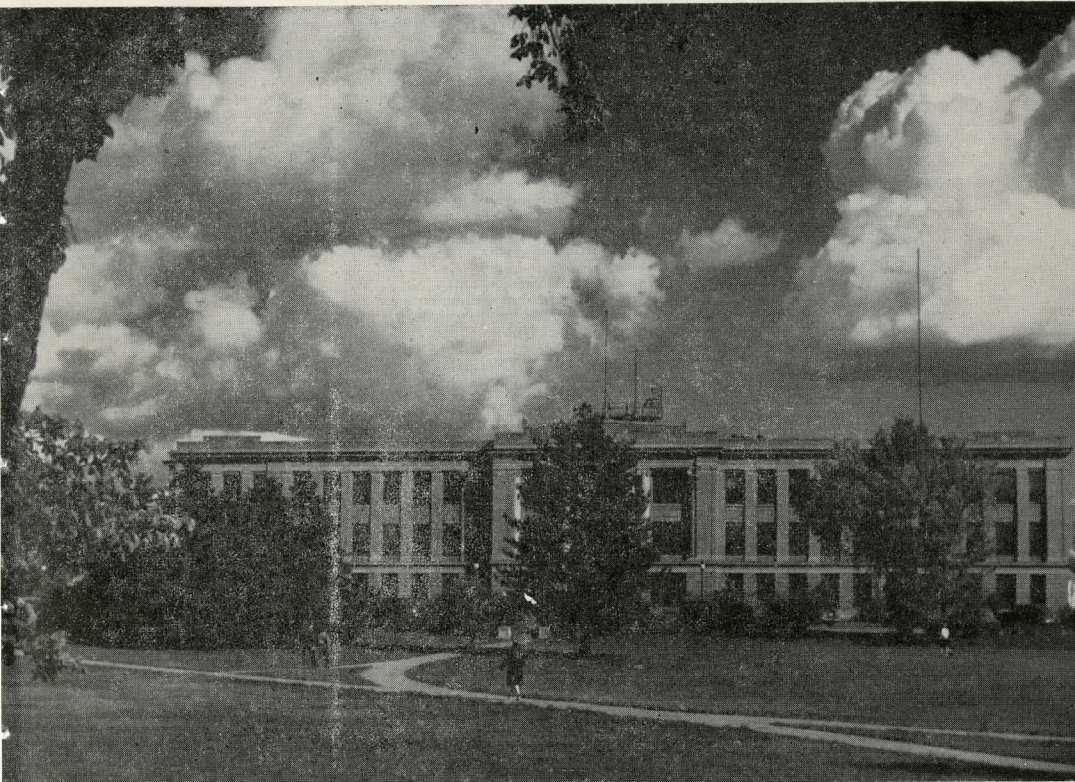


# BULLETIN



## SOUTH DAKOTA STATE COLLEGE

# *Summer School*

### First Term

June 13, Monday—Registration for first term.

June 14, Tuesday—Beginning of regular class schedule

July 4, Monday—A holiday

July 20, Wednesday — First term closes at 4:15 p.m.

1949

### Second Term

July 21, Thursday—Work for second term begins on regular class schedule.

August 27, Saturday—Second term closes at noon.

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No. 3

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# General Information

State College is offering its 1949 Summer Session program with the firm conviction that education can make a major contribution to the welfare of the State and 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 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 dean of the particular division to determine whether special provisions for studying these subjects might 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: college students who have been in attendance during the current year, and graduate students and teachers who wish to take advanced work.

Monday, June 13, 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 preceding Saturday forenoon.

## Admission

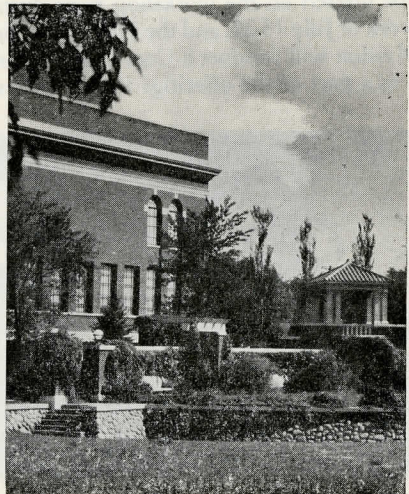
The requirements for admission to the Summer Quarter are the same as for other quarters

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

\*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.

## 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 desig-



Coolidge Sylvan theater, a center for summer social activities

nated as senior college and graduate courses, while those with numbers 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 special arrangements might be made.

