



1953 SUMMER SESSION
JUNE 15 TO AUGUST 7
GRADUATE WORK INSTITUTES WORKSHOPS

SOUTH DAKOTA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
BROOKINGS, SOUTH DAKOTA

BULLETIN

South Dakota State College Bulletin

of Agriculture and Mechanic Arts

Summer School Issue 1953

JOHN W. HEADLEY, D.Ed.,
President

HAROLD M. CROTHERS, Ph.D.,
Vice President, Dean, Division of Engineering

RAYMOND Y. CHAPMAN, M.A.,
Dean, Student Personnel, Acting Director of Summer Session

DAVID B. DONER, B.S.,
Registrar

ALFRED M. EBERLE, M.S.,
Dean, Division of Agriculture

ALICE M. ROSENBERGER, M.S.,
Dean, Division of Home Economics

FLOYD J. LEBLANC, Ph.D.,
Dean, Division of Pharmacy

FRANK G. SCHULTZ, Ph.D.,
Dean, Division of General Science

RUDOLPH A. LARSON,
Secretary

W. EDWARD SMITH, M.S.,
Business Manager

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General Information

The State College Summer Session for 1953 will be an eight-week session opening on June 15 and closing on August 7.

Monday, June 15 will be registration day. 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 during the preceding Saturday forenoon.

The eight-week summer session has been arranged to be of maximum benefit to teachers, students who are now enrolled in colleges, and high school students who wish to begin their college work. Courses will be offered in all five divisions of the College—Home Economics, General Science, Agriculture, Engineering and Pharmacy.

The normal load for students in the eight-week session will be 12 quarter-hours of credit.

Students wishing to study courses not listed in the Summer Session bulletin, should write to the Director of Summer Session to determine whether special provision for studying these subjects might be made.

The College reserves the right to withdraw any courses for which there is not sufficient demand.

Enrollment Procedure and Admission.—

All undergraduate students entering State College for the first time must submit an application for admission on the official form and take the examinations which are used in counseling students. The examinations are given after classes start and entrance is not based on the examination. Students who have previously attended State College need not make advanced application or take placement examinations.

A student entering directly from high school should request the principal to send a transcript of his record directly to the Registrar's Office at State College before registration. A candidate for entrance to the Freshman class must present at least fifteen units of high school credit. A student who presents fourteen units may be admitted as a conditional freshman, but must earn the additional unit in college before the close of his first year.

Who Can Benefit by Attending Summer School?

Teachers in public schools of the state who wish to broaden the field of their teaching qualifications will find many suitable courses on the schedule at State College this summer. Teachers who wish to earn a higher certificate or a higher degree will find many courses on advanced levels in the Summer Session.

High School Students may wish to begin their college work immediately following their high school graduation. Present mobilization plans make it desirable for some students to get as much college training as possible before they are called into the service of our country. Beginning courses for high school graduates will be available.

It is particularly desirable for students planning technical training in fields such as Engineering or Pharmacy who may not have had required mathematics courses to register

for summer school and makeup such deficiencies.

Students of high ability may by careful selection of courses accelerate their college career and complete the requirements in approximately three calendar years.

College students who wish to accelerate their programs, or who have been unable to take certain required courses during the college year, may find the courses which they need listed in this bulletin.

Expenses

Expenses are relatively low at State College. Tuition for the eight-weeks summer session will be \$27. General College Fees \$12.00, a Union fee of \$2, and an activity ticket of \$2.75. The total tuition and general fees will be \$43.75. However, students who have not previously registered at State College must pay a matriculation fee of \$5. This fee is paid only once. It is not required of those who have previously registered at State College.

For short courses of less than the normal summer session term that are open for college credit, a fee of three dollars (\$3.00) per credit hour is charged in lieu of regular tuition and course fees. General College fees will not apply to students carrying short courses only.

Students in short courses desiring to establish College credit will pay the matriculation fee if registering for the first time.

Housing

A limited number of barracks and trailer units will be available for married students. Persons interested in such accommodations should write to Director of Student Housing, State College.

Women students who are not residents of Brookings are required to live in dormitories unless permission to live elsewhere is granted by the dormitory committee. Men students may secure rooms in the men's dormitories.

The charge for rooming in the College dormitories is \$20.00 for the eight weeks session.

Students who live in dormitories must bring with them a mattress pad, pillow cases, pillow, sheets, blankets and towels.

Meals are available at the Pugsley Union as well as at restaurants near the campus. The cost of meals usually ranges between \$8 and \$10 per week.

Graduate Work

Graduate work leading to the degree of Master of Science is offered in many departments at the College. The Department of Education offers a Master of Science degree in Education without requiring the usual thesis. Under this arrangement a student must work on a research project, which is the equivalent of a three or four credit course or if he wishes he may work on several practical problems within his own school situation. Of courses listed in this bulletin, those which are numbered 100 through 199 may be taken for graduate credit, although they are open to seniors. Those numbered 200 or higher are intended primarily for graduate students.

Teachers Employment Bureau

The College has a Teachers Employment Bureau for alumni and former students who wish help in locating suitable teaching positions. The Bureau is operated by the Department of Education. Teachers who desire to have the employment bureau notify them when suitable vacancies occur may register with the Bureau during the Summer Session.

Faculty

The teaching staff for the 1953 summer session will consist largely of the regular faculty of the College, plus a number of visiting instructors who will be called in to offer instruction in certain specialized courses.

Special Workshops

Workshop courses and institutes will be offered in various fields during the summer session. In most cases students need not be regularly enrolled in the summer session in order to enroll in one of the workshops. Students who are enrolled in the regular summer session, however, will in most cases be given an opportunity to take advantage of those workshops which are of interest to them.

Workshops which have been planned so far are:

Workshop in Economic Education (Economics Forum) July 6-17, 1953

The purpose of this workshop is to provide an opportunity for teachers and others to increase their understanding of the basic mechanics of economics and how economic factors enter into the decisions people must make in their day-to-day activities. A similar workshop was conducted last summer.

The program is being conducted under the sponsorship of the Economics Department and the Education Department, with the cooperation of agricultural, business, public education and labor groups in South Dakota. The Joint Council on Economic Education, a national organization with offices in New York City, will provide consulting service and instructional materials.

The program will be conducted as an intensive two-week's workshop (July 6-17) with workshop sessions in the mornings (9-12), lectures and discussions scheduled for the afternoon (2-4) and evening sessions (7:30-9:00). This arrangement makes it possible for regular summer school students to attend all lecture and discussion sessions. Regular summer school students will complete the workshop projects in additional afternoon sessions following July 17.

