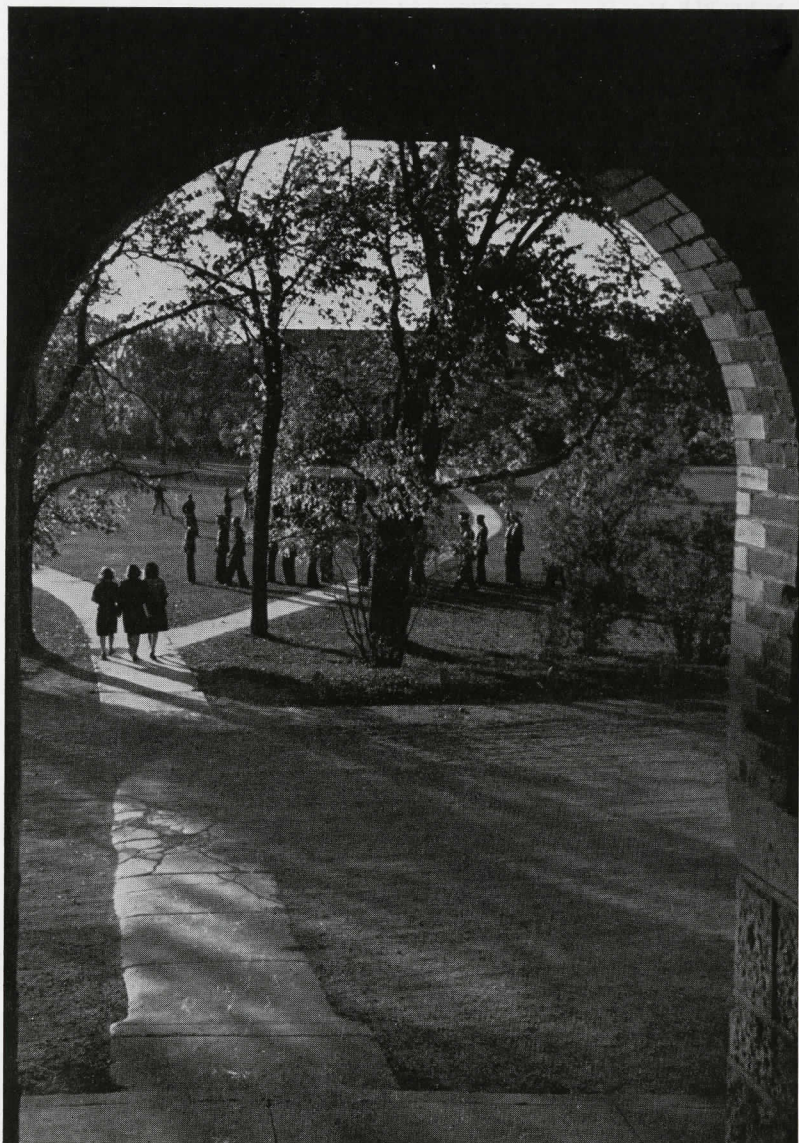


SOUTH DAKOTA STATE COLLEGE

*Bulletin*



# 1945 Summer Quarter

FIRST TERM - JUNE 11 to JULY 18

SECOND TERM - JULY 19 to AUGUST 25

# Summer Quarter Staff

LYMAN E. JACKSON, Ph.D., President  
GEORGE LINCOLN BROWN, Ph.D., President Emeritus  
ALFRED M. EBERLE, M.S., Dean of the Division of Agriculture  
HAROLD M. CROTHERS, Ph.D., Dean of the Division of Engineering  
EDITH M. PIERSON, M.S., Dean of the Division of Home Economics  
FLOYD J. LeBLANC, Ph.D., Dean of the Division of Pharmacy  
FRANK G. SCHULTZ, Ph.D., Dean of the Division of General Science  
RAYMOND Y. CHAPMAN, M.A., Director of the Junior College.  
DAVID BENTON DONER, B.S., Registrar  
RUDOLPH A. LARSON, Secretary  
W. EDWARD SMITH, M.S., Business Manager