The Department of Education offers a Master of Science degree in Education without requiring the usual thesis. Under this 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.

### Workshops and Institutes

Several workshop and institute programs will be conducted during the summer quarter. The course in Driver Education and Training will be offered on the workshop basis during the week of July 18-22, and the Home Economics Division will conduct a Curriculum Workshop as a part of the offerings for the first six

weeks. Short-period workshop sessions are also being contemplated in science education and secretarial work.

Some time during the summer quarter the College expects to conduct its annual Institute on Professional and Public Relations for public school teachers and administrators. This institute will be sponsored jointly by the NEA, the SDEA and the College Department of Education.

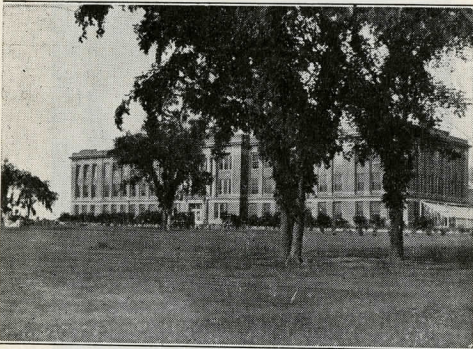
### Teacher Training Program

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.

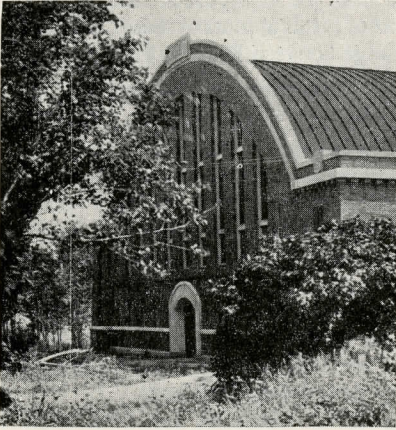
While it is highly desirable that teachers who wish to take summer work to prepare for teaching in these subjects should have had some previous training in these areas, it is not absolutely essential that they have an extensive college background. Assuming that a teacher has had high school algebra and 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



Administration building serenely overlooks a broad greensward



Physical and health activities are centered  
in State's gymnasium

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.

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 5,500 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.

### 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 87,000 volumes and 31,000 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 780 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.

### 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 quarter. 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 be able to secure rooms in the men's dormitories.

A limited number of Veterans' Barracks and Trailer Units will be available for housing married students. Rentals on the barracks units will run from about \$27.50 to \$32.50 per month, while for the trailer units the rental will range from \$22.50 to \$27.50 per month. Persons interested in securing such accommodations should contact Mr. Melvin B. Henrichsen, housing director, at the earliest possible moment.

The charge for rooming in the college dormitories will be \$15.00 per term. Charges for private rooms will range from \$2.50 to \$3.00 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*	\$20.00
Library	.50
Health	1.25
Union	1.50
Activity Ticket	2.00†
	Total \$25.25

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

†Plus federal tax.

#### Other Expenses

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.

A matriculation fee of \$5 is collected from all students entering for the first time. Laboratory fees are charged for the courses requiring laboratory work and course fees are charged for many courses not having laboratory work.

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 \$8.00 to \$10.00 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 organizations are held. Activities of a more social nature consist of mixer parties, picnics and dances. These activities 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 mathematics. Many teachers who have basic work in those fields may, through refresher courses in such work in summer session, become qualified for very good positions in the field in many cases and 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 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 1948-49 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, consumption and distribution of wealth, money and value; price fluctuations and policies. Course fee \$1.25.

#### 125 Intermediate Economic Analysis 3 Cr. 1st term

The methodology and scope of economic science; fundamentals of value and distribution theory; relation of economic analysis to economic policy. P, 20. Course fee \$.75.

#### 139 Business Management 3 Cr. 1st term

The methods and practices of efficient management of business located in rural areas or dealing with rural people. P, 20, 35ab. Course fee \$.75.

### Agricultural Engineering

#### 167ab Senior Problem 2 or 3 Cr. 1st term

Original problem in design or research on an Agricultural Engineering subject. Includes outlining problem, tabulating data and submitting typewritten comprehensive report of results. Fee \$3.00.

#### 10 Beginning Riding 2 Cr. 1st term

Basic riding instruction with English and Western type equipment. Types and breeds of riding horses, gaits, grooming, equipment, rations, care of feet, stables, and riding instruction. Horsemanship contest at end of course. Mr. Kiser. Laboratory fee \$15.00.