Lecturers will be presented by national and regional authorities in the field of business, agriculture, labor and government, as well as, by college staff members from the departments of Economics and Education.

Students may register for graduate credit either in economics (Special Problems in Economics 197) or in education (Workshop in Education 170). Three credits will be granted for the completion of the two-week's session.

Tuition for special workshop students will be \$9.00 plus a \$5.00 matriculation fee for those who wish to receive credit and who have not been previously registered. Students enrolled for the regular summer term are eligible to enroll without paying the special \$9.00 fee.

Workshops

Special Topics in Home Economics Family Life. Mrs. Evelyn Duvall, Director. June 8—June 12. Concentrated Study. See Home Economics

Child Development in the Family, Miss Helen Young. June 15—June 26. Concentrated Study, See Home Economics.

U. S. Employment Service Training Conference—June 23-24.

Secretarial Institute. June 26 and 27. See Printing and Rural Journalism.

Nutrition Readings, Mrs. Elizabeth Pfautz. June 29—July 17. Concentrated Study. See Home Economics.

Workshop in Economic Education. July 6—17. See Explanation Below.

P.T.A. Workshop and Conference—July 15-16

News Workshop. July 24 and 25. See Printing and Rural Journalism.

Home Economics Seminar. July 20—August 7. See Home Economics

Driver Education. August 10—August 26. See Physical Education and Recreation Department.

Recreation and Social Activities

A program of organized social activities and recreation has been arranged to provide maximum entertainment and relaxation for summer session students. The program will be varied in nature and activities of interest to all groups have been arranged. Activities of a social nature will include parties, picnics and dancing. Tennis courts, baseball diamonds, equipment for archery and other sports will be available for student use. Student activity tickets will be honored at the Municipal Legion Gold course, which is just north of the college campus and farm. The beautiful municipal Swimming pool will also be available to holders of Summer Session activity tickets.

An outstanding convocation program of professional entertainment is planned in the fields of art, music and dramatics. These programs are open to all students and their families.

Course Offerings of General Interest

State College is a technical institution and all courses are listed under Departments within a division. Many subjects are of such nature that students not classified in a particular division may be interested in these courses.

The following courses of general interest are open to all students:

- Audio-Visual Education—See Library
 Horsemanship—See Animal Husbandry
 Black Hills Flora—See Botany
 The Local Flora—See Botany
 Human Physiology—See Entomology-Zoology
 Marriage—See Rural Sociology
 Engineering Problems—See General Engineering
 Fundamentals of Radio and Television—See Electrical Engineering
 Blueprint Reading—See Mechanical Engineering
 Architectural Drafting Details—See Mechanical Engineering
 Elementary Carpentry—See Engineering Shops
 Wood Turning—See Engineering Shops
 Cabinet Making—See Engineering Shops
 Physics in the Modern World—See Physics
 Home Furnishings—See Home Economics
 Driver Education and Training—See Physical Education
 Commercial Correspondence—See English
 South Dakota History—See History
 Music (Private Lessons)—See Music
 Swimming—See Physical Education
 Window Display—See Pharmacy
 Book Selection and Reference—See Library
 Safety Training—See Engineering
 Child Development in the Family—See Home Economics
 Special Topics in Home Economics Family Life—See Home Economics
 Newswriting and Reporting—See Printing and Rural Journalism
 Office Machines—See Printing and Rural Journalism
 Publicity Methods—See Printing and Rural Journalism
 Journalism for Teachers—See Printing and Rural Journalism
 Institutional Public Relations—See Printing and Rural Journalism

ABBREVIATIONS

- R—Recitation
 L—Laboratory
 P—Prerequisite
 Cr—Credit
 MTWTFSS—The days of the week
 *—Time and/or credit to be arranged

Division of Agriculture

1 Orientation $\frac{1}{2}$ Cr. R, W 1

Required of all freshmen. Meet with assigned counselor each week. College rules and regulations, attention to study habits and practices, self appraisal, health problems, campus social affairs and vocational and career planning.

AGRICULTURAL ECONOMICS

21 Principles of Economics 3 Cr. R, MTTF 8

Basic citizenship economics. Main concepts applying to operation of economy as a whole, including money, banking, national income, and its fluctuations, government finance, international and interregional trade, and comparative economic systems. Emphasis on economics essential for good citizenship.

38 Farm and Ranch Management 3 Cr. R, MTTF 9

Nature of farming and ranching as business, types of farming, tenure and leasing, combination of enterprises, factors affecting choice of crop and livestock, selection and use of machinery and equipment, use of labor and capital, marketing and record analysis.

150 Intermediate Economic Analysis 3 Cr. R, MTTF 8

Methodology and scope of economic science; fundamentals of value and distribution theory; relation of economic analysis to economic policy.

175 History of Economic Thought 3 Cr. *

Survey of economic theory; different schools of economic thought and economic environments which produced them.

195 Agricultural Policy 3 Cr. R, W 8, 9, 2 hrs.*

Economic policies affecting agricultural prosperity; suggested means of reform. Emphasis on national and regional problems and interrelationships affecting rural and national welfare.

197 Special Problems 2-5 Cr. *

Advanced work or special problems in agricultural cooperation, agricultural finance, farm management, land economics, marketing, public finance, statistics. Open to qualified seniors and graduate students by consent.

Note: Economic Education Workshop participants may obtain Economics credit by registering for this course.

285 Special Topics in Agricultural Economics

2-5 Cr. *

Graduate students may elect subjects in agricultural economics in consultation with staff. Open to all graduate students working towards Masters' Degree in agricultural economics.

299 Thesis in Agricultural Economics Cr. *

Original work under supervision on suitable research problem approved by department head and requiring written report to meet specifications of Committee on Graduate Study and College Library. Required of each candidate for degree Master of Science with major in this department and not open to others. Preferably scheduled over two or more quarters and department may withhold final grade on full credit until written report is accepted.

AGRICULTURAL ENGINEERING**150 Senior Problem** 2 Cr. *

Advanced study in farm machinery and farm shop with emphasis on teaching methods. Designed for Vocational Agriculture instructors.

AGRONOMY**57 Soil Conservation** 3 Cr. R, MTWT 9

Value of soil as natural resource, effects of soil physical properties, type of rainfall, vegetation, cultural practices on soil erosion. Methods of conservation of soil, water and plant nutrients with special emphasis on Agronomy practices. P, 25.

190 Crop Production Problems 2 Cr. *

Assigned readings, reports and discussion on important topics dealing with production of selected farm crops.

