South Dakota State College of Agriculture and Mechanic Arts

Bulletin

Annual Catalog Number

For the Session of
1945-46

With Announcements for
the Session of
1946-1947

South Dakota State College
Brookings, South Dakota

South Dakota State College

Organization and Divisions

JUNIOR COLLEGE.—The Junior College of South Dakota State College provides a comprehensive student personnel and guidance program for all beginning college students entering the institution. Within the Junior College are offered the preparatory programs or curricula which are required of any student desiring to enter the Senior College. The Junior College also provides numerous terminal programs for students not desiring to enter the Senior College.

SENIOR COLLEGE.—The Senior College of South Dakota State College is comprised of five divisions. Each division of the Senior College offers one or more programs or curricula leading to the degree of Bachelor of Science. The divisions of the Senior College are:

Agriculture.—The Division of Agriculture is comprised of the Animal Science Section which includes the departments of Animal Husbandry, Dairy Husbandry, Entomology-Zoology, Poultry, and Veterinary Medicine; the Plant Science Section which includes the departments of Agronomy, Botany, Bacteriology, and Horticulture; the Rural Social Science Section which includes the departments of Agricultural Economics and Rural Sociology; and the Agricultural Engineering Section.

Engineering.—The Division of Engineering includes the departments of Civil Engineering, Electrical Engineering, Mechanical Engineering, Aeronautical Engineering, Engineering Shops, Mathematics and Physics.

Home Economics.—The Division of Home Economics provides instruction in foods and nutrition; home administration; clothing and textiles; and in home economics education.

Pharmacy.—The Division of Pharmacy provides a complete program in the field of Pharmacy and includes the department of Nursing Education.

General Science.—The Division of General Science includes the departments of Art, Chemistry, Education and Psychology, English, Foreign Languages, History and Political Science, Military Science and Tactics, Music, Physical Education and Recreation, Printing and Rural Journalism, and Speech.

In addition to the instructional work the Agricultural Experiment Station and the Agricultural Extension Service are maintained at the College.

The college bulletins are sent free, postage paid, on request. The request should indicate the department concerning which information is desired.

For bulletins and other information address the Registrar, State College, Brookings, South Dakota

South Dakota State College

of Agriculture and Mechanic Arts

Bulletin

Annual Catalog Number

1945-46

With Announcements for

the Session of

1946-1947

Published Quarterly by

SOUTH DAKOTA STATE COLLEGE

Brookings, South Dakota

Volume XXXVIII April, 1946 Number 4

Entered as second class matter August 10, 1908, at the post office at Brookings, South Dakota, under the Act of July 16, 1904

College Calendar

1946 SUMMER SESSION

June 10, Monday—Registration for first term.
June 11, Tuesday—Class work begins 8:00 a.m.
July 4, Thursday—A holiday.
July 17, Wednesday—First term closes at 4:15 p.m.
July 18, Thursday—Second term begins at 8:00 a.m.
August 24, Saturday—Second term closes at noon.

1946 FALL QUARTER

September 25, 26, 27, 28, Wednesday, Thursday, Friday, Saturday—Counseling and registration of freshmen. All freshmen are required to report at the college auditorium at 1:00 p.m. on Wednesday.
September 28, Saturday—Registration of all students except freshmen.
September 30, Monday—8:00 a.m.—Beginning of class work of the fall quarter.
October 19, Saturday—Hobo Day.
November 4, Monday—Enrollment in the School of Agriculture.
November 11, Monday—A holiday.
November 20, 21, 22, 23, 24—Thanksgiving recess beginning Wednesday, November 20 at noon.
December 20, Friday—Fall quarter closes at noon.

1947 WINTER QUARTER

January 2, Thursday—School of Agriculture registration day.
January 3, Friday—School of Agriculture class work starts at 8:00 a.m.
January 6, Monday—Winter quarter begins at 8:00 a.m.
February 7, Friday—School of Agriculture registration for third term at 4:20 p.m.
February 8, Saturday—School of Agriculture work of second term closes at noon.
February 10, Monday—School of Agriculture work begins at 8:00 a.m.
March 20, Thursday—Winter quarter closes at noon.
March 21, Friday—School of Agriculture closing exercises at 10:00 a.m. and work of third term closes at 10:00 a.m.

1947 SPRING QUARTER

March 25, Tuesday—Spring quarter begins.
April 15, 16, Tuesday, Wednesday—Smith-Hughes livestock State Judging contest.
May 28, Wednesday—College Memorial exercises. Work of members of graduating class closes at 4:15 p.m.
May 30, Friday—Observance of Memorial Day, a holiday.
June 1, Sunday—Baccalaureate services.
June 2, Monday—Sixty-first Annual Commencement.
June 5, Thursday—Spring quarter closes at noon.

1947 SUMMER SESSION

June 9, Monday—Registration for first term.
June 10, Tuesday—Class work begins at 8:00 a.m.
July 4, Friday—A holiday.
July 16, Wednesday—First term closes at 4:15 p.m.
July 17, Thursday—Second term begins at 8:00 a.m.
August 23, Saturday—Second term closes at noon.

Calendar for 1946-47

JUNE, 1946

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

JULY, 1946

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST, 1946

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER, 1946

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER, 1946

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER, 1946

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER, 1946

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JANUARY, 1947

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY, 1947

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

MARCH, 1947

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

APRIL, 1947

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY, 1947

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JUNE, 1947

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY, 1947

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST, 1947

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Regents of Education

Honorable Frank Cundill (Term Expires Jan. 1, 1949)	Isabel
Honorable Mrs. E. R. Doering (Term Expires Jan. 1, 1951)	Sioux Falls
Honorable A. R. Ferguson (Term Expires Jan. 1, 1951)	Watertown
Honorable M. E. Hafner (Term Expires Jan. 1, 1947)	Newell
Honorable E. M. Mumford (Term Expires Jan. 1, 1949)	Howard

Officers of the Board

Honorable E. M. Mumford	President
Honorable Mrs. E. R. Doering	Secretary
Honorable E. V. Youngquist (State Treasurer)	Treasurer

Regents Committee for the College

Honorable A. R. Ferguson, *Chairman*
Honorable Frank Cundill

College Staff, 1945-46

Following the Secretary the names are arranged alphabetically

The number immediately after the title of a member of the staff indicates the year when the person was first employed as a regular member of the college staff, the number following, if there is one, the year of appointment to present rank. An asterisk (*) in connection with a name indicates that there has been a break in the member's official connection with the College.

The above notation is not used with names of those whose duties are wholly in the field.

Lyman E. Jackson, *President,* 1941; B.S., University of Wisconsin, 1921, M.S., 1925; Ph.D., University of Minnesota, 1931. (Resigned February 1, 1946.)

George Lincoln Brown, *President Emeritus,* 1897, 1944; B.S., University of Missouri, 1892, M.S., 1893; Ph.D., University of Chicago, 1902; LL.D., University of South Dakota, 1926.

Harold M. Crothers, *Dean of Engineering, Acting President,* 1923, 1946; B.S., South Dakota State College, 1910; E.E., University of Wisconsin, 1913, Ph.D. 1920.

David B. Doner, *Registrar,* 1919, 1922; B.S., South Dakota State College, 1928.

William Edward Smith, *Business Manager,* 1945; A.B., Parsons College, 1932; M.S., Iowa State College, 1940.

Rudolph A. Larson, *Secretary,* 1901.

Oscar R. Abel, *Instructor in Printing,* 1942; B.S., South Dakota State College, 1942.

Lee L. Amidon, *Professor of Mechanical Engineering, Head of Department,* 1941; B.S. (M.E.), University of Minnesota, 1923; M.S. (M.E.), West Virginia University, 1927.

Arthur W. Anderson, *Assistant Farm Management Specialist,* 1946; B.S., University of Minnesota, 1938, M.S., 1942.

Ray Antonen, *Assistant Extension Editor,* 1945.

Stella Congleton Atkinson, *Head Resident of Women's Dormitories,* 1944; A.B., Eastern Kentucky Teachers College, 1929; M.A., University of Kentucky, 1936.

Ernest B. Bader, *Instructor in History,* 1945; A.B., Nebraska State Teachers College (Wayne) 1941; M.A., University of Nebraska, 1944. (Resigned December 15, 1945.)

Earl R. Bales, *Visual Education Specialist,* 1934; B.S., Colorado State College, 1933, M.A., 1944.

Leighton M. Ballew, *Instructor in English,* 1945; B.A., Memphis State College, 1937; M.A., Western Reserve University, 1940.

Myron Barber, *District Club Agent,* 1944; B.S., South Dakota State College, 1942.

Emery Bartle, *Instructor in Dairy Husbandry, Superintendent of Dairy Production,* 1944; B.S., South Dakota State College, 1926.

George S. Beatty, *Colonel, Infantry, U. S. Infantry, U. S. Army, Professor of Military Science and Tactics,* 1946.

Lyle M. Bender, *Extension Farm Management Specialist,* 1945; B.S., South Dakota State College, 1935, M.S., 1937.

Ruby Volby Beto, *Assistant in Home Economics Education,* 1942; B.S., South Dakota State College, 1936.

Edward R. Binnewies, *Associate Professor of Chemistry, Acting Director of Student Affairs,* 1915, 1944; B.S., South Dakota State College, 1913, M.S., 1915.

Ralph E. Birchard, *Instructor in Geography,* 1945; B.A., Iowa State Teachers College, 1937; M.A., University of Illinois, 1938.

Grant E. Blanch, *Assistant Economist, Experiment Station,* 1944; B.S., Utah State College, 1940; M.S., University of Illinois, 1941; Ph.D., Cornell University, 1944. (Resigned September 30, 1945.)

Julian H. Blau, *Instructor in Mathematics,* 1945; B.S., College of City of New York, 1938; M.S., New York University, 1939.

HOWARD BLAIR BLODGETT, *Professor of Civil Engineering, Head of Department,* 1929, 1936; B.S. (C.E.), University of Arizona, 1928, M.S., 1929, C.E., 1933.

HENRY BLOEM, *Assistant Professor of Engineering Shops,* 1935-1942; B.S., South Dakota State College, 1935; Certified Arc Welder, Hobart Arc Welding School. (Resigned August 1, 1945.)

JOHN A. BONELL, *Assistant Professor of Engineering Shops,* 1910, 1924; Graduate of Stout Institute, 1904.

JAMES S. BOYD, *Instructor in Agricultural Engineering,* 1946; B.S., South Dakota State College, 1939.

J. ERVIN BOYD, *Extension Poultryman,* 1945; B.S., South Dakota State College, 1932.

D. F. BREAZEALE, *Associate Professor of Dairy Husbandry, Associate Dairyman Experiment Station,* 1944; B.S., Iowa State College, 1928, M.S., 1929, PH.D., 1938.

*L. M. BROWN, *Assistant Professor of Agricultural Economics, Assistant Economist Experiment Station,* 1938, 1945; B.S., South Dakota State College, 1934, M.S., 1936. (Resigned April 1, 1946.)

*MABEL BRYAN, *Home Management Specialist,* 1932, 1946; B.S., South Dakota State College, 1925.

WALTER F. BUCHHOLTZ, *Plant Pathologist,* 1940; B.S., Iowa State College, 1929, M.S., 1930, PH.D., 1935. (Resigned November 30, 1945.)

ROBERTA BURBECK, *Assistant in Home Economics Education,* 1942; B.S., University of Minnesota, 1938.

DONALD D. BURCHARD, *Professor of Printing and Rural Journalism, Head of Department, College Editor,* 1945; A.B., Beloit College, 1925; A.M., University of Missouri, 1938.

*WILLIAM H. BURKITT, *Instructor in Animal Husbandry, Assistant Animal Husbandman, Experiment Station,* 1942, 1946; B.S., Colorado State College, 1937; M.S., Washington State College, 1939.

ROY A. CAVE, *Extension Dairyman,* 1935; B.S.A., Iowa State College, 1906.

RAYMOND Y. CHAPMAN, *Director of Junior College,* 1942; B.A., Dakota Wesleyan University, 1926; M.A., University of South Dakota, 1931.

J. NORMAN CHEADLE, *Instructor in Physics,* 1945; B.S. (E.E.), South Dakota State College, 1937.

CARL CHRISTENSEN, *Professor of Music, Head of Department,* 1906, 1918; B.MUS., McPhail School of Music, 1929.

JOHN H. CLEMENTS, *Instructor in Physics,* 1945; B.A., University of Toronto, 1927, M.A., 1928; PH.D., University of Chicago, 1935.

JOHN W. COLE, *Assistant Professor of Animal Husbandry,* 1945; B.S., Oklahoma Agricultural and Mechanical College, 1941; M.S., Ohio State University, 1942.

PAOLO ENRICO COLETTA, *Instructor in History,* 1946; B.S., University of Missouri, 1938; A.M., 1939, PH.D., 1942. (Resigned March 2, 1946.)

THEODORE S. COLTON, *Instructor in English,* 1945; B.A., University of California, Los Angeles, 1939, M.A., 1940. (Resigned November 1, 1945.)

IMA R. CRISMAN, *Assistant Union Manager in Charge of Food Service,* 1942, 1943; B.S., South Dakota State College, 1928.

MAGNI DAVIDSON, *College Physician,* 1938; B.A., University of North Dakota, 1920; M.D., University of Illinois, 1925.

HENRY H. DELONG, *Associate Professor in Agricultural Engineering, Acting Head of Department,* 1930, 1945; B.S., South Dakota State College, 1928, B.S. (A.E.), 1938; M.S., University of Minnesota, 1941.

*RUTH E. DILLAVOU, *Instructor in Mathematics,* 1943, 1945; B.A., State Teachers College, Moorhead, Minn., 1927; M.A., Columbia University, 1932.

W. E. DITTMER, *District Extension Supervisor,* 1923, 1935; B.A. (An. Husb.), Iowa State College, 1922.

GEORGE H. DUFFEY, *Assistant Professor in Chemistry,* 1945; A.B., Cornell College (Mt. Vernon, Iowa), 1942; A.M., Princeton University, 1944, PH.D., 1944.

BERTRAND A. DUNBAR, *Professor Emeritus of Chemistry,* 1911, 1941; B.A., Ohio Wesleyan University, 1891, M.A., 1892.

A. M. EBERLE, *Dean of Agriculture,* 1922, 1940; B.S., Montana State College, 1915; M.S., University of Minnesota, 1939.

ARLINGTON EDDY, *Director, School of Agriculture;* B.S., South Dakota State College, 1927, M.S., 1945.

CLARK T. EIDSMOE, *Professor of Pharmacy,* 1929, 1940; PH.C., South Dakota State College, 1928, B.S., 1929, M.S., 1931.

*JAMES C. EMMERICH, *Instructor in Physical Education,* 1940, 1946; B.S., South Dakota State College, 1940.

HELEN ENGEBRETSON, *Instructor in Mathematics,* 1945; B.S., St. Olaf College, 1934; M.A., University of Minnesota, 1945.

E. L. ERICKSON, *Assistant Professor in Agronomy, Assistant Agronomist Experiment Station,* 1939, 1942; B.S., Iowa State College, 1934, M.S., 1937.

R. ESTHER ERICKSON, *Associate Professor of Nursing Education, Head of Department,* 1935, 1942; R.N., Fairview Hospital, 1928; B.A., Baylor University, 1935.

MERLE L. ESMAY, *Extension Agricultural Engineer,* 1946; B.S., South Dakota State College, 1942.

ALBERT D. EVENSON, *Instructor in Printing,* 1930, 1931; B.S., South Dakota State College, 1930.

GERALDINE FENN, *Assistant Club Leader,* 1936, 1944; B.S., South Dakota State College, 1933.

ELVIN K. FERRELL, *Extension Forester,* 1946; B.S., Washington State College, 1930.

GILES ROBERTS FLOYD, *Associate Professor of English,* 1942; A.B., Wofford College, 1924; M.A., Vanderbilt University, 1928; PH.D., University of Iowa, 1942.

CLIFFORD J. FRANZKE, *Instructor in Agronomy, Assistant Agronomist Experiment Station,* 1924; B.S., South Dakota State College, 1924.

*WILLIAM H. GAMBLE, *Professor of Electrical Engineering, Head of Department,* 1925, 1941; B.S., South Dakota State College, 1925; M.S., University of Wisconsin, 1929.

GEORGE F. GASTLER, *Assistant Agricultural Chemist, Experiment Station,* 1942, 1944; B.S., South Dakota State College, 1929, M.S., 1943.

JOSEPH ADDISON GIDDINGS, *Associate Professor of English,* 1936, 1942; A.B., Western Reserve University, 1926; M.A., Cornell University, 1928.

GEORGE I. GILBERTSON, *Director of Extension Service,* 1914, 1945; B.S., South Dakota State College, 1914, M.S., 1916.

*DWIGHT B. GOODNER, *Assistant Professor of Mathematics,* 1937, 1946; B.A., Penn College, 1934; M.A., Haverford College, 1935.

C. O. GOTTSCHALK, *State Supervisor Trade and Industrial Education (State Department of Public Instruction.)*

J. E. GRAFIUS, *Associate Professor in Agronomy,* 1940; B.S., Michigan State College, 1937; M.S., Iowa State College, 1938, PH.D., 1942.

ARTHUR R. GRISMER, *Assistant Professor in Bacteriology,* 1940, 1944; B.ED., Illinois State Normal University, 1929; A.M., University of Illinois, 1934, M.S., 1938.

*GUILFORD C. GROSS, *Assistant Professor of Pharmacology,* 1940, 1946; B.S., South Dakota State College, 1939, M.S., 1940.

HAROLD THOMAS HAMRE, *Instructor in Physics,* 1945; B.S., University of Wisconsin, 1933, M.S., 1934. (Resigned January 1, 1946.)

NIELS EBBESEN HANSEN, *Professor Emeritus of Horticulture,* 1895, 1937; B.S., Iowa State College, 1887, M.S., 1895; SC.D., University of South Dakota, 1917.

ALBERT S. HARDING, *Professor Emeritus of History and Political Science,* 1897, 1943; B.S., South Dakota State College, 1892; M.S., University of Nebraska, 1897.

EDWIN B. HARDING, *Instructor in Printing,* 1921; B.S., South Dakota State College, 1931.

G. S. HARSHFIELD, *Professor of Veterinary Science, Head of Department, Director of Animal Health Laboratory,* 1943; DVM., Ohio State University, 1926, M.Sc., 1930.

NELLE A. HARTWIG, *Assistant Professor in Zoology,* 1927, 1940; B.S., Kansas State College, 1926, M.S., 1927.

*KENNETH S. HAYTER, *Assistant Director Junior College, in Charge of Veterans Affairs,* 1933, 1946; B.S., South Dakota State College, 1933.

REUEL G. HEMDAHL, *Assistant Professor in History,* 1944; B.S., Augustana College (Rock Island), 1925; PH.D., Northwestern University, 1932.

GEORGIA N. KNOTT HENEGAR, *College Nurse,* 1945; R.N., Sioux Valley Hospital, 1945; B.S., South Dakota State College, 1945.

MELVIN HENRICHSEN, *Acting Manager Pugsley Union, In Charge of Student Housing,* 1945; B.S., South Dakota State College, 1938.

JOSEPH L. HILL, *District Extension Supervisor,* 1936; B.S., South Dakota State College, 1917.

CHARLES S. HOBBS, *Professor of Animal Husbandry, Head of Department, Animal Husbandman, Experiment Station,* 1945; B.S., Oklahoma Agricultural and Mechanical College, 1938; M.S., Cornell University, 1939, PH.D., 1941.

MERLIN G. HODGSON, *District Club Agent,* 1946; B.S., South Dakota State College, 1943.

ALVIN B. HOERLEIN, *Associate Veterinary Pathologist,* 1945; D.V.M., Colorado State College, 1940; PH.D., Cornell University, 1945.

C. RAYMOND HOGLUND, *Assistant Professor in Agricultural Economics, Assistant Economist, Experiment Station,* 1943; B.S., University of Minnesota, 1940, M.S., 1941.

LOUIS W. HOLM, *Associate Agricultural Chemist Experiment Station,* 1945; B.A., Reed College, 1934; M.A., University of Wisconsin, 1940, PH.D., 1943.

OTTO GIEDE HOIBERG, *Associate Professor of Rural Sociology,* 1945; A.B., Drake University, 1931; A.M., University of Nebraska, 1933, PH.D., 1944. (Resigned September 17, 1945.)

NORA M. HOTT, *State Home Demonstration Leader,* 1934; B.S., Kansas State College, 1914; M.S., New York University, 1926.

HOWARD H. HOY, *Professor Emeritus of Engineering Shops,* 1899, 1944; B.S., South Dakota State College, 1896, M.S., 1903.

LYLE S. HOYT, *Instructor in Animal Husbandry Department,* 1945; B.S., Iowa State College, 1941.

A. N. HUME, *Professor in Agronomy, Agronomist Experiment Station,* 1911; B.S.A., Purdue University, 1900; M.S., 1902; PH.D., Goettingen University, 1910.

BOYD A. IVORY, *Extension Poultryman,* 1943; B.S., Utah State Agricultural College, 1938; M.S., Rutgers University, 1939. (Resigned September 30, 1945.)

MILDRED JARRATT, *Instructor in Pharmacognosy,* 1944; B.S., Eastern State Normal School, 1931; B.S., South Dakota State College, 1943.

ISAAC B. JOHNSON, *Director of Agricultural Experiment Station, Professor of Animal Husbandry,* 1918, 1938; B.S.A., Iowa State College, 1913, M.A., 1921.

JOHN A. JOHNSON, *Instructor in Physical Education,* 1944; B.S., South Dakota State College, 1927.

KAY LOUISE JOHNSON, *Instructor in Home Economics,* 1946; B.S., Iowa State College, 1939.

LESLIE E. JOHNSON, *Associate Professor of Animal Husbandry, Associate Animal Husbandman, Experiment Station,* 1941; B.S., Iowa State College, 1929, M.S., 1938, PH.D., 1941.

CLAYTON R. JONES, *Instructor in Physics,* 1945; B.S., South Dakota State College, 1939.

MINERVA KELLOGG, *Associate Professor of Home Economics (in charge of Nutrition Research)* 1933; B.S., University of Minnesota, 1920; M.S., Columbia University, 1925, PH.D., 1938.

PHILIP L. KELLY, *Professor of Dairy Husbandry, Head of Department, Dairyman Experiment Station,* 1945; B.S., University of Minnesota, 1930, PH.D., 1936.

NELLIE G. KENDALL, *Assistant Professor in Physical Education,* 1912 ,1918; B.S., South Dakota State College, 1908.

KATHARINE KLEIN, *Assistant Professor in Education and Psychology,* 1931; A.B., University of Kansas, 1926, A.M., 1927.

WILLIAM KOHLMEYER, *Associate Professor Poultry Department, Acting Head of Department, Associate Poultry Husbandman Experiment Station,* 1944; B.S., Iowa State College, 1928; M.S., 1938.

ESTHER ROSS KORSTAD, *Instructor in Shorthand and Typing,* 1933; B.S., University of Minnesota, 1938.

WENDELL F. KUMLIEN, *Professor of Rural Sociology, Head of Department, Rural Sociologist Experiment Station,* 1920, 1925; B.A., Lawrence College, 1911; M.S., South Dakota State College, 1921; M.S., University of Wisconsin, 1923, PH.D., 1941.

LEONARD L. LADD, *Extension Soil Conservationist,* 1944; B.S., South Dakota State College, 1920.

*DUANE E. LAKE, *Manager Pugsley Union,* 1940, 1946.

*CHRISTIAN LARSEN, *Dean Emeritus of Agriculture,* 1907, 1940; B.Sc. (Agr.), Iowa State College, 1902, M.S., 1904.

*T. O. LARSON, *Extension Animal Husbandman,* 1942, 1944; B.S., South Dakota State College, 1940. (Resigned December 31, 1945.)

FLOYD J. LEBLANC, *Dean, Division of Pharmacy, Professor of Pharmaceutical Chemistry;* PH.C., South Dakota State College, 1923, B.S., 1924, M.S., 1927; PH.D., Purdue University, 1938.

RAY M. LIEN, *Instructor in Agricultural Engineering,* 1945; B.S., South Dakota State College, 1941.

CHESTER H. LINSCHEID, *Acting Librarian,* 1936, 1944; B.A., Bethel College, 1932; B.A. (in Library Science), University of Oklahoma, 1934; M.A. (in Library Science), University of Illinois, 1941.

CHARLES C. LIPP, *Professor Emeritus of Veterinary Science,* 1913, 1944; D.V.M., Ohio State University, 1903.

*MERTON C. LIPPERT, *Instructor in Printing,* 1940, 1945; B.S., South Dakota State College, 1930.

LILLIAN LUND, *Assistant Professor in Home Economics, in Charge of Textile Research,* 1944; B.A., St. Olaf College, 1930; M.S., University of Minnesota, 1944.

GABRIEL LUNDY, *Professor of Agricultural Economics, Head of Department, Economist Experiment Station,* 1926, 1936; B.S. (Agr.), North Dakota Agricultural College, 1914; M.S., University of Wisconsin, 1917.

JAMES B. LUSK, *Associate Professor in Mechanical Engineering,* 1943; B.S., Purdue University, 1935; M.S., Leigh University, 1937.

MARY FRANCES LYLE, *Assistant in Club Work,* 1945; B.S., University of South Dakota, 1943.

HERBERT B. MACDOUGAL, *Professor of Mathematics, Acting Head of Department,* 1929, 1938; A.B., Miami University, 1927; M.S., University of Iowa, 1929.

CATHERINE FRASER MACLAGGAN, *Professor of Foreign Languages, Head of Department,* 1927, 1928; A.B., Bucknell University, 1906, A.M., 1922.

LAURA J. MCARTHUR, *Assistant Professor in Home Economics,* 1920; B.S., University of Minnesota, 1920, M.S., 1935.

GEORGE W. MCCARTY, *Professor of Speech, Head of Department,* 1920, 1924; A.B., University of Indiana, 1915; A.M., Columbia University, 1920.

AUDREY MCCOLLUM, *Assistant State Home Demonstration Leader,* 1946; B.S., South Dakota State College, 1939.

THURLO E. MCCRADY, *Professor of Physical Education, Head of Department,* 1941; A.B., Hastings College, 1929; M.A., University of South California, 1940.

S. A. MCCRORY, *Associate Professor of Horticulture, Acting Head of Department, Associate Horticulturist, Experiment Station,* 1938, 1941; B.S. (Education), State Teachers College, Springfield, Mo., 1937; B.S. (Agr.), University of Missouri, 1936, M.A., 1937.

*GERTRUDE MCKNIGHT, *Assistant in Library,* 1915, 1944.

FLORENCE LANG MCLAREN, *Assistant Extension Home Management Specialist,* 1945; B.S., University of Minnesota, 1924.

NELLIE MCLOUGHLIN, *Assistant State Home Demonstration Leader,* 1943; B.S., South Dakota State College, 1932.

KARL F. MANKE, *Assistant Agronomist, Experiment Station,* 1944; B.S., University of Minnesota, 1935; M.S., University of Nebraska, 1938.

GRACE MARSHMAN, *Instructor-Secretary, School of Agriculture,* 1934.

BECKMAN MARTIN, *Instructor in Physics,* 1945; A.B., Oakland City College, 1926; M.A., University of Indiana, 1933. (Resigned November 15, 1945.)

JOHN E. MARTIN, *Assistant in Education,* 1929; B.S., Kansas State Agricultural College, 1909; M.S., University of Colorado, 1935.

MRS. ALBERT MARTINSON, *Assistant Farm Labor Supervisor, Extension Service,* 1944; B.S., South Dakota State College, 1933. (Resigned January 31, 1946.)

HAROLD A. MILLER, *College Physician,* 1938; B.S., South Dakota State College, 1916; M.D., Tulane University, 1922.

WARD L. MILLER, *Professor of Botany, Head of Department,* 1928; A.B., Southwestern College, 1916; M.S., University of Chicago, 1919, PH.D., 1928.

ALVIN L. MOXON, *Experiment Station Chemist, Professor of Chemistry,* 1934, 1940; B.S., South Dakota State College, 1934, M.S., 1937; PH.D., University of Wisconsin, 1941.

CLATUS M. NAGEL, *Plant Pathologist,* 1943, 1946; B.S., North Dakota State College, 1929; M.S., Iowa State College, 1932, PH.D., 1938.

K. LORETTE NELSON, *Extension Home Management Specialist,* 1935, 1940; B.S., South Dakota State College, 1927.

U. J. NORGAARD, *Extension Agronomist,* 1939; B.S.A., University of Wisconsin, 1921.

ELSIE T. OBER, *Assistant Professor in Art,* 1924, 1938; Graduate Minneapolis School of Art, 1919; B.S., University of Minnesota, 1923; M.A., Columbia University, 1941.

JAMES J. O'CONNELL, *Extension Animal Husbandman,* 1946; B.S., South Dakota State College, 1935.

*CALVIN C. OLESON, *Associate Professor in Civil Engineering,* 1936, 1945; B.S. in C.E., 1925; M.S. in C.E., Iowa State College, 1928.

JOHN E. OLSON, *Captain, Infantry, U. S. Army, Professor of Military Science and Tactics;* B.S., South Dakota State College, 1940.

EDWARD OLSON, *Assistant County Extension Agent in Horticulture,* 1944; B.S., South Dakota State College, 1940; M.S., Colorado State College, 1944. (Resigned December 31, 1945.)

MILO S. OPDAHL, *State Club Leader,* 1937, 1944; B.S., South Dakota State College, 1935.

DONALD DEAN PARKER, *Professor of History, Head of Department of History and Political Science,* 1943; B.A., Park College, 1922; M.A., University of Washington, 1932; PH.D., University of Chicago, 1936.

DAVID GEORGE PATERSON, *Assistant Professor in Agricultural Economics and Assistant Economist, Experiment Station,* 1946; B.S., South Dakota State College, 1941; M.S., Iowa State College, 1942.

NORMAN G. PATTERSON, *Assistant Agronomist, Experiment Station,* 1944; B.S., Iowa State College, 1939.

RALPH L. PATTY, *Professor of Agricultural Engineering, Head of Department, Agricultural Engineer, Experiment Station,* 1916, 1924; B.DI., Iowa State Teachers College, 1907; B.S. (A.E.), Iowa State College, 1939. (Died November 6, 1945.)

TWILA M. PAULSEN, *Station Analyst, Experiment Station Chemistry,* 1943, 1944; B.S., South Dakota State College, 1943. (Resigned December 15, 1945.)

WILLIAM ALBERT PETERSON, *Associate Professor of Music,* 1912, 1919; B.MUS., American Conservatory of Music, 1911.

BESSIE PETTIGREW, *Instructor in English,* 1944; A.B., University of Wisconsin, 1906; M.A., Columbia University, 1928.

EDITH M. PIERSON, *Dean of the Division of Home Economics, Professor of Home Economics,* 1919, 1923; B.S., Lewis Institute, 1914; M.S., University of Minnesota, 1922. (Died October 10, 1945.)

*STALEY L. PITTS, *Instructor in Physical Education, Assistant Coach,* 1941, 1945; B.S., Kansas State College, 1939.

ELIZABETH S. PRINGLE, *Assistant Extension Editor,* 1944.

LEO F. PUHR, *Associate Professor of Agronomy (Soils), Associate Agronomist Experiment Station,* 1925, 1940; B.S., South Dakota State College, 1925, M.S., 1927; PH.D., University of Wisconsin, 1940.

EVERETT GUSTAV PYLE, *Instructor in English,* 1945; B.ED., Western Illinois State Teachers College, 1935; M.A., State University of Iowa, 1939.

RAYMOND E. REINHART, *Professor of Physics, Head of Department,* 1934, 1937; A.B., Phillips University, 1927; M.S., University of Washington, 1929; PH.D., University of Kansas, 1935.

WILLIAM F. REYNARD, *First Lieutenant, U. S. Army,* 1944; *Assistant Professor of Military Science and Tactics;* B.A., University of Colorado, 1941.

MADELINE GATEKA RITZ, *Professor of Art, Head of Department,* 1945; A.B., Oklahoma College for Women, 1925; M.A., Columbia University, 1928.

FRANK I. ROCKWELL, *Extension Forester,* 1936; B.S.F., University of Minnesota, 1906. (Resigned September 30, 1945).

ALICE MAE ROSENBERGER, *Associate Professor of Home Economics, Acting Dean of Division,* 1928, 1945; B.A., University of Iowa, 1916; M.S., Iowa State College, 1927.

JOHN M. RYAN, *Extension Editor,* 1937, 1940; B.S., South Dakota State College, 1940.

ROBERT R. SAND, *First Lieutenant, Infantry, Assistant Professor of Military Science and Tcatics,* 1945; B.S., University of North Dakota, 1943.

ORPHA SANDBECK, *Assistant College Nurse,* 1946; B.S., South Dakota State College, 1945.

ELMER E. SANDERSON, *Assistant Extension Agronomist;* B.S., South Dakota State College, 1942.

FRANK G. SCHULTZ, *Dean of General Science,* 1942; B.S., Northland College, 1926; M.A., University of Minnesota, 1935, PH.D., 1941.

CLEO SCOTT, *Assistant in Club Work,* 1944; B.S., South Dakota State College, 1940.

PAUL T. SCOTT, *Assistant Professor of Journalism,* 1943; A.B., Indiana University, 1930; M.A., State University of Iowa, 1937.

PERSIS J. SCOTT, *Assistant to Head Resident, Women's Dormitories,* 1945; B.A., Ripon College, 1913.

HARRY CHARLES SEVERIN, *Professor of Entomology-Zoology, Head of Department, Experiment Station Entomologist,* 1909, 1919; B.A., University of Wisconsin, 1907; M.A., Ohio State University, 1908.

CLARENCE SHANLEY, *District Extension Supervisor,* 1931, 1933; B.S., South Dakota State College, 1913.
ELEANOR SHANLEY, *Assistant in Library,* 1945; B.S., South Dakota State College, 1945.
RUTH SICKLES, *Assistant in Home Economics Education,* 1945; B.S., Dakota Wesleyan University, 1927.
LELA L. SMITH, *Assistant Registrar,* 1943.
GEORGE E. SMOCK, *Professor of English, Head of Department,* 1935; A.B., De Pauw University, 1927; A.M., University of Chicago, 1928; PH.D., Cornell University, 1934.
*LIMEN T. SMYTHE, *Assistant Professor Agricultural Economics, Assistant Economist, Experiment Station,* 1940, 1945; B.A., University of Washington, 1934; M.A., University of Washington, 1937.
*GERALD B. SPAWN, *Assistant Professor of Entomology-Zoology,* 1938, 1946; B.S., South Dakota State College, 1931, M.S., 1933, PH.D., Iowa State College, 1941.
RUTH STALEY, *Instructor in English,* 1945; B.A., Wells College, 1913; M.A., Wittenberg College, 1916; PH.D., University of Wisconsin, 1938.
*HARRIS DEAN STALLINGS, *Librarian,* 1935, 1946; A.B., Stanford University, 1933; B.S., in Library Science, University of Illinois, 1935, M.A., 1940.
*CORRINNE HEATON STAPLES, *Assistant Professor of Home Economics,* 1938, 1944; B.S., South Dakota State College, 1936; M.S., Cornell University, 1944. (Resigned February 14, 1946.)
*MATTIE STODDART, *Instructor in School of Agriculture,* 1929, 1936; B.S., South Dakota State College, 1917.
LOUISE C. STOLLE, Instructor in Mathematics, 1943; B.S., Carleton College, 1928.
WINDSOR A. STRAW, *Assistant Professor of Printing and Rural Journalism, Superintendent of Printing Laboratory,* 1936, 1940; B.S., South Dakota State College, 1927.
STANLEY A. SUNDET, *Assistant Professor in Education, in charge of Agricultural Education,* 1946; B.S., South Dakota State College, 1935; M.S., Iowa State College, 1939.
A. O. SYVERUD, *Assistant Agronomist,* 1943, 1944; B.S., Iowa State College, 1916.

MYRON C. TANK, *College Physician,* 1945; M.D., Washington University, 1927.
KARL THEMAN, *Assistant Professor of Music (Voice)* 1938; Fellow three years, Julliard Graduate School of Music; B.S., Teachers College Columbia University, 1936, M.A., 1937.
ROBERT THOMPSON, *Assistant in Agricultural Education,* 1945; B.S., South Dakota State College, 1939.
WILLIAM G. THOMAS, *Instructor in Chemistry,* 1946; B.S., South Dakota State College, 1939.
C. C. TOTMAN, *Instructor in Dairy Husbandry,* 1923; B.S.A., University of Wisconsin, 1912.
LAVONNE TWEETEN, *Supervising Teacher Home Economics Education,* 1945; B.S., University of Minnesota, 1942.