\* \* \* \*

OSCAR R. ABEL, B.S., Instructor of Printing  
LEE L. AMIDON, M.S. (M.E.), Professor of Mechanical Engineering  
HOWARD B. BLODGETT, M.S. (C.E.), Professor of Civil Engineering  
HENRY BLOEM, B.S., Assistant Professor of Engineering Shops  
JOHN A. BONELL, Graduate of Stout Institute, Assistant Professor of Engineering Shops  
EDWARD R. BINNEWIES, M.S., Associate Professor of Chemistry  
CARL CHRISTENSEN, B.Mus., Professor of Music  
EMILY HASKELL DAVIS, Ph.D., Professor of Art  
LOREN E. DONELSON, M.S., Professor of Printing and Rural Journalism  
BERTRAND A. DUNBAR, M.A., Professor Emeritus of Chemistry  
CLARK T. EIDSMOE, M.S., Professor of Pharmacy  
R. ESTHER ERICKSON, R.N., B.S., Professor of Nursing Education  
ALBERT D. EVENSON, B.S., Instructor in Printing  
GILES ROBERTS FLOYD, Ph.D., Associate Professor of English  
WILLIAM H. GAMBLE, M.S., Professor of Electrical Engineering  
JOSEPH ADDISON GIDDINGS, M.A., Associate Professor of English  
ARTHUR R. GRISMER, M.S., Instructor in Bacteriology  
ALBERT S. HARDING, A.M., Professor Emeritus of History  
EDWIN B. HARDING, B.S., Instructor in Printing, Composing Machines Specialist  
NELLE H. HARTWIG, M.S., Assistant Professor of Entomology-Zoology  
REUEL GUSTAV HEMDAHL, Ph.D., Assistant Professor of Political Science  
OTTO GIEDE HOIBERG, Ph.D., Associate Professor of Rural Sociology  
JOHN A. JOHNSON, B.S., Instructor in Physical Education  
NELLIE G. KENDALL, B.S., Assistant Professor of Physical Education (Women)  
KATHERINE KLEIN, A.M., Assistant Professor of Education and Psychology  
ESTHER ROSS KORSTAD, B.A., Instructor in Typewriting and Shorthand  
CHESTER H. LINSCHIED, M.A., Acting Librarian  
GABRIEL LUNDY, M.S., Professor of Agricultural Economics  
HERBERT B. MACDOUGAL, M.S., Professor of Mathematics  
CATHERINE F. MACLAGGAN, A.M., Professor of Foreign Languages  
JOHN E. MARTIN, M.S., Assistant in Education  
GEORGE W. McCARTY, M.A., Professor of Speech  
THURLO E. McCRADY, M.A., Professor of Physical Education and Director of Athletics  
WARD L. MILLER, Ph.D., Professor of Botany  
JOHN E. OLSON (Capt.), B.S., Professor of Military Science and Tactics  
DONALD D. PARKER, Ph.D., Professor of History  
WILLIAM ALBERT PETERSON, B.Mus., Associate Professor of Music  
RAYMOND E. REINHART, Ph.D., Professor of Physics  
WILLIAM F. REYNARD (Lt.), A.B., Instructor of R.O.T.C. and A.S.T.P.  
ALICE ROSENBERGER, M.S., Associate Professor of Home Economics  
PAUL T. SCOTT, M.A., Assistant Professor of Journalism and Geography  
GEORGE E. SMOCK, Ph.D., Professor of English  
CORRINE HEATON STAPLES, M.S., Assistant Professor of Home Economics  
WINDSOR A. STRAW, B.S., Assistant Professor of Printing and Rural Journalism; Superintendent of Printing  
Laboratory  
KARL THEMAN, M.A., Assistant Professor of Music (Voice)  
VIVIAN VIRGINIA VOLSTORFF, Ph.D., Dean of Women, Assistant Director of Student Affairs and Associate Professor of History  
ORLIN E. WALDER, A.M., Associate Professor of Mathematics, Manager of Men's Dormitories  
VICTOR S. WEBSTER, Ph.D., Professor of Chemistry  
CLINTON R. WISEMAN, Ph.D., Professor of Education and Psychology

1945 Summer Quarter  
SOUTH DAKOTA STATE COLLEGE  
of Agriculture and Mechanic Arts  
*BULLETIN*

SUMMER QUARTER CALENDAR

First Term

|                    |                                |
|--------------------|--------------------------------|
| June 11, Monday    | Registration Day               |
| June 12, Tuesday   | Class work begins at 8:00 a.m. |
| July 4, Wednesday  | A holiday                      |
| July 18, Wednesday | First Term closes at 4:00 p.m. |

Second Term

|                     |                                |
|---------------------|--------------------------------|
| July 19, Thursday   | Class work begins at 8:00 a.m. |
| August 25, Saturday | Second Term closes at noon     |

Workshop for Guidance Workers and Teachers

June 14, 15, 16, 1945

The war has given tremendous impetus to the guidance movement. South Dakota State College recognizes this important activity and in cooperation with the State Department of Education, and Division of Occupational Information and Guidance Services, is providing opportunity for teachers, guidance workers, and administrators to work out their special problems during a three day workshop this summer.

Areas to be developed with competent advisors and assistants:

- Administration and organization of guidance services.
- The individual inventory.
- Occupational information.
- Counseling.
- Tests and testing procedures and interpretation.
- Veterans' problems.

# General Information

State College is offering its 1945 Summer Session program with the firm conviction that education can make a major contribution to the welfare of the State and the Nation. Men and women prominent in national affairs are insisting that only by continuing such training as the schools and colleges are able to give can this Nation be assured of retaining its high position of leadership in the post-war world. The demand for trained men and women continues unabated and there is every evidence that the need will increase rather than diminish. Under the circumstances there seems to be little doubt that high school graduates of unusual ability can contribute more to the "American way of life" by continuing their education than by engaging in almost any other kind of activity.

In planning the program of courses every effort was made to anticipate the needs of students whose major objective will be that of preparing for the opportunities and responsibilities lying ahead. The two six weeks sessions of the Summer School provide training opportunities in all of the five divisions of the College, namely; Home Economics, General Science, Engineering, Pharmacy, and Agriculture. Students wishing to study courses not listed in this catalog should write to the deans of the particular division to determine whether special provisions for studying these subjects might not be made.

The faculty for the summer terms will be composed almost entirely of members of the regular college staff. The courses offered are intended to accommodate the following groups of students: high school students who have completed their junior year and who have been recommended for college work by their school officials, graduates of high schools just ready to begin their college work; the college students who have been in attendance during the current year, and, graduate students and teachers who wish to take advanced work.

Monday, June 11, is Registration Day for the first term. Students should register on that day and be ready to start classes on Tuesday morning. Students should plan to arrive in Brookings in time to arrange for living quarters before school opens. All administrative offices

will be open the preceeding Saturday forenoon.

## Admission

The requirements for admision to the Summer Quarter are the same as for other quarters of the year. Satisfaction of entrance credits means the completion of a standard high school course. A candidate for entrance to the freshman class of the Junior College must present at least 15\* units of entrance credit by certification or examination, or present at least 12 units of entrance credit together with a recommendation for college work as a special freshman from his superintendent or principl. Others may be admitted as special students to courses they are qualified to pursue. Credit toward a degree will be given only to students who satisfy the entrance requirements. All students entering the College for the first time must submit an application for admission on the official forms and take the entrance examinations for use in guidance and counseling with the students. The examinations are given after classes start and entrance is not based on these examinations. Students entering direct from high

\*Students who present 14 units may be admitted as conditioned freshmen but must earn the additional unit before the close of their first year in college.



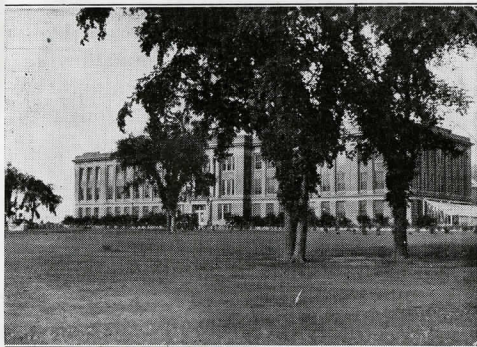
Coolidge Sylvan theater, a center for summer social activities

schools should have their superintendent or principal send a high school transcript directly to the Registrar's office before registering.