#### 22 Farm Meats 3 Cr. 1st term

Selecting, evaluating, slaughtering and dressing of meat animals; cutting and wrapping for freezing, curing and smoking farm meats; food value and utilization of meat and meat products. Laboratory fee \$3.50.

#### 66 Livestock Problem 2-5 Cr. Both terms

Senior students who have the necessary qualifications may be assigned special problems along definite lines of investigation.

#### 143a Livestock Feeding 3 Cr. 1st term

Practical application of nutrition principles to live-

#### 141 Statistical Methods 5 Cr. 1st term

Collection, organization and interpretation of quantitative data; statistical reasoning and design of experiments and questionnaires. Course fee \$4.50.

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

Principles and problems of public revenues, public expenditures, fiscal policy, and public debt management. Problems of attaining equitable distribution of burdens and benefits. P, 20. Fee \$.75.

#### 148 Money, Bank Credit and Prices 3 Cr. 2nd term

Monetary theory, influence of monetary, banking and fiscal policies on price levels, business activity and public welfare. P, 48. Fee \$.75.

### Agronomy

#### 78 Soil Conservation 3 Cr. 1st term

Value of soil as natural resource, effects of soil physical properties, types of rainfall, vegetation, cultural practices on soil erosion, methods of conservation of soil, water and plant nutrient with special emphasis on agronomic practices.

### Animal Husbandry

stock feeding; examining and studying characteristics of feeds; practice in compounding and mixing rations and studies of their relative economy. Trips will be made to experimental and nearby farm feed lots. P, Ch 21. Laboratory fee \$2.00.

#### 144 Livestock Management 4 Cr. 1st term

Designed for majors in other departments. Survey of the livestock industry, feeding practices, breeding, management, marketing, evaluating, judging and fitting of farm animals. P, 43ab. Laboratory fee \$1.00.

#### 145 or 146 or 164 or 165 or 167 Both terms

One of these production courses will be offered. Students should express their preference previous to registration. No course will be offered for less than five students. 145 fee \$2.00, 164 fee \$2.00, 165 fee \$4.00, 167 fee \$2.00.

## Botany—Bacteriology

## Botany

**10ab General Botany** 4(4,4) 1st term; 2nd term  
Consideration of life problems which seed plants must solve if they are to develop successfully from seed to maturity. 10a, first term; 10b, second term. Fee \$3.50 each term.

**10c General Botany** 4(4,4) 2nd term  
Survey of great groups of plant kingdom; their origin and contribution to present vegetation. Fee \$3.50.

**24 Flora of the Black Hills** \* 1st term  
Field-laboratory course in taxonomy and ecology of Black Hills flora. Maximum of nine credits may be earned toward graduation. Apply to Botany Department for details of prerequisites, expenses, and equipment. Fee \$7.50.

**\*27 The Local Flora** 4(4,3) both terms  
Principles of taxonomy and identification of plants in Brookings vicinity. P, General Botany or equivalent. Fee \$3.50.

**41 General Plant Physiology** 5 Cr. 2nd term  
Rapid survey of field of plant functions and adjustments. P, 10ab. Desirable antecedents Ch 1abc and 21. Fee \$3.50.

\*Either 10c or 27 will be offered the second term, but not both.

## Entomology—Zoology

**20ab General Zoology** 4 Cr. 20a 1st term; 20b 2nd term  
Fundamental principles of animal morphology, physiology, reproduction, embryonic development, genetics, classification, ecology, geographic distribution, paleontology and evolution. Fee \$3.50 per term.

**42 Genetics** 3 Cr. 2nd term  
Origin of germ cells, germ cell cycle, embryological development as determined by heredity and modified by environment, cytology of germ cells, relation of

**20 Principles of Sociology** 5 Cr. both terms  
Basic introductory course prerequisite to all other sociology courses numbered above 20. Comprehensive study of society, with analysis of forces shaping human behavior in group life. Fee \$1.25.

**131 Rural Sociology** 3 Cr. 1st term  
Principles of sociology applied to study of rural society and its problems. P, 20. Fee \$75.

**132 Elements of Leadership** 3 Cr. 1st term  
Designed primarily for prospective Rural Life leaders who will work on community, county or state level. Specifically, it should be of interest to Agricultural and Home Economics Extension workers, Teachers, or those who work in either Social or Economic institutions with country or town people. Special emphasis is given to selecting, training, and supervising work of local lay leaders. P, 20. Fee \$75.