RAYMOND L. VENARD, *Assistant Extension Soil Conservationist,* 1946; B.S., South Dakota State College, 1934.
FRANK G. VIETS, *Associate Agricultural Chemist, Experiment Station,* 1944; B.S., Colorado State College, 1937; M.S., University of California, 1939, PH.D., 1942. (Resigned November 25, 1945.)
VIVIAN V. VOLSTORFF, *Dean of Women and Associate Professor of History, Assistant Director of Student Affairs,* 1932, 1944; B.S., Northwestern University, 1928, M.A., 1929, PH.D., 1932.

ORLIN E. WALDER, *Associate Professor of Mathematics, Manager of Men's Dormitories,* 1930, 1940; B.S., Huron College, 1928; A.M., University of Nebraska, 1930.
ANNA D. WALKER, *Assistant in Club Work in Charge of Older Youth,* 1938, 1945; B.S., South Dakota State College, 1924.
F. MILDRED WALKER, *Itinerant Teacher Trainer, Home Economics,* 1935, 1941; B.S., Dakota Wesleyan University, 1925; M.S., Iowa State College, 1940.
CARL G. WATSON, *Associate Professor in Physics,* 1943; A.B., Indiana University, 1914, A.M., 1917.
*GILBERT S. WEAVER, *Extension Veterinarian,* 1919, 1946; D.V.S., Ohio State University, 1908.
VICTOR S. WEBSTER, *Professor of Chemistry, Head of Department,* 1936, 1944; B.A., University of Iowa, 1930, M.S., 1931, PH.D., 1933.
FORREST L. WELLER, *Associate Professor of Rural Sociology,* 1945; B.A., Manchester College, 1925; M.A., University of Chicago, 1927; PH.D., 1940
IRENE L. WENTE, *Assistant Professor of Mathematics and German,* 1930, 1938; B.S., Lewis Institute, 1927; M.S., University of Chicago, 1929.
WOODROW P. WENTZY, *Instructor in Printing,* 1945; B.S., South Dakota State College, 1938.
EUGENE I. WHITEHEAD, *Assistant Agricultural Chemist, Experiment Station,* 1942; B.S., South Dakota State College, 1939, M.S., 1941.
MARY LOUISE WILLIAMS, *Manager, College Cafeteria, Instructor in Home Economics,* 1924, 1935; M.S., University of Minnesota, 1917.
HERBERT G. WILLIAMS, *Instructor in English,* 1945; A.B., Ohio State University, 1916; B.S., Bowling Green University, 1944.
ANNA M. WILSON, *Extension Nutritionist,* 1944; B.S., Kansas State College, 1931; M.S., Washington State College, 1941.
FREDERICK WILSON, *Assistant Extension Animal Husbandman,* 1946; B.S., University of Wyoming, 1937.
JAMES WILBUR WILSON, *Director Emeritus of Experiment Station,* 1902, 1938; B.S.A., Iowa State College, 1896, M.S.A., 1898; LL.D., University of South Dakota, 1922.
Z. S. WIPF, *Assistant State Supervisor on Farm Labor, Extension Service,* 1941, 1944; B.A., Dakota Wesleyan University, 1924.
CLINTON R. WISEMAN, *Professor of Education and Psychology and Head of Department,* 1918, 1933; B.S.A., University of Wisconsin, 1915, M.S., 1923; PH.D., University of Minnesota, 1928.

W. W. WORZELLA, *Professor of Agronomy, Head of Department, Agronomist, Experiment Station,* 1943; B.S.A., University of Wisconsin, 1929; M.S.A., Purdue University, 1932; PH.D., 1934.

TURNER R. H. WRIGHT, *Associate Professor of Animal Husbandry, Associate Animal Husbandman, Experiment Station,* 1923, 1927; B.S. (Agr.), University of Missouri, 1909.

LEONARD ARTHUR YAGER, *Instructor in Horticulture, Extension Agent at Large in Horticulture,* 1946; B.S.A., University of Manitoba, 1941.

GERTRUDE S. YOUNG, *Professor Emeritus of History,* 1907, 1943; A.B., University of Wisconsin, 1906.

HELEN A. YOUNG, *Assistant Professor of Home Economics,* 1929; B.S., University of Nebraska, 1922; M.A., Columbia University, 1937.

JOHN F. YOUNGER, *District Club Agent,* 1945; B.S., South Dakota State College, 1932.

1945 Summer Quarter Staff

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

* * * *

OSCAR R. ABEL, B.S., Instructor in Printing
LEE L. AMIDON, M.S. (M.E.), Professor of Mechanical Engineering

HOWARD B. BLODGETT, M.S. (C.E.), Professor of Civil Engineering
HENRY BLOEM, B.S., Assistant Professor of Engineering Shops
JOHN A. BONELL, Graduate of Stout Institute, Assistant Professor of Engineering Shops
EDWARD R. BINNEWIES, M.S., Associate Professor of Chemistry

CARL CHRISTENSEN, B.MUS., Professor of Music

EMILY HASKELL DAVIS, PH.D., Professor of Art
LOREN E. DONELSON, M.S., Professor of Printing and Rural Journalism
BERTRAND A. DUNBAR, M.A., Professor of Emeritus of Chemistry

CLARK T. EIDSMOE, M.S., Professor of Pharmacy
R. ESTHER ERICKSON, R.N., B.S., Professor of Nursing Education
ALBERT D. EVENSON, B.S., Instructor in Printing

GILES ROBERTS FLOYD, PH.D., Associate Professor of English

WILLIAM H. GAMBLE, M.S., Professor of Electrical Engineering
JOSEPH ADDISON GIDDINGS, M.A., Associate Professor of English
ARTHUR R. GRISMER, M.S., Instructor in Bacteriology

ALBERT S. HARDING, A.M., Professor Emeritus of History
EDWIN B. HARDING, B.S., Instructor in Printing, Composing Machines Specialist
NELLE H. HARTWIG, M.S., Assistant Professor of Entomology-Zoology
REUEL GUSTAV HEMDAHL, PH.D., Assistant Professor of Political Science
OTTO GIEDE HOIBERG, PH.D., Associate Professor of Rural Sociology

JOHN A. JOHNSON, B.S., Instructor in Physical Education

NELLIE G. KENDALL, B.S., Assistant Professor of Physical Education (Women)
KATHERINE KLEIN, A.M., Assistant Professor of Education and Psychology
ESTHER ROSS KORSTAD, B.A., Instructor in Typewriting and Shorthand

CHESTER H. LINSCHEID, M.A., Acting Librarian
GABRIEL LUNDY, M.S., Professor of Agricultural Economics

HERBERT B. MACDOUGAL, M.S., Professor of Mathematics
CATHERINE F. MACLAGGAN, A.M., Professor of Foreign Languages
JOHN E. MARTIN, M.S., Assistant in Education
GEORGE W. MCCARTY, M.A., Professor of Speech
THURLO E. MCCRADY, M.A., Professor of Physical Education and Director of Athletics
WARD L. MILLER, PH.D., Professor of Botany

JOHN E. OLSON (Capt.), B.S., Professor of Military Science and Tactics

DONALD D. PARKER, PH.D., Professor of History
WILLIAM ALBERT PETERSON, B.MUS., Associate Professor of Music
RAYMOND E. REINHART, PH.D., Professor of Physics
WILLIAM F. REYNARD (Lt.), A.B., Instructor of R.O.T.C. and A.S.T.P.
ALICE ROSENBERGER, M.S., Associate Professor of Home Economics

PAUL T. SCOTT, M.A., Assistant Professor of Journalism and Geography
GEORGE E. SMOCK, PH.D., Professor of English
CORRINE HEATON STAPLES, M.S., Assistant Professor of Home Economics
WINDSOR A. STRAW, B.S., Assistant Professor of Printing and Rural Journalism; Superintendent of Printing Laboratory

KARL THEMAN, M.A., Assistant Professor of Music (Voice)
VIVIAN VIRGINIA VOLSTORFF, PH.D., Dean of Women, Assistant Director of Student Affairs and Associate Professor of History

ORLIN E. WALDER, A.M., Associate Professor of Mathematics, Manager of Men's Dormitories
VICTOR S. WEBSTER, PH.D., Professor of Chemistry
CLINTON R. WISEMAN, PH.D., Professor of Education and Psychology

South Dakota State College Agricultural Extension Service—1945-46

GEORGE I. GILBERTSON, Director of Extension

District Extension Supervisors

Clarence Shanley, Joseph L. Hill, W. E. Dittmer

District Extension Agent

*Henry P. Holzman, Box 1169, Rapid City, South Dakota

Area Extension Agent

N. E. Beers, Miller, South Dakota

County Extension Agents

(As of February 13, 1946)

County	*Name, Address*
Aurora	Maynard Warne, Plankinton
Beadle	Gale Peppers, Huron
Bon Homme	Ray McDaniel, Tyndall
Brookings	Charles Sayre, Brookings
Brown	Benj. H. Schaub, Aberdeen
Butte	Floyd F. Collins, Belle Fourche
Campbell	Michael Madden, Mound City
Clark	C. H. Wagner, Clark
Clay	Carl O. Reed, Vermillion
Codington	John Noonan, Watertown
Custer	Conrad Simonson, Custer
Davison	Leonard Schrader, Mitchell
Day	Al O'Connell, Webster
Deuel	Robert Pylman, Clear Lake
Dewey	Raymond Gibson, Timber Lake
Douglas	Robert L. Pinnow, Armour
Edmunds	Oscar E. Prestegard, Ipswich
Fall River	F. A. Staley, Hot Springs
Faulk	Konrad Stummeier, Faulkton
Grant	Fred Dosch, Milbank
Gregory	Hagen Kelsey, Burke
Haakon	Elbert Bentley, Philip
Hamlin	Clayton Kelsey, Hayti
Hand	La Verne Kortan, Miller
Hanson	Lu Vern Rusch, Alexandria
Harding	———, Buffalo
Hyde	Kenneth J. Wanless, Highmore
Jerauld	J. B. Solem, Wessington Springs
Kingsbury	Carroll Wellman, De Smet
Lake	Clarence Schladweiler, Madison
Lawrence	T. H. Young, Spearfish
Lyman	Thomas W. Strachan, Kennebec
McCook	R. B. Kelton, Salem
McPherson	Vernon Johnson, Leola
Marshall	———, Britton
Meade	Kenneth Leslie, Sturgis
Mellette, Todd	———, White River
Minnehaha	Tony L. Westra, Sioux Falls
Moody	C. M. Culhane, Flandreau
Pennington	Kirk T. Mears, Rapid City
Perkins	———, Bison
Potter	———, Gettysburg
Roberts	Cecil Sanderson, Sisseton
Sanborn	Floyd Beach, Woonsocket
Spink	Lloyd Wilson, Redfield
Sully	John F. Neu, Onida
Tripp	Olan Starkey, Winner
Turner	Orville Doescher, Parker
Union	Harmon Boyd, Elk Point
Walworth	James S. Hopkins, Selby
Ziebach	———, Dupree

*On leave of absence.

Assistant County Extension Agents

Name	*Temporary Headquarters*
Glenn Schrader	Sioux Falls
Kenneth Ostroot	Huron
Ralph Braun	Watertown
Otto Sckerl	De Smet
Daniel Wiersma	Belle Fourche

Home Extension Service

Nora M. Hott, State Home Demonstration Leader

Nellie McLoughlin, Assistant State Home Demonstration Leader

Anna M. Wilson, Extension Nutritionist

K. Lorette Nelson, Home Management Specialist

Anna D. Walker, Clothing Specialist

Home Extension Agents

(As of March 6, 1946)

District	*Name*	*Address*
Beadle	Dixie Ebersole	Huron
Bon Homme, Yankton	Elizabeth Dawson	Tyndall
Brookings	Mrs. Esther S. Farnham	Brookings
Brown	Mrs. Bessie Joyner	Aberdeen
Charles Mix, Douglas,	Mrs. Ermel Cade Larson	Armour
Clay	Mrs. Leslie Smith	Vermillion
Custer, Fall River	Nelda Nold	Hot Springs
Day	———	Webster
Deuel, Hamlin	Louise Hofstad	Clear Lake
Edmunds	Mrs. Jeanne Marie Wahl	Ipswich
Faulk	———	Faulkton
Grant	Adele Johnson	Milbank
Hand	Doris Brooking	Miller
Hanson	Elaine Christensen	Alexandria
Kingsbury	Ora M. Sloat	De Smet
Lake	———	Madison
Lawrence	Luella Larson	Spearfish
Lyman	———	Kennebec
McCook	Mrs. Grace Simons	Salem
Meade	———	Sturgis
Minnehaha	Sara Dewing	Sioux Falls
Pennington	Donna Ballard	Rapid City
Potter	———	Gettysburg
Roberts	Mrs. Agnes Slattery	Sisseton
Spink	———	Redfield
Turner	Esther Aalseth	Parker
Sanborn, Miner	Idella Alfson	Woonsocket
Sully	———	Onida
Union	———	Elk Point
Home Agent-at-large	Mrs. Hildur Jaffe	Brookings
Butte	Mrs. Lucille Kirtland	Belle Fourche
Haakon, Stanley, Jones	Mrs. Joy A. Paine	Murdo
Jackson and at large	———	———
Mellette, Bennett, Todd	———	———
Gregory, Lyman	———	———
Tripp	Mrs. Ina B. Hanson	Winner

General Information

Historical Sketch

Establishment. An act of the Territorial Legislature, approved February 21, 1881, provided that "an Agricultural College for the Territory of Dakota be established at Brookings, provided that a tract of land not less than eighty acres be secured and donated to the Territory of Dakota."

The Legislature of 1883 provided for the erection of the first building. This building, now known as the Central Building, was opened for use September 24, 1884.

The Enabling Act, admitting the State of South Dakota, approved February 22, 1889, provided that 120,000 acres of land be granted for the use and support of the Agricultural College, in accordance with the acts of Congress making donations of lands for such purpose. The acts of Congress referred to are primarily the act of July 2, 1862, known as the Morrill Act, providing that 30,000 acres of public land for each representative in Congress be given to each state towards "the endowment, support, and maintenance of at least one college, where the leading object shall be, without excluding scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts." By the Enabling Act of 1889 Congress granted to South Dakota for the Agricultural College 40,000 additional acres, in lieu of a grant that had been made to the new states in 1841. Thus the total land grant for the Agricultural College was 160,000 acres.

In the Morrill Act of 1862, such colleges were spoken of as "Colleges of Agriculture and Mechanic Arts." In order that the name might more nearly conform to the object for which the College was established, the Legislature of 1907 changed the name from "The Agricultural College of South Dakota" to "The State College of Agriculture and Mechanic Arts."

NOTICE

Due to conditions which may arise beyond the control of South Dakota State College, statements in this catalog may be changed during the next year without notice. In so far as possible courses listed will be offered, but the College reserves the right to modify any statements in accordance with finances and other unforseen conditions.

The Experiment Station* was organized in 1887, under the Hatch Act of Congress, which provided for the establishment of agricultural experiment stations in connection with agricultural colleges. These stations were established for the purpose of conducting experiments and research in connection with all branches of the home and agricultural industries of the United States, due regard being paid to the various conditions and needs of the respective states. It is also their object to aid in diffusing among the people useful and practical information in all subjects connected with homes and agriculture. The South Dakota station conducts its investigations chiefly along the following lines: Livestock, dairying, soils, field experiments with crops, greenhouse work, trees and small fruits, injurious insects, and chemistry of plant growth and foods. In the home, studies are made of foods, their selection, preparation and conservation, clothes and textiles, and the various phases of home management.

The Agricultural Extension Service was established to carry to the people of the State the results of the work of the College, and also such methods as the most successful farmers and homemakers have approved for different localities. From its earliest history the College has sent out members of its staff to help the people of the State by addressing farmers' meetings, acting as judges at fairs and for agricultural clubs, and in various other ways. The College, however, had no money available to conduct such work in a

*See the index for references to additional information concerning the Agricultural Experiment Station and the Agricultural Extension Service.

systematic way until 1914, when the Smith-Lever Act was passed by Congress providing $10,000 annually to each state beginning with July 1, 1914, to be used for agricultural extension work by the State Colleges of Agriculture in cooperation with the United States Department of Agriculture. The act also provided that beginning with July 1, 1915, additional amounts, which increased for a period of five years are to be given to the different states upon the condition that the states appropriate equal funds for the extension work.

Sources of Income. A joint resolution passed by the Legislature of 1890 accepted the lands granted in the Enabling Act. These lands were not at once assigned. The Commissioner of Public Lands reported that 64,658 acres had been selected. All have since been selected; very few have been sold. A small amount is received yearly as rental. No school lands may be sold for less than ten dollars an acre. When all the land is sold it will yield an endowment of approximately three million dollars.

In addition to the acts of Congress making donations of land for the support of the College several Congressional acts have subsequently been passed providing the College with funds for instruction, research, and agricultural extension work. Among these are the Morrill, Nelson, and Bankhead-Jones acts, providing for instructional work; the Hatch, Adams, Purnell, and Bankhead-Jones acts providing for research work in agriculture and home economics; and the Smith-Lever act with its supplementary Capper-Ketcham and Bankhead-Jones acts which, with cooperative funds, provides for agricultural and home extension work.

The College also receives aid from the State, biennial appropriations being made by the Legislature for maintenance and buildings.

Location, Buildings, Equipment

The Location. The College is located in Brookings, which has a population of about 5,000 people, not including students. The city is situated on the Central Dakota Division of the Chicago & Northwestern Railway, the Watertown branch making connections with the main line at this point.

Few educational institutions are more advantageously located. The campus, lying at the northeast corner of the City of Brookings, is approached by wide paved streets, which are shaded with well grown trees. The lawns of the city are well kept and abound in ornamental plants and shrubs. The houses are nearly all modern in equipment, and many of them are new and most attractive in appearance. City conveniences are provided mostly from municipal plants. Brookings is a city of homes and its atmosphere is favorable to the establishment and continuance of good habits.

The College Buildings and Grounds. The college owns a total of 1360 acres. The college campus is ornamented with many varieties of beautiful trees and shrubs, and laid out with necessary walks and drives. Adjoining to the east are the horticultural gardens, and to the north, northeast, and northwest are the college farms.

The oldest college building, called the Central Building, built in 1884, houses the departments of agricultural economics, rural sociology and speech, the journalism office, and the post-office. The Old North Building, which was completed in 1887, is used by the School of Agriculture and the printing laboratory.

Another old building, completed in 1886, has been successively used as a boys' dormitory and for class rooms and offices; in 1917 it was moved to the present location, remodeled, and now houses the Extension Service.

The Administration Building was occupied in 1913, and the north extension was added in 1918. It provides executive offices, an auditorium, laboratories, class rooms and offices for the various agricultural departments, and also for other departments.

The Physics-Enginering Building, completed in 1901, is occupied by the physics and engineering departments with their various class rooms, laboratories and shops. It has recently been remodeled, a third story being added, and later the basements excavated, the number of class rooms and the laboratory space being thus very much increased.

The Plant Breeding Building, also completed in 1901, together with the large Greenhouse, furnishes room for the work that is being conducted by the departments of horticulture and entomology.

The Stock Judging Pavilion affords excellent opportunities for the judging and studying of the different kinds of livestock. Recently a modern abattoir has been added which provides an excellent place for the studying of the cutting and curing of meats from the different animals.

The brick Horse Barn does much to facilitate the instructional work in horse production.

The Agricultural Engineering Building was built in 1899 as a gymnasium. It has been remodeled inside and now is used for instruction in automobiles, tractors, and farm machinery.

The Chemistry Building, replacing one destroyed by fire in March 1928, was occupied in January 1929. It is a modern fireproof structure.

The Creamery is a two-story building erected in 1899, and enlarged in 1902, and again in 1911. It furnishes quarters for the department of dairy husbandry and for a creamery which is conducted on a commercial scale.

The Armory, completed in the year 1918, which has housed both the department of Military Science and Tactics and the department of Physical Education, is now to be devoted entirely to the college programs in physical education and athletics. The main floor is 100 feet by 165 feet, and free from supports. This floor plus the other facilities of the building provides space and equipment for an enlarged program in physical education and athletics.

A new Armory has just been completed to be used exclusively by the department of Military Science and Tactics. The new building and its equipment have been designed to meet the needs of a modern Reserve Officers' Training Corps.

The Women's Dormitories are Wenona Hall, built in 1909, and Wecota Hall, built in 1916, together with the Annex to Wecota Hall, which was completed in December, 1939.

The old dormitory for men, named East Men's Hall, was built during 1920 and 1921 for the benefit of men who were disabled while in the United States Army or Navy and were sent to this college for training by the United States Veteran's Bureau. A new dormitory for men, named Scobey Hall, was completed in 1940.

Both of the new dormitories and the Union Building were erected as PWA projects, and are of brick, fireproof, and have the latest conveniences in heat, light, and plumbing.

The Animal Health Laboratory, a brick building erected in 1920, furnishes quarters for the veterinary department.

The Lincoln Memorial Library was built in 1927 and was dedicated by President Calvin Coolidge. It is one of the most beautiful and efficient libraries to be found on any campus.

The Coughlin Campanile or Chimes Tower, built in 1929, is a gift of Charles L. Coughlin of the class of 1909. The tower houses eighteen tubular chimes. These are electrically played and are used to mark the hours, also to give concerts of hymns and other tunes. The tower is surmounted by two powerful lights, one revolving and the other stationary, which serve as a beacon to aviators.

The Pugsley Union is the center of student social life. It was financed from a PWA grant and twenty-year serial bonds to be paid from alumni and other gifts, student fees and book store, cafe, and other income.

All buildings on the campus are heated by steam and lighted by electricity generated in a new heating plant of modern design which is located in the rear of the campus.

Near the campus are the President's house and the home economics Practice Cottage. On the adjoining college farm are located the livestock and dairy barns, together with several dwellings and a number of small buildings which are used for agricultural purposes.

The Farm and Horticultural Gardens. The college farms include 882 acres, about 60 of which are used by the Agricultural Experiment Station as an experimental farm. Here the field experiments with crops, seed germination and soil preparation are conducted, and the students may witness and actually participate in this scientific work. The remainder of the farm is used as a model crop, stock and dairy farm under the direction of the agricultural divi-

sion. Practical work in experiments involving the best farming practices for this region is given the students.

The horticultural gardens comprise about 50 acres adjoining the campus. Here and in the greenhouse a large amount of work in fruit propagation and plant experimentation is being carried on.

The Laboratories, Shops and Museums. Well fitted laboratories and shops have been provided in all those departments where their use is made necessary by modern educational methods. The value of illustrative materials has been recognized, and numerous departments have made large collections and museums. The equipment of the various departments is described in connection with the description of their work.

The Library. The College recognizes that an essential part of every student's education should be training and practice in the use of books. The college library contains well over 80,000 bound volumes (January, 1945) and 24,000 pamphlets. It receives over 500 periodicals and a large number of scientific and technical publications. It is also a depository for state and federal documents. As far as funds are available, these collections are being gradually enlarged. A professional staff is available to aid students and faculty in the use of the library.

The library reading rooms will seat 240 persons. In addition to the reading rooms, there are seminar rooms designed for conferences and study of smaller groups. There is a Browsing Room which has a collection of popular books and periodicals to stimulate reading of students outside their study work.

During the past few years the library has received two outstanding gifts of books, one in the field of electrical engineering, the other in general literature.

While the library is designed primarily for the use of students and the faculty of the College, its privileges are extended freely to people of the city and the state insofar as this feature does not interfere with the work of the College.

The Postal Facilities. The College furnishes first-class postal facilities. State College Station, Brookings, South Dakota, is a Federal Post-office, located in a college building. Mail is delivered at convenient times during the day, making it unnecessary for students to go to the city post-office.

Organization and Government

The Board of Regents. By an act of the legislature approved March 10, 1897, provision was made for the appointment of the Regents of Education, who have charge of all the educational institutions which are maintained either wholly or in part by the State. The terms of office of the regents are each six years, and expire at different times, so that the board is a continuous body. Appointments to the board are made by the Governor, with the approval of the Senate, "of persons of probity and wisdom from among the best known citizens, residents of different portions of the State, none of whom shall reside in the counties in which any of the state educational institutions are located, who shall be designated as the Regents of Education."

Among the powers and duties of the regents as defined by law some important ones are: To employ members of the different faculties and other agents, to determine the proper number of teachers in said faculties, also their compensation and terms of employment, to establish departments, to settle upon the courses of study, to determine the rules to be enacted for the government of the students, to decide upon the textbooks to be used, to fix tuition fees, to guard against unwise duplication of departments, to confer degrees, to control the Agricultural Experiment Station, and to promote education among the farmers by providing for institutes; in fact, to make all regulations as to the execution and instructional functions of the educational institutions of the State. The regents govern the College largely through a regents' committee.

The Faculty. The faculty, consisting of a president and professors, all of whom are elected by the regents, determines in large part the general policy of the College. The president appoints, at the beginning of each college year, certain faculty committees which take up such work as may be as-

signed them by the president and the faculty.

Student Conduct. The State through its institutions of higher education provides the opportunity to its future citizens to get a college education at greatly reduced cost. In return the State and the College demand from enrolled students high standards of conduct and of scholarship. These high standards of conduct apply off the campus as well as on the campus. They must be considerably higher than the minimum required by law since the purposes of the College are related to good citizenship as directly as to intellectual abilities. Honesty, sobriety, and decency are of course essential.

Upon entering the College each student assumes the responsibility for adapting his own conduct to the purposes of the institution and to the welfare of the student body. When it becomes known that a student is not so conducting himself the College authorities may restrict or cancel such student privileges as seems necessary to correct the attitude of the offender and protect the welfare of the student body.

Such action of minor importance by the College may be informal and unrecorded, but *disciplinary action involving permanent expulsion, suspension for a period, probation or other serious penalty becomes a part of the student's record* and a statement to that effect will be sent to the student's parents.

For the guidance of students in special phases of college life in which specific guidance is deemed necessary, the College issues regulations such as those relating to student organizations, social events, dormitory life, and rooming houses. Where no specific rule is given the college standards of good conduct will apply.

By action of the Regents hazing in every form is prohibited. As interpreted by them, hazing is interference with the personal liberty of others and includes any act of domination by some students over others which may lead to the physical injury, intimidation, or humiliation of the latter students.

Automobiles. The College recommends that students attending State College should not be furnished automobiles by their parents. Very few of our students have need for an automobile, and the operation of one while attending college is not only expensive but usually interferes with the students' college work.

Student Activities

Faculty Control. While the students are allowed wide latitude in carrying on affairs which vitally concern themselves, such as athletic, literary, musical, social and other activities, the faculty retains an advisory interest in such matters, and has the right at any time to pass reasonable regulations for the welfare of the College. All matters relating to college activities and organizations are under the control, as the case may require, of a Faculty Committee on College Activities, or of this committee acting jointly with student committees. The Chairman of the Committee on College Activities is responsible for the administration of all regulations in this connection. (See Rules and Regulations for the Guidance of Faculty and Students.)

The Students' Association. The athletic, debating and oratorical interests, the musical organizations and student publications, are under the control of the Students' Association, which governs these and other student activities by means of a Board of Control consisting of students and members of the faculty. Assisting this Board are the Athletic, Forensic, Music and Publications Councils, which have charge of the respective activities that are assigned to them.

The Women's Self-Government Association. Each college woman by virtue of her registration is a member of this association. It brings about cooperation between all of the women of the College in matters which pertain to the interest of the group and promotes a friendly feeling between the dormitory women and women students of the town.

Physical Education and Athletics. All students are required to take physical education during the freshman and sophomore years. A large percentage of the students

participate in various intramural activities.

Under the Department of Physical Education and Athletics, an adequate program of intercollegiate athletics is available for all men students.

Rifle Markmanship. In addition to the regular instruction to freshmen in rifle marksmanship, rifle teams of both men and women students are selected and matches are fired with teams from different colleges and universities throughout the country.

Oratory and Debating. Each year for a number of years representatives of the College have met students from other institutions in debating contests, in which all are urged to take part. There has thus been aroused in the student body a large interest in this kind of work together with a healthy rivalry to obtain places on the intercollegiate teams.

Upon the recommendation of the instructor in charge of debating, college credit may be given students who take part in intercollegiate debates. (See Department of Speech for conditions governing such credit.)

A representative of the College is sent each year to the intercollegiate oratorical contest of the State. This student is selected by means of a local preliminary contest. In order that this contestant may fully represent the College, the faculty has imposed the requirement that those competing for this honor must be pursuing regular work for the Bachelor's degree. In like manner a representative is chosen each year for the State Extempore contest.

Excellence of achievement in all these activities is recognized by appropriate awards and prizes.

The Student Publications. The South Dakota Collegian is a weekly paper published by the students of the College. It is intended to be a mirror of student life at this institution, and all phases of college activity have representatives on its staff of editors.

The Jack Rabbit, or college year book, which was formerly published by the junior class, is published annually by the students of the College.

Members of the Collegian and Jack Rabbit staffs may receive credit for their editorial work. (See Rules and Regulations of the College for conditions governing such credit.)

The Christian Associations. In the state schools the Young Men's and the Young Women's Christian Associations occupy unique positions. They are the only organizations of the College whose primary object is the moral development of the student body. Their platforms are broad enough to allow every student who stands for pure manhood and womanhood to affiliate with them. The purpose of the associations is to present to the student the value of Christian living, and to create an atmosphere of goodfellowship among the members of the student body.

Other Student Organizations. Among the other outstanding student organizations of the College are the Band, Chorus, and Orchestra, which give a series of musical performances during the year; the Art Club, which in many ways fosters an interest in art; the Agricultural Society; Alpha Zeta, (an honorary agricultural society); the International Relations Club; the South Dakota State College Pharmaceutical Association; Rho Chi (an honorary pharmacy society); the Cadet Officers' Mess; Home Economics Club; Phi Upsilon Omicron (an honorary home economics society); Sigma Lambda Sigma (an honorary society for senior women); Pi Kappa Delta (a forensic society); Pi Gamma Mu (a social science honor fraternity); the Blue Key (an honorary service society for men); the Women's Athletic Association; the Scabbard and Blade (a military organization) and the women's auxiliary, the Guidon; the Printonian Society; the student chapter of the three professional engineering societies (The American Society of Civil Engineers, the American Society of Mechanical Engineers and the American Institute of Electrical Engineers) and the honorary engineering society Sigma Tau, with their coordinating Council; Sigma Delta Chi (a professional journalism society); and other organizations which promote interest in the various kinds of college work.

Tuition, Living and Other Expenses; Deposits

Tuition and Other Fees. The tuition fees for students who are residents of the state are as follows:

In all collegiate courses, $24 for the fall quarter, $23 for the winter quarter and $23 for the spring quarter.

For the summer quarter of two terms, $12 per term.

For the School of Agriculture term of five months, $45. The School of Agriculture students pay no laboratory or library fees.

For the tuition in special short courses and the fees in Music see "Special and Secondary Courses," in another part of this bulletin.

The tuition fees for students who are nonresidents of the state are fifty percent more than for resident students.

No deduction in regular tuition fees is made when a student enters late.

Each student of college rank pays $5.25 per quarter for membership in the Students' Association ($2 per term of summer quarter) plus Federal tax.

Each student is required to pay a health fee of $7.50 for the college year ($2.50 per quarter, $1.25 per term of summer quarter).

A library fee of $1.00 per quarter is required of each student of college rank. Students enrolled in the summer quarter pay a library fee of $.50 per term. The money derived from this source is spent for new books and periodicals and to replace old books.

By request of the Student Board of Control upon petition of the student body, the Regents of Education approved the addition of $3.00 a quarter to the student fees, the amount so collected to be used for the construction and support of a Student Union Building. A fee of $1.50 per term is required of summer quarter students for this purpose.

A graduation fee of $5 is required of each student who receives a degree from the College.

See the following pages for statements concerning deposits for military suits and for rooms in the dormitories.

A laboratory fee is charged for the use of each laboratory in which the student takes work. Deposits are also required in connection with some laboratory work. The deposits are refunded after a deduction has been made for equipment broken by the student. These fees are mentioned in connection with the departmental description of the college work.

A fee of 50 cents is charged for each change in enrollment made at the request of the student after the first week of the term.

As an inducement to students to register promptly, the regents have imposed the rule that a tardy-enrollment fee of $2.00 shall be collected from all students who enroll and pay their fees after the time announced for that purpose.

Expenses

	Fall Quarter	*Winter Quarter*	*Spring Quarter*
Tuition	$ 24.00[1]	$ 23.00[1]	$ 23.00[1]
Board and Room	98.00[2]	98.00[2]	98.00[2]
Health Fee	2.50[3]	2.50[3]	2.50[3]
Laboratory Fees	7.00[4]	7.00[4]	7.00[4]
Books and Supplies	14.00[4]	8.00[4]	8.00[4]
Students' Association Fee	5.25[5]	5.25[5]	5.25[5]
Library Fee	1.00	1.00	1.00
Student Union Fee	3.00[6]	3.00[6]	3.00[6]
Physical Education Fee	1.50[7]	1.50[7]	1.50[7]
	$156.25	$149.25	$149.25
Deposit for Men taking Military Science	10.00[8]		

1. Students who are not residents of the state must pay 50 percent additional. Tuition is paid by the quarter; i.e., $36.00 Fall, $34.50 Winter, $34.50 Spring.
2. See statement in catalog (listed below) concerning "Room and Board."
3. This includes physical examination, ordinary medical service and hospitalization. It does not include any surgery.
4. These fees vary with course pursued. See description of courses for amounts.
5. $5.25 plus federal tax, this includes a small amount for class dues, Collegian subscription, Jack Rabbit annual, admission to athletic events, debate, concerts, use of tennis courts and golf grounds and other privileges.
6. This serves as a membership fee in the Pugsley Union.
7. A fee of $1.50 is charged each freshman and sophomore student in connection with Physical Education which is now required of both men and women students.
8. All able-bodied men below the rank of junior are required to take military. This deposit is returned at the end of the year when the student completes his military training, and returns the uniform.

The foregoing estimate does not include expenses for traveling, laundry, entertainments, etc., nor cost of clothing. However, all able-bodied men of collegiate rank below

the junior year are required to take military science, and are furnished uniforms by the federal government. A deposit of $10.00 is required of each student who enrolls in military training of the freshman and sophomore years, to insure proper care and return of the military uniform. If this condition is complied with, the deposit is returned at the end of the year, or when the student completes his military training.

A deposit of $20 is required of each student who is enrolled in the advanced military work to cover the issue of special uniform and overcoat.

While the above is considered as a reasonable estimate, much depends upon the character of the student and the work he is taking. In some of the technical courses the laboratory fees and the cost of books may be larger than the amounts mentioned in the estimate.

When entering College all students should have sufficient money available (about $100) to pay for immediate expenses such as tuition and deposits, books, and board and room. (See page 19 for estimate of expenses for the college year.)

Room and Board. Every effort is made by the college authorities to render the living conditions of the students wholesome and pleasant. If new students will write—the men to the Registrar, the women to the Dean of Women—these persons will assist them in getting suitably located.

All students must live in rooming places approved by the faculty. Wherever students reside, they are expected to conform to the general regulations of the College governing absences from the home, study hours, and other matters. Men students are not permitted to room in residences where women students, women employed in or about the city, or any girls or women not members of the housekeeper's immediate family, are rooming. This rule applies conversely to women students.

Women students who are not residents of Brookings are required to room in the women's dormitories.

Freshman and sophomore men students who are non-residents of Brookings are required to room in the men's dormitory unless formally excused from the requirement by the dormitories committee upon the request of their parents. Juniors and seniors will be accommodated as space permits.

The cost of rooms in the college dormitories is $60.00 to $90.00 for the college year for each student two in a room, depending upon location, size and condition of the room. If paid in advance by the term, a 10 percent discount is allowed.

The cost of rooms in private homes is $1.75 to $2.50 a week.

A cafeteria is operated by the College in connection with the women's dormitory. Students and faculty may secure good food here for $4.75 to $6.00 per week. Board may be obtained in private homes at about the same price.

The Grill room in the Pugsley Union building also offers food facilities at reasonable rates.

The Dormitories. Wenona Hall and Wecota Hall, together with the new annex to Wecota Hall, will accommodate 308 young women.