### Graduate Work

A number of the departments of the College will offer courses which may be applied toward graduate credit in the respective fields. Courses carrying a number between 100-200 are designated as senior college and graduate courses, while those with number above 200 are strictly graduate courses. Those interested in graduate work are urged to write to the Chairman of the Graduate Committee for regulations concerning graduate study. Students who are interested in carrying graduate work but who do not find suitable graduate courses listed should write to the head of the department concerned in order to determine whether or not special arrangements might be made.

This year the Department of Education is offering a Master of Science degree in Education without requiring the usual thesis. Under the new arrangement, known as "Plan B," the student will be required to work out a smaller research project (equivalent to three or four credits) or several practical problems within his own school situation in lieu of the thesis. This plan has been, for a number of years, in operation in a considerable number of colleges and universities offering the masters degree in education. It is not intended to replace the customary research degree but is made available to those teachers and administrators who might find it more suitable for their particular purposes.



Administration building serenely overlooks a broad greensward

### Teacher Training Program

Although there is a teacher-shortage in all high school subject-matter areas the shortage seems to be particularly acute in the fields of science, mathematics, and in the specialized fields generally. Assuming that under these circumstances it will be necessary for certain teachers in certain schools to change from one teaching assignment to another, State College is organizing its schedule to provide opportunities for teachers, who are otherwise qualified, to become reasonably effective teachers in the "critical" fields in one summer quarter.

While it is highly desirable that teachers who wish to take summer work to prepare for teaching in these subjects should have had some previous training in these areas, it is not absolutely essential that they have an extensive college background. Assuming that a teacher has had high school algebra and plane geometry and a reasonable aptitude for mathematics, this individual can acquire enough credits in mathematics in one summer quarter to meet the North Central Association requirements. The North Central Association requirements for teachers of physics, chemistry, or biology, can be met by any high school teacher in one summer quarter provided that teacher has had at least one three credit course in any subject that may be classified as a science. Persons who are interested in teaching commercial subjects can accumulate from 18 to 20 credits in this field.

The demand for high school teachers of home economics is as great and possibly greater than that in any of the above mentioned fields and teachers who wish to extend their training in this subject will find excellent opportunity to do so.

A reasonably large selection of professional education courses for high school teachers and administrators will also be offered. Courses other than those listed may be made available if there is a sufficiently large demand.

### Commercial, Printing, and Journalism

Girls who wish to improve their background for office employment will find an excellent opportunity to do so by enrolling in the "speeded-up" programs in shorthand, typewriting, and office practice.

### Lincoln Memorial Library

The Lincoln Memorial Library at South Dakota State College is the heart of the summer school activities. Many of the offices of the various departments are located in the library building and also many of the classes meet there.

The Library itself contains 80,000 volumes and 24,000 pamphlets carefully selected and well-catalogued to facilitate instruction and individual research and also to stimulate general reading. The library receives currently many newspapers and maintains subscriptions to 500 journals and periodicals of both a technical and general nature. It maintains all the necessary reference books and indexes for both periodicals and documents which make the long files of each valuable in the many fields of research.

The library is also a federal and state document depository and has also been designated as the new center of war information by the Office of War Information.

### Pugsley Union

The Pugsley Union is primarily a student enterprise, operated as the college social, recreational, and service center. It is maintained by and for the students, faculty, and alumni as their college club, with facilities for service and pleasure. Every student, by payment of the specified fee, is an active member of the Union and has a voice in its direction.

Pugsley Union will continue to operate as usual during the summer term. Food service and recreational facilities, including the game and card room accommodations, will be available to all eligible persons. There will be no meal service of any kind in rooms other than in the Jungle. Student and faculty lounges will be open and rooms for meetings pertaining to college affairs may be scheduled through the Union Director's Office, Room 202.

### Housing Facilities

Wecota and Wenona Halls have been redecorated and will be available for housing women students during the summer terms. Women who are not residents of Brookings are required to live in these dormitories unless special permission to room elsewhere is granted by the Dormitories Committee. Men students will



Physical and health activities are centered in state's gymnasium

The man-power shortage in the fields of printing and journalism has prompted the College to organize special intensified courses in the technical phases of printing and newspaper publication. By concentrating on restricted areas of work a student may learn to operate the linotype or a printing press in a relatively short time. Courses of less than six-weeks duration are also provided for individuals who already have had some training in this field of work.

### Credit

All scheduled courses carry college credit as indicated in connection with the courses. The normal load for a summer term is eight or nine quarter credits.

### Brookings

Brookings is a beautiful city with a population of approximately 5,400 located in the east central part of the state on the Chicago and Northwestern railroad. It also has several bus lines leading into it. Its shaded streets and well-kept lawns make it an unusually attractive place in which to spend the summer. Lake Campbell is but a short distance from the city. The Sioux River is a popular picnic point. Nearby golf courses are available for summer recreation. Brookings has a fine municipal swimming pool, and two beautiful city parks with picnic and recreational facilities; including horse shoe, tennis, music concerts, etc.

have no difficulty in securing accommodations in rooming houses near the campus.

The charge for rooming in the college dormitories will be \$12.00 per term. Charges for private rooms will range from \$1.75 to \$2.50 per week. Students wishing to live in the dormitories should provide themselves with a mattress pad, two pairs of pillow cases, three sheets, one pair of blankets, and towels.

**Fees Per Term**

|                 |       |         |
|-----------------|-------|---------|
| Tuition*        | ..... | \$12.00 |
| Library         | ..... | .50     |
| Health          | ..... | 1.25    |
| Union           | ..... | 1.50    |
| Activity Ticket | ..... | 2.00    |
|                 |       | <hr/>   |
|                 | Total | \$17.25 |

**Other Expenses**

Small laboratory fees are charged for the courses requiring laboratory work. The fee is indicated in each case with the description of the course. A late registration fee of \$2.00 will be collected from all students who complete their registration and pay their fees subsequent to the time announced for that purpose. The cost of books will vary with the course. Used copies may frequently be purchased at reduced cost. Text books and supplies are available at the Union Book Store.

