., 3929 14th Ave. So.
- Olson, Martin H., 2416 17th Ave. So.
- ††Olson, Paul, 2528 Taylor St. N.E.
- Oreckovsky, Max, 3436 Nicollet Ave.
- Overlie, Albin F., 2436 14th Ave. So.
- Overlock, Trafton H., 3228 Hennepin Ave.
- Palin, H. D., 612 East 15th St., Apt. 5c
- *Palm, J. M., 1505 Hythe St., St. Paul
- Palmer, Byron E., 1506 3d Ave. So.
- Palmer, David E., 26 Oak Grove St.
- Parker, Warren S., 2938 Cedar Ave. So.
- Parry, J. E., 211 West 15th St.
- Patterson, Howard G., 86 Willow St.
- Patton, Edwin L., 2527 4th St. No.
- Paul, Ernest, 1225 Hawthorne Ave., Apt. C
- Paulson, Cecelia, 418 Oliver Ave. No.
- Peel, Leon R., 738 East 16th St.
- Penberthy, Henry F., 1339 Vine Place
- Peppard, Melville J., 2532 3d Ave. So.
- Perreault, Madeline A., 1931 Marshall St. N.E.
- Perusse, Lawrence J., 612 13th Ave. So.
- Peters, Ray J., 325 University Ave. N.E.
- Petersen, A. C., 923 26th Ave. So.
- Peterson, Clarence A., 3818 Chicago Ave.
- Peterson, Edwin A., 1322 Vine Place
- Peterson, Elmer A., 2638 15th Ave. So.
- Peterson, Gilmore W., 1034 16th Ave. S.E.
- Peterson, Lester P., 3252 Girard Ave. No.
- Peterson, Ray C., 3025 5th Ave. So.
- Peterson, Robert E., 737 Carroll Ave., St. Paul
- *Peterson, Walter A., 737 Carroll Ave., St. Paul
- Pettersen, Harold, 2004 Como Ave. S.E.
- Phillips, C. F., care Mercantile Bank
- Phillips, Augusta, 4412 Bryant Ave. So.
- *Phillips, Grace C., 1686 Capitol Ave., St. Paul
- Pierce, Raymond C., 1609 University Ave.
- Pilon, Joseph E., 2113 Girard Ave. No.
- Pinkerton, F. M., 3249 3d Ave. So.
- Pinkerton, J. M., 3249 3d Ave. So.
- Pitney, E. H., 1715 Lagoon Ave.
- Plack, Harry, 2314 2d St. N.E.
- Platzer, Ruth, 3470 Garfield Ave.
- Plein, Floyd E., 1419 1st Ave. So.
- Plummer, Lawrence D., 4375 Wooddale Ave.
- Podolar, Reuben, 1010 Fremont Ave. No.
- Powell, Gomer R., 3442 11th Ave. So.
- Pray, Otis, 3145 Clinton Ave.
- Price, Robert B., 4248 Grimes Ave. So.
- Prisch, W. M., 1402 Spruce Place, Apt. 5
- Provencher, W. A., 612 E. Franklin Ave.
- Puelston, Roy E. J., 3506 Grand Ave. So.
- *Rasmussen, Gustav C., 217 Pleasant Ave., Flat 4, St. Paul
- Rayner, H., 2912 2d Ave. So.
- Reading, George W., 808 4th St. S.E.
- Redieske, Delphia, 3604 Park Ave.

- Reed, Floyd E., 4444 Bryant Ave. So.
 ††Remmele, David, 408 8th Ave. S.E.
 Richardson, Mrs. G. M., 3908 10th Ave. So.
 Riecki, August, 1025 6th Ave. So.
 Rideout, John Gordon, 1154 Ashland Ave., St. Paul
 Riggins, George H., 4244 Linden Hills
 Riley, H. P., 2641 Dupont Ave. So.
 ††Risberg, H. W., 1906 17th Ave. So.
 *Risinger, Dean J., 217 Pleasant Ave., St. Paul
 Ritchie, C. H., 4618 Pillsbury Ave.
 Robohm, Carl A., 3126 Elliott Ave.
 Rochat, J. B., 1938 Hayes St. N.E.
 Rochl, Catherine, 2011 3d St. No.
 Rollins, Mark P., 1912 Hennepin Ave.
 Rose, Carrol H., 926 13th Ave. So.
 ††Rosenberg, Harold L., 1907 14th Ave. So.
 Rosenstein, Sidney G., 1309 Harmon Place
 Rosenthal, O. L., 723 Dupont Ave. No.
 Rosquist, Lees, 1210 19th Ave. N.E.
 Ross, O. C., 2933 Clinton Ave.
 Ross, Lester A., 2015 2d Ave. So.
 Rothinberger, C. R., 1912 3d Ave. So., Apt. 1
 Rothsten, Rilla, 116 Groveland Ave.
 Ruchoft, Earle A., 1116 13th Ave. S.E.
 ††Russell, Mrs. Harriet L., 3453 Stevens Ave.
 Rychman, Jos., 2644 30th Ave. So.
 Rydeen, Maurice R., 2013 7th St. So.
 Sage, La Verne E., 1975 Selby Ave., St. Paul
 Sager, Carl E., 35 Groveland Terrace
 Salisbury, Richard O., 2130 Fremont Ave. No.
 *Samuelson, H. E., 1611 Ashland Ave., St. Paul
 ††Sandahl, Harold E., 108 East 32d St.
 Sander, Theodore, Jr., 459 Fuller Ave., St. Paul
 Sandstrom, A. W., 1224 21st Ave. No.
 Sather, Marcus O., 2423 Aldrich Ave. No.
 Sawyer, Fred W., 2709 Girard Ave. So.
 Sawyer, R. J., 2514 4th Ave. So.
 *Schiffer, M. J., 615 Ashland Ave., St. Paul
 Schilling, Paul A., 1607 Roblyn Ave., St. Paul
 Schoenborn, A. H., 2424 Oakland Ave.
 Schomaker, J. D., 1460 Hague Ave., St. Paul
 Schreiber, Bert O., 3314 25th Ave. So.
 Schreiber, Leo, 1717 Thomas Ave. No.
 Schroetke, Luella B., 3323 Newton Ave. No.
 Schultz, August W., 2929 5th Ave. So.
 Schultz, Clarence A., 2929 5th Ave. So.
 Schultz, Walter H., No. 7, 34 Spruce Place
 Schumacher, Conrad P., 1326 James Ave. No.
 Schutta, Lloyd, 710 4th St. N.E.
 Sears, Frank, 2517 4th Ave. So.
 Seelye, Alvin, 4023 6th St. N.E.
 Sell, Jeannette E., 1335 Vine Place
 Selvage, James J., 3344 1st Ave. So.
 Shaker, Elias, 913 Laurel Ave., St. Paul
 Shapiro, Samuel, 43 Highland Ave. No.
 Shaw, J. Burton, 2036 Queen Ave. So.
 ††Shedlow, Edith, 812 Bryant Ave. No.
 Sheehan, John S., 2126 Lyndale Ave. No.
 Shepard, Albert S., 299 Harrison St. St. Paul
 Sheridan, Charles R., 3737 2d Ave. So.
 Shern, Ronald, Rosslyn Apts.
 Sidle, Walter T., 208 East 17th St.
 ††Silk, Harry L., 41 27th Ave. S.E.
 Silverman, Mitchell, 2122 Chicago Ave.
 ††Simpson, E. C., 3104 Bryant Ave. So.
 Siverson, C. A., 1308 Harmon Place
 Skahen, Mrs. Marion E., 1514 Newton Ave. No.
 ††Sklar, Frances, 536 Fremont Ave. No.
 Skog, Frank A., 4033 Garfield Ave.
 *Slechts, Cyril A., 265 Nugent St., St. Paul
 Smith, Arthur P., 1930 2d Ave. So.
 ††Smith, Constance C., 2833 Girard Ave. So.
 Smith, Edward D., 3641 Portland Ave.
 Smith, Fred H., 1714 Fremont Ave. No.
 Smith, Houghton S., 1724 3d Ave. So. Apt. 105
 Smith, James C., 1930 2d Ave. So.
 Smith, John W., 4353 Bryant Ave. So.
 Smithey, B. A., 84 Spruce Place, Apt. 114
 Smithey, Burgess R., 1728 Nicollet Ave.
 Sobon, John, 312 14th Ave. N.E.
 Sorenson, Roy C., 1512 East 21st St.
 Speier, Hugo M., 3210 Blaisdell Ave.
 Sperry, Anna E., 2409 Taylor St. N.E.
 Sprague, John L., 412 Ridgewood Ave.
 Stacy, Edwin P., 2307 Colfax Ave. So.
 Stahman, Allan, 1319 Yale Place, Apt. 51
 Stanchfield, Harry R., 3456 16th Ave. So.
 Stanchfield, Steele S., 1110 13th Ave. S.E.
 Stebbins, Robert, 3119 Clinton Ave.
 Steels, Robert E., 1930 Girard Ave. So.

- Stenson, S. E., 1806 Park Ave.
 Stensrud, Victor R., 2507 Lyndale Ave. So.
 Stern, Anna, 2641 34th Ave. So.
 Stevens, Walter J., 2221 Harriet Ave.
 Stodder, M. W., Curtis Court
 Stoep, Arne C., 2304 11th Ave. So.
 Stone, Oscar P., 910 20th Ave. So.
 Stowe, E. L., 11 Spruce Place
 Strand, Eno, 1004½ Nicollet Ave.
 Strom, John L., 3845 Grand Ave.
 Strub, George W., 246 E. Lake Como & Phalen Blvd., St. Paul
 Strudwick, James, 215 Walnut St. S.E.
 Strudwick, William E., 4136 Pleasant Ave.
 Sund, Archie, 3833 16th Ave. So.
 Sundberg, Everett A., 3449 Longfellow Ave.
 Swagger, W. E., 1117 Harmon Place
 Swaggert, Hazel R., Wayzata, Minn.
 Swain, Earl E., 1109 6th St. S.E.
 Swalen, Clarence J., 3231 15th Ave. So.
 Swanson, Harry O., 4316 Lyndale Ave. So.
 Swanson, Martin S., 4121 11th Ave. So.
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 Takle, Olaf K., 1801 Vine Place
 Talty, C. W., 902 West Franklin
 Tanchin, William, 2616 Washington St. N.E.
 ††Teichroew, Henry W., 2339 Pierce Ave., St. Paul
 Thayer, M. E., 1521 Nicollet Ave.
 Thayer, Rustan O., 4330 Wentworth Ave.
 Thomassen, Thomas, Jr., 2014 3d Ave. So.
 Thompson, E. T., 1690 Capitol Ave., St. Paul
 Thompson, G. R., 4618 Pillsbury Ave.
 Thompson, Lewis E., 21 South 10th St.
 Thorson, Stuart J., 512 S.E. Delaware
 Thyberg, Helen M., 114 West Lake St.
 ††Tilden, Rose E., 102 East 19th St.
 Towles, Robert, 4420 Abbott Ave. So.
 Troedson, George E., 1401 19th Ave. No.
 Troop, Joseph P., 8 East 38th St.
 Tryon, Philip D., 2115 Girard Ave. So.
 Tryon, Richard M., 2115 Grand Ave. So.
 Tschen, Marguerite L., 2131 Bryant Ave. No.
 Tunell, H. C., 3736 3d Ave. So.
 Turnberg, Clarence F., 2642 Bryant Ave. No.
 Tuscany, William A., 3519 Architect Ave.
 Uglum, H., 2948 Fremont Ave. No.
 Van Camp, H. F., 3222 9th St. S.E.
 Vandyke, Charles W., 730 Curfew Ave., St. Paul
 Vaughn, M. F., 1310 East 22d St.
 ††Verdelin, Henry, 1816 Stevens Ave.
 Vick, Jay Morrel, 500 8th St. So.
 Villevik, J. K., 3023 Dupont Ave. No.
 Vogler, Herbert, 3102 Thomas Ave. No.
 Von Stocken, Ewald, 3535 2d St. N.E.
 Von Tobel, Edw. Butler, 127 West 26th St.
 Vosmek, Frank J., Hopkins, Minn.
 Wagenhals, E. J., 815 27th Ave. No.
 Wagner, Jos. F., 4749 Bryant Ave. So.
 Wahl, Milton B., 2114 Bryant Ave. No.
 ††Walberg, E. M., 1823 10th Ave. So.
 Waldo, E. A., 3003 Holmes Ave. So.
 Wallace, Roy, 1530 Vine Place
 Waller, Frank A., 1422 James Ave. No.
 Wallin, Axel R., 4050 40th Ave. So.
 Wallin, Herbert B., 2221 30th Ave. So.
 Walters, Ray P., 1409 Vine Place
 Walton, Grace S., 802 Mount Curve Ave.
 Ware, Amy Robbins, Robbinsdale, Minn.
 Warmington, Harold, 3105 Clinton Ave.
 Warneke, Edw. F., 2114 Irving Ave. No.
 Waskey, George, 627 Oak St. S.E.
 Wattson, W. M., 810 West 34th St.
 Weickel Herman H., 2108 Chicago Ave.
 Weingart, A. P., 3346 Emerson Ave. No.
 Weis, Edward A., 4704 Blaisdell Ave.
 Weisenberger, Albert C., 1423 E. 35th St.
 Welch, Richard D., 1309 E. Hennepin Ave.
 Wells, Frank J., Jr., 3641 Pillsbury Ave.
 Wennerdahl, J. A., 1717 Elliott Ave.
 Westling, August E., 3212 Bryant Ave. So.
 Whear, F. B., 1612 Park Ave.
 Wheeler, Walter H., 4141 Colfax Ave. So.
 Wilkins, Howard, 2945 Garfield Ave.
 Will, Fred L., 139 Sheridan Ave. No.
 Williams, James E., 4232 Linden Hills Blvd.
 Williams, Keith D., 2731 Fremont Ave. So.
 Williams, Muriel M., 341 Ramsey St., St. Paul
 Williams, Myrtle, 2541 Blaisdell Ave.
 Wilson, C. D., 2026 South 4th St.
 Wilson, Edmund A., 2019 Chicago Ave.
 Wilson, George L., 3 South 11th St.
 Wilson, William C., 810 Washington Ave. S.E.

Winner, R. M., 2905 West 43d St.
 Winter, Harry J., 1508 N. E. Monroe St.
 Winters, R. C., 4133 Columbus Ave.
 *Woehler, Charles G., 4026 No. Lyndale Ave.
 Voit, Charles F., 1607 N. E. Jefferson St.
 Wold, Fred, 1409 South 8th St.
 Wolfgram, Otto H., 2210 3d St. No.
 Wolfson Wilfred, 801 Logan Ave. No.
 Wood, Robert A., 515 Oak St. S.E.
 Woolpy, Evelyn S., 1817 Chicago Ave.
 Worum, Toralf, 965 Bayliss Ave., St. Paul

Wright, Ethel J., 3220 Grand Ave.
 Wright, William W., 4314 Humboldt Ave. No.
 ***Wrinch, Hubert G., Y. M. C. A.
 Wulf, Bertha S., 1819 Lyndale Ave. So.
 Wygant, L. F., 26 West 14th St.
 ††Young, Donald, 2445 Lyndale Ave. So.
 Zander, F. F., 724 Washington Ave. S.E.
 Ziegler, Robert D., 2625 Harriet Ave.
 Zimmerman, Anthony, 3014 15th Ave. So.
 Zimmerman, Roy G., 240 22d Ave. So.
 Zollicoffer, Roy E., 1401 Willow St., Apt. 1

MINNEAPOLIS—COLLEGIATE

Abey, Joseph Alex, care N. E. Neighborhood House
 Abramovitz, Bertha A., 912 14th Ave. So.
 Adams, Emma N., 3136 Portland Ave.
 Adams, V. H., 4028 Garfield Ave.
 Allee, Anna M., 2437 14th Ave. So.
 Allen, Ethel, 1112 8th St. S.E.
 Allen, Sadie L., 2820 Bloomington Ave.
 Allstrom, Edith R., 136 No. Lexington Ave., St. Paul
 Allstrom, H. W., 136 No. Lexington Ave., St. Paul
 Amonson, Maude, 1800 13th Ave. So.
 Amonson, Nettie, 1800 13th Ave. So.
 Anderson, Bert G., 2111 Franklin Ave. S.E.
 Anderson, Carl A., 3324 Chicago Ave.
 Anderson, Carl Oscar, 2421 11th Ave. So.
 †Anderson, Edward R., 3109 Garfield Ave.
 Anderson, Erma H., Apt. 29, 36 Spruce Place
 Anderson, Hanna C., General Delivery
 Anderson, Lydia H., 1807 2d Ave. So.
 Anderson, Mabelle, 1805 2d Ave. So.
 Anderson, Margaret E., 78 Willow St.
 Anderson, Minnie C., 1002 18½ Ave. N.E.
 Anderson, Nora C., 2310 Emerson Ave. So.
 †Anderson, Oscar W., 1714 Nicollet Ave.
 Anderson, Ruth, 705 Cedar Ave.
 Andresen, Mrs. Jean, 2915 No. Lyndale Ave.
 Andrews, Mel C., 1010 N. Y. Life Bldg.
 Ankeny, Sara T., 2401 Clinton Ave.
 Anthony, Maud, 3906 Thomas Ave. So.

Armstrong, Almeda, 118 W. Rustic Lodge
 Armstrong, Orie V., 3554 17th Ave. So.
 Arne, Esther M., 2928 12th Ave. So.
 Arthur, Hugh, 2013 Harriet Ave.
 Auxer, Mrs. Caroline C., 806 12th Ave. S.E.
 Babcock, M. Vinnette, 3824 1st Ave. So.
 Babcock, Viola Lucretia, 227 Xerxes Ave. No.
 Bacon, Eleanor J., 3416 2d Ave. So.
 Bailey, Lucille, 1733 Blair St., St. Paul
 Baker, Mrs. A. T., 211 West 15th St.
 Baldwin, Fanny E., 1837 Park Ave.
 Baldwyn, Louise, 2219 So. Dupont Ave.
 Ballon, Edith S., 1111 Hawthorne Ave.
 Bancroft, Ella M., 3707 1st Ave. So.
 Barber, Henry H., 1725 Irving Ave. So.
 Barber, Laura, 3232 2d Ave. So.
 Barber, Nellie, Curtis Court.
 Barnes, Harry M., 1354 Lincoln Ave., St. Paul
 Barns, Katherine, 1354 Luckoner, St. Paul
 Barrett, Helen E., 1621 Hillside Ave. No.
 Bartlett, Mae L., 1420 Portland Ave.
 Barton, Mrs. Flora R., 622 East 18th St.
 Bass, Josephine, 413 5th St. S.E.
 Baston, Ethel M., St. Louis Park, Minn.
 Baumann Helen L., 91 Ash St.
 Baxton, Bertha R., 427 8th Ave. S.E.
 Beach, Rowena E., 2708 Colfax Ave. So.
 Beckstrom, Emily, 901 5th St. S.E.
 Beech, Hazel M., 3110 4th St. S.E.
 Beisner, Goldie M., 3500 34th Ave. So.
 Bekkwald, Emil, 246 Cedar Ave.

- Belden, Mrs. Mary F., 2951 Penn Ave. No.
- Bell, Jane E., 1115 West 26th St.
- Bell, Mrs. J. Warren, 1001 E. River Road
- Bell, Mabel V., 77 Ash St.
- Bemis, Luella May, Hotel Waverly
- Bennett, Ellura, 1407 Yale Place
- Benson, Ernest G., 1117 2d Ave. So.
- Benson, Gudrum, 712 7th St. S. E.
- *Benson, J. R., 751 Fauquier, St. Paul
- Bentley, Ruth, 223 Oak Grove
- Benton, Mrs. J. L., 3640 Portland Ave.
- Ber, Adelaide, 1801 1st Ave. So.
- Bercon, J. D., 937 14th Ave. So.
- Berg, Robert D., 1557 Midway Pkwy., St. Paul
- Berg, Zella E., 1557 Midway Pkwy., St. Paul
- Berglund, Lillian O., 116 Groveland Ave.
- Bergvall, Elizabeth, 2712 Aldrich Ave. No.
- Berry, Claire M., 2122 Fremont Ave. No.
- Berry, Hannah E., 947 26th Ave. N.E.
- Berry, Harry Edwin, 2112 Fremont Ave. No.
- Betlack, Elvira J., 103 Orlin Ave.
- Bird, Beatrice A., Hopkins, Minn.
- Bjerke, Mrs. W. M., 3649 Park Ave.
- Blackhurst, John H., 622 Dayton Ave., St. Paul
- Blake, Jessie, 1916 Colfax Ave. So.
- Blythe, Mrs. V. B., 544 Andrus Bldg.
- Bolter, Leon M., Leamington Hotel
- Borst, Harold L., 1724 4th St. S.E.
- †Boulay, J. A., 428 South 8th St.
- Bourke, Clara, 1605 Hennepin Ave.
- Bowles, Stephen M., 30 Orlin Ave.
- Boyd, Helen W., 3336 Irving Ave. So.
- Boyson, Maybelle, 516 15th Ave. S.E.
- Braden, Della, 3145 Irving Ave. So.
- Brady, Katherine, Hampshire Arms
- Bredcrson, Orphie C., 2410 Oliver Ave. So.
- Brill, Esther, 823 16th Ave. So.
- †Broderick, Martin J., 603 Delaware St. S.E.
- Brooks, Mrs. E. D. 1779 James Ave. So.
- Brooks, Grace J., 802 W. Franklin
- Brooks, Lulu W., 3925 Lyndale Ave. So.
- Brown, Effie M., 411 Curtis Court
- Brown, Helen Marion, 718 6th Ave. So.
- Brown, Thomas C. W., 5129 Dupont Ave. So.
- Buchanan, Anabel, 4029 Garfield Ave.
- Buchholz, Amy, 2014 Dupont Ave. So., Flat 1
- Buckley, Margaret, 649 Van Buren St.
- Bucklin, Inez C., 201 Macalester Ave., St. Paul
- Budge, Lillian M., 1786 Hennepin Ave.
- Buechler, Elsie M., 3606 Garfield Ave.
- Bullard, Irma Louise, 3213 2d Ave. So.
- Bullock, Adella L., 624 4th St. S.E.
- Bunge, Amanda C., 5140 44th Ave. So.
- Burnell, Mrs. Florence P., 3152 Minnehaha
- Burton, Jane, 1005 5th St. S.E.
- Bushnell, Elizabeth G., 2309 Priscilla St., St. Paul
- Busse, Ida D., 2951 Penn Ave. No.
- Bussey, Marian, 429 Walnut St.
- †Cady, Byron, 1714 Stevens Ave.
- **Cameron, Isabella, 997 Dayton Ave., St. Paul
- Campbell, Ina S., 1775 Hennepin Ave.
- Carey, Mary L., 4745 Lyndale Ave. So.
- Cargill, R. G., 2617 Portland Ave.
- Carlson, Mrs. A. E., 2119 10th Ave. So.
- Carlson, Esther, 1597 Roblyn Ave., St. Paul
- Carlson, Ethel, 4929 Upton Ave. So.
- Carlson, Ida C., 1409 Stevens Ave.
- Carlson, Oscar A., 1786 Hennepin Ave.
- Carlsrud, Gertrude, 1907 Stevens Ave., Apt. 301
- Carlsrud, Marjorie, 1907 Stevens Ave., Apt. 301
- Carroll, Catherine, 413 20th Ave. So.
- Carroll, Teresa R., 413 20th Ave. So.
- Casady, Alexander B., 1930 Lincoln Ave., St. Paul
- Case, M. Maud, 1026 5th St. S.E.
- Castner, Irene, 1567 Lincoln Ave., St. Paul
- Cavanna, J. V., 2208 Oliver Ave. So.
- Cederstrom, Curtis, 805 7th St. S.E.
- Cederstrom, I. Evangeline, 805 7th St. S.E.
- Cederstrom, Susan M., 805 7th St. S.E.
- Centfield, Alice, 2615 10th Ave. No.
- Centfield, De Ette, 2615 10th Ave. No.
- Chalek, Celia, 271 E. Winifred St., St. Paul
- Chaline, Edith J., 2735 Garfield Ave.
- Challman, Esther R., The Leamington
- Chapel, Winnie M., 1834 Irving Ave. No.
- Chapman, James E., 2316 Pierce Ave., St. Paul
- Charles, Clara, 2522 Polk St. N.E.
- Chelstrom, Ella, 1507 University Ave. S.E.
- Chilson Iona F., 1512 2d Ave. So.
- Chisholm, C. Tryphena, 2108 Harriet Ave.