299 Thesis in Agronomy 7-10*

Original work under supervision on suitable research problem approved by department head and requiring written report to meet specifications of Committee on Graduate Study and College Library. Required of each candidate for degree Master of Science with major in this department and not open to others. Preferably scheduled over two or more quarters and department may withhold final grade on full credit until written report is accepted.

ANIMAL HUSBANDRY**10 Horsemanship** 2 Cr. L, MWF 1, 2

Types and breeds of riding horses, gaits, grooming, equipment, rations; basic riding instruction with English and Western type equipment.

160 Animal Husbandry Seminar 2 Cr. R, MWF 8

Review of current research in Animal Husbandry.

201 Research Problems 3-5 Cr. *

Graduate students may select a problem in:

- (1) Swine production
- (2) Beef Cattle production
- (3) Sheep production
- (4) Range Livestock production
- (5) Animal breeding
- (6) Meats
- (7) Nutrition
- (8) Livestock marketing

Maximum of five hours credit during graduate study.

260 Graduate Conference 1-3 Cr. *

Advanced discussion of newer knowledge of various phases of livestock production. When possible this course will be taught by guest professors.

299 Thesis in Animal Husbandry * Cr. *

7-10 as arranged. Original work under supervision on suitable research problem approved by department head and requiring written report to meet specifications of Committee on Graduate Study and College Library. Required of each candidate for degree Master of Science with major in this department and not open to others. Preferably scheduled over two or more quarters and department may withhold final grade on full credit until written report is accepted.

BOTANY**11 General Botany: Seed Plants** (First Half)

4 Cr. R, MWF 7; L, MWF 1, 2

Consideration of those problems of development, adjustment, and functions which plants must solve if they are to live successfully. Attention given to importance of plants to man's economy. Open to all students.

24 Black Hills Flora 9 Cr. Summer Botany Camp

Field-laboratory course in taxonomy and ecology of plant life in Black Hills. Maximum of nine credits allowed. Apply to Botany Department for details of prerequisites, equipment, and expense.

27 The Local Flora 4 Cr. R, MWF 8; L, TT 1, 2, 3

Principles of taxonomy, and identification of plant species in Brookings vicinity. P, 1, 2 or 11, 12.

In event Botany Camp (course 24) is not in demand, following will be offered on campus:

32 Plant Responses 4 Cr. R, MWF 10; L, MW 1, 2, 3

Analysis of environmental conditions, and of anatomical and physiological responses to them, which plants exhibit. P, 11-12.

47 Plant Anatomy 5 Cr. R, MWF 9; L, TT 1, 2, 3, and Th 4

Developmental anatomy of seed plant axis and its appendages. Emphasis on structural fitness of tissues and organs for functions they perform. P, 11, 12.

DAIRY HUSBANDRY—

BACTERIOLOGY

167 Dairy Problems 1-3 Cr.

Special problems in field of dairying. For advanced students only.

201 Graduate Conference in Dairying 2 Cr.

Four weeks. Problems in dairy production, dairy manufacturing and related sciences.

299 Thesis in Dairy Husbandry Cr. *

30 General Bacteriology 4 Cr. R, MWF 8;

L, MWF 1, 2
Principles of Microbiology and Microbiological Techniques. P, Sophomore standing.

41 Elementary Bacteriology 5 Cr.

R, MTF 10; L, MWF 1, 2
Principles of Microbiology and Microbiological Techniques. For students of Pharmacy, Nursing Education and Pre medical students. P, Ch 21.

146 Virus and Rickettsia Diseases 3 Cr. R, MTF 9

Attention given to pathogenic fungi as well as to diseases of types mentioned. P, 142.

151, 152, 153 Bacteriological Literature 2 Cr. *

Review and criticism of current papers in field of bacteriology, and discussion of their application to industry and health. Maximum of four credits allowed. Admission upon recommendation of instructors. Course 151, 152, or 153 offered as needed.

163 Soil Microbiology 5 Cr. R, MTWT 8;

L, MWF 3, 4
Microbial flora of agricultural soils, and biochemical changes which such organisms induce. P, 30, Ch 21, Agr 25-26 or equivalent.

165, 166, 167 Bacteriology Problems *

Individually assigned investigative problems in bacteriology, mycology or immunology. Individual conferences and laboratory or field work. Admission upon recommendation of instructors. Course 161, 162 or 163 offered as needed.

171, 172, 173 Seminar 1 Cr. *

Presentation of original and contemporary research in various fields of bacteriology and related fields. Maximum of 3 credits allowed. Course 171, 172 or 173 offered as needed.

299 Thesis in Bacteriology 7-10 Cr.

Original work under supervision on suitable research problem approved by department head and requiring written report to meet specifications of Committee on Graduate Study and College Library. Required of each candidate for degree Master of Science with major in this department and not open to others. Preferably scheduled over two or more quarters, and department may with hold final grade on full credit until written report is accepted.

ENTOMOLOGY—ZOOLOGY

20 General Zoology 4 Cr. R, MWF 11;

L, TT 9, 10, 11
Fundamental principles of animal morphology, physiology, reproduction, embryonic development, genetics.

22 Human Physiology 4 Cr.

R, MWF 8; L, TT 1, 2, 3
Fundamental physiological processes of human body. Kymographs, sphygmographs, haemocytometers used in some of physiological studies. P, 20-21.

42 Genetics 3 Cr. R, MTF 10

Origin of germ cells, germ cell cycle, embryological development as determined by heredity and modified by environment, cytology of germ cells, relation of chromosome material to genetics, theory of gene, linkage, crossing over, non-mendelian inheritance, experimental evolution and related phenomena. P, 20-21 or equivalent.

62 General Parasitology 3 Cr. R, MWF 9;

L, W 1, 2, 3
Survey is made of better known parasites belonging to various phyla, their life histories, economic importance and treatment. Laboratory work consists of morphology and life history of representatives of each group, techniques of diagnosis of parasitic diseases, and methods of preparation of whole mounts of parasites for microscopic examination. P, 20-21.

PLANT PATHOLOGY

46 Field Plant Pathology 3 Cr. *

Summer Field Course. Disease symptoms, isolation of disease organisms, and identification of common economic plant diseases. P, 45.

RURAL SOCIOLOGY

5 Current Social Problems 3 Cr. R, MTWT 11

Survey of present day problems in American Society such as crime, divorce, alcoholism, drug addiction, old age, war and physical and mental health. No Prerequisite.