Scobey Hall, the new dormitory for men, will house 308 young men. East Men's Hall, the old dormitory for men, will house 104 young men. The latter building is used for School of Agriculture students. For cost of rooms in the dormitories see above.

Everything possible is done to make a real home for those who live in the dormitories. The students are given a large share in the government of the halls and are thus encouraged to form orderly habits and high ideals of conduct. The purpose of those in charge is to make the dormitories as attractive and homelike as possible, and to create the spirit of cooperation that is found in a real home.

Resident nurses acting under the direction of the Student Health Service do everything possible to maintain health among the students, and to care for them when ill.

Each room is provided with closets, two single beds, mattresses, two straight chairs, study table, dresser with mirror, rug or linoleum, or tile covering, and window shades. Each student should provide bedding, including a mattress pad, a pillow, two pairs of pillow cases, four sheets, and two pairs of blankets; also six towels and a clothes bag.

A deposit of $5 is required of all students rooming in the dormitories as a guarantee against damage to property. This must be paid when the room is reserved. The unused

part of this will be refunded at the end of the year.

Any student who reserves a room and later discovers that he or she is unable to take it must inform the Registrar of this at least two weeks before the beginning of the school term, otherwise the deposit will not be returned.

Student Health Service. In order to guard the health of the students a department of Student Health Service has been established in the College. A college nurse is stationed in the women's dormitories and closely watches the health of the women students of the College. Some infirmary rooms are set aside in the women's dormitories for women students who are ill enough to require hospital service. The College has also made arrangement with The Municipal Hospital of Brookings to receive men students who require hospital service. The College pays for the rooms and for general care from the health fees. In cases requiring special nurses and special care, the cost must be borne by the students concerned. The College assumes no financial responsibility for expense of operations or special hospitalization of an individual student for more than thirty days during each school year, nor will the College assume hospital expenses for illness due to conditions which existed prior to the opening of the college each year. It will lend assistance in securing physicians or quarters selected by students or their parents under such circumstances.

The College has recently installed a new X-Ray machine for the benefit of the students. A minimum charge sufficient to cover the cost of the films and material is made. This low cost permits the college physicians to take full advantage of any X-Ray study necessary for any student.

The college physicians maintain a suite of rooms in the Extension building where students may consult them. This office is open from 10:00 to 12:00 a.m., and from 4:00 to 5:30 p.m. Students who need attention at other hours may call on any of the college physicians at their down town offices in Brookings without any charge.

The following rules govern the health service:

1. Each student in the regular collegiate courses shall pay a health fee of $7.50 a year ($2.50 each quarter). Other students pay in proportion to the length of the term. (See page 19.)

2. Upon registration in the College for the first time all students will be given a physical examination. Subsequent examinations will be given at the discretion of the College Health Service. In general one complete physical examination will be given students each year.

3. In order to prevent, as far as possible, the spread of contagion, the following measures will be adhered to:

Vaccination for smallpox will be administered upon matriculation.

Immunity tests, in so far as practicable, will be administered whenever there is an occurrence of contagion in the community.

4. In case of an epidemic of any quarantinable disease, proper housing and care will be furnished the student at cost. The cost of special nursing will be borne by the students receiving same. The services of the college nurse will not be given in case of contagious diseases or where special duty is required.

5. Major injuries and certain specific and chronic diseases will not be attended, and major operations will not be performed under the direction of the Health Service. For these the student will be expected to choose and pay his own physician.

6. The Division of Pharmacy maintains a Dispensary where only the prescriptions issued to the students by their physicians will be dispensed. A charge covering the cost of material and labor will be made to the student receiving the service.

The Dispensary is in charge of a registered Pharmacist and will be open daily from 11:00 to 12:00 a.m., and from 4:00 to 6:00 p.m., except Saturday afternoons. All prescriptions will be cash on delivery.

Nothing in the foregoing paragraphs is to be construed as interfering with the right of the student to employ on his own responsibility a physician or surgeon whom he may choose, provided in doing so he complies with the regulations governing physical examinations and such health measures as may be prescribed by the Health and Sanitation Committee of the College.

Fellowships and Scholarships

The College has a number of graduate assistantships in various departments as the need for additional instructional help has developed. These assistants usually help with teaching or research work about one-half time, and spend the remainder of their time in graduate study.

The following fellowships, scholarships and other awards are granted through the College. Additional information concerning them may be obtained by writing to the College.

Open to Students of All Divisions

Student Association Scholarships. The Student Association of the College grants two scholarships of $70 each to incoming freshmen for the payment of tuition. These freshmen are selected under a plan of competitive essays, high school records, promise of leadership, etc. Each high school faculty of the State is entitled to recommend a boy and a girl to compete for the scholarships.

Alumni Association Scholarships. The Alumni Association of the College through its scholarship committee has established the following scholarships:

(a) Two scholarships of $75 each given to worthy needy juniors or seniors of South Dakota State College.

(b) The H. B. Mathews Scholarships. These will be paid from the interest earned on a fund to be established by the Alumni Association to honor the memory of the late Dean H. B. Mathews, and will be awarded to junior and senior students. In no case may a student receive more than $200 for the year.

Farm Underwriters Association Scholarships. Two scholarships of $125 each are awarded to freshman students for work in the field of farm fire prevention, and safety.

The LaVerne Noyes Scholarships. LaVerne Noyes left by his will a large part of the income from his estate to be used in certain colleges and universities, including the South Dakota State College, for assistance to World War I veterans or their descendants. These scholarships are to be used toward paying the tuition, in part or in full, of deserving students who need such assistance.

War Service Scholarships. Free tuition is given by the institutions under the control of the Board of Regents of Education to residents of the State who have served in the army or navy in any war in which the United States has been engaged. This provision also includes any person who has performed active war service in nursing or assisting in the care of the soldiers or sailors as a member of the Red Cross or any similar organization engaged in war relief work which was recognized and approved by the government. Applicants for these scholarships should bring their discharge papers when they enroll.

Departmental and Divisional Awards

The following awards are made in the indicated divisions or departments. For fuller statements turn to the catalog descriptions of these divisions or departments.

Sears-Roebuck Agricultural Scholarships. To twenty-five freshman students in agriculture; also one sophomore, one junior and one junior-senior scholarship.

Northwestern Yeast Company Scholarships. A scholarship of $100 to be awarded to a freshman student in home economics.

Sioux City Stock Yards Company Scholarships. Two scholarships of $100 each to be awarded to freshman agricultural students.

South Dakota Board of Pharmacy. A scholarship of $75.00 to be awarded to a worthy, needy entering pharmacy student.

South Dakota Pharmaceutical Association. A scholarship of $75.00 to be awarded a worthy, needy entering pharmacy student.

Danforth Foundation Fellowship. A four weeks fellowship of $93 in agriculture.

Swift and Company Essay Contest Award. An award of $65 open to agricultural students.

Other Awards

A number of medals and cash awards are given in various departments:

Lehn and Fink medal, Division of Pharmacy.

Blue Key Scholarship of $25 awarded to the sophomore man student who has had the best record in athletics, scholarship, and character during his freshman year.

Alpha Zeta medal awarded to the freshman who ranks highest in agriculture.

A saber and medals to the members of the four college classes who rank highest in military science.

Various medals and cash awards for excellence of work in the Speech department.

Sigma Tau award to highest ranking freshman in Engineering.

American Society of Mechanical Engineers district prize for student paper.

Student Loan Funds

Loan funds are maintained for the benefit of worthy students usually of the advanced classes who need financial aid to help them reach an earning period. Most of them are open to seniors only. The following are the loan funds which are largely controlled by the College:

Agricultural Student Loan Association (Agricultural students only)

Faculty Women's Club Loan Fund (Women students only)

4-H Loan Fund (Former 4-H club members)

Rotary Loan Fund (Men only)

Solberg Loan Fund (Engineering students only)

Student Association Loan Fund (Open to all senior students)

South Dakota Pharmaceutical Association Loan Fund (Pharmacy students only)

State Federation of Extension Clubs Loan Fund (Junior and senior women only)

A. S. Mitchell Loan Fund (Open to all senior students)

Dryborough Loan Fund in Nursing Education (Nursing students only)

For further information concerning these loan funds please write to the Registrar of the College.

Employment for Students

Student Labor. Many students earn part of their expenses while attending college by working for the College, the people of the city, or near-by farmers, but no one should expect to earn all his expenses. It is desirable that a student should not carry outside labor during his first term of attendance, since his full time is needed to permit adjustment to his new situation. In general, students who carry considerable outside work should not attempt to carry a full schedule of college work, and the College reserves the right to limit the student loads of those who are doing a large amount of outside labor. Such students will gain in the end by taking a little longer than the regular time to complete the requirements for graduation.

The College helps deserving students in every possible way to find work. Those interested should apply to the Registrar's office for a blank which is used in this connection.

Admission

A candidate for entrance to the freshman class of the Junior College must present at least 15 units of entrance credit by certificate or examination, or both as indicated in the following statements. A unit is a subject which is taught five times a week throughout the high school year, or the equivalent of this work.

The requirements for entrance to special courses may be found in the description of such work.

Entrance By Certificate. The four year accredited high school course is the standard of entrance to the collegiate courses, and the graduate of such a high school course will be admitted to freshman standing upon presenting a certificate from the Principal, Superintendent, or other official of his high school, specifying the subjects and the credits included in his course of study. Application blanks for this purpose are furnished by the College. However, if the student does

not present credit for all of the subjects prescribed for entrance to the college course of study he wishes to pursue, he must make up the deficiency during his first year in college.

A student who is not a graduate of a four year accredited high school will be admitted to freshman standing if he presents 15 units of credit from such a high school, provided they conform to the requirements mentioned below.

Entrance by Examination. Students who wish to enter the College by examination, either to make a part of their entrance credits or all of them, should report to the Registrar on the forenoon of the first day of registration of freshman students, at the beginning of the college year. At other times of the year, examinations may be taken by special arrangement with the Registrar. A student who presents at least 14 credits from a four year accredited high school will be admitted as a conditioned freshman, the condition to be removed during the first year. A student who presents at least 14 credits from a non-accredited four year high school may receive credit for these upon passing examinations in English Composition and Rhetoric, Elementary Algebra, American History, and Civics, and either a language or a natural science as the student may elect.

Entrance Credits. Of the 15 units required for entrance, some are prescribed, the remainder being optional. The required units are shown in the following table:

	English	Mathematics		Total Specifics
Agriculture	3	1	(Algebra)	4
Engineering	3	3	(1½ Algebra, 1 Plane Geometry, ½ Solid Geometry)	6
Home Economics	3	1	(Algebra)	4
Pharmacy*	3	2	(Algebra & Plane Geometry)	5
General Science	3	1	(Algebra)	4
General Registration	3	1		4

Students who do not present required credits may arrange with college authorities to make up college entrance deficiencies, for which reasonable fees may be necessary. No college credit, however, will be allowed in the curriculum for which this work is taken.

It is recommended that all students should have at least one unit in natural science and one unit in social science, which should include American History and Civics.

Students majoring in Agricultural Engineering must have the same credits in Mathematics as other Engineering students. Students majoring in the natural science field are required to have two units in Mathematics (Algebra and Plane Geometry).

*Students majoring in Nursing Education are required to have only one unit in mathematics.

UNDERGRADUATE COLLEGE CREDIT FOR MILITARY SERVICE

I. Submitting record: War veterans desiring credit for military service must submit their war service record papers, or a certified copy of such, showing the actual time spent in military service, to the Registrar.

II. College credit for military service shall be granted as follows: A student must have served at least three months in the armed forces before any credit will be allowed. Having served three months or more, one credit will be granted for each month, or major fraction thereof, of actual Army service. The total credit granted shall not exceed 12 quarter hours, which credit shall be entered on the permanent records in the Registrar's office.

III. Any such college credit granted may be used as general or free elective credit and count towards a degree, but such credit shall not be used in lieu of required work for a course degree, except in the case of Military Science and, or, Physical Education. If it is in the best interest of the student's scholastic program, this Military Service credit may be assigned for the required work in Military Science and, or, Physical Education.

IV. Such military service credits as may be allowed may count in the total credits for graduation, with two grade points for each credit so accepted, but such credits and grade points shall not be used in figuring grade point averages, either for graduation, for honor societies or scholastic standings. For such purposes these credits will simply be omitted from all calculations.

V. Provided that not more than six (6) such credits may be counted towards the associate degree of the Junior College.

VI. If military service credit is used for admission credit it shall not be used also as college credit.

Advanced College Credit. Advanced credit in the College may be obtained by presenting certified grades from other institutions of reputable standing or by examination. The College reserves the right, however, to cancel grades accepted from other schools should the student prove deficient in a subject for which he has received credit. A student entering with advanced credit in subjects not prescribed in the course he is pursuing may use these as electives as far as his course permits. Reasonable substitutions of additional credits for prescribed work are allowed. Applicants for admission to the collegiate courses are strongly urged to submit their entrance and advanced credits by mail before the opening of the college year and thus facilitate the work of registering.

Academic Requirements

The Unit of Credit. A credit or credit-hour is the measure of the work done in carrying for one quarter a subject of one recitation a week or its equivalent. In work of college rank a recitation is intended to be accompanied by one and one-half to two hours of preparation. Three hours of laboratory work where no outside work is required are counted equivalent to one recitation with the accompanying preparation.

Grades and Grade Points. The grading system of the College assumes that the fairest and most intelligible record of a student's work is that which indicates his approximate rank in comparison with his fellow students. To be valid, the comparison must be made in large classes, or in small classes in the same subjects averaged over a series of years. Under these conditions in the course of several years the distribution of grades in each class should approach a reasonable theoretical standard.

The quality of work done by students is indicated by the following marks:

A, exceptionally high
B, superior
C, fair
D, passing (the lowest passing mark)
F, failure. The student must repeat the subject in a regular class in order to get a passing mark.
WF, withdrawal from a course with failure.
N, no grade.
Con, conditioned; see following paragraph.

Con. (conditioned) is a temporary report indicating, (a) that for some good reason beyond the student's control the essential work in a subject has not been completed, (b) that the work which has been completed was of passing grade, and that it is deemed practicable for the student to complete the subject in a satisfactory way without repeating it in a regular class. When the teacher reports a student's work as "conditioned," he must file with the Registrar a "Petition For the Removal of a Condition."

At the beginning of the next quarter in which the student is enrolled, arrangements must be completed by the student in accordance with the "Petition For the Removal of a Condition," as a means of meeting the requirements of all courses in which the individual has received a "condition."

Unless a special extension of time, indicated on the "Petition," has been granted by the Director and, or the Dean of the Division, the removal of the "condition" must be completed by the time set in the College calendar for the removal of "conditions."

If the condition is not removed in accordance with the above paragraph, it becomes a failure and will be so recorded on the permanent records in the Registrar's office.

The grades A, B, C, D, and F after having been reported to the Registrar may be changed only by permission of the Director or Dean of the Division.

At his first opportunity a student must repeat in class a required course in which he has failed, unless the Director or Dean approves other arrangements.

When a student raises his grade in any subject by repeating the subject or otherwise, the new grade shall be counted in place of the old grade, but the latter will remain on the books of the College as a part of the student's record.

Grade Points. The grade shall carry grade points for each credit hour as follows: A—4 grade points; B—3 grade points; C—2 grade points; D—1 grade point; F—no grade points.

Example: The following will illustrate the way in which grade points are related to the grades of a student in the subjects named:

Military, 1 credit; grade A; grade points, 4

Mathematics, 5 credits; grade B; grade points, 15

Chemistry, 4 credits; grade C; grade points, 8

French, 4 credits; grade C; grade points, 8

English, 3 credits; grade D; grade points, 3

Total credits—17; total grade points—38

The following arrangement will be continued for students who entered before June 1, 1942:

In general, the number of grade points required for the completion of the Junior College is 204 and for the Senior College 204. This requires that the student who does not carry his work at an average grade or higher must complete additional work in order to finish the work of either the junior or senior college. No grade points will be counted for work of D grade after the student has 102 credits in the Junior College or 102 credits in the Senior College.

Effective with the class entering after June 1, 1942, a student in order to obtain the degree of Bachelor of Science must have 102 credits of Senior College work in the curriculum he is pursuing, and a grade point average of 1.85 for all the work he has undertaken in the Senior College.

Admission to the Senior College is determined by a comprehensive examination and evaluation of each student's qualifications and records.

Before final admission to the Senior College is granted the student must have completed a suitable preparatory program in the Junior College comprising 102 credits with a grade point average of 1.8 as a minimum. Any time after 85 of the 102 required credits have been completed with an accompanying grade point average of 1.8 the student becomes eligible for the comprehensive examination and evaluation to determine the possibility of entrance into the Senior College.

Any student completing 90 credits of work in the Junior College with an accompanying grade-point average of 1.5 is eligible for the degree of Associate on the completion of a Junior College program of instruction.

A student, in order to qualify for the subject of student teaching, must have a grade-point average of 2.00 in all education subjects prerequisite to student teaching.

A Scholarship Committee will act, upon written requests of the students concerned, on cases which seem to demand special consideration in the application of the above requirements.

Registration. In registering for work the student is advised by a member of the faculty who helps him to make out a consistent schedule of studies. In general he is expected to classify in the normal amount of work in the scheme of study he is pursuing.

The student of college rank will not be allowed to register in more than nineteen credit hours the first term of his attendance, and not more than nineteen hours any subsequent term unless his work of the preceding term is of high character.

A student who is registered in more than nineteen credit hours during the term will receive credit for only seventeen hours if his grades do not reach a certain high average. (See Rules and Regulations of the College.)

Elective Work. Electives are offered so that a student may develop special talents or social interests. The choice of subjects is left to the student, provided the selections made are not inconsistent with the academic standards of the College (on account of duplication of material, work with others too far below the student's own rank, etc.)

The dean of the division in which the degree is sought may refuse to approve an elective if he thinks that the subject should not be counted toward that degree; or he may approve classification in the subject with the notation that it is not to be counted toward a degree.

The student himself is responsible for the observance of the following restrictions as he arranges his term schedules. The Registrar will apply these restrictions in checking the requirements just before graduation:

No credit for graduation will be allowed in part of a subject which is extended over more than one term, unless the part covered is fairly complete in itself. The decision with regard to this point must necessarily rest with the head of the department in which the subject is offered.

No credit for less than one year's work in foreign languages will be allowed towards a degree unless the student has presented credit for entrance for at least one year of high school work in the language.

The amount of credit that may be counted towards a degree in such subjects as practical music, typewriting, forging, carpentry and similar work is naturally limited unless such work is a part of the scheme of study that is being pursued. Intercollegiate debating, editorial work on student papers, and other work outside regular class work are also included. (See the General Science division for a statement concerning limited credit in that division.)

In general elective subjects are not given to fewer than five students unless there is some special reason for doing so. Teachers should not abolish classes without the approval of the dean of the division concerned.

Military Requirements. In fulfillment of the purpose of the National law endowing State Colleges devoted chiefly to agriculture and the mechanic arts, the Regents have made basic military training (two years) a requisite for graduation for all physically fit male students—the minimum prescribed being three hours per week. In accordance with this requirement all such students who rank below the Senior College are required to enroll in military science until the two years' work has been completed. Fitness for this training is determined by a physical examination conducted by a physician appointed by the College, without expense to the student. For statement concerning deposit for military uniforms, see page 20.

Students who have satisfactorily completed the basic military training and whose record and character are such as to warrant their selection by the Professor of Military Science and Tactics and the President of the College, may elect the Advanced Military Course.* This Advanced Training requires five hours per week during the junior and senior years and attendance at a camp of instruction during six weeks of the summer intervening between the junior and senior years. During this time the student draws pay from the government. Satisfactory completion of the Advanced Military Course makes the student eligible for appointment as Second Lieutenant in the Officers' Reserve Corps of the Army. For further details see "Military Department." (These provisions are subject to change because of war conditions.)

Physical Training. Men and women students enrolled in the Junior College are required to take physical training twice a week throughout the year. Additional physical training may be required of students who need corrective exercises. Personal hygiene, first aid to the injured and similar topics are given in connection with the freshman work in physical training.

Conditioned Students. Any student who without good reason has failed to receive a passing grade in a reasonable amount of his work will be registered only conditionally for future work. And if any student at any time is not carrying the work in which he is classified at a passing grade, or fails to perform other duties which may be expected of him, he may be placed upon the conditioned list and thus debarred from certain student privileges, or he may be dropped from the College.

Class Attendance. Regular attendance at all class sessions is an obligation of each student as well as an opportunity. The progress of any class is hampered by irregular attendance, and a student who is irregular interferes with the work of others as well as his own. Students are expected to attend all recitations and laboratory meetings for which they are registered, and to be punctual, unless this becomes impossible for reasons beyond his control. Class attendance and punctuality shall be an inseparable part of class achievement.

The college does not have any system of excusing absences. It should be thoroughly understood that students are held responsible for all work of the classes in which they are enrolled. No matter what the reasons for absences may be the student will suffer a reduction in grade unless the work is made up.

If a student has frequent absences, he may be dropped from the subject, by the teacher, with the approval of the Director and, or Dean, with a mark of "F" (failed).

*The following requirements are made in connection with the advanced work in Military Science:

1. In order to enroll in the advanced military course the student must have completed sufficient work, including the basic R.O.T.C. work, to enroll in the Senior College.
2. While enrolled in the advanced R.O.T.C. work, the student must carry a reasonably heavy classification each term at an average grade.
3. Upon the completion of the advanced military course, and the requirements for a bachelor's degree, the student may receive his commission.

Note: If students for reasons other than lack of ability or application are unable to meet requirements 1 and 2, by special request they may have their cases reviewed by the college administration, who may modify the requirements in their cases.

When a student has been absent without authorization from two consecutive meetings of his class, the teacher shall promptly report the absences, together with pertinent information called for on a card which may be obtained in the Registrar's Office. After the first report of absences, additional reports are due, unless the teacher has been advised of the situation, whenever a student again is absent without authorization from two successive class periods. (It is not necessary to report information which has been given in preceding reports, but new information should be reported.) The current scholarship status should be reported each time.

The Registrar shall send these reports to the Director or Dean immediately after receiving them.

At the discretion of teachers, reports of intermittent absences which may be affecting scholarship should be made.

A student who for any reason enrolls in a class after the beginning of the term shall be counted absent from the beginning of the term, and is responsible for all work from the beginning.

However, in holding students responsible for the work of their classes, the college does give every reasonable consideration to a student whose work is interfered with by illness or other valid reason.

A fee of $1.00 per class meeting missed shall be assessed for absences from the last meeting of a class before a holiday within a quarter, and for absences from the first meeting of classes following a holiday within a quarter.

Absences immediately before and after a holiday shall be reported immediately to the office of the Registrar.

Teachers shall report the total number of absences of each student during the course with the final grade, to the Registrar's office at the conclusion of the course.

Graduation Honors

In order to give recognition to superior worth as shown throughout their courses by candidates for the degree of Bachelor of Science honors are awarded at Commencement.*

1. To be eligible for honors a student must have been in residence for two years, must have not failed in any subject and must have earned a grade-point average of 3.2 or higher. To determine the grade-point average all subjects submitting for graduation shall be used (excluding excess limited credit subjects).

2. Students who transfer here from other colleges shall, for the purpose of determining honors, receive full value for grades and credits transferred, provided the institutions are fully accredited. Limited credits, if more than ten have been gained, shall be valued at the average of all the limited credits gained.

3. Honors shall be awarded on the basis of grade-point averages, but the number of students to receive honors automatically on such basis shall not exceed 1 in 12 seniors for each division, with 1 additional for a major fraction of 12.

4. Should the number of eligible students in any division exceed 1 in 12 seniors for that division, those who are in excess for that division shall be considered by a committee of the faculty representing each division. This committee may, or may not, add to the honors list. Whatever its conclusions may be, they shall be based solely upon the scholarship of the eligible students considered, and the ratio of the total number of honors to the total number of seniors. In no case shall the total honor list exceed one-tenth of the graduating class.

5. Honors shall be of three degrees, in accordance with the following scale:

With Honor.....grade-point average 3.2 to 3.499
With High Honor..grade-point average 3.5 to 3.749
With Highest Honor
grade-point average 3.75 or above

6. Honor students shall have the appropriate honors inscribed upon the diplomas which they receive at graduation.

*See Handbook of College Regulations for information concerning changes in these rules.

Degrees and Certificates; Courses of Study

Bachelor of Science. This degree is conferred upon the satisfactory completion of a curriculum leading to this degree offered within the Senior College.

For further information concerning the requirements for this degree, see description of "Senior College" page 30.

Associate Degree. The degree of Associate is conferred upon the satisfactory completion of the work of the Junior College.

Non-Degree Courses. In addition to the courses leading to degrees, the College offers special and short courses in several important and practical lines of work. (See index for Special and Non-Degree Courses.)

The Degree of Master of Science.* The degree of Master of Science is conferred upon students who have received the degree of Bachelor of Science from this or some other institution offering an equivalent course of study and who in addition have completed a year of advanced work in residence in accordance with the regulations of the College governing this degree.

Professional Degrees in Engineering.* The degree Civil Engineer (C.E.), Mechanical Engineer (M.E.), or Electrical Engineer (E.E.), may be conferred upon a graduate of this institution who has made a superior record in college and in the practice of his profession, and who, in addition, has complied with the regulations of the College, as stated in the section on graduate study.

*A more complete statement concerning the requirements for the advanced degrees may be found in the section devoted to graduate study. (See index for reference to this section.)

Organization of the College

The instructional work is arranged as to content in departments which for administrative purposes are grouped into five divisions (Agriculture, Engineering, Home Economics, Pharmacy, and General Science).

A list of the departments may be found on the second cover page.

The curricula and the departmental descriptions appear in the divisions to which they belong.

It will be noted that the instructional work of the College is also organized into a Junior College and a Senior College as described in the following statements.

Junior College

The primary functions or purposes of the Junior College are three in number, as follows:

1. **Student personnel and guidance program.** A comprehensive program of student personnel work and guidance is provided in the Junior College. Each student will be given as much help as possible in making such adjustments as are necessary. Students will be assigned to counselors within the fields of greatest interest or importance to them.

2. **Preparatory Curricula.** The Junior College provides numerous preparatory curricula for students interested in specified fields of work in the Senior College. A curriculum is composed of a particular combination of courses. Each combination of courses or curriculum is designed to provide a particular type of training. Thus, students interested in becoming Engineers will be enrolled in a different curriculum than those interested in Agriculture or other particular fields of the Senior College.

3. **Terminal Curricula.** Many students may desire to complete their college work in two years time or less. For such students the Junior College provides numerous curricula or combinations of courses of a practical and useful nature.

References to Junior College

Senior College

The Senior College is composed of five divisions, as follows: Agriculture, Engineering, Home Economics, Pharmacy, and General Science. In the different divisions and in connection with various departments are outlined curricula leading to the degree of Bachelor of Science. In order to avoid conflicts in schedules, substitutions and rearrangements in these curricula may be made with the approval of the head of the department and the dean of the division concerned.

Eligibility for admission to the Senior College is determined by a comprehensive examination or evaluation of each student's qualifications and records, plus the completion of 102 credits with an accompanying grade point ration of 1.8 (See page 26.)

References to Senior College

Graduate Study

Information pertaining to graduate work may be found on page 120.

Other Training Programs

For School of Agriculture and other non-degree programs of instruction see page 123.

DIVISION OF AGRICULTURE

THE AGRICULTURAL WORK at State College is of three kinds—resident instruction, experimentation and investigation, and extension. Experiments and investigations for the benefit of the farmers of the state are carried on in connection with problems of livestock production, dairying, soils, crops, poultry, veterinary, horticulture, farm economics, rural sociology, and agricultural engineering.

The results of these investigations form a basis for class room instruction, for extension work, and a means of answering inquiries coming to the College. The Extension Service makes the work of instruction really state wide, by carrying the results of investigation to every farm in the state.

The aim of the resident instruction is to prepare men for successful work and leadership in the field of active farming, in agricultural education, in research work, in administrative and regulatory work, and in many lines of business closely related to agriculture.

Scholarships and Other Awards

The following awards are made to students in this division:

SEARS-ROEBUCK AGRICULTURAL SCHOLARSHIPS. Sears, Roebuck and Company of Chicago has been giving State College a fund to be used for scholarships to selected freshman agricultural students who cannot attend college without help. A determination to engage in agricultural work after graduation is a requirement. These scholarships average about $90 a year. They are grants of cash requiring no work. The recipient must fulfill all college regulations and keep a scholastic average of not less than C. Those who receive the scholarships are selected by a special committee on the following basis: Scholarship 50 per cent, leadership 25 per cent, personality 15 per cent, and business ability 10 per cent. The highest ranking freshman in this group will receive a sophomore scholarship of $200 and a trip to Chicago following his sophomore year, at which time he will compete with students from seventeen other agricultural colleges for a first award of a $500 Junior-Senior scholarship and a second award of $250 Junior scholarship.

Students interested in making application for these scholarships should contact their county agents, Smith-Hughes instructors, or the superintendents of their schools. Blanks are available in June of each year.

SIOUX CITY STOCK YARDS SCHOLARSHIPS. The Sioux City Stock Yards Company, R. M. Harben, Traffic Manager, Sioux City, Iowa, offers two scholarships of $100 each for freshman students in agriculture at State College. Winners will be selected on the basis of their 4-H club records in livestock work, livestock exhibits, judging and demonstration work, scholastic standing in high school, and character. Records and reports are to be submitted to the county extension office by July 1 each year.

DANFORTH FOUNDATION SUMMER FELLOWSHIP. This is awarded annually by the Purina Company of St. Louis, Missouri, to a high ranking junior student in agriculture. The selection is made by a faculty committee.

SWIFT COMPANY ESSAY CONTEST. This contest is open to junior and senior students who are pursuing animal husbandry and agricultural economics. The award ($65) is to pay expenses of a trip to the International Live Stock Exposition and market study program to Chicago. For further information see the Dean of Agriculture.

ALPHA ZETA SOCIETY AWARD. This is a medal awarded to the highest ranking freshman in agriculture.

THE WNAX AGRICULTURAL SCHOLARSHIP FUND. The WNAX Radio Station offers each year a $300 scholarship to a boy who has completed his freshman year and

intends to major in Agriculture. The selection is made by a faculty committee on the basis of outstanding scholarship, promise of leadership, character and financial need. The Three Hundred Dollars is paid in equal installments at the beginning of each quarter, the amount worked out with the recipient.

THE C. B. NEWCOMB SCHOLARSHIP FUND. Mr. C. B. Newcomb of the Sunshine State Hatcheries offers each year a $100 scholarship to a junior majoring in poultry. The award is made under the direction of the Poultry Department, and on the basis of scholarship, leadership, character and financial need.

Curricula Offered in the Division of Agriculture

I. Collegiate Curricula

1. Curricula leading to the Bachelor of Science degree, the first two years of which are in the Junior College and the last two in the Senior College:
   - A. Curriculum in Technical Agriculture
   - B. Curriculum in Agricultural Science
   - C. Curriculum in General Agriculture
   - D. Curriculum in Agricultural Engineering
   - E. Curriculum in Wild Life Techniques and Conservation
   - F. Curriculum in Biochemistry
2. Two-year terminal curriculum in the Junior College.

II. Special Curricula

1. The School of Agriculture for high school graduates and eighth grade graduates at least 17 years of age. This is a two-year curriculum running from November through March. For further information see the index for "non-degree courses."
2. The three months practical creamery course. See index for "non-degree courses" for further information.

Description of Collegiate Curricula

In keeping with the general plan of organization of this institution as explained on page 29 all students desiring to pursue college work in Agriculture will register in the Junior College until the requirements to enter the Senior College have been completed.

On the following pages are the curricula of the Junior and the Senior Colleges of the Agricultural Division together with the description of the work offered in the departments of the division. The curricula of the Senior College lead to the degree of Bachelor of Science.

For information concerning credit, grade-point, and other requirements for graduation and degrees in connection with the various curricula see pages 25 and 26.

1. Curricula leading to the Bachelor of Science Degree

A. Curriculum in Technical Agriculture

This curriculum has been planned for agricultural students who wish to prepare for such opportunities as operating general and specialized types of farms, for county agent work, teaching of vocational agriculture, service with the United States Department of Agriculture, farm managers, field men for breed associations, crop improvement associations, and for numerous business enterprises closely allied with agriculture.

For such pursuits a broad training in the field of agriculture and the related sciences, together with general training to develop skill in self expression, leadership ability, a sense of civic responsibility, avocational and cultural interests, and other qualities of a complete personality is desirable. The program outlined, therefore, provides for extensive work in the various agricultural fields, for courses in the biological, physical and social sciences, and for a liberal choice of electives chosen with the help of an advisor to meet the needs and desires of each student.

In the Senior College the student must complete one of the following majors: Agricultural Economics, Agricultural Education, Agronomy (Field Crops, Soils) Animal Husbandry, Dairy Manufacturing, Dairy Production, Horticulture, Poultry Husbandry, Botany, Bacteriology, Entomology, Zoology, Wild Life Techniques, Rural Journalism, Rural Sociology, and Biochemistry.

Suggested courses for meeting the requirements of the respective departmental majors leading to the degree of Bachelor of Science in Technical Agriculture may be found by referring to the description of the departments included in the Division of Agriculture.

All Junior College students interested in securing a degree in agriculture, except those following the curricula in agricultural enginering, wild life technique and conservation, and biochemistry, must complete the following basic requirements.

Curriculum in Technical Agriculture

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English, Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Inorganic Qualitative Analysis, Ch 1c or Elective			4
Orientation, 1ab	½	½	
Botany, Bot 10ab; or Zoology, Z 20ab	4	4	
Military Science, Mil 1abc	1	1	1
College Algebra, Math 13			5
Physical Education, PE 1abc	1	1	1
Elective†	5	5	5
	18½	18½	19

Sophomore Year	Fall	Winter	Spring
English or Journalism*	3	3	
Extempore Speaking, Sp 22			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	13	13	13
	18	18	18

*Six credits should be earned at some time during the student's attendance in courses selected from the following:

Introduction to Literature, Engl 20 ..... 3 credits
Advanced Composition, Engl 42 ..... 3 credits
Newswriting, PRJ 24 ..... 3 credits
Publicity Methods, PRJ 66 ..... 3 credits

†Electives for the first year must be chosen from the following list:

Types and Classes of Livestock, AH 1
Elements of Dairying, DH 1
Poultry Culture, PH 20
Agricultural Physics, Phy 1
Crop Production, Agron 1
General Horticulture, Hort 20

Curriculum in Technical Agriculture—Senior College

A student registered in the Senior College must elect a major. Each department offering a major has worked out its requirements for a bachelor of science degree. It is recommended that the student follow the curriculum of his major department which is outlined in the departmental description in this catalog. (See index for page.)

B. Curriculum in Agriculture-Science

This curriculum is designed to meet the needs of students who wish to prepare for scientific and technical positions in the field of Agriculture, wherein extensive training in the basic sciences is essential for successful performance. Some students who complete this curriculum pursue graduate study. In order to compete successfully for possible graduate fellowships and scholarships, it is essential that the student have a grade point average of approximately 3.0 or better for his undergraduate work.

In this curriculum a student may major in Animal Husbandry, Field Crops, Botany, Bacteriology, Dairy Husbandry, Poultry Husbandry, Soils, Horticulture, Entomology-Zoology, Agricultural Biochemistry, Agricultural Economics, Rural Sociology and Rural Journalism.

The outline of required courses for this curriculum in the Junior College is the same as that already presented for the curriculum in Technical Agriculture. In this case, however, the electives will be taken more generally in the basic sciences and mathematics. A student desiring to follow this curriculum should notify his advisor of this before entering upon his Senior College work so that necessary foundation courses in the sciences and mathematics may be worked out with the heads of those departments in advance.

C. Curriculum in General Agriculture

The curriculum in agriculture without a major is intended for the student who desires a broad training in agriculture, rather than in some specialized field. Students who expect to be responsible for the management of large estates, or who desire to enter industrial or financial enterprises serving agriculture, will usually find it to their advantage to elect a broad general course which familiarizes them with all lines of agricultural endeavor.

Curriculum in General Agriculture

Leading to the degree of Bachelor of Science in Agriculture.