- Chowen, Celiste, Crystal Bay, Minn.
 Christie, Blanche, 3125 James Ave. So.
 Christie, Dorothy, 2645 Columbus Ave.
 Christian, Lella B., Curtis Court
 Clancy, Catherine, 2655 15th Ave. So.
 Clapp, Lucy S., 9 Crocus Place, St. Paul
 Clawson, Erwin, 414 Oak St. S.E.
 Cloud, Josephine P., 1939 Bryant Ave. So.
 Cloyes, Ella May, 116 Oak Grove St.
 Cockburn, Edna G., 425 S. E. 6th St.
 Coffin, Isa L. E., 4411 Morgan Ave. No.
 †Cohen, Abraham V., 208 State St., St. Paul
 Cohen, Jacob C., 1203 Aldrich Ave. No.
 Cohen, Mamie, 1203 Aldrich Ave. No.
 Cohen, Marion, 1715 8th Ave. No.
 Cole, Frances W., 4300 Alden Drive
 Cole, L. N., 1316 West 25½ St.
 Coleman, Gertrude, 612 East 15th St.
 Collins, Adelaide E., 2423 Clinton Ave.
 Collins, Ethelyne A., 2423 Clinton Ave.
 Collins, Gertrude M., 2423 Clinton Ave.
 Collins, Margaret E., 4410 West Lake Harriet Blvd.
 Condit, L. A., care Elks Club
 Conn, Bertha, Curtis Court
 Connell, Mary E., 4013 Sheridan Ave. So.
 Cook, Charlotte, 910 Donaldson Bldg.
 Cook, S. S., 1932 Penn Ave. So.
 Cooley, Fannie E., 3115 Humboldt Ave. So.
 Coolidge, Ross A., 1463 Breda, St. Paul
 Core, H. C., 3729 1st Ave. So.
 Corell, Floyd W., 200 Security Bldg.
 Cornish, Harold, 1025 6th Ave. So.
 Cory, Mae M., 3125 Garfield Ave. So.
 Costigen, Honora, 508 12th Ave. S.E.
 Costin, Julia K., Hastings Hotel
 Coulter, M. Eitta, 1310 Lowry Ave. No.
 Covell, Susan A., 2429 Garfield Ave.
 Cowie, Ruby C., 2602 Como Ave. S.E.
 Coyle, Frank H., 717 Laurel Ave., St. Paul
 Craig, Mrs. James J., 81 Oliver Ave. No.
 Crane, Grace C., 1624 Hague Ave., St. Paul
 Crane, Jennie C., 3040 Humboldt Ave. So.
 Crane, Laura, 100 Seymour Ave. S.E.
 Crawford, Charles A., 3437 3d Ave. So.
 Crawford, Myrtle E., 602 East 15th St.
 Crickmer, Louise S., 2215 Dupont Ave. No.
 Crockett, Clara S., 2512 Hennepin Ave.
 Crouse, Agnes R., 3600 1st Ave. So.
 Crowley, Mrs. Elizabeth, 127 West Grant St.
 Culver, Agnes May, 3914 Dupont Ave. No.
 Curran, Mrs. Hugh A., 630 7th St. S.E.
 Curry, Margaret G., 1511 Breda St., St. Paul
 Curtis, Elias B., 1608 Clinton Ave.
 Cutler, Ruth, 39 Barton Ave. S.E.
 Daly, John J., 3209 4th St. S.E.
 Danielson, C. T., 1907 Stevens Ave.
 Dashill, N. H., 4926 Colfax Ave. So.
 Davidson, John Allen, No. 408 Y. M. C. A., St. Paul
 Davies, Lucile, Hotel Ogden
 Davis, Gennette C., 717 6th St. S.E.
 Davis, John L., 4339 Pleasant Ave.
 Davis, May V., 4441 Washburn Ave. So.
 Day, Juanita H., Maryland Hotel
 †Dean, A. B., 2017 Garfield Ave.
 Deiman, Helen, 805 7th St. S.E.
 Delander, Nathalie, 4424 1st Ave. So.
 Dennis, Dollie L., 1352 Vine Place
 Densmore, Lydia, 2105 Bryant Ave. So.
 De Pue, Alice, 2102 No. Lyndale Ave.
 De Pue, Berenin, 2102 No. Lyndale Ave.
 De Pue, Beulah, 2102 No. Lyndale Ave.
 Devany, Anne M., 3801 Stevens Ave.
 Dickinson, Sherman, 2258 Commonwealth, St. Paul
 Dickinson, Mrs. Sherman, 2258 Commonwealth, St. Paul
 Diederich, Rose C., 1933 Ashland Ave., St. Paul
 Diepenbrock, Catherine, 252 Curtis Court
 Dietrich, Ella D., 2419 Chicago Ave.
 Dills, May H., 5531 1st Ave. So.
 Disney, Florence H., 314 3d Ave. S.E.
 Docken, Elizabeth G., 3321 So. Aldrich
 Donahue, Michael F., 3201 Aldrich Ave. So.
 Donaldson, Laura M., 1422 Thomas St., St. Paul
 Donaldson, Rosetta A., 1420 Portland Ave.
 Donlon, Lauretta, Hopkins, Minn.
 Donovan, Dayne, 2405 Portland Ave.
 Donovan, Katherine, 3535 Lyndale Ave. So.
 Dougherty, Eleanor M., 306 West 40th St.
 Dougherty, Grace M., 410 Curtis Court
 Dowe, Helen A., Hotel Ogden
 Doyle, Helen A., 2125 So. Lyndale Ave.
 Drake, Mary J., 610 E. 15th St.
 Draper, G. Haven, 3317 Colfax Ave. So.
 Dreves, Albert P., 369 Hall Ave., St. Paul
 Drohan, Gertrude, 2716 Portland Ave.

- Drohan, Margaret, 2716 Portland Ave.
 Duesler, Grace, 1422 Portland Ave.
 Dunbar, Emma L., 1969 Selby Ave., St. Paul
 Dungan, Minnie W., 4620 Lake Harriet Blvd W.
 Dunlan, Thomas, 4228 France Ave. So.
 Dunn, Anna M., 3110 4th St. S. E.
 Dunn, Ella May, 1929 Fremont Ave. So.
 Dunn, G. J., 2830 14th Ave. So.
 Dunnington, Helen, 4035 Sheridan Ave. So.
 Durkee, Gertrude M., 642 Portland Ave., St. Paul
 Duval, Agnes E., 1425 Vine Place
 Dyer, Nancy, 702 4th St. S.E.
 Earp, Allan W., 23 Grove St.
 Eckman, Mrs. Walter, 1800 4th St. S.E.
 Edelman, Sophie, 152 E. Isabel St., St. Paul
 Edgerton, Bessie E., 2919 Girard Ave. No.
 Edridge, Florence, 2622 3d Ave. So.
 Edwall, Esther J., 3220 Nicollet Ave.
 Egan, Elizabeth M., Hampshire Arms
 Ellis, Ethel, 1025 6th Ave. So.
 Enoeth, Ellen, 520 University Ave. S.E.
 Engebretsen, Andrew J., 320 Walnut St. S.E.
 Engstrom, Edythe, 714 Pierce St. N.E.
 Engstrom, Maymie, 714 Pierce St. N.E.
 Erickson, Bertha, 1119 W. Franklin
 Erickson, C. G., 3145 1st Ave. So.
 Erickson, Ethel, 1516 West 27th St.
 Estes, Adah, 1801 2nd Ave. So.
 Estes, Florence A., 1610 Stevens Ave.
 Estes, Ver M., 1610 Stevens Ave.
 Evans, Albert G., 3250 47th Ave. So.
 Evans, Bessie, Osseo, Minn.
 Evans, J. W., 3521 West 25th St.
 Evers, Mrs. Bess M., The Leamington
 Everett, John R., 2325 Grand Ave.
 Exelby, Walter W., 3035 46th Ave. So.
 Faber, Clara J., 1413 Lyndale Ave. No.
 Fagg, Helen M., 3300 2d Ave. So.
 Faragher, Reginald G., 420 13th Ave. S.E.
 Farisy, M. Adaline, 3637 Bloomington Ave.
 Farris, Christina J., 2720 Pillsbury Ave.
 Farwell, Nathan A., Y. M. C. A.
 Fawcett, Jessie E., Curtiss Hotel
 Finden, Sitona, 1416 Portland Ave.
 Finberg, Lillian M., 913 21st Ave. So.
 Finey, Ella P., 1111 Hawthorne Ave.
 Fiterman, Jerome M., 1217 Upton Ave. No.
 Fitzgerald, Caroline A., 2318 Pierce St.
 Fitzgerald, Teresa, 721 7th St. S.E.
 Fitzpatrick, Lucy, Hotel Hastings
 Fitzpatrick, Mary A., Hotel Hastings
 Flahaven, Frances, 2531 16th Ave. So.
 Flahaven, Teresa, 2531 16th Ave. So.
 †Fligelman, Henry L., 2304 Lyndale Ave. So.
 Fligelman, Julius, 2304 Lyndale Ave. So.
 Flynn, Mary E., 813 11th Ave. S.E.
 Fogarty, Edwin D., 3945 11th Ave. So.
 Ford, Lulu, 113 West 35th St.
 Ford, Mary F., 1939 Bryant Ave. So.
 Foster, Ada L., 2649 Taylor St.
 Foster, Rachel H., 36 Spruce Place
 Fox, Agnes Isabel, 2927 Park Ave.
 Fox, Katherine, Brookside
 Fox, Margaret, 3725 Garfield Ave.
 Fox, Winifred M., Brookside
 France, L. V., 1459 Hythe St., St. Paul
 Fraser, Mary Janet, 4331 Fremont Ave. So.
 Frazer, Lillian May, 3313 Emerson Ave. So.
 Freeman, Eva I., 3341 2d Ave. So.
 Freeman, J. Merritt, 319 Busch Terrace
 Freymiller, Mrs. Erma, 1416 7th St. S.E.
 Fridley, John P., 707 East 14th St.
 Friedlander, Esther, 2803 2d Ave. So.
 Frizzell, Marie A., 3304 Elliott Ave.
 Funk, Harriet, Curtis Court
 Gamelgard, Mabel V., 2645 3d Ave. So.
 Gardner, Marie, 4323 Garfield
 †Gates, Cullen C., 928 Y. M. C. A.
 Gates, Edith M., 1212 Yale Place
 *Gates, Edwin H., 924 Y. M. C. A.
 Gates, Myrtle L., 1514 West 25th St.
 Gaus, Ottilie J., 2915 West 44th St.
 Gaylord, Ethel I., 1935 Bryant Ave. So.
 Gears, Charles H., 1503 Lyndale Ave. No.
 Geist, Annamarie, 2904 W. River Road
 Gelfand, Anna, 1911 14th Ave. So.
 Geming, Richard A., Robbinsdale, Minn.
 †Gerth, Edwin P., 1625 University Ave. S.E.
 Gibbs, Louise D., 2426 Garfield Ave.
 Gilkey, Katherine, Vine Hall
 Gillis, W. L., 1915 1st Ave. So.
 Girrback, G. F., 421 18th Ave. S.E.
 Gjems, Lina, The Leamington
 Goodale, Ina L., 1413 Willow St.
 Goodson, Leota W., 87 Ash St.
 Gorgen, Mary, 1905 Hennepin Ave.
 Gould, Carl A., 500 Delaware St. S.E.
 Gouldthrite, V. W., 1051 13th Ave. S.E.
 Granner, J. M., 514 Cedar Lake Road
 Gray, Leil L., 3935 Grand

- Greene, Louise, 78 E. Summit Ave.,
Apt. 1, St. Paul
- Greenland, Norah, 1119 W. Franklin
- Greenwood, Grace O., City Hospital
- Greer, Abby Elizabeth, 2629 Pleasant
Ave.
- Greer, Margaret R., 2629 Pleasant Ave.
- Grethen, Mrs. Otto, 1700 Portland Ave.
- Grimes, R. W., Care Dayton Company
- Grimm, Marguerite A., 322 13th Ave.
S.E.
- Grobel, Oliver A., 1927 Elliott Ave. So.
- Groesbeck, Agnes M., 2020 No. Fremont
Ave.
- Gross, Helen, 2815 Pleasant Ave.
- Guenther, Florence M., 1014 17th Ave.
S.E.
- Gustafson, Florence, 2314 Johnson St.
N.E.
- Gustafson, Richard, 45 Spruce Place
- Guthrie, Marguerite, 2001 Aldrich Ave.
So.
- Hacking, Elizabeth P., 1056 15th Ave.
S.E.
- Haggerty, Mrs. Laura C., 315 Walnut
St. S.E.
- Hain Eleanor, 920 14th Ave. So.
- Hainer, Gertrude B., 2446 1st Ave. So.
- Haines, Nellie C., 1786 Hennepin Ave.
- Hale, Hattie E., 3229 5th Ave. So.
- Hall, Alice M., 621 Erie St. S.E.
- Hall, Eleanor, 4853 Russell Ave. So.
- †Halsey, Laura, 1115 Logan Ave. No.
- Hamilton, Zelma L., 1828 Park Ave.
- Hamm, Helen E., Anoka, Minn.
- Hammond, Alice E., 4008 Bryant Ave.
So.
- Hammond, Grace H., 4008 Bryant Ave.
So.
- Haney, Elizabeth, 4837 Lyndale Ave. So.
- Hanna, Delia, 113 2d St. N.E.
- Hansen, Alta I., 628 4th St. S.E.
- Hansen, Nora Constance, 1422 Breda
St., St. Paul
- Hanson, Lillian I., 733 East 16th St.
- Harding, Nellie, 5141 Camden Ave.
- Harger, Lena, 4321 Grimes Ave. So.
- Harney, Gertrude L., 4756 Aldrich Ave.
So.
- Harrington, Julia, 502 2d St. N.E.
- Harris, Lillian, 308 East 28th St.
- Hart, Mrs. Mary B., 260 Farrington, St.
Paul
- Harter, Edna, 14 East 51st St.
- Hartman, Walter R., 308 9th St. S.E.
- Harving, Ellen E., 2501 Hennepin Ave.
- Hastings, Ruby, 421 Walnut St. S.E.
- Hatlestad, Elizabeth, 2621 4th Ave. So.
- Hatz, Anna B., 1710 Stevens Ave.
- Hauer, Marie E., 3628 Pleasant Ave.
- Haugen, Arthur Nelson, 1290 James
St., St. Paul
- Hause, Elizabeth, 2174 Commonwealth,
St. Paul
- Haven, Kittie, 3416 2d Ave. So.
- Haverstock, Helen C., 2300 Bryant So.
- Haveson, Sophia, 929 Penn Ave. No.
- Hawes, Harriet M., 728 10th Ave. S.E.
- Hawkins, Catherine S., 1523 No. Fre-
mont Ave.
- Hawkins, Martha, 718 6th Ave. So.
- Hawlish, Lillian, Hopkins, Minnesota
- Hayes, Annie M., 1701 University Ave.
S.E.
- Hayes, Bridget, 1701 University Ave.
S.E.
- Hays, Ada S., 2637 Lyndale Ave. So.
- Heald, Rex W., 4460 W. Lake Harriet
Blvd.
- Heeman, Mary, 925 14th Ave. S.E.
- Helm, C. B., 4825 Xerxes Ave. So.
- Helm, Alice S., 4825 Xerxes Ave. So.
- Henderson, Mary E., 311 9th Ave. S.E.
- Hennessy, Veronica, 3032 Blaisdell Ave.
- Henrickson, Gustav, 430 4th St. N.E.
- Henrickson, Heide, 2507 Nicollet Ave.
- Henry, Alice A., 1015 21st Ave. No.
- Henry, Ida E., 1815 No. Crystal Lake
Ave.
- Hermann, Clare, 2642 Polk St. N.E.
- Hertert, Marion P., 2318 No. Dupont
Ave.
- **Hickman, John H., Jr., 533 Rondo
Ave., St. Paul
- Higgins, Sydnie M., 3108 So. Humboldt
Ave.
- Hilder, Fannie E., 1057 13th Ave. S.E.
- Hill, Esther, 2520 Oakland Ave.
- Hillgren, Stella, 3342 Oakland Ave.
- Hinman, Kathleen, Berkeley Club
- Hitchcock, Elizabeth, 1504 Chicago Ave.
- Hitchcock, Jessie, 3116 Fremont Ave. So.
- Hixman, Claudia, 2111 Bryant Ave. No.
- Hobar, Bonnie, 1625 University Ave.
S.E.
- Hofflander, Margaret, 2116 Harriet Ave.
So.
- Holbrook, Eleanor B., 5250 Penn Ave.
So.
- Holmquist, Axel E., 216 Bedford St.,
S.E.
- Hood, Leone B., 134 East 18th St.
- Hookey, Edith H., 2877 Holmes Ave.
So.
- Hooper, Myrtle Una, 1724 3d Ave. So.
- Hopkins, G. M., 309 17th Ave. S.E.
- Horan, Lillian G., 1802 15th Ave. So.

- Horn, Clara, 231 Oak Grove
 Hotchkiss, Fred W., 520 Delaware St. S.E.
 Houghtaling, Barbara, 1519 Brooke Ave. S.E.
 Houghtaling, Jay, 1519 Brooke Ave. S.E.
 Houghtaling, Mrs. Jay, 1519 Brooke Ave. S.E.
 Howard, Margaret L., 1786 Hennepin Ave.
 Howe, Jane A., 2005 Garfield Ave. So.
 Hoy, V. Grace, 1402 Spruce Place
 Hoyt, Jane M., 1801 2d Ave. So.
 Hubbard, Elmer L., 824 9th Ave. S.E.
 Hubbard, Gladys, 2204 Grand Ave. So.
 Hudson, George L., 4648 Lake Harriet Blvd.
 Huefner, Stanley, 1786 Hennepin Ave.
 Hughes, Charles F., 2418 Ferrant Place
 Hughes, Harriet J., 2433 Colfax Ave. So.
 Hughes, Margaret E., 1422 Portland Ave.
 Huhn, Olive B., 319 12th Ave. S.E.
 Hulett, Ethel R., 2636 Hennepin Ave.
 Hulett, Jessie I., 2636 Hennepin Ave.
 Hull, Alice V., 2216 Doswell Ave., St. Paul
 Hull, Maebelle C., 3148 10th Ave. So.
 Hull, May W., 2217 Girard Ave. So.
 Hulls, Mrs. Mabel G., 3918 Stevens Ave.
 Hult, Ann K., 1521 2d St. S.E.
 Hultcrantz, Elsie M., 2015 Elliott Ave.
 Hultkrans, Esther A., 2949 Fremont Ave. No.
 Humason, Harry L., Brookside
 Hunt, Lettie G., 1776 Knox Ave. So.
 Hurlburt, Frances S., 3541 17th Ave. So.
 Hurwitz, Yetta, 61 Highland Ave.
 Huxmann, Sophie, 2111 Bryant Ave. No.
 Ingle, Jeanette, 2708 Colfax Ave. So.
 Ingraham, Florence, 26 Oak Grove St.
 Irving, Alice, 833 Summer St.
 Jacobs, Judith A., 1015 14th Ave. S.E.
 Jacobson, R. A., 3520 East 25th St.
 †Jaffa, Goldie A., 704 Dupont Ave. No.
 Jalma, M. M., 408 19th Ave. N.E.
 James, John Wm., 4450 Pillsbury Ave.
 James, Mary L., 3236 3d Ave. So.
 Jameson, May, Hotel Leamington
 Jansen, Mildred H., 318 Arbor St., St. Paul
 Jansen, Myrtle F., 2724 Bryant Ave. So.
 Janzig, A. C., 3554 Architect Ave. N.E.
 Jasinski, Marie, 623 19th Ave. N.E.
 Jensen, Mrs. A. B., 2108 Portland Ave.
 Jensen, Harriet, 812 Curfew Ave., St. Paul
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 Jerdee, Theo. R., 1815 Fillmore St. N.E.
 Johnson, Alice G., 3249 36th Ave. So.
 Johnson, A. Madeline, 206 Harvard, S.E.
 Johnson, Anna F., 70 South 12th St.
 Johnson, Anna Marie, 3255 14th Ave. So.
 Johnson, Clarence E., 1492 Cleveland Ave., St. Paul
 Johnson, Esther Mable, 618 16th Ave. S.E.
 Johnson, Eva C., 2411 4th Ave. S.
 Johnson, Lillian M., 1425 Vine Place
 †Johnson, Percy L., Y. M. C. A.
 Johnson, Raymond E., 45 S. Lexington, St. Paul
 Jones, Bertha, 70 South 12th St.
 Jones, Hallie E., 1410 Stevens Ave.
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 Jordan, Irene, Hopewell Hospital
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 Jorgenson, Ann, 2612 Hennepin Ave.
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 Kasmuski, Mathilda M., 242 Forbes, St. Paul
 Kassubke, Elsie, 21 West 34th St.
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 Kelley, Nellie E., 16 South 12th St., Flat 3
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 Kennedy, Agnes M., 2533 Bryant Ave. So.
 Kennedy, Marion, 2533 Bryant Ave. So.
 Kennedy, Mrs. Mary D., 624 4th St. S.E.
 Kerr, Adah L., 1520 Washington St. N.E.
 Kerr, H. A., 1420 Portland Ave.
 Kilbourne, Charles A., West Lake & Earl Ave.
 Killeen, Florence M., 1325 Vine Place
 Killeen, Ursula, 1325 Vine Place
 Kimball, Florence, 141 Orlin Ave. S.E.
 King, Cecelia, 1680 Hennepin Ave.
 King, Don N., 105 Western Ave.
 King, J. T., 1810 4th St. S.E.
 King, Julia E., 1034 19th Ave. S.E.

- Knapp, V. W., 4041 Bryant Ave. So.
 Knause, Mr. W. C., 406 Midway Pkwy.,
 St. Paul
 Knause, Mrs. W. C., 406 Midway Pkwy.,
 St. Paul
 Knem, John 1300 West Lake St.
 Knight, Sara C., 220 Oak Grove St.
 **Knox, Leone, 276 Dayton Ave., St.
 Paul
 Knutson, Mable, 3418 Elliott Ave.
 Kocourek, John F., 736 Superior St. S.E.
 Kraft, Louise C., 2131 No. Dupont Ave.
 Krefting, Emma, 4851 Lyndale Ave. No.
 Krinbill, Julia, Hampshire Arms
 Kriskey, Esther, 1212 Yale Place, No.
 364
 Kronstedt, Anton S., 8 Melbourne
 Krovig, Lillian R., 2402 Johnson St.
 Kuehl, Bertha I., 2533 Chicago Ave.
 †Kulp, Delmar E., 332 Oak Grove St.
 Lackersteen, Wynne, 2301 Oliver Ave.
 So.
 La Force, Zelma, 820 East 36th St.
 †Lahtinen, Wymmen W., 233 Humboldt
 Ave. No.
 Lambert, E. M., 977 14th Ave. S.E.
 Lambert M. E., 1326 8th St. S.E.
 Lancaster, Mrs. W. A., 2008 Pillsbury
 Ave.
 Langemo, E. M., 2704 Pillsbury Ave.
 Langlais, Joseph F., 1119 6th St. N.E.
 Langvand, P. A., 3621 24th Ave. So.
 Larpenteur, Marie A., 3615 Park Ave.
 Larson, Charles J., 3249 Colfax Ave. So.
 †Larson, Eli, 749 Fillmore St. N.E.
 Larson, Gustav L., 4208 Pleasant Ave.
 Larson, Pauline, 3347 Bloomington Ave.
 So.
 Lauer, Eugene C., 4401 Colfax Ave. So.
 Lawrence, Hortense, 1817 Vine Place
 Lawson, Florence B., 806 12th Ave. S.E.
 Lego, Olive L., Hampshire Arms
 Lemire, Howard C., 3224 4th St. S.E.
 Lenmark, Mary M., 221 2d St. N.E.
 Lenmark, Oal J., 3516 14th Ave. So.
 Leonard, Alice E., 1023 14th Ave. S.E.
 Leu, Elizabeth, Curtis Court
 Levings, Jessie R., 3219 Lyndale Ave.
 So.
 Lewis, Adelaide H., 2517 Elliott Ave.
 Lidman, Marie E., 1320 4th Ave. So.
 Liedl, Rose, 718 6th St. S.E.
 Liljenstrom, N. J., 914 West 36th St.
 Lincoln, Guy, 2815 West 44th St.
 Linder, Paul C., 67 27th Ave. S.E.
 Lindholm, Mable F., 2318 Jackson St.
 N.E.
 Lindquist, Agnes, 717 Fillmore St. N.E.
 Lindquist, Mabel, 717 Fillmore St. S.E.
 Lindstedt, Esther, 2210 Polk St. N.E.
 Linner, Gunnar, 201 Walnut St. S.E.
 Little, Wirt F., 125 West Grant St.
 Locke, Amy E., Hopkins, Minn.
 Locke, Olive A., Hopkins, Minn.
 Loftus, Helen Marie, 2401 Grand Ave.
 So.
 Long, A. E., 1716 19th Ave. No.
 Lorentzen, Robert, 4638 16th Ave. So.
 Lorwell, Nathan A., Y. M. C. A.
 Louis, John J., 4153 Aldrich Ave. So.
 Lounberg, Lester E., 2703 Aldrich Ave.
 No.
 Lucier, Mary Anne, 212 6th St. S.E.
 Ludwig, Warren O., 2904 1st Ave. So.
 Luke, William H., Concordia College, St.
 Paul
 Lundgren, Paul J., 21 East 25th St.
 McAndrews, Byda, Hotel Leamington
 McAuliffe, Gertrude, 303 Curtis Court
 McCall, Bessie A., 3044 Harriet Ave.
 McCann, Alice, 321 No. Newton Ave.
 McCarren, Jane, 424 5th St. S.E.
 McCarthy, Alice, 2747 Aldrich Ave. So.
 McCauley, Isabel M., 2732 3d Ave. So.
 McClellan, Mary F., 88 Kent St., St.
 Paul
 McClendon, Margaret S., 421 Union St.
 S.E.
 McConnell Daisie C., 5340 Nicollet Ave.
 McConnell, M. J., 77 Langford Park
 Place, St. Paul
 McCormack, Katherine, 2001 Aldrich
 Ave. So.
 McCullock, F. B., 221 Curtis Court
 McDill, Genevieve, The Leamington
 McDonald, Marie, 2200 Blaisdell Ave.
 McDowell, Harriet J., 2608 3d Ave. So.
 McElligott, Mary, 3952 Harriet Ave.
 McGee, Gertrude, 2712 Pillsbury Ave.
 McGrory, Mary C., 1010 Security Bldg.
 McGuane, Anne, 3016 Portland Ave.
 McGuire, Erle J., 1016 24th Ave. N.E.
 McGuire, Sarah E., 3320 Pillsbury Ave.
 McGrath, F., Robbinsdale, Minn.
 McInnes, Frances Jean, 2309 Priscilla,
 St. Paul
 McLaughlin, C. E., 2230 Hayes St. N.E.
 McLaughlin, Howard, 2230 Hayes St.
 N.E.
 McLaughlin, Isabel M., 3015 Calhoun
 Blvd.
 McLean, May, Hopkins, Minn.
 McLimans, Ira J., 1423 McKinley Ave.
 McMahon, Janet, 233 Oak Grove St.
 McNamara, Kathryn, Waverly Hotel