**143 Social Pathology** 3 Cr. 1st term  
Conditions and factors which result in individual maladjustment, such as illness, blindness, mental disease, and suicide; in breakdown of domestic relations, such as divorce, widowhood, illegitimacy, and vice; or in failure to cope with social problems such as alcohol-

## Bacteriology

**30 General Bacteriology** 4(4,4) First term  
Introduction to principles of microbiology and bacteriological technique. P, sophomore standing. Fee \$3.50.

**142 Principles of Infection and Immunity** 5(6,4) 1st term  
Bacterial infection, antibodies, vaccines, blood typing. P, 41. Fee \$3.50.

**143 Pathogenic Bacteria** 5(6,4) 2nd term  
Morphological and cultural characteristics of bacterial organisms which cause man's most important diseases. P, 142. Fee \$3.50.

**152 Virus and Rickettsial Diseases** 3(6,0) 2nd term  
Attention given to pathogenic fungi as well as disease types mentioned. P, 142. Fee \$5.00.

**160 Bacteriological Problems** 2-5(\*\*,\*) both terms  
Individually assigned problems in bacteriology, mycology, or immunology. Admission upon recommendation of instructors. Fee \$1.00 per hour.

chromosome material to genetics; theory of gene, linkage, crossing over, non-medelian inheritance, experimental evolution and related phenomena. P, 20b.

**22 Human Physiology** 4 Cr. 1st term  
Fundamental physiological processes of human body. Kymographs, sphymographs, haemocytometers, etc., are used in some physiological studies. P, 20ab. Fee \$3.50 per term.

ism, crime, poverty, unemployment, and war. P, 20. Fee \$75.

**144 Urban Sociology** 3 Cr. 2nd term  
Sources and characteristics of urban populations, geographical setting, structural characteristics, institutions, folkways and social problems of modern city. P, 20. Fee \$75.

**162 Criminology** 3 Cr. 2nd term  
Nature and causes of crime. Making of criminals. Theories of punishment. Agencies and methods of arrest, conviction, and segregation of criminals. Jails, prisons, and reformatories, probation and parole. P, 20. Fee \$75.

**167 Marriage** 3 Cr. 1st term  
Courtship and marriage period is given special emphasis. Mate selection problems of unmarried, adjustment in marriage, reproduction, and child training are discussed. P, 20. Fee \$75.

**168 The Family** 3 Cr. 2nd term  
Main emphasis is on typical American family. Consideration given to importance of family life, personal relations within family and social changes affecting it. P, 20. Fee \$75.



## Division of Engineering

*See time schedule for assignment of courses to first term second term or to 12 weeks schedule  
The final arrangement of courses will be adjusted to meet the needs.*

### General Engineering

#### 3a Engineering Drawing 2 Cr.

Development of skill in use of drawing instruments, and in mechanics of drafting. Open to all students who have had high school mathematics. Fee \$1.00.

#### 30 Engineering Problems 2 Cr.

Systematic methods of solving representative problems. Use of slide rule and other calculating devices and machines. Habits of neatness and orderliness in calculation are cultivated. P, Math 26.

#### 32 Statics 4 Cr.

Force systems, centroids, and moment of inertia. P, Math 26.

#### 142 Strength of Materials 4 Cr.

Stresses and deformations in structural and machine elements. P, 32, Math 27.

#### 177 Engineering Economy 3 Cr.

Economic aspects of engineering, cost estimating, and financing. P, Senior standing.

### Civil Engineering

#### 3 Plane Surveying 4 Cr.

Theory and practice of surveying; field problems including profiles, cross sections, traverses, and area determinations, P, Math 15, GE 3b. Fee \$4.50.

#### 53 Elements of Sanitation 3 Cr.

Public health problems, sanitation of water and food, industrial wastes, stream pollution, rodent control, and other related topics. P, Ch 1c.

#### 163 Reinforced Concrete Theory 3 Cr.

Reinforced concrete, theory and design. Applications to design of beams, slabs, and columns. P, GE 142.

#### 170 Fluid Mechanics 3 Cr.

Laws governing fluids at rest and in motion. Theory of hydraulic measurements and study of hydraulic machinery. P, GE 45.

#### 172 Water Supply and Sewerage 5 Cr.

Engineering problems in the design and operation of water and sewerage systems. P, 53, 170.