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English, Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Qualitative Analysis, Ch 1c			4
Botany, Bot 10ab; or / Zoology, Z 20ab	4	4	
College Algebra, Math 13			5
Orientation, 1ab	½	½	
Types and Classes of Livestock AH 1	5		
Crop Production, Agron 1			5
Elements of Dairying, DH 1		5	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	18½	19

Sophomore Year	Fall	Winter	Spring
English (See footnote, page 33)	3	3	
Extempore Speech, Sp 22			3
Elemen. Organic Chem., Ch 21	5		
General Bacteriology, Bac 30	4		
Forage Crops, Agron 66		3	
Agricultural Engineer., AE 24			3
Prin. of Economics, AgEc 20			5
Poultry Culture, PH 20		3	
Botany, Bot 10ab; or / Zoology, Z 20ab	4	4	
Veterinary Anatomy and Physiology, Vet 20		5	
Horticulture, Hort 20			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	18	20	16

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Breeds of Livestock, AH 20ab		3	3
Farm Meats, AH 22		3	
Soils, Agron 25ab	3	3	
Principles of Sociology, RS 20			5
Plant Breeding, Agron 142abc	3	3	3
Veterinary Hygiene, Vet 40	3		
Newswriting, PRJ 24	3		
Elective	6	6	6
	18	18	17

Senior Year	Fall	Winter	Spring
Prin. of Marketing, AgEc 55			5
Livestock Marketing, AH 166		4	
Genetics, Z 42	3		
Plant Pathology, Bot 45	5		
Elective	10	14	13
	18	18	18

D. Curriculum in Agricultural Engineering

Agricultural Engineering is the science of engineering as applied to the agricultural industry. Students who take the four-year curriculum in Agricultural Engineering are trained in mathematics and the fundamental principles of engineering. They are also required to take many of the courses in scientific agriculture. The scheme in Agricultural Enginering described below emphasizes the application of the principles of engineering to the agricultural industry.

With this training students are fitted for the following lines of work: land improvement work, including drainage, irrigation, land clearing and soil conservation; positions with farm machinery and tractor companies; positions with building materials concerns; positions in rural electrification; and land and building appraisal work.

In his senior year the student is required to outline and carry out an important agricultural engineering problem in research under the guidance of a staff member. Credit of not less than three and not more than six hours will be given for this problem depending upon the time spent, the grade of work, and the quality of the thesis presented. This four year curriculum leads to the degree of Bachelor of Science in Agricultural Engineering.

Curriculum in Agricultural Engineering

Leading to the degree of Bachelor of Science in Agricultural Engineering.

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
Inorganic Chemistry, Ch 1abc	4	4	4
English Comp., Engl 1abc	3	3	3
College Algebra, Math 14	5		
Plane Trigonometry, Math 15		5	
Analytic Geometry, Math 16			5
Farm Concrete, AE 16			2
Engineering Drawing, ME 3a	2		
Architectural Drawing, ME 4a			2
Crop Production, Agron 1		5	
Technical Lecture, AE 12		R	
Elem. Forging and Welding, 5	2		
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	19½	18

Sophomore Year	Fall	Winter	Spring
Calculus, Math 25, 26, 27	4	4	4
General Physics, Phy 21abc	4	4	4
Plane Surveying, CE 3	3		
Topographic Surveying, CE 25			3
Engineering Problems, CE 30			2
Agricultural Machinery, AE 36			4
General Mechanics, AE 23		3	
Gravimetric Analysis, Ch 23		4	
Physical Education, PE 20abc	1	1	1
Military Science, Mil 20abc	1	1	1
Machine Shop, ES 2		2	
Extempore Speaking, Sp 22	3		
Elective	2		
	18	19	19

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Soils, Agron 25ab	3	3	
Engr. Mechanics, CE 142abc	4	4	4
Elem. of Heat Power, ME 45	3		
Thermodynamics, ME 142abc		3	3
Farm Structures, AE 150, 151		4	3
Farm Motors, AE 145, 146		3	3
Dairy Management, DH 21			3
Adv. Composition, Engl 42	3		
Landscape Garden, Hort 147	5		
*Elective**			2
	18	17	18

Senior Year	Fall	Winter	Spring
Electrical Machinery, EE 40	4		
Technical Sketching, ME 21		1	
Prin. of Economics, AgEc 20			5
Specifica. & Contracts, CE 175			3
Hydraulics, CE 170	3		
Drainage Engineering, AE 154	3		
Erosion and Irrigation Engineering, AE 164			3
Farm Management, AgEc 38		3	
Econ. Hist. of U. S., Hist 26ab	3	3	
Farm and Home Util., AE 160	2		
Senior Problem, AE 167ab	2	3	
Senior Seminar, AE 157ab		1	1
*Elective**		5	5
	17	17	17

There is no major or minor in this course.

In Machinery and Power group—*Metals*, ME 168, 3 cr.; *Machine Design*, ME 144, 5 cr.

In Farm Structures group—*Construction Materials*, CE 144ab, 6 cr.; *Reinforced Concrete*, CE 163ab, 5 cr.; *Descriptive Geometry*, ME 5, 2 cr.

In Soil and Water group—*Geology*, Agron 171, 4 cr.; *Meteorology*, Agron 181, 4 cr.; *Topographic Mapping*, CE 35, 4 cr.

In Rural Electrification group—*Electricity and Magnetism*, EE 141, 5 cr.; *Alternating Current Circuits*, EE 161, 4 cr.

E. Curriculum in Wildlife Techniques and Conservation

This course is designed to give the student a broad basis of required work in agriculture with specialization in the field of wildlife management and directly related subjects.

The immediate aim of the course is to prepare students for Civil Service positions under the Bureau of Biological Survey, Soil Conservation Service and Forest Service; positions with State Conservation Commissions and Fish and Game Departments; positions with the Extension Service in 4-H Club work in the wildlife field; and for positions with various wildlife organizations, both public and private.

For the benefit of students who may wish to specialize in fields other than those mentioned a suggested curriculum is outlined in the catalog with the description of courses offered in the Department of Entomology-Zoology.

There is a steadily increasing demand for the introduction of conservation subjects into the curriculum of the public schools.

For the student who wishes to prepare for high school teaching there will be found sufficient elective subjects to enable him to meet the educational requirements except in the case of Smith-Hughes work.

There is likewise a great demand upon county agents in many states for knowledge of wild life management. For the prospective county agent or Smith-Hughes teacher the subjects in wildlife may be taken as electives in the curriculum in Zoology.

Curriculum in Wildlife Techniques and Conservation

Leading to the degree of Bachelor of Science in Wildlife Techniques and Conservation.

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Inorg. Qualitative Anal., Ch 1c			4
Birds, Z 23			3
College Algebra, Math 10	5		
General Zoology, Z 20ab	4	4	
Engr. Draw. and Plans, AE 22			2
Orientation, 1ab	½	½	
Typewriting, PRJ 16abc	1	1	1
Physical Education, PE 1abc	1	1	1
Trigonometry, Math 11		5	
Plane Surveying, CE 3			3
Military Science, Mil 1abc	1	1	1
	19½	19½	18

Sophomore Year	Fall	Winter	Spring
General Botany, Bot 10ab	4	4	
Elementry Physics, Phy 1abc	4	4	4
Elem. Organic Chem., Ch 21	5		
Extempore Speaking, Sp 22		3	
Woody Plant Materi., Hort 22			3
General Bacteriology, Bac 30			4
Physical Education, PE 20abc	1	1	1
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
Military Science, Mil 20abc	1	1	1
Option			
Techniques in Wildlife Management, Z 43, or	3		
A 3 credit course in Zoology			
	18	18	18

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Turkey Production, PH 158			3
Prin. of Accounting, AgEc 35ab	4	4	
Soils, Agron 25ab	3	3	
Invertebrate Zoology, Z 40ac	3		3
Adv. Composition, Engl 42			3
Insect Taxonomy, Ent 44ab	3	3	
Farm Forestry, Hort 41		2	
Parasitology, Z 41			3
Options			
Fishes, Z 44; or		3	
Game Birds & Mammals, Z 45			
Techniques in Wildlife Management, Z 43; or	3		
Wildlife Management, Z 150			
Elective	1	2	5
	17	17	17

Senior Year	Fall	Winter	Spring
Geology, Agron 171			5
Vertebrate Zoology, 161ab; or	3	3	
Vertebr. Embryology, 162ab			
Fishes, Z 44; or		3	
Game Birds & Mammals, Z 45			
Techniques in Wildlife Management, Z 43; or	3		
Wildlife Management, Z 150			
Elective	11	11	12
	17	17	17

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR: Z 20ab, 23, 40ac, 41, 43, 44, 45, 150, 161ab, 162ab.
MINOR: Z 20ab, 23, 43, 44, 45, 150.

Suggested Electives in Junior and Senior Years.

Genetics, Z 42
Organic Evolution, Z 60
Animal Ecology, Z 163ab
Veterinary Anatomy and Physiology, Vet 20
Veterinary Hygiene, Vet40
Field Crops Enotmology, Ent 40
Taxonomy of Insects, Ent 44ab
Veterinary & Medical Entomology, Ent 60
Vertebrate Histology, Z 164a
General Agricultural Entomology, Ent 20
Contagious Diseases, Vet 41
Elementary Physics, Phy 1abc
Farm Machinery, AE 34

F. Curriculum in Agricultural Biochemistry

A curriculum in Agricultural Biochemistry has been set up for the training of those students who wish to prepare themselves for advanced study in agricultural chemistry. Since considerable training is necessary to fully equip a specialist in this field, the student should plan to enter graduate work after completion of this curriculum. There are facilities at this institution for an additional year's work leading to the Master of Science degree. The able student can usually

obtain a fellowship or scholarship at some recognized institution to defray expense of further graduate study.

Prospective students should consult the Head of the Chemistry Department for information regarding this curriculum.

2. Two-Year Terminal Curriculum in the Junior College

The two-year terminal programs in agriculture are offered to accommodate students who can devote only two years or less to study of agricultural science and practice. Work in these curricula is on a college level, and when satisfactorily completed the student receives a certificate of completion.

A student desiring a terminal program in agriculture will be directed in the choice of his courses by the Director of the Junior College and a representative of the department of his major interest.

College courses are built up in sequence so that some serve as a foundation for others. These foundation courses are called prerequisites. In case a student enrolled in a terminal curriculum cannot meet the prerequisites for certain desired courses, he may, with the approval of his advisor, be permitted to take the courses in question, but without credit for senior college requirements, should he later decide to qualify for a bachelor of science degree.

Special curricula have been worked out by the several major departments and will be a basis for advising with the student after finding his major interests. The regular rules and regulations of the Division and of the College shall apply to students enrolled in this two year curriculum.

Departments of Instruction

Agricultural Economics (Ag Ec)

Professor Lundy, Assistant Professors Hoglund, Brown, Smythe

The subjects offered in the Agricultural Economics Department are designed to give the student a working knowledge of the principles of economics and business management which apply to the practical operation of a farm, and to provide training in the efficient marketing of the product after it is produced; also, to provide a basic training for those who wish to make a more intensive study of these problems later, or who wish to go into some of the many lines of activity related to farming, such as agricultural extension work, research work in agricultural economics, work in agricultural statistics, managership of farmers' cooperative associations, loan approval and inspection work, country banking, retailing in rural communities, etc. Besides giving training intended to enhance the efficiency of individuals in their private endeavors, the aim is to impart an understanding and appreciation of the broad public or social interests in economic affairs. Students who expect to major or minor in agricultural economics should consult the head of the department about courses before the beginning of their junior year.

For Junior and Senior College curricula in Agricultural Economics see the end of the course descriptions for this department.

In connection with certain phases of work in agricultural economics, it is highly desirable to have a farm background and training in agriculture. Those planning to go into statistical research work should also obtain training in mathematics. Because of the large social consequences of many activities in economic life, the student should know something about the other social sciences such as sociology, economics, history, political science, and psychology. Students majoring in agricultural economics will be expected to have a fair knowledge of modern economic and agricultural history, political science, and sociology.

JUNIOR COLLEGE

20[1] **Principles of Economics** 5 credits FWorS[2]
Analysis of problems of production, consumption and distribution of wealth; money and value; price fluctuations and policies, etc. P, sophomore standing. Mr. Lundy.

[1]In the departmental description of subjects, numbers from 1 to 19 indicate freshman rank; from 20 to 39, sophomore rank; 40 to 59, junior rank; 60 to 79, senior rank; 100 to 199, undergraduate and graduate subjects; 200 and above, subjects ordinarily open only to graduates.
[2]The letters, F, W, and S refer to the quarters in which the courses are offered, fall, winter and spring.

25 Farm Records 3 credits W

The application of record keeping and accounting principles to farming, emphasizing analysis and use of the records to increase farm income. Mr. Hoglund.

30 Economic Geography 3 credits S

Climate and resources as strategic factors influencing the nature and location of economic activity, such as farming, mining, manufacturing, commerce, etc.

35ab Principles of Accounting
4 credits each term FW

Fundamental principles of accounting, their operation and use in the management of an enterprise. P, sophomore standing.

38 Farm Management 3 credits W

How farm income can be increased by economic utilization of resources, applying technical knowledge and skill in producing and marketing produce and aiding in formulating socially desirable agricultural programs. Recommend that 25 precede this course. Mr. Hoglund.

SENIOR COLLEGE

41 Business Law 5 credits W

Practical knowledge of legal problems encountered in the organization and operation of farm and business enterprises which will enable one to avoid needless litigation. Property, Contracts, Agency, Negotiable Instruments, Sales, Insurance, Common Carriers, Partnership, etc. P, Junior standing.

47 Transportation 3 credits F

The history of transportation in the United States, rate making, transportation finance, and state and federal transportation legislation. Influence of transportation on various economic acitivities. P, 20. Given in alternate years.

48 Financial Organization 4 credits W

Principles of money and credit, major types of financial institutions and their significant functions and policies. P, 20. Mr. Lundy.

55 Principles of Marketing 5 credits W

The organization and structure of the distribution system. An economic analysis of the functions performed by various middlemen. P, 20. Mr. Blanch.

100 Agricultural Economics 3 credits S

The economic problems facing the farmer in our social order. P, 20.

110 International Trade 3 credits W

Review of theories of international trade and foreign exchange. Basis of interregional exchange; advantages of trade; barriers to trade; P, 20, and junior standing. Mr. Lundy.

135 Intermediate Accounting 4 credits S

Consolidated statements; valuation problems for inventories and securities; statement analysis and comparison, etc. P, 35ab. Given in alternate years.

138 Advanced Farm Management 3 credits S

Special problems in farm organization and management; the application of economic principles to farming and the analysis of actual farm records. Budgeting and its use in farm operation. Field trips to farms. P, 38; 25 suggested. Mr. Hoglund.

141ab Statistical Methods 5 credits each term FW

Collection, organization, ind interpretation of quantitative data; statistical reasoning and the design of experiments and questionnaires.

142 Production Economics 3 credits W

Problems of production policy in industry and agriculture from the social and managerial points of view; applications of theory and experience. P, junior standing. Mr. Lundy.

145 Public Finance 3 credits F

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

146 Agricultural Finance 3 credits F

Credit and capital needs in agriculture, credit agencies; principles and problems involved in using and extending agricultural credit. P, 48. Mr. Lundy.

148 Money, Bank Credit and Prices 3 credits S

Monetary theory, and the influence of monetary, banking and fiscal policies on price levels, business activity, and general welfare. P.48

149 Investments 3 credits S

Investment principles and practices; investment credit and its application to securities; analysis of bond prices and yields, together with the methods of testing. Given in alternate years.

155 Agricultural Marketing 3 credits S

Methods of marketing agricultural products; emphasis on the marketing of agricultural commodities important to South Dakota. P, 20 and 55. Mr. Blanch.

166 Land Economics 3 credits S

Land as a factor of production; classification, appraisal and valuation; types of land tenure; taxes as they affect the use of land; land use planning. P, 142. Mr. Lundy.

175 History of Economic Thought 3 credits F

A survey of economic theory; the different schools of economic thought and the economic environments which produced them. P, graduate standing or consent of instructor.

179 Agricultural Cooperation 3 credits W

The principles of cooperation; managerial problems of cooperatives serving farmers. P, eleven hours of ecenomics. Mr. Lundy.

185ab Advanced Economics
3 credits each term WS

185a Theory of value and distribution.

185b Recent development in theories of value and capital as they relate to the interest rate, monetary policy, employment and the business cycle. P, graduate standing, or consent of instructor.

195 Agricultural Policy 3 credits S

Economic policies affecting agricultural prosperity; suggested means of reform. Emphasis on national and regional problems and interrelationships affecting rural and national welfare. P, 20 and 100. Mr. Lundy.

197 Special Problems
2 to 5 credits as arranged FWS

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

COURSES AVAILABLE ONLY TO GRADUATE STUDENTS IN AGRICULTURAL ECONOMICS

200 Thesis 7 to 10 credits FWS

The subject will be selected in consultation with adviser. Required of all candidates for the Master's Degree with major in this department. The final approved typewritten copy must be checked in at the department office not later than one week before the date set for the oral examination.

270 Agricultural Economics Seminar FWS

Special seminar courses in selected economic fields relating to agriculture. P, graduate standing. The number of credits will be arranged in consultation with the head of the department. Members of the department.

277 Research Methods 3 credits W

A presentation of the methods, problems and principles involved in research work and sources of data for the prospective research workers in the field of agricultural economics. P, graduate standing. Staff members.

285 Research in Agricultural Economics
3 to 5 credits as arranged FWS

Graduate students may elect subjects in agricultural economics research in consultation with adviser or teacher. Open to all graduate students working towards a Master's Degree in agricultural economics. Members of the staff.

Curriculum in Technical Agriculture, Agricultural Economics Major†

Leading to the degree of Bachelor of Science in Agriculture.

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
Orientation, 1ab	½	½	
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Gen. Botany, Bot 1ab or 10ab	3/4	3/4	
Types and Market Classes of Livestock. AH 1	5		
Crop Production, Agron 1		5	
College Algebra, Math 13			5
Agricult. Engineering, AE 24			3
Military Science, 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective			4
	17½	17½	17/18

Sophomore Year	*Fall*	*Winter*	*Spring*
Intro. to Lit., Engl 20 and elective (Footnote, page ??)	3	3	
Extempore Speaking, Sp 22			3
Prin. of Economics, AgEc 20	5		
Farm Management, AgEc 38		3	
General Zoology, Z 20ab	4	4	
Elements of Dairying, DH 1			5
Prin. of Accounting, AgEc 35ab	4	4	
Economic Geography, AgEc 30			3
Elective	1	3	4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	19	19	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Statistical Meth., AgEc 141ab	5	5*	
Principles of Sociology, RS 20			5
American Government, PS 34	4		
Financial Organ., AgEc 48		4	
Prin. of Marketing, AgEc 55		5	
Agricul. Economics, AgEc 100			3
Adv. Composition, Engl 42	2		
Production Econ., AgEc 142		3	
Public Finance, AgEc 145	3		
Elective	5	2	9
	19	19	17

Senior Year	*Fall*	*Winter*	*Spring*
Soils, Agron 25ab	3	3	
Agricultural Policy, AgEc 195			3
Eco. Hist. of Europe, Hist 127			4
International Trade, AgEc 110		3	
Agricult. Finance, AgEc 146	3		
Money, Bank Credit, and Prices, AgEc 148			3
Agri. Marketing, AgEc 155		3	
Hist. of Ec. Thought, AgEc 175	3		
Elective	8	8	7
	17	17	17

*Recommended

†See curriculum in Agricultural Economics in General Science division.

Prescribed courses are in Roman type, elective and optional courses are in *Italic type.*

MAJOR: AgEc 20, 38, 48, 55, 100, 141a, 195 and additional electives in the department to total 36 credits.
MINOR: AgEc 20, 48, 55, 141a, and additional electives in the department to total 24 credits.

Suggested electives, Freshman and Sophomore yaers.

Trigonometry, Math 15
Analytical Geometry, Math 16
General Horticulture, Hort 20
General Poultry Culture, PH 20
General Bacteriology, Bac 30
Ec. Hist. of the United States, Hist 26ab
History of Agri. in the U. S., Hist 28
Livestock Feeding and Mgt., AH 41ab
Forage Crops, Agron 66

Agricultural Education (Ag Ed)

Acting-Professor Wiseman, Mr. Davis

The Smith-Hughes Vocational Education Act and subsequent federal acts require and provide for training of teachers of vocational agriculture. This work has been assigned to South Dakota State College, and has been approved by the State Board of Vocational Education and by the Division of Vocational Education of the U. S. Office of Education. In order to do this, the Division of Agriculture and General Science cooperate in offering such teacher training work. Students preparing to teach take practically all the required subjects in the curriculum in General Agriculture. They take a major in Agricultural Education, a minor or major in some phase of Agriculture, and electives in technical Agriculture and farm mechanics to make up the total requirement. Teachers of Vocational Agriculture in South Dakota receive the High School Special Certificate to teach Agriculture, issued by the State Department of Public Instruction. (Sometimes they receive the High School General Certificate.) Usually they are required to teach certain academic subjects too. The certificate permits them to teach academic subjects in which they have made adequate preparation. The professional (education) requirement is 23 term credits in Education including Supervised Student Teaching in Vocational Agriculture. The student-teaching is done in the Agriculture Department of Brookings High School (an approved Smith-Hughes Department) or in an approved department in some other High School.

A graduate major or minor in Agricultural Education is also provided for those interested and qualified to pursue such graduate work.

See description of courses under Education.

Curriculum in Technical Agriculture, Agricultural Education Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
Types and Market Classes of Livestock, AH 1	5		
Crop Production, Agron 1		5	
Elements of Dairying, DH 1			5
English Comp., Engl 1abc	3	3	3
College Algebra, Math 13			5
General Botany, Bot 1ab	3	3	
Inorganic Chemistry, Ch 1ab	4	4	
Orientation, 1ab	½	½	
Physical Education, PE 1abc	1	1	1
Military Science, Mil 1abc	1	1	1
Eng. Drawing & Plans, AE 22			2
Advanced Carpentry, ES 11			2
	17½	17½	19

Sophomore Year	Fall	Winter	Spring
Prin. of Economics, AgEc 20	5		
Principles of Sociology, RS 20		5	
General Bacteriology, Bac 30			4
Veterinary Anatomy and Physiology, Vet 20	5		
Elem. Organic Chem., Ch 21		5	
Gen. Poultry Culture, PH 20		3	
General Horticulture, Hort 20	3		
General Zoology, Z 20ab	4	4	
Elementary Physics, Phy 1c			4
Elementary Psychology, Psy 25			3
Extempore Speaking, Sp 22			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	19	19	16

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Prin. of Secondary Edu., Ed 40	3		
Educational Psychology, Ed 45		3	
Meth. of Teach. in H. S., Ed 47			3
Surv. of Agricult. Edu., Ed 42	1		
Soils, Agron 25ab	3	3	
Adv. Composition, Engl 42		3	
Publicity Methods, PRJ 66	3		
Forage Crops, Agron 66		3	
Seed Problems and Weed Control, Agron 30			3
Gen. Agr. Entomology, Ent 20			5
Livestock Feeding and Management, AH 41ab		3	3
General Mechanics, AE 23		3	
Farm Machinery, AE 34			3
Elective	7		
	17	18	17

Senior Year	Fall	Winter	Spring
Special Methods of Teaching Vocational Agr., Ed 70	3		
Organization and Management of Vocational Agr., Ed 71		3	
Supervised Student Teaching Vocational Agr., Ed 73*	5		
Farm Management, AgEc 38		3	
Farm Meats, AH 41		3	
Rural Sociology, RS 131	3		
Teaching Farm Shop, Ed 72			3

*Elective in Education**	3		*Elective*	3	6	11
*Elective in Agr. Economics**		3				
*Elective in Tech. Agriculture**	2			17	17	17

Prescribed courses are in Roman type, elective and optional courses are in *Italic type.*

Farm Records, AgEc 25
Veterinary Hygiene, Vet 40 or
Contagious Diseases, Vet 41
Judging Poultry, PH 41

Agricultural Economics, AgEc 100
Agricultural Marketing, AgEc 155
Agricultural Cooperation, AgEc 179
Newswriting, PRJ 24

Dairy Cattle and Products Judging, DH 20
Dairy Bacteriology, DH 141
Farm and Home Utilities, AE 160
Breeds of Livestock, AH 20ab

*Offered any quarter.

Agricultural Engineering (AE)

Associate Professor DeLong, Instructors Lien, Boyd

Students expecting to pursue the four-year course in Agricultural Engineering should take the courses outlined in the Agricultural Engineering curriculum on pages 34 and 35. Many of the courses described below may be elected by students in other lines and some are required of Agriculture and Industrial Arts students. A few of the courses are designed especially for Agricultural students and are not required of Agricultural Engineers. However, most of the following courses are required of students taking the four-year course leading to the degree of Bachelor of Science in Agricultural Engineering.

JUNIOR COLLEGE

12 Technical Lecture Required without credit W
History, purpose, aims and general status of Agricultural Engineering.

16 Farm Concrete 2 credits S
Specifications, strength, and methods of pouring, use on the farm, mixtures, and cost estimates. Laboratory fee $2.00.

22 Engineering Drawing and Plans 2 credits S
Lettering and use of drawing instruments for agricultural students, some work in drawing, small building plan and graphic presentation.

23 General Mechanics 3 credits W
Rope work, soldering, pipe fitting, babbiting, machinery repair, motor timing, precision instruments, cold metal work, glazing, welding, and similar subjects. Laboratory fee $3.00.

24 Agricultural Engineering 3 credits S
A general course in Agricultural Engineering for Agricultural students in Junior College and especially designed for a terminal course in Agriculture. Includes some work in farm buildings, farm concrete, farm machinery and gas engines. Laboratory fee $2.00.

34 Farm Machinery 3 credits S
Construction, adjustment, operation and care of farm machinery; cost of operation and other economic phases. Laboratory fee $2.00. Mr. DeLong.

36 Agricultural Machinery 4 credits S
Design, construction, adjustment, field operation, draft testing of new and experimental machinery. P, Phy 21a, Math 15. (For Agricultural Engineering Students.) Laboratory fee $2.00. Mr. DeLong.

38 Farm Motors 3 credits W
The operation, adjustment, construction, and care of gas and oil engines and tractors. P, 34, or Phy 1. Laboratory fee $2.00.

SENIOR COLLEGE

140 Farm Motors 3 credits S
A continuation of course 38 for Agriculture students. Includes assembling and testing for gas engines and tractors. P, 38. Laboratory fee $2.00.

***145 Farm Motors and Power** 3 credits W
The design, construction, adjsutment and theory of gas and oil engines and tractors. P, Phy 21abc.

***146 Advanced Farm Motors and Power** 3 credits S
Includes horse power, gas engines, wind, water and electric power. Design, construction, adjustment, operation and testing of motors. P, AE 145. Laboratory fee $2.00.

150 Farm Structures 4 credits W
Design with regard to balanced strength, efficiency, moisture control, ventilation, sanitation and standard practices. Also building materials and building appraisal. P, ME 3a, ME 4a, Phy 21abc.

151 Farm Structures 3 credits S
Computation of stresses in farm buildings. Comparative strength of building materials. Design of complete farm building plans, specifications, evaluation and cost estimates. P, 150, CE 142.

153 Farm Buildings 3 credits W
For Agriculture students. Plans and arrangement of farm buildings for poultry and livestock housing. Includes equipment, frost control and environmental conditions. P, AE 22, Phy 1.

154 Drainage Engineering 3 credits F
Fundamental principles of tile and open drains, design and field surveys, drainability of soils, rates of run-off, outlet capacity and intensity—frequency of rainfall. P, CE 3, CE 25, Agron 25ab. Laboratory fee $2.00.

157ab Senior Seminar 1 credit each term FW
Preparation, presentation and discussion of papers on Agriclutural Engineering subjects. Agricultural Engineering Staff.

160 Farm and Home Utilities 2 credits F
Home improvement including sewage disposal, water supply, lighting and heating of the farm home, also air conditioning and rural electrification. Phy, Phy 21abc.

*Courses 145 and 146 are for Agricultural Engineering students.

164 Erosion and Irrigation Engineering 3 credits S
Soil erosion control including the design and practices used in gully control and terracing; spillway design for dams; land clearing methods; and land irrigation. One lecture and six hours of laboratory work a week. P, 154, Agron 25ab.

167ab Senior Problem 3 to 6 credits WS
An original problem in design or research on an Agricultural Engineering subject. Includes outlining the problem, tabulating data and submitting a typewritten comprehensive report of results. Agricultural Engineering staff.

Curriculum in Technical Agriculture, Farm Mechanics Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

For Curriculum in Agricultural Engineering, See Page 34

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
General Botany, Bot 1ab	3	3	
Elementary Physics, Phy 1c			4
Types and Market Classes of Livestock, AH 1	5		
Field Crops, Agron 1		5	
College Algebra, Math 13			5
Farm Concrete, AE 16			2
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	17½	17½	16

Sophomore Year	Fall	Winter	Spring
English, Engl 42, 20	3	3	
Extempore Speaking, Sp 22			3
Zoology, Z 20ab	4	4	
Gravimetric Analysis, Ch 23		4	
Prin. of Economics, AgEc 20			5
Agricultural Machinery, AE 36			4
Poultry Culture, PH 20		3	
Eng. Drawing & Plans, AE 22			2
Engineering Shop, ES 10, 5	2	2	
Horticulture, Hort 20			3
Elem. Organic Chem., Ch 21	5		
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	16	18	19

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Soils, Agron 25ab	3	3	
Livestock Feeding and Management, AH 41ab		3	3
Field Crop Entomology, Ent 40		3	
Farm Motors, AE 38, 140		3	3
Ec. History of U. S., Hist 26ab	3	3	
Farm and Home Utili., AE 160	2		
Newswriting, PRJ 24	3		
Farm Meats, AH 22		3	
Agricul. Economics, AgEc 100			3
Elective	6		8
	17	18	17

Senior Year	Fall	Winter	Spring
Farm Structures, AE 150		4	
Principles of Sociology, RS 20	5		
Farm Management, AgEc 38		3	
General Mechanics, AE 23		3	
American Government, PS 44a	4		
Dairy Management, DH 21			3
Elementary Psychology, Psy 25			3
Landscape Garden., Hort 147	5		
Meteorology, Agron 172		5	
Spanish, 1abc	4	4	4
Elective			7
	18	19	17

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR: AE 16, 22, 23, 34, 38, 140, 153, 160 with additional courses to total 36 hours.
MINOR: AE 16, 22, 23, 34, 38, 153.

Suggested electives:

Farm Forestry, Hort 41
Timber Preservation, Hort 23
Principles of Secondary Education, Ed 40
Methods of Teaching in High School, Ed 47

Agronomy (Agron)

Professors Worzella, Hume; Associate Professors Grafius, Puhr, Manke; Assistant Professors Erickson, Franzke, Patterson, Syverud

The Agronomy department is the department of soils and crops. To help students apply the principles of science to crop production is the essential purpose of the courses offered.

What is the soil of South Dakota? The student may learn to outline soil areas, to analyze soils, to observe field experiments, and to answer the question for himself.

What crops will grow in specific soil areas, and how may the growing of them be made more profitable to the man who does the work? A study of the results of experiments will answer these questions for the student. These courses attempt to give the student in agronomy that accurate knowledge of conditions which is necessary to success in farming.

The courses offered are fundamental, practical, scientific. They are designed for South Dakota farmers. They may be pursued with profit by prospective teachers of agriculture or by experiment station workers and managers of marketing enterprises.

Completion of the agronomy curriculum provides a basic training for all agricultural workers such as: Farm managers, County agents, Experiment station workers, Seed and Grain dealers and for positions with the Federal agricultural agencies.

The broad choice of electives will enable a major in agronomy to prepare for practically any field in agriculture. Those interested in further information are invited to confer with the agronomy staff.

JUNIOR COLLEGE

1 Crop Production 5 credits W

Fundamental practices and principles of crop production; crop distribution; growth process; response to environment. Study of grain and forage crops, including their distribution, use, improvement, growth, harvesting, and marketing.

25ab Soils 3 credits FW

An introductory course which considers the origin, development, physical properties, fertility and management of soils. P, Ch 1ab. Laboratory fee $1.00.

30 Seed Problems and Weed Control 3 credits F

Seed inspection, certification and production of foundation seed stocks. Identification of weed plants and seeds; their economic importance, distribution, method of dissemination, control, and weed laws. P, 1.

SENIOR COLLEGE

50 Seed Technology 3 credits W

Fundamentals of seed analysis, as applied to agricultural practices including purity analysis, noxious weed examinations, germination and disease tests. Market standards, grain grading and visits to industrial plants. P, 1, Bot 10.

55 Grain Crops 3 credits (odd years) W

Distribution, adaption, classification, and culture of corn, wheat, oats, barley, flax and other crops. P, 1.

66 Forage Crops 3 credits (even years) W

Study of grasses, legumes and other plants and their use in hay, pasture, silage, green manure, etc. Problems related to cultural practices, food reserves and morphology. P, 1.

68 Crop Judging 2 credits F

Seed and sheaf judging of cereal, legumes, grass and other crops. P, 1, 30.

74 Soil Management and Fertility 3 credits S

Lectures, discussions, review of literature on the chemical composition of soils and fertilizers, soil management problems with respect to use of fertilizers, crop rotations, legumes, organic matter and nitrogen, available plant food, soil reaction and biological aspects of soil fertility. P, 25.

75 Soil Problems in Dryland Agriculture 2 credits S

Soil management problems which occur in limited rainfall areas with emphasis on soil moisture conservation, crop residue management, tillage practices, crop rotations, maintenance of soil organic matter and nitrogen and the relationship of climate to soil management. P, 25.

78 Soil Conservation 3 credits S

The value of the soil as a 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 Agronomic practices. P, 74.

142 Plant Breeding 3 credits (odd years) S

Application of genetic principles and allied subjects used in breeding crop plants. Field methods and practices in cross- and self-pollination of crop plants. P, Z 42.

150 Laboratory Methods of Soils Investigations 4 credits S

A laboratory course devoted to the study and application of chemical methods for the analysis of soils and fertilizers. P, 25, Ch 24. Laboratory fee $2.00.

152 Classification and Genesis of Soils 3 credits F

A study of the formation, soil profile characteristics, zonal groups, methods and development of soil classification, influence of climate, vegetation, parent material on soil genesis and the geographic distribution of soils. P, 78.

160 Soil Survey 2 credits S

Lectures and field work on the identification of soil types, technique of soil mapping, interpretation and application of soil survey data in terms of land use capabilities, proper land use and the organization of survey data into soil reports. P, 152.

162 Range and Pasture Management 3 credits S

The establishment, management and utilization of pastures. Application of laws of ecology and plant physiology to management of range land. Grazing value, poisonous plants, natural and artificial reseeding, deferred and rotational grazing and grazing capacity of pasture plants. P, 1, 66.

171 Geology 4 credits S

A course in general geology with emphasis on fundamental geologic processes including rock weathering, work of wind, ground water, streams, glaciers, lakes, ocean, vulcanism, mountain formation, origin of earth, minerals and rocks. P, Junior standing. Laboratory fee $1.00.

172 Soil Physics 3 credits W

A study of the physical properties of soils including texture, structure, colloids, moisture relations and the effect of these properties on the growth of crops and utilization of soils. P, 25. Laboratory fee $2.00.

180 Crop Ecology 2 credits (odd years) W
An analysis of environmental conditions that influence the growth of crops. The natural and economic factors responsible for crop production in different regions and countries. P, 1.

181 Meteorology 3 credits W
A practical course dealing with the laws controlling the movements of atmosphere, the study of climatological and weather factors, with special attention to conditions in the United States, the climate and weather of South Dakota. P, Junior standing.

182 Biometry 3 credits (even years) S
Principles of statistical methods as applied to biological data with special reference to experimental design, reduction of experimental data and tests of signficance and their interpretation. P, Math 13.

190 Crop Production Problems
2 credits (even years) W
Assigned readings, reports and discussion on important topics dealing with the production of selected farm crops. P, 1.

191 General Physical Geography 5 credits F
Physical environment including weather, climate, topography, natural vegetation, and soils. P, Sophomore standing.

192 Soil Problems 2 credits W
Assigned readings, reports and discussions.

199abc Agronomy Seminar 1 credit FWS
A review of the literature and original investigations in technical crop and soil bulletins and agronomic journals.

PRIMARILY FOR ADVANCED STUDENTS

205 Advanced Plant Breeding 3 credits
Advanced principles, techniques, and problems in the improvement of cereals, legumes, grasses, and other crop plants. Pathological, physiological and ecological relationships are considered.

210 Advanced Crop Production 3 credits
Literature reviews and conferences on selected crops according to needs and interests of students.

220 Advanced Soil Problesm 3 credits
Literature reviews and conferences on selected topics according to needs and interests of students.