- †McMahon, William Henry, 3407 Minnehaha
 McNeil, Frances J., 320 East 27th St.
 McShane, Catherine, 3107 Park Ave.
 MacComber, Olive B., 1393 Cleveland Ave., St. Paul
 MacDermid, Kate, 2703 Bloomington Ave.
 MacDonald, J. D., 3128 17th Ave. So.
 Mackell, James F., 627 Oak St. S.E.
 Mackey, Laura P., 2870 Holmes Ave. No.
 Madden, Adeline E., 2612 Chicago Ave.
 Madsen, Marie, 2632 Garfield Ave.
 Madsen, Mary A., 611 14th Ave. S.E.
 Magnusson, Esther A., 3025 11th Ave. So.
 Malerick, J. A., 428 South 8th St.
 Malmquist, Myrtle S., 1806 Park Ave.
 Maloney, Bezie A., Hampshire Arms
 Manley, Mary E., 3236 Holmes Ave. So.
 Marchesseault, Albina M., 1201 Penn Ave. No.
 Marclay, Walter J., 5110 Wentworth Ave.
 Marshall, Donald E., 2015 Garfield Ave.
 †Marston, Antoinette, 3842 Vincent Ave. So.
 Martens, Hazel I., 3022 Elliott Ave.
 Martin, Andrew I., 3609 Park Ave.
 Martin, Clara M., Mrs., 4148 Upton Ave. So.
 Martin, Maud E., Waverly Hotel
 **Martinet, Leslie, 702 Holly Ave., St. Paul
 Martinson, Myinnie O., 618 East 37th St.
 Mason, Adelaide, 1108 15th Ave. S.E.
 Masters, Laura A., 3106 41st Ave. So.
 Mathews, R. M., 419 3d Ave. S.E.
 Mathias, Lillian E., 2442 1st Ave. So.
 Matthews, Ernest L., 1404 Spruce Place
 Meade, Joy, 3125 19th Ave. So.
 †Mecker, Dean W., 5028 Vincent Ave. So.
 Meeker, Mary K., 3109 Portland Ave.
 Mellerud, Helen C., 1500 3d Ave. So.
 Mergens, Loretta, 1028 5th St. S.E.
 Merriam, Edna G., 3440 So. Aldrich Ave.
 Merrill, Blanche S., 233 Oak Grove
 Meuer, Lewis A., 2420 Chicago Ave.
 Michler, Emma W., 2608 Pillsbury Ave.
 Micklin, Sarah, 617 Dupont Ave. No.
 Miller, Jane S., 1873 Marshall Ave., St. Paul
 Millstrom, Helen, 1031 Portland Ave.
 Miner, Irma, 1710 Stevens Ave.
 Moffat, Mable G., 2165 Ann Arbor St., St. Paul
 Molan, Kathleen, 3553 16th Ave. So.
 Montellius, George A., 2518 Emerson Ave. So.
 Montgomery, Esther D., 3015 No. Fremont Ave.
 Montgomery, Margaret, 1806 Park Ave.
 †Moore, Kenneth C., 1073 12th Ave. S.E.
 Moore, Frederick, 808 Essex St. S.E.
 Moore, May, 2621 5th Ave. So.
 Moorman, Lucille, 602 East 15th St.
 Moren, Eurena C., 2517 Garfield Ave.
 Morris, Agatha B., 1530 Vine Place
 Morris, R. B., 1317 22d Ave. So.
 Morrison, Myrtle B., 3625 Stevens Ave.
 Moser, Clara, Robbinsdale, Minn.
 Moser, Florence, Robbinsdale, Minn.
 Mossman, Katherine C., 1728 Hague, St. Paul
 Mozzara, Adeline, 1280 Raymond Ave., St. Paul
 Mullen, Mrs. Lesile, 1821 1st Ave. So.
 Munson, Harriet, Waverly Hotel
 Murdock, J. N., 126 South 12th St.
 Murnane, Mark R., 650 Portland Ave., St. Paul
 Murphy, Anna, Curtis Court
 Murphy, Michael J., 216 Harvard St. S.E.
 Murray, Agnes, 2445 Aldrich Ave. No.
 Myers, Mrs. J. A., 57 Arthur St. S.E.
 Myran, Frances H., 324 13th Ave. S.E.
 Naper, Martha E., 3149 Holmes Ave. So.
 Nash, Anna M., 2018 Hennepin Ave.
 Nason, Effie L., 1407 Clinton Ave.
 Neason, Gertrude, 2123 Bryant Ave. So.
 Nelson, Arthur O., 1610 2d Ave. So.
 †Nelson, Ernest, 520 South 8th St.
 Nelson, Esther W., 1508 West Lake St
 Nelson, Harold C., 2019 St. Anthony Ave., St. Paul
 Nelson, Jensena M., 2121 Minnehaha Ave.
 Nelson, Mildred, 633 Jackson St. N.E.
 Nelson, Minnie, 1623 3d Ave. So.
 Nelson, Ruth E., 2109 22d Ave. N.E.
 Nettleton, Flora, 1109 Hawthorne Ave.
 Newell, Bertha M., 3323 Humboldt Ave. So.
 Newholm, Janet Bernice, 781 Hague Ave., St. Paul
 Newkirk, Muriel, 519 Essex St. S.E.
 Newkirk, Virginia, 519 Essex St. S.E.
 Newman, Lucille, 807 16th Ave. No.
 **Newton, Elizabeth, 1229 Selby Ave., St. Paul

- Newton, Sadie, 2623 Harriet Ave.
 Nichols, Mabel B., 1844 Iglehart Ave.,
 St. Paul
 Niedorf, Lillian R., 237 St. Albans St.,
 St. Paul
 Nielson, N. J., 3620 East 42d St.
 Niles, Harriet S., Hotel Maryland
 Nolan, Merrill C., Y. M. C. A.
 Nordby, Roy, 3905 Grand Ave.
 Nordin, Oscar F., 669 York St., St.
 Paul
 Noren, Carl W., 3407 19th Ave. So.
 Norlin, Signa L., 684 Sims St., St. Paul
 Norman, Magnus B., 621 Oak St. S.E.
 Normann, Astrid, 3137 1st Ave. So.
 Nye, Ellen S., 1801 4th St. So.
 Nygard, Mrs. Mabel G., 4231 Vincent
 Ave. So.
 O'Brien, Frank C., 2644 15th Ave. So.
 O'Brien, Genevieve, 511 Harrison Ave.,
 St. Paul
 O'Dell, Thomas E., 501 Beacon St.
 O'Hara, J. F., 2911 Humboldt Ave. So.
 O'Herrin, Mrs. Mary, 2014 Dupont Ave.
 So.
 O'Neil, William H., 1520 Harmon Place
 Oakford, Frances P., 1788 Hennepin
 Ave., Apt. 33
 Oberg, Anna M., 2519 Grand Ave.
 Oberg, Margaret, 2519 Grand Ave.
 Ohm, Eleanor S., 1416 West 27th St.
 Okland, Herman J., 605 17th Ave. So.
 *Ollivier, Jeanne, 962 Osceola Ave., St.
 Paul
 Olsen, Eleanor V., 4018 Grand Ave.
 Olsen, Mabel, 821 5th St. S.E.
 Olson, Byrdie C., 4208 Lyndale Ave. So.
 Olson, Carrie, 2232 Lincoln St.
 Olson, Florence M., 1401 E. Lake St.
 †Olson, Paul, 2538 Taylor St. N.E.
 Olson, Rebecca E., 4320 Bryant Ave. So.
 Ord, Maude R., 965 Curtis Hotel
 Oren, Ellen, 1111 Russell Ave. No.
 Oren, Mary Louise, 1111 Russell Ave.
 No.
 Orr, Loretta M., 2509 Emerson Ave. No.
 Osberg, Mrs. William, 2609 Hennepin
 Ave.
 Osborn, Harold P., 1902 10th Ave. So.
 Oslin, Mrs. Charles, 1700 Como Ave.
 Osterberg, May, 1238 Edmund St., St.
 Paul
 Ozman, Edgar W., Y. M. C. A.
 Page, Grace Marie, 2162 Carroll Ave.,
 St. Paul
 Paleson, Edith S., 2646 Fremont Ave.
 No.
 Palmer, Mary J., 528 14th Ave. S.E.
 Parsons, Mrs. Clara Dickey, 4242 Alden
 Drive
 Patchen, George A., 1811 1st Ave. So.
 Patterson, O. J., 1713 Queen Ave. No.
 Payne, Emily H., 1623 Laurel Ave., St.
 Paul
 Peck, Dr. A. E., 1912 Emerson Ave. So.
 Peck, Dr. H. E., 1719 Emerson Ave. So.
 Pebousek, Elizabeth V., 639 Erie St. S.E.
 Peiffer, Ella, 505 West 5th St.
 Pelletier, B. J., 1919 Morgan Ave. No.
 Pelling, Wm. L., Jr., 3728 Columbus
 Ave.
 Pencoek, Agnes, 3800 5th Ave. So.
 Perkins, Alice M., 3120 James Ave. So.
 Perkins, Ellen G., 3021 Park Ave.
 Perrault, Isabelle, 2400 Elliott Ave. So.
 Perry, Georgia, 2717 Pleasant Ave.
 Perry, Laurretta, 2717 Pleasant Ave.
 Peterson, Agnes O., 1605 Elliott Ave.
 Peterson, C. A., 3727 21st Ave. So.
 Peterson, Clara V., 2016 28th Ave. So.
 Peterson, J. E., 1708 Como Ave.
 Peterson, M. Hanna, 2320 7th St. So.
 Peterson, Rudolph W., 743 E. Lake St.
 Petran, Miriam V., 1700 Kenwood Pkwy.
 Pferfer, E. M., 1347½ Goodrich Ave.,
 St. Paul
 Pferfer, Helen M., 1347½ Goodrich
 Ave., St. Paul
 Phillips, Anna, 1808 Stevens Ave.
 Phillips, Bertha L., 3145 Irving Ave. So.
 Piemeisel, Robert L., 1615 1st Ave. So.
 *Pilger, Celina M., 1680 Capitol Ave.,
 St. Paul
 Pingel, Dorothea, 4720 Colfax Ave. So.
 Pinneo, Alice M., 3740 Bryant Ave.
 Pittard, Katherine V., 1118 7th St. S.E.
 Pittorf, Albert J., 232 E. Mainzer, St.
 Paul
 Plummer, Bel, 1111 Hawthorne Ave.
 Polk, Grace E., 608 West 24th St.
 Poreau, Germaine, 589 Portland Ave.,
 St. Paul
 Porter, George E., 1236 Selby Ave., St.
 Paul
 Porter, Hattie W., 121 11th St. So.
 Porter, Mary L., 3929 Clinton Ave.
 Potvin, Floyd R., 2301 Emerson Ave.
 No.
 Power, Anna, Rosslyn Apts., 707 Sum-
 mit
 Powers, Frank B., 47 Ash St.
 Powers, Samuel R., 621 Beacon St. S.E.
 Pratt, Elizabeth B., 717 Delaware St.
 Price, Cora Belle, 3323 Humboldt Ave.
 So.
 Prindeville, Helen, 209 East 19th St.

- Putnam, Pearl A., 1405 Portland Ave.,
St. Paul
- Pybus, Emma M., 602 East 15th St.
- Quaid, J. P., 1407 24th Ave. No.
- Quilty, Marie Leora, 2725 18th Ave. So.
- Raab, Frank, 13 Barton Ave. S.E.
- Radeck, Esther, 3744 Garfield Ave.
- Rader, Ada Marie, 3312 Stevens Ave
- Radusch, Minna, 721 Erie St. S.E.
- Ralph, H. W., 3917 38th Ave. So.
- Randall, Ada M., 4250 Linden Hills
- Raymond, Bess H., 942 19th Ave. N.E.
- Reed, Margaret L., 2204 Grand Ave.
- Reeve, Mrs. W. D., 820 University Ave.
S.E.
- Reeve, W. D., 820 University Ave. S.E.
- Regan, Mrs. G. H., The Leamington
- Rehfeld, Alice D., St. Louis Park, Minn.
- Reichman, Louisa, 3224 Dupont Ave. So.
- Reid, Louise F., 3705 Harriet Ave. So.
- Reilly, Alice, 1864 1st Ave. So.
- †Remmele, David, 408 8th Ave. S.E.
- Renfro, R. T., 2108 Fremont Ave. So.
- Reque, Marie E., 307 West 15th St.
- Rey, Florence H., City Hospital
- Reynolds, Anna, 2911 Penn Ave. No.
- Reynolds, Gertrude M., 3811 10th Ave.
So.
- Rhame, Robert, 209 State St. S.E.
- Richards, Anna J., 901 5th St. S.E.
- Richards, Estelle W., Maryland Hotel
- Riedle, Anna M., 734 East 16th St.
- Riordan, Elsie, 3120 Findley Place
- †Risberg, H. W., 1906 17th Ave. So.
- Ristrom, Ruth, 3708 Blaisdell Ave.
- Ritze, Bertha L., 2549 Bryant Ave. So.
- Roberts, Mrs. Florence, 979 14th Ave.
S.E.
- Robinson, Harriet M., The Leamington
- Roden, John J., 3849 1st Ave. So.
- Rogers, Edna M., 1420 Portland Ave.
- Rogers, Helen L., 4029 Garfield Ave.
- Rogers, Lena H., 1614 Girard Ave. No.
- Rogers, Mrs. R. S., 408 13th Ave. S.E.
- *Roisner, Rebecca, 1211 Como Blvd.,
St. Paul
- Roney, Lillian M., 1926 3d Ave. So.,
Apt. 21
- Rood, Mary B., Maryland Hotel
- Roodstrom, Ethel N., 3545 14th Ave. So.
- Rose, Mrs. Alexander, 1201 Penn Ave.
No.
- Rose, Florence J., 2425 Dupont Ave. So.
- †Rosenberg, Harold L., 1907 14th Ave.
So.
- Roskovick, Leon E., 1051 16th Ave. S.E.
- Ross, Effie L., 1820 Stevens Ave.
- Rotering, Anna T., 1915 1st Ave. So.
- Rowan, Margaret, 1700 Portland Ave.
- Rowe, Dr. Arthur T., 3345 Grand Ave.
- Rowe, Marion E., 3345 Grand Ave.
- Rowell, Ora M., 1408 Spruce Place,
Apt. 3
- Rowley, Bunny, 217 Beacon St. S.E.
- Rudow, Leonora, 4025 Upton Ave. So.
- Rumbaugh, Mary Louise, 2449 Blais-
dell Ave.
- Rusch, Ella, 1753 Iglehart, St. Paul
- Russell, Clara H., 2400 Grand Ave.
- Russell, Clementina R., 2400 Grand Ave.
- Russell, Elizabeth Y., 2400 Grand Ave.
- †Russell, Mrs. Harriet L., 3543 Stevens
Ave.
- Rutledge, J. W., 18 W. Rustic Lodge
- Ryan, James Lee, 820 Northern Pacific
Bldg., St. Paul
- Ryan, Joseph M., 416 7th Ave. N.E.
- Rye, C. D., 1407 Girard Ave. No.
- Rymer, Florence M., 618 15th Ave. S.E.
- Sachs, Eva, 615 East 17th St.
- Sachs, Lena, 568 17th Ave. No.
- Sachs, Sophie C., 615 East 17th St.
- Sager, Mrs. C. E., 45 Croveland Ter-
race
- Sand, Borghild L., 612 East 15th St.
- †Sandahl, Harold E., 108 East 32d St.
- Sanderson, Katherine, 27 Crocus Place,
St. Paul
- Sandquist, Edith E., 2940 Elliott Ave.
- Sandy, Alan F., 2641 Grand Ave. So.
- Sandy, Calvin M., 3036 Holmes Ave. So.
- Sanford, Beth M., 163 Bedford St. S.E.
- Schmidt, Mary, 2217 No. Fremont Ave.
- Schmit, Florence M., 539 Brainerd Ave.,
St. Paul
- Schoepp, Elizabeth D., 3241 Oakland
Ave.
- Schroeder, Mildred E., 1422 Thomas St.
St. Paul
- Schuen, Hattie, 2800 43d Ave. So.
- Schussler, Emma W., 2722 Bloomington
Ave.
- Schussler, Rose A., 2722 Bloomington
Ave.
- Scofield, Harriet E., 2609 Columbus Ave.
- Scripture, Elizabeth, 1316 7th St. S.E.
- Seidlitz, Ella, 5108 Colfax Ave. So.
- Sengir, Barbara, 2216 Clinton Ave.
- Sessing, Gunnar, 2908 1st Ave. So.
- Severinsson, Bernice, 612 East 15th St.
- Seyller, Blanche, 1335 Vine Place
- Shaick, Mrs. Rose D., 5314 Morgan
- Shark, Anne, 1619 11th Ave. So.
- Shea, Agnes, 20 North 13th St.
- Shea, Margaret, Grant-Portland Hotel
- †Shedlov, Edith, 812 Bryant Ave. No.

- Sheekmon, Arthur, 1931 Grand Ave., St. Paul
 Sheldan, Bessie H., 1316 7th St. S.E.
 Shephard, Albert S., 299 Harrison, St. Paul
 Shillock, Anna, 806 4th St. S.E.
 Shipley, Annie Emily, 1517 E. River Road
 Shippee, Elizabeth G., 316 17th Ave. S.E.
 Sholley, Gertrude B., 3836 Thomas Ave. So.
 Shore, S. Louis, 3237 Chicago Ave.
 Sidebottom, Radclyffe S., 1907 Orange St., St. Paul
 Sikes, Lena A., 2433 Colfax Ave. So.
 Silber, Gertrude, 127 Highland Ave.
 †Silk, Harry L., 41 27th Ave. S.E.
 Sims, Mary E., Plaza Hotel
 †Simpson, E. C., 3104 Bryant Ave. So.
 Simpson, Josephine, Hotel Plaza
 Sinclair, George L., 3045 Emerson Ave. So.
 Sire, Alf, 1411 25th Ave. No.
 Sjoberg, Mrs. Agnes, 2551 Harriet Ave.
 Sjoberg, Sigurd R., 2551 Harriet Ave.
 Skinner, John N., care Dayton Company
 Skinner, Margaret A., 2950 Park Ave.
 †Sklar, Frances, 536 Fremont Ave. No.
 Slider, Ethel M., 1226 5th St. S.E.
 Smith, Mrs. Agnes C., 4100 Upton Ave. So.
 Smith, Claribel, 1224 Mary Place
 Smith, Cleora F., 209 Groveland Ave.
 †Smith, Constance C., 2833 Girard Ave. So.
 Smith, Dora, 3933 Lyndale Ave. So.
 Smith, D. Edmund, 2601 Pleasant Ave.
 Smith, Evelyn F., Curtis Court
 Smith, Genevieve, 628 11th Ave. S.E.
 Smith, Irene A., 3125 16th Ave. So.
 Smith, Ora Kathleen, 719 East 18th St.
 Smith, Paul, 423 Oak St. S.E.
 Snyder, Mary, 1325 Vine Place
 Solien, Tella J., 413 Oak St. S.E.
 Sommerfield, A. A., 1319 Edmund St., St. Paul
 Souba, Amy, Hopkins, Minn.
 South, Helen M., 4343 Blaisdell Ave.
 Speake, Weltha, Hotel Waverly
 Sperry, Ralph M., 705 7th St. S.E.
 Splan, Mary H., 620 E. Franklin
 Squier, Mrs. Carrie, 303 Walnut St. S.E.
 Squier, Louise, 303 Walnut St. S.E.
 Squire, Anne, 1025 6th Ave. So.
 Stanchfield, Lois H., 3118 Park Ave.
 Stanley, Elizabeth A., 747 N. E. Madison
 Stark, Charles B., 4242 Queen Ave. So.
 Steinmetz, Jennie C., 914 Logan Ave. No.
 Stern, Marie, 1265 Como Blvd., St. Paul
 Steward, Minnie M., 1317 2d Ave. So.
 Sticka, Sylvia, 524 12th Ave. S.E.
 Stodden, Margaret, Curtis Court
 Stone, O. M., 1025 6th Ave. So.
 Straka, Paul P., 621 Ontario St. S.E.
 Strand, Alma J., 487 Lynnhurst Ave., St. Paul
 Strand, Margaret, 487 Lynnhurst Ave., St. Paul
 Strand, J. A., 1402 Emerson Ave. No.
 Stromme, Minnie, 1013 13th Ave. So.
 Sullivan, Mollie E., 1801 Vine Place
 Sumner, Bernice, 2649 Taylor St.
 Sundt, Carol A., Hampshire Arms
 Swanson, Anna E., 912 West 31st St.
 †Swanson, Nels C., 699 Pelham St., St. Paul
 Swenson, Erling, 3244 6th St. No.
 Swensrud, Hannah, 2608 8th St. So.
 Swift, Mary E., 819 Superior St.
 Syse, Sara, 5015 41st Ave. So.
 Tallman, Corrine, 1168 Ashland Ave., St. Paul
 Tatkin, Annetta, 156 Eva. St., St. Paul
 Taylor, Allyn C., 1551 Lincoln Ave., St. Paul
 Taylor, William S., 4124 Harriet Ave.
 †Teichroew, Henry W., 2339 Pierce Ave., St. Paul
 Telfair, Nellie M., 2444 Chicago Ave.
 Terp, Dorothy, 130 West 28th St.
 Thomas, Mrs. A. W., 1514 Monroe St. N.E.
 Thomas, Mabel H., 3032 Irving Ave. So.
 Thomas, Mary E., Curtis Court
 Thompson, Blanche M., 2311 No. Bryant Ave.
 Thompson, Edith, 630 East 16th St.
 Thompson, Harvey E., 3007 Fremont Ave. No.
 Thompson, Mrs. Laurie, Grimes Ave. & W. 40th St.
 Thompson, W. M., 508 Minneapolis Ave.
 Thornton, B. Elizabeth, Curtis Court
 Thornton, Katherine, Curtis Court
 Thorpe, John W., 1025 6th Ave. So.
 Thorson, Thora, 3700 17th Ave. So.
 Thraikill, Fanny F., Curtis Court
 Thuras, P. C., 1520 1st Ave. So.
 Tierney, Michael J., 7 East 17th St.
 †Tilden, Rose E., 102 East 19th St.

- Tinker, Florence, 1815 1st Ave. So.
 Todd, Erma E., 1217 Washington Ave.
 No.
 Tollifson, Hazel, 315 Harvard St. S.E.
 Tomlinson, Bessie A., 3115 13th Ave. So.
 Tornbler, Gladys, 4617 Aldrich Ave. So.
 Tousley, Mrs. E. M., 3649 Park Ave.
 Treadgold, Nellie M., Curtis Court
 Trufant, Nellie S., 2614 Clinton Ave.
 Truman, Veronica, 1323 East 25th St.
 Tucker, Caroline, The Leamington
 Turnquist Herbert E., 2418 Chicago Ave.
 Tutkin, Annetta, 156 Eva St., St. Paul
 Tyler, Alice Felt, 619 Beacon St. S.E.
 Ulbricht, Clara M., 523 7th St. S.E.
 Ulbricht, Emma, 523 7th St. S.E.
 Underdahl, Olena, 328 15th Ave. S.E.
 Underwood, Elizabeth, 1220 Mary Place
 Van Camp, Kate, 3325 Nicollet Ave.
 Vance, Anne, 525 10th Ave. S.E.
 Van Dyke, F. J., 718 New York Life
 Bldg.
 Vanderhoof, Clare J., 500 Delaware St.
 S.E.
 Van Gelde, Helen, 4136 27th Ave. So.
 Van Horn, Helen, 1819 Lyndale Ave. So.
 Van Kleet, Maud, 1920 2d Ave. So.
 Vehe, William D., 2636 Colfax Ave. So.
 Vebeck, Norman I., Hotel Hastings
 †Verdelin, K. Henry, 1816 Stevens Ave.
 Verdelin, Olga Kristen, 1816 Stevens
 Ave.
 Vertz, Leila W., 4938 Russell Ave. So.
 Vievering, Marcella, 236e Hampden
 Ave., St. Paul
 Vievering, William, 2360 Hampden Ave.,
 St. Paul
 VonRohr, Lucy E., The Leamington
 VonScholten, Agnes, 2404 Girard Ave.
 So.
 Wade, Marjorie D., 3740 Bryant Ave.
 So.
 Wadsworth, Frank M., 2871 Irving Ave.
 So.
 Waiste, Lucy B., 4717 Washburne Ave.
 So.
 †Walburg, E. M., 1823 10th Ave. So.
 Wallar, Beulah H., 1668 Princeton Ave.,
 St. Paul
 Waller, Lulu E., 3420 Irving Ave. So.
 Walstad, Otto A., 2800 Park Ave.
 Warner, H. L., 70 South 12th St.
 Warner, Mrs. E., 910 21st Ave. S.E.
 Wasielewski, Eleanor, 1403 4th St. S.E.
 Wasielewski, Rose F., 1403 4th St. S.E.
 Wastlund, Ruth, 11 East 17th St.
 Watson, Mrs. Louise H., 2635 Hum-
 boldt Ave. So.
 Watson, Marie L., 2635 Humboldt Ave.
 So.
 Weatherhead, Lonesa, Curtis Court
 Weeks, Emma Firestone, 601 5th Ave.
 S.E.
 Weichselbaum, Blanche, 4343 1st Ave.
 So.
 Weiss, Mrs. Hope S., 2104 Scudder St.,
 St. Paul
 Wennerdahl, John A., 1717 Elliott Ave.
 Wentland, Ida V., 1335 Vine Place
 Werket, Inga, 2204 Grand Ave.
 *Westline, Walter, St. Thomas College,
 St. Paul
 Westlund, Olof N., 2107 Portland Ave.
 Weyer, Edward M., 200 West 40th St.
 Wharton, Florence C., 4454 W. River
 Road
 Wheeler, Eva G., 1906 1st Ave. So.
 Wheeler, Mildred, 512 Newton Ave. No.
 Whitcomb, A. Wilhelmina, 2726 Buch-
 anan St. N.E.
 White Arthur C., 1946 Sheridan Ave.
 So.
 White, Helen, 70 South 12th St.
 White, Rose P., 3809 Columbus Ave.
 White, Roy W., 303 Aurora Ave., St.
 Paul
 Whiteford, Mrs. Margaret, 2917 Aldrich
 Ave. So.
 Whittle, H. L., 910 West 31st St.
 Wicklund, Hazel E., 5412 Stevens Ave.
 Wilkinson, Sarah H., 20 West 36th St.
 Willis Ethel, 2101 23d Ave. No.
 Wilson, B. H., Hotel Hastings
 Wilson, Hewitt, 2943 Polk St. N.E.
 Wincott, Marguerite, 1715 Portland Ave.
 Wind, Kate, Linden Hills Station
 Wingblade, Henry, 1392 Almond St.,
 St. Paul
 Winn, Blanch, 5101 44th Ave. So.
 Winton, Adelaide, 2705 Bloomington
 Winton, Mary F., 2705 Bloomington Ave.
 Witmer, Joseph M., 1025 6th Ave. So.
 Wohlgemuth, Anna C., 602 East 15th St.
 Wolf, Edna Mary, 1116 7th St. S.E.
 Wolfe Gussa B., 714 South 10th St.
 Wolfe, Merietta, 1611 Emerson Ave. No.
 Wolfsberg, Mrs. E., 2217 Girard Ave.
 So.
 Wolkon, Malinda, City Hospital
 Woltman, Hy, 2096 Dayton Ave., St.
 Paul
 Wood, Harriet J., Curtis Court
 Wood, Ruth M., 427 8th Ave. S.E.
 Woodbury, Jessie E., 3121 Dupont Ave.
 So.
 Woodruff, Pearl E., 1208 W. Franklin

Woodward, M. Myrtle, 2525 4th Ave. So.
 Woolman, Harry, 117 27th Ave. S.E.
 Wunderlich Margaret E., 1786 Hennepin Ave.
 Yohr, Cora, 2914 Bloomington Ave.
 Young, Carol E., 301 Walnut St. S.E.
 †Young, Donald, 2445 Lyndale Ave. So.
 Young, George W., 909 20th Ave. No.
 Young, Marjorie I., 52 South 10th St.

Young, Muriel M., 301 Walnut St. S.E.
 Young, R. A., 1610 Franklin Ave. W.
 Younger, Edward G., 903 East 15th St.
 Zeidler, John F., 1912 Franklin Ave. S.E.
 Zickrick, Theo, care Holland School
 Zimmerman, Mrs. Louis, 2617 Fremont Ave. So.
 Zimmerman, Anne, Osseo, Minn.
 Zimmerman, H. L., 3236 Columbus Ave.