20 Principles of Sociology 5 Cr. R, MTWTF 8, 2 hr.*

Prerequisite to all other sociology courses numbered above 20. Comprehensive study of society, with analysis of group life and other forces shaping human behavior.

31 Rural Sociology 3 Cr. R, MTWF 10

Rural ecology with emphasis on nature and composition of rural population; migration; tenancy; social and economic institutions, cooperatives; welfare conditions; rural organizations and movements; leadership; and social processes and problems of rural society. P, 20.

44 Urban Sociology 3 Cr. R, MTWF 8

Sources and characteristics of urban populations, geographical setting, structural characteristics, institutions, folkways, and social problems of modern city. P, 20.

46 Marriage 3 Cr. R, MTWT 9

Courtship and marriage period given special emphasis. Mate selection problems, adjustment in marriage, reproduction, and child training discussed. P, 20.

47 American Minorities 3 Cr. R, MTWT 11

America's minority groups: inter-racial and inter-cultural conflicts, accommodation and assimilation. Sources of prejudice, current trends, and proposed solutions. P, 20.

150 General Anthropology 3 Cr. R, MTWT 9

Prehistoric and primitive people and cultures, primitive customs and institutions compared with those of modern man. P, 20; one additional course and consent of instructor.

260 Social Change 4 Cr. R, *

Theories concerning factors and processes in social-cultural change. Consideration of various interpretations of social-cultural change in terms of stages, cycles, and trends.

Division of Engineering

1 Orientation ½ Cr. R, W 1

Required of all freshmen. Meet with assigned counselor each week. College rules and regulations, attention to study habits and practices, self appraisal, health problems, campus social affairs and vocational and career planning.

GENERAL ENGINEERING

3 Engineering Drawing 2 Cr. L, MTuW 1, 2, 3

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

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 15.

40 Safety Training 2 Cr. *

General course in safety covering employer liability, accident cost, safety devices, accident-prone worker, employee health, occupational diseases, accident and fire prevention, and organization for safety control.

CIVIL ENGINEERING

3 †Plane Surveying 3 Cr. *

Use, adjustment, and care of surveying instruments and field application of these instruments. P, Math 15, GE 4.

180-181 Special Engineering Problems 1-5 Cr. *

Elective course for special or detailed study of investigation. P, senior in Civil Engineering. For advanced irregular students.

Courses for senior engineers as needed.

†Suitable for irregular students as well as for mathematics and science teachers.

ELECTRICAL ENGINEERING

5 Fundamentals of Radio and Television 4 Cr. *

AM and FM radio and television with emphasis on receiving equipment. Treatment of underlying principles, radio, video and audio amplifiers, oscillators, detectors and rectifiers and their combination to form radio and television receivers. Laboratory work includes construction of radio receivers, trouble-shoot-

ing, and basic experiments in television. Cannot be applied toward graduation in engineering. P, High school graduation.

170 Special Electrical Problems 1-3 Cr. *

Special problems assigned in field of power or electronics. P, senior standing.

Note: Other courses may be added if needed by our own students.

MECHANICAL ENGINEERING

2 Blueprint Reading 2 Cr. R, Tu 11; L, ThF 1, 2, 3

Reading and interpreting blue prints. Suitable for mechanics, building trades people, and others who do not wish to take regular course in engineering drawing (or preparatory for those who have difficulty with drawing and descriptive geometry.)

10 Architectural Drafting Details

2 Cr. L, MTuW 1, 2, 3

Usual construction details used in building trades including foundations, framing roofs, cabinets and furniture. Course can be arranged to fit needs of student considering his ability and drafting experience.

ENGINEERING SHOPS

2 Machine Shop 2 Cr. L, MTWT 1, 2, 3

Equipment and tools used in machine shop work, methods of laying out work, elementary principles of machine and bench work, and problems involved in use of machine tools.

3 Advanced Machine Shop 2 Cr. *

Continuation of Machine Shop 2. Further and more detailed instruction in machine shop problems and operation.

5 Forging and Welding 2 Cr. L, MTWT 1, 2, 3

Introductory lectures and exercises in forging, heat treatment, oxyacetylene, and arc welding.

10 Woodworking 2 Cr. L, MTWT 1, 2, 3

Use, care and conditioning of tools. Properties of various kinds of woods and processing of woods for specific purposes.

20 Machine Shop Problems 2 Cr. *

Opportunity to undertake detailed and specialized studies of particular machines or to undertake comprehensive problems.

24 Wood Turning 2 Cr. *

Use of wood lathe, spindle, face plate, drive chuck, wood chuck operations in turning of various items, including patterns for foundry work. P, 11.

25 Carpentry 3 Cr. *

Continuation of elementary carpentry with emphasis in framing and rafter cutting. Special materials available for use in modern building. P, 10.

MATHEMATICS**2 Solid Geometry 2 Cr. R, MWF 8**

(Not counted toward graduation.) Required of freshmen engineering students who enter without high school credit in subject.

3 Algebra (1st year H. S. continued)

5 Cr. R, MTWTF 8, 2 hrs. *

(Not counted towards graduation.) Required of freshmen engineering students entering with credit in only two semesters of Algebra.

10 College Algebra 5 Cr. R, MTWTF 11, 2 hrs. *

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

11 Trigonometry (for General Science and Pharmacy Students) 5 Cr. MTWTF 8, 2 hrs. *

Principles of Plane Trigonometry and their application to solution of triangles, inverse functions, solutions of trigonometry equations. De Moivre's theorem. P, 10 or equivalent.

16 Analytic Geometry 5 Cr. R, MTWTF 11, 2 hrs.*

Co-ordinate systems, loci, straight line, general equation of second degree. Required in engineering, elective for others. P, 14, 15.

27 Applied Calculus 4 Cr. R, MTWTF 9

Applications of calculus to maxima and minima, series, areas, surfaces, volumes, centroids and move-

ments. Required in engineering, elective in other courses. P, 26.

110-111 Mathematics of Finance 3 Cr. *

Application of algebra to problems in interest, annuities, amortization, valuation of bonds, sinking funds and depreciation, building and loan associations, theory of probability and problems in life insurance. P, 14, 15 or 10, 11.

141 Theory of Equations and Determinants

3 Cr. R, MTTF 10

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

148 Differential Equations 4 Cr. R, MTTF 10

Differential equations with applications in fields of mechanics and physics. P, 26.

PHYSICS**3 Physics in the Modern World 2 Cr. R, MWF 10**

Elementary survey of field of physics with emphasis on application to phenomena and equipment encountered in every day life. Offered only in summer session.