230 Advanced Soil Fertility 3 credits
Chemistry of soil-plant relationships; theory and practice in use of fertilizer.

299 Research in Agronomy 2 to 5 credits
Special problems for advanced students who may be interested in soil and crop problems. Original data obtained in laboratory, greenhouse or field studies may be used for master's thesis.

Curriculum in Technical Agriculture, Agronomy Major

Leading to the degree of Bachelor of Science in Agriculture **(See page 32)**

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, Bot 10ab	4	4	
College Algebra, Math 13			5
Types and Market Classes of Livestock, AH 1	5		
Crop Production, Agron 1		5	
General Horticulture, Hort 20			3
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Elem. Organic Chem., Ch 21	5		
Gravimetric Analysis, Ch 23		4	
Extempore Speaking, Sp 22			3
Adv. Composition, Engl 42	3		
Publicity Methods, PRJ 66		3	
Agricult. Engineering, AE 24			3
Seed Problems and Weed Control, Agron 30	3		
Field Crop Entomology, Ent 40		3	
Prin. of Agri. Econ., AgEc 20			5
Elements of Dairying, DH 1			5
General Bacteriology, Bac 30		4	
Soils, Agron 25ab	3	3	
Physical Education, PE 20abc	1	1	1
Military Science, Mil 20abc	1	1	1
Elective	2		
	18	19	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Genetics, Z 42	3		
Livestock Feeding, AH 143		3	
Geology, Agron 171			4
Gen. Plant Physiology, Bot 41	5		
Pathology of Cereal, Forage and Fiber Crops, Bot 163		5	
Biometry, Agron 182			3
Elementary Psychology, Psy 25	3		
Grain Crops, Agron 55		3	
Soil Mgt. & Fertility, Agron 74			3
Elective	7	7	8
	18	18	18

Senior Year	*Fall*	*Winter*	*Spring*
Elementary Physics, Phy 1a	4		
Forage Crops, Agron 66		3	
Soil Conservation, Agron 78			3
Principles of Sociology, RS 20	5		
Agronomy Sem., Agron 199abc	1	1	1
Classification and Genesis of Soils, Agron 152	3		
Crop Ecology, Agron 180		2	
Elective	5	12	14
	18	18	18

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR IN CROPS: Agron 50, 68, 142, 162, 190, and Bot 1abc.
MAJOR IN SOILS: Agron 150, 160, 172, 181, 192 and Ch 24.

Animal Husbandry (AH)

Professors Hobbs, Johnson, Associate Professors Wright, L. Johnson
Instructors Cole, Hoyt, Burkitt

The importance of livestock husbandry in South Dakota agriculture is indicated by the fact that approximately seventy percent of the farm income is derived from livestock and livestock products. The department of Animal Husbandry affords the agricultural student instruction in selecting, breeding, feeding, managing, judging and marketing the different market and breed types of beef cattle, swine, sheep and horses under both farm and range conditions; also in the slaughtering of meat animals and in cutting and curing meat. Another important departmental activity is the livestock experimental work which affords the student an added opportunity for securing basic facts relating to livestock husbandry.

Agricultural students majoring in Animal Husbandry are encouraged and assisted in supplementing their class and laboratory work with practical experience in the line of work which they plan to pursue after completing the course. In order to develop agricultural students as judges of livestock and meat, the department annually sponsors college livestock and meat judging teams which participate in the student contests at the Denver, the Ft. Worth, the Waterloo, the American Royal and the International Livestock shows.

Agricultural graduates of the College who majored in Animal Husbandry have become operators of their own farms and livestock business or have found employment as managers of stock farms and ranches, in college work, in experiment station work, in the U. S. Department of Agriculture and its conservation programs, as county agents, 4-H club agents and supervisors, as agricultural instructors in high schools, in extension work for the colleges and commercial concerns, in the field of agricultural journalism; with companies and commission firms at the terminal livestock markets, the packers, feed companies and other commercial agricultural concerns, and as fieldmen for breed associations.

JUNIOR COLLEGE

1 Types and Market Classes of Livestock 5 credits F

Practice in grading and judging market types and classes of beef cattle, sheep, swine and horses; market terms and methods of marketing livestock. Messrs. Eddy and Wright. Laboratory fee $1.50.

20ab Breeds of Livestock 3 credits each term WS

The origin, characteristics and development of the leading breeds of beef cattle, swine, sheep and horses, including a study of pedigrees, and breed families; and judging classes of livestock illustrating breed type. P, 1. Messrs. Wright and Eddy. Laboratory fee $1.00.

22 Farm Meats 3 credits W

Selecting, evaluating, slaughtering and dressing of meat animals; cutting, curing, smoking and canning of farm meats; food value and utilization of meat and meat products. Mr. Eddy. Laboratory fee $1.50.

SENIOR COLLEGE

41ab Livestock Feeding and Management 3 credits WS

Designed for majors in other departments. Survey of livestock industry; feeding, breeding, management, market classes, evaluation, judging and fitting of farm animals. Laboratory fee $1.00.

42 Livestock Judging 3 credits W

Selection for individual excellence; judging and evaluation of market, breeding and show ring classes of beef cattle, swine, sheep, horses and mules. Two junior judging teams usually selected from students taking this course. P, 20ab. Mr. L. Johnson. Laboratory fee $1.50.

60 Meat Studies 2 credits F

For Home Economics students. Identifying, selecting and grading of wholesale and retail cuts; care and storage of meats and meat products; food value of meats; meat inspection service. Trips will be made to nearby meat packing plants and retail markets. Laboratory fee $1.00.

66 Livestock Problems 1 to 5 credits FWS

Senior students who have the necessary qualifications may be assigned special problems along definite lines of investigation. Messrs. Johnson, Wright, L. Johnson and Eddy.

143 Livestock Feeding 3 credits W

Practical application of nutrition principles to livestock 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 41, Vet 20. Laboratory fee $1.00.

145 Swine Production 3 credits S

Regional trends in production, improvement and management of breeding stock; feeding problems and a study of swine feeding experiments; equipment for successful hog production; keeping records and fitting hogs for the show or sale ring. P, 20ab, 41a or 143. Mr. Wright. Laboratory fee $1.00.

146 Range Livestock Production 3 credits S

Feeding, breeding and management principles and practices of sheep and beef cattle under range conditions; grazing capacities, conservation and improvement of range areas; important range forages. P, 1, 43a or 143.

161 Advanced Livestock Judging 3 credits F

Continuation of 42. Trips made to purebred herds for practice judging; participation in American Royal and International Livestock Judging Contests. P, 42. Mr. L. Johnson. Laboratory fee $1.50.

162 Advanced Meats 3 credits F

Practice in identifying, judging and grading carcasses and cuts; review of recent meat research; practice in specialized meat cutting and retailing; trips to nearby packing plants and markets; and participation in intercollegiate meats judging contest. P, 22. Laboratory fee $1.50.

163 Principles of Animal Breeding 3 credits W

Application of principles of genetics to improvement of farm animals; systems of breeding and breeders' problems. P, 20ab, Z 42, Vet 42. Mr. L. Johnson.

164 Sheep Production 3 credits S

Feeding, breeding and management principles for wool and mutton production in farm and range flocks; the purebred industry; fitting of sheep. P, 1 and 41a or 143. Laboratory fee $1.00.

165 Beef Cattle Production 3 credits S

Trends in beef cattle production; beef cattle enterprises; breeding, feeding and management problems under farm and ranch conditions; purebred herd management. P, 20ab, 41a or 143. Laboratory fee $1.00.

166 Livestock Marketing 4 credits S

Livestock marketing methods, involving problems of transportation; terminal market practices; methods of selling; factors determining livestock prices; and the selling of purebred livestock. The course involves field trips to terminal and interior livestock markets. P, 1, 20ab and AgEc 55. Mr. Wright.

167 Horse Production 3 credits W

Offered in 1946 and alternate years thereafter. Trend of the horse and mule industry; horse equipment for the farm or ranch; training; feeding; management; and fitting of light and draft horses for the market and for the show. P, 20ab, 41a or 143. Mr. Wright. Laboratory fee $1.00.

168abc Animal Husbandry Seminar
1 credit each term FWS

Current and special problems in animal husbandry, selected review topics, and research assignments on investigations relating to the livestock industry. P, senior standing. The Staff.

200 Research Problems
3 to 5 credits for each type of research listed FWS

Graduate students who have the necessary qualifications may select problems in:

(1) Swine production
(2) Beef cattle production
(3) Sheep production
(4) Animal Breeding
(5) Meats
(6) Nutrition problems
(7) Range livestock production
(8) Livestock marketing

Any term. Messrs. Johnson, Wright, L. Johnson, Eddy.

201 Thesis 7 to 10 credits FWS

Graduate students majoring in Animal Husbandry may select a suitable project, the same to be approved by the graduate committee. Any term. The Staff.

Curriculum in Technical Agriculture, Animal Husbandry Major

Leading to the degree of Bachelor of Science in Agriculture **(See page 32)**

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
Types and Market Classes of Livestock, AH 1	5		
Crop Production, Agron 1		5	
Farm Dairying, DH 1			5
Inorganic Chemistry, Ch 1abc	4	4	4
English Comp., Engl 1abc	3	3	3
General Zoology, Z 20ab	4	4	
Orientation, 1ab	½	½	
College Algebra, Math 13			5
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	18½	19

Sophomore Year	*Fall*	*Winter*	*Spring*
Breeds of Livestock, AH 20ab		3	3
Farm Meats, A H22		3	
Prin. of Economics, AgEc 20			5
Veterinary Anatomy and Physiology, Vet 20	5		
Elem. Organic Chem., Ch 21	5		
General Botany, Bot 10ab	4	4	
General Horticulture, Hort 20		3	
Extempore Speaking, Sp 22			3
Element. Bacteriology, Bac 31			4
Advanced Composition, Engl Adv. Composition, Engl 42		3	
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	3		1
	19	18	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Livestock Judging, AH 42		3	
Livestock Feeding, AH 143		3	
Swine Product., AH 145; or Range Livestock Pr., AH 146			3
Gen. Poultry Culture, PH 20	3		
Soils, Agron 25ab	3	3	
Farm Engineering, AE 24			3
Forage Crops, Agron 66		3	
Field Crop Entomology, Ent 40		3	
Veterinary Hygiene, Vet 40	3		
Agricult. Biochemistry, Ch 41	5		
Contagious Diseases, Vet 41			3
Principles of Sociology, RS 20			5
Agricul. Economics, AgEc 100			3
Newswriting, PRJ 24	3		
Elective		3	
	17	18	17

Senior Year	*Fall*	*Winter*	*Spring*
Animal Breeding, AH 163		3	
Sheep Production, AH 164			3
Beef Cattle Product., AH 165			3
Livestock Marketing, AH 166			4
Prin. of Marketing, AgEc 55		5	
Genetics, Z 42	3		
A. H. Seminar, AH 168abc	1	1	1
Adv. Livestock Judg., AH 161	3		
Advanced Meats, AH 162	3		
Elective	7	8	6
	17	17	17

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR: AH 1, 20ab, 22, 42, 143, 145, 146, 163, 164, 165, 166, 167, 168abc. Two of the 5 production courses may be omitted.
MINOR: AH 1, 20ab, 22, 41ab, and additional electives in Animal Husbandry to total 24.

Suggested electives:

Newswriting, PRJ 24
Speech, Sp 10
Dairy Breeds, DH 142
Agricultural Finance, AgEc 146
Carpentry, ES 10
Forging and Welding, ES 5
Photography, PRJ 58ab
Farm Management, AgEc 25
Farm Records, AgEc 25
Advanced Carpentry, ES 11
Landscape Gardening, Hort 147
Turkey Production, PH 158
Rural Sociology, RS 131
Publicity Methods, PRJ 66
Typewriting, PRJ 16a

Botany, Plant Pathology, and Bacteriology (Bot, Bac)

Professor Miller, Assistant Professor Grismer

The recognition of two kinds of human interest in the field of science has determined the content and method of the courses offered by the department. One of these interests, which is cultural in nature, is nontechnical; the other is professional and necessarily technical.

The needs of both interests are met by the department's introductory courses in botany and bacteriology; for these are of the survey type, broad in scope, and varied in application. Other courses among Junior College offerings, however, and all in the Senior College, are technical. They lay the foundation for the teaching of botany in secondary schools, for advancement into the field of botanical or bacteriological research, or for direct application to the variety of fields represented in vocational divisions of the Senior College.

Botany-Plant Pathology (Bot)

JUNIOR COLLEGE

1abc General Botany 3 credits each term FWS

1ab, Seed Plants; a consideration of the life problems which plants must solve if they are to develop successfully from seed to maturity.

1c, The Plant Kingdom; a rapid survey of plant groups more primitive than seed plants.

A lecture-demonstration course without laboratory work. Although open to all students, this course is recommended especially for those who desire only a cultural acquaintance with their plant environment. Mr. Miller. Demonstration fee $1.00 each term.

10abc General Botany 4 credits each term FWS

Similar in content to the preceding course, but employing the laboratory method. Designed especially for those who expect to continue with science work into the Senior College. Mr. Miller. Laboratory fee $2.00; deposit $2.00 each term.

24 Flora of the Black Hills

A field-laboratory course in the taxonomy and ecology of the Black Hills flora. Offered in summer school only. A maximum of 9 credits may be earned toward graduation. Apply to the Botany Department for details of expense, equipment, etc.

27 The Local Flora 4 credits S

Principles of taxonomy, and the identification of plants in the vicinity of Brookings. P, 1abc or 10abc. Mr. Miller. Laboratory fee $1.00.

SENIOR COLLEGE

41 General Plant Physiology 5 credits F

A short survey of the field of plant functions. P, 10abc. Laboratory fee $3.00; deposit $2.00.

42 Plant Microtechnique 4 credits W

Preparation of plant organs and tissues for critical study with the microscope. P, 10abc. Mr. Miller. Laboratory fee $3.00; deposit $2.00.

43 Plant Anatomy 5 credits S

Developmental anatomy of the seed plant axis and its appendages. Emphasis is given to the structural fitness of tissues and organs for the functions which they perform. P, 10ab. Mr. Miller. Laboratory fee $2.00; deposit $2.00.

45 General Plant Pathology 5 credits F

A short survey of the field of plant diseases. P, 10abc. Laboratory fee $2.00; deposit $2.00.

140abc Plant Morphology
5 credits each term FWS

140a, Thallophytes

140b, Bryophytes, Pteridophytes

140c, Spermatophytes

Life histories and evolutionary relationship of the great orders of the plant kingdom. P, 10abc. Mr. Miller. Laboratory fee $2.00; deposit $2.00 each term.

150ab Plant Physiology 5 credits each term WS

A more detailed study than course No. 41. Recommended for students who are doing their major work in the plant sciences. P, 10abc and Ch 1abc. Laboratory fee $3.00; deposit $2.00 each term.

161 Pathology of Fruit Crops 5 credits S

A study of disease and its control among cultivated fruits. P, 45. Alternates with course 162. Laboratory fee $2.00; deposit $2.00.

162 Pathology of Vegetable Crops 5 credits S

A study of disease and its control among garden vegetables. P, 45. Alternates with course 161. Laboratory fee $2.00; deposit $2.00.

163 Pathology of Cereal, Forage and Fiber Crops
5 credits W

A study of disease in grasses and in other plants grown for feed or fiber. P, 45. Laboratory fee $2.00; deposit $2.00.

170 Botanical Problems Credit arranged

The solution of individually assigned original problems in botany, making use of techniques which were acquired in the background courses. P, adequate background for the assigned problems. Individual conferences and laboratory or field work. Mr. Miller. Laboratory fee $2.00 (not collected if the problem does not require work with laboratory equipment); deposit $1.00 for each credit hour.

172 Seminar 1 credit W

Presentation and criticism of original, and of contemporary, research. P, two years of botany work of collegiate rank. Staff members and advanced students.

270 Graduate Research Credit arranged FWS

Open to graduate students whose previous training and personal qualifications equip them for serious work with a minimum of supervision. Admission upon recommendation of the research director. Mr. Miller. Laboratory fee $2.00 (not collected if the problem does not require work with laboratory equipment); deposit $1.00 for each credit hour.

Curriculum in Technical Agriculture, Botany Major

Leading to the degree of Bachelor of Science in Agriculture **(See page 32)**

See Botany Curriculum in Division of General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
Orientation, 1ab	½	½	
English Comp., Engl 1abc	3	3	3
College Algebra, Math 13			5
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, Bot 10abc	4	4	4
Crop Production, Agron 1		5	
Types and Market Classes of Livestock, AH 1	5		
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	18½	18

Sophomore Year	*Fall*	*Winter*	*Spring*
Introdu. to Literature, Engl 20	3		
Extempore Speaking, Sp 22		3	
Elem. Organic Chem., Ch 21	5		
Principles of Sociology, RS 20		5	
Prin. of Economics, AgEc 20			5
General Horticulture, Hort 20	3		
Local Flora, Bot 27			4
Plant Microtechnique, Bot 42		4	
Elementary Pyschology, Psy 25			3
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	17	18	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
The English Langua., Engl 56		3	
General Physics, Phy 21abc	4	4	4
Gener. Plant Pathology, Bot 45	5		
Plant Physiology, Bot 150ab		5	5
Genetics, Z 42	3		
Organic Evolution, Z 60			3
**Elective*	6	6	6
	18	18	18

Senior Year	Fall	Winter	Spring
Botany Seminar, Bot 172		1	
Soils, Agron 25ab	3	3	
Geology, Agron 171			4
Plant Anatomy, Bot 43			5
Plant Morphology, Bot 140abc	5	5	5
Element. Bacteriology, Bac 41	5		
Principles of Infection and Immunity, Bac 142		5	
*Elective	5	4	4
	18	18	18

*Students who expect to continue the study of botany at the graduate level should include among their junior and senior electives a minimum of two year-courses in French or German. Those who expect to teach botany or biology in the secondary schools should include among their electives such courses in the department of Education as are required for teacher certification.

Prescribed courses are in Roman type, elective and optional courses are in *Italic type.*

MAJOR: Bot 10, 27, 42, 172, and additional electives in Botany to total at least 36 credits.
MINOR: Bot 10, 27, and additional electives in Botany to total at least 24 credits.

Bacteriology (Bac)

JUNIOR COLLEGE

30 General Bacteriology 4 credits any term FWS
Principles of microbiology and of microbiological technique. P, sophomore standing. Mr. Grismer. Laboratory fee $3.00; deposit $2.00.

SENIOR COLLEGE

41 Elementary Bacteriology 5 credits F
Similar to course No. 30 but more comprehensive. Designed especially for students of Pharmacy and Nursing Education, for premedical students, and for those who will do advanced work in the field of Bacteriology. P, Ch 20. Mr. Grismer. Laboratory fee $3.00; deposit $2.00.

46 Microbiology of Water and Sewage 4 credits W
Microbiological problems associated with water supplies and sewage disposal. Open to Engineering students. P, junior standing. Laboratory fee $3.00; deposit $2.00.

61 Soil Bacteriology 5 credits F
A study of the microbial flora of agricultural soils, and of the biochemical changes which such organisms induce. P, 30. Laboratory fee $3.00; deposit $2.00.

142 Principles of Infection and Immunity 5 credits W
A study of bacterial infection, antibodies, vaccines and blood typing. P, 41. Mr. Grismer. Laboratory fee $4.00; deposit $2.00.

143 The Pathogenic Bacteria 5 credits S
Morphological and cultural characteristics of the bacterial organisms which cause man's most important diseases. P, 142. Mr. Grismer. Laboratory fee $3.00; deposit $2.00.

152 Virus and Rickettsial Diseases 3 credits W
Some attention is given to pathogenic fungi as well as to the disease type mentioned. P, 142. Mr. Grismer.

160 Bacteriological Problems Credit arranged FWS
Individually assigned problems in bacteriology, mycology or immunology. An introduction to research techniques. Admission upon recommendation of the instructors. Mr. Grismer. Laboratory fee $2.00 (not collected if the problem does not require work with laboratory equipment); deposit $1.00 for each credit hour.

170 Seminar 1 credit each term FWS
Presentation of original research and of papers on current developments in bacteriology. Open to advanced students of bacteriology and related fields. Staff and advanced students.

260 Graduate Research Credit arranged FWS
Open to graduate students who are prepared to pursue a problem independently with a minimum of supervision. Admission upon recommendation of the research direcotr. Mr. Grismer. Laboratory fee $2.00 (not collected if the problem does not require work with laboratory equipment); deposit $1.00 for each credit hour.

Curriculum in Technical Agriculture, Bacteriology Major

Leading to the degree of Bachelor of Science in Agriculture **(See page 32)**

See Bacteriology Curriculum in Division of Geenral Science

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
Orientation, 1ab	½	½	
English Comp., Engl 1abc	3	3	3
College Algebra, Math 10	5		
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, Bot 10abc	4	4	4
Crop Production, Agron 1		5	
Elements of Dairying, DH 1			5
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
Introd. to Literature, Engl 20	3		
Advan. Composition, Engl 42			3
Extempore Speaking, Sp 22			3
Elemen. Organic Chem., Ch 21	5		
Principles of Sociology, RS 20		5	
Princi. of Economics, AgEc 20			5
Elementary Psychology, Psy 25		3	
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
General Horticulture, Hort 20	3		
Gener. Poultry Culture, PH 20		3	
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	17	17	17

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Element. Bacteriology, Bac 41	5		
Microbiology of Water and Sewage, Bac 46		4	
Principles of Infection and Immunity, Bac 142		5	
Pathogenic Bacteria, Bac 143			5
General Physics, Phy 21abc	4	4	4
Agricultural Chemistry, Ch 41	5		
Parasitology, Z 41			3
Elective	4	5	6
	18	18	18

Senior Year	Fall	Winter	Spring
Bacteriology Seminar, Bac 160	1	1	1
Soil Bacteriology, Bac 61	5		
Virus and Rickettsial Diseases, Bac 152		3	
Dairy Bacteriology, DH 141		5	
Adv. Dairy Bacteriol., DH 162			3
Contgaious Disease, Vet 41			3
Gen. Plant. Pathology, Bot 45	5		
Soils, Agron 25ab	3	3	
Geology, Agron 171			4
**Elective*	4	6	7
	18	18	18

*Students who expect to continue the study of bacteriology at the graduate level should include among their junior and senior elective courses a minimum of two year-courses in French and German. Those who expect to teach biology or health subjects in the secondary schools should include among their electives such courses in the department of Education as are required for teacher certification.

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR: Bac 41, 46, 142, 143, 160, and additional Bacteriology electives to total at least 36 credits. Such electives may be chosen from offerings of other departments if they are approved as being directly pertinent to a bacteriology sequence.
MINOR: Bac 41, 142, 143, and additional electives to total at least 24 credits.

Dairy Husbandry (DH)

Professor Kelly, Associate Professor Breazeale, Mr. Totman

The Dairy Husbandry Department offers two dairy majors in the four-year collegiate General Agriculture curriculum, and a three-month creamery course.

The dairy majors have been outlined with the special view of fitting young men as teachers in college, Smith-Hughes high schols, research workers in colleges and commercial plants, federal, state and municipal inspectors of dairy products, government service, county agents, dairy farmers, dairy plant owners, operators and employees.

A major may be chosen in either dairy production or dairy manufactures or both.

The students who major in the Dairy Husbandry Department are encouraged and assisted to get at least six months of practical work in a dairy plant or on a dairy farm, depending on whether they major in dairy production or dairy manufactures.

See Special and Secondary courses for description of three-month Dairy Courses.

The Dairy Husbandry Department operates on a commercial basis a well equipped creamery in which butter, cheese, and ice cream are manufactured throughout the year. The department occupies a two-story brick building. On the first floor are the engine room, creamery rooms with full equipment for butter, cheese, and ice cream making, refrigerating rooms, locker rooms, and the large laboratory used for instructional purposes. On the second floor are located class room, office, dairy bacteriology laboratory, chemistry research laboratory, and reading room.

The dairy herd, which consists of representatives of the dairy principal breeds, affords an excellent opportunity to become acquainted with dairy types. The dairy barn is large and well equipped. Milking machines are in daily use, thus affording students opportunity to acquire practical knowledge regarding their operation and care.

Experiments relating to feeding, breeding and care of dairy stock and the manufacture of dairy products are in progress at all times. Students may have the advantage of keeping in touch with these experiments note the manner of outlining and executing investigational work, and profit from results. Advanced students may arrange to assist in some of this work.

JUNIOR COLLEGE

1 Elements of Dairying 5 credits S

A survey course including the study of the various phases of dairy production and dairy manufactures. Deposit $1.00.

20 Dairy Cattle and Products Judging 2 credits S

The judging of the major breeds of dairy cattle with special emphasis on the standard score card. The judging of dairy products by U.S.D.A. score cards. The Staff. Deposit $1.00.

21 Dairy Management 3 credits S

The study of costs and management problems pertaining to the dairy farm, dairy buildings and equipment, dairy cattle, and dairy products.

22 Dairy Inspection 3 credits S

The various chemical, biochemical, bacteriological tests used in the technical control of dairy products; U.S.D.A. score cards for the inspection of milk, milk plants and dairy farms. P, 1. Laboratory fee; deposit $2.00.

SENIOR COLLEGE

141 Dairy Bacteriology 5 credits W

The types of micro-organisms found in milk, sources of contamination; milk fermentation; sanitary aspects of pasteurization; practical application of methods for bacteriological examination of milk and milk products. P, Bac 30. Laboratory fee $2.00; deposit $2.00.

142 Dairy Breeds 3 credits F

History and development of the leading dairy breeds; breeding and selection of breeding stock based upon production records, show-ring records and pedigrees. P, 1, Z 42.

143 Condensed Milk Products 3 credits F

The manufacture of condensed milk, powdered milk, casein and lactose; defects in condensed milk products, their causes and preventions; history and statistics in the industry. P, 1, 22, 141. Mr. Totman.

144 Manufactures of Cheese 4 credits F

The constitutents of milk with special reference to cheese making; manufacture of hard and soft cheese, principles involved in processing, curing, and marketing of cheese; food value, history and statistics of the cheese industry. P, 1, 22, 141,150. Mr. Totman.

145 Manufacture of Butter 4 credits S

Receiving, sampling, and grading of cream, preparation and use of starter; pasteurization, neutralization, and ripening of cream. Principles of churning, grading, and marketing of butter; mechanical refrigeration, types and suitability of creamery equipment. Food value, history and statistics of the butter industry. P, 1, 22, 141, 150. Deposit $2.00. Mr. Totman.

146 Manufacture of Ice Cream, Sherbets, and Ices 4 credits S

Ice cream mixes, preparation, and processing; freezing, hardening, storage, and transportation of ice cream; the effects of various ingredients of the mix on yield, freezing and quality of ice cream. Refrigeration and ice cream equipment, food value, history and statistics of ice cream. P, 1, 141, 150. Deposit $2.00. Mr. Totman.

147 Market Milk 3 credits W

The sanitary production and processing of milks; factors affecting quality; methods of buying and distribution of market milk with special attention to the small city milk plant; milk inspection and standardization. P, 1, 22, 141, 150. Deposit $2.00. Mr. Totman.

148 Advanced Judging of Dairy Cattle 1 and 2 credits F

Judging of dairy cattle in the college herd and trips to nearby breeding establishments. The course will usually include participation in the National Collegiate Cattle Judging Contest. The credits determined by the time devoted to judging each year. P, 20. The Staff.

149 Advanced Judging of Dairy Products 1 or 2 credits F

Judging of butter, cheese, milk, and ice cream according to the U.S.D.A. score cards. The course will usually include a trip to the National Collegiate Products Judging Contest. Credit determined by time devoted to practice judging. Deposit $2.00. The Staff.

150 Dairy Chemistry 5 credits F

The physical, colloidal and chemical properties of milk; nutritional value of milk constituents; methods used in the manufacture, processing and handling of dairy products. P, 1, Ch 21. Laboratory fee $2.00; deposit $2.00.

160 Dairy Plant Operation 3 credits S

Buying, processing, advertising and marketing dairy products; types of business, profits, wages, costs of operation. Building plans, machinery, refrigeration, sewage disposal, boilers. P, 1, 22. Mr. Totman.

162 Advanced Dairy Bacteriology 3 credits S

A continuation of Dairy 141. The role of micro-organisms in the manufacture of butter, cheese, ice cream, and condensed milk; the numbers and types concerned; the preparation and study of fermented milks and starters; the isolation of common types of micro-organisms found in milk. P, 141. Laboratory fee $2.00, deposit $2.00. Mr. Breazeale.

163 Milk Secretion 3 credits F

A discussion of the anatomy and physiology of the udder; the function of the hormones in milk secretions, factors affecting the quality and quantity of milk. P, 1. Mr. Kelly.

164 Dairy Cattle Nutrition 5 credits W

The utilization of nutrients, the evaluation of feeds, and the determination of nutritive requirements with applications to dairy cattle feeding. P, 1, Ch 41, Vet 20. Mr. Kelly.

166abc Dairy Seminar 1 credit each term FWS

The study and review of scientific literature on various phases of the dairy industry; writing and reporting of same. P, senior standing.

167 Dairy Problems 1 to 3 credits FWS

Special problems in the field of dairying. For advanced students only. P, junior or senior standing. The Staff.

267 Dairy Research 3 to 9 credits FWS

A digest of recent research work on problem chosen; research work, references and reports. P, graduate standing. Number of credits as arranged. The Staff.

268 Thesis 5 to 8 credits WS

The thesis must comply with the regulations of the graduate committee. Number of credits as arranged. The Staff.

Curriculum in Technical Agriculture, Dairy Production Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Inorganic Chem., Ch 1c; or Physics, Phy 1c			4
General Zoology, Z 20ab	4	4	
College Algebra, Math 10		5	
Elements of Dairying, DH 1			5
Dairy Cattle and Products Judging, DH 20			2
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective	5		2
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
English and Speech, Sp 22	3	3	3
General Bacteriology, Bac 31		4	
General Botany, Bot 1 ab	4	4	
Agricultural Chemistry, Ch 41		5	
Prin. of Economics, AgEc 20			5
Organic Chemistry, Ch 21	5		
Dairy Management, DH 21			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	5	1	5
	19	19	18

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Genetics, Z 42	3		
Dairy Breeds, DH 142	3		
Dairy Bacteriology, DH 141		5	
Milk Secretion, DH 163		3	
Advanced Judging of Dairy Cattle, DH 148	2		
Market Milk, 147		3	
Elective	9	6	17
	17	17	17

Senior Year	Fall	Winter	Spring
Dairy Seminar, DH 166abc	1	1	1
Dairy Cattle Nutrition, DH 164		5	
Elective	16	11	16
	17	17	17

Suggested electives in the Junior College.

General Horticulture, Hort 20 — 3 cr. S
Physics, Phy 1c or 21c — 4 cr. S
General Poultry Culture, PH 20 — 3 cr. S
Agricultural Engineering, AE 24 — 3 cr. S
Types and Classes, AH 1 — 5 cr. F
Farm Meats, AH 22 — 3 cr.
Breeds of Livestock, AH 20ab — 6 cr.
Forage Crops, Agron 20 — 3 cr. W
Veterinary Anatomy and Physiology, Vet 20 — 5 cr. FW
Soils, Agron 25ab — 3 cr. FW
Dairy Inspection, DH 22 — 3 cr. S
Principles of Sociology, RS 20 — 5 cr. S
General Mechanics, AE 23 — 5 cr. W
Field Crops, Agron 1 — 5 cr. W

Suggested Electives in the Junior and Senior Years.

Veterinary Hygiene, Vet 40 — 3 cr. F
Contagious Diseases, Vet 41 — 3 cr. S
Applied Embryology, Vet 42 — 2 cr. S
Farm Record, AgEc 25 — 3 cr. W
Farm Management, AgEc 38 — 3 cr. W
Principles of Marketing, AgEc 55 — 5 cr. W
Statistical Methods, AgEc 141a — 4 cr. F
Seed Inspection, Agron 40 — 3 cr. F
Livestock Feeding, AH 41ab — 3 cr. WS
Human Physiology, Z 22 — 3 cr. S
General Agricultural Entomology, Z 20 — 5 cr. S
Egg and Poultry Marketing, PH 157 — 5 cr. S
Poultry Nutrition, PH 159 — 5 cr. S
Livestock Marketing, AH 166 — 3 cr. S
American Government, Hist 44 — 4 cr. FS
History of Agriculture, Hist 28 — 4 cr. W
Dairy Problems, DH 167 — 1-3 cr. FWS

Curriculum in Technical Agriculture, Dairy Manufacture Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
Elements of Dairying, DH 1			5
General Botany, Bot 1ab	4	4	
Orientation, 1ab	½	½	
College Algebra, Math 10		5	
Dairy Cattle and Prod., DH 20			2
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective	4		2
	17½	18½	18

Sophomore Year	Fall	Winter	Spring
English Electives and Speech, Sp 22 (See footnote p. 33)	3	3	3
Organic Chemistry, Ch 21	5		
General Bacteriology, Bac 30		4	
Dairy Inspection, DH 22			3
General Zoology, Z 20ab	4	4	
Prin. of Economics, AgEc 20			5
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	4	5	5
	18	18	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Dairy Chemistry, DH 150	5		
Dairy Bacteriology, DH 141		5	
Manufactu. of Butter, DH 145			4
Advanced Judging of Dairy Products, DH 149	2		
Market Milk, DH 147		3	
Elective	10	9	13
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Dairy Seminar, DH 166abc	1	1	1
Manufact. of Cheese, DH 144	4		
Cond. Milk Products, DH 143	3		
Manuf. of Ice Cream, DH 146			4
Dairy Plant Operation, DH 160			3
Elective	9	16	9
	17	17	17

Suggested electives in Freshman and Sophomore years.

General Horticulture, Hort 20 ..... 3 cr. S
Trigonometry, Math 11 ..... 5 cr. WS
Development of Civilization, RS 1 ..... 4 cr. FW
General Physics, Phy 1abc ..... 12 cr. FWS
Principles of Accounting, AgEc 35ab ..... 8 cr. FW
General Poultry Culture, PH 20 ..... 3 cr. FW
Principles of Sociology, RS 20 ..... 5 cr. FWS
Soils, Agron 25ab ..... 6 cr. FW
General Mechanics, AE 23 ..... 3 cr. W
Gravimetric Anaylsis, Ch 23 ..... 4 cr. FW
Volumetric Analysis, Ch 24 ..... 4 cr. S
Stoichiometry, Ch 28ab ..... 2 cr. WS

Suggested Electives in Junior and Senior Years.

Microbiology of Water and Sewage, Bac 46 ..... 4 cr. W
The Pathogenic Bacteria, Bac 142 ..... 5 cr. W
Principles of Marketing, AgEc 55 ..... 5 cr. W
Financial Organization, AgEc 48 ..... 4 cr. FW
American Government, Hist 44 ..... 4 cr. FW
Advertising, PRJ 50 ..... 3 cr. WS
Egg and Poultry Marketing, PH 157 ..... 3 cr. F
Genetics, Z 42 ..... 3 cr. F
History of Agriculture in United States, Hist 28 ..... 4 cr. W
Statistical Methods, AgEc 141a ..... 4 cr. F
Business Psychology, Ed 168 ..... 3 cr. S
Human Physiology, Z 22 ..... 3 cr. FWS
Dairy Problems, DH 167 ..... 1-3 cr. FWS

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR IN DAIRY MANUFACTURE: DH 1, 40, 20, 141, 150, 145, 143, 144, 146, 147, 160, 166.
MAJOR IN DAIRY PRODUCTION: DH 1, 20, 40, 142, 141, 150, 21, 147, 163, 166.

Entomology-Zoology (Ent, Z)

Professor Severin, Assistant Professors Spawn, Hartwig

Subjects offered by the Entomology-Zoology Department are planned to meet the needs of three classes of students: first, those who wish to major or minor in entomology, in zoology, in wildlife techniques and conservation or in any two of these fields; second, those who must have a fundamental training in the work of this department in order that they may pursue certain branches of study, such as animal husbandry, horticulture, veterinary medicine, home economics, pharmacy, medicine, dentistry, nursing, etc.; third, those who desire merely to acquire a knowledge of the fundamental facts and principles of zoology and entomology.

The work of this department is conducted by means of lectures, recitations, laboratory and field work. The student is thus afforded not only an opportunity to gain familiarity with the principles and theories discussed in the class room, but is also encouraged to put these theories to the test and verify the principles in the field.