ST. PAUL—BUSINESS

Adams, R. M., 566 Edmund St.
 Adams, Theresa M., 566 Edmund St.
 **Ahern, Philip J., 193 W. University Ave.
 Allen, C. H., 292 Dayton Ave.
 Anderson, C. A. L., 954 Westminster
 Anderson, J. F., 153 Macalester Ave.
 Anderson, O. Nicholas, 114 W. Cook St.
 Anderson, R., 1142 Marshall Ave.
 †Anderson, R. W., 215 Fuller St.
 Arndt, Arthur L., 1107 Hawthorne St.
 Arth, Frank J., 836 East 3d St.
 Atlas, Sam, 583 Carroll Ave.
 Axness, C. Edwin, 1383 Breda St.
 Ballard, George Raymond, 409 Baker St.
 Barlow, Arthur A., 2508 Como Ave. S.E., Minneapolis
 Barth, E. A., 404 St. Michaels Apts.
 Barwise, Thomas C., 2264 James St.
 Bayliss, Kenneth H., 513 Summit Ave.
 Becker, William A., 796 Manomin Ave.
 Benson, Gerald C., 1130 Beech St.
 ††Benson, J. Raymond, 751 Fauquier
 **Berger, Victor, G No. 6, Hillcrest Apts.
 Bily, Frank, 750 Foster St.
 Blandin, A. A., 1015 Grand Ave.
 Boese, Alvin H., 571 Como Ave.
 Bohman, Oscar W., 50 Como Ave.
 Borovansky, Francis J., 399 Superior St.
 Bourdaghs, Clarence D., K. of C. Club Rooms, Smith & 5th St.
 Bradish, Norman C., Northwestern Trust Company
 Broten, Anton, 616 Iglehart Ave.
 Brown, Cyrus P., Jr., 496 Portland Ave.
 Brown, Joseph I., 319 Pleasant Ave.
 Brown, Michael L. J., 914 East 6th St.
 Buckham, Clifford J., 2925 39th Ave. So., Minneapolis
 Buetow, Herbert P., 733 Charles St.
 Burns, Katherine, 639 Portland Ave.
 Busse, Alvin C., 1725 Lincoln Ave.
 Butke, Henry B., 625 Wabasha St.
 Byrne, William P., 664 Van Buren Place

Calendar, George E., 580 Laurel Ave.
 Carpenter, C. H., 1773 Goodrich
 Cederblade, Richard C., 739 Como Blvd.
 Chenery, John H., 175 No. Avon St.
 Cherry, George W., 989 Burgess
 Chrest, Rubert W., 894 East 3d St.
 †Clapp, Warner H., 1882 Ashland Ave.
 Clark, Clayton C., 534 Laurel Ave., Apt. 4
 Clasen, C. T., 888 Union St.
 Clayton, Jas. H., 892 Clear St.
 Clow, Richard A., 1946 Dayton Ave.
 Coburn, George, North St. Paul
 †Conklin, O. J., 242 Bedford St. S.E., Minneapolis
 Connolly, J. S., 552 Dayton Ave.
 Conway, M. J., 857 Cherokee Ave.
 Cook, William V., 184 No. Syndicate
 Copley, Robert S., 252 E. Curtice
 Cosgrove, S. E., 1758 St. Anthony Ave.
 Cregg, Nell, 904 Aurora Ave.
 Darwitz, William A., 1063 East 3d St.
 Davies, Thomas J., 620 E. Minnehaha St.
 Decker, Orville, 701 Carroll Ave.
 Dedor, Clarence T., Central Bank
 De Meules, E. A., 180 W. George St.
 Dolan, George F., 1155 Beech St.
 Donsker, Nathan, 1352 Grand Ave.
 Drew, Albert, 1914 Iglehart Ave.
 Dudgeon, Gordon L., 491 So. Cretin Ave.
 Dushek, Henry J., 404 St. Michael Apts.
 Dwyer, J. M., Y. M. C. A.
 Edell, J. E., 73 W. Isabel St., Apt. 5.
 Egan, Peter T., 797 Cedar St.
 Eggert, Gerald Oliver, 842 Margaret St.
 Eichhorn, Carl H., 759 East 5th St.
 **Elmqvist, Nan C., 356 Pleasant Ave.
 †Enstad, Minnie C., 517 Ridgewood Ave., Minneapolis
 Epstein, Israel, 312 Fuller Ave.
 Erppelding, Arthur P., 504 Selby Ave.
 Faudel, Frayne, 217 Pleasant, Apt. 5
 Faulkner, Louis R., 1378 Charles St.
 Felton, Nat L., Hillcrest Apts., So. St. Paul

- Fink, Benjamin, 3d & Robert
 Finley, Charles T., 782 Dayton Ave.
 Fisher, Charles G., 897 Hague Ave.
 Fitzpatrick, Edwin R., 505 So. Cretin Ave.
 Flesher, Blanche, 357 Maria Ave.
 Flesher, Herbert, 357 Maria Ave.
 Flesher, Leonard, 1804 Park Ave., No. 3, Minneapolis
 Foss, Leif N., 445 E. Minnehaha St.
 Gadacz, Stanley J., 35 W. Winifred St.
 Gamst, Harold M., 1313 Seminary
 Gardner, Clifford H., 483 Ada St.
 ††Gates, Cullen C., 928 Y.M.C.A., Minneapolis
 ††Gates, Edwin H., 924 Y. M. C. A., Minneapolis
 Gehrke, Edward G., 1367 Grand Ave.
 Geib, Philip J., 325 Iglehart Ave.
 Gillespie, Mary, 326 Harrison
 Ginter, D. J., 711 Aurora Ave.
 Glasgow, Mable B., 1408 Capitol Ave.
 Gobeil, Cyril E., 695 Hall Ave.
 *Goldberg, Ben, 596 Iglehart Ave.
 *Goldberg, Isadore G., 579 Carroll Ave.
 Goodwillie, J. F., 292 Walnut
 Greenman, Allan E., 1056 Goodrich Ave.
 Griffing, Thomas S., 1510 Charles St.
 Griffith, Donald H., St. Vincent, Minn.
 Grohs, Louis A., 426 Cherokee Ave.
 Grove, Ralph H., 1398 Breda St.
 Grove, Sigleit A., 1398 Breda St.
 Haas, Albert L., 908 Arcade St.
 Haas, Frank, 334 Webster St.
 Haider, M. J., 677 Canton St.
 Hanrahan, George H., 834 Tuscarora Ave.
 Hanrahan, Leo H., 241 E. Robie St.
 **Harrington, Jerry, 262 Selby Ave.
 Harvey, Clifford, 322 Fisk St.
 Hauer, John P., 144 Summit Ave.
 Haun, Albert, 404 St. Michaels Apts.
 Hawkinson, A. W., Stillwater, Minn.
 Heaton, William, 819 Stellar St.
 Hechtl, George W., 123 Como Ave.
 **Heck, Helen Marie, 418 Rice
 **Hefferman, Horace, 2114 Beard Ave. So., Minneapolis
 Henly, Edward I., 271 Prescott St.
 Henly, Harold J., 271 Prescott St.
 Hernwall, Carl E., 1020 Dayton Ave.
 Herz, Malvin Emanuel, 888 Lincoln
 Hoag, Richard L., 10 W. Belvidere
 Hoff, William H., 519 Winslow Ave.
 **Hoffman, A. Jerome, 1008 E. Lawson St.
 Honebrink, W. H., 2090 Dayton Ave.
 Horeish, F. R., 17 Wilkin St.
 Howe, Frank W., 1708 Blair St.
 Huester, Howard N., 1648 Portland Ave.
 Hultman, T. W., 660 Case St.
 Hurley, J. William, Stillwater, Minn.
 Imsdahl, A. J. A., 704 E. Lawson
 Jacobson, John A., 1319 Blair St.
 Janda, Coletta M., Stillwater, Minn.
 Jennings, Thomas J., 633 Dayton Ave.
 Jensen, Archie O., Central Bank
 Johanson, Raymond, 627 Jessamine St.
 Johnson, Arthur, 682 Lawson St.
 Johnson, A. K., 651 Portland, Flat A
 **Johnson, George W., 874 Westminster
 Johnson, Harry L., 667 Magnolia St.
 Johnson, Jalmer B., 652 Case St.
 Jones, Edmund J., 848 Lafond St.
 Jorgensen, Joseph W., 675 Fuller Ave.
 Kadas, Louis, Riverview Station
 Kadela, A. L., 389 View St.
 Keller, Walter P., 110 Amherst Ave.
 Kennedy, Daniel, 1296 Hague Ave.
 Kerfoot, Paul S., 2176 Dayton Ave.
 Kern, Harry E., 560 Mendota St.
 †††Kessel, H. J., 1984 Marshall Ave.
 King, Clarence M., 716 Hudson Ave.
 Kirchloff, E. Norman, 839 Lafond St.
 Knobloch, Oscar A., 601 So. Cleveland
 Knoedl, John J., 937 Woodbridge St.
 Knudsen, Walter O., 35 Como Ave.
 Koenen, William B., 318 So. Franklin St.
 Kohner, Henry J., 544 Smith Ave. So.
 Kuehne, Bertha F., 402 Dayton
 Kuehne, Minnie L., 402 Dayton
 Landey, Jens, 308 Iglehart Ave.
 Lanphear, Harry M., 1443 Blair St.
 Larson, Elmer V., 857 Lafond St.
 Lavigne, John E., 397 No. Smith Ave.
 Lavigne, Joseph A., 419 Iglehart Ave.
 LeBorious, William, 721 East 4th St.
 LeMay, Roger D., 1341 Forest St.
 Lesemann, E. C., 833 Margaret St.
 Lethert, John G., 804 Aurora Ave.
 Lewis, James D., 923 De Sota St.
 Libby, H. C., 1315 Edmund St.
 Lindberg, A. W., 918 Euclid St.
 Lindstrom, Clarence Wm., 1684 Selby Ave.
 Linnerooth, Sidney, 762 Duluth
 Lohman, Aaron H., 957 Beech St.
 Looby, Mary J., 843 Edmund St.
 Lundquist, Marie, 957 Case St.
 Luther, Raymond H., 1148 Churchill Ave.
 Lyden, Theodore, 2153 Scudder St.
 Lyman, Arthur, 306 E. Page
 †McCarl, Scott, 404 St. Michael Apts.
 McCarthy, John E., 231 Arundel St.

- McCuaig, Roy D., 217 Pleasant Ave., Flat 3
 McEvoy, John J., 1435 James St.
 McGuire, Frank, 769 Marshall Ave.
 McLean, Harry J., 50 Como Ave.
 Mackintosh, William F., 414 Ashland Ave.
 Maddex, J. W., Y. M. C. A.
 Madison, George P., 20 Viola St.
 Maier, Theo, 1235 East 6th St.
 Makiesky, Jack, 799 Cedar St.
 Maley, Clarence A., 362 Aurora Ave.
 Manning, George E., 786 Dayton Ave.
 Markoe, Stuart F., White Bear, Minn.
 Meierbachtal, Clarence W., 738 E. 4th St.
 Melsness, Tyler, 1215 Jessie St.
 Meyer, Hattie E., Crowley School
 Meyer, Joseph H., 1844 Portland Ave.
 Miller, Herbert M., 955 Pacific St.
 Miner, George R., 201 Goodrich
 Mitton, Clarence E., 391 Wilder Ave.
 Moberg, Clarence W., 292 E. 13th St.
 Monick, Eugene A., 837 Margaret St.
 Moore, Jerome Thomas, 603 LeOrient St.
 Mulliken, Charles E., 521 So. Cleveland
 Munson, Clifford R., 176 Kent
 Nelson, Clifford M., 150 No. Fairview
 †Nelson, Hugo E., 2024 Selby Ave.
 **Nelson, Henry, 704 Smith Ave. So.
 Newbaner, Henry R., 778 Tuscarora Ave.
 Newcomber, Patrick L., 467 Iglehart
 Nyberg, G. W., 1017 Kilburn St.
 Nystrom, Alfred S., 796 Hague Ave.
 O'Connor, Frank J., 244 Bedford St. S.E., Minneapolis
 ††Okland, Herman J., 605 17th Ave. So., Minneapolis
 Olsen, Martin N., 627 Cable Ave.
 Olson, Alexander A., 1268 Dayton Ave.
 Olson, George E., 604 Jenks St.
 Olson, Walter E., 963 Minnehaha
 Oltman, Clarence E., 1361 Van Buren St.
 Overmann, Roy, 895 Clark St.
 Page, John H., 801 Marshall Ave.
 †Palm, J. M., 1505 Hythe St.
 Palmquist, Axel F., 1250 Sherburne Ave.
 Palmquist, Jack, 339 Finn Ave.
 Pampush, J. R., 420 Lafond St.
 Patterson, David Knox, 269 Brimhall Ave.
 Payne, Sam Fifield, 544 Selby Ave.
 Pearson, Arthur J., 1382 Como Ave. W.
 Pearson, Clyde A., 11 W. Summit
 Pearson, Godfrey, 1955 Lincoln Ave.
 Pearson, Walter T., 736 Maryland St.
 Perrier, O. J., 947 Wakefield Ave.
 Peterson, A. M., 411 Forest St.
 **Peterson, Dewey W., 309 Mackubin St.
 Peterson, George A., 14 Tilton St.
 Peterson, George S., 667 Hyacinth St.
 Peterson, Glenn L., 757 Carroll Ave.
 Peterson, Melvin A., 215 Fuller Ave.
 ***Peterson, O. Ewald, 1135 Edgerton St.
 Peterson, Paul B., 357 Hope St.
 †Peterson, Walter A., 737 Carroll Ave.
 Petter, Millard W., 338 Maple St.
 Pettibone, E. M., 1822 Selby Ave.
 †Phillips, Grace C., 1686 Capitol Ave.
 Pollman, Harold J., 930 Woodbridge
 Power, Robert E., 494 Ashland Ave.
 Powers, Ronald V., 369 Laurel Ave.
 Provan, Wilfred D., 950 Selby Ave.
 Quale, Stanley O., 1021 Charles St.
 †Rasmussen, Gustav C., 217 Pleasant Ave., Flat 4
 Ratliff, Gordon A., 1596 Jefferson Ave.
 Reagan, P. D., 673 E. Maryland Ave.
 Reber, Joseph W., 512 Edmund St.
 Remick, Louis M., 1219 Como Blvd.
 Rice, Harry C., 1599 Randolph St.
 Rice, G. Merritt, White Bear Lake, Minn.
 Ries, Ronald B., 328 10th Ave. S.E. Minneapolis
 Ringold, William H., Highland Park
 †Risinger, Dean J., 217 Pleasant Ave.
 Robbins, G. M., 1239 Capitol
 Rochstroh, Archie B., 1041 Arkwright
 Rosenbloom, M. W., 886 Hague Ave.
 Rowe, Charles M., 10 E. Summit, Apt. 14
 Rowles, Florence F., 1958 Selby Ave.
 Sabean, S. H., 796 Delaware Ave.
 †Samuelson, H. E., 1611 Ashland Ave.
 Schaffelke, Henry A., 653 Humboldt Ave.
 Schaffner, R. A., 1423 Lincoln Ave.
 †Schiffer, M. J., 615 Ashland Ave.
 Schlesselman, Mr. C. F., So. St. Paul, Minn.
 Schmit, Emil S., 623 Fuller Ave.
 Schmitt, Earl F., 458 No. Grotto
 Schmitt, Michael A., 206 Ramsey St.
 Schwartz, Mary, 1031 St. Clair St.
 Scribner, M. A., 1076 Blair St.
 Seaburg, Harry L., 867 Raymond Ave.
 Schultz, W. E., Y. M. C. A.
 Slader, Jerome C., 649 Delaware Ave.
 †Slechtsa, Cyril A., 265 Nugent St.
 Smith, Leon, 1729 Dayton Ave.
 Sonner, C. A., 233 Sherburne
 Sorlien, Harold A., 620 Ashland Ave.

Spaeth, Wesley W., 205 So. Chalsworth
 Spitoliske, Leon P., 130 E. Rose St.
 Steinigeway, Theo C., 809 Marshall Ave.
 Stevens, D. W., 761 Selby Ave.
 Stevenson, James R., 118 Western Ave.
 No.
 Stoffer, Joseph, 835 Holly Ave.
 Strache, Walter F., 534 Sycamore St.
 Strand, Roy E., 306 Sycamore St.
 Strelneck, Martin, 253 E. Haskell St.
 Sturley, Rodney F., Mahtomedi, White
 Bear, Minn.
 **Stutzman, William J., Merchants Na-
 tional Bank
 Sudor, Carl A., 1639 Portland Ave.
 Sundt, Osmund, 1225 White Bear Ave.
 Swanson, Albert F., 516 W. Laurel St.,
 Stillwater, Minn.
 Swanson, Elmer F., 544 Selby Ave.
 Swanson, H. C., 931 E. Minnehaha
 Taylor, Andrew R., 466 Laurel Ave.
 Taylor, Arthur, 2718 W. 7th St.
 Thoel, William Edw., 1299 East 4th St.
 Thomas, Leo, 673 Iglehart
 Timmons, Martin J., 71 Tilton St.
 Tobin, George L., 689 Carroll Ave.
 Toensing, Arthur Fred, 695 Blair St.

Toensing, Wilfred T., 157 East Arch St.
 **Tschida, Katherine A., 826 Sherburne
 Ave.
 Turnquist, Arthur E., 1342 Raymond
 Ave.
 Vars, R. L., 421 Fuller Ave.
 Vars, W. Keith, 1601 Edmund St.
 Wahlquist, C., 1415 Lafond St.
 Walsh, Thomas, 45 No. Lexington Ave.
 Warn, M. J., 776 E. Cook St.
 Warren, H. E., 35 N. Grotto
 Weigel, Ernest J., 662 Armstrong Ave.
 Wesenberg, Elmer N., 404 Aurora Ave.
 West, Erling, 656 Portland Ave.
 ††Westline, W. L., St. Thomas College
 Wilhelm, R. J., 1039 Arkwright St.
 Williams, Archie W., 1100 Argyle St.
 Williams, L. Stanley, 62 W. Summit
 Winter, Emil O., 1053 York St.
 Wiprud, A. C., 1435 Grand Ave.
 †Wochler, Charles G., 4026 No. Lyndale
 Ave., Minneapolis
 Woodruff, Earl A., 820 Ohio St.
 Young, E. T., 113 Virginia Ave.
 Zachrisson, Lawrence E. H., 592 Wells
 St.
 Zehnder, Fred C., 1105 Burns Ave.

ST. PAUL—COLLEGIATE

*Ahern, Philip J., 193 W. University
 Ave.
 Altman, Mrs. Gerson, 855 St. Clair St.
 Anderson, Alphonse, 269 Nelson Ave.
 Anderson, Bertha L., Ames School
 Anderson, Esther, 1121 Hyacinth
 Anderson, Paul W., 1038 Case St.
 Anderson, Mrs. P. W., 1038 Case St.
 Axtell, Mary E., 535 Ashland Ave.
 Bailie, Monroe, 988 Lincoln Ave.
 Baker, Mrs. Sally M., 854 Linwood
 Bannma, Margaret, 414 Earl St.
 Baumgart, Dorothy, 1067 Bradley St.
 Behrens, Marie, 601 Summit
 Bell, Mrs. Ella Door, 1711 Capitol Ave.
 *Berger, Victor, G No. 6, Hillcrest Apts.
 Berry, Mona Alice, 826 Selby Ave.
 Biggie, Blanche S., 54 W. Delos St.
 Birnberg, Margaret, 654 Hall Ave.
 Bittrich, Theresa M., 372 Stryker Ave.
 Blum, Valerie, 670 Goodrich Ave.
 Boeringer, Antoinette M., 912 Laurel
 Ave.
 Bohan, Victoria, 1783 Carroll Ave.
 Boink, Helen G., 361 Maria Ave.
 Boody, Claire, 680 Ashland Ave.
 Borden, Mabel C., 2026 Laurel Ave.
 Borup, Sophia C., 726 Portland Ave.

Bouquet, Mrs. Edward, 1628 Dayton
 Ave.
 Bouquet, Ethel June, 1628 Dayton Ave.
 Boyd, Esther W., 27 Crocus Place
 Brash, Anabel C., 843 Dayton Ave.
 Breman, Mary E., 726 Summit Ave.
 Breman, Nell, 477 Laurel Ave.
 Brey, Florence, 614 Dayton Ave.
 Briggs, John G., 897 Dayton Ave.
 Broadstone, Erminie, 275 West 6th St.
 Brodeen, Elsie, 389 Dayton, No. 29
 Browne, Joseph F., 319 Pleasant Ave.
 Bucklin, Mrs. C. A., 201 Macalester
 Buell, Caroline, 679 Lincoln Ave.
 Burch, Miriam A., The Angers Hotel
 Burns, Catherine, 999 Portland Ave.
 Burns, Maria, 999 Portland Ave.
 Burns, Robert M., 1049 Portland Ave.
 Burns, Sara, 999 Portland Ave.
 Burns, Sophie C., 723 Portland Ave.
 Burns, Mrs. Wendell T., 1857 Laurel
 Ave.
 ††Cameron, Isabella, 997 Dayton Ave.
 Campbell, Gladys M., 1693 Capitol Ave.
 Campbell, Mary C., 1016 Euclid Ave.
 Canning, Katherine M., 115 Western
 Ave. No.
 Cannon, Winifred, 387 Maple St.

- Carney, Mary Vance, 636 Grand Ave.
 Carroll, Kathleen G., 164 W. Congress St.
 Castle, Carrie I., 497 Dayton Ave.
 Castner, Irene, 1567 Lincoln Ave.
 Caulfield, Grace, 774 Laurel Ave.
 Caulfield, Mary G., 774 Laurel Ave.
 Cederberg, Ruth, 689 Bedford St. S.E., Minneapolis
 Chapin, Blanche I., 629 Ashland Ave.
 Christiansen, Mrs. Helen F., 2294 Commonwealth
 Christopher, Mary C., 512 Portland Ave.
 Clapp, Mrs. A. W., 9 Crocus Place
 Clark, Harry S., 1206 Reaney
 Clark, Jennie, 23 Minnehaha Apts.
 Clausen, Clara, 469 Laurel
 Clinton, Nora, 739 Hudson Ave.
 Cochran, Grace E., 135 Western Ave. No.
 Cohen, Mrs. I., 855 St. Clair
 Cohen, Mrs. Leonard, 2440 Bryant Ave. So., Minneapolis
 Collins, Elizabeth, The Seville, No. 7
 Colter, Florence, 841 Laurel Ave.
 Conley, Lydia M., 1141 Laurel Ave.
 Connolly, Mary M., 135 Western Ave.
 Cook, Grace, 179 Kent St.
 Cook, Nellie A., 922 East 6th St.
 Cooley, Bret E., 1694 Hewitt Ave.
 Cooper, Margaret E., 1144 Ashland Ave.
 Copley, Mary E., 20 W. St. Albans
 Cornwell, Alice M., 491 Ashland Ave.
 Cornwell, Marie, 491 Ashland Ave.
 Corcoran, Elizabeth, 781 Cedar St.
 Cosgrove, Mary E., 136 Western Ave. No.
 Crosby, Marion E., 135 Western Ave. No.
 Crowley, Helen, 389 Marshall
 Daily, Gertrude, 1901 Goodrich Ave.
 Daly, Elizabeth, 287 Bates Ave.
 Daly, Martin A., 630 Marshall Ave.
 Davies, Edith, 614 Dayton Ave.
 Deem, Eleanor F., 391 Selby Ave.
 Diether, Althea, 1446 Summit Ave.
 Diether, Ruth, 1446 Summit Ave.
 Dilley, Antoinette, 954 Selby Ave.
 Dinsmoor, Marian, 2132 Iglehart
 Dittenhope, Mrs. Simon, 854 Linwood Place
 Doermann, Marie, 1907 Marshall Ave.
 Dossdall, Bertha, 1332 Dayton Ave.
 Dougherty, Aurelia, 620 Park Ave.
 Dougherty, Hannah, 620 Park Ave.
 Doyle, Anne, 2057 Grand Ave.
 Doyle, Mary C., 327 Carroll Ave.
 Doyle, M. A., 741 E. Third
 Drake, Leah, 1429 W. Como
 Driscoll, Josephine L., 1186 Hague Ave.
 Dugas, Mrs. Nettie L., 1684 Blair St.
 Duncan, Marion, 147 River St.
 Dunivon, Nellie M., 1938 Laurel Ave.
 Dunn, Irene, 29 The Minnehaha
 Dunphy, Anna, 864 Hague Ave.
 Earl, Clara, 745 York St.
 Earl, Robert, 745 York St.
 Easterbrook, Pearl E., 75 Mackubin
 Eaton, Eleanor, 1745 Laurel Ave.
 Eckholm, Effie, 664 Conway
 Egan, Anastasia, 872 Hague Ave.
 Eisenberg, Juliet B., Angus Hotel
 Eisenberg, Mrs. Lee, Angus Hotel
 *Elmquist, Nan C., 356 Pleasant Ave.
 Elsing, Helene, 985 Summit Ave.
 Emery, Rhoda J., 680 Smith Ave.
 Engberg, Dagmar F., 1064 Marshall Ave.
 Engberg, Edw. John, 1064 Marshall Ave.
 Englerth, Josie, Apt. 803, St. Agatha, St. Peter & Exchange Sts.
 Eustace, Helen M., 703 Portland Ave.
 Fanning, Mary G., 757 East 6th St.
 Fargo, Eleanor C., 852 Lincoln
 Fayerweather, Mary, 535 Ashland Ave.
 Feely, Elizabeth, 2135 Lincoln
 Felsted, Jessie M., 1996 Carroll Ave.
 Ferguson, Mrs. James C., 931 Portland Ave.
 Finkelstein, Mrs. M. L., 834 Goodrich Ave.
 Fitzpatrick, Mrs. Thomas C., 726 Summit Ave.
 Foerster, Alma I., 787 W. Winifred St.
 Foote, Ray H., 1632 Blair St.
 Fosnes, Agnes N., 651 Ivy St.
 Fosnes, Walter, 651 Ivy St.
 Foster, J. Maude, 271 Selby Ave.
 Foulke, Edith, 1209 Ashland Ave.
 Fox, Agnes Isabel, 2927 Park Ave., Minneapolis
 Fraser, Harriet R., 109 W. Summit Ave.
 Frederick, B. Gladys, 260 Kent St.
 Freeman, Mrs. Clarence R., 496 Marshall Ave.
 Gallagher, Lulu, 838 Lincoln Ave.
 Garner, Eva, 908 Marshall Ave.
 Gaughan, Katherine, The Marlborough
 Gaughan, S., The Marlborough
 Garing, Maud P., 9 W. Delos
 Gerahaty, Bridget, 308 Como Ave.
 Gibson, Marie, 653 Grand Ave.
 Gilbert, Roy, 745 York St.
 Gill, Mary, 818 Ashland Ave.
 Gleason, Mary A., 884 Laurel Ave.
 *Goldberg, Ben, 596 Iglehart Ave.