Meals and fountain service are available at the Pugsley Union, as well as at other eating places near the Campus. At the present time the cost of meals at most of these establishments will range between \$5.00 and \$6.00 per week.

**Assembly and Recreation**

The Summer Quarter social and recreational program is organized to give a maximum of entertainment and relaxation without necessitating excessive travel. Assembly programs, consisting of talks by imported and local speakers, professional entertainments, and performances by State College music organization are held. Activities of a more social nature consist of mixer parties, picnics and dances. These ac-

tivities are organized by a joint committee of faculty members and students.

Organized recreation for both men and women is provided for under the general direction of the Physical Education Department. The College is well equipped with tennis courts, ball diamond, golf course, archery equipment, etc. The recently completed municipal swimming pool and several city parks can, by special arrangement with the city authorities, be made available for student use.

**Teachers' Employment Bureau**

The College maintains a Teachers' Employment Bureau for graduates and students who wish to secure help in locating suitable teaching positions. The Bureau is maintained and operated by the Department of Education and is in charge of a full-time secretary. Complete instructions for registering may be secured at the office of the Bureau at Room 109 Library Building. An annual registration fee of \$1.00 is charged for this service.

There appears to be a shortage of teachers along several high school lines with high school salaries up considerably over those of the last few years. Those who have not taught for a few years, particularly married women, might through summer attendance take refresher work in subject matter courses and education courses and secure teaching certificates. There is an urgent demand for teachers of science and



Chemistry has its own modern building and laboratories

\*Fifty percent higher tuition for students who are not residents of South Dakota.

mathematics due, in many cases, to men leaving for the armed service. Many teachers who have basic work in those fields may, through refresher course in such work in summer session, become qualified for very good positions in the field and, in many cases, be assured of a position before they take the work.

### Courses Offered

In order to provide ample opportunity for those students who are attempting to complete their college education in the shortest possible time, the College is offering a wide range of courses for the summer sessions. Where there is a sufficient demand additional courses not listed in this bulletin may be offered. The College, in turn, reserves the right to withdraw any courses for which there is not sufficient demand to warrant the organization of the class.

Courses listed in this bulletin have the same number as those found in the 1944-45 Annual Catalog and are intended to cover the same material. The student is referred to the Annual Catalog in case the abbreviated course description does not provide sufficient information. Further information regarding courses may also be had by writing to the Deans of the Divisions.

In general, the courses listed in these pages are classified as follows: Those numbered 1-19 are of Freshman rank; 20-39 Sophomore rank; 40-59 Junior rank; 60-79 Senior rank; 100-199 undergraduate and graduate rank; 200 or above primarily for graduates. The symbol "P," following the course descriptions, refers to the pre-requisites for the course in question. In cases where the student has unusual qualifications the pre-requisites may be waived.

## Division of Agriculture

### Agricultural Economics

#### 20 Principles of Economics 5 Cr. 1st term

Analysis of problems of production, consummation and distribution of wealth; money and value; price fluctuations and policies.

#### 142 Production Economics 3 Cr. 1st Term

Problems of production policy in industry and agriculture from the social and managerial point of view; applications of theory and practice.

#### 145 Public Finance 3 Cr. 2nd Term

Introduction to public finance problems; special emphasis upon tax receipts and expenditures and their administration. P, 20.

#### 185a Advanced Economics 3 Cr. 2nd Term

Theory of value and distribution.

*NOTE: Classes in Agricultural Economics will be offered if a sufficient number of students register for them.*

### Botany—Bacteriology

#### BOTANY

#### 10ab General Botany 4 Cr. 10a 1st Term 10b 2nd Term

Laboratory fee \$2, deposit \$2 for each course

10ab, Botany of seed plants; a consideration of those problems which plants must solve if they are to develop successfully from seed to maturity; problems of germination, nutrition, growth, adjustment, reproduction and dispersal.

#### 27 The Local Flora 4 Cr. Both Terms

Laboratory fee \$1

Fundamental principles of taxonomy and the identification of plants in the vicinity of Brookings. The chief aim is to develop accuracy and facility in the use of field manuals. P, 10c.

#### BACTERIOLOGY

#### 41 Elementary Bacteriology 5 Cr. 1st Term

Laboratory fee \$3, deposit \$2

Cultural studies of bacteria, principles of enzyme action, classification of bacterial organisms. P, Chem 21.

#### 142 Principles of Infection and Immunity 5 Cr. 2nd Term

Laboratory fee \$4, deposit \$2

A study of bacterial infection, antibodies, vaccines, blood typing. P, 41.

#### 160 Bacterial Problems Both Terms Cr. arranged

Laboratory fee \$2 (not collected if work does not require work with laboratory equipment), deposit \$1 per credit hour.

Open only to advanced students.





Pugsley Union building is the recreation and social center for all students at South Dakota State College.

### Entomology—Zoology

**20ab General Zoology** 4 Cr. 20a 1st Term  
20b 2nd Term

Laboratory fee \$1, deposit \$1 per term

The fundamental principles of animal morphology, physiology, reproduction, embryonic development, genetics, classification, ecology, geographic distribution, paleontology and evolution.

**22 Human Physiology** 4 Cr. 1st Term

Laboratory fee \$.50, deposit \$1

The fundamental physiological processes of the human body. Histological slides are used for the study

of tissue while anatomical methods and the organs of the domesticated animals are used for the study of the structure or organs and systems. P, 20ab.

**42 Genetics** 3 Cr. 2nd Term

A general discussion of genetics, the origin of the germ cell, the germ cell cycle, embryological development as determined by heredity and modified by environment, the cytology of the germ cells, the relation of the chromosome material to genetics, the theory of the gene, linkage, crossing over, non-mendelian inheritance, experimental evolution and related phenomena. P, 20ab.