The laboratories are well supplied with apparatus and illustrative materials. The apparatus includes compound microscopes, binocular microscopes, dissecting microscopes, camera lucidas, paraffin baths, incubators, microtomes, physiology apparatus, photographic apparatus, spray machinery and accessories, dusting machinery, etc. As illustrative materials, in addition to the general museum and entomological collections, there is a large series of charts, skeletons, formalin and alcoholic preparations, models, lantern slides, microscopic preparations, a line of insecticides and fungicides, a collection of approximately 1,000 Riker mounts illustrating the life cycle of injurious insects, etc.

Zoology (Z)

JUNIOR COLLEGE

20ab General Zoology 4 credits each term FW

The fundamental principles of animal morphology, physiology, reproduction, embryonic development, genetics, classification, ecology, geographic distribution, paleontology and evolution; limited study of the life histories of various types of animals, especially those of major economic importance. Mr. Severin. Laboratory fee $1.00, deposit $1.00 a term.

21ab Physiology for Pharmacy Students
4 credits each term FW

Fundamental physiological processes are studied from the viewpoint of the pharmacist. Frogs and domesticated animals are used in the physiological experiments when it is impossible or impractical to use the human being. Kymographs, sphygmographs, haemocytometers, histological slides, anatomical models, etc., are also used. Miss Hartwig. Laboratory fee $1.00, deposit $1.00 a term.

22 Human Physiology 4 credits S

The fundamental physiological processes of the human body. Kymographs, sphymographs, haemocytometers, etc., are used in some of the physiological studies. P, 20ab. Miss Hartwig. Laboratory fee $1.00, deposit $1.00.

23 Birds 3 credits S

Identification of common song, game, and non-game birds; life histories, habits and special structural adaptations of various groups. Particular attention is given to the birds of eastern South Dakota. Laboratory fee $.50, deposit $1.00.

40abc Invertebrate Zoology
3 credits each term FWS

A general survey of all the phyla of invertebrate animals with emphasis upon the morphology, ecology, and economic importance of important representatives of each phylum. Considerable time is devoted to field work in this course. P, 20ab. Mr. Severin. Laboratory fee $1.00, deposit $1.00 a term.

SENIOR COLLEGE

41 Parasitology 3 credits S

The chief worm and protozoan parasities of domestic animals and man, their habits, life histories and economic importance; the course should be preceded by Veterinary and Medical Entomology (see Ent 60): P, 20. Miss Hartwig. Laboratory fee $.50, deposit $1.00.

42 Genetics 3 credits F

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

43 Techniques in Wildlife Management
3 credits F

Methods of preparation of museum skins and study mounts of birds and mammals; food analysis, census methods, collections of data, cover type mapping, and literature. P, 20ab. Offered in alternate years. Not given in 1945-46. Laboratory fee $.50, deposit $1.00.

44 Fishes 3 credits W

Identification of common species of game and soft fishes; life histories, habits, general management, economic and recreational importance, conservation and laws. Special reference to fishes of North Central States. Offered in alternate years. Not given in 1945-46. P, 20ab. Laboratory fee $.50, deposit $1.00.

45 Game Birds and Mammals 3 credits W

Identification of game birds and mammals, particularly fur-bearing, with special reference to those of the North Central States. Life histories, habits, general management, game laws, economic and recreational importance of the various species. P, 20ab. Offered in alternate years. Not given in 1945-46. Laboratory fee $.50, deposit $1.00.

60 Organic Evolution 3 credits S

The fundamentals of the doctrine of organic evolution. Evidence in support of the doctrine is discussed from comparative animal morphology, comparative physiology, comparative embryology, paleozoology, animal taxonomy, geographic distribution, experimental genetics and blood tests. P, 20ab. Mr. Severin.

150 Wildlife Management 3 credits F

A general knowledge of wildlife management with special reference to game birds. Wildlife management with various land uses and conservation practices. Federal and State game laws; recent trends in legislation; field work planning for wildlife management; and refuge development, maintenance and administration. P, 43. Offered in alternate years. Not given in 1945-46. Laboratory fee $.50, deposit $1.00.

161ab Vertebrate Zoology 3 credits each term FW

Vertebrates, their morphology, physiology, probable origin and relationships. The laboratory work consists of a study of the morphology of a fish, amphibian, reptile, bird and mammal. Offered in alternate years. Not given in 1945-46. Miss Hartwig, Laboratory fee $1.00, deposit $1.00 per term.

162ab Vertebrate Embroyology
3 credits each term WS

The male and female germ cells, fertilization, cleavage, development, origin of the germ layers and initiation and growth of the systems of organs. The pig and chicken furnish laboratory material. Offered in alternate years. Given in 1945-46. Miss Hartwig. Laboratory fee $1.00, deposit $1.00 a term.

163ab Animal Ecology 3 credits each term WS

The adjustments and responses of organisms or groups of organisms to factors in the environment. An ecological study of marine animals, fresh water animals and terrestrial animals. P, 20ab. Offered in alternate years. Not given in 1945-46.

164ab Vertebrate Histology
4 credits each term FW

Microscopic anatomy and microtechnique methods include the preparation by the student of a large number of microscopic slides. Part of the course consists of the study of tissues from these preparations. P, 20ab. Miss Hartwig. Laboratory fee $1.00, deposit $1.50 a term.

165abc Seminar in Entomology and Zoology
1 credit each term FWS

Assignments of research literature upon an assigned subject and the reports upon such assignments. Mr. Severin.

201 Special Problems in Zoology
3 to 5 credits FWorS
Qualified students may investigate a special zoological problem under a supervising instructor. Staff.

202 Zoological Literature 3 credits F
Study of important literature and authors; preparation and use of bibliographies; methods of finding published materials. Offered in alternate years. Not given in 1945-46. Mr. Severin.

203 Thesis in Zoology 7 to 10 credits FWS
Required of all graduate majors. The investigational work must be carried on throughout three terms. Staff.

Entomology (Ent)

JUNIOR COLLEGE

20 General Agricultural Entomology 5 credits S
A general course adapted to students of agriculture. Brief study of morphology and physiology of insects followed by a study of the various types of mouth parts of insects, their metamorphosis, reproduction and development. Insecticides, spraying and dusting machinery and the major insect pests of South Dakota. Laboratory fee $1.00, deposit $1.00.

40 Field Crop Entomology 3 credits W
Insects injurious to field crops; their recognition, life cycle, and control. Laboratory study includes apparatus for control of pests. Offered in alternate years. Given in 1945-46. Laboratory fee $.50, deposit $.50.

SENIOR COLLEGE

41 Orchard Entomology 3 credits S
The life history, recognition and control of insect and mite pests of fruit-producing plants. Spraying and dusting apparatus and preparation and application of insecticides. Offered in alternate years. Not given in 1945-46. Laboratory fee $.50, deposit $.50.

42 Garden Entomology 3 credits F
The insect and mite pests of vegetable-garden crops, their life cycle, injury and control. Offered in alternate years. Not given in 1945-46. P, 20. Laboratory fee $.50, deposit $.50.

43ab External and Internal Insect Morphology
3 credits each term FW
External and internal morphology of representative insects. Offered in alternate years. Not given in 1945-46. Mr. Severin. Laboratory fee $.50, deposit $.50.

44ab Taxonomy of Insects 3 credits each term FW
A general course in classification of insects. Emphasis on characteristics used in identifying all orders and many families of Insects. Each student makes insect collection, properly mounts and identifies the specimens. Laboraory fee $1.00, deposit $1.00 each term.

45 Entomology for Pharmacy Students 3 credits S
The pharmacist by law is a licensed dispenser of poisons and may be called upon to recommend controls for insect pests. A study of insect morphology, recognition of common insects pests, life histories, behavior, and control through insecticides; house fumigation. Laboratory fee $.50, deposit $1.00.

60 Veterinary and Medical Entomology
3 credits W
The injurious insects, mites and ticks which affect domestic animals and man and the part they play in the transmission of disease. P, 20 or its equivalent. Laboratory fee $.50, deposit $.50.

61 Principles of Beekeeping 3 credits S
The general principles of modern beekeeping. The habits and life history of bees, care of the apiary throughout the year, production and marketing of honey and commercial methods of honey production. Laboratory fee $.50, deposit $1.00.

161 Insectary Methods 3 credits F
Methods of rearing insects under laboratory, greenhouse and outdoor conditions. Each student is assigned one or more species of insects to rear. P, all sophomore and junior subjects in Entomology listed in the required work under major in Entomology. Mr. Severin. Laboratory fee $.50, deposit $1.00.

162 Taxonomy of Insects 3 credits F
A axaonomic study of a group of insects; classification of the species and varieties. The student prepares a report in which he gives a technical description of the family, genera, species and varieties, the food habits of the species, keys to the genera and species, and bibliography consulted. P, 20, 43ab. Mr. Severin.

163 Insecticides 3 credits W
The history, preparation, application and toxicology of insecticides. The Natoinal Insecticide Law and the South Dakota Drug Act are reviewed. A number of lectures are given by members of the staff of the Department of Chemistry and the Division of Pharmacy. P, 20 or 45.

201 Special Problems in Entomology
3 to 5 credits FWorS
Qualified students may investigate a special entomological problem under a supervising instructor. Staff.

202 Principles of Taxonomy 1 credit W
The fundamental principles of taxonomy; systems of classification, taxonomic categories, international code of zoological nomenclature, code of nomenclature, pre-Linnaean nomenclature, binominal nomenclature, modern nomenclature, conceptions and criteria of subspecies and genera, laws of priority, types, publication, modern tendencies in taxonomy and professional ethics. Offered in alternate years. Not given in 1945-46. P, 20, 43ab. Mr. Severin.

203 Entomological and Zoological Literature 3 credits W

Study of important literature and authors; preparation and use of bibliographies. Offered in alternate years. Not given in 1945-46. Mr. Severin.

204 Wing Venation 3 credits W

Details of wing venation of insects for use in insect taxonomy and in study of evaluating processes. P, all subjects listed for an undergraduate major in Entomology or their equivalent. Offered in alternate years. Not given in 1945-46.

205 Thesis in Entomology 7 to 10 credits FWS

A thesis on a suitable problem in partial fulfillment of the requirements for the master's degree. Staff.

Curriculum in Technical Agriculture, Zoology Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

See Zoology Curriculum in Division of General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Inor. Qualitative Analy., Ch 1c			4
College Algebra, Math 13			5
General Zoology Z 20ab	4	4	
Human Physiology, Z 22			4
Orientation, 1ab	½	½	
Animal Science Option			
a. *Types and Market Classes of Livestock*, AH 1			
b. *Elements of Dairying*, DH 1			
c. *Gen. Poultry Culture*, PH 20			
Plant Science Option			
a. *Crop Production*, Agron 1			
b. *Gen. Horticulture*, Hort 20			
Elective (From Animal and Science Options above)	3/5	3/5	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	17/19	16/18	18

Sophomore Year	*Fall*	*Winter*	*Spring*
English (see footnote p. 33)	3	3	
Extempore Speaking, Sp 22		3	
Elemen. Organic Chem., Ch 21	5		
General Botany, Bot 10abc	4	4	4
Invertebrate Zoology, Z 40abc	3	3	3
General Bacteriology, Bac 30			4
Social Sceince Option			
a. *Prin. of Economics*, AgEc 20			
b. *Prin. of Sociology*, RS 20			
Elective (From Social Science Options above)		5	
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective			5
	17	15	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Veterinary Anatomy and Physicology, Vet 20		5	
Genetics, Z 42	3		
Organic Evolution, Z 60			3
Vertebrate Zoology, Z 161ab	3	3	
Diseases of Poultry, Vet 101	3		
Contagious Diseases, Vet 41			3
Gener. Plant Pathology, Bot 45	5		
Elective	5	9	11
	19	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Parasitology, Z 41	3		
Vertebrate Embryolo., Z 162ab	3	3	
Vertebrate Histology, Z 164ab	4	4	
Veterinary and Medical Entomology, Ent 60		3	
Geology, Agron 171			5
Seminar, Z 165abc	1	1	1
Elective	6	6	11
	17	17	17

Prescribed courses are in Roman type, elective and optional courses are in *Italic type*.

MAJOR: Z 20ab, 22, 40abc, 61, 60, 161ab, 164ab, Ent 60.
MINOR: Z 20, 22, 42, and additional electives in Zoology to total 20 credits.

Curriculum in Technical Agriculture, Entomology Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

See Entomology Curriculum in Division of General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
College Algebra, Math 13			5
General Zoology, Z 20ab	4	4	
Gen. Agr. Entomology, Ent 20			5
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Animal Science Option			
a. *Types and Market Classes of Livestock*, AH 1			
b. *Elements of Dairying*, DH 1			
c. *Gen. Poultry Culture*, PH 20			
d. *Veterinary Anatomy and Physiology*, Vet 20			
Plant Science Option			
a. *Crop Production*, Agron 1			
b. *Gen. Horticulture*, Hort 20			
Elective (From Animal and Plant Science Options above)	3/5	3/5	5
	16/18	16/18	20

Sophomore Year	*Fall*	*Winter*	*Spring*
English (See footnote p. 33)	3	3	
Extempore Speaking, Sp 22			3
Elemen. Organic Chem., Ch 21	5		
Taxonomy of Insects, Ent 44ab	3	3	
General Botany, Bot 10abc	4	4	4
General Bacteriology, Bac 30			4
Field Crops Entomolo., Ent 40		3	
Social Sceince Option			
a. *Prin. of Economics,* AgEc 20			
b. *Princip. of Sociology,* RS 20			
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective (From Social Science Option above)		3	5
	17	18	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Genetics, Z 42	3		
External and Internal Insect Morphology, Ent 43ab	3	3	
Vet. and Med. Entom., Ent 60		3	
Beekeeping, Ent 61			3
Contagious Diseases, Vet 41			3
Veterinary Hygiene, Vet 40	3		
Parasitology, Z 41			3
Soils, Agron 25ab	3	3	
Diseases of Poultry, Vet 101	3		
Elective	3	8	8
	18	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Insectory Methods, Ent 161	3		
Vertebrate Histology, Z 164a		4	
Insecticides, Ent 163		3	
Seminar, Z 165abc	1	1	1
Elective	13	9	16
	17	17	17

Prescribed courses are in Roman type, **elective and optional courses are in** *Italic type.*

MAJOR: Ent 20, 40, 44ab, 43ab, 60, 61, 161.
MINOR: Ent 20, 40, 44ab, 60, and additional electives in Entomology to total 20 credits.

Curriculum in Technical Agriculture, Wild Life Major

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Inor. Qualitative Analy., Ch 1c			4
General Zoology, Z 20ab	4	4	
Orientation, 1ab	½	½	
College Algebra, Math 13			5
Animal Science Option			
a. *Types and Market Classes of Livestock,* AH 1			
b. *Elements of Dairying,* DH 1			
c. *Poultry Culture,* PH 20			
Plant Science Option			
a. *Crop Production,* Agron 1			
b. *Gen. Horticulture,* Hort 20			
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective (From Animal and Plant Science options above)	3/5	3/5	5
	16/18	16/18	19

Sophomore Year	*Fall*	*Winter*	*Spring*
English (See footnote p. 33)	3	3	
Extempore Speaking, Sp 22			3
Elemen. Organic Chem., Ch 21	5		
General Bacteriology, Bac 30		4	
Birds, Z 23			3
Botany, Bot 10ab	4	4	
Woody Plant Material, Hort 22			3
Farm Forestry, Hort 41	2		
Wildlife courses to be taken if offered			
a. *Techniques in Wildlife Management,* Z 43 (altern. yrs.)			
b. *Fishes,* Z 44 (alternate yrs.)			
c. *Game Birds and Mammals,* Z 45 (alternate years)			
Social Sceince Option			
a. *Prin. of Economics,* AgEc 20			
b. *Prin. of Sociology,* RS 20			
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective (From Wildlife courses and Social Science options above)	3	5	5
	19	18	16/19

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Parasitology, Z 41			3
Invertebrate Zoology, Z 40ac	3		3
Diseases of Poultry, Vet 101	3		
Soils, Agron 25ab	3	3	
Wildlife courses to be taken if offered			
a. *Techniques in Wildlife Management,* Z 43 (Altern. yrs.)			
b. *Fishes,* Z 44 (alternate years)			
c. *Game Birds and Mammals,* Z 45 (alternate years)			
d. *Wildlife Management,* Z 150 (alternate years)			
Elective (From Wildlife courses mentioned above and from appended list in footnote and other approved courses)	8	14	11
	17	17	17

Senior Year	Fall	Winter	Spring
Vertebrate Zoology, Z 161ab (alternate years) or	3	3	
Vertebrate Embryology, Z 162ab (alternate years)	3	3	
Wildlife Management, Z 150	3		
Elective (From appended list in footnote and other approved courses)	8	14	11
	17	17	17

Prescribed courses are in Roman type, elective and optional courses are in *Italic type.*

MAJOR: Courses 20ab, 23, 40ab, 41, 43, 44, 45, 150, 161 or 162ab.
MINOR: Courses 20ab, 23, 43, 44, 45, 150.

Suggested Electives in Junior and Senior Years.

Genetics, Z 42
Organic Evolution, Z 60
Animal Ecology, Z 163ab
Vertebrate Histology, Z 164a
General Agricultural Enotmology, Ent 20
Field Crops Entomology, Ent 40
Taxonomy of Insects, Ent 44ab
Veterinary and Medical Entomology, Ent 60
Veterinary Anatomy and Physiology, Vet 20
Veterinary Hygiene, Vet 40
Contagious Diseases, Vet 41
Elementary Physics, Phy 1abc
Engineering Drawing and Plans, AE 22
Farm Machinery, AE 34

Horticulture (Ho)

Associate Professor McCrory, Professor Emeritus Hansen, Instructor Yager

The horticulture program offers a general training in the fundamentals of fruit production, vegetable gardening, and landscape gardening. In addition to the departmental gardens the extensive research program in fruit breeding, hardy ornamentals and shrubs, and the vegetable improvement program offers opportunity for field study. Greenhouse facilities are available for students to gain practical experience with forcing problems. Students who major in horticulture gain practical experience if they serve as student assistants during the summer months.

Students who select horticulture as a major field of study should plan a well balanced program. A knowledge of related subjects such as botany, chemistry, entomology, and soils is essential. Students who expect to enter some general agricultural work may elect courses in this department. Courses are designed for this need.

Horticultural graduates find employment in nurseries, seed houses, fruit and vegetable production, and floriculture. Recently the processing of fruits and vegetables by canning, dehydrating and freezing has increased the demand for those trained in horticulture. Government and experiment stations also afford desirable employment.

JUNIOR COLLEGE

20 General Horticulture 3 credits F
The general principles of fruit growing and vegetable gardening; the planting and care of home grounds.

22 Woody Plant Materials 3 credits S
Indentification, classification, and characteristics of hardy evergreen and deciduous trees, shrubs, and woody vines.

23 Timber Preservation 3 credits W
Covering such items as seasoning and durability of woods, kiln drying and the methods of preserving railroad ties, timbers, paving blocks, poles and posts.

SENIOR COLLEGE

40 Floral Decorations 2 credits W
Principles and methods of cut flower arrangement and design; interior decoration; exhibiting and judging flowers and plants. Laboratory work receives much emphasis.

41 Farm Forestry 2 credits W
Planting and maintenance of farm windbreaks, shelterbelts and groves; harvesting and utilization of farm woodlot products.

43 Small Fruit Culture 2 credits F
Principles and practices for the successful culture of small fruits and grapes. Much consideration is given to the growing conditions found in South Dakota. P, 20. Given in alternate years; not given in 1944-45.

45 Plant Propagation 2 credits S
Commercial methods and theories of propagating plants by seeding, cutting, layering, and grafting. Given in alternate years; given in 1943-44.

48 Garden Flowers 2 credits S
The common annual, biennial, and perennial flowers; their culture and arrangement in the garden. Given in alternate years; given in 1944-45.

49abc Horticulture Seminar 1 credit FWS
The study of scientific work pertaining to horticulture. Required of horticulture majors; each student limited to 3 credits.

147 Landscape Gardening 5 credits F
Planting and maintenance of the home grounds. Much field work given to a study of plant materials. An introduction to the drafting of planting plans.

160ab Orcharding 3 credits WS
The principles of fruit production, soils, moisture, fertility, temperature, nurserystock, fruit formation, fruit setting and pruning factors. P, 20. Given in alternate years; not given in 1944-45.

161 Vegetable Gardening 3 credits S

Methods employed by home gardeners and truck farmers in vegetable production. P, 20. Given in alternate years; given in 1944-45.

162 Systematic Pomology 3 credits F

Origin, history and relationship of economic fruits. Practice in the description, identification and classification of fruits, and in exhibiting and judging fruits. P, 20. Given in alternate years; not given in 1944-45.

163 Literature of Horticulture 3 credits F

The study of the literature and development of horticulture. Given in alternate years; given in 1944-45.

164 Greenhouse Management 3 credits W

Studies deal with construction, heating and management of the greenhouse. Laboratory work gives actual experience in forcing practices. Given in alternate years; given in 1944-45.

165 Landscape Architecture 3 credits W

Landscape composition, civic art, advanced composition. Solution of problems in landscape gardening. City planning, rural and town improvement. P, 147.

166 Horticulture Crop Breeding 2 credits S

Application of the principles of genetics and cytology to the improvement of horticultural crops. P, Z 42.

167 Experimental Horticulture 3 credits W

Principles, methods, equipment, organization, and applications of horticultural research. P, graduate standing.

168abc Horticulture Problems 2 credits FWS

Special investigation for undergraduate students. Thesis required. Each student limited to six credits.

200abc Graduate Conference 1 credit FWS

Required of all graduate students majoring in Horticulture. This includes the organization of data relative to a research problem in Horticulture.

201abc Research 2 credits FWS

Required of all graduate students majoring in Horticulture. This includes the gathering of data relative to the research problem in Horticulture.

202abc Thesis 2 credits FWS

Before a final grade is given in Hort 200, 201, and 202, a thesis representing original research work must be submitted in partial fulfillment of the Master's degree in Horticulture.

Curriculum in Technical Agriculture, Horticulture Major

Leading to the degree of Bachelor of Science in Agriculture **(See page 32)**

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
Orientation, 1ab	½	½	
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, Bot 10abc	4	4	4
College Algebra, Math 13	5		5*
General Horticulture, Hort 20			3
Crop Production, Agron 1		5	
Animal Science Option			
Types and Market Classes of Livestock, AH 1	5		
Farm Dairying, DH 1			5
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
English (See footnote p. 33)	3		
Small Fruit Culture, Hort 43	2		
Farm Forestry, Hort 41		2	
Woody Plant Materi., Hort 22			3
Gener. Poultry Culture, PH 20		3	
Soils, Agron 25ab	3	3	
Organic Chemistry, Ch 21	5		
General Bacteriology, Bac 30		4	
Principles of Sociology, RS 20		5	
Prin. of Economics, AgEc 20			5
Extempore Speaking, Sp 22			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	3		5
	18	19	18

*Math 13 may be taken in the fall or spring term to alternate with animal science option.

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Landscape Garden., Hort 147	5		
Lit. of Horticulture, Hort 163	3		
Floral Decoration, Hort 40		2	
Greenhouse Managt., Hort 164		3	
Landscape Archit., Hort 165		3	
Garden Flowers, Hort 48			2
Vegetable Gardening, Hort 161			3
Horti. Crop Breed., Hort 166			3
Agric. Biochemistry, Ch 141a	5		
Elective	4	9	9
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Horticulture Seminar, 49abc	1	1	1
Systemat. Pomology, Hort 162	3		
Orcharding, Hort 160ab		3	3
Plant Propagation, Hort 45			2
Gen. Plant Pathology, Bot 20	5		
Genetics, Z 42	3		
Plant Physiology, Bot 150a		5	
Elective	5	8	11
	17	17	17

Prescribed courses are in Roman type, elective and optional courses are in *Italic type.*

MAJOR:Hort 20, 41, 43, 45, 147, 160, 161, 168 and additional electives to total 36 hours.

MINOR: Advisable only when a sufficient number of closely related courses are taken to complete a program of at least 18 hours.

Poultry Husbandry (PH)

Associate Professor Kohlmeyer

Poultry and poultry products annually yield the third largest agricultural revenue in South Dakota, being consistently exceeded only by cattle and hogs. In the United States the value of the Poultry Industry is approximately a billion dollars.

The work of this department is designed to meet the needs of several different interests. First, the course in General Poultry is offered for those desiring only a general knowledge of the industry; second, adequate training is offered for those desiring either a major or a minor in poultry husbandry; third, certain courses are offered to meet the requirements of poultry knowledge in certain allied industries, such as packing houses. Prospective high school teachers, county agents and marketing specialists should take courses suitable for their respective fields.

Students having a thorough knowledge of poultry husbandry are increasingly in demand, to carry on research work and college teaching, to take charge of commercial organizations manufacturing poultry equipment, and in other branches of this industry. Generally, farming enterprises are suitable for profitable poultry or turkey production, which offers a good means of diversification.

Students are urged to supplement their training with any of these courses and such other courses as may seem desirable, according to the type of poultry work they wish to follow.

JUNIOR COLLEGE

20 General Poultry Culture 3 credits ForW

The rise of the poultry industry and its economic importance; breeds and varieties of domestic fowls, poultry buildings and equipment, feed and feeding, management of laying and breeding stock, etc.

SENIOR COLLEGE

41 Judging Poultry 3 credits F

The theory and practice of selecting poultry for egg production and judging the more common breeds for exhibition qualities. Both live and dressed poultry are judged for market purposes. Practice is also given in egg grading. P, 20.

155 Advanced Poultry Husbandry 4 credits S

Incubation and brooding, types of incubators and brooders, emybryonic and chick development and practical arrangement of growing stock, caponizing; hatchery industry and hatchery management. P, 20.

156 Poultry Breeding 4 credits W

The genetic principles and practices of poultry breeding; progney testing; trapnest and breeding records. Study of experimental findings. Problems of the hatchery industry. Given in alternate years. P, 20, Z 42.

157 Egg and Poultry Marketing 3 credits F

The marketing of various poultry products, market classes of fowls; egg candling, grading and packing; the preparation of poultry products for market and marketing problems from both production and distribution angles. Given in alternate years.

158 Turkey Production 3 credits S

The turkey industry and the economics of production and marketing; breeding, feeding, management, disease prevention and control, incubation and brooding, etc.

159 Poultry Nutrition 5 credits S

The principles and practices of poultry feeding, anatomy and physiology; vitamins, proteins, minerals and other nutrients in connection with most recent experimental findings; effect of feed on the quality of meat and eggs, the relative values of common poultry feeds in various types of rations. Given in alternae years. P, 20, 156.

201 Poultry Research Problems
2 or more credits ForW

For advanced undergraduate and graduate students desiring further studies and research either in poultry nutrition, management or marketing. A suitable problem for investigation may be assigned for work towards the Master's degree, thus affording an opportunity to obtain either a major or a minor in some branch of Poultry Husbandry.

202 Thesis 7 to 10 credits As arranged

Required of all graduate students majoring in Poultry. The gathering and organization of data relative to the research project required for the Master's degree. A satisfactory report must be completed before full credit may be given. P, graduate standing in Poultry.

203 Graduate Conference 1 to 5 credits Any Term

The problems of certain phases of the poultry industry, research methods, and a review of the more recent literature. Graduate students are required to have some credit in this course. P, graduate standing in Poultry.

Curriculum in Technical Agriculture, Poultry Husbandry Major

Leading to the degree of Bachelor of Science in Agriculture (See page 32)

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
Orientation, 1ab	½	½	
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
Zoology, Z 20ab	4	4	
Types and Classes of Livestock, AH 1	5		
Crop Production, Agron 1		5	
College Algebra, Math 13			5
Agricultural Engineer., AE 24			3
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	18½	17

Sophomore Year	Fall	Winter	Spring
English, Engl 20 (See footnote, page 33)	3	3	
Organic Chemistry, Ch 21	5		
Elements of Dairying, DH 1			5
Gen. Poultry Culture, PH 20	3		
Bacteriology, Bac 30		4	
General Horticulture, Hort 20	3		
Veterinary Anatomy and Physiology, Vet 20		5	
Speech, Sp 22			3
Breeds of Livestock, AH 20		3	3
Principles of Sociology, RS 20			5
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	2		
	18	17	18

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Genetics, Z 42	3		
Poultry Judging, PH 41	3		
Poultry Diseases, Vet 101	3		
Agricultu. Biochemistry, Ch 41		5	
Poultry Breeding, PH 156		4	
Turkey Production, PH 158			3
Advanced Poultry, PH 155			4
Princi. of Marketing, AgEc 55		5	
Veterinary Hygiene, Vet 40	3		
Farm Structures, AE 151			3
*Elective**	5	4	7
	17	17	17

Senior Year	Fall	Winter	Spring
Egg and Poultry Mar., PH 157	3		
Poultry Research Prob., PH 201	2	2	
Poultry Nutrition, PH 159			5
*Elective**	12	15	12
	17	17	17

*Careful selection of the elective courses will be required. They should be chosen by the student and subject to the approval of his advisor.

Prescribed courses are in Roman type, elective and optional courses are in *Italic type.*

MAJOR: PH 20, 155, 41, 156, 158, 157, 159, 201 and Vet 101 are required.

MINOR: 15 to 24 credits taken from the courses listed for major.

Rural Sociology (RS)

Professor Kumlien, Associate Professor Weller

The courses offered by this department have been organized with three definite objectives in mind; first, to meet the need for basic service courses that will be of interest and practical help to students in either the Junior or Senior College or in any division of the College; second, to offer a sequence of courses for those in the Agricultural or other college divisions who may wish to earn an undergraduate major or minor in the Rural Sociology department; third, to offer sufficient courses in sociology of an advanced nature to fulfill the requirements for a major or minor towards a master's degree.

Rural Sociology majors should be prepared to enter a number of possible outlets, especially in fields of rural leadership. Among such fields are: county agricultural extension work, Smith Hughes Agricultural teaching, Rural social case work, and other forms of community organizational or promotion endeavor. A sufficient number of electives are permitted to take care of individual needs when preparing for specific outlets.

JUNIOR COLLEGE

1a Development of Civilization 4 credits F

This course covers the prehistoric period of a three term survey of world civilization.

The second an dthird term's work of the year's course covers the historical periods of civilization, and is taught by the History department. The year's work serves as an orientation course in the social sciences for freshmen.

20 Principles of Sociology 5 credits FWorS

A basic introductory course prerequisite to all other sociology courses numbered above 20. A comprehensive study of society, with an analysis of the forces shaping human behavior in group life. P, sophomore standing or the consent of the instructor.

SENIOR COLLEGE

131 Rural Sociology 3 credits W

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

143 Social Pathology 3 credits F

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 alcoholism, crime, poverty, unemployment, and war. P, 20.

144 Urban Sociology 3 credits S

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

145 Population Problems 3 credits W

The factors involved in the declining birth rate; the eugenic, cultural and social problems arising from differential rates and natural increase; migration as a factor in American and international affairs; and the elements of population policy. P, 20.

162 Criminology 3 credits W

The nature and causes of crime. The making of the criminal. Theories of punishment. Agencies and methods of arrest, conviction, and segregation of criminals. Jails, prisons, and reformatories. Probation and parole. P, 20. Three recitations a week.

167 Marriage 3 credits F

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

168 The Family 3 credits S

The main emphasis is on the typical American family. Consideration is given to the importance of family life, personal relations within the family and social changes affecting it. P, 20.

171 Social Legislation 3 credits S

The principles underlying past and present legislation concerning marriage and divorce, birth control, sterilization, child welfare including adoption, illegitimacy, and the juvenile court, and the various classse of dependents provided for in the Social Security Act. P, 20.

182 Introduction to Social Case Work 3 credits W

A pre-professional course. Attention is directed to standard case work procedures, public and private, to group work, and to community resources available for use in solving social problems. The course has a rural emphasis. P, 20.

260 Social Change 4 credits F

Prehistoric origins of civilization; the accumulation of culture traits; the cultural patterns of Greece, Rome, and 16th century Scandinavia. Interpretation of social-cultural change in terms of stages, cycles, and factors; survivals from the past invention, and cultural lag; human nature as a factor in social change. P, graduate standing or consent of instructor. Mr. Kumlien.

261 Rural Social Institutions 4 credits W

A study of the pivotal institutional fields with special reference to such rural social institutions as standards of living and the home, the school, religion and the rural church and local government. P, graduate standing or consent of instructor. Mr. Kumlien.

262 History of Social Thought 4 credits S

A brief survey of the history and development of the world's most important social theories and schools of social thought, evaluated in the light of present knowledge. P, graduate standing or consent of instructor. Mr. Kumlien.

271abc Thesis 2 to 5 credits each term FWS

Collecting data for the writing of thesis. Total credit seven to ten. P, candidacy for Master's degree. Mr. Kumlien.

Curriculum in Technical Agriculture, Rural Sociology Major

Leading to the degree of Bachelor of Science in Agriculture **(See page 32)**

See Rural Sociology curriculum in General Science division

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
Types and Classes of Livestock, AH 1	5		
Crop Production, Agron 1		5	
Dairying, DH 1			5
Inorganic Chemistry, Ch 1abc	4	4	4
English Comp., Engl 1abc	3	3	3
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Dev. of Civili., RS 1a, Hist 1bc	4	4	4
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
Soils, Agron 25ab	3	3	
Veterinary Anatomy and Physiology, Vet 20	5		
College Algebra, Math 13		5	
General Zoology, Z 20ab	4	4	
Horticulture, Hort 20			3
Gen. Poultry Culture, PH 20			3
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20	5		
Introdu. to Literature, Engl 20			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Engr. Draw. and Plans, AE 22			2
Rural Sociology, RS 131			3
	19	19	16

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Statistical Methods, AgEc 141a	5		
Social Pathology, RS 143	3		
Urban Sociology, RS 144			3
Population Problems, RS 145		3	
Extempore Speaking, Sp 22			3
Bacteriology, Bac 31	4		
Farm Structures, AE 150		4	
Farm Management, AgEc 38		3	
Forage Crops, Agron 66		3	
General Entomology, Ent 20			5
Livestock Management, AH 21			3
Elective	5	4	3
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Criminology, RS 162		3	
The Family, RS 160			3
Farm & Home Util., AgEc 160	2		
Princi. of Marketing, AgEc 55		5	
Social Psychology, Psy 167			3
Contagious Diseases, Vet 41			3
Hist. of Agr. in U. S., Hist 28		4	
Sociology Electives	3		3
General Electives	12	5	5
	17	17	17

Prescribed courses are in Roman type, elective and optional courses are in *Italic type*.

MAJOR: RS 1a, 20, 131, 143, 144, 145, 168, AgEc 141a, and additional credits to total 36 credits.
MINOR: RS 20, 131, 144. AgEc 141a, and additional credits total 20 credits.

Veterinary Science (Vet)

Professor Harshfield, Professor Emeritus Lipp, Associate Professors Taylor, Hoerlein

The development of our complex systems of livestock farming and transportation has increased the rapidity with which animal diseases spread over wide areas. Through the necessity of protecting their own interests, farmers and stockmen are paying more attention to all that relates to animal disease prevention than ever before. The following veterinary courses are planned to meet this demand.

JUNIOR COLLEGE

20 Veterinary Anatomy and Physiology 5 credits ForW

The anatomy and physiology of the various species of domestic animals. P, sophomore standing. Dr. Lipp.

40 Veterinary Hygiene 3 credits W

The general cause of disease, the most common pathological processes, stable hygiene, disinfection, quarantine and carcass disposal. P, 20, Bac 31. Dr. Lipp.

SENIOR COLLEGE

41 Contagious Disease 3 credits S

The cause and method of preventing the most prevalent contagious and infectious disease of farm animals. P, 20, 40, Mac 31. Dr. Lipp.

42 Applied Embryology 2 credits S

The uterine development of the common domestic animals and the process of parturition. P, junior standing. Dr. Lipp.

101 Diseases of Poultry 3 credits F

A study of the prevalent diseases, both parasitic and bacterial that are common in the flocks of this state. P, junior standing. Dr. Lipp.

The Agricultural Experiment Station

I. B. Johnson, Director

The research work conducted by the Agricultural Experiment Stations furnishes most of the basic facts for the advancement of agriculture, for the agricultural teaching at Land Grant Colleges, and for the subject material supplied by the Extension Service. Farmers rely upon these experimental facts, and with the increased development of organized agriculture, they realize that the Stations must have greater support for additional research, which is so urgently needed for agriculture's further advancement.