- *Goldberg, I. G., 579 Carroll Ave.
 Goldman, Caroline R., 952 Summit Ave.
 Gorman, Alice, 727 East 3d St.
 Gorman, Mary, 727 East 3d St.
 Gorman, Mary, 547 Laurel Ave.
 Gould, Edna H., 135 Western Ave. No.
 Grant, Mary J., 648 Brown Ave.
 Graves, Ethel S., 672 Delaware Ave.
 Gray, Helen A., 543 E. Jessamine St.
 Grendall, Alice D., 401 Maple St.
 Gries, Estelle M., 695 Dayton Ave.
 Gruber, Minnie H., 1396 Grand Ave.
 Guiterman, Mrs. Alfred S., 730 Lincoln Ave.
 Guiterman, Mrs. R. S., 806 Linwood Place
 Hand, R., 591 Ashland Ave.
 Hansen, Gertrude, 868 Ottawa Ave.
 Hansen, Nancy E., 288 Dayton Ave.
 Hanstein, Mrs. W. F., 807 St. Clair
 *Harrington, Jerry, 262 Selby Ave.
 Hartwell, Mrs. S. O., 962 Osceola Ave.
 Haselbeck, Henry, 733 Jessamine St.
 Hauenstein, Leonilla, 948 Osceola Ave.
 Hayward, Della T., 1295 Goodrich
 Healy, Eva P., 875 Hague Ave.
 *Heck, Helen M., 418 Rice St.
 Heck, Jennie, 418 Rice St.
 Hedman, H. P., 984 Desota St.
 Hedman, Mrs. H. P., 984 Desota St.
 *Hefferman, Horace P., 2114 Beard Ave. So., Minneapolis
 Heffner, Ellen L., 299 Bates Ave.
 Heilbron, Mrs. Julius, 880 Goodrich Ave.
 Heinemann, Dorothy, 1177 Hague Ave.
 Heinemann, Margaret, 1177 Hague Ave.
 Hellner, Hilda C., 997 Margaret St.
 Hertz, Mrs. Ernest T., 1707 West 26th St.
 ††Hickman, John H., Jr., 533 Rondo St.
 Higgins, Mary M., 115 Western
 Higgins, Sarah F., St. Luke's Hospital
 Hille, Henry M., 102 South 4th St.
 Hirschman, Mrs. Hugo, 1576 Summit
 Hirschman, Mrs. Maude, 1855 Summit
 Hirshberg, Mrs. M., 70 Marlborough
 Hobson, Viola D., 2132 Iglehart Ave.
 Hodapp, A. P., 1200 Marshall Ave.
 Hoeborn, Elizabeth A., 679 Lincoln Ave.
 *Hoffman, A. Jerome, 1008 E. Lawson St.
 Hoffman, Minnie C., 1008 E. Lawson St.
 Holcomb, Mrs. F. A., 960 Payne Ave.
 Holcomb, Mrs. J. T., 599 E. Maryland St.
 Holcomb, Mrs. O. W., 703 Case St.
 Horeish, John H., 17 Wilken
 Hoskins, Eleanor, 1194 Dayton Ave.
 Hosmer, Alice M., 528 Ashland Ave.
 Houlihan, Edna M., 888 Aurora Ave.
 How, Mary W., 614 Grand Ave.
 Huber, Dora M., 624 Dayton Ave.
 Hudson, Anise, 252 Mason Ave.
 Iddings, Clara L., 1708 Laurel Ave.
 Jones, Mrs. Nancy W., 588 Grand Ave.
 John, Elsa, 373 Maple St.
 John, Louise, 373 Maple St.
 Johnson, Charlotte, 1009 Ashland Ave.
 *Johnson, George W., 874 Westminster
 Johnson, H. C., 687 Manomin Ave.
 Johnson, Jennie U., 439 N. Fairview
 Johnson, Julia, 939 Linwood Place
 Johnson, Laurie C., 716 Dayton Ave.
 Johnson, Mathilda, 1388 Capitol Ave.
 Johnson, Nettie, 1780 Wordsworth
 Johnson, Rose M., 859 East 3d St.
 Johnston, Ida A., 135 Western Ave.
 Jones, Mrs. A. L., 588 Grand Ave.
 Jones, R. O., 655 Portland Ave.
 Juds, Elsa E., 399 Western Ave.
 Kaldahl, Gertrude, 1486 Hythe St.
 Keane, M. F., 278 Dayton Ave.
 Kellett, Mary G., Aberdeen Hotel
 Kellogg, Gertrude, 810 Ashland Ave.
 ††Kelly, Alice M., 1985 Selby Ave.
 Kelly, Nellie M., 659 Conway
 Kennedy, Anne, 546 Portland Ave.
 Kennedy, Ella F., 741 Hague Ave.
 Kennedy, Jane, 436 Iglehart Ave.
 †Kessel, H. J., 1984 Marshall Ave.
 King, Margaret M., 842 Laurel Ave.
 Klinefelter, Fernica C., 374 Lookout Place.
 ††Knox, Leone, 276 Dayton
 Koerner, Olga, 1377 Granthan
 Kopple, Marguerite, 1032 Grand Ave.
 Kortmann, Wildemar E., 169 East Belvidere St.
 Krakaner, Rose, 682 Holly Ave.
 Kuck, Julius L., 1469 Lafond
 Kuester, R. E., 2039 Dayton Ave.
 Kult, Mary, 401 East Bernard
 Kurtz, Mrs. A. S., 886 Fairmount
 La Due, Harry J., care State Capitol, Game & Fish Dept.
 Lamb, June Ellen, 1169 Ashland Ave.
 Lambert, Marion C., 781 Laurel Ave.
 Landman, Ione H., 855 St. Clair
 Larkin, Jane V., 1204 Portland Ave.
 Larpenteur, Ethel, 737 Hudson Ave.
 Larson, Emanuel E., 991 Payne Ave.
 Laupp, Martha C., care Macalester College
 Lealtad, Grace, 465 Mackubin St.
 Lengby, Hilda C., 768 E. Lawson St.
 Leonard, Mary, 221 No. Victoria St.
 Levy, Alice, 918 Goodrich Ave.
 Levy, Mrs. I., 724 Laurel Ave.
 Lindeberg, Selma, 1964 Selby Ave.

- Lodge, Mary D., 304 Nelson Ave., So. St. Paul
- Long, Lily A., 589 Summit Ave.
- Lorensten, Lillian, 1003 Goodrich
- Luffin, Hamilton, 888 Union St.
- Lund, W. L., 69 No. Milton
- Luxien, Anna, 945 Hastings Ave.
- McCauley, A. M., 681 Holly Ave.
- McCJain, Hazel, 1453 Charles St.
- McCleary, Nellie M., 801 Goodrich Ave. Ave.
- McClellan, Mary F., 88 Kent St.
- McCormack, Elizabeth, 632 St. Peter St.
- McFetridge, Margaret E., 2071 Carroll Ave.
- McGroit, Eugene F., 313 Somerset St.
- McGrozy, Mary C., 1010 Security Bldg., Minneapolis
- McGuffin, Amy, 1845 Iglehart Ave.
- McGuffin, Katherine, 1845 Iglehart Ave.
- McGuire, Helen B., 769 Marshall Ave.
- McGuire, Margaret, 769 Marshall Ave.
- McGuire, Mary, 769 Marshall Ave.
- McShane, Martha F., 835 Holly Ave.
- McShane, Ellen, 835 Holly Ave.
- McVay, Secundella, 1988 Princeton Ave.
- Macdonald, Emma J., 778 Agate St.
- MacEwen, Nora H., 246 N. St. Albans St.
- MacKnight, Mary V., 355 St. Anthony Ave.
- Maguire, Helen F., Aberdeen Hotel
- Maitrejean, Martha J., 1668 Dayton Ave.
- Malone, Anna, 1197 Grand Ave.
- Maloney, Marguerite L., 358 Dale St.
- Maloney, Sadie L., 358 Dale St.
- Malvern, Dorothy H., 620 Ashland Ave.
- Manahan, Mrs. Jas., 876 Laurel Ave.
- Mann, Helen G., 766 Iglehart Ave.
- Mann, Helena, 908 Marshall Ave.
- Mann, Josephine M., 1662 Capitol Ave.
- Marron, John J., 17 Grove St.
- Marshall, Amy A., 601 Summit
- Marshall, J. E., 1724 Van Buren
- Martindale, Bessie E., 716 Iglehart Ave.
- ††Martinet, Leslie, 702 Holly Ave.
- Marzynski, Rose U., 295 Laurel Ave.
- Matson, Sadie L., 1936 Dayton Ave.
- Maxman, Mrs. Julius, 62 So. St. Albans St.
- Meeghen, Margaret E., Aberdeen Hotel
- Mellem, Lulu E., 2201 Scudder Ave.
- Metzger, Mrs. Lewis L., 30 So. St. Albans
- Meyer, Mrs. Gerson, St. Paul Hotel
- Miller, Gertrude B., 823 Aurora Ave.
- Minter, Esther, 892 Hague Ave.
- Moes, Marion, 307 Nelson Ave.
- Monkhouse, Marjorie L., 1799 Summit
- Morrisey, Winifred E., 1053 Charles St.
- Morton, Marguerite W., 824 Holly Ave.
- Moulton, Charity, 135 Western Ave. No.
- Mullaine, Nora E., 1656 Laurel Ave.
- Muller, Frances, 309 Dayton Ave.
- Muller, M. C., 276 No. Lexington
- Muller, Nellie C., 1441 Lincoln Ave.
- Muller, Therese C., 276 No. Lexington
- Munch, Terese, 652 East 5th St.
- Nelson, Anna K., 989 E. Minnehaha
- Nelson, Mrs. E. N., 1144 Laurel Ave.
- *Nelson, Henry, 704 So. Smith
- Neumann, Mrs. Minnie M., 947 Cromwell Ave.
- Newell, Frank J., 461 Dayton Ave.
- ††Newton, Elizabeth M., 1229 Selby Ave.
- Newton, Fay M., 1043 Goodrich Ave.
- Nichols, Georgia L., 117 No. Victoria St.
- Nordgren, Dan J., 345 Robert St.
- Norman, Mrs. E., 2201 Scudder Ave.
- Nudorf, Katherine E., 237 St. Albans
- O'Brien, Frances O., 583 St. Peter St.
- O'Brien, M. M., No. 10, The Seville
- O'Connell, Susan, 695 Dayton Ave.
- O'Keefe, N. M., 1021 Portland Ave.
- O'Toole, Mary, 1429 Portland Ave.
- Oas, E. A., Jr., St. Paul Park, Minn.
- Okon, Mrs. Axel, 735 E. Geranium St.
- ††Ollivier, Jeanne, 962 Osceola Ave.
- Olsen, Carolyne, 271 Selby Ave.
- Olson, Mina, 1233 Lafond
- Olson, Ruth S., Franklin School
- Ostergren, Mable C., 1153 Jessie St.
- Overby, Fred, 1354 Grand Ave.
- Parkenson, Laura D., 1789 Iglehart Ave.
- Patterson, F. D., 108 So. 3d Ave., So. St. Paul
- Patterson, George L., 61 So. St. Albans
- Pearson, Bessie, 771 York St.
- Pearson, Katie E., 185 Concord St.
- *Peterson, Dewey W., 309 Mackubin
- ††Pilger, Celina M., 1680 Capitol
- Pinska, Louise A., 1128 Laurel Ave.
- Platsch, Bianca, 757 Dayton Ave.
- Pollak, Mrs. Harry, 669 Grand Ave.
- Power, Fred S., 751 Goodrich Ave.
- Powers, Bernadine, 216 Genessee St.
- Prendergast, Alice, 408 Ashland Ave.
- Price, Myrtle, 374 Lookout Place
- Quilligan Mary, 258 Dayton Ave
- Raudenbush, Mrs. W. R., 791 Linwood Place
- Rawles, May, 1950 Selby Ave.
- Rawlinson, Mrs. Anna I., 261 Fisk St.

- Reeves, Leah M., 1057 Edgerton St.
 Regan, M. Maude, 493 Hall Ave.
 Reitmann, Olive, 599 Ashland Ave.
 Rice, Virginia, 585 Portland Ave.
 Richards, Grace E., 535 Ashland Ave.
 Rittenberg, Mrs. Oscar, 57 So. Aron St.
 Roberts, Margaret Eleanor, 576 Carroll Ave.
 Robertson, Gordon A., 1580 Margaret St.
 Rohrer, Mertie, 766 Iglehart
 ††Roisner, Rebecca F., 1211 Como Blvd.
 Rose, Mrs. A. W., 701 Summit Ave.
 Rose, Mrs. Nathan S., 857 Fairmont
 Ross, Eleanor M., 515 Manomin Ave.
 Rothschild, Mrs. Herman, 1032 Grand Ave.
 Roverud, Ella M., 643 Laurel Ave.
 Rowles, May O., 1958 Selby Ave.
 Ruddy, Harriet E., 140 East 10th St.
 Rush, Mary C., 969 Linwood Place
 Russell, Irene E., 1615 Hague Ave.
 Ryan, Mrs. Alice, 2087 Selby Ave.
 Rypins, Esther F., 210 So. Victoria
 Sander, Theodore, Jr., 459 Fuller Ave.
 Schow, Mayme J., 224 East Page
 Schuneman, Carl T., 535 Grand Ave.
 Schwartz, Rachel B., 699 Ashland Ave.
 Scott, Alfretta, Piedmont, Apt 49 A
 Scott, Edith, The Seville, No. 7
 Seidlitz, Lulu E., 738 East 4th St.
 Sexton, Catherine A., 790 Dayton Ave.
 Sexton, Katherine E., 695 Carroll Ave.
 Sexton, Margaret M., 790 Dayton Ave.
 Sexton, Mary J., 790 Dayton Ave.
 Seymour, Mary B., 2215 Dayton Ave.
 Shanley, Helen, 361 Stryker Ave.
 Shedorsky, Lena, 204 Western Ave.
 Shedorsky, Sara, 204 Western Ave.
 Shields, Alice, 89 Mackubin St.
 Shinsky, Florence L., Apt. 86, The Marlborough
 Simmonds, Edith F. A., 1079 Goodrich Ave.
 Simmonds, Marian E., 1079 Goodrich Ave.
 Simon, Clara J., 1065 Van Slyke Ave.
 Simon, Mrs. J. G., 81 So. Victoria
 Simon, L. Louise, 81 So. Victoria
 Simpson, Mrs. E. C., 704 Ashland Ave.
 Simpson, Mildred, 704 Ashland Ave.
 Sjoberg, Martha H., 1159 Hague Ave.
 Skinners, Mary, 201 Goodrich Ave.
 Slattengren, Hattie, 600 Laurel Ave.
 Slavik, John, 372 Walnut St.
 Sliney, Elizabeth J., 736 Holly Ave.
 Sliney, Catherine A., 736 Holly Ave.
 Smith, Gertrude Gray, 1676 Capitol Ave.
 Smith, Grace V., 937 Ottawa
 Smith, Margaret L., 405 Ashland Ave.
 Spell, Ella May, 403 Dewey Ave.
 Spates, Anna E., 844 Hague Ave.
 Springer, Frances, 526 Canada St.
 Stapleton, Julia M., 102 Western Ave. No.
 Stapleton, M. A., 102 Western Ave. No.
 Steffanus, Clara, 378 St. Clair St.
 Sternberg, Hattie, 30 So. St. Albans St.
 Stevens, Elizabeth M., 77 Mackubin
 Stevenson, Edith, Glenoren, White Bear Lake, Minn.
 Straus, Mrs. Charles, 842 Summit Ave.
 Strauss, Gertrude, 661 Grand Ave.
 Stroble, Elizabeth, 591 Ashland Ave.
 Struad, Mary A., 339 Webster St.
 *Stutzman, W. J., 1019 East 3d St.
 Sullivan, Mrs. Lillian X., 1793 Iglehart
 Sullivan, Hanna M., 1074 Lombard Ave.
 Swan, L. G., 679 Lincoln Ave.
 Swanson, Martha O., 2519 Grand Ave.
 Swanstrom, Mrs. M. M., 949 Pacific Ave.
 Sweney, John, 150 Smith Ave.
 Taylor, Edith B., 1430 W. Minnehaha St.
 Thiers, Carl, 397 Maple St.
 Thompson, Clara E., 345 W. 6th St., Flat 3
 Thomson, Clyde S., 1146 W. Central
 Thomson, Eva F., 1902 Cayroll Ave.
 Tolson, Edgar, 856 Albemarle St.
 Tracy, Matilda, 2053 Lincoln Ave.
 *Tschida, Katherine, 826 Sherburne Ave.
 Tucker, Florence, 766 Iglehart
 Turner, Lena M., 325 Charles St.
 Turnhull, Margaret, 129 Cayugo St.
 Turnquist, H. B., 888 Burr St.
 Varney, Bertha M., 529 Holly Ave.
 Veigel, Mrs. A. J., 941 Osceola Ave.
 Vierling, Louise C., 824 Hall Ave.
 Wallenberg, Edith, 482 Fuller Ave.
 Walstrum, Emma C., 5164 Fairmont Ave.
 Warner, Mrs. Eugene, 1118 Lexington
 Warner, Mrs. H. F., 533 Portland Ave.
 Waters, Marie G., 280 W. University
 Wedge, Daisy Agnes, 775 Portland Ave.
 Weiskoff, Mrs. Robert G., 306 Oak Grove St.
 Weiskoff, Mrs. William, 766 Linwood Place
 Weiss, Evelyn, 1177 Lincoln Ave.

Westheimer, Mrs. Jacob, 846 Summit Ave.
 Whitman, Jessie L., 2356 Bayliss Ave.
 Whitman, Nina, 2356 Bayliss Ave.
 Whitney, Maude H., 757 Dayton Ave.
 Wilcockson, Lillian M., 412 W. Wy-
 oming
 Williams, Catherine, 235 Arundel St.
 Williams, Mrs. F. D., 151 Western Ave.

Williams, Isabel, 554 Holly Ave.
 Williams, Laura A., 235 Arundel St.
 Willner, Mrs. A., The Marlborough
 Withrow, L. E., 826 Dayton Ave.
 Wolfe, Mrs. B., 845 Lincoln
 Works, Mrs. Samuel D., 1073 Good-
 rich Ave.
 Yost, L., 294 Dayton Ave.

ENGINEERING

Aamodt, Oscar, 3647 Colfax Ave. No.
 Ackley, Henry B., 4245 Aldrich Ave.
 So.
 Ackman, John H., 3616 34th Ave. So.
 Adams, Linthon E. C., St. Louis Park
 Adams, Marguerite E., 204 W. Grant
 St.
 Ahlquist, Carl, 4608 32d Ave. So.
 Albright, H. L., 2107 Oliver Ave. No.
 Almendinger, C. F., Minnesota Sol-
 diers' Home
 Alton, Albert R., 402 2d Ave. S.E.
 Alton, William M., 402 2d Ave. S.E.
 Anderson, A. E., 3341 Stevens Ave.
 Anderson, Charles A., 253 Queen Ave.
 No.
 Anderson, C. J., 3245 21st Ave. So.
 Anderson, D. E., 946 Burr St., St. Paul
 Anderson, Emil, 663 York St., St. Paul
 Anderson, E., 2817 East 24th St.
 Anderson, Gerald, 1152 Laurel Ave., St.
 Paul
 Anderson, Gust., 1902 4th Ave. So.
 Anderson, Herbert E., 2315 Pierce St.
 N.E.
 Anderson, J. E., 424 Beacon Ave., St.
 Paul
 Anderson, Lloyd F. D., 928 Franklin
 Terrace
 Anderson, Paul Gerhard, 711 Erie St.
 S.E.
 Anderson, Peter C., 2903 36th Ave. So.
 Anderson, R. C., 3340 17th Ave. So.
 Arness, O. J., 332 Oak Grove St.
 Asmussen, John, 2021 4th St. No.
 Auge, Henry H., 2125 Emerson Ave.
 No.
 Ayers, W. E., 217 No. Snelling Ave.,
 St. Paul
 Bailey, J. A., 3039 31st Ave. So.
 Balkins, Ellis H., 1918 Buchanan St.
 N.E.
 Barnum, Chas. R., 1430 Van Buren St.,
 St. Paul
 Barrett, Arnold B., 3351 Emerson Ave.
 No.

Barrett, Raymond M., 2804 41st Ave.
 So.
 Bartishofski, Frank, 841 Arcadia St., St.
 Paul
 Bastis, Emil T., 248 22d Ave. So.
 Batzli, O., 4231 Humboldt Ave. No.
 Bedahl, Leonard C., 1464 Charles St.,
 St. Paul
 Behmer, W. H., 1412 Portland Ave.
 Behrens, Fred F., 1498 Albany, St. Paul
 Belivean, Arthur A., 877 Carroll Ave.,
 St. Paul
 Benjamin, W. A., 756 Iglehart Ave., St.
 Paul
 Benson, John, 521 9th St. So.
 Benson, Olaf, 521 9th St. So.
 Benson, R. E., 2864 Irving Ave So.
 Bilodeau, Arthur R., 1602 University
 Ave. N.E.
 Bishop, Robert, 1830 Stevens Ave.
 Bishop, Robert K., 1615 Stevens Ave.
 Bjerken, Maurice H., 3205 Bloomington
 Ave.
 Bjorke, Emil, 2218 28th Ave. So.
 Bjostad, Leonard, 789 E. Jessamine St.,
 St. Paul
 Bjostad, Louis, 789 E. Jessamine St., St.
 Paul
 Bjurstrom, Axel R., 703 19th Ave. N.E.
 Blaisdell, J. H., 1401 Yale Place
 Bledge, William, 2722 West 44th St.
 Bliss, Harold S., Harmon Hotel
 Bloomiss, Ernest, 1507 Stevens Ave.
 Boddy, J. M., 2409 1st Ave. So.
 Boker, John, 88 Arthur Ave. S.E.
 Boker, Vitus A., 88 Arthur Ave. S.E.
 Borden, J. F., 2026 Laurel Ave., St.
 Paul
 Bortel P. F., 1043 Security Bldg.
 Bovaird, Ellis L., 709 Cherokee Ave.,
 St. Paul
 Bowers, E. Clair, 1679 Taylor Ave.
 Bowman, James A., 3108 33d Ave. So.
 Bracklow, Edward L., 2823 Fremont
 Ave. No.
 Bramhall, C. E., 3400 33d Ave. So.

- Brasser, James R., 3015 29th Ave. So.
 Bravo, Tony, 50 Irvin Park, St. Paul
 Breivid, I. Martin, 3245 22d Ave. So.
 Breivid, Carl, 3656 38th Ave. So.
 Brown, J. A., 1608 Stevens Ave.
 Buetow, C. H., 428 No. Victoria St.,
 St. Paul
 Bunt, Donald, 1232 Marshall Ave., St.
 Paul
 Burandt, F. F., 3724 16th Ave. So.
 Burns, Robert H., 1414 6th St. S.E.
 Bursell, G. W., 4812 28th Ave. So.
 Bushnell, John W., 2157 Common-
 wealth, St. Paul
 Butler, William C., 2013 Irving Ave.
 No.
 Byrne, Philip J., 859 Sherburne Ave.,
 St. Paul
 Caldwell, W. A., 1711 Selby Ave., St.
 Paul
 Capwell, Claud C., 1800 Aldrich Ave.
 No.
 Cargill, Richard R., Decorah Hotel
 Carlborn, Theo, 4015 Girard Ave. No.
 Carlson, Oscar H., 2632 17th Ave. So.
 Carlson, P. G., 3216 31st Ave. So.
 Carlson, Verner, 2628 13th Ave. So.
 Carter, Chillis I., 919 Chicago Ave.
 Cashin, Charles V., 223 Oak Grove St.
 Caswell, Arthur D., 527 13th Ave. S.E.
 Chilson, Horace B., 1512 2d Ave. So.
 Christensen, LeRoy C., 141 E. Brompton
 St., St. Paul
 Christiansen, Axel A., 1814 So. 5th St.
 Churchill, Donald J., 4231 Scott Terrace
 St. Paul
 Clarke, Habbley W., 1396 Lincoln Ave.,
 St. Paul
 Clayton, L. R., Plaza Hotel
 Cloud, N. E., 2429 Broadway N.E.
 Collopy, E. J., 3200 Clinton Ave.
 Cory, Harry H., Y. M. C. A.
 Cowling, Charles W., 184 W. Robie, St.
 Paul
 Crasser, Eugene, 3615 Nicollet Ave.
 Creighton, William J., 119 Union St.
 S.E.
 Cunningham, James B., 394 Dayton
 Ave., St. Paul
 Dahl, Irvin, 1541 Charles St., St. Paul
 Dean, W. M., 423 Buchanan St. N.E.
 Deggondry, Joseph, 1600 Arthur Ave.
 S.E.
 De Marais, Lowell F., 2701 Dupont
 Ave. So.
 Desmond, W. A., 3457 Dupont Ave. No.
 Dewey, John C., 3111 East 31st St.
 Dice, Frank L., 1801 3d Ave. So., Apt,
 101
 Didion, Vincent, 911 Beech St., St.
 Paul
 Dix, Mike, 3018 Penn Ave. No.
 Dobbs, Loyle D., 616 12th Ave. S.E.
 Donagher, J. D., 2704 15th Ave. So.
 Doolittle, William K., 1630 Selby Ave.,
 St. Paul
 Doror, J. P., 3024 Elliott Ave.
 Dorrance, Harold W., 423 Harrison
 Ave., St. Paul
 Doupe, William V., 22 W. Dearborn
 St., St. Paul
 Drake, Ralph S., 806 4th St. S.E. .
 Drews, Eric H., P. O. Box 52
 Duckworth, Floyd L., 758 Dayton Ave.,
 St. Paul
 Durr, C. Warren, 409 Virginia Ave.,
 St. Paul
 Eberlen, Theo. H., Jr., 558 Edmund St.,
 St. Paul
 Edstedt, John, 1516 Adams St. N.E.
 Elberlie, Thos. Farr, 583 Lincoln Ave.,
 St. Paul
 Ellingsen, Ernest E., 415 4th St. S.E.
 Elliott, Ernest E., 2413 Cole Ave. S.E.
 Elmund, George, 1251 Edmund St., St.
 Paul
 Engberg, Elmer V., 2809 5th Ave. So.
 Engberg, Oscar S., 2809 5th Ave. So.
 Erickson, August H., 1601 11th Ave.
 So.
 Erickson, Herman C., 171 E. Cook St.,
 St. Paul
 Fairbanks, Dudley A., 341 No. Snelling
 Ave., St. Paul
 Falk, Byron A., Hotel Windsor, Apt.
 416, St. Paul
 Fark, Elmer L., 710 Lafond St., St.
 Paul
 Faulian, George E., 3025 29th Ave. So.
 Fellrath, Frank C., 301 West 4th St.,
 St. Paul
 Felton, Leo, 940 Thomas St., St. Paul
 Ferguson, George A., 1523 Washing-
 ton St. N.E.
 Fischer, Bert L., 3519 15th Ave. So.
 Fitzgerald, Joseph, 2942 Taylor St. N.E.
 Flanagan, John B., 1262 Edmund, St.
 Paul
 Fogarty, Daniel E., 3945 11th Ave. So.
 Fogarty, Edwin D., 3945 11th Ave. So.
 Foley, Mike, 318 Oak St.
 Foley, Stephen L., 666 Western Ave.,
 St. Paul
 Fordington, LeRoy N., 517 15th Ave.
 S.E.
 Forsman, J. A., 101 E. Dearborn St.,
 St. Paul