### Rural Sociology

**20 Principles of Sociology** 5 Cr. 1st Term

A basic introductory course prerequisite to all other sociological courses numbered above 20. A comprehensive study of society, with an analysis of the forces shaping human behavior in group life.

**131 Rural Sociology** 3 Cr. 2nd Term

The principles of sociology applied to the study of rural society and its problems. P, 20.

**145 Population Problems** 3 Cr. 2nd Term

The factors involved in the declining birth rate; the eugenic, cultural and social problems arising from differential rates and natural increase; migration as a fact-

or in American and international affairs; and the elements of population policy. P, 20.

**167 Marriage** 3 Cr. 2nd Term

The courtship and marriage period is given special emphasis. Mate selection, problems of the unmarried, adjustment in marriage, reproduction, and child training are discussed. P, 20.

**168 The Family** 3 Cr. 1st Term

Traces the historical development of the family in different parts of the world with the main emphasis on the American family. Consideration is given to the importance of family life, personal relations within the family and social changes affecting it. P, 20.

# Division of Engineering

## Civil Engineering

- 3 Plane Surveying** 3 Cr. Full Quarter  
Theory and Practice of surveying; field problems including profiles, cross sections, traverses, and area determinations. P, Math 15, ME 3b. Laboratory fee \$3.00.
- 25 Topographic Surveying** 3 Cr. Full Quarter  
Transit-stadia and plane-table surveys of representative field area. Preparation of a finished map. P, CE 3. Laboratory fee \$3.00.
- 27 Navigation** 3 Cr. Full Quarter  
Methods of celestial and aerial navigation.

- 142a Engineering Mechanics** 4 Cr. Full Quarter

Force systems, motion, moments of inertia; mass and acceleration; work and energy; impulse and momentum. Stress analysis as applied to boilers, beams, column, riveted joints, springs and other structural members. P, Math 27.

- 175 Specifications and Contracts** 3 Cr. Full Quarter  
Synopsis of the law of contracts. Typical specifications and contracts. P, senior standing in engineering.

## Electrical Engineering

- 143 Direct Current Machinery** 4 Cr. Full Quarter  
A study of the construction of direct current generators and motors of the various types, the theories of their operation. For students majoring in electrical engineering. P, 141.
- 144 a or b Dynamo Laboratory** 2 Cr. per Term Full Quarter  
Laboratory fee \$2.00 each term  
Practical operation of and standard tests on direct

current machines, calculations of test results and preparation of engineering reports. May be taken for one credit each term with less emphasis on report writing by students in Mechanical Engineering. To accompany course 142 or 143.

- 161 Alternating Current Circuits** 4 Cr. Full Quarter  
Alternating currents, voltages, and power in single-phase and polyphase circuits, use of symbolic notation. P, 141.

## Mechanical Engineering

- 3ab Engineering Drawing** 2 Cr. Arranged  
Development of skill in the use of drawing instruments, and in the mechanics of drafting. Standard practice of lettering, projection, pencilling, inking, dimensioning and sectioning of drawing made from geometrical problems, exercises, and machine parts. Open to all students who have had high school mathematics.
- 27 Mechanism** 5 Cr. Full Quarter  
Study of machine elements; the analysis of motion and design features of linkages, cams, belts, screws, gears and gear trains. P, Math 15.
- 161b Engineering Design** 2 Cr. Full Quarter  
Solution of typical problems involved in the design of steam engines, steam turbines, internal combustion en-

gines and assembly drawings of machines. Some opportunity is given to select a project of interest to the student. P, 142ab, 144.

- 162c Advanced Mechanical Laboratory** 2 Cr. Full Quarter

Laboratory fee \$2  
Standard tests and analysis of boilers, steam pumps, condensers, engines and turbines; internal combustion engines, including gas, gasoline, oil, automotive and aviation; tests and determination of characteristics of fans, steam air, and hydraulic flow devices; heating, ventilating, air conditioning, refrigeration and equipment. P, 142ab.

- 164 Heating, Ventilation and Air Conditioning** 4 Cr. Full Quarter

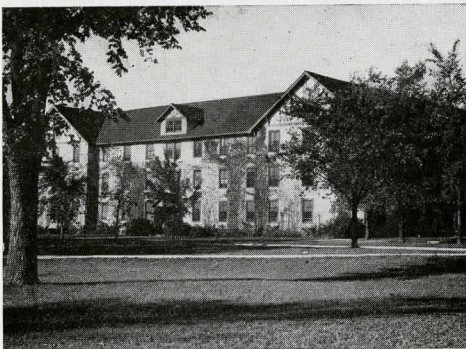
Principles underlying the design of heating, ventilating and air conditioning systems in common use; computation of heat loss and gain in buildings; proportioning of ducts and piping systems for steam and hot water heating; study of apparatus and control systems. P, 45.

- 168 Metals** 3 Cr. Full Quarter

Commercial methods of extraction, refining and compounding of metals and their alloys. Effects of composition, mechanical treatment and heat treatment on the microstructure and properties of metals. Metal casting, working and application to the engineering field. P, CE 14, Ch 2abc.

- 180 Seminar** 1 Cr. Full Quarter

Group discussion and reports on current events and developments in the field of mechanical engineering. P, senior standing.



East men's hall, ivy-entwined, is "home" for many men students

## Engineering Shop

**5 Elementary Forging and Welding** 2 Cr. 2nd Term  
Laboratory fee \$3

Introductory lectures and exercises in forging, heat treatment, oxy-acetylene and arc welding.

**10 Elementary Carpentry** 2 Cr. 1st Term  
Laboratory fee \$2

Use, care and conditioning of tools. A study of the properties of various kinds of woods and the processing of woods for specific purposes.

**11 Advanced Carpentry** 2 Cr. 1st Term

A continuation of elementary carpentry with emphasis on framing and rafter cutting. A study of special materials available for use in modern building. P, 10. Laboratory fee \$2.00.

**25 Cabinet Making** 2 Cr. 2nd Term

Cabinet construction and machine wood working. Cupboards, furniture, finishings, carving, upholstering, machine set-up and production. P, 12. Laboratory fee \$2.00.