20 General Physics 4 Cr. *

Mechanics of solids and fluids; sound; heat; electricity; magnetism, and light. P, Math 11 or 15.

161 Modern Physics 3 Cr. R, MTTF 11

Detailed study of selected topics including elementary particles, wave and particle theory, X-rays, atomic spectra, artificial disintegration of nuclei and nuclear energy. P, 41, 60 or consent of instructor. P, 160.

165 Modern Physics Laboratory 1 Cr. *

Experimental work covering work in 160 and 161. P, concurrent registration in 160 and 161.

Additional courses will be offered if demand warrants it.

Division of Home Economics**1 Orientation ½ Cr. R, W 1**

Required of all freshmen. Meet with assigned counselor each week. College rules and regulations, attention to study habits and practices, self appraisal, health problems, campus social affairs and vocational and career planning.

WORKSHOPS**164 Nutrition Readings 3 Cr. June 29—July 17**

Mrs. Elizabeth Pfautz. Concentrated Study.

175 Child Development in the Family 3 Cr.

June 15—June 26

Miss Helen Young. Concentrated Study.

272 Special Topics in Home Economics 1.5 Cr.

June 8—June 12

Family Life. Concentrated Study. Mrs. Evelyn Duvall, Director.

275 Seminar 2 Cr. July 20—August 7**30 Clothing 3 Cr. R, *; L, TT 8, 9, 10, M 2, 3**

Development of Foundation pattern, flat-pattern construction, selection and construction of garment. Emphasis on selection of design and color to express individual personality. P, 11-12.

41 Family Nutrition 3 Cr. *

Meeting nutritional needs of family groups with special emphasis on present nutritional status of children, methods of judging nutrition, and effects of malnutrition on development of children. P, 40.

59 Experimental Cookery 3 Cr. *

Investigation of factors which affect standard food products. P, 20, junior standing in Home Economics.

44 Advanced Clothing 3 Cr. R, *; L, TT 8, 9, 10, M 2, 3

Application of principles of costume design. Laboratory practice includes make-over problem and tailored suit or dress. P, 30.

Ed 51 Special Methods in Home Economics 3 Cr. R, MTTT 11

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.

Division of Pharmacy

1 Orientation ½ Cr. R, W 1

Required of all freshmen. Meet with assigned counselor each week. College rules and regulations, attention to study habits and practices, self appraisal, health problems, campus social affairs and vocational and career planning.

40-41 Drug Assaying 8 Cr. *
P, Ch 1-2-3. Deposit \$3.00.**42 Theoretical Pharmacy 4 Cr.**
Medicinal alkaloids and their derivatives, glandular**60 Methods of Teaching Clothing 3 Cr. R, 11; L, MW 1, 2, 3**

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

72 Home Management House 4 Cr. *
Six weeks residence in home management house with experience in problems that arise in a home. P, 50, and Senior standing in Home Economics.**75 Home Furnishing 2 Cr. R, M 10; L, TT 1, 2, 3**
Planning, furnishing of medium-priced home. P, Art 1.**Ed 280 Research Project 1 Cr. ***
Required of all graduate students qualifying for Master's Degree without writing thesis. Problem to be selected in some area of Home Economics Education. P, Graduate standing in Home Economics.

products, vitamins, and biologicals. P, First two years of Theoretical and Practical Pharmacy.

43 Practical Pharmacy 2 Cr. *
Compounding of more simple prescriptions, packaging, labeling, and wrapping of finished product. P, First two years of Theoretical and Practical Pharmacy. Deposit \$3.00.**46 Window Display 2 Cr. ***
Combination study of color schemes, and arrangements of materials, lighting effects. Deposit \$3.00.

Division of Science and Applied Arts

1 Orientation ½ Cr. R, W 1
Required of all freshmen. Meet with assigned counselor each week. College rules and regulations, attention to study habits and practices, self appraisal, health problems, campus social affairs and vocational and career planning.**ART****1 Design R, Tu 8; L, TT 9, 10**
First quarter of foundation course to serve as basic prerequisite for all other art work. Design, color, composition.**4 Drawing and Composition 2 Cr. L, MWF 8, 9, 10****25 Applied Design 2 Cr. L, TT 1, 2, 3, plus 3 hrs.**
Design and execution of various problems involving definite use of materials, tools and processes. Problems in metal, stenciling, leather, etc.**CHEMISTRY****1 Inorganic Chemistry 4 Cr. R, MTTT 9;**
L, TT 1, 2, 3
First quarter of standard course. Deposit \$3.00.**3 Inorganic Chemistry 4 Cr. R, MTTT 8;**
L, TT 1, 2, 3
Systematic study of metals. P, 2. Deposit \$3.00.**20 Semi-Micro Qualitative Analysis 5 Cr. ***
Analysis of mixtures of inorganic compounds using semi-micro technique. P, 3, Math 10 or 14. Deposit \$5.00.**21 Elementary Organic Chemistry 5 Cr.**
R, MTTT 8; L, MTuW 1, 2, 3
Compounds of carbon with emphasis on those of special interest to students in agriculture and general science. P, 3. Deposit \$5.00.**23† Gravimetric Analysis 4 Cr. R, MWF 9;**
L, MTuW 1, 2, 3
Theory and practice. P, 3. Deposit \$4.00.**24† Volumetric Analysis 4 Cr.**
R, MWF 9; L, MTuW 1, 2, 3
Theory and practice. P, 3. Deposit \$4.00.**28 or 29 Stoichiometry 1 Cr. R, TT 9**
Methods of calculations in quantitative analysis. Should accompany Ch 23 or 24, P, 3.**73 Undergraduate Research * Cr. ***
Special problems requiring original research. P, consent of instructor. Deposit \$1.00 per credit hour.**91, 92, 93 Undergraduate Chemistry Seminar 1 Cr. ***
Presentation of topic based on reference reading or original research. P, minor in chemistry.

147 Advanced Inorganic Chemistry 3 Cr.

R, MTTF 11

Selected topics in inorganic chemistry in light of modern theory. P, 3.

174 Biochemical Research * Cr. *

Research problems in applied biochemistry. P, 168. Deposit \$1.00 per cr. hr.

260 Seminar 1 Cr. *

Required of all graduate majors in chemistry.

299 Thesis in Chemistry * Cr.

Required of candidates for the Master's degree in chemistry.

Note: Every effort will be made to provide graduate courses for those who need them to fill out a graduate program.

†Either Chemistry 23 or 24 but not both will be given.