- Fortune, J. W., 837 Marshall Ave., St. Paul
- Fox, Allen H. F., 320 Ontario St. S.E.
- Frank, Adolph, 175 Atwater, St. Paul
- Frank, Richard, 24 No. 12th St.
- Fraser, J. E., 2385 Pearl St., St. Anthony Pk., St. Paul
- Frenz, C. K., N. P. R. R. Bldg., Room 1228, St. Paul
- Frost, E. E., 4421 Zenith Ave. So.
- Fuedrich, A. R., 2417 25th Ave. So.
- Funk, A. C., 470 Greenwood, St. Paul
- Gardner, John Edward, So. St. Paul
- Gehhardt, R. H., 2611 Pillsbury Ave.
- Geis, Joseph P., 2736 Hennepin Ave.
- Gerlach, Henry C., 408 4th St. S.E.
- Gibson, John, Room 722, Y.M.C.A.
- Gilbertson, Ralph E., 2524 Bloomington Ave.
- Gillard, H. W., 1671 Marshall Ave., St. Paul
- Gillespie, R. E., 1427 Hague Ave., St. Paul
- Illis, John, 701 9th St. So.
- Godette, William M., 852 Albemarle St., St. Paul
- Golfus, Charles, 706 Queen Ave. No.
- Goring, John C., 3612 34th Ave. So.
- Grabow, Fred C., 4600 Pleasant Ave. So.
- Graf, John, 2824 33d Ave. So.
- Graham, John W., 16 Nourse St., St. Paul
- Grant, E. E., 322 17th Ave. So.
- Grant, Mable K., 204 W. Grant St.
- Graves, Lewis B., R. R. No. 1, St. Louis Park
- Greshl, John, 1009 Western Ave., St. Paul
- Gustafson, Richard, 45 Spruce Place
- Gustafson, S. O., 2225 30th Ave. So.
- Hagland, J., 3314 17th Ave. So.
- Hancock, Geo. W., Jr., 1493 Ashland Ave., St. Paul
- Hanford, D. W., 5124 29th Ave. So.
- Hannar, Conrad H., 2105 Lyndale Ave. So.
- Hansen, C. P., 1027 14th Ave. S.E.
- Hansen, J. W., 3410 19th Ave.
- Harrington, Archie D., 2602 Pleasant Ave.
- Harris, E. W., 24 Washington Ave. No.
- Hartman, Roy H., 1272 Charles St., St. Paul
- Hasselo, Charlie, 525 9th St. So.
- Haugen, Iner, 2408 30th Ave. So.
- Haxton, Edwin B., Flat 3, 535 Asbury Ave., St. Paul
- Heaner, Henry, 1416 3d Ave. So.
- Heath, Chas. H., 621 11th Ave. S.E.
- Heckmann, George, 1891 W. Minnehaha St., St. Paul
- Helgernd, John, 2529 10th Ave. So.
- *Heller, George, 2737 Garfield Ave.
- Hellier, Martin A., 3635 Fremont Ave. No.
- Helmick, Dan S., 1014 13th Ave. S.E.
- Henriksen, Alpha, 2507 Nicollet Ave.
- Herre, John, 3115 17th Av. So.
- Herrewig, Walter, 1302 Watson Ave., St. Paul
- Hewitt, Frank L., 2913 17th Ave. So.
- Heylman, L. R., 612 Central Park Place, St. Paul
- Hinman, Chas. Hyatt, 3044 34th Ave. So.
- Hirsch, Joseph, care Mpls. Steel & Machinery Co.
- Hobart, Victor, 1416 Portland Ave.
- Hoffman, E. L., 3657 18th Ave. So.
- Hoffman, John Frederick, 1985 Prospect Ave., St. Paul
- Hoffman, Victor R., 1409 Vine Place
- Hoffman, Wilbur H., 648 Laurel Ave., St. Paul
- Holden, Herman A., 2321 Grand Ave. S.
- Holman, Henry W., 628 St. Peter St., St. Paul
- Holtan, H. O., 2912 Girard Ave. So.
- Holzinger, Joe, 4223 Pillsbury Ave.
- Horde, Ed., 3332 23d Ave. So.
- Houle, C. A., 3204 Minnehaha Ave. So.
- Hovde, Ed, care Mpls. Steel & Machinery Co.
- Hoyt, J. W., 3820 13th Ave. So.
- Huevler, J., 2463 University Ave., St. Paul
- Huggins, F. H., 3216 Chicago Ave.
- Hull, George E., 5004 Abbott Ave. So.
- Hult, Dewey E., 2519 Penn Ave. No.
- Inman, John, 112 So. 9th St.
- Ives, William, 615 N. W. Bldg.
- Jackson, Aug., 4129 Park Ave.
- Jacobs, Chas. William, Central Y. M. C. A.
- Jacobs, E., State Boiler Inspector, Old Capitol, St. Paul
- Jacobson, Andrew, 3031 14th Ave. So.
- Jacobson, L. H., 2711 Dean Blvd.
- Jacoby, Roy, 655 Edmund St., St. Paul
- Jandrick, Henry M., 369 Duke St., St. Paul
- Johanson, Alf E., 1588 East 7th St., St. Paul
- Johnson, Arthur D., 718 13th Ave. S.E.
- Johnson, A. L., 4036½ Vincent Ave. S.

- Johnson, Elmer, 1306 Lincoln St. N.E.
 Johnson, Fred J., 625 E. Franklin Ave.
 Johnson, George L., 3248 42d Ave. S.
 Johnson, Hannah, 1101 7th St. So.
 Johnson, Harry C., 930 21st Ave. S.
 Johnson, Harry V., 647 Marshall Ave.,
 St. Paul
 Johnson, Herman, 509 12th Ave. No.
 Johnson, James V., Jr., 1645 Hewitt
 Ave., St. Paul
 Johnson, Kenneth A., 385 Clinton Ave.,
 St. Paul
 Johnson, William G., 926 Fulton St.
 S.E.
 Jones, L. W., 449 Frey St., St. Paul
 Jones, Reginald E., Y. M. C. A.
 Jones, Trevor V., 2636 16th Ave. So.
 Jorgenson A. M., 843 Selby Ave., St.
 Paul
 Juhl, W. A., 51 South 11th St.
 Julsrud, Rolf Scott, 3149 Fremont Ave.
 So.
 Kalar, J. L., 179 Malcolm Ave. S.E.
 Kalf, A. M., 65 Central Terrace, St.
 Paul
 Kallman, Otto S., 2226 26th Ave. So.
 Kalton, M. A., Excelsior, Minn.
 Keeton, E. B., 3131 Chicago Ave.
 Kelly, Roy D., St. Louis Park
 Kenny, Clyde Chas., 1820 Stevens Ave.
 Kephart, George E., 629 University
 Ave. S.E.
 Kinkel, Sam A., 3421 Portland Ave.
 Klopp, Edward F., 763 Ashland Ave.,
 St. Paul
 Kobohm, John F., 2835 Girard Ave. So.
 Koch Ralph, 1913 Penn Ave. So.
 Kolar, James L., 179 Malcolm Ave. S.E.
 Krapp, Henry P., 369 W. Central Ave.,
 St. Paul
 Krevelin, R. Gan, 3216 29th Ave. So.
 Kronstedt, Anton S., 8 Melbourne Ave.
 Krumbholz, Leo, 3352 34th Ave. So.
 Kubias, Ralph, 2704 3d Ave. So.
 Kuester, Louis C., 2039 Dayton Ave.,
 St. Paul
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 No.
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 Lantz, Leland, 349 Cook St., St. Paul
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 Larson, Carl P., 324 East 17th St.
 Larson, Clarence M., 1051 16th Ave.
 S.E.
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 Larson, George A., 278 Goodrich Ave.,
 St. Paul
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 Ave.
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 Bank Bldg.
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 Paul
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 So.
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 Paul
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 Leridahl, Harold F., 612 Jenks St., St.
 Paul
 Lewis, Herbert N., 1508 26th Ave. N.E.
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 St.
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Paul
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St. Paul
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Paul
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Paul
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Paul
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S.E.

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- Stegner, E. W., 307 East Winifred St., St. Paul
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- Stewart, William J., 3604 13th Ave. So.
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- Tollen, John, 2213 Taylor St. N.E.
- Tonsfeldt, Wynne D., care Swedish Hospital
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- Udelle, J. E., 3318 Tyler St.
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- Vander Meulen, John, 259 Stevens, St. Paul
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- Vesely, Loins A., 86 Park Place, St. Paul
- Vick, Ole, 3228 30th Ave. So.
- Vievering, William, 2360 Hampden Ave., St. Paul
- Vitcak, Andrew J., 45 W. Maryland St., St. Paul
- Wagner, A. H., 2805 Girard Ave. So.
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WILLIAM O. BEAL, M.S., M.A., Assistant Astronomer
EMMETT L. BENNETT, M.A., Secretary Municipal Reference Bureau, General Extension Division
LOUIS L. BERNARD, Ph.D., Associate Professor of Sociology
ROY G. BLAKEY, Ph.D., Professor of Economics
GISLE BOTHNE, M.A., Professor of Scandinavian Languages and Literatures
OSCAR C. BURKHARD, Ph.D., Assistant Professor of German
EDWARD G. CHEYNEY, B.A., Professor of Forestry
JOSEPH E. CUMMINGS, M.A., Instructor in Economics.
JAMES DAVIES, Ph.D., Assistant Professor of German
HERMIONE L. DEALEY, Ph.D., Assistant Professor of Educational Psychology
JOHN F. EBERSOLE, M.A., Professorial Lecturer in Economics
OLIVER C. EDWARDS, B.S., M.E., Assistant Professor of Mechanical Engineering, General Extension Division
ETHEL ELLIOTT, B.A., Teaching Fellow in Romance Languages
DONALD N. FERGUSON, B.A., Assistant Professor of Pianoforte
ROSS L. FINNEY, Ph.D., Assistant Professor of Educational Psychology
SYBIL I. FLEMING, M.A., Instructor in History, University High School
JULES T. FRELIN, B.A., Assistant Professor of Romance Languages
ROBERT W. FRENCH, B.S. in C.E., Assistant Professor of Drawing
JOHN E. GRANRUD, Ph.D., Professor of Latin
MARGUERITE GUINOTTE, Brevet Supérieur, Certificat d'Aptitude Pédagogique, Instructor in Romance Languages
ALVIN H. HANSEN, Ph.D., Associate Professor of Economics
CAMILA HENRÍQUEZ-UREÑA, M.A., Teaching Fellow in Romance Languages
LEWIS B. HESSLER, Ph.D., Instructor in Rhetoric
REWEY B. INGLIS, B.A., Instructor in English, University High School

¹Resigned, July 1, 1920.

CORRESPONDENCE COURSES

- AUGUST C. KREY, Ph.D., Associate Professor of History
 SAMUEL KROESCH, Ph.D., Assistant Professor of German
 ALBERT J. LOBB, Ph.B., LL.B., Assistant Professor of Political Science
 RUPERT C. LODGE, M.A., Assistant Professor of Philosophy
 FRANCES E. LOWELL, Ph.D., Instructor in Psychology
 GEORGE A. MCGARVEY, B.A., Supervisor of Trade and Industrial Education, State Department of Education
 JOHN V. MARTENIS, M.E., Associate Professor of Mechanical Engineering
 WALTER R. MYERS, Ph.D., Assistant Professor of German
 CHARLES W. NICHOLS, Ph.D., Assistant Professor of Rhetoric
 CHARLES E. OLSON, B.A., Assistant in Accounting
 ARTHUR F. PAYNE, M.A., Assistant Professor of Trade and Industrial Education
 RUTH S. PHELPS, M.A., Associate Professor of Romance Languages
 JOSEPH B. PIKE, Ph.D., Professor of Latin
 CHESSLEY J. POSEY, M.S., Assistant Professor of Geography
 GEORGE C. PRIESTER, B.E., M.S., Assistant Professor of Mathematics and Mechanics
 ALBERT W. RANKIN, B.A., Professor of Education
 THOMAS H. SANDERS, M. Com., Assistant Professor of Accounting
 CHARLES ALBERT SAVAGE, Ph.D., Professor of Greek
 CARLYLE M. SCOTT, Professor of Music
 JOHN H. SHERMAN, B.A., Professorial Lecturer in Economics
 LESTER BURRELL SHIPPEE, Ph.D., Assistant Professor of History
 WILLIAM C. SMILEY, LL.M., Instructor in Business Law, General Extension Division
 HOMER J. SMITH, Ph.B., Assistant Professor of Trade and Industrial Education
 J. WARREN STEHMAN, M.A., Assistant Professor of Economics
 GEORGE M. STEPHENSON, Ph.D., Instructor in History
 ANDREW A. STOMBERG, M.S., Professor of Scandinavian Languages and Literatures
 EMERSON G. SUTCLIFFE, Ph.D., Instructor in Rhetoric and Public Speaking
 ARTHUR H. TAYLOR, M.A., Lecturer in Social and Civic Work
 GUSTAVE L. VAN ROOSBROECK, Aspirant Candidat, M.A., Instructor in Romance Languages
 SAMUEL VASCONCELOS, LL.B., Abogado, Instructor in Romance Languages
 QUINCY WRIGHT, Ph.D., Assistant Professor of Political Science

GENERAL INFORMATION

CORRESPONDENCE STUDY

The developments of the last few years have clearly demonstrated the effectiveness of, and the necessity for, university teaching by correspondence. The foremost American universities have recognized this opportunity for specific service by extending their work beyond the lecture room and the campus, in order to reach students who are unable to comply with the traditional limitations of university and college study.

In thus extending its functions the University offers a plan of practical instruction whereby preparatory, vocational, and collegiate training is made available to those who of necessity must devote a part of their time to other duties, and hence can not attend classes. Teaching by correspondence thus has become a part of the state educational system and has broadened it so that it now makes education possible to every person who is willing to make the effort to get it.

The subjects offered cover a wide range and give sufficient material for the needs of numbers of men and women intent on further study. Mathematics and certain lines of natural science, language, and literature, history, politics, economics, and the elements of philosophical and other social sciences, engineering, and business subjects afford a considerable breadth of selection.

By a careful economy of time it is possible to contribute largely to the requirements for a Bachelor's degree by combining work in residence at the University summer session with correspondence study under the General Extension Division.

FOR WHOM IT HAS SIGNIFICANCE

Correspondence teaching is of significance to several kinds of students: to the teacher, whom experience has taught the need of further study for individual satisfaction and professional efficiency; to the college graduate, who desires to take up some study which he did not pursue in his resident work; to the man or woman who left school early and who now feels the value of broader training to make life more interesting or work more productive; to the young high-school graduate who desires to begin his college course but is not able to enter school at once; to club women who wish to carry on organized study; to artisans, mechanics, electricians, and others interested in vocational subjects; and to business men and women who desire further training in their field of work. When correspondence teaching is fully developed, it can offer something to every one in the community, whatever his age, training, occupation, or interests.

ADVANTAGES

Correspondence study has many advantages to commend it. It accommodates itself to a person's spare time, enabling him to make valuable use of short periods which would otherwise be wasted; it permits

him to carry on work in a single field of study in which he has a special interest, to prepare for special occupations, to broaden his intellectual outlook to meet the demands of mature life, and to make up defects in education—defects one often does not realize until it is too late to attend school.

The student recites on every part of every lesson and receives the individual attention of the teacher in the correction of the papers he submits. Since a student is not hurried in his work, but may within reasonable limits take as much time as he needs for the preparation of a lesson, he can master the material thoroly and make every recitation report represent his best efforts.

Correspondence courses develop initiative, resourcefulness, and a sense of responsibility. They put a student on his mettle and make him the determining factor in the success of the work he undertakes.

THE INSTRUCTION

The teaching is done by instructors from the various faculties in the University who are in continuous charge of similar courses in residence and who are familiar with the needs of non-resident students. The courses are not mere duplicates of university work, but have been outlined and will be administered in such a way as to take advantage of the broader experience of the mature non-resident student.

Upon the receipt of the application and fee for any course the first lessons will be sent, together with instructions for study and for methods of preparation, and directions for making reports.

Each lesson contains questions to test the student's methods of work as well as his understanding of the ground covered. After preparing for recitation, the student writes his answers to the questions and returns them, together with a statement of any difficulties which may have arisen during his study.

Each recitation report will be returned to the student with such corrections, explanations, and suggestions as may be needed, and these should be carefully gone over. Lists of books, assignments for reading, and all necessary assistance will be furnished throughout the course, so that the student at no time will be left without adequate aid and guidance. Questions on the subject in hand are at all times encouraged.

THE UNIT COURSE

The unit course is divided, where practicable, into forty lessons, representing a five-credit course for one semester in residence. Such a course represents an amount of work equal to that done in residence at the University in a study of five full recitation hours per week for one semester or half-year. It is assumed that this work may be done by the average student in forty weeks with a minimum leisure for study of one hour per day, six days in the week. Variations from the unit course are indicated by the number of credits, or by the number of lessons when university credit is not allowed. Two lessons in correspondence approximately cover the ground in quantity of a week's work in residence.

High-school courses are arranged so that each lesson covers approximately a week's work in the high school.

CLASS WORK

The work here offered is primarily for individual students. When a group of twelve or more is pursuing the same course, however, in any community, the University offers to send an instructor at a nominal charge of five dollars for each visit, in order to direct personally either in the beginning of the term or occasionally at intervals the studies of the group.

SELECTION OF COURSES

In selecting courses for university credit, the student should conform to the prescribed course of study of each college. This is particularly necessary in the case of those taking up college work for the first time. It is advisable for such students to secure a copy of the bulletin of the college which they expect to enter, in order to find out what subjects are prescribed for the freshman year. Advice in the selection of courses is always freely given. Full information regarding preparation and aims should accompany requests for such advice. The bulletin of any of the colleges of the University may be secured from the University registrar.

HIGH-SCHOOL COURSES

High-school courses are offered in a limited number of subjects. It is hoped that additional subjects may be announced from year to year until enough are offered to enable the mature student to complete a full high-school course and thus prepare for college entrance by this means. The courses that are offered are given entrance credit in this University. The student may not be in attendance at any secondary school while he is taking such courses for university entrance credit. Information regarding entrance requirements is contained in the general information bulletin, a copy of which may be obtained from the University registrar. It should be borne in mind that beginning courses in foreign languages may be taken to satisfy entrance requirements, tho they also are considered of university grade.

BOOKS AND OUTFIT

All necessary textbooks, drawing outfits, and apparatus, are extra and *must be procured by the student*. Money should not be sent to the University for the purchase of texts and other material. The student also pays postage on lessons one way.

Every correspondence student, regardless of the course for which he enrolls, is expected to buy and use the pamphlet *How to Study*, by Swain, published by McGraw-Hill Book Company, 239 West 39th Street, New York, at twenty-five cents.

Some reference books may be borrowed from the University Library. This privilege does not apply to the necessary textbooks. The period of loan is one month. The student is expected to pay express or postage

both ways. Requests for such reference books should be addressed to The Librarian, University of Minnesota, Minneapolis, and the student should state explicitly what books are desired, with the author's name, title of the book, and the volume number, naming the course taken by correspondence and giving full instructions for mailing. Blanks are supplied for this purpose.

No list of textbooks is published by the Department.

PROCEDURE

The student who wishes to undertake correspondence study should first select such course or courses as he may desire to take and send for an application blank if he has not already obtained one. All applications must be made on the blank furnished by the Department. He should fill out the blank with all the information called for and return it with the required fee to the Correspondence-Study Department, General Extension Division, University of Minnesota, Minneapolis.

HOW TO SEND MONEY

Payment should be made by post-office or express money order, personal check, or draft. *Make all checks and orders payable to the University of Minnesota.* They should cover the exact amount of the fee, no more and no less. If the fee is not indicated in the description of the course, see Fees, page 9.

REGULATIONS

ADMISSION

All men and women who seem qualified to pursue successfully the courses offered will be admitted to registration without formal examination. The student is required to fill out an application blank giving all the information asked for in order that his fitness to pursue the course selected may be determined. It is desired that the student state fully the purpose he has in view in taking the work and give in detail such educational advantages, training, or experience as he may have had. The Department endeavors to meet the needs of the individual student by advice and suggestions, as well as by formal instructions, but whenever it finds that the courses selected are not for the best interests of the student, it reserves the right to reject the application or to advise change. It also reserves the right to advise discontinuance or change after a course has been started, if the student shows entire unfitness for the work. Whenever a registration is discontinued in this way or rejected, the fee will be returned.

TIME

Students may begin a correspondence course at any time during the year and will be required to complete the course within twelve months from the time of enrollment, but the Department *can not guarantee that all courses will be given during the summer months.* During an instructor's vacation, a substitute will be provided to carry on such course or courses, if possible, or the time for completing the courses will be extended. The student may work as rapidly as he desires provided his work is satisfactory.

As a rule the student should endeavor to send in a recitation report every week or at least one in two weeks. If it is not possible to do this the department should be notified. Temporary delays are, however, unavoidable in a busy person's work, and no student should become discouraged because of them and give up the attempt to complete the course upon which he has entered.

NUMBER OF COURSES CARRIED

Not more than two courses may be carried through correspondence at one time.

FEES

All fees are payable at the time the student files his application for registration. No reduction of fee is made for a combination of courses carried simultaneously. The fees are as follows:¹

Two-credit course—16 lessons.....	\$ 8.00
Three-credit course—24 lessons.....	12.00
Five-credit course—40 lessons	20.00
Six-credit course—40 lessons.....	20.00

¹If fees vary from this schedule, the amount is indicated in the description of the course.

No fee is refunded because of a student's inability to enter upon or pursue a course for which he has once registered. If an application for instruction is rejected, the fee is returned.

REINSTATEMENT

Any student whose registration has expired, or who has failed to complete a course within the prescribed time of one year through causes not within the control of the University, may be reinstated with the consent of the secretary on payment of one dollar for each course.

CREDIT

Correspondence courses remain on the semester basis of credit, altho the University is on the quarter basis. To translate semester credits to quarter credits, multiply by three halves.

Students who undertake correspondence-study work for university credit must state this fact in advance and comply with all requirements of the University, including the prerequisites for each course. University credits allowed in this connection will be recorded separately until the student matriculates at the University, when they will be recorded permanently as university credits. Registrations for credit will not be accepted unless evidence is given that university entrance requirements can be met. These requirements are ordinarily comprised in a four-year high-school course.

Those seeking a university degree must conform to all the requirements exacted by the college or school in which such degree is sought. The bulletin of any college or school may be obtained from the University registrar.

A maximum of one half of the required credits for the Bachelor of Arts degree may be accumulated through correspondence. The work of the earlier part of the course is more likely to be available for correspondence study. The work of the senior year, or the major portion of it, must be done in residence.

Normal school students who undertake courses for university credit with the purpose of having the credit transferred to the normal school in which they are working for a diploma should make certain by consultation with the proper authorities at the normal school that the arrangement to do this is satisfactory and that the course selected fits into their program of work.

Entrance credit is allowed for courses of high-school grade. See High-School Courses, page 7.

No credits may be earned by correspondence study to apply on the Master's degree, or any other graduate degree.

Notice of completion with or without credit, as the case may be, is sent by the University registrar to each student who satisfactorily completes a course.

PROFESSIONAL STATE TEACHERS' CERTIFICATE

The State Department of Public Instruction does not accept grades acquired through correspondence study in lieu of examination for credit toward the state professional or any other state teachers' certificate. Correspondence courses listed in this bulletin, however, may be taken as a preparation for the state examinations in the required branches.

RESIDENT STUDENTS

Registrations for correspondence courses will not be accepted from resident students of the University of Minnesota or of any other institution of learning unless acceptance would be justified by exceptional circumstances.

Persons pursuing correspondence courses for credit must discontinue them when they enter school. Arrangements may be made to hold the courses over until the student is again free to pursue them.

No university student may enroll for a correspondence course for the purpose of removing a condition or a failure.

EXAMINATIONS

All students on completing any course will be given an examination either at the University or, by arrangement, in their home towns under the supervision of an accredited representative of the University. This representative may often be the local superintendent of schools.

GRADE SYMBOLS

The following grade symbols are used to indicate the grade of any paper:

A (93-100)

B (87-93)

C (81-87)

D (75-81)

E (Conditioned)

F (Failed)

COURSES OF INSTRUCTION

ASTRONOMY

1. **DESCRIPTIVE ASTRONOMY.** A descriptive course designed to give accurate general information regarding the solar system and the stellar universe. Students will be expected to construct some simple inexpensive apparatus for themselves to aid in the comprehension of the subject. Altho not necessary, the student will find that a small telescope, or even an opera glass, will add greatly to the interest in the subject.

Twenty-four lessons (three university credits). BEAL.

2. **URANOGRAPHY.** A study of the constellations visible from the United States. The course includes an exposition of star magnitudes; use of star maps; identification of the constellations, brighter stars, variables, doubles, clusters, and nebulae; interpretation of the Milky Way; reading of star folk-lore; watching the motions of the brighter planets relative to the sun and stars. Each lesson is adapted to a particular month of the year. The course can be begun at any time.

Twelve lessons (no university credit). Fee, \$6.00. BEAL.

BUSINESS COURSES

1. **BUSINESS CORRESPONDENCE.** Mastery of materials, letters in general, complaint answers, reminder letters, recommendation letters, application letters, credit-adjustment letters, form letters, follow-up letters, general sales letters. The ability to use correct English is prerequisite.

Twenty-four lessons (no university credit). NICHOLS.

2. **BUSINESS LAW A—CONTRACTS AND AGENCY.** Contracts: Formation of contracts, offer and acceptance, consideration, capacity of parties, minors, married women, misrepresentation, fraud, legality of object, the operation of contracts, interpretation of contracts, methods of discharging contracts. Agency: Methods of forming the relation of agency, who may act as agent, who may act as principal, liabilities of principal to third parties, liabilities of agents, termination of agency.

The general rules of contracts being fundamental to all work in business law, this course must precede Business Law B.

Sixteen lessons (two university credits). SMILEY.

3. **BUSINESS LAW B—PERSONAL PROPERTY, SALES, BAILMENTS, NEGOTIABLE INSTRUMENTS.** Negotiable instruments, nature and characteristics, definition; the uniform negotiable instruments law, essentials, non-essentials, negotiations, indorsements and delivery, holder in due course and his rights, notice of dishonor, protest, checks. Personal property—bailments: definitions, distinction between real and personal property, nature of bailment, rights of bailor, rights of bailee.

Sales of personal property: definition of a sale; when the title passes to the buyer; rights of the seller (a) to set the contract aside on the ground of fraud, (b) the seller's lien for the purchase money, (c) right of stoppage in transit; rights of the purchaser to demand (1) goods of a certain quality, (2) warranty of the purchaser's title. Prerequisite, Course 2.

Sixteen lessons (two university credits). SMILEY.