#### 180abc Special Problems Cr.\*

Elective course for special or detailed study or investigation. P, senior standing in CE.

### Electrical Engineering

#### 141 Electricity and Magnetism 5 Cr.

Laws of electric and magnetic fields and circuits; measurements of electric and magnetic properties. P, Math 25, Phy 21c.

#### 144ab D. C. Lab 2 Cr.

12 weeks

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. Fee \$3.00.

#### 161 Alternating Current Circuits 4 Cr.

12 weeks

Alternating currents, voltages, and power in single-phase and polyphase circuits. P, 141.

#### 163b Alternating Current Machinery 3 Cr.

Construction and characteristics of various types of alternating current machinery. P, 161.

#### 164abc A. C. Lab 2 Cr.

12 weeks each

Measurements in alternating current circuits, including polyphase power, phase angles and phase sequences. Operation and testing of alternating current generators, transformers, and motors. May be taken for one credit per term with less emphasis on report writing by stu-

dents in Electronics sequence and by students in Mechanical Engineering. To accompany courses 163ab or 167ab. Fee \$3.00 per term.

#### 170 Electrical Problems Cr.\*

Special problems assigned in field of power of electronics.

#### 176 Radio Circuits 3 Cr.

Radio frequency amplifiers and oscillators, amplitude and frequency modulators and demodulators, and associated circuits. P, 174.

#### 177 Electronics Laboratory 2 Cr.

Radio frequency oscillators and amplifiers, detectors, modulators, audio amplifiers, radio test equipment, square-wave generators, oscilloscopes and electronic switches. To accompany course 176. Fee \$3.00.

#### 181 Industrial Electronics Laboratory 2 Cr.

Electronic voltage regulators and speed controls, high frequency heating, industrial x-ray units, resistance welders, ignition and mercury-vapor rectifiers. May be taken for one credit with less emphasis on report writing by students in electrical power sequence and mechanical engineering students. P, 168 or 180. Fee \$3.00.

### Mechanical Engineering

#### 45 Elements of Heat Power 3 Cr.

Introductory course; power generation field, types and study of heat power machinery. P, junior standing.

#### 62 Mechanical Laboratory 2 Cr.

Laboratory instruments; testing of fuels and lubricating oils; engines and boilers. P, 45. Fee \$3.00.

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

Formal differentiation with application to engineering and science. P, 12 or 16. Required in engineering, elective in other courses.

**26 Integral Calculus** 4 Cr. Full quarter

Formal integration with applications. P, 25. Required in engineering, elective in other courses.

**27 Applied Calculus** 4 Cr. Full quarter

Applications of calculus to maxima and minima, series, areas, surfaces, volumes, centroids, and movements. P, 26. Required in engineering, elective in other courses.

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

Suitable for students with little mathematical background. Open to freshmen. Offered to all students outside the engineering groups. General topics in mechanics, heat, sound, electricity and light will be considered. P, high school algebra and plane geometry. Fee \$2.00 per term.

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

Suitable for students with little mathematical back-

**105 Mathematics Statistics** 5 Cr. Full quarter

Analysis of data by certain elementary principles; curve fitting, measures of correlation, and meaning and calculation of number of statistical constants. P, college courses in algebra and trigonometry.

**141 Theory of Equations and Determinants** 3 Cr. Full quarter

Complex numbers, DeMoivre's Theorem, cubic and biquadratic equations. P, 16.

**166a Advanced Engineering Math** 3 Cr. Full quarter

Series, partial differentiation, differential equations, Bessel's functions, and Vector analysis. P, 27.

**Physics**

ground. Subject matter is presented in elementary manner, course open to freshmen. Offered to all students outside engineering groups. Topics in mechanics, heat, sound, electricity and light will be considered. P, high school algebra and plane geometry. Fee \$2.00.

**21a General Physics** 4 Cr. 12 weeks

Mechanics of solids and fluids. P, Math 11 or 15. Fee \$2.00 per term.

**Division of Home Economics****Home Economics****51a Special Methods in Home Economics** 3 Cr. 1st term

Philosophy and objectives of home economics as they relate to those of general education and are specific to home economics, with methods of classroom teaching for attainment of objectives.

**71 Household Management** 3 Cr. 1st term

Applications of principles of scientific management to budgeting time and money.

**72 Home Management House** 4 Cr. 1st term

Six weeks residence in home management house with experience in problems that arise in a home.

**140 Nutrition** 3 Cr. 1st term

Fundamental principles of human nutrition; relation of food to health; dietaries for adults. P, Ch 19, Foods 20. Fee \$2.00.