## Mathematics

**10 College Algebra** 5 Cr. Full Quarter

A review of the fundamental operations, factoring, highest common divisor, least common multiple and solutions of linear simultaneous equations; study of quadratic equations, exponents, radicals, etc.

**11 Trigonometry** 5 Cr. Full Quarter

The principles of plane trigonometry and their application to the solution of triangles, inverse functions, solutions of trigonometric equations, De Moivre's theorem. P, 10, or equivalent.

**16 Analytic Geometry** 5 Cr. Full Quarter

Co-ordinate systems, loci, the straight line, the general equation of the second degree. P, 14, 15. Required in freshman engineering; elective in general science and agricultural courses.

**25 Differential Calculus** 4 Cr. Full Quarter

Formal differentiation with applications to engineering and science. P, 12 or 16.

**27 Applied Calculus** 5 Cr. Full Quarter

Applications of the calculus to maxima and minima, series, areas, surfaces, volumes, centroids, and movements. P, 26.

## Physics

**1a Elementary Physics** 4 Cr. 1st Term

Laboratory fee \$2  
Course will cover mechanics and certain phases of heat. P, high school algebra and plane geometry.

**1b Elementary Physics** 4 Cr. 2nd Term

Laboratory fee \$2  
Course will cover electricity and magnetism. P, 1a.

# Division of Home Economics

## Home Economics

**30 Clothing** 3 Cr. 1st Term  
Laboratory fee \$1

Development of the foundation pattern, flat pattern construction, and the selection and construction of a garment. Emphasis on selection of design and color to express individual personality. P, 11a.

**144 Advanced Clothing** 3 Cr. 1st Term  
Laboratory fee \$1

Application of principles of costume design to promote more independence, initiative, originality and art in planning and adapting garments for different types of figures. Laboratory practice to include remodeling for a child and the construction of a dress. P, 30.

**146 Methods of Teaching Clothing** 3 Cr. 1st Term  
Analysis of problems; making of illustrative material for clothing courses.

**160 Experimental Cookery** 3 Cr. 1st Term  
Laboratory fee \$4

Investigation of factors which affect a standard food product by laboratory experiments and a review of the literature on research in cookery.

**166 Textile Economics** 3 Cr. 1st Term

A study of the economic aspects of clothing which directly or indirectly affects the consumers. P, Ag Econ 20.



Wecota and Wenona halls are cool, modern homes for women students

**174-175 The House** 3 Cr. 1st Term  
 Planning and furnishing of a medium-priced home from the standpoint of economy, convenience, comfort, and beauty. (Combination of House Planning and Home Furnishing.)

**264 Nutrition Seminar** 2 Cr. 1st Term  
 \*Assigned readings and discussions of topics in the field of foods and nutrition with special attention to recent literature bearing on problems in dietetics in both normal and pathological conditions. P, 140, 141.

## Division of Pharmacy

### Nursing Education

Entering Nursing Education students will take Chemistry 1a and English 1a the first quarter and Chemistry 1b and English 1b the second quarter.

Advanced students in Nursing Education will receive their practical training at Sioux Valley Hospital, Sioux Falls, South Dakota.

### Pharmacy

**60ab Dispensing** 4 Cr. each term  
 60a 1st Term; 60b 2nd Term  
 Laboratory fee \$3, deposit \$3 each term

This course is designed to acquaint the student with the actual work that comes before him in the store, and give him the practical side of the work. P, all courses of Theoretical and Practical Pharmacy. Two recitations and six hours of laboratory work a week. Text: Scoville's Art of Compounding.

**61 Pharm. Jurisprudence** 2 Cr. each term

A study of the State and National laws governing the importance, commercial disposition and the medico-legal aspects of prescription practice.

**62ab Pharmacology** 4 Cr. each term  
 62a 1st Term, 62b 2nd Term  
 Laboratory fee \$3, deposit \$3 each term

The course in Pharmacology is designed to embrace a knowledge of the action of the more important drugs and preparations dispensed by the pharmacist. A careful study of the dose, therapeutic action and mode of administration comprises the major portion of the course. Laboratory work consists of biologic assays and antidotal treatment of common poisons. P, 23abc.

**143a Toxicology** 2 Cr. 1st Term

An introduction to the study of the nature, effects and antidotes of poisons as well as their classification. P, junior standing. Text and references: McNally's Toxicology; Authenrieth's Detection of Poisons; and Sollman's Manual of Pharmacology. Primarily for students electing one term's work in the field.

## Division of General Science

### Art

**1c Design** 2 Cr. 1st Term  
 Laboratory fee \$0.50

A foundation course intended to serve as a basic prerequisite for all other art work. P, lab.

**2 Frechand Drawing** 1 or 2 Cr. 1st Term  
 Laboratory fee \$0.50

A study of the principles of perspective. Exercises in outline and value from cast, nature forms and still life. Interpretative compositions.

**22 Costume Design and Fashion Illustration**<sup>2</sup>  
 2 Cr. 1st Term

Commercial rendering in color and black and white; costumes and accessories built on design principles, with use of research material. P, labc.

**23 Interior Decoration**<sup>2</sup> 2 Cr. 1st Term  
 Laboratory fee \$0.50

Technical rendering of design plates in color and in black and white; special consideration of scale, color, texture, and composition in relating interior furnishings to architectural features. P, labc.

**25 Applied Design**<sup>1</sup> 2 Cr. 1st Term  
 Laboratory fee \$0.50

The design and execution of various problems involving the definite use of materials, tools, and processes, will be used to further the understanding of design through actual application and execution. P, labc.

**26 Crafts** 1 or 2 Cr. 1st Term  
 Laboratory fee \$0.50

A study of the principles of design as applied to construction and decoration in the various crafts of pottery, basketry, weaving, wood carving, stenciling, block-printing, needlecraft, etc. P, labc.

**27 Art Appreciation**<sup>1</sup> 3 Cr. 1st Term

The place of the fine arts in the development of civilization and as a part of our cultural heritage in major emphasis on the pleasurable and intelligent appreciation of our artistic achievements.