EDUCATION

The Summer School offerings of the Education Department are comprehensive in nature and are designed to serve the needs of: (a) undergraduate students wishing to qualify for a teaching certificate; (b) teachers who are seeking a renewal of certificate; (c) teachers who wish to take graduate work in education, either for the purpose of qualifying for the permanent certificate, or for administrative certificates; and (d) those whose purpose it is to qualify for the Master's degree with either a major or a minor in education. Provision is also made for persons who are not concerned with any of the above objectives but who wish to take graduate work to broaden their background in Education in general.

A detailed statement of the offerings available to meet the several needs is indicated below:

A. Undergraduate students planning to qualify for a certificate:

1. Juniors who have had a basic course in psychology are eligible to take Educational Psychology 45. This course is required for certification.
2. Seniors who have completed the required junior sequence may enroll in courses 160, 164, 168, 169, and 170.

B. Teaching certificate renewal:

1. Teachers who need credit required for certificate renewal (9 quarter hours) may take graduate or undergraduate

courses in education or in other fields, if they have the prerequisites stated in the course write-up.

C. Graduate work in Education to satisfy needs of different groups:

1. Teachers who wish to qualify for a permanent certificate must present a minimum of 27 quarter hours of graduate credit from a college or university offering teacher-training courses, plus evidence of having completed forty-five months of satisfactory teaching experience. Education courses numbered 100 or above will apply toward the 27 credits required. Graduate courses in other subject-matter fields will also apply.
2. Teachers who wish to qualify for an administrative certificate but who are not interested in working for the Master's degree may qualify for the certificates as follows:

x. **Principal's Certificate:** Beginning with July 1, 1953, the requirement is 9 semester (13.5 quarter) hours of graduate work in education, including courses in administration, supervision, and guidance. One year of high school teaching experience is also required. Courses 160, 245, and 261 listed below will meet the specific course requirements. Students who cannot acquire the total credits required during the regular Summer School will be given an opportunity to take 3 credits of additional work in a post-session.

y. **Superintendent's Certificate:** Beginning with July 1, 1953, the requirement is 27 quarter hours of graduate credit in education, plus three years of successful teaching experience, at least one year of which must have been in high school. Courses 160, 245, 260, 261, and 262 will meet the specific course requirements. Students who cannot meet the total course requirements by the end of the regular summer session will have an opportunity to acquire 3 additional graduate credits in education in a post-session.

3. Students who wish to qualify for the Master's degree may take either a major or a minor in education. Upon completing the Master's degree, and if the student has selected the necessary courses, he or she can qualify for any of the administrative certificates as well as meet the North Central Association requirements for administering the public schools. Majors may be taken in Education, Educational Administration, Agricultural Education. A major in Home Economics Education is available in that Division. The Master's degree may be taken either under "Plan A" with a thesis or under "Plan B" without a thesis. (For more detailed statement of graduate degree requirements see regular college catalog.)

Students who are interested in meeting any of the above needs are urged to write to Dr. C. R. Wiseman, Head, Department of Education.

EDUCATION and PSYCHOLOGY

45 Educational Psychology 3 Cr. R, MTuWF 10

Nature of learning, learning curves, economical learning, rates and limits of improvement; retention of experience, differences in learning capacity, transference and interference. Required for certification. P, Psy 25, Ed 40.

Phys Ed 49 Driver Education 3 Cr. R, MF 2, L, *

Basic course. Behind wheel instruction, recent materials and equipment; use of psychological tests; teaching techniques. Meets certification requirements for teaching Driver Training in South Dakota. (Will be offered as concentrated two-week's course during the period of August 10 to August 21, 1953. For information concerning short course write: Prof. Harold J. Holmes, Department of Physical Education, instructor.)

Lib 65 Audio-Visual Aids in Teaching 3 Cr.

Characteristics, advantages, and practical school-room use of visual aids of projection and non-projection type. Specific laboratory practice in operation of usual projection machines. Sources of supply, acquisition and organization of audio-visual materials in school library.

68 Teaching Speech in High School 3 Cr. *

Philosophy, selection and use of textbook, classroom methods and techniques, evaluation and criticism. P, 47 and consent of instructor.

160 Public School Administration 3 Cr. MTTF 9

Organization and administration of school system in state, county, and various types of school districts. Responsibilities of State Department of Public In-

struction, county superintendent, school board, and superintendent and principal. Some consideration given financial problems. P, 47.

164 Educational Measurements 3 Cr. MTWT 10

Testing movement in education and principal tests designed to measure achievement in secondary school subjects. Value of educational measurements. P, 47.

PRJ 165 Institutional Public Relations 3 Cr. MTTF 9

Relations between various kinds of institutions and their publics; interpretation of institutions to publics; preparation and supervision of public relations programs. P, 15 hrs. of English or English and journalism, and graduate standing in Education.

168 Educational Statistics 3 Cr. MTWTF 8

Methods of dealing with quantitative educational and psychological data; exercises in tabulation, graphical representation; calculation of statistical constants and measures of dispersion and correlation. P, 47. (Note: one of the five sessions to be used as a laboratory session for students who need help.)

169 The School Curriculum 3 Cr. MTT 1, W 2

Nature, principles, application, and purposes of curriculum in American public schools. P, 47.

170 Workshop in Education 2-4 Cr. *

Workshop sessions in specified areas in education. Generally requires 30 hours of work per credit. Credit is allowed at the rate of 1½ credits per week if conducted as a concentrated course. Fee of \$3.00 per credit charged as tuition if Workshop is conducted as a concentrated course. (Workshop in Economic Education offered July 6-17.)

240 Advanced Educational Psychology 3 Cr.

TWTF 9

Modern psychological theories of education with particular emphasis on learning process; critical analysis of recent research in educational psychology; application to present-day educational problems. P, 45 and graduate standing.

245 Administration of School Guidance Program

3 Cr. MTTF 10

Principles of guidance; organizing school guidance program; tests and testing; guidance library and materials; interviewing and counseling. Meets requirements for administrative certificate. P, graduate standing.

260 Elementary School Supervision 3 Cr.

MTuWF 11

Emphasis upon cooperative participation of school personnel in improvement of instruction in elementary school subjects. Evaluation of total teaching situation. P, 160 or concurrently with 160 and graduate standing.

261 Secondary School Supervision 3 Cr. *

Organization for supervision by superintendent and high school principal. Procedures for classroom visitation conferences and ratings of teachers. In-service training of teachers, evaluation of supervision. P, 160 or concurrently with 160 and graduate standing.

262 Business Administration of Schools 3 Cr. *

Business aspects of public school administration; organization and work of school board; administration of equipment and supplies, janitorial service; building plans; school finances including budgetary procedure and insurance. P, 160 and graduate standing.