4. PRINCIPLES OF ACCOUNTING. This is a course containing all the fundamental principles of accounting, together with sufficient practice work to show the application of these principles. The emphasis throughout is put upon principle rather than upon the details of method; but the practice material is made to conform to present-day methods as nearly as possible, and the course demonstrates what service accounting should render to business.

Part I treats of the fundamentals of debit and credit, the books of account, standard methods of recording transactions, accruals and adjustments, construction and interpretation of balance sheets and income statements, classification of accounts, the distinction between capital and revenue, and an introduction to partnerships.

Twenty-four lessons (three university credits). SANDERS and OLSON.

Part II is built up with corporation accounting as its leading feature, but gives further consideration to partnerships, and to certain essential accounting principles, such as valuation, depreciation, capital, and revenue. These general principles will be emphasized and made clear by application to various businesses by means of problems, in which manufacturing establishments will be included.

Twenty-four lessons (three university credits). SANDERS and OLSON.

NOTE: See also Course 3 under Economics.

ECONOMICS

1. ELEMENTS OF ECONOMICS, PART I. Price under competition and under monopoly; the factors of production and the principles determining the reward that the factors get in the shape of wages, rent, interest, and profit; principles of trade, including consideration of relative merits of free trade and protection; money; banks and banking; immigration; trade unions; stock exchange; concentration of industry; insurance; the economic functions of the state.

This course is designed to give a general understanding of our economic order. Special attention is given to a consideration of basic principles and to descriptive accounts of economic institutions.

Twenty-four lessons (three university credits). CUMMINGS.

2. **ELEMENTS OF ECONOMICS, PART II.** This course undertakes a more intensive study of the principles of price determination than was possible in Course I, especially as related to the problem of distribution. Further attention will be given certain important economic questions, such as the business cycle, the tariff problem, corporation finance, monopoly, public utility regulation, and projects of economic reform. Course I or its equivalent is a prerequisite.

Twenty-four lessons (three university credits). CUMMINGS.

3. **BANKING.** The subject-matter of this course constitutes the necessary basis of a thoro understanding of the principles of currency, banking, and finance. The lessons will survey all the practical operations of modern banks with chief emphasis upon commercial banking and with some attention to the legal problems to be met with in dealings between banks and their customers. Beginning with a description of the development of commercial banking, of savings banks and trust companies, the course will be developed under the following topics: how to organize a commercial bank; shareholders, directors and officers, their duties, powers, and liabilities; deposits, depositors, and the receiving teller; the paying teller and checks; the bank reserve; national bank notes; clearing houses; collections and domestic exchange; foreign exchange; loans and discounts, credit departments and how they judge credit; collateral loans; statements of condition; bank policy; supervision and examinations; central banks of England, France, and Germany, and the federal reserve system of the United States. Prerequisite for credit, Course I.

Twenty-four lessons (three university credits). EBERSOLE.

4. **ADVERTISING.** Functions and principles of advertising; advertising media; planning and executing an advertising campaign; relating the advertising campaign to the distribution system; selection of media; and preparation of copy. Prerequisite for credit, Marketing of Products.

Sixteen lessons (two university credits). SHERMAN.

5. **RETAIL MARKETING.** Problems and methods of the so-called regular retailer, department stores, and chain stores. Coöperation between the retailer and the local board of trade. The retailer and the consumer. Prerequisite for credit, Marketing of Products.

Sixteen lessons (two university credits). SHERMAN.

6. **LABOR PROBLEMS.** Modern labor problems; woman and child labor, industrial education, unemployment, poverty, industrial hygiene, welfare work, profit-sharing, coöperation, labor unions, strikes, boycotts, conciliation, and arbitration; economic causes and effects of immigration. Prerequisite for credit, six credits in economics, including Course I.

Twenty-four lessons (three university credits). HANSEN.

7. **PUBLIC FINANCE.** Governmental revenues, expenditures and debts. This includes a study of the various forms of taxation, of budgetary legislation and control, of war and emergency financing, of the shifting and incidence of taxation, and of fiscal reforms. Prerequisite for credit, Courses 1 and 2.
Twenty-four lessons (three university credits). BLAKEY.
8. **COMMERCIAL POLICIES.** Theory of international commerce, free trade, reciprocity, protection, and other governmental and organized efforts to affect trade, with special emphasis upon American policies in view of post-war conditions. Prerequisites for credit, Courses 1 and 2.
Sixteen lessons (two university credits). BLAKEY.

EDUCATION

1. **GENERAL PSYCHOLOGY**
See Courses 1 and 2 under Psychology.
2. **EDUCATIONAL PSYCHOLOGY.** A study of the fundamental problems of individual behavior as related to the learning process. These problems involve discussions of instinctive and emotional reactions, individual capacities, habit formation, mental and educational diagnosis. Courses 1 and 2 in psychology are prerequisite.
Twenty-four lessons (three university credits). DEALEY.
3. **HISTORY OF EDUCATION TO THE REFORMATION.** An introductory study in the history of education, with special attention to the education of Greece and Rome, and of the early Christian centuries, to the development of different types of schools in medieval times, and to the rise of the universities and of the humanistic schools of the Renaissance. The course is designed to arouse an interest in educational problems, to secure some perspective for use in current investigation, and to give some command of the facts of educational history and some facility in the methods of historical investigation. An attempt is made to bring out education as one phase of civilization and to show the connection of schools with other social institutions. Psychology 1 and 2 are prerequisite.
Twenty-four lessons (three university credits). ALEXANDER.
4. **HISTORY OF MODERN EDUCATION.** A somewhat intensive study of the periods in the history of modern education, with special reference to the development of the various national systems of public instruction. Different types of educational theory are considered in connection with a study of the men who first advanced them and of the schools in which they were first put into effect. This course is a direct preparation for an understanding of the educational systems,

theories, and practices of the present. Psychology 1 and 2 are prerequisite.

Twenty-four lessons (three university credits). ALEXANDER.

5. **RURAL SCHOOL MANAGEMENT.** The course treats of the technique of school management and instruction in the various subjects with special reference to the needs of the teacher in the one-room school. In addition it aims to acquaint teachers with the significance of the country life movement, giving a sort of elementary introduction to rural sociology, with special emphasis upon the standpoint of the school. The student will be expected to purchase two texts.
Eight lessons (one university credit). Fee, \$4. FINNEY.
7. **INDUSTRIAL EDUCATION.** The principles fundamental to vocational training in the public school system as affecting the arrangement of school years, the course of study, and the methods of teaching. Prerequisite for credit, History of Education.
Twenty-four lessons (three university credits). RANKIN.
8. **THEORY OF TEACHING.** An introductory course in educational theory, including a somewhat detailed study of the principles on which is based the present practice of teaching, with an interpretation of the fundamental facts of psychology as applied to the problems of education. The course is designed primarily for elementary school teachers. Prerequisite, 6 credits in psychology. In special cases a student may, by conference with the instructor, waive these prerequisites.
Twenty-four lessons (three university credits). ALEXANDER.
9. **SCHOOL ORGANIZATION AND LAW.** A comprehensive course in the organization and management of schools in American communities, with special reference to the duties of school boards and school superintendents, principals, and teachers, to the methods and equipment proper to schools of various grades, and to the main facts in the school law of Minnesota. Prerequisite for credit, History of Education.
Twenty-four lessons (three university credits). RANKIN.
10. **SCHOOL SANITATION.** This course is designed for those who are concerned with schools of any and all grades. It deals with conditions affecting the health of school children of all ages. School architecture, courses of study, and the discipline of the school will be considered as well as all other questions affecting the well-being of pupils. Prerequisite for credit, History of Education.
Twenty-four lessons (three university credits). RANKIN.
12. **SOCIAL ASPECTS OF EDUCATION.** This course is concerned with the school as an environment which is designed to fit its pupils for their social relations; also it discusses the school in respect to its interaction with other institutions of a similar character and aim. It

is a common remark that the school is becoming more and more a social institution, and this course attempts to determine in what respect and in what manner this is true. Prerequisite for credit, Psychology 1 and 2.

Twenty-four lessons (three university credits). RANKIN.

20. ORGANIZATION AND SUPERVISION OF VOCATIONAL EDUCATION. The course will include a careful study of the Smith-Hughes Act for vocational education. Particular attention will be given to the Minnesota plan for establishing vocational courses in our public schools. Consideration will be given to the various types of vocational schools, to adapting vocational courses to community needs, and to the methods of organization and supervision of courses. The methods of making an analysis of certain trades will be discussed, and recent vocational surveys will be studied.

Sixteen lessons (two university credits). MCGARVEY.

21. PROBLEMS IN VOCATIONAL EDUCATION. A general course for administrators in education and for teachers who aspire to supervisory and administrative positions. A partial list of topics discussed is: aims of vocational education; types of vocational education; relations to industry; relations to regular schools; teachers, methods of teaching; equipment; projects; federal and state laws; school, community, and industrial surveys; vocational guidance; vocational placement.

Sixteen lessons (two university credits). PAYNE.

22. SURVEYS OF SCHOOLS AND INDUSTRIES FOR PURPOSES OF INDUSTRIAL EDUCATION. An intensive course in the methods of surveying industries and trades for the purpose of discovering needs and opportunities for industrial education. Trade analyses will be made for the purpose of discovering educable elements. Methods of surveying schools and school equipment to discover needs and possibilities for any of the various forms of industrial education.

Sixteen lessons (two university credits). PAYNE.

23. METHODS OF ANALYSING AND CLASSIFYING TRADE KNOWLEDGE. A course for men and women with trade experience who wish to prepare for the teaching of shop work in day, part-time, and evening schools. Among the subjects treated will be the analysis and classification of trade knowledge; project analysis, arrangement of courses for specified conditions; lesson outlines; and the organization of teaching material. It is not intended in this course to take up subject-matter, the supposition being that those enrolled in the class have had sufficient trade experience to enable them to qualify as shop teachers.

Sixteen lessons (two university credits). PAYNE.

24. METHODS OF ESTABLISHING AND CONDUCTING PART-TIME SCHOOLS AND CLASSES. This course consists of three distinct units all of which

must be taken to secure credit for the course. These three units are the industrial survey, vocational guidance and placement, and the organization of subject-matter for part-time schools. The course is designed for public-school teachers who are interested in the problem of the part-time school and are looking forward to a teaching position of this kind.

Sixteen lessons (two university credits). SMITH.

25. **TEACHING OF RELATED SUBJECTS.** The purpose of this course is to meet the needs of teachers of related subjects, as science, mathematics, and drawing, who expect to teach these subjects. The organization of teaching units, related subject-matter, trade analysis, testing and checking results, discipline and records will be taken up in this course. Opportunities will be given to afford students to present and work out their own particular problems for immediate needs.

Sixteen lessons (two university credits). SMITH.

26. **HISTORY AND LITERATURE OF VOCATIONAL EDUCATION.** This course traces the development of our present system of vocational education; and makes a study of the forces back of the movement and the factors responsible for certain developments. The literature of the entire field is covered; students may specialize in certain phases of immediate interest to them.

Sixteen lessons (two university credits). SMITH.

27. **BUILDINGS, EQUIPMENT, MATERIALS, AND RECORDS FOR VOCATIONAL SCHOOLS AND CLASSES.** This course is primarily for those teachers of experience who wish to prepare for supervisory and administrative positions in the field of vocational education. Types of buildings will be studied, plans worked out for the remodeling of old buildings, purchasing and arrangement of equipment, the sources of supplies and materials.

Sixteen lessons (two university credits). SMITH.

ENGINEERING

1. **SHOP MATHEMATICS, PART I.** This course is for the practical man who desires training in mathematics to solve mechanical and electrical problems and will be found valuable by the teacher who is preparing to teach applied mathematics under the Smith-Hughes Act. It takes up arithmetic from fractions through proportion and contains problems in areas, volumes, weights of materials, screw threads, and gears. It teaches logarithms, the use of the slide rule, and the fundamental elements of machines, such as levers, pulleys, and the inclined plane.

Twenty-four lessons (no university credit). EDWARDS.

2. **SHOP MATHEMATICS, PART II.** This work is in advance of Part I and takes up algebra, geometry, and trigonometry from a practical shop standpoint. A thoro working knowledge of formulae is given. Each lesson in both Parts I and II has numerous practical problems to be worked by the student.

Twenty-four lessons (no university credit). EDWARDS.

3. **MECHANICAL DRAWING, PART I.** The course includes the use of instruments, lettering, views and sections, conventions, sketching, dimensioning, completed working drawings, and tracing. The course is designed to meet the needs of beginners.

Twenty lessons (no university credit). Fee, \$10. FRENCH.

4. **MECHANICAL DRAWING, PART II.** A continuation of Part I.

Twenty lessons (no university credit). Fee \$10. FRENCH.

NOTE: It is impossible to quote prices on drawing outfits. The cost will probably be from \$8 to \$12.

5. **ELEMENTARY MECHANICS.** A short, practical course in elementary mechanics designed to meet the needs of students who have had limited training in mathematics. Numerical and simple graphical calculations, forces, simple machines, velocity, acceleration, impulse, momentum, work, power, and energy are treated. Prerequisites, Courses 1 and 2 or their equivalents.

Twenty-four lessons (no university credit). EDWARDS.

6. **TECHNICAL MECHANICS.** This course is similar to Course 5, but it is more advanced, as it is written for those who have had calculus and wish to take work for university credit. It is offered in two parts. Prerequisite, Courses 18 and 19.

Part I. Twenty-four lessons (three university credits).

Part II. Twenty-four lessons (three university credits). EDWARDS.

7. **STRENGTH OF MATERIALS—ELEMENTARY.** An elementary course on the strength of materials in common use. It treats of properties of materials, stress and strain, elastic limit, ultimate strength, deformation, deflection, principle of moments, moments of inertia, and the general elementary theory of beams, columns, and shafts. Prerequisite, Courses 1, 2, and 5.

Twenty-four lessons (no university credit). EDWARDS.

8. **STRENGTH OF MATERIALS—ADVANCED.** This course is similar to Course 7 but takes up the subject in a more advanced manner. Prerequisite, Course 6.

Twenty-four lessons (three university credits). EDWARDS.

9. **ELECTRICITY AND MAGNETISM, PART I.** An elementary study of magnetism and electricity. Simple laws of magnetism, and the relation of magnetism to direct current electricity are developed. Series and

parallel circuits, and combinations of both, simple wiring and armature winding are taken up. A knowledge of arithmetic is necessary.

Twenty-four lessons (no university credit). EDWARDS.

10. **ELECTRICITY AND MAGNETISM, PART II.** This course is a continuation of Part I. It will deal with motors, generators, and instruments.

Twenty-four lessons (no university credit). EDWARDS.

11. **ALTERNATING CURRENTS.** This course takes up simple laws of alternating currents and their application to machines; inductance, capacity, and impedance are fully treated.

Twenty lessons (no university credit). EDWARDS.

12. **HEATING AND VENTILATING.** The course is intended to meet the needs of those who wish to know about the principles and installation of heating and ventilating apparatus. The work will include an introduction and study of heat, heat losses, heat loss due to ventilation, ventilation practice, air conditioning, heating systems—steam and hot-water, direct and indirect, use of exhaust steam, thumb rules, warm-air systems, fan systems—plenum and exhaust systems, vacuum systems, piping systems, central-station heating, and heating accessories.

Twenty-four lessons (no university credit). MARTENIS.

13. **ARITHMETIC.** A short course in arithmetic for those who are engaged in boiler-room practice and need to learn how to do the necessary figuring connected with steam boilers and boiler accessories. It gives work in multiplication, division, fractions, decimals, areas, etc.

Ten lessons (no university credit). Fee, \$5. EDWARDS.

14. **BOILER-ROOM PRACTICE.** The course is intended for the boiler operator. Outline of course: combustion, coal; firing methods; flue gas analysis; boiler construction; feed water; boiler fittings; power of boilers; care of boilers; pipes and fittings; pipe covering; steam tables.

Sixteen lessons (no university credit). MARTENIS.

15. **ENGINE-ROOM PRACTICE.** The course is planned to give an elementary and plain presentation of the subject to operating engineers who are not able to comprehend fully the average textbook on steam engines. Outline of course: principles of energy, motion, steam; classes of steam engines; parts of the steam engine; valves and steam action; valve setting; governing; reversing gears; indicators and cards; calculating horse-power; pumps, condensers, lubrication; engine troubles.

Sixteen lessons (no university credit). MARTENIS.

NOTE: For those who are in boiler-room practice and who may wish to take an examination for a chief engineer's license, Courses 13, 14, and 15 are of the utmost importance.

16. **ELEMENTS OF MACHINE DESIGN.** A short, practical course in machine design. Some elementary machines will be discussed and the laws of mathematics, mechanics, and strength of materials will be applied in each case, leading to the complete design of the particular machine under consideration. Working detail and general drawings will be made as the work advances. Prerequisites, Courses 1, 2, 3, 4, 5, and 7. Twenty-four lessons (no university credit). EDWARDS.
17. **TRIGONOMETRY.** A course in plane and spherical trigonometry, designed to meet the needs of beginners and to include the subject usually considered in the ordinary college course. The solution of triangles is treated quite fully, but not to the exclusion of analytical trigonometry. Prerequisite, Courses 1 and 2. See Mathematics, Course 8. Twenty-four lessons (university credit for properly qualified students). PRIESTER.
18. **CALCULUS FOR ENGINEERS, PART I.** A brief course in differential calculus. Only the essential parts of the subject are taken up, and all the formulae are derived and explained. Prerequisite, trigonometry and analytic geometry. Forty lessons (five university credits). EDWARDS.
19. **CALCULUS FOR ENGINEERS, PART II.** This course is a continuation of Part I, and takes up integral calculus. Application to engineering problems will be given wherever possible. Forty lessons (five university credits). EDWARDS.
20. **LUMBER AND ITS USES.** Structural and physical properties of wood, standard grades and sizes, structural timbers, seasoning and preservation, paints and stains, lumber prices, cost of wood construction, specific uses of woods and selection of materials. Ten lessons (no university credit). Fee, including text material, \$6. CHEYNEY.
- NOTE: See also General Physics I and II.

ENGLISH AND RHETORIC

HIGH-SCHOOL COURSES

1. **ENGLISH COMPOSITION A.** This course and the one following are suited to the needs of those persons who do not have a good foundation in English, and hence need training in the correct use of the language. It covers that part of the work in high-school composition given in the freshman and sophomore years. It gives practice in writing compositions on simple subjects, with special attention to the development of sentence structure and a unified paragraph; special drill to overcome errors in grammar, spelling, punctuation, etc.; training in the use of the dictionary; and letter writing. The course is offered

CORRESPONDENCE COURSES

in two parts. The completion of both parts gives one entrance unit in English.

Part I. Twenty lessons. Fee, \$10.

Part II. Twenty lessons. Fee, \$10. INGLIS.

2. ENGLISH COMPOSITION B. This course is a continuation of the work of the first year but it is more advanced and presupposes the ability to do more thoughtful work, as it covers the composition work of the junior and senior years of the high school. Composition forms a large part of the course. In it emphasis is placed on gathering material and organizing it into longer themes than those of the first year. Drill in spelling, punctuation, etc., includes more difficult points than those covered in the first year. The course is offered in two parts. The completion of both parts gives one entrance credit in English.

Part I. Twenty lessons. Fee, \$10.

Part II. Twenty lessons. Fee, \$10. INGLIS.

NOTE: Courses covering the literature of high-school work in English are in preparation. Inquiry concerning them is invited. There will be two courses, each giving one entrance credit in English.

COLLEGE COURSES

English

1. HISTORY OF ENGLISH LITERATURE I. A general survey of English literature from the earliest times to 1700, with a good deal of emphasis upon the historical setting. Extensive readings from volumes of examples of the most famous poetry and prose. When feasible, the special study of the work of one of the major authors is recommended to be done at the same time as an intensive offset to so much rather sporadic reading. Prerequisite for credit, Rhetoric 1 and 2 or their equivalents.

Twenty-four lessons (three university credits). SUTCLIFFE.

2. HISTORY OF ENGLISH LITERATURE II. A general survey of English literature from 1700 to the present time. Prerequisite for credit, Course 1 or its equivalent.

Twenty-four lessons (three university credits). SUTCLIFFE.

3. AMERICAN LITERATURE—GENERAL SURVEY. A study of American literary development, with particular attention to the influence of English literature and the effect of our own national history upon the progress of thought and expression in the United States. The student must read extensively from American authors and answer questions which will call for constructive criticism and independent estimates. Textbook comments will not be accepted. Prerequisite for credit, Courses 1 and 2 or their equivalents.

Twenty-four lessons (three university credits). SUTCLIFFE.

4. **THE ENGLISH NOVEL.** An elementary course in the principles of fiction with the careful study of seven novels, selected to represent various aspects of the history of English prose fiction; also the study of a contemporaneous novel with an attempt to ascertain its literary value and its relationship to the masterpieces of the past. The consecutive study of the novels will be accompanied by selected assignments from Bliss Perry, *Study of Prose Fiction*, and W. L. Cross, *The Development of the English Novel*. Prerequisite for credit, Courses 1 and 2 or their equivalents.

Twenty-four lessons (three university credits). SUTCLIFFE.

Rhetoric

1. **RHETORIC, PART I.** This course is designed to give practical training in composition as well as a knowledge of rhetorical principles. Besides the study of the text it includes practice in the analysis of the best specimens of English prose, and the writing of papers, mainly expository in character.

Twenty-four lessons (three university credits). HESSLER.

2. **RHETORIC, PART II.** A continuation of Part I, with more advanced work in analysis, and practice in writing narration, description, and informal argument.

Twenty-four lessons (three university credits). HESSLER.

NOTE: Rhetoric 1 and 2 and History of English Literature 1 and 2 meet the present requirement of freshman English.

3. **EXPOSITION.** Imitative and creative work in the various types of exposition with especial recognition in the latter part of the course of the way in which exposition merges into the other forms of discourse. Prerequisite for credit, Courses 1 and 2.

Twenty-four lessons (three university credits). HESSLER.

4. **NARRATION AND DESCRIPTION.** An attempt at an untechnical but thorough understanding and application of these associated forms of discourse. Prerequisite, Course 3.

Twenty-four lessons (three university credits). HESSLER.

5. **VERSIFICATION.** A study of the nature of poetry, and a detailed analysis of English meters and the various English verse forms. The theory accompanied by criticism of current poetry and practice in writing verse. Open for credit to those who have completed the equivalent of freshman and sophomore rhetoric (Courses 1, 2, 3, and 4, above). Open to others without credit.

Twenty-four lessons (three university credits). NICHOLS.

NOTE: See Business Correspondence under Business.

GEOLOGY AND GEOGRAPHY

1. PHYSICAL GEOGRAPHY. A college course in the essentials of physical geography and physiography, with special application of the conditions of surface and climate to human occupation and economic and national development.
Twenty-four lessons (three university credits). POSEY.
2. COMMERCIAL AND INDUSTRIAL GEOGRAPHY. A study of the world's great commercial products, their dependence on physiographic conditions and their relation to industrial enterprise.
Twenty-four lessons (three university credits). POSEY.

GERMAN

1. BEGINNING GERMAN. Grammar and easy composition. The course aims to give the student a knowledge of the elements of German grammar, the facility to read easy German and to write simple German sentences.
Forty lessons (six university credits). BURKHARD.
2. INTERMEDIATE GERMAN. Grammar and composition continued; selected readings in easy prose and verse. Course 1 or its equivalent is prerequisite.
Forty lessons (six university credits). BURKHARD.
3. RAPID READING A. Selections from modern narrative and descriptive prose. Assigned outside readings and reports. Prerequisite, Courses 1 and 2 or their equivalents.
Twenty-four lessons (three university credits). KROESCH.
4. RAPID READING B. Plays of Lessing, Goethe, Schiller, Hebbel. Assigned outside readings and reports. Both A and B must be completed before credit is given for A. Students who obtain credit for these courses can not receive credit also for Courses 5 and 6.
Twenty-four lessons (three university credits). KROESCH.
5. PROSE AND POETRY A. Spanhoffd's *Aus vergangener Zeit*; selected lyrics and ballads. Geography, history, legend. Review of the morphology of grammar. Prerequisite, Courses 1 and 2 or their equivalents.
Twenty-four lessons (three university credits). MYERS.
6. PROSE AND POETRY B. Lyrics and ballads continued. Goethe's *Hermann und Dorothea*. Review of syntax. These courses not open to those who have obtained credit in Courses 3 and 4. Both A and B must be completed before credit is given for A.
Twenty-four lessons (three university credits). MYERS.

7. **ELEMENTARY COMPOSITION A.** Translation of short English selections. Paraphrasing of simple poems. Free narration. Exercises based on topical grammar review. Open to those who are taking or have taken Courses 3 and 4 or 5 and 6 or their equivalents.
Sixteen lessons (two university credits). MYERS.
8. **ELEMENTARY COMPOSITION B.** Translation and grammar review continued. Simple description. Letter writing. Both A and B must be completed before credit is given for A.
Sixteen lessons (two university credits). MYERS.
9. **DRAMA A.** Study of the present-day drama in Germany. Selected plays of Hebbel, Hauptmann, or Sudermann, with assigned readings and reports. Open to those who have completed Courses 1 and 2, and 3 and 4, or 5 and 6, or who have had four years of preparatory German.
Twenty-four lessons (three university credits). DAVIES.
10. **DRAMA B.** Study of the German drama of the eighteenth century and through the classic period. Selected plays of Lessing, Goethe, or Schiller, with assigned readings. Prerequisite as in Course 9.
Twenty-four lessons (three university credits). DAVIES.
11. **SCIENTIFIC GERMAN A.** Readings from general works on biology, anatomy, physiology, and hygiene. This course is intended primarily for medical students. It aims to give the student a scientific vocabulary and to acquaint him with the style of scientific articles. Prerequisite 3 and 4, or 5 and 6. No credit is given until B is completed.
Sixteen lessons (two university credits). BURKHARD.
12. **SCIENTIFIC GERMAN B.** A continuation of Course 11. No credit is given for A until B is completed.
Sixteen lessons (two university credits). BURKHARD.

GREEK

1. **BEGINNING GREEK A.** The declensions and conjugations and the simpler rules of syntax, together with translation of sentences from Greek into idiomatic English and from English into Greek. Both A and B must be completed before credit is given for Course A.
Forty lessons (five university credits). SAVAGE.
2. **BEGINNING GREEK B.** Course A continued; general principles, inflections, word formations, syntax, elementary readings, composition.
Forty lessons (five university credits). SAVAGE.
3. **HISTORY—XENOPHON'S ANABASIS.** Selections from Books 2, 3, 4; Hadley's *Greek Grammar*; etymology reviewed and syntax studied sufficiently to enable the student to proceed confidently in the translation

of the text; the irregular verb. Prerequisite for credit, Courses 1 and 2 or their equivalents.

Twenty-four lessons (three university credits). SAVAGE.

4. **ELEMENTARY COURSE IN HOMER.** Selections from the *Iliad* or the *Odyssey*. Open to those who have read in Greek prose three books of the *Anabasis*, or the equivalent.