<sup>1</sup>Either course 25 or 27 will be given but not both.

<sup>2</sup>Either course 22 or 23 will be given but not both.

**40 Painting** 1-2 Cr. per term 1st Term<sup>1</sup>  
 Laboratory fee \$0.50 per term  
 A study of color and its properties. Exercises in mixing and harmonizing color in painting, in oil, water color, or pastel. Emphasis is given to problems of composition. P, 3 credits in Freehand Drawing.

**42 Advanced Art Appreciation** 1 Cr. 1st Term  
 A study, somewhat in detail, of the art of a particular period to be selected by the group. P, 27.

**Special Craft and Design** 1 or 2 Cr. 1st Term  
 Laboratory fee \$0.50 per term  
 Intended for those who have had no previous work in Design but who would like to do some work in the crafts. The problems are adjusted to the group.

## Chemistry

**1ab Inorganic Chemistry** 4 Cr. 1a 1st Term  
 1b 2nd Term  
 Laboratory fee \$3.00; deposit \$3.00 per term.  
 A general survey of the field of inorganic chemistry, with emphasis on chemical laws and theories and non-metallic elements.

**28ab Stoichiometry** 1 Cr. 28a 1st Term  
 28b 2nd Term  
 Methods of calculations in quantitative analysis. Should accompany courses 23 and 24. P, 1c.

**22ab Elementary Organic Chemistry** 5Cr. 22a 1st Term, 22b 2nd Term  
 Laboratory fee \$6.00; deposit \$5.00 per term  
 A general course in organic chemistry to meet the requirements of the pharmacy division. (Agriculture students may substitute 22a for 21); P, 1c.

**173 Undergraduate Research** Cr. arranged  
 Both Terms  
 Laboratory fee \$1.00; deposit \$1.00 per credit hour  
 Special problems requiring original research. P, consent of instructor.

**23 Gravimetric Analysis** 4 Cr. 1st Term  
 Laboratory fee \$5.00; deposit \$4.00  
 Theory and practice of elementary gravimetric analysis. P, 1c.

**174 Biochemical Research** Cr. arranged, Both Terms  
 Laboratory fee \$1.00; deposit \$1.00 per credit hour  
 Research problems in applied biochemistry. P, consent of instructor.

**24 Volumetric Analysis** 4 Cr. 2nd Term  
 Laboratory fee \$5.00; deposit \$4.00  
 Theory and practice of elementary volumetric analysis. P, 1c.

**190ab Seminar** 1 Cr. 190a 1st Term, 190b 2nd Term  
 Presentation of topics based on reference reading and original research. P, Minor in Chemistry.

## Education and Psychology

**45 Educational Psychology** 3 Cr. 1st Term  
 Nature of learning curves, economic learning, rates and limits of improvement. The retention of experience, differences in learning capacity, transference and interference. Required for certification. P, Psy 25.

**262 Business Administration of Schools** 3 Cr. 1st Term  
 Business aspects of public school administration including such problems as organization of the work of the school board, budgetary procedure, financial accounting, building plans, equipment and supplies, janitor services, school finances. P, 160, graduate standing.

**137 Educational and Vocational Guidance\*** 3 Cr. 1st Term  
 Educational and vocational guidance; needs, aims and functions, means and methods; testing and counseling; programs of guidance in junior and senior high schools. P, 40, 45, 47.

**285 Thesis** Credit to be arranged Both Terms

**169 Curriculum Construction\*** 3 Cr. 1st Term  
 Nature, principles, applications, and purpose of the curriculum in American public schools. P, 40, 45, 47, senior in education.

NOTE: Additional courses for the second term will be organized in accordance with the demand. Individuals expecting to qualify for the administrative certificate should contact Dr. C. R. Wiseman, Head of the Department, before the opening of the First Term.

## English

**1ab English Composition** 3 Cr. 1a 1st Term;  
 1b 2nd Term  
 Drill in grammar, punctuation, and vocabulary. Study of the principles of rhetoric. Training in accurate, intelligent reading. Required of all freshmen.

**30c English Literature** 3 Cr. 1st Term  
 Third quarter of the English Literature Sequence covering the modern period. Required of English minors. P, 20.

**20 Introduction to Literature** 3 Cr. 1st Term  
 A study of the principal literary types—fiction, drama, essay, biography, and poetry. P, 1abc.

**Types Course** 3 Cr. 2nd Term  
 Either Fiction or Poetry, depending upon the demand. P, 20.  
 Advanced Courses (Numbered above 50) for English Minors who will graduate at the end of the Summer Quarter.

### Foreign Languages

Instruction in French, German, Italian, Portuguese, and Spanish will be offered if there is sufficient demand.

Anyone interested in studying these languages should consult with the head of the Language Department.

### History and Political Science

**23ab The American Nation** 4 Cr. 23a 1st Term; 23b 2nd Term  
Standard courses in American history. Special emphasis upon political development and constitutional growth. 23a, 1783 to 1850; 23b, 1850 to end of the century. P, sophomore standing.

**34 American Government** 4 Cr. 1st Term  
The National government; genesis of American federalism; the Constitution, its formation, principles, and development; party organization and activities; the President as chief executive; the Cabinet, growth of executive influence; departments; independent establishments and their reorganization; Congress, structure, organization and procedure; the national judiciary; national finance; federal centralization. P, sophomore standing.

**44 State and Local Government** 4 Cr. 2nd Term  
The State and the Nation; constitutional basis of state government; organization, functions, and popular control; rapid survey of county, city, and township organization. Emphasis upon South Dakota constitution and government. P, Sophomore standing.

**142b Contemporary Europe** 4 Cr. 1st Term  
Europe between two wars. A study of the nineteen twenties, the period of settlement, and the thirties, the period of crisis culminating in the Second World War. A political, diplomatic, and economic survey of post-war Europe including studies of Bolshevism, Facism, Nazism, present day dictatorships and important world conferences. P, Junior standing and one year of college history.