The following fourteen departments are now conducting research work on projects having the approval of the United States Department of Agriculture: Agronomy, Animal Husbandry, Dairy Husbandry, Horticulture, Poultry Husbandry, Veterinary, Agricultural Economics, Agricultural Engineering, Station Chemistry, Entomology, Plant Pathology, Rural Sociology, Home Economics and Pharmacy. The Experiment Station employees in these departments are for the most part devoting a portion of their time to similar subject matter in the College and are paid in proportion to the time they work on the approved research projects.

A full description of the research work being conducted by the South Dakota Experiment Station is published in the Director's annual report, and, like the station bulletins which set forth in detail the results of the research work as it is completed, will be mailed without any charge to the citizens of the state upon their request. Address the communications to the Director, Agricultural Experiment Station, Brookings, South Dakota.

It was in 1887 that the Government first made a provision for agricultural experiment station work, when Congress passed the Hatch Act, giving to each state and territory $15,000 for the establishment of an Agricultural Experiment Station. The

South Dakota State Legislature accepted the provisions of this act and passed a law making the Experiment Station a part of South Dakota State College. A second act known as the Adams Act was passed by Congress in 1906 giving each of these same stations an additional sum of $15,000 per year; and in 1925 the Purnell Act was passed by Congress providing further funds annually for experimental purposes.

In 1935 Congress passed the Bankhead-Jones Act which provides additional funds for the experiment stations, the amount being divided among the different states in proportion to their rural population. This act differs from the former appropriations in that it requires the matching of funds by the State.

Besides appropriating money for the support of the Experiment Station the State Legislature has provided for the partial operation of sub-stations at Cottonwood, Eureka, Highmore and the Government Field Station at Newell. The soil and climatic conditions found at the four different stations are supposed to represent the different agricultural conditions found in South Dakota.

The Agricultural Extension Service

George I. Gilbertson, Director

The Smith-Lever Act passed by Congress in 1914 appropriated a sum of money to the various states for which extension work in agriculture and home economics should be established. The State Legislature of South Dakota at each session has appropriated funds to meet the requirements of the Smith-Lever Act. All extension work in South Dakota therefore is a cooperative enterprise participated in by the United States Department of Agriculture, the State College, and by various local and county organizations. The aim of this service is to carry to the people of the state the results of investigations of the Experiment Station and the State College.

Communities and counties in the state may secure the benefits of the extension work when the County Commissioners appoint a County Extension Board in accordance with the State Extension Law, and make the necessary appropriation. The assistance available through the Extension Service is in the form of County Agricultural Agents, Home Extension Specialists, Boys' and Girls' Club Work, and the assistance of Extension Specialists in Animal Husbandry, Dairy Husbandry, Horticulture and Entomology, Animal Health, Field Crops and Soils, Poultry, Farm Management, Marketing, Foods and Nutrition, Clothing and Health.

County Agricultural Agents are giving their efforts to the urgent agricultural problems of quality production, organization and marketing. They follow closely the counsel of the local advisory committees in the county. Since the inception of the Agricultural Adjustment Act they have had charge of the educational work in connection with all AAA programs. This has absorbed a great deal of their time but in spite of the many details to look after, they have found time to conduct many additional extension projects. Home Extension Agents are serving from one to three counties each in the state and work with groups of women organized into Home Extension Clubs, giving demonstrations and instruction along lines of foods, clothing, health and the home. Ten thousand farm boys and girls in South Dakota are assisted yearly through the Extension Service in obtaining instruction in better agricultural and marketing practices, in better home making, in improvement of health and in aspirations toward better citizenship. The 4-H Club Work is an active project of every extension worker in South Dakota.

As far as personnel and funds will permit, a program service is provided for the various Community Clubs; also assistance in securing speakers, demonstrators, and judges. Assistance is also given in the control of plant diseases, insect pests and animal diseases, by specialists from the Extension Service. Bulletins on timely and important subjects are written and available for distribution to the public. A news service on agriculture and home economics is also made available to the newspapers of the state.

Short Courses, fairs and demonstrations are held each winter in a limted number of counties.

DIVISION OF ENGINEERING

THE following programs are offered in the Engineering Division in cooperation with other divisions: 1. Civil Engineering; 2. Electrical Engineering; 3. Mechanical Engineering; 4. Enginering Physics; 5. Industrial Arts. The Engineering Curricula are described below, Engineering Physics and Industrial Arts on following pages.

The Four-Year Curricula in Engineering

The four-year curricula in Civil Engineering, Electrical Engineering, and Mechanical Engineering are accredited by the Engineering Council for Professional Development, which is composed of representatives of six of the largest and oldest national engineering societies and the National Council of State Boards of Engineering Examiners.

The Regents of Education have authorized a curriculum in Aeronautical Engineering when funds permit.

During the first two years the work of each engineering curriculum is concerned mainly with the foundation subjects common to all branches of engineering. A student may delay his choice of curriculum until through observation, counsel and experience he has learned something of engineering work in the various fields and has selected his field of major interest. During this period counsellors in the engineering departments combine curricular counselling services with the general counselling and orientation service provided through the Junior College.

In the work of the first two years each student must make a showing of progress that is satisfactory to the departments concerned before he will be admited to the work of the last two years as a prospective graduate in engineering. Because of this requirement, the work of the first two years is set off as Junior College work, and the work of the last two years is set off as Senior College work.

In the last two years each curriculum provides special training in its field of engineering as is shown in the detailed schedules of subjects below.

The above mentioned courses offer opportunity for the student to acquire the necessary understanding of fundamental principles and to become familiar with their application to practical problems in the field of engineering chosen by the individual. Problem work and laboratory work are essential features of this part of the courses.

Each engineering curriculum devotes considerable time to English, Economics, Public Speaking, and other general studies which should broaden both the students' interests and his background for work in which he must deal with men as well as machines.

The "four-year curriculum" consists of 12 quarters. Ordinarily these are designated as "fall, winter, and spring." Due to the wartime disruption of normal schedules the various phases are designated as "term one, two, and three," in the following material.

For information concerning credit, grade-point, and other requirements for graduation and degrees in connection with the various curricula see pages 25 and 26.

Curricula in Engineering

First Two Years

JUNIOR COLLEGE

Freshman Year Term:	*One*	*Two*	*Three*
Inorganic Chemistry, Ch 1abc	4	4	4
English Comp., Engl 1abc	3	3	3
College Algebra, Math 14	5		
Plane Trigonometry, Math 15		5	
Analytic Geometry, Math 16			5
Engineering Drawing, ME 3ab	2	2	
Descriptive Geometry, ME 5			2
Engineering Shop, ES 2, 3, 5	2	2	2
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
Note: Civil Engineering Freshmen take Plane Surveying, CE 3, in place of Shop in third term.			
	18½	18½	18

Sophomore Year	Terms	One	Two	Three
Calculus, Math 25, 26, 27		4	4	4
General Physics, Phy 21abc		4	4	4
Ec. Hist. of the U. S., Hist 26ab		3	3	
Prin. of Economics, AgEc 20				5
Extempore Speaking, Sp 22		3		
Technical Sketching, ME 21			1	
Engineering Problems, CE 30				2
Military Science, Mil 20abc		1	1	1
Physical Education, PE 20abc		1	1	1

Civil Engineering Group			
Topographic Surveying, CE 25	3		
Topographic Mapping, CE 35		4	
Elementary Carpentry, ES 10			2
Electrical and Mechanical Engineering Group			
Plane Surveying, CE 3	3		
Mechanism, ME 27ab		4	2
Note: ME 27b optional for Electrical Engineering			
	19	18	19

Curriculum in Civil Engineering

Leading to the Degree of Bachelor of Science in Civil Engineering

SENIOR COLLEGE

Junior Year	Terms	One	Two	Three
Roads and Pavements, CE 50			4	
Route Surveying, CE 52				3
Junior Seminar, CE 57abc		1	1	1
Engr. Mechanics, CE 142abc		4	4	4
Construct. Materials, CE 144ab			3	3
Heat Engines, ME 44		5		
Electrical Machinery, EE 40		4		
Geology, Agron 71				5
General Bacteriology, Bac 31			4	
Adv. Composition, Engl 42		3		
Elective			1	1
		17	17	17

Senior Year	Terms	One	Two	Three
Framed Structures, CE 161abc		4	4	4
Reinforced Concrete, CE 163ab		3	2	
Cem. & Concrete Lab., CE 165		2		
Hydraulics, CE 170		4		
Sanitary Engineer., CE 172ab			5	5
Specifications & Con., CE 175		3		
Engineering Economy, CE 177			3	
Highway Engineering, CE 179				4
Electve		1	3	4
		17	17	17

Curriculum in Electrical Engineering

SENIOR COLLEGE

Leading to the Degree of Bachelor of Science in Electrical Engineering

Junior Year	Terms	One	Two	Three
Electricity and Magn., EE 141		5		
Direct Current Mach., EE 143			5	
Dynamo Laboratory, EE 144ab			2	2
Alt. Current Circuits, EE 161				4
Engr. Mechanics, CE 142abc		4	4	4
Elemen. of Heat Power, ME 45			3	3
Thermodynamics, CE 142ab			3	3
Hydraulics, CE 170				3
The Engineering Prof., EE 50			2	
Adv. Composition, Engl 42		3		
Elective		2		2
		17	16	18

Senior Year	Terms	One	Two	Three
Alt. Current Mach., EE 163ab		3	3	
Adv. Dynamo Lab., EE 164abc		2	2	2
Communication Circ., EE 171		4		
Vacuum Tubes, EE 172ab			4	1
Central Stations, EE 166				3
Dynamo Design, EE 169		2		
Electrical Problems, EE 170			2	
Machine Design, ME 144		4		
Metals, ME 168				3
Mechanical Laboratory, ME 62				3
Specifications & Con., CE 175				3
Internal Comb. Eng., ME 163			3	
Elective		2	3	3
		17	17	18

Curriculum in Mechanical Engineering

SENIOR COLLEGE

Leading to the Degree of Bachelor of Science in Mechanical Engineering

Junior Year	Terms	One	Two	Three
Electricity and Magn., EE 141		5		
Direct Current Equip., EE 142			3	
Dynamo Laboratory, EE 144a				1
Alt. Current Circuits, EE 161				4
Engin. Mechanics, CE 142abc		4	4	4
Elemen. of Heat Power, ME 45		3		
Thermodynamics, ME 142ab			3	3
Hydraulics, CE 170				3
Mechanical Laboratory, ME 62			2	
The Engineering Prof., EE 50			2	
Adv. Composition, Engl 42		3		
Elective		2	3	2
		17	17	17

Senior Year	Terms	One	Two	Three
Engineering Design, ME 161ab			3	2
Internal Comb. Eng., ME 163			3	
Machine Design, ME 144		5		
Alt. Current Equip., EE 167ab		3	3	
Adv. Dynamo Lab., EE 164abc		1	1	1
Adv. Mechan. Lab., M E162abc		2	2	2
Specifications & Con., CE 175				3
Heat., Vent. & A. Con., ME 164			5	
Power Plant Engineer., ME 165		4		
Metals, ME 168				3
Industrial Managem't., ME 149				3
Seminar, ME 180			1	
Elective		2		2
		17	17	16

OPTION IN AERONAUTICS

If the preference is stated to the Head of the Mecanical Engineering Department before beginning the work of the junior year, a student may substitute the following subjects for others selected with the approval of the Department Head.

Simple Aerodynamics, ME 146

Differential Equations, Math 148

Advanced Aerodynamics, ME 147

Framed Structures, CE 161a

The Four-Year Curriculumin Engineering Physics

There are numerous opportunities for men and women who have followed specialized courses of study in the field of Physics. It is possible to obtain the degree of Bachelor of Science with a Physics major in the General Science Division.

By a cooperative arrangement between the Physics Department and the Engineering Division a separate curriculum in Engineering Physics is offered. This course is designed to prepare the student for activity in the borderground between Engineering and Physics. This frequently includes such fields as electronics, radio, meteorology, optics, acoustics, pure and specialized research. The curriculum is flexible enough to provide specialized study suitable to individual demand.

For information concerning credit, grade-point, and other requirements for graduation and degrees in connection with the various curricula see pages 25 and 26.

Curriculum in Enginering Physics

Leading to the Degree of Bachelor of Science in Engineering Physics

JUNIOR COLLEGE

Freshman Year Term:	*One*	*Two*	*Three*
Same as for all freshman engineers.			
Sophomore Year *Terms*	*One*	*Two*	*Three*
Calculus, Math 25, 26, 27	4	4	4
General Physics, Phy 21abc	4	4	4
German or French, 1abc	4	4	4
Ec. Hist. of U. S., Hist 26ab	3	3	
Prin. of Economics, AgEc 20			5
Physical Education, PE 20abc	1	1	1
Military Science, Mil 20abc	1	1	1
Elective	2	2	
	19	19	19

SENIOR COLLEGE

Junior Year *Terms*	*One*	*Two*	*Three*
Advanced General Physics class and 1ab, Phy 131abc, 132abc	4	4	4
Engin. Mechanics, CE 142abc	4	4	4
Electricity and Magn., EE 141	5		
Electrical Measure., Phy 152	2		
Direct Current Mach., EE 143		5	
Dynamo Laboratory, EE 141ab		2	2
Alt. Current Circuits, EE 161			4
Elective	2/3	2/3	2/3
	17/18	17/18	16/17

Senior Year *Terms*	*One*	*Two*	*Three*
Mod. Phys., Phy 135ab, 146ab	4	4	
X-Rays, Phy 169			3
Elemen. Organic Chem., Ch 21	5		
Gravimetric Analysis, Ch 23		4	
Volumetric Analysis, Ch 24			4
Communications Circ., EE 171	4		
Vacuum Tubes, EE 172ab		4	1
Differential Equat., Math 148			4
Elective	4	5	5
	17	17	17

Note: The above curriculum is designed for one who is primarily interested in electrical work. A student interested in some other branch of physics or meteorology may, with the consent of the Dean of Engineering and the head of the physics department, substitute further work in physics, engineering, mathematics, or chemistry for some of the prescribed course work in electricity.

The Four-Year Curriculum in Industrial Arts

There are certain opportunities open to those who are particularly trained in the manual operations related to engineering and industry. For the most part these opportunities involve the teaching of Industrial Art or Shop subjects in High School and Trade Schools, but there may be other opportunities in the fields of industry and construction. State law requires a minimum of 23 credits in education for those who expect to teach in high school. Students following the Industrial Arts curriculum may elect other studies instead of the prescribed education studies if they do not intend to qualify for a teaching certificate.

The curriculum in Industrial Arts is administered through the office of the Dean of Engineering.

For information concerning credit, grade-point, and other requirements for graduation and degrees in connection with the various curricula see pages 25 and 26.

Curriculum in Industrial Arts

Leading to the Degree of Bachelor of Science in Industrial Arts

JUNIOR COLLEGE

Freshman Year — Term:	One	Two	Three
English Comp., Engl 1abc	3	3	3
Military Science, Mil 1abc	1	1	1
Algebra, Trigonometry, Analytical Geometry, Math 10, 11, 12	5	5	5
Inorganic Chemistry, Ch 1abc	4	4	4
Engineering Drawing, ME 3ab	2	2	
Descriptive Geometry, ME 5			2
Elemen. Forg. & Welding, ES 5	2		
Machine Shop, ES 2		2	
Elementary Carpentry, ES 10			2
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year — Terms	One	Two	Three
Introduc. to Literature, Engl 20	3		
Extempore Speaking, Sp 22		3	
Architectural Draw., ME 4abc	2	2	2
Elementary Physics, Phy 1abc	4	4	4
Military Science, Mil 20abc	1	1	1
Advanced Carpentry, ES 11	2		
Acetylene Welding, ES 6		2	
Advanced Machine Shop, ES 3			2
Elementary Psychology, Psy 25			3
Modern or American History, Hist 20abc or 23abc	3	3	3
General Botany, Bot 1abc; or General Zoology, Z 20ab and Physiology, Z 22	3	3	3
Physical Education, PE 20abc	1	1	1
	19	19	19

SENIOR COLLEGE

Junior Year — Terms	One	Two	Three
Prin. of Economics, AgEc 20	5		
Principles of Sociology, RS 20		5	
Geology, Agron 171			5
Adv. Composition, Engl 42	3		
Construct. Materials, CE 144ab		3	3
Machine Shop Prob., ES 20a	2		
Wood Turning, ES 12		2	
Arc Welding, ES 7			2
Prin. of Secondary Edu., Ed 40	3		
Educational Psychology, Ed 45		3	
Meth. of Teach. in H. S., Ed 47			3
Elective	4	4	4
	17	17	17

Senior Year — Terms	One	Two	Three
American Government, Hist 34	4		
Local and State Gov't., Hist 44		4	
Freehand Drawing, Art 2			2
Design, Art 1abc	2	2	2
Cabinet Making, ES 25	2		
Ornamental Iron Work, ES 8		2	
Machine Shop Prob., ES 20b			2
Special Methods of Teaching Industrial Art, Ed 69			3
Supervised Student Teaching in Industrial Art, Ed 75		5	
Education Voca. Guid., Ed 137		3	
Elective in Education	3		
Elective	7		8
	18	16	18

Terminal Curricula

Many individuals do not find it advisable to enter a regular four-year (twelve quarters) college schedule, but are desirous of having the advantages of training in the elementary phases of the college experience. In order that the college facilities may become of the greatest possible service to all who seek this experience, certain two-year terminal curricula are included in the college program.

In the engineering division two-year terminal curricula are offered in Draftsmanship, Shop Practices, and Surveying. Upon satisfactory completion of the courses of study prescribed in these curricula, the appropriate certificate is awarded.

Two-Year Terminal Courses

DRAFTSMANSHIP—JUNIOR COLLEGE

Freshman Year — Term:	One	Two	Three
Military Science, Mil, 1abc	1	1	1
Algebra, Trigonometry, Analytical Geo., Math 10, 11, 12	5	5	5
English Comp., Engl 1abc	3	3	3
Engineering Drawing, ME 3ab	2	2	
Descriptive Geometry, ME 5			2
Engineering Shop, ES 2, 5, 10	2	2	2
Design, Art 1abc	2	2	2
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
Elective	4	4	4
	18½	18½	18

Sophomore Year — Terms	One	Two	Three
Military Science, Mil 20abc	1	1	1
Architectural Draw., ME 4abc	2	2	2
Mechanism, ME 27		5	
Extempore Speaking, Sp 22	3		
Technical Sketching, ME 21			1
Freehand Drawing, Art 2	2		
Prin. of Economics, AgEc 20			5
Plane Surveying, CE 3	3		
Elementary Physics, Phy 1abc	4	4	4
Physical Education, PE 20abc	1	1	1
Elective	2	5	4
	18	18	18

SHOP PRACTICE

Freshman Year	Term: *One*	*Two*	*Three*
Military Science, Mil 1abc	1	1	1
Algebra, Trigonometry, Analytical Geo., Math 10, 11, 12	5	5	5
English Comp., Engl 1abc	3	3	3
Engineering Drawing, ME 3ab	2	2	
Descriptive Geometry, ME 5			2
Engineering Shop, ES 2, 5, 10	2	2	2
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
Elective	4	4	4
	18½	18½	18

Sophomore Year	*Terms* *One*	*Two*	*Three*
Military Science, Mil 20abc	1	1	1
Mechanism, ME 27		5	
Extempore Speaking, Sp 22	3		
Technical Sketching, ME 21			1
Engineering Shop, ES 3, 6, 11	2	2	2
Engineer. Shop, ES 20a, 7, 12	2	2	2
Prin. of Economics, AgEc 20			5
Elementary Physics, Phy 1abc	4	4	4
Physical Education, PE 20abc	1	1	1
Elective	5	3	2
	18	18	18

SURVEYING

Freshman Year	Term: *One*	*Two*	*Three*
Military Science, Mil 1abc	1	1	1
English Comp., Engl 1abc	3	3	3
Algebra, Trigonometry, Analytical Geo., Math 10, 11, 12	5	5	5
Engineering Drawing, ME 3ab	2	2	
Descriptive Geometry, ME 5			2
Engineering Shop, ES 2, 5	2	2	
Plane Surveying, CE 3			3
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
Elective	4	4	3
	18½	18½	18

Sophomore Year	*Terms* *One*	*Two*	*Three*
Military Science, Mil 20abc	1	1	1
Elementary Physics, Phy 1abc	4	4	4
Extempore Speaking, Sp 22	3		
Prin. of Economics, AgEc 20	5		
Topographic Surveying, CE 25	3		
Topographic Mapping, CE 35		4	
Route Surveying, CE 52			3
Construct. Materials, CE 144ab		3	3
Physical Education, PE 20abc	1	1	1
Elective	6		6
	18	18	18

Departments of Instruction

Civil Engineering (CE)

Professor Blodgett, Associate Professor Calvin C. Oleson

Civil Engineering includes the location, design, construction, operation, and maintenance of railways, highways, bridges, dams, water supply and distribution systems, sewage systems and sewage disposal plants, irrigation systems, river and harbor improvements and many other works essential to modern existence.

The course in Civil Engineering is planned to give students a foundation in the exact sciences, (mathematics, physics, and chemistry); a thorough training in the technical phases of Civil Engineering (drawing, surveying, hydraulics, testing of construction materials, and principles of design involved in engineering work); and an introduction to the humanistic subjects (rhetoric, speech, history, and economics), in order to prepare them for responsible positions in the profession.

JUNIOR COLLEGE

3 Plane Surveying 3 credits
Theory and practice of surveying; field problems including profiles, cross sections, traverses, and area determinations. P, Math 15, ME 3b. Laboratory fee $3.00.

25 Topographic Surveying 3 credits
Transit-stadia and plane table surveys of representative field areas. Preparation of a finished map. P, CE 3. Laboratory fee $3.00.

27 Navigation 3 credits
Methods of celestial and aerial navigation.

30 Engineering Problems 2 credits
Systematic methods of solving representative problems. The use of slide rule and other calculating devices and machines. Habits of neatness and orderliness in calculation are cultivated. P, Math 26.

35 Topographic Mapping 4 credits
Use of topographic symbols; calculation of areas and volumes from a typical contour map. Determination of latitude, longitude, and true meridian. P, 25. Laboratory fee $1.00.

SENIOR COLLEGE

50 Roads and Pavements 4 credits
Methods and materials used in modern road and pavement design and construction. P, 25.

52 Route Surveying 3 credits
Theory and practice of curves and earthwork computations for highways, railroads, and other routes. P, 35, Math 26.

55 Airports and Air Transportation 3 credits
Location, design, and operation of airports. The problems of aerial transport. P, junior standing.

57abc Junior Seminar 1 credit each term
Oral reviews of articles of engineering and other technical publications, with class discussion. P, junior standing in Civil Engineering.

142abc Engineering Mechanics 4 credits each term
Force systems, motion, moments of inertia, mass and acceleration; work and energy; impulse and momentum. Stress analysis as applied to boilers, beams, column, riveted joints, springs and other structural members. P, Math 27.

144ab Construction Materials 3 credits each term
Study and testing of modern construction materials. P, 142a. Laboratory fee $4.00 each term.

146 Advanced Mechanics of Materials 3 credits
Continuation of 142c with emphasis upon the more advanced problems of mechanical operations. P, 142c.

161abc Framed Structures 4 credits each term
Stress analysis, design, detailing, fabrication and erection of structural steel frames and members. Graphical and analytical methods of determining stress and deflections. Complete designs and drawings for representative structures such as roof trusses, railway and highway bridge trusses, and plate girders. P, 142c.

163ab Reinforced Concrete 3 credits, 2 credits
Reinforced concrete beams, columns, footings, foundations, retaining walls, culverts, bridges and buildings are considered as problems in stress analysis, design, and detail. A brief consideration of the methods of analysis of continuous frames. P, 142c.

165 Cement and Concrete Laboratroy 2 credits
Design, manufacture, and testing of Portland cement concrete mixtures. Laboratory fee $4.00.

170 Hydraulics 3 or 4 credits
Static fluid pressures, flow of water through orifices, pipes, open channels, and over weirs. P, 142c. Laboratory fee $2.00 for 4 credits.

172ab Principles of Sanitary Engineering
5 credits each term
Principles of development and design of water distribution systems and treatment plant, sewerage systems and disposal plants, and inspection. Analysis of public health problems. P, 170, Bac 31. Laboratory fee $3.00 for last term.

175 Specifications and Contracts 3 credits
Synopsis of the law of contracts. Typical specification s and contracts. P, senior standing in engineernig.

177 Engineering Economy 3 credits
Methods of estimation of costs of engineering projects. The determination of the most economical arrangement of structural units. The selection of the most economical structural types for given conditions. Problems in the finance of engineering projects. P, senior standing in engineering.

179 Highway Engineering 4 credits
A continuation of Roads and Pavements with emphasis on economic location and design of highways and city streets. The study of traffic control and super-highway projects is included with laboratory work gathering field information and reduction in office. P, 50, 52. Laboratory fee $3.00.

180abc Special Engineering Problems
Credit as arranged
An elective course for special or detailed study or investigation. P, senior standing in civil engineering.

244abc Advanced Construction Materials
2 to 4 credits
Selection, testing and utilization of construction materials. P, graduate standing in civil engineering.

261abc Advanced Structural Engineering
3 to 5 credits
Steel and reinforced concrete design problems as applied to office buildings, industrial buildings, bridges, and dams, their foundations and superstructures. P, graduate standing in civil engineering.

272abc Advanced Sanitary Engineering
3 to 5 credits
Plans and specifications covering both water and sewage treatment plants, distribution systems, and collection systems. Economics and efficiencies of various methods of treatment of water and sewage. Principles of general sanitation and relation to public health engineering. Administration, finance and jurisprudence of sanitary engineering departments and bureaus. P, graduate standing in civil engineering.

279abc Advanced Highway Engineering
2 to 5 credits
Ecoonmics of location and design; selection, improvement and maintenance; administration, finance and jurisprudence as applied to rural and city highways. P, graduate standing in civil engineering.

280 Thesis 7 to 10 credits
An original treatment of a laboratory, design, or other approved problems. P, graduate standing in civil engineering.

Electrical Engineering (EE)

Professor Gamble, Professor Crothers

The object of the work offered by this department is to develop a thorough understanding of the laws and principles on which electrical engineering practice is based, and to give the student a knowledge of present day engineering practice.

Classroom work is supplemented with work in the laboratories. In the machinery laboratory, the student works with an assortment of direct and alternating current machinery and auxiliary equipment.

In addition to radio equipment the communication laboratory includes television, facsimile, teletypewriters, and photoelectric equipment.

SENIOR COLLEGE

40 Electrical Machinery 4 credits
A brief study of electric and magnetic circuits; direct current and alternating current machinery. For non-electrical engineering students. P, Math 26, Phy 21. Laboratory fee $2.00.

50 The Engineering Profession 2 credits
Lectures, seminar papers and assigned readings dealing with engineering as a profession and the place of the individual in the professional group.

141 Electricity and Magnetism 5 credits
Electric and magnetic circuits; measurements of electric and magnetic properties. P, Math 26, Phy 21c.

142 Direct Current Equipment 3 credits
Direct current machinery and other equipment; for juniors in Mechanical Engineering. P, 141.

143 Direct Current Machinery 5 credits
The construction of direct current generators and motors of the various types, and theories of their operation. For students majoring in electrical engineering. P, 141.

144ab Dynamo Laboratory 2 credits per term
Practical operation of and standard tests on direct current machines, calculations of test results and preparation of engineering reports. May be taken for one credit each term with less emphasis on report writing by students in Mechanical Engineering. To accompany course 142 or 143. Laboratory fee $2.00 each term.

161 Alternating Current Circuits 4 credits
Alternating currents, voltages, and power in single-phase and polyphase circuits. P, 141.

163ab Alternating Current Machinery 3 credits per term
Construction and characteristics of various types of alternating current machinery. P, 161.

164abc Advanced Dynamo Laboratory 2 credits per term
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 each term with less emphasis on report writing, by students in Mechanical Engineering. To accompany courses 163ab or 167ab. Laboratory fee $2.00 each term.

165 Electric Power Transmission 3 credits
Efficiency, regulation, and other characteristics of transmission lines. Insulation and inductive interference. P, 161.

166 Central Stations 3 credits
Central Station control and protective equipment; costs including depreciation and methods of providing for the same. P, 163.

167ab Alternating Current Equipment 3 credits per term
Characteristics of alternating current motors and other equipment used in applying electrical power to mechanical drive. Elementary work on vacuum tubes. For students in Mechanical Engineering. P, 161.

169 Dynamo Design 2 credits
Computation of principle dimensions and drawing for a direct current machine. P, 143ab.

170 Electrical Problems Credit as Arranged
Special problems on electrical machinery, electrical circuits, transmission systems, etc.

171 Communication Circuits 4 credits
Properties of electric circuits at high frequencies. Circuit theorems applicable to complex networks. Principles of conversion and electrical transmission of sound. P, 161. Laboratory fee $2.00.

172ab Vacuum Tubes 4 credits and 1 credit
Elementary physics of the vacuum tube. Voltage-current characteristics of the tube and its properties as a circuit element. Use as amplifier, oscillator, or modulator. P, 161. Laboratory fee $2.00 each term.

173 Transient Currents 3 credits
Theory of transient current in simple series circuits, with steady voltage and with alternating voltages applied. P, 161 and grades of C or above in Math and EE subjects.

210abc Advanced Circuit Theory 3 to 5 credits per term
P, graduate standing.

220ab Electrical Machine Theory 2 to 4 credits
More detailed and accurate analysis of characteristics of electrical machinery. Mainly a study of the technical literature, but may be accompanied by special laboratory tests. P, graduate standing.

280 Thesis 7 to 10 credits
An original treatment of a laboratory, analytical or other approved problem. P, graduate standing in electrical engineering.

Engineering Shops (ES)

Professor Hoy, Assistant Professor Bonell

Engineering students are required to take certain courses in the Engineering Shops in order that they may have an opportunity to become acquainted with the various shop processes which are so closely associated with practical applications of the principles of engineering. In working with the machines and other equipment the student must incidentally acquire some understanding of the various properties of materials, and various treatments of materials for specific operations and purposes.

The Engineering Shops are well equipped for the particular operations involved in machine tool operations, welding and forging and wood working.

Certain Shop courses are required of Engineering and Industrial Arts students and facilities are available for advanced elective courses in these fields.

JUNIOR COLLEGE

2 Machine Shop 2 credits
Equipment and tools used in machine shop work, methods of laying out work, elementary principles of machine and bench work, and problems involved in the use of machine tools. Laboratory fee $3.00.

3 Advanced Machine Shop 2 credits
Continuation of Machine Shop 2. Further and more detailed instruction in Machine Shop problems and operation. Laboratory fee $3.00.

5 Elementary Forging and Welding 2 credits
Introductory lectures and exercises in forging, heat treatment, oxy-acetylene, and arc welding. Laboratory fee $3.00.

6 Acetylene Welding 2 credits
A basic study of acetylene welding. Flame cutting, and hard surfacing and applications of these processes. P, 5. Laboratory fee $3.00.

7 Arc Welding 2 credit
Electric arc welding and its application. P, 5. Laboratory fee $3.00.

8 Ornamental Iron Work 2 credits
Advanced work in ornamental and tool forging, power hammer work, bench work, heat treating, and use of cyanide. P, 5. Laboratory fee $3.00.

10 Elementary Carpentry 2 credits
Use, care and conditioning of tools. A study of the properties of various kinds of woods and the processing of woods for specific purposes. Laboratory fee $2.00.

11 Advanced Carpentry 2 credits
A continuation of elementary carpentry with emphasis on framing and rafter cutting. A study of special materials available for use in modern building. P, 10. Laboraotry fee $2.00.

12 Wood Turning 2 credits
Exercises in the use of the wood lathe. Exercises include spindle, face plate, drive chuck, and wood chuck operations in the turning of various items including patterns for foundry work. P, 11. Laboratory fee $2.00.

20ab Machine Shop Problems 2 credits each term
These two courses give the student an opportunity to undertake detailed and specialized studies of particular machines or to undertake comprehensive problems. Laboratory fee $3.00 each term.

23 Special Problems in Forging and Welding 2 credtis
This course gives the student an opportunity to undertake detailed and specialized studies in forging and welding. P, 6, 7. Laboratory fee $3.00.

25 Cabinet Making 2 credits each term
Cabinet construction and machine wood turning. Cupboards, furniture, finishings, carving, upholstering, machine set-up and production. P, 12. Laboratory fee $2.00 each term.

Mathematics (Math)

Professor MacDougal (Acting Head), Professor Brown, Associate Professor Walder, Assistant Professor Wente, Miss Stolle

The general work of this department is planned to cultivate habits of systematic and accurate thinking, as well as facility in making calculations. Independent effort is encouraged to the greatest possible extent, the solutions of problems and original demonstrations forming an important part of each course.

General Science students who have unusual ability in mathematics should take courses 14, 15, and 16 rather than 10, 11, and 12 in the freshman year.

At the end of four or five weeks those students enrolled in courses who have shown sufficient ability will be allowed to go into course 14. Also, those students in course 14 who do not have sufficient knowledge of high school algebra may be required to take course 3.

A major in mathematics is offered in the Natural Science curriculum, Division of General Science. An outline of the work recommended is given with the description of curricula in the General Science Division.

JUNIOR COLLEGE

2 Solid Geometry 2 credits F
Required of freshman engineering students who enter without high school credit in the subject. Not counted towards graduation in the engineering courses.

3 Algebra (1st year H. S. continued) 5 credits F
Required of freshman engineering stduents entering with credit in only two semesters of algebra. Not open to other students.

10 College Algebra (for General Science and Pharmacy students) 5 credits FW
Review of the fundamental operations, factoring, highest common divisor, least common multiple and solutions of linear simultaneous equations; study of quadratic equations, exponents, radicals, etc.

11 Trigononmetry (for General Science and Pharmacy students) 5 credits WS
The principles of plane trigonometry and their application to the solution of triangles, inverse functions, solutions of trigonometric equations. DeMoivres theorem. P, 10 or equivalent.

12 Analytic Geometry
(for General Science students) 5 credits S

Co-ordinates, loci, the straight line, circle, ellipse, parabola and hyperbola. P, 10, 11, or equivalent.

13 College Algebra
(for Students of Agriculture) 5 credits S

Review of high school algebra, a treatment of functions and their graphs, graphical representation of statistical data, equations of the line, quadratic functions and equations, maxima and minima, binomal expansion, logarithms, progressions, interest, discount, annuities, sinking funds, farm loans, and amortization schedules.

14 College Algebra 5 credits ForW

Elementary topics, functions and their graphs, review of the quadratic equations, complex numbers, theory of equations, permutations and combinations, partial fractions, and determinants. P, three semesters of high school algebra. Required in freshman engineering course. This subject may be taken in place of 10 by general science students of unusual mathematical ability.

15 Plane Trigonometry 5 credits WorS

The functions of acute angles, the solution of the right triangle, the solution of the oblique triangle, general applications of trigonometry. P, one year of plane geometry and one and one-half years of high school algebra. Required in freshman engineering, elective in general science and agricultural courses.

16 Analytic Geometry 5 credits F or S

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

23 Descriptive Astronomy 5 credits S

An introductory course. P, a knowledge of plane trigonometry.

25 Differential Calculus 4 credits ForW

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

26 Integral Calculus 4 credits WorS

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

27 Applied Calculus 4 credits SorF

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

SENIOR COLLEGE

105 Mathematical Statistics 3 credits W

The analysis of data by certain elementry principles; curve fitting, measures of correlation, and the meaning and calculation of a number of statistical constants. P, college courses in algebra and trigonometry.

110ab Mathematics of Finance
3 credits W, 2 credits S WS

The application of algebra to problems in interest, annuities, amortization, the 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.

125ab Actuarial Mathematics
3 credits each term WS

Higher algebra, probability theory, and elementary work in finite differences. P, 25. Alternates with 164abc; not given in 1945-46.

141 Theory of Equations and Determinants
3 credits F

The theory of determinants, complex numbers, De Moivre's Theorem, cubic and biquadratic equations. P, 16.

144 Solid Analytic Geometry 3 credits W

The application of coordinate systems of geometry of three dimensions. P, 16. Offered primarily for students who are interested in advanced mathematical study and graduate work.

148 Differential Equations 4 credits S

A study of differential equations with applications in the fields of mechanics and physics. P, 26.

164abc Advanced Calculus
3 credits each term FWS

For seniors and graduate students. P, 25, 26, 27. Alternates with 125ab; given in 1945-46.