**144 Advanced Clothing** 3 Cr. 1st term

Application of principles of costume design. Laboratory practice includes a made-over problem and a tailored suit or dress. Fee \$3.00.

**146 Methods of Teaching Clothing** 3 Cr. 1st term

Analysis of problems; making of illustrative material for clothing courses.

**177 Curriculum Workshop** 3 Cr. 1st term

Open to homemaking teachers who have been participating in development of homemaking curriculum. Designed to make possible, through concerted effort, use of library, consultants, and laboratory in preparing homemaking curriculum for secondary schools in South Dakota. Fee \$.75.

**Division of Pharmacy****Pharmacy****41ab Drug Assaying** 4 Cr. each term both terms  
P, Ch 1abc, Fee \$3.50; deposit \$3 each term.**42 Theoretical Pharmacy** 4 Cr. 1st term

Medicinal alkaloids and their derivatives, glandular products, vitamins, and biologicals. P, first two years of Theoretical and Practical pharmacy. Text: Remington's Practice of Pharmacy.

**43 Practical Pharmacy** 2 Cr. 1st term

Compounding of more simple prescriptions, packaging, labeling, and wrapping of finished product. P, first two years of Theoretical and Practical Pharmacy. Text: Remington's Practice of Pharmacy. Fee \$3.50; deposit \$3.

**46 Window Display** 2 Cr. 1st term

Combination study of color schemes, and arrangements of material, lighting effects. Fee \$3.00; deposit \$3.

**143a Toxicology** 2 Cr. 2nd term

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 field.

**Nursing Education**

Entering Nursing Education students will take Chemistry 1a and English 1a first term and Chemistry 1b and English 1b second term. Advanced students in Nursing Education will receive their practical training at Sioux Valley Hospital, Sioux Falls, South Dakota.

**262 Business Administration of Schools** 3 Cr. 1st term

Business aspects of public school administration including such problems as organization of work of school board, budgetary procedure, financial accounting, building plans, equipment and supplies, janitor services, school finances. P, 160, graduate standing.

**270 Research Methods in Education** 3 Cr. 2nd term

Study and application of ordinary research procedures as, selection of research problems, techniques of gathering data, experimentation, organization and statistical treatment of data, interpretation of results and proper form of reporting. Considerable collateral reading and analysis of reported and published research studies in Education and Psychology. P, 160.

**\*277 Curriculum in Vocational Agriculture**

3 Cr. 1st term

For teachers and administrators of vocational agriculture. Survey of scientific studies and literature in the field; principles and procedures in curriculum building

as applied to vocational agriculture. P, graduate standing.

**280 Research Problems in Education** 3 Cr. Both terms

Required of graduate students who wish to qualify for Master's degree without writing thesis. Student may conduct research projects in connection with three selected courses in which case he will be allowed four instead of three credits per course; or, he may select a more pretentious problem, relating to work of his own school system, which will be equivalent to three or four credits of work. In each case problem must be organized, investigated, and reported in approved form. Usually some statistical treatment will be involved.

**285 Thesis** Credit Arranged

Both terms

\*Graduate students who wish to qualify for the Master's degree under plan B may select research projects in areas covered by starred courses, thereby earning four instead of three credits.

**Psychology****25 Elementary Psychology** 3 Cr.

1st term

Fundamental principles of human behavior. Prerequisite for all Education courses. Fee \$.75.

**35 Applied Psychology** 3 Cr.

1st term

Scientific study of adjustment problems common to all normal people. Mental hygiene approach to personal efficiency. P, 25. Fee \$.75.

**English****1abc** 3 Cr. each term

1a 1st term; 1bc both terms

Drill in grammar, punctuation, and vocabulary. Study of principles of rhetoric. Training in accurate, intelligent reading. Required of all freshmen.

**20 Introduction to Literature** 3 Cr.

1st term

Principle literary types—fiction, drama, essay, biography, and poetry. P, 1c. Fee \$.75.

**22 Drama** 3 Cr.

1st term

Selected plays, ancient and modern. May be elected to complete sophomore English requirement. P, 20. Fee \$.75.

**25 Biography** 3 Cr.

2nd term

Great biographies of past and present. May be elected to complete sophomore English requirement. P, 20. Fee \$.75.

**31ab American Literature** 3 Cr. each term

31a 1st term; 31b 2nd term

American literature from its beginning to present

day. Required of Journalism-English majors and persons who expect to teach English. P, 20 or 30abc. Fee \$.75.