Twenty-four lessons (three university credits). SAVAGE.

5. **ELEMENTARY COURSE IN THE DRAMA.** Euripides' *Alcestis* or *Medea*; translation, study of mythology and of Greek life. Open to those who have read at least two books of Homer in addition to three books of the *Anabasis*, or the equivalent.

Twenty-four lessons (three university credits). SAVAGE.

6. **PHILOSOPHY.** Plato's *Apology* and selections from other works of Plato; study of Greek philosophy. Open to those who have had at least two years of Greek. Prerequisite for credit, Course 3 or its equivalent.

Twenty-four lessons (three university credits). SAVAGE.

HISTORY

1. **ANCIENT HISTORY, PART I—GREEK.** This course includes a brief preliminary survey of Egypt and Babylonia, showing their influence on later civilizations, followed by a study of Greek history, with special stress on the development of Sparta and Athens, the Persian Wars, the Age of Pericles, the interrelation of politics with the artistic and literary development and finally the conquest of Alexander and the diffusion of Greek civilization over the East. Prerequisite for credit, 9 credits in history.

Twenty-four lessons (three university credits). STEPHENSON.

2. **ANCIENT HISTORY, PART II—ROMAN.** A course in Roman history, including the rise of Rome from a petty city to the position of mistress of the ancient world, the great struggle with Carthage, the causes that led to the fall of the Republic, the transition to the Empire, and its decline and fall, with special emphasis on the effect of imperial institutions on modern civilization.

Twenty-four lessons (three university credits). STEPHENSON.

3. **MEDIEVAL AND MODERN HISTORY, PART I.** A study of European history from the time of Charlemagne to the close of the Thirty Years War (A.D. 800-1648).

Twenty-four lessons (three university credits). KREY.

4. **MEDIEVAL AND MODERN HISTORY, PART II.** A study of European history from the close of the Thirty Years War to the present (1648-1914).

Twenty-four lessons (three university credits). KREY.

5. UNITED STATES HISTORY, PART I. This is the first half of a comprehensive course in American history. About two thirds of Part I is devoted to the colonial period, the remainder to the Revolution and the closing years of the eighteenth century. The work consists of a study of the text, supplemented by a considerable amount of source study and collateral reading. The student is required to prepare written answers to questions based on the text and on the supplementary readings. Prerequisite for credit, 6 credits in history.

Twenty-four lessons (three university credits). SHIPPEE and STEPHENSON.

6. UNITED STATES HISTORY, PART II. A continuation of Part I, devoted mainly to a study of the period from the beginning of the nineteenth century down to 1861, with a brief survey in conclusion of the principal events from that time to the present.

Twenty-four lessons (three university credits). SHIPPEE and STEPHENSON.

LATIN

1. BEGINNING LATIN. Inflections; reading easy Latin prose; the study of elementary syntax.

Forty lessons (six university credits). GRANRUD.

2. SELECTIONS FROM CAESAR. Forms and syntax; idiomatic translation; historical environment. Prerequisite, Course I or its equivalent.

Forty lessons (six university credits). GRANRUD.

3. ORATIONS OF CICERO A. Two orations, study of the life of Cicero, and Latin composition. Open to those who have completed two years of preparatory Latin.

Twenty-four lessons (three university credits). GRANRUD.

4. ORATIONS OF CICERO B. Four orations, study of the times of Cicero, and Latin composition. Open to those who have completed Course 3.

Twenty-four lessons (three university credits). GRANRUD.

5. VIRGIL'S AENEID A. The course will cover the first two books of the *Aeneid* and include the study of the life and times of Virgil, the principles of Latin prosody, the literary style of the *Aeneid*, and, to a limited extent, Roman mythology. Open to those who have completed three years of preparatory Latin.

Twenty-four lessons (three university credits). PIKE.

6. VIRGIL'S AENEID B. Books 3, 4, 5, 6 of the *Aeneid*. Textbooks: *Virgil's Aeneid* by Charles Knapp, Bennett's *Latin Grammar*. The student will, besides, be expected to read and report on Sellar's *Virgil*. Open to those who have completed Virgil's Aeneid A.

Twenty-four lessons (three university credits). PIKE.

7. **LIVY, BOOK I.** The work will comprise the study of the text, the life, times, and literary style of Livy, and, in some measure, early Roman institutions, and lastly, Latin composition. Textbooks: Westcott's *Livy, Book I*, Bennett's *Latin Grammar*, and White's *Latin-English Lexicon*. The student will also read and report on Ihne's *Early Rome*. Open to those who have completed four years of preparatory Latin.

Twenty-four lessons (three university credits). PIKE.

8. **PLAUTUS AND TERENCE: SELECTIONS.** The course will consist of a study of the texts, the literary styles of Plautus and Terence, and an outline of the history and technique of the Roman drama. • Textbooks: *Plautus' Menaechmi* by Fowler, *Terence's Phormio* by Elmer, and White's *Latin-English Lexicon*. The student will also be required to read and report upon Sellar's *Plautus and Terence in The Roman Poets of the Republic*. Open to those who have completed Course 7.

Twenty-four lessons (three university credits). PIKE.

MATHEMATICS

HIGH-SCHOOL COURSES

1. **ELEMENTARY ALGEBRA I.** A course for students who have never studied algebra. The course treats positive and negative numbers; addition, subtraction, multiplication, and division of monomials and polynomials; simple equations in one unknown quantity; elementary special products and factoring; highest common factor and lowest common multiple. Prerequisite, common school arithmetic.

Twenty lessons. Fee, \$10. BARTON.

2. **ELEMENTARY ALGEBRA II.** This course with Course I constitutes one entrance unit in mathematics. The course treats addition, subtraction, multiplication, and division of fractions including complex fractions; equations in one unknown quantity which involve fractions; graphical representation; simultaneous equations of the first degree; square roots and quadratic surds; quadratic equations in one unknown quantity. Prerequisite, Elementary Algebra I.

Twenty lessons. Fee, \$10. BARTON.

3. **PLANE GEOMETRY I.** The work of this course is elementary geometry, Books I and II. Rectilinear figures and the circle, with miscellaneous original exercises and some elementary construction problems. Prerequisite, Courses 1 and 2.

Twenty lessons. Fee, \$10. BARTON.

4. **PLANE GEOMETRY II.** This course treats proportion, similar triangles, proportional properties of line segments, proportional properties of chords and secants, trigonometric ratios, areas of polygons, regular

polygons and circles. This course with Course 3 counts for one entrance unit in mathematics. Prerequisite, Course 3.

Twenty lessons. Fee, \$10. BARTON.

COLLEGE COURSES

5. **SOLID GEOMETRY.** This course is designed not only to give a knowledge of the standard theorems and exercises of the text, but to develop the student's own imagination and initiative and to give a well-rounded view of the subject by practice in special proofs and original exercises. Prerequisites for credit, Courses 1, 2, 3, 4, or their equivalents.

Twenty-four lessons (three university credits). BARTON.

6. **HIGHER ALGEBRA, PART I A.** Brief review of Courses 1 and 2, linear equations in one, two, and three unknowns, with solution by determinants, ratio and proportion, variation, quadratic equations in one and two unknowns, graphs. Prerequisite, Courses 1 and 2 or their equivalents.

Twenty lessons. Fee, \$10. BARTON.

HIGHER ALGEBRA, PART I B. A continuation of Part I A. Completion of quadratic equations, progressions, equations in quadratic form, binomial theorem. Prerequisite, Course 6, Part I A. If both courses are completed, five university credits are granted to properly qualified students.

Twenty lessons. Fee, \$10. BARTON.

NOTE: Courses 5 and 6 meet the extra high-school requirements in mathematics of the College of Engineering.

7. **HIGHER ALGEBRA, PART II.** A continuation of Part I, including a study of variations, quadratic equations, special higher equations, simultaneous equations of the second degree, maxima and minima of functions, logarithms, theory of equations, and solution of numerical higher equations.

Twenty-four lessons (three university credits). BARTON.

8. **TRIGONOMETRY.** A course in plane and spherical trigonometry, designed to meet the needs of beginners and to include the subject usually considered in the ordinary college course. The solution of triangles is treated quite fully, but not to the exclusion of analytical trigonometry. Prerequisite, Course 6 and logarithms. (Students who did not have logarithms in higher algebra may secure special lessons in this subject.)

Twenty-four lessons (three university credits). PRIESTER.

9. **PLANE ANALYTIC GEOMETRY.** This course treats systems of coordinates, loci, the type forms of the equation of the straight line with application; the circle, central and general conic sections, tangents, diameters, asymptotes, some higher plane curves, parametric loci, polar

curves. The fundamental problem of the equation and its locus forms the basis of the course. Prerequisite, Course 8 above.

Twenty-four lessons (three university credits). BARTON.

10. **DIFFERENTIAL CALCULUS.** A first course in differential calculus treating differentiation of algebraic and transcendental functions with attention to the notion of the limit of a function, continuity of a function and the derivative. Extensive practice in the technique of differentiation by means of exercises and applications to maxima and minima, tangents, normals, curvature, singular points, velocity, and acceleration. Elementary discussion of Rolle's theorem and the law of the mean, indeterminate forms, and partial differentiation. The course is based upon a textbook with supplementary written lectures and exercises upon many of the topics. Prerequisites, Courses 7, 8, and 9.

Twenty-four lessons (three university credits). BARTON.

11. **INTEGRAL CALCULUS.** First course in integral calculus. The integration of various types of functions, the definite integral with applications to areas, surfaces, and volumes of geometric figures, rectification of curves and simple problems of mechanics. Much practice in the technique of integration and the use of tables of integrals, the evaluation of simple double and triple integrals. Prerequisite, Differential Calculus.

Twenty-four lessons (three university credits). BARTON.

NOTE: See also Courses 1, 2, 13, 17, 18, 19, under Engineering.

MUSIC

1. **HARMONY.** Scales, major and minor; intervals; formation of triads, their inversion; the dominant seventh chord, its inversions; modulation; suspension; organ-point, etc.

Twenty-four lessons (three university credits). SCOTT.

2. **HISTORY OF MUSIC.** A general survey of the development of music, from the earliest times to the present: primitive scale-forms, Greek theory, changes due to Christian practices, the development of polyphony, the monodic revolution and the growth of opera, the rise of instrumental music and instrumental forms, leading to a historical view of present-day music and musical tendencies. Considerable attention will be given to parallel movements and conditions in literature and history, the aim of the course being to present music as a literature.

Twenty-four lessons (three university credits). FERGUSON.

PHILOSOPHY

1. **INTRODUCTION TO PHILOSOPHY.** A survey course in philosophy, in which the main fields of investigation are mapped out, the permanent

problems indicated, and the chief methods employed in their solution are discussed. The course leads up to an outline of the idealistic view of the world, with practical applications to conduct and religion.

Twenty-four lessons (three university credits). LODGE.

2. LOGIC. A study of the nature and place of thinking in human life and in science. Part I: theory of judgment. Part II: theory of inference. Part III: theory of scientific method.

Twenty-four lessons (three university credits). LODGE.

3. ETHICS. The principles of moral life. Sketch of the historical development of morality followed by an analysis of its meaning and an application to present-day social, economic, and political problems.

Twenty-four lessons (three university credits). LODGE.

4. PRESENT-DAY PHILOSOPHY. A study of four of the great movements in present-day thought—pragmatism, idealism, the philosophy of Bergson, and neo-realism—in the writings of the most distinguished representatives of these schools. Open to students who have six semester credits in philosophy or psychology.

Twenty-four lessons (three university credits). LODGE.

PHYSICS

1. GENERAL PHYSICS. Mechanics of solids and fluids, sound, and heat. An elementary university course in the fundamental principles of the subject. A theoretical course without laboratory work.

Twenty-four lessons (three university credits). EDWARDS.

2. GENERAL PHYSICS. Electricity, magnetism, and light. A continuation of General Physics I. Without laboratory work.

Twenty-four lessons (three university credits). EDWARDS.

POLITICAL SCIENCE

1. AMERICAN GOVERNMENT. An elementary course in American government and politics intended as a preparation for teaching in secondary schools and for good citizenship. The course deals with the national government, treating its nature and origin. Special attention will be given to the organization of the executive, legislative, and judicial branches of the government, together with the various powers and duties of each department; to the conduct of foreign affairs; and to the present problems of national government.

Twenty-four lessons (three university credits). LOBB.

2. STATE AND LOCAL GOVERNMENT. A complementary course to the one preceding. The constitutional basis of state government; relation of the states to the national and local governments, and to the citizen; organization, functions, and actual workings of state governments, and of county, township, and city governments; public opinion and popu-

lar control in state governments; nominations and elections, initiative, referendum, and recall; taxation and finance; social and regulatory legislation. Prerequisite for credit, Course 1.

Twenty-four lessons (three university credits). BENNETT.

3. AMERICAN MUNICIPAL ADMINISTRATION. A study of the city problem in the United States. Organization, functions, and administration. Forms of charters. Commission and manager plans. Home rule. Inefficiency, corruption. Civil service and other reform measures. Finance, health, police, education, and other activities. Prerequisite for credit, Course 1.

Twenty-four lessons (three university credits). ANDERSON.

4. INTERNATIONAL LAW. Recognition, extinction, and succession of states. Inviolability of territory; freedom of the seas. Declaration of war; rules of war on land and on sea. Neutrality and neutral rights; blockade, contraband, unneutral service, visit and search. Mediation, arbitration, and judicial settlement of international disputes. A world court. Prerequisite for credit, Course 1.

Twenty-four lessons (three university credits). WRIGHT.

PSYCHOLOGY

1. GENERAL PSYCHOLOGY I. The purpose of this course is to acquaint the student with the general characteristics and laws of mental life and with the aims and methods of modern psychology.

Twenty-four lessons (three university credits). LOWELL.

2. GENERAL PSYCHOLOGY II. The study of mental development in its relation to heredity and training, with an investigation of the facts and theories of childhood and adolescence with special reference to their bearing on education. Prerequisite, Course 1.

Twenty-four lessons (three university credits). LOWELL.

ROMANCE LANGUAGES

FRENCH

1. BEGINNING FRENCH. French grammar and reader; modern texts; comprises the usual work of first-year French.

Forty lessons (six university credits). FRELIN.

2. INTERMEDIATE FRENCH. Review of grammar; composition; reading of representative authors. Prerequisite, Course 1 or its equivalent.

Forty lessons (six university credits). FRELIN.

5. ELEMENTARY FRENCH COMPOSITION. This course is designed to train the student in the use of French. It presupposes a knowledge of French such as is given by Courses 1 and 2. It consists of translations of passages of connected prose dealing with every-day life in France, such as traveling, shopping, going to the theater, etc. Towards the

end of the course, the student is expected to translate short clippings from newspapers. Prerequisite, Courses 1 and 2.

Sixteen lessons (two university credits). GUINOTTE.

6. **ADVANCED FRENCH COMPOSITION.** A continuation of Course 5. It affords practical exercises in prose composition. Prerequisites, Courses 1, 2, and 5 or their equivalents.

Sixteen lessons (two university credits). ELLIOTT.

SPANISH

1. **BEGINNING SPANISH.** Grammar and reader. In this course stress will be laid upon grammar, accurate translation, and composition. Exercises in phonetic equivalents will be given with the view of acquiring a careful pronunciation.

Forty lessons (six university credits). VASCONCELOS.

2. **INTERMEDIATE SPANISH.** Review of grammar; composition; reading of modern Spanish texts. Prerequisite, Course 1 or its equivalent.

Forty lessons (six university credits). VASCONCELOS.

5. **ELEMENTARY SPANISH COMPOSITION.** Connected prose composition dealing with every-day life in Spain. The aim is the ability to write Spanish. Prerequisite, Courses 1 and 2 or their equivalents.

Sixteen lessons (two university credits). HENRÍQUEZ.

6. **ADVANCED SPANISH COMPOSITION.** A continuation of Course 5, which is prerequisite.

Sixteen lessons (two university credits). VASCONCELOS.

ITALIAN

1. **BEGINNING ITALIAN.** Rules of pronunciation, grammar, elementary composition, and easy readings in modern prose.

Twenty-four lessons (three university credits). PHELPS.

2. **INTERMEDIATE ITALIAN.** Continuation of grammar study and composition; readings in prose and verse.

Twenty-four lessons (three university credits). PHELPS.

SCANDINAVIAN LANGUAGES AND LITERATURE

NORWEGIAN

1. **ELEMENTARY NORWEGIAN.** Elementary study of the language: grammar, composition, select readings in easy prose and poetry.

Forty lessons (six university credits). BOTHNE.

2. **INTERMEDIATE NORWEGIAN.** Grammar; composition; elementary history of literature; select works of modern authors. Prerequisite, Course 1 or its equivalent.

Forty lessons (six university credits). BOTHNE.

3. **ADVANCED NORWEGIAN I.** The reading of representative prose and poetry. Prerequisite, Courses 1 and 2 or their equivalents.

Twenty-four lessons (three university credits). BOTHNE.

CORRESPONDENCE COURSES

4. **ADVANCED NORWEGIAN II.** A continuation of Course 3. Reading in prose and verse.

Twenty-four lessons (three university credits). BOTHNE.

SWEDISH

1. **ELEMENTARY SWEDISH.** Grammar and composition; select readings in easy prose and verse.

Forty lessons (six university credits). STOMBERG.

2. **INTERMEDIATE SWEDISH.** Grammar; composition; easy reading. Prerequisite, Course I.

Forty lessons (six university credits). STOMBERG.

3. **SWEDISH LITERATURE A.** History of Swedish literature from 1718 to the present time. History of the literature and study of modern authors, including Selma Lagerlöf, Gejerstam, Strindberg. Prerequisites, Courses I and 2, and advanced Swedish.

Twenty-four lessons (three university credits). STOMBERG.

4. **SWEDISH LITERATURE B.** A continuance of Course 3. Open to advanced students. Both courses must be completed before credit is given for the first course.

Twenty-four lessons (three university credits). STOMBERG.

SOCIAL SCIENCE

HIGH-SCHOOL COURSE

1. **SOCIAL SCIENCE, PART I.** This is a course which deals with the history of the origins and evolution of the various human institutions up to the present time. This will include prehistoric experiments and inventions, ancient civilizations, the development of government, medieval social and industrial life, and the changes wrought by the Industrial Revolution. This covers the work of the first half-year of the course as given in high school.

Twenty lessons. Fee, \$10. FLEMING.

2. **SOCIAL SCIENCE, PART II.** In this part present-day social, economic, and political institutions are described with reference to their functions and problems. The various proposed reform programs are defined, compared, and tested by means of known economic laws and past historical experiments. The subjects studied include the family, private ownership of property, the high cost of living, social control, and recent political experiments. It covers the second half-year of the course as given in the high school. Parts I and II give one entrance credit in Group F of the requirements for admission.

Twenty lessons. Fee, \$10. FLEMING.

SOCIOLOGY

1. **INTRODUCTION TO SOCIOLOGY.** A study of the evolution and present organization of human society. The evolution of typical social institu-

tions, such as the family, industry, and the state; the influence of the biological and environmental (both physical and social) factors upon man in his social relationships; an introductory analysis of some of the leading social problems of the time; a study of the methods of social organization and control, especially from the standpoints of tradition, custom, and science. This course is intended to serve (1) as an introduction to other more specialized courses in sociology, (2) as a background for a better understanding of the society in which we live and of its problems.

Twenty-four lessons (three university credits). BERNARD.

2. RURAL SOCIOLOGY. A study of the conditions and problems of country life. Analysis of environmental, human, and general social conditions; how soil, climate, etc., the quantity and quality of the rural population, the interaction of city and country, determine the type of rural communities. Problems of sanitation, coöperation, education, religion, recreation, crime, and dependency, growing out of these conditions.

Twenty-four lessons (three university credits). BERNARD.

3. CHILD WELFARE. Study of social obligations to the child; development of the child-saving movement in the United States; infant and child mortality, recreation, education; courts, institutions, societies, and other public efforts for the child. A limited amount of field work must be done. Prerequisite for credit, one year's work in sociology. Open to others without credit.

Twenty-four lessons (three university credits). TAYLOR.

52. FIELD WORK IN RURAL SOCIOLOGY. Students who have completed the work in Rural Sociology (Sociology 2) or its equivalent may, with the consent of the instructor, enroll for more advanced work on some selected rural community problem. The work will consist of the application of the survey method to the study of the problem selected. Schedules will be provided through the correspondence department. The student will collect the data and will be responsible for some preliminary interpretation of this data. The accuracy of the completed schedules, which will be returned to the instructor, and the ability shown in interpreting the data collected will serve as a basis for judging the quality of the work done. One or two semester hours' credit, according to amount of work done.

Fee for one credit, \$4. BERNARD.

OTHER EXTENSION ACTIVITIES

BUREAU OF VISUAL INSTRUCTION

The Bureau of Visual Instruction of the General Extension Division was organized to supply to the schools and other educational institutions of the state lantern slides and motion picture films on subjects of general interest and educational value.

SLIDE SERVICE

Slides are sent out under three different plans:

1. Several schools may band together and form a circuit. Each school may receive one set of slides at weekly or bi-weekly intervals. This plan saves transportation charges. Schools should arrange circuits as early in the year as possible.

2. Schools may place individual orders for sets of slides. These will be filled if the slides are available. Bookings for this service should be made as far in advance as possible.

3. Slides may be borrowed like the books of a library. The bureau is accumulating hundreds of slides on various subjects which are being classified with the intention of issuing a catalog of them. Only a limited number may be obtained at one time.

It should be noted: (1) the slide service is free of all charge; (2) the borrower pays transportation charges both ways; (3) slides may be used only one week unless special arrangement is made; and (4) no admission fee is to be charged except where funds go toward the purchase of school, playground, or other equipment, or for the cost of the service.

FILM SERVICE

The bureau has several hundred reels of film on travel, industries, mechanics, etc. These reels may be borrowed on the same terms as slides with the exception that the borrower must remit an inspection fee of fifteen cents for one-reel programs and twenty-five cents for more than one reel. Most schools pay the yearly inspection fee of \$5 which entitles them to at least eighteen programs.

The film "How Life Begins," a biological film for seventh- and eighth-grade pupils, is available at a rental fee of \$6 per program.

INFORMATION SERVICE

The bureau is glad to inform inquirers as to where visual aids may be obtained and to give advice as to purchase of equipment, its repair and management.

LECTURE AND LYCEUM DEPARTMENT

EXTENSION LECTURES

Lectures, either single or in series, delivered by members of the University Faculty, may be obtained by any community at a purely nominal fee. The lectures offered cover a wide variety of subjects of

current interest and are presented in popular form. A community which avails itself of this opportunity can keep in touch with the important developments of the day and maintain a steady interest in public affairs. The fee for each lecture is \$15 and the local entertainment of the speaker, and is uniform throughout the state. A bulletin giving complete information regarding the lectures available for next season will be sent on request.

LYCEUM COURSES

The General Extension Division also offers to the communities of the state professional lyceum courses at cost. A wide variety of talent has been secured for the season 1920-21, including 13 lectures, 14 entertainers, and 17 musical and dramatic companies. The musical companies range from the symphony orchestra and grand opera star to the popular trio and quartet.

The talent is secured by the coöperation of the extension divisions of four state universities. The four universities together form one of the largest booking agencies in the country and are able to get the best talent on the most reasonable terms.

By careful railroad routing and by the complete elimination of profit, the University is able to deliver these courses at a cost so low that even the smallest towns can make them pay. One hundred dollars will buy a course of three members including an entertainer, a lecturer, and a musical company.

In most counties the county agent is acting as the representative of the Lecture and Lyceum Department and has full information regarding talent and prices. A bulletin will be sent on request.

DRAMA SERVICE

There is becoming apparent throughout the state an increasing interest in the drama. Many schools now plan to give amateur theatricals every year. The University Drama Service is planned to give assistance to amateurs in the selection of plays. A loan library of between four hundred and five hundred plays is maintained from which selected plays will be sent to committees for reading purposes. No charge is made for this service beyond the cost of postage. In addition, advice is given as to costumes and also with respect to the purchase and the painting of scenery.

It is hoped that in the future it may be possible to send out University dramatic companies to give plays in the several communities of the state during vacations and at week-ends. If interest in this form of service develops it may also be possible to furnish amateurs in the state the assistance of a University dramatic coach. Correspondence is invited from interested schools.

COMMUNITY SERVICE

There is a movement now running through the country in the interest of a wider community use of the school plant and of other public buildings. It is realized that these buildings, in which the public has a large investment, are open for the use of the people for only a fraction of the available time. There is need for a civic forum or community club house, where citizens may gather for discussion of public questions and for the expression of neighborhood civic and social life. The General Extension Division proposes to further this movement by offering guidance and cooperation, more particularly in the way of providing plans for organization, with a list of things that may be done. The division also offers the services of an adviser on the organization and program of community and commercial clubs. Correspondence is invited from any citizen or organization of citizens interested in this subject.

MUNICIPAL REFERENCE BUREAU

The Municipal Reference Bureau is designed to provide the municipal officials of the state with a central clearing house for the dissemination of reliable information on matters of municipal importance. To render this service the Bureau has collected charters, ordinances, and other municipal documents. This information is drawn upon in the answering of specific inquiries referred to the Bureau by municipal officials of the state, and in the preparation of reports of general interest to the villages and cities of Minnesota. Municipalities desiring information, public reports, statistics, and advice upon administrative matters are urged to communicate with the Bureau.

SHORT COURSES

In addition to night classes and correspondence courses, short courses of a week or more are used for disseminating to outsiders in an intensive way the information and expert knowledge which is available at the University or which may be summoned thither for that purpose. In a week or two weeks of concentrated, intensive effort much may be learned about a limited branch of a given subject. In every case the teachers are experts, either secured from the University Faculty or from the ranks of those actively engaged in the pursuit of the occupation, trade, or profession under study. In this way short courses are given each year in retail merchandising, in two or three different branches of dentistry for graduate dentists, in banking with special reference to income tax problems, in social service work, and in citizenship. New short courses will be added from time to time as the demand arises. In every case the plan is to expound the various phases of the subject and to outline fundamental principles.

AGRICULTURAL EXTENSION

Agricultural extension including lectures, demonstrations, institutes, and short courses will be carried on as usual under the direction of the Agricultural Extension Division of the College of Agriculture. Address all inquiries regarding such work to the Agricultural Extension Division, University Farm, St. Paul, Minnesota.

INFORMATION

It often happens that citizens of a state are in need of information on some specific subject not to be found in the ordinary books of reference, and in such cases the average person is at a loss where to turn. The General Extension Division has as one of its functions the business of obtaining and furnishing to inquirers information on the various subjects which from time to time may be called for. This information is obtained by research and by application to the proper university source, and thereby the division acts as a clearing house for the information which is gathered and stored up through the facilities of a great university. Inquiries for information are therefore invited, and so far as the means at hand will permit, the information will be found and supplied.

The various subjects mentioned in the preceding pages lie within the province of the General Extension Division and inquiries on all of them should be addressed to The General Extension Division, University of Minnesota, Minneapolis.

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