### Library Study

**60a Library Administration** 2 Cr. 1st Term  
A general course stating the problem of school libraries. Objectives and methods of service in the small high school libraries, organization, budget and ordering, classification and cataloguing, student library club, housing and equipment, records to be kept, reports to make, and methods of publicity. P, senior classification.

**60b Book Selection and Reference** 2 Cr. 1st Term  
Standards of criteria which may be used in appraising books for school libraries. P, Senior classification.

**60c Cataloguing and Classification** 2 Cr. Both Terms  
This course is to teach students how to catalogue and classify books for high school libraries. P, Senior classification.

### Military

Courses in Military Science and Tactics will be offered in accordance with the demand for such training.

### Music

The Summer term provides opportunity for study in piano, pipe organ, voice, and wind or stringed instruments. Individual instruction will also be given in sight reading and ear training, choral techniques and interpretation, conducting (Band, Orchestra or Choral), orchestration and harmony. All members of the staff will be available for individual lessons. Credit may be earned toward a minor in music.

A summer school chorus will be organized by Mr. Theman and a symphony orchestra and a band will be organized by Mr. Christensen if organization permits. Students in choral and instrumental conducting will be given an opportunity to direct these groups.

#### Fees per Term

|                                       |         |
|---------------------------------------|---------|
| One individual lesson per week .....  | \$ 6.00 |
| Two individual lessons per week ..... | \$12.00 |

### Physical Education and Recreation

#### MEN

**1a,b, or c Physical Education** 1 Cr. 1st Term  
Laboratory fee, including towel service, use of equipment, etc. \$1.50. Required of all freshmen. Emphasis on physical fitness.

**20a,b, or c Physical Education** 1 Cr. 1st Term  
Laboratory fee, including towel service, use of equipment, etc. \$1.50. Required of all sophomores.

**Sp Swimming** 1 Cr. Both Terms

NOTE: Special consideration will be given to men who may need additional courses to qualify for coaching positions, etc.

#### WOMEN

**1a,b, or c Physical Education** 1 Cr. 1st Term  
Laboratory fee, including towel service, use of equipment, etc., \$1.50. Required of all freshmen.

**20a,b, or c Physical Education** 1 Cr. 1st Term  
Laboratory fee, including towel service, use of equipment, etc., \$1.50. Required of all sophomores.

**40 Physical Education** 1 Cr. 1st Term  
Laboratory fee, including towel service, use of equipment, etc. \$1.50. Theory and practice of organized play.

### Printing and Rural Journalism

**16a Typewriting** 1 Cr. Both Terms  
Laboratory fee \$1 per term

Graded exercises to learn "touch method" are first given. Care of machines; correspondence and various forms; billing and tabulating.

**18ab Beginning Shorthand** 5 Cr. 18a 1st Term;  
18b 2nd Term

The Gregg system is taught. Complete theory. Some dictation.

**19ab Advanced Shorthand** 2 Cr. 19a 1st Term;  
19b 2nd Term

An intensive review of shorthand with special emphasis on dictation and development of speed. P, 18abc.

**24 Newswriting** 3 Cr. 1st Term

The beginning course in journalism. Includes a study of news sources and news values; actual practice in gathering and writing news is emphasized. P, English, 1abc.

**51 Feature Writing** 3 Cr. 2nd Term

A course covering the writing of news features and special feature articles; particular emphasis placed on methods of popularizing scientific material. P, 24.

**67 Journalism for Teachers** 2 Cr. 1st Term

A course for high school journalism instructors or advisers; includes journalism course-work, instruction in various types of school publication, school relations. P, Engl 1abc.

### Speech

**10 Argumentation and Debating** 2 Cr. 1st Term

The nature, kinds, and tests of evidence; structure, brief-drawing. Practice in debating and extemporaneous speaking.

**22 Extempore Speaking** 3 Cr. Both Terms

This course, required for graduation, may be taken during any term of the year. To assist the student in acquiring an effective oral style—simple, clear, direct. Attention to the selection, organization and presentation of material. P, Engl 1abc.

**23a Oral Reading and Interpretation of Literature**  
3 Cr. 2nd Term

Intended to develop skill in oral interpretation of emotional and imaginative literature.: Voice training with exercises and selections.

**41 Advanced Extempore Speaking;  
Speech Composition** 2 Cr. 1st Term

The principles of practical effective speech. P, 22 or by special permission.

**43 Public Address; Practical Persuasive Speech**  
2 Cr. 2nd Term

The various forms of public address and public discussion; the elements of persuasive speech. Original work by members of the class. P, 22.

**Sp Swimming** 1 Cr. Both Terms

NOTE: Special consideration will be given students who need additional courses to qualify for positions as instructors of physical education, etc.

### PRINTING

**Shop Course for Printers** Both Terms

Special shop courses are offered during the summer session in presswork, typography, and composing machines for men and women of the printing trades who wish to develop their skill in the various shop phases of printing. No entrance requirement is necessary other than previous experience in one of the printing trades. Tuition and laboratory fee \$5.00 per week.

**Typography** Both Terms

Laboratory fee \$1.50 per unit\*

Principles of typography are given to beginning students, including all the elements of hand composition.

**Composing Machines** Both Terms

Laboratory fee \$2.50 per unit\*

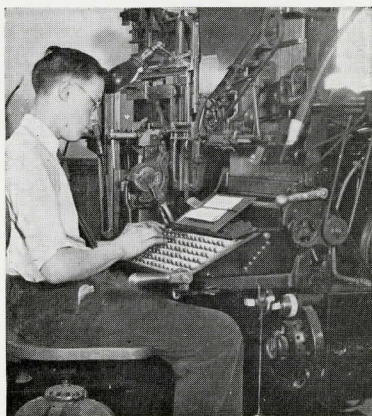
The course in composing machines includes practice and study in the repair and mechanical adjustments of all the composing machines including both Linotype and Intertype.

**Press Work** Both Terms

Laboratory fee \$2 per unit

The student may take either platen presswork or cylinder presswork, or both.

\*Six hours per week for each unit.



Many mid-western printers and publishers were trained at State College

South Dakota State College  
of Agriculture and Mechanic Arts

*Bulletin*