**33 Commercial Correspondence** 2 Cr.

1st term

Review of fundamentals of English grammar and composition; special application to writing business letters and other business forms. Required of Agricultural Business majors and open to other students. Does not meet general English requirements. P, 1abc.

**42 Advanced Composition** 3 Cr.

2nd term

Required of juniors in engineering curricula. P, 1c.

**55 Recent American and British Literature**

3 Cr. 2nd term

American and British literature since 1900. Fee \$.75.

**56 The English Language** 3 Cr.

1st term

Development of structure of language. Special emphasis on grammar treated from historical perspective. P, 30abc, or consent of instructor. Fee \$.75.

**Foreign Languages**

Full year courses will be offered in Spanish 1abc, and Spanish 21abc or French if demand is sufficient to warrant organization of such classes. Persons interested in

language study in these fields should consult head of department before June 13.

**History and Political Science****1bc Development of Civilization** 4 Cr. each term

1b 1st term; 1c 2nd term

Civilizations, including those of India, China, and Japan, from earliest times to 1600 A.D. Emphasis is placed on points which affect our present civilization. Fee \$1.00

**23ab American History** 4 Cr. each term

23a 1st term; 23b 2nd term

Political, social, and economic development. (23a, 1492—1865; 23b, 1865—1914). Fee \$1.00.

**PS31 Reading on Public Affairs** 2 Cr. 1st term

To interest students in more consistent and selective reading of better newspapers and periodicals; covers aftermath of second world war. Fee \$50.

**PS34 American Government** 4 Cr. 1st term

Emphasis on constitution, federalism and national government. Fee \$1.00.

**143b Latin America and the United States** 4 Cr. 1st term

International relations of Latin America with special reference to U. S. P, one year of college history. Fee \$1.

**60a Library Administration** 3 Cr. 1st term

Problem of school libraries. Objectives and methods of service in small high school libraries, organization, budget and ordering, classification and cataloging, student library club, housing and equipment, records to be kept, reports to make, and methods of publicity. P, senior classification. Fee \$75.

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), teaching or instrumental groups and harmony. All members of the staff will be available for individual lessons. Credit may be earned toward a minor in music.

Summer school band and orchestra will be directed by Mr. Christensen. Students in conducting will be

**Library Study****165 Social Science Methods** 3 Cr. 1st term

How social scientists arrive at conclusions; place of social sciences in modern life. For majors and graduate students in any social science fields. P, 30 credits in social science, or prerequisites for graduate work in social science fields. Fee \$75.

**250ab Special Problems in Political Science** 3 or 4 Cr. Both terms

Advanced work in political science to fit the graduate student's need.

**60b Book Selection and Reference** 3 Cr. 1st term

Standards of criteria which may be used in appraising books for school libraries. P, senior classification. Fee \$75.

**60c Cataloging and Classification** 3 Cr. Both terms

To teach students how to catalog and classify books for high school libraries. P, senior classification. Fee \$75.

**Music**

given an opportunity to conduct summer school groups.

**Fees per Term**

Instrumental, piano, pipe organ, voice: One individual lesson per week, \$9.00 per term; two individual lesson per week, \$18.00 per term.

Individual instruction in sight singing and choral technique and materials, harmony, conducting, and teaching of instrumental groups. \$9.00 per term.

**Physical Education and Recreation****Men****12 Prevention and Care of Injuries** 2 Cr. 2nd term

General care and treatment of athletic injuries, training rules, conditioning, types of taping for athletic injuries, and equipment for training room. Required of physical education majors. Fee \$50.

**21b Physical Education Activities** 1 Cr. 1st term

Fundamental conditioning exercises. Fee \$2.00.

**21c Physical Education Activities** 1 Cr. 1st term

Individual and dual sports. Fee \$2.00.

**13 First Aid Specialization** 2 Cr. 2nd term

Standard Red Cross first aid course given under auspices of American Red Cross. Students completing course will receive a card showing registration with American Red Cross. Fee \$50.

**17 Swimming** 1 Cr. Both terms

Fundamentals of swimming and diving, including various types of strokes and elementary water safety. Fee \$1.00 plus admission fees to community pool.

**49a Advanced Physical Education Activities** 1 Cr. 1st term

Combatives. Fee \$2.00.