Mechanical Engineering (ME)

Professor Amidon, Associate Professor Lusk

Mechanical Engineering includes the following major divisions: design of machinery and apparatus for all purposes; steam power generation, internal combustion engines; heating, ventilation, refrigeration, and air conditioning; automotive; aeronautical; production methods, and industrial management.

The course is planned to give a thorough training in the fundamental principles involved in mechanical research, design, construction and operation of machinery of all kinds. Emphasis is laid on a broad application rather than on detailed work in highly specialized fields of the profession. Throughout the entire course, classroom work is supplemented by practical training in drafting and design rooms, shops, and laboratories. Some inspection trips are arranged to power and manufacturing plants.

The Mechanical Engineering laboratories are equipped for experimental work in

steam and gas engineering; internal combustion engines; heating, ventilation and air conditioning; fans; steam, air and gas flow apparatus; fuels; lubricants; and metallography. These laboratories also include a small brass and aluminum foundry for instruction practice.

The college power and heating plant is available for the study and testing of power steam boilers, turbo-generators and power plant auxiliaries.

JUNIOR COLLEGE

3a Engineering Drawing 2 credits
Development of skill in the use of drawing instruments, and in the mechanics of drafting. Open to all students who have had high school mathematics.

3b Engineering Drawing 2 credits
Emphasis placed on speed and accuracy in drafting practice, as applied to more complicated machine parts and simple assemblies. Elementary design problems. P, 3a.

4abc Architectural Drawing 3 credits each term
Rendered floor plans, elevations and display layouts of houses, buildings and other practical problems. Construction details and practice applied to problems. P, 3a.

5 Descriptive Geometry 2 credtis
The theory of drafting applied to points, lines, planes and solids. Problems relating to solid intersection; sheet metal development; pattern layout; pictorial representations; drainage and mining. P, Plane Geometry.

21 Technical Sketching 1 credit
Development of skill and technique in sketching freehand lines, circles and curves. Types of projection and pictorial representation.

27ab Mechanism 4 credits 2 credits
Study of machine elements; the analysis of motion and design features of linkages, cams, belts, screws, gears and gear trains. P, Math 15.

SENIOR COLLEGE

44 Heat Engines 5 credits
An introductory course; including a survey of the power generation field, types of plants and equipment; power units and equipment for various services. P, junior standing.

45 Elements of Heat Power 3 credits
An introductory course; the power generation field, types and study of heat power machinery. P, junior standing.

62 Mechanical Laboratory 2 credits
Study of laboratory instruments; testing of fuels and lubricating oils; study of engines and boilers. P, 45. Laboratory fee $2.00.

142ab Thermodynamics 3 credits each term
Fundamental principles of equipment, steam machinery, internal combustion engines, air machinery, heat tranmission, refrigeration, and air conditioning. P, 45 and Math 26.

144 Machine Design 4 or 5 credits
Properties of materials, fundamental mechanics, working stresses, fabrication and proportioning of part sizes involved in the design of fastenings, shafting, fly wheels, gears, bearings, connecting linkages and other machine elements. P, 27a, CE 142ab.

146 Simple Aerodynamics 2 credits
Airfoil characteristics, wing shapes, statis and dynamic forces, stability and control, constructoin details. P, junior standing.

147 Advanced Aerodynamics 3 credits
Continuation of ME 146.

149 Industrial Management 3 credits
Industrial ownership, organization and tendencies. Production layout and control, time and motion studies, labor problems, wage incentives and systems, employment and personnel work. P, junior standing.

161ab Engineering Design 3 credits, 2 credits
Study of steam engines, steam turbines, internal combustion engines and assembly drawings of machines. Some opportunity is given to select a project of interest to the student. P, 142ab and 144.

162abc Advanced Mechanical Laboratory
2 credits per term
Standard tests and anaylsis of boilers, steam pumps, condensers, engines and turbines; internal combustion engines, including gas, gasoline, oil automotive and aviation; tests and determination of characteristics of fans, steam, air, and hydraulic flow devices; heating, ventilating, air conditioning, refrigeration and equipment. P, 142ab. Laboratory fee $2.00 a term.

163 Internal Combustion Engines 3 credits
Study of the theory, design and operation of gas, gasoline and oil engines of various types. P, 142ab.

164 Heating, Ventilation and Air Conditioning
4 credits
Principles of heating, ventilating and air conditioning systems in common use; computation of heat loss and gain in buildings; ducts and piping systems for steam and hot water heating; apparatus and control systems. P, 45.

165 Power Plant Engineering 4 credits
Design and operation of modern power plants; power units and appurtenances; fuel handling and storage; power generation costs in steam and Diesel plants; economics of design and operation. P, 142ab.

168 Metals 3 credits
Commercial methods of extraction, refining and compounding of metals and their alloys. Effects of composition, mechanical treatment and heat treatment on the microstructure and properties of metals. Metal casting, working and application to the engineering field. P, CE 142, Ch 2abc.

169 Metals Laboratory 2 credits
Principles of metallography; properties of metals used in engineering practice. P, 168. Laboratory fee $1.50.

170 Special Mechanical Engineering Problems (credit as arranged)
An elective course to provide an opportunity for study or investigation of a special problem. Problems chosen may be analytical, design, or laboratory studies.

180 Seminar 1 credit
Group discussion and reports on current events and development in the field of mechanical engineering. P, senior standing.

242ab Applied Thermodynamics 3 credits
Heat generation and transmission; thermal analysis of steam engines, steam turbines and internal combustion engines. P, graduate standing.

265abc Central Stations 3 to 5 credits
Choice and arrangement of apparatus; design and operation; economics of plant operations. P, graduate standing.

266 Refrigeration Engineering 3 credits
Design and operation of ice making and cold storage plants; compression and absorption systems. P, graduate standing.

280 Thesis 7 to 10 credits
An original treatment of laboratory, analytical or other approved problems.

Physics (Phy)

Professor Reinhart, Associate Professor Watson

Two main objectives have been kept in mind in the organization of the course work of this department. First, it is intended that the courses offered should adequately meet the needs of students in the various divisions of the College who need the basic subject matter of physics in their chosen fields. Second, the sequence of courses offered makes it possible for a student to complete a strong major in physics. The department is well supplied with laboratory and lecture demonstration equipment and other facilities in support of these objectives.

Two outlines in physics are offered. First, is the major in the Natural Science curriculum which is described under the Division of General Science. This major should be followed by those who expect to teach physics at the high school or junior college level. Second a curriculum in engineering physics is offered. Students who expect to enter industrial work or who expect to do graduate work in physics should elect this curriculum in engineering physics which is listed with the curricula in Engineering on the proceeding pages.

JUNIOR COLLEGE

1abc Elementary Physics 4 credits FWS
This course is designed to be an elementary course in physics suitable for students with little mathematical background. Since the subject matter is to be presented in an elementary manner, the course is open to freshmen. The course is to be offered in general to all students outside the engineering groups. General topics in mechanics, heat, sound, electricty and light will be considered. P, high school algebra and plane geometry. Laboratory fee $2.00 per term.

21abc General Physics 4 credits each term FWSorWSF
Mechanics of solids and fluids; sound; heat; electricity; magnetism, and light. P, Math 11 or 15. Laboratory fee $2.00 per term.

5 Household Physics 5 credits WS
A general review of physics. Emphasis is laid upon the practical application of physical principles in the home.

SENIOR COLLEGE

131abc Advanced General Physics 3 credits FWS
The course is designed as a second year's work in general physics. General topics in the fields of mechanics, heat, electricity, sound, light, and modern physics are considered. P, 1c or 21c and Math 26.

132abc Advanced General Physics Laboratory 1 credit FWS
Laboratory work designed to accompany Physics 131abc.

135ab Modern Physics 3 credits each term FW
The subject matter of this course deals with recent developments in the field of physics. Among the topics considered are: Elements of radio, electron tubes, electrical oscillations, and waves; polarized light; atomic structure; X-Rays; optical and X-Ray spectra; radioactivity, nuclear structure, and the transmutation of the elements. P, 1c or 21c, Math 26.

136ab Modern Physics or Electronics Laboratory 1 credit FW
Laboratory work designed to accompany Physics 135ab.

140ab Heat* 3 credits FW
Measurement of temperature; theory of specific heats; thermal expansion; heat transfer; change of state; radiation laws; kinetic theory of gases; introductory thermodynamics; production of high and low temperatures. P, 1c or 21c and Math 26.

141ab Sound* 3 credits FW
Mathematical treatment of: Simple harmonic motion, damped oscillatory motion, forced oscillatory motion and various motions of flexible strings. Plane waves of sound, the wave equation and its solutions, acoustic elements, resonators, reflection and refraction with change in media, transmission through conduits, filtration of sound, acoustic measurements and instruments. P, 1c or 21c and Math 26.

142ab Light* 3 credits FW
Wave motion, reflection and refraction of light; dispersion; lenses and mirrors; optical instruments; interference and diffraction; double refraction and polarization; electromagnetic theory; origin of spectra and quantum theory. P, 1c or 21c and Math 26.

145 Meteorology 3 credits W
A study of the various factors affecting weather and climate. This course is designed in particular to acquaint the student with the phases of meterology most useful in the interpretation of meteorological observation and the forecasting of weather conditions. P, junoir standing.

150ab Intermediate Mechanics* 3 credits FW
An intermediate theoretical course in mechanics. Topics considered are: Mass, force, work and energy, center of gravity, moments of inertia, statics of a particle and of rigid bodies, laws of motion under various force fields, generalized coordinates. P, 21c or 1c and Math 26.

155 Electrical Measurements 2 credits F
This course is to deal with the measurement of such fundamental electrical quantities as: Capacitance, inductance, galvonometer constants, resistance, permeability and frequency. P 21c or 1c and Math 26.

169 X-Rays 3 credits S
An introduction to X-Rays with special emphasis on their application in chemistry, metallurgy, crystal structure, and industrial problems. P, 21c or Math 26.

EE141 Electricity and Magnetism 5 credits F
For description see Electrical Engineering department.

EE172 Vacuum Tubes 3 credits W
For description see Electrical Engineering department.

EE161 Alternating Current Circuits 4 credits S
For description see Electrical Engineering department.

275 Thesis 7 to 10 credits FWS

*It is intended that only one of the courses in Heat, Sound, Light and Intermediate Mechanics be offered each year, the selection depending upon the needs of the greatest number of students.

The Engineering Experiment Station

The Regents of Education established an Engineering Experiment Station in the Division of Engineering in 1926. The aim of the Station is to encourage and support engineering research, especially in the practical engineering problems that relate to the development of South Dakota's resources, South Dakota industries, the state highway system, etc. The objects sought are (a) results of practical and economic value to the state, (b) the improvement of teaching that has been found to occur when engineering teachers can carry studies of practical problems along with their teaching.

The establishment of Engineering Experiment Stations has been the general practice of Land Grant Colleges, only a few states being without such stations.

DIVISION OF HOME ECONOMICS

THE COURSE of study in home economics is designed to train a young woman for home making and for a skilled occupation, whereby she may become self-supporting. Students may obtain a broad general training in home economics, or specialize in Foods and Nutrition, Clothing and Textiles, or Home Economics Education.*

As indicated on pages 25 and 26 of this catalog, the instructional work of all division of the College is organized into a Junior College and a Senior College.

The requirements of the Junior College in Home Economics are essentially the same for all students who plan to complete the four-year course. In the Senior College the junior and senior students have the opportunity to specialize through optional groups of electives. For the student who does not plan to complete the four-year course, opportunity is given for the completion of a two-year course in the Junior College.

For information concerning credit, grade point and other requirements for the degrees in connection with the various curricula, see pages 25 and 26.

Curriculum in Home Economics

Leading to the degree of Bachelor of Science in Home Economics

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
Foods, HE 1			4
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1ab	4	4	
Survey of Chemistry of Carbon Compounds, Ch 19			5
Design, Art 1abc	2	2	2
Textiles, HE 10	3		
Clothing, HE 11ab		3	3
Dev. of Civiliz., RS 1a, Hist 1b	4	4	
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	17½	17½	18

Sophomore Year	*Fall*	*Winter*	*Spring*
Foods, HE 20	4		
Int. to Liter., Engl 20 & optoin	3	3	
Elementary Psychology, Psy 25		3	
Elemen. Bacteriology, Bac 30†			4
Clothing, HE 30†	3		
General Zoology, Z 20ab	4	4	
Extempore Speaking, Sp 22		3	
Principles of Sociology, RS 20			5
Food Analysis, Ch 25		3	
Applied Design, Art 26a	2		
Human Physiology, Z 22			4
Art Appreciation, Art 27			3
Physical Education, PE 20abc	1	1	1
	17	17	17

*See Department of Education for information concerning teaching certificates.

†Half of the class will take Bacteriology in the Fall term and the other half will take Clothing.

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Household Physics, Phy 5			5
Dietetics, HE 140		4	
Child Development, HE 75	3		
Household Manage't., HE 71	3		
Prin. of Economics, AgEc 20	5		
American Nation, Hist 23ab; or	4	4	
History sequence		4	4
Elective	3	6	9
	18	18	18

‡OPTIONS OF JUNIOR YEAR

Home Practice—Home Practice will be required of all students in:

a. Foods and Nutrition between the sophomore and junior years. The character of the work must be planned at a conference with a member of the Foods and Nutrition staff during the sophomore year. An examination will be held during the fall term of the junior year to test results of the work.

b. Clothing and Textiles between the junior and senior years. The problem selected should be arranged with a member of the Clothing and Textiles staff during the junior year.

Group A. Home Economics Education—Teachers' Course

Principles of Secondary Education, Ed 40	3
Educational Psychology, Ed 45	3
Special Methods in HE, 51a	3
Child Nutrition, HE 141	3
Methods of Teaching Clothing, HE 146	3

‡The student should select one of the three optional groups A, B or C, depending on the field in which she wishes to major.

Group B. Nutrition and Dietetics

Educational Psychology, Ed 45	3
Sanitary Bacteriology, Bac 142	4
Child Nutrition, HE 141	3

Group C. Clothing and Textiles

Free Hand Drawing, Art 2a	1-2
Costume Design, Art 22	2
Applied Design, Art 26b	1-2
Decorative Stitchery, HE 69	2
Advanced Clothing, HE 144	3
News Writing, PRJ 24	3
Feature Writing, PRJ 51	2

Group D. Child Development

Child Nutrition, HE 141	3
Nursery School Technique, HE 78	3
Play and Play Materials, HE 134	3

SENIOR COLLEGE

Senior Year	*Fall*	*Winter*	*Spring*
Home Man'g't. House,* HE 72	4		
Child Develop't. Lab., HE 77	3		
The Famrily, RS 168			3
Electives to make 17 credits	10	17	14
	17	17	17

OPTIONS OF SENIOR YEAR

Group A. Home Economics Education—Teachers Course

Special Methods in Home Economics, Ed 51bc	6
Student Teaching, Ed 78	5

*Offered each term.

Adult Home Making, Ed 53 — 3
House Planning, Ed 174 — 2
Advanced Clothing, HE 144 — 3
Textile Economics, HE 166 — 3
Home Furnishing, HE 175 — 2
Experimental Cookery, HE 160 — 3
High School Organization and Admin., Ed 163 — 3

Group B. Nutrition and Dietetics

Diet in Disease, HE 162 — 2
Experimental Cookery, HE 160 — 3
Nutrition Seminar, HE 264 — 2
Physiological Chemistry, Ch 162 — 5
Quantity Cookery, HE 73 — 2
Institution Buying, HE 74 — 2

Group C. Clothing and Textiles

Costume Design, Art 22 — 2
Advanced Clothing, HE 144 — 3
History of Costume, HE 145 — 2
Textile Economics, HE 166 — 3
Children's Clothing, HE 167 — 2
Advanced Textiles, HE 268 — 1-2

Group D. Child Development

Advanced Child Development, HE 135 — 3
Methods of Nursery School Teaching, HE 136abc — 9
Children's Clothing, HE 167 — 2
Child Development in the Family, HE 137 — 3
Home Nursing, HE 62 — 2

Prescribed courses are in Roman type, elective and optional courses are in *Italic type*.

A great many high schools require the home economics teacher to teach at least one other subject. It is, therefore, desirable that students who take the teacher's course above should elect sufficient work in English, science (botany, zoology, chemistry etc.), social studies (history, economics, and rural sociology), foreign languages and mathematics, depending upon the group in which teaching work is desirable, to qualify for teaching subjects in those fields.

The following are the requirements for teaching minors:

English—22½ term credits

Science—22½ term credits of which 7½ should be in the science taught.

Social Studies—22½ term credits which must include preparation in the subjects taught.

Foreign Languages—22½ term credits in the language taught.

Mathematics—22½ term credits

Departments of Instruction

Foods and Nutrition

Assistant Professor Staples, Instructor Johnson

JUNIOR COLLEGE

1 Foods 4 credits S

Selection, preparation and use of the various clases of food; history of cookery, food customs and conventions. P, Ch 1a. Mrs. Staples. Laboratory fee $4.00.

20 Foods 4 credits F

Food preservation for the home; food resources, varieties and selection; responsibility of the consumer. P, 1. Mrs. Staples. Laboratory fee $4.00.

SENIOR COLLEGE

140 Dietetics 4 credits W

The fundamental principles of human nutrition; relation of food to health; dietaries for adults. P, Ch 19. Laboratory fee $4.00.

141 Child Nutrition 3 credits S

The present nutritional status of children; methods of judging nutrition; cause and effect of malnutrition. P, 140. Laboratory fee $2.00.

160 Experimental Cookery 3 credits WorS

Investigation of factors which affect standard food products. P, junior standing in Home Economics. Mrs. Staples. Laboratory fee $4.00.

161 Demonstration Cookery 2 credits WorS

Training for extension teaching, commercial work and teaching; demonstrations by instructors, students and specialists. Equipment organization, methods of procedure, etc. P, junior standing. Mrs. Staples. Laboratory fee $4.00.

162 Diet in Disease 2 credits S
Diets for abnormal conditions. A preliminary course for those who wish to become hospital dietitions. P, 140, 141.

264 Nutrition Seminar 2 credits S
Assigned readings and discussions of topics in the field of foods and nutrition with special attention to problems in dietetics in both normal and pathological conditions. P, 140, 141.

265-266 Home Economics Problems
1 to 5 credits FS
Investigation of selected problems in foods, nutrition, textiles and child care. Miss Rosenberger, Miss Lund.

Home Administration

Assistant Professor Young, Instructors Crisman, Johnson

SENIOR COLLEGE

71 Household Management 3 credits F
Applications of the principles of scientific management to budgeting time and money.

72 Home Management House 4 credits FWorS
Six weeks residence in the home management house with experience in problems that arise in a home.

73 Quantity Cookery 2 credits W
The principles of cookery applied to large quantity preparation; experience in planning and preparing meals for college food service. Miss Crisman.

74 Institution Buying 2 credits S
Problems involved in the purchasing and use of food and equipment for quantity cookery. Miss Crisman.

75 Child Development 3 credits FW
The physical and mental growth of children during the pre-school years. In this course two hours a week are spent at the Nursery School, observing the children according to a prescribed procedure. P, Ed 45. Miss Young.

77 Child Development Laboratory
3 credits FWorS
The Nursery School is for the purpose of providing students with contact with children and with the management of behavior reaction. Each student makes an intensive study of one child. P, 75. Miss Young. Laboratory fee $1.00.

174 House Planning 2 credits FS
The exterior and interior of the house planned for convenience, economy, and beauty. Mr. Bonell.

175 Home Furnishing 2 credits FS
Planning and furnishing of a medium-priced home. P, Art 1a. Mrs. Staples.

Clothing and Textiles

Associate Professor Rosenberger, Assistant Professor Young

JUNIOR COLLEGE

10 Textiles 3 credits F
A study of textile fabrics. Laboratory analysis to include practical home tests. Miss Rosenberger. Laboratory fee $4.00.

11ab Clothing 3 credits WS
The selection, use and care of clothing; comparison of home and factory made garments; clothing budget; use and care of sewing machine; fitting and use of commercial patterns. Laboratory experience. Laboratory fee $1.00 each term.

30 Clothing 3 credits FWS
Development of the foundation pattern, flat-pattern construction and the selection and construction of a garment. Emphasis on selection of design and color to express individual personality. P, 11a. Miss Rosenberger. Laboratory fee $1.00.

SENIOR COLLEGE

69 Decorative Stitchery 1 or 2 credits S
A laboratory course to give practice in decorative stitchery. Miss Rosenberger. Laboratory fee $1.00.

144 Advanced Clothing 3 credits FWS
Application of principles of costume design. Laboratory practice includes a made-over problem and a tailored suit or dress. P, 30. Miss Rosenberger. Laboratory fee $1.00.

145 History of Costume 2 credits S
Study of the history of costume of the important periods, as a means for better understanding the costumes of today and as a foundation for costumes of play and pageants. P, Hist 23a or 20b. Miss Rosenberger.

146 Methods of Teaching Clothing 3 credits FWS
Analysis of problems; making of illustrative material for clothing courses. P, junior standing. Miss Rosenberger, Miss Young.

166 Textile Economics 3 credits WS
The economic aspects of clothing which directly or indirectly affect the consumer. P, AgEc 20. Miss Rosenberger.

167 Children's Clothing 2 credits S
The selection, designing and construction of suitable clothing for children. P, junior standing. Miss Young. Laboratory fee $1.00.

268 Advanced Textiles
Credit and hours to be arranged
Research problems to be arranged with instructor. For prerequisites consult instructor. Miss Rosenberger. Miss Lund.

Home Economics Education

Assistant Professor McArthur, Itinerant Teacher Trainer Walker, Instructors Beto, Burbeck, Tweetam, Sickles

SENIOR COLLEGE

The work in Home Economics Education is administered jointly by the department of Vocational Education and the Division of Home Economics. The Department is approved by the Vocational Division of the Department of the Interior, Office of Education.

Ed51a Special Methods in Home Economics 3 credits S

The 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 the attainment of the objectives. P, junior standing. Miss McArthur.

Ed51b Special Methods in Home Economics 3 credits F

Emphasis given to the development of units for Vocational Program II and III with the integration of related science and art principles for Program III. Development of units and methods of teaching the related subjects in Program II. Senior standing. Miss McArthur.

Ed51c Special Methods in Home Economics 3 credits W

Problems of classroom teaching as they relate to pupil interests and needs, home visits and the home experience program, the equipping and business management of the department, opportunities in and obligations to the profession, and the entire school program. Miss McArthur.

Ed53 Adult Homemaking Education 2 credits FWS

History, philosophy and objectives of adult education in general and home economics. Curriculum and methods of teaching applied particularly to home economics. Opportunity is provided for developing teaching units, planning means of publicity and for observation of adult classes. P, senior standing. Miss McArthur.

Ed78 Supervised Student Teaching in Home Economics 5 credits FWS

Student teaching is done under supervision in at least two phases of home economics. Group and individual conferences, home visits and project supervision. P, senior standing. Misses McArthur, Walker, Cunningham, Beto, Burbeck, Sickles, Laboratory fee $3.00.

Child Development

Assistant Professor Young

SENIOR COLLEGE

78 Nursery School Technique 3 credits F

The course is concerned with such administrative problems as the physical set-up, equipment, and personnel of the Nursery School; records and their use; the contribution of science and creative experience; the historical development of the Nursery School; the early and continued influence of progressive education on nursery education; nursery school and child development centers; aim and goals of nursery school; and integration of the nursery school and kindergarten. P, 75, 77.

134 Play and Play Materials 3 credits WS

Literature, Art, Music, and Play for pre-school child. Selection and design of play equipment. P, 75, 77.

135 Advanced Child Development 3 credits WS

Developmental characteristics of children from six to twelve years with special emphasis on guidance program and importance of enviromental factor for growth. P, 75, 77, 78, 134.

136abc Methods of Nursery School Teaching 9 credits FWS

This course includes practical work in Nursery School, during which time each student has complete charge of the play of a group of children, and may carry out a project arising from children's interests. For one day each student takes complete charge of a group of children, substituting for the teacher in charge. Weekly conference is planned. P, 75, 77, 78, 134.

137 Child Development in the Family 3 credits WS

This course is planned to further the student's understanding of human relationships in the family. Children are studied as parts of a family group, as products of the family, and as factors in family development. Other environmental factors that affect the development of the individual and the family, as school, church, and community is also considered. Problems in adult counseling. P, 75, 77, 78, 134.

DIVISION OF PHARMACY

THE DIVISION of Pharmacy offers an opportunity to students to earn a Bachelor of Science Degree in Retail Pharmacy, Pharmaceutical Research, or Clinical and Hospital Pharmacy.

At the request of the South Dakota State Nurses' Association, the Department of Nursing Education was established by the Board of Regents in 1935.

For information concerning the credit, grade point and other requirements for degrees in connection with the various curricula, see pages 25 and 26.

Pharmacy

This line of work offers many inducements to young men and young women. The requests of the pharmacists of the state for our graduates are far in excess of the supply and the pure food and drug laws have opened up a new field for young men who are competent drug and food analysts.

Fellowships, Scholarships, and Other Awards

The following fellowships, scholarships and other awards are made in the **Division of Pharmacy:**

The South Dakota Pharmaceutical Association has established a $75.00 scholarship for a needy and worthy student who is entering the Division of Pharmacy, who graduates from High School in the upper fifty per cent of his class. Applications for this scholarship are to be submitted to the Dean of Pharmacy on or before September 1 of each year.

The South Dakota State Board of Phamacy also offers a scholarship, as outlined above, to an entering student in the Division of Pharmacy.

The Lehn and Fink Medal award is given each year to the senior student who has attained the highest scholarship rank, or who in the judgment of the faculty had made the most distinctive conrtibution to the advancement of science in Pharmacy.

Merck and Company awards two prizes to the two students who have attained the highest scholastic standing during their senior year in the courses in Dispensing and Pharmacology.

A friend of the Division of Pharmacy, who wishes to remain anonymous, will award a Twenty-Five dollar war bond to the senior who has maintained the best scholastic average for his four years work. This award is made annually.

The Courses in Pharmacy

Following the recommendations of the American Association of Colleges of Pharmacy, the South Dakota State College Division of Pharmacy discontinued the three-year course beginning with the fall term of 1930.

The above change enables the Division of Pharmacy to give attention to the addition of certain business courses which are essential to retail pharmacy and to offer electives in certain scientific lines which may be of advantage to the student in allied fields. These electives may be selected in such science courses as may be approved by the dean of the division.

The course is arranged with reference to the South Dakota State Law governing the registration of Pharmacists. A portion of the law is as follows:

"Any person of good moral character and temperate habits not less than twenty-one years of age, who is a graduate of a four-year high school course or whose education is equivalent thereto in the discretion of the Board, who is a graduate of a four-year course in a school or college recognized and approved by the Board and who has had at least one year's experience before, after or during his college

course, in the practice of Pharmacy under a regularly licensed pharmacist in a pharmacy where physician's presciptions are compounded, and who shall pass a satisfactoryy examination prescribed by the Board of Pharmacy shall be entitled to a certificate of registration as a licentiate in Pharmacy."

All applicants for registration by examination will be required to obtain an average rating of 75 percent and not less than 60 per cent in any one subject. A grade of 75 per cent must be obtained in Practical Pharmacy. The subjects given will be Chemistry, Pharmacy, Materia Medica, Manipulation, Identification of Drugs, Chemical and Pharmaceutical Arithmetic, and an Oral Examination.

In order to harmonize the work of the College with these standards the completion of four years of high school work or its equivalent is required. The results have justified the measure, for at present only a few of the graduates of the College who have taken the state examination are not registered.

The curriculum of the Division of Pharmacy has been divided into two years of work in the Junior College and two years in the Senior College.

Below is given a brief outline of the subjects and the credit required for each of the four years.

Curricula in Pharmacy

Leading of the degree of Bachelor of Science in Pharmacy

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
Rhetoric, Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
Theoretical Pharm'y., Pha 5abc	4	3	3
Pharmaceutical Latin, Pha 1	4		
Practical Pharmacy, Pha 6ab		1	2
College Algebra, Math 10		5	
Trigonometry, Math 11			5
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	17½	18½	19

Sophomore Year	*Fall*	*Winter*	*Spring*
Theoretical Pharm., Pha 27abc	3	3	3
Practical Pharmacy, Pha 28abc	2	2	2
Pharmacognosy, Pha 23abc	4	4	4
Organic Chemistry, Ch 22ab	5	5	
Volumetric Analysis, Ch 24			4
Physiology, Z 21ab	4	4	
Entomology, Z 45			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	20	20	18

†Curriculum in Retail Pharmacy

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Elementary Psychology, Psy 25			3
Prin. of Economics, AgEc 20	5		
Prin. of Sociology, RS 20 or		5	
American Govern't., PS 34, 44	4	4	
Theoretical Pharmacy, Pha 42			4
Practical Pharmacy, Pha 43			2
Drug Assaying, Pha 41ab	4	4	
Store Management, Pha 40ab		2	2
Gen. Bacteri., Bac 41, 142, 143	5	5	5
Window Display, Pha 46	2		
*Elective**	2	2	2
	17/18	17/18	18

Senior Year	*Fall*	*Winter*	*Spring*
Pharmacology, Pha 62abc	4	4	4
Dispensing, Pha 60ab	4	4	
Prescription Practice, Pha 160c			4
Pharma. Jurisprudence, Pha 61			4
Chem. Physics or Toxicology	4	4	4
*Elective**	5	5	1
	17	17	17

†Curriculum in Pharmaceutical Research

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Prin. of Economics, AgEc 20	5		
Prin. of Sociology, RS 20 or		5	
American Govern't., PS 34, 44	4	4	
Theoretical Pharmacy, Pha 42			4
Practical Pharmacy, Pha 43			2
Drug Assaying, Pha 41ab	4	4	
Language or Science	4	4	4
Organic Chemistry, Ch 160abc	5	5	5
*Elective**			3
	17/18	17/18	18

Senior Year	*Fall*	*Winter*	*Spring*
Dispensing, Pha 60ab	4	4	
Prescription Practice, Pha 160c			4
Pharmacology, Pha 62abc	4	4	4
Pharma. Jurisprudence, Pha 61			4
Toxicology, Pha 143abc	2	4	4
Language or Science	4	4	
*Elective**	3	1	1
	17	17	17

†Curriculum in Clinical and Hospital Pharmacy

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Prin. of Economics, AgEc 20	5		
Prin. of Sociology, RS 20 or		5	
American Govern't., PS 44ab	4	4	
Theoretical Pharma., Pha 42			4
Practical Pharmacy, Pha 43			2
Vertebrate Histology, Z 164ab	4	4	
Drug Assaying, Pha 41ab	4	4	
Gen. Bacteri. Bac 41, 143, 152	5	5	5
*Elective**			7
	17/18	17/18	18

Senior Year	*Fall*	*Winter*	*Spring*
Pharmacology, Pha 62abc	4	4	4
Dispensing, Pha 60ab	4	4	
Prescription Practice, Pha 160c			4
Pharma. Jurisprudence, Pha 61			4
Clinical Methods, Pha 152abc	4	4	4
*Elective**	5	5	1
	17	17	17

*Electives are to be chosen subject to the approval of the Dean of the division.

†The student should select one of the curricula listed above depending on the field in which he wishes to major.

Departments of Instruction

Pharmacy

Professors Eidsmoe and LeBlanc

JUNIOR COLLEGE

1 Pharmaceutical Latin 4 credits F

The subject is taught with specific reference to Latin titles and prescription practice. Text: Muldoon's Pharmaceutical Latin. Mr. LeBlanc.

5abc Theoretical Pharmacy 4, 3, 3 credits FWS

A comparison of weights and measures of the various systems, pharmaceutical calculations and the theory of the application of the methods used in pharmaceutical manufacture. Text: Remington's Practice of Pharmacy, with lectures. Mr. Eidsmoe.

6a Practical Pharmacy 1 credit W

The student is trained to use the balance, measure liquids accurately, and to determine specific gravity by various methods. Text: Remington's Practice of Pharmacy. Mr. Eidsmoe. Laboratory fee $2.00, deposit $3.00.

6b Practical Pharmacy 2 credits S

Preparation of waters, syrups, mucilages, and other galenicals. P, 6a. Text: Remington's Practice of Pharmacy. Mr. Eidsmoe. Laboratory fee $3.00, deposit $3.00.

27abc Theoretical Pharmacy 3 credits each term FWS

The official inorganic salts, their compounds, and methods of manufacture; study of the common organic compounds. P, 5 and 6. Text: Remington's Practice of Pharmacy. Mr. Eidsmoe.

28abc Practical Pharmacy 2 credits each term FWS

Application of course 2 7which it accompanies. P, 5 and 6. Text: Remington's Practice of Pharmacy. References: United States Pharmacopeia, National Formulary, and other Formularies. Mrs. Jarratt. Laboratory fee $3.00, deposit $3.00 each term.

SENIOR COLLEGE

40ab Store Management 2 credits each term WS

The student is given practical knowledge in the operation of a drug store. A new model pharmacy is used as a laboratory. P, first two years of pharmacy. Mr. LeBlanc. Laboratory fee $2.00, deposit $2.00 each term.

42 Theoretical Pharmacy 4 credits S

The 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. Mr. Eidsmoe.

43 Practical Pharmacy 2 credits S

The compounding of the more simple prescriptions, packaging, labeling, and wrapping of the finished product. P, first two years of Theoretical and Practical Pharmacy. Text: Remington's Practice of Pharmacy. Mr. Eidsmoe. Laboratory fee $3.00, deposit $3.00.

46 Window Display 2 credits FWorS

Work in window display, a combination study of color schemes, and arrangements of material, lighting effects. Mr. Eidsmoe. Laboratory fee $2.00, deposit $3.00.

60ab Dispensing 4 credits each term FW

The student is given the actual work that comes before him in the store. P, all courses of Theoretical and Practical Pharmacy. Text: Scoville's Art of Compounding. Mr. Eidsmoe. Laboratory fee $3.00, deposit $3.00 each term.

61 Pharmaceutical Jurisprudence 4 credits S

The National and State laws governing the importance, commercial disposition, and the medico-legal aspects of prescription practice. P, 60ab. Texts and references: Remington's Practice of Pharmacy; National and State Laws. Mr. LeBlanc.

160c Prescription Practice 4 credits S

An advanced course in dispensing; study of the official substances and preparations of the latest edition of the National Formulary. P, 60b. Text: National Formulary, with lectures by the instructor. Mr. Eidsmoe. Laboratory fee $3.00, deposit $3.00.

164 Pharmaceutical Research Credits 1 to 5

Undergraduate students of superior ability may elect a research problem from any of the following: Toxicology, Manufacturing Pharmacy, Drug Assaying, Products from the Medicinal and Poisonous Plant Garden. Members of the staff. Laboratory fee $1.00 per credit hour.

264 Pharmaceutical Research Credits 1 to 5

The advanced students may select as an elective any one of the following subdivisions of pharmaceutical research: Toxicology, Manufacturing Pharmacy, Drug Assaying, Products from the Medicinal and Poisonous Plant Garden. Members of the staff. Laboratory fee $1.00 per credit hour.

265 Thesis 7 to 10 credits

Required of all graduate students majoring in any of the several subdivisions of Pharmacy. The thesis must comply with the regulations as established by the Committee on Advanced Degrees.

Pharmacology and Pharmacognosy

Professors Jarratt and Eidsmoe

JUNIOR COLLEGE

23abc Pharmacognosy 4 credits FWS

The source, characteristics, constituents, etc., of the crude vegetable and animal drugs. The laboratory work consists of plant morphology and identification of pure and adulterated powdered drugs. Text: Youngken's Pharmacognosy. Mrs. Jarratt. Laboratory fee $3.00, deposit $3.00 each term.

24 Pharmacology 4 credits W

The systems of weights, measures, and rules for computing the dosage of drugs and preparations used by the nurse in her daily practice. Attention is given to the method of administration as well as the action of important remedial agents. P, sophomore standing. Mrs. Jarratt. Laboratory fee $3.00.

SENIOR COLLEGE

62abc Pharmacology 4 credits each term FWS

The action of the more important drugs and preparations dispensed by the pharmacist. A careful study of the dose, therapeutic action and mode of administration. Laboratory work consists of biologic assays and antidotal treatment of common poisons. P, 23abc. Mr. Eidsmoe. Laboratory fee $3.00, deposit $3.00 each term.

267ab Pharmacology 4 credits WS

The fundamental principles and theories of drug action upon animal life; modes of administration and methods of recording physiological action. Research work