270 Research Methods in Education 3 Cr.

MTT 1, W 2

Research procedures, selection of research problems, techniques of gathering data, experimentation methods. Organization and statistical treatment of data, interpretation of results and proper form for reporting research. Analysis and evaluation of published research. Required of all candidates for graduate major in education who follow Plan B. P, graduate standing and 20 credits in graduate Education courses completed.

277 Curriculum in Vocational Agriculture 3 Cr.

MTWT 7

For teachers and administrators of vocational agriculture. Survey of scientific studies and literature in field; principles and procedures in curriculum building as applied to vocational agriculture. P, graduate student in agricultural education.

280 Research Problem in Education 3-4 Cr. *

Required of all graduate students wishing to qualify for Master's degree without writing thesis. Recommend that student select problem relating to his own school system. Problem analyzed, data gathered and treated statistically. Report in approved form.

299 Thesis in Education 2-4 Cr. *

Original work under supervision on suitable research problem approved by department head and written report to meet specifications of Committee on Graduate Study and College Library. Required of all candidates for Master's degree under Plan A. Preferably scheduled over two or more quarters and department may withhold final grade on full report until written report is accepted.

ENGLISH**1 English Composition 3 Cr. MTTT 7**

First quarter of required Freshman English sequence. No prerequisite.

3 English Composition 3 Cr. MTTT 10

Third quarter of required Freshman English sequence. P, 2.

20 Introduction to Literature 3 Cr. MTTT 11

Principal literary types—fiction, drama, essay, biography and poetry. Primarily literature but some attention given to composition. P, 3 or consent of instructor.

21 †Fiction 3 Cr. MTTT 11

Narrative prose with emphasis on novel and short story. May be elected to complete sophomore English requirement. P, 20.

22 †Drama 3 Cr. MTTT 11

Selected plays, ancient and modern. May be elected to complete Sophomore English requirement. P, 20.

23 †Poetry 3 Cr. MTTT 11

Selected poems, English and American. May be elected to complete sophomore English requirement. P, 20.

25 †Biography 3 Cr. MTTT 11

Great biographies of past and present. May be elected to meet sophomore English requirement. P, 20.

32 Advanced Composition 3 Cr. MTTT 8

Advanced writing for students other than engineers. P, 3.

33 Commercial Correspondence 3 Cr. *

Review of grammar, punctuation and principles of composition with special application to writing business letters and other business forms. Not counted toward Journalism-English major nor toward meeting English requirements in other curricula.

52 Language in Public Affairs 3 Cr. MTTT 9

Analysis of how language is used to influence public opinion. Articles, news reports, press releases, speeches and advertisements will be examined from this point of view. Meets English elective requirement but may also be counted as journalism credit. P, 3.

56 The English Language 3 Cr. *

Development and structure of language. Special emphasis placed on grammar, treated with historical perspective. Attention also to etymology and semantics. P, 20 and consent of instructor. Recommended for students planning to teach English.

60 Shakespeare 3 Cr. MTTT 10

Representative comedies, tragedies, and chronicle histories. P, 22 or 40.

†Only one of the courses preceded by a “+” will be offered.

FOREIGN LANGUAGE**10 French 3-6 Cr. ***

Reading course for those interested in meeting language requirements for graduate degrees. Basic French grammar with intensive study of verbs and basic vocabulary.

Note: Other courses will be offered if there is sufficient demand. Persons interested should write or consult with head of department before June 10.

HISTORY and POLITICAL SCIENCE**23 American History 4 Cr. MTWTF 8**

Covers the period of 1492 to 1865.

57 South Dakota History 2 Cr. MWF 1

Early exploration and settlement; coming of railroads; “Dakota Boom” of 1880’s; territorial government; main developments since 1890.

140 Modern Europe 4 Cr. *

Europe from 1500 to 1870, emphasizing cultural and political developments. P, one year of college history.

145 Contemporary World 4 Cr. MTWTF 11

Covers period of 1945 to present. Unfinished peace settlements; “cold war;” Soviet Russia and her satellites; European and Near Eastern and Asian problems of nationalism; collective action to restrain aggression. P, one year of college history.

147 Latin America and United States 4 Cr. MTTF 10
International relations of Latin America with special references to United States. P, one year of college history.

LIBRARY STUDY

60 Library Administration 3 Cr. *

Objectives and methods of service in small school libraries; organization; budget and ordering; classification and cataloging; student library club; housing and equipment; records, reports and publicity.

61 Book Selection and Reference 3 Cr. *

Criteria which may be used in appraising books for high school libraries.

62 Cataloging and Classification 3 Cr. *

How to catalog and classify books for high school libraries.

65 Audio-Visual Aids in Teaching 3 Cr. *

Characteristics, advantages, and practical school-room use of visual aids or projection and non-projection type. Specific laboratory practice in operation of usual projection machines. Sources of supply, acquisition and organization of audio-visual materials in the school library.

MUSIC

Summer School 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 of instrumental groups and harmony. All members of staff will be available for individual lessons. Credit may be earned toward minor in music. Summer school band and orchestra will be directed by Professor Christensen. Students in conducting will be given opportunity to conduct summer school groups.

FEES: Instrumental, piano, pipe organ, voice, one private lesson per week, \$12.00; two private lessons per week, \$24.00.

Private instruction in sight singing and choral technique and materials, harmony, conducting, and teaching of instrumental groups. \$12.00.

61 Teaching Music in Junior and Senior High School 3 Cr. *

PHYSICAL EDUCATION and RECREATION

MEN AND WOMEN

17 Beginning Swimming 1 Cr. L, TT 10

Various types of strokes and elementary water safety. May be substituted for one credit of required physical education.

27 Individual and Dual Sports 1 Cr. L, TT 3

Open to both men and women. Locker deposit \$2.

28 Advanced Swimming 1 Cr. L, TT 11

Advanced techniques in swimming and water safety. P, 17 or permission of instructor. May be substituted as one credit of required physical education.

32 General Physical Education 1 Cr. L, MW 10

Beginning tennis. Open to both men and women. Locker deposit \$2.00.

41 Self Testing Activities 1 Cr. L, TT 2

Open to both men and women. Locker deposit \$2.

49 Driver Education 3 Cr. R, MF 2; L, 6 hrs. *

Basic course; consists of behind wheel instruction, recent materials and equipment; use of psychophysical tests; teaching techniques. Designed to train teachers for high school driver education.

(Note: Will be offered as concentrated course during period of August 10-21 as well as an 8 week's course during regular summer school term.)