**62 Football Coaching** 3 Cr. 1st term

Theory of both offensive and defensive team play and strategy; technique and execution of fundamentals of game. Open to juniors and seniors. Fee \$75.

**63 Basketball Coaching** 3 Cr. 1st term

Theory and practice of individual and team play; proper technique for execution of fundamentals of basketball; theory of offensive and defensive team play. Fee \$75.

**Men and Women****18 Nature, Function, and Organization of Play** 2 Cr. 1st term

Historical significance of play; meaning and value of play; theories and philosophy of play; play as a social movement; practical conduct of play ground; and constructive recreational programs for all-year systems. Fee \$50.

**43 Administration of Intramural Sports** 2 Cr. 2nd term

Methods of directing intramural sports. Opportunity will be given to assist in supervising and managing various intramural sports. Fee \$.50.

**57 Curriculum in Physical Education** 2 Cr. 2nd term

Acquaints students with procedure for constructing complete physical education course of study and principles underlying selection and arrangement of activities in physical education program. Fee \$.50.

**23b Physical Education Activities** 1 Cr. 1st term

Singing games and elementary folk dancing. Fee \$2.

**60 Teaching of Physical Education** 3 Cr. 1st term

Theory and practice of program planning and adaptation and selection of material according to age, grade, and sex for class and squad work for elementary and secondary schools. Lesson planning, group teaching, and criticism of class. Fee \$.75.

**88 Adapted Activities** 3 Cr. 2nd term

Principles and techniques involved in exercise for prevention and amelioration of functional defects. Adaptation of physical activities to individual. Fee \$.75.

**Women****45c Intermediate Physical Education Activities**

1 Cr. 1st term

Teaching of archery. Fee \$2.

**Printing and Rural Journalism****16ab Typewriting** 2 Cr. each term

16a 1st term

16b 2nd term

Course 16a includes use of typewriter by touch system, term papers, personal typing. Open only to students who have not had previous typing instruction.

Course 16b includes review of typing techniques, business letter writing, manuscript writing, tabulation, legal and business documents. Not open to students who have had more than one year of high school typewriting instruction. Fee \$3.00 per term.

**18abc Shorthand** 6 Cr. for two terms

Gregg system taught. Five two-hour class sessions per week. Open for credit only to those with no previous shorthand instruction.

**19ab Advanced Shorthand** 3 Cr. per term

19a 1st term; 19b 2nd term

Intensive review of shorthand with special emphasis on dictation and development of speed in taking shorthand and transcription. Five two-hour class sessions per week. P, 18abc or two years of high school shorthand instruction, or consent of instructor. Fee \$2.00 per term.

**24a Newswriting** 3 Cr. 1st term

Beginning course in journalistic writing. Includes news sources and news value; actual practice in gathering and writing news. P, English 1bc. Fee \$3.00.

**33 Commercial Correspondence** 2 Cr. 1st term

(For course description see Department of English.)

**60 Problems and Methods** 2 Cr. 2nd term

Individual work fitted to special needs of student as determined by interests and aptitudes. P, 26 and consent of instructor. Fee \$.50 per credit.

**66 Publicity Methods** 3 Cr. 2nd term

For students expecting to become county agents, home demonstration leaders, or vocational teachers. Not open to majors or minors in journalism. Fee \$.75.

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

For high school journalism instructors or advisers; includes journalism course work, instruction in various types of school publications, and school publicity work. P, Engl 1abc. Fee \$.75.

**Printing****Typography** Both terms

Principles of typography are given to beginning students, including all elements of hand composition. Fee \$1.50 per unit.\*

**Composing Machines** Both terms

Includes keyboard practice and study in repair and

mechanical adjustments of composing machines including both Linotype and Intertype. Fee \$2.50 per unit.\*

**Press Work** Both terms

Student may take either platen presswork or cylinder presswork, or both. Fee \$2 per unit.\*

\*Six hours laboratory or two hours class per week for each unit.

**Speech****22 Extempore Speaking** 3 Cr. 1st term

Required for graduation, may be taken during any term of year. To assist student in acquiring an effective oral style—simple, clear, direct. Attention to selection, organization and presentation of material. Fee \$.75.

**41 Advanced Extemporaneous Speaking; Speech Composition** 2 Cr. 1st term

Principles of practical effective speech. P, 22 or by special permission. Fee \$.50.

**43 Public Address; Practical Persuasive Speech**

2 Cr. 1st term

Various forms of public address and public discussion; elements of persuasive speech. Original work by members of class. P, 22. Fee \$.50.