61 Organization and Administration of Physical Education 3 Cr. MTTF 1

History and principles which have determined past and present programs, aims and objectives of physical education, administration of curricula, professional attitudes and ethics, administration of facilities, equipment and supplies.

62 Football Coaching 3 Cr. MTWT 11

Open to juniors and seniors. Each student required to purchase rule book, text book, and notebook. Offensive and defensive team play and strategy; correct technique and execution of fundamentals. Open to men only.

171 Advanced Problems in the Administration of Interscholastic Athletics 3 Cr. MTWT 10

Budgets, public relations problems, subsidization, objectives of athletics, staff organization, control of athletics both interscholastic and intercollegiate, and general policies of athletics. P, PE 61, senior standing, permission of staff.

266 Advanced Problems of Organization and Administration of Community Recreation

3 Cr. MTWT 8

Problems related to equipment; establishing program; budget and finance; selecting and supervising staff; public relations activities. P, minor in physical education, graduate standing, permission of staff.

288 Recent Literature and Research in Health, Physical Education and Recreation 3 Cr. MTWT 9

Directed readings and class discussions on recent literature; steps involved in solving problems; critical analysis of research in field. P, graduate standing, permission of staff.

PRINTING and RURAL JOURNALISM JOURNALISM

24 Newswriting and Reporting 2 Cr. R, MWF 11

Students must enroll in PRJ 37 concurrently. Basic course in journalism. Practice in gathering, evaluating, and writing news. P, Engl 1-2-3 with no grade lower than C, and ability to typewrite.

37 Newswriting and Reporting Laboratory

1 Cr. L, 3 hrs. *

Students write news for publication under guidance of instructor. P or concurrent, 24.

66 Publicity Methods 3 Cr. R, MTTF 8

For students expecting to become county agents, home economics leaders, or teachers. P, Engl 1-2-3. Not for journalism majors.

67 Journalism for Teachers 3 Cr. R, MTTF 1

For high school journalism instructors and advisers. Includes survey of high school textbooks in journalism, possible curricula or course outlines for high school courses, problems affecting advisers of yearbooks, mimeographed papers, and other school publications. P, Engl 1-2-3.

165 Institutional Public Relations 3 Cr. R, MTTF 9

Relations between various kinds of institutions and their publics; interpreting institution to publics; preparation and supervision of public relations programs. P, 15 hours of English or English and journalism.

200 Interpretative Writing 3 Cr. R, MTTF 8

Interpreting technical, scientific, agricultural, and social data to general public. Includes use of illustrative materials for publication, problems concerning readability, and reader interest. P, 15 hours of English or English and journalism.

PRINTING

NOTE: Summer Shop Instruction for Printers will be conducted as four-week course. There will, however, be two four-week sessions. Session 1 will run from June 15 to July 10; Session 2, from July 13 to August 7. In order to take linotype instruction student must either have had experience as printer or he must have had four weeks instruction in hand composition.

Elementary Typography no credit, 44 hours per week

Care of equipment, learning case, setting and distributing type, spacing, indentation, study of type faces and where and how to use them.

Composing Machines (keyboard)

no credit, 44 hours per week

Elementary keyboard practice. Emphasis on correct keyboard fingering. Simple newspaper style. Machine changes, daily and weekly cleaning and oiling. P, previous printing experience.

Composing Machines (mechanism)

no credit, 44 hours per week

Care, maintenance and adjustments of linotypes and intertypes. P, previous experience as composing machine operator.

Platen Presswork no credit, 44 hours per week

Introduction, including types, care, oiling, feeding, washing and press makeready. Paper, inks, rollers, and common pressroom troubles. P, previous printing experience.

Cylinder Presswork no credit, 44 hours per week

Mechanism and care of cylinder press. Practice feeding with both push and pull guides. Positioning forms, makeready and running forms. Inking mechanism adjustments. P, previous job press experience.

(Tuition for four week session will be one half tuition for full eight week's term.)

SECRETARIAL SCIENCE**11 Typewriting** 2 Cr. L, MTWTF 8 plus 2 hrs. *

Use of typewriters by touch system. Term papers, personal typing. Open to those who have not had previous typing instruction.

12 Typewriting 2 Cr. *

Review of typing techniques. Business letter writing, manuscript, tabulation. Not open to those who have had more than one year of high school instruction in typewriting.

13 Advanced Typewriting 2 Cr. *

Review of typing techniques. Job production of correspondence, legal and business documents, rough draft, conference reports, form letters. P, 1 year or more of high school typing instruction.

15 Office Machines 1-2 Cr. *

Duplicating machines and filing. Special units for teachers and office workers.

16 Office Machines 1-2 Cr. *

Calculating machines. Acquaintanceship with various types of machines and development of skill on Comptometer, 10-key or rotary calculator.

17 Office Machines 1-2 Cr. *

Transcribing machines. Ediphone, dictaphone and other types of dictating, transcribing equipment. To supplement or substitute for shorthand.

18-19 Shorthand 6 Cr. R, MTWTF 9, 3 hrs. *

Gregg system taught. Intensive course in elementary shorthand. Open for credit to those with no previous shorthand instruction. Course 18 will be completed the first four weeks and course 19 the second four weeks.

20 Shorthand 3 Cr. R, MTTF 10

Review of shorthand theory. Dictation and transcription of easy materials. P, 19 or one year of high school instruction in shorthand.

21 Advanced Shorthand 3 Cr. R, MTTF 10

Review of shorthand with special emphasis on dictation and development of speed in taking shorthand and transcription. P, 20 or 2 years of high school shorthand instruction.

23 Typewriting Office Practice 3 Cr. *

Instruction and practice in modern office procedure, Production typewriting, civil service training or specialized units in various fields. P, 2 years of high school typewriting or permission of instructor.

26 Applied Secretarial Practice 4 Cr. *

Secretarial duties and qualifications, business ethics and etiquette, work experience or specialization in field of interest. P, 20 or consent of instructor.

SPEECH**22 Oral Communication** 3 Cr. R, MTTF 9

Designed to improve student's ability to communicate orally. Attention to selection, organization and presentation of material. Required for graduation in most curricula.

45 Discussion 3 Cr. R, MTTF 10

Nature, values, limitations, analysis and types of discussion. Emphasis on leadership and participation.

Ed 68 Teaching Speech in High School 3 Cr. *

For individuals who intend to teach in field. Philosophy, selection and use of textbook, classroom methods and techniques, evaluation and criticism. P, Ed 47 and at least a teaching minor, or by special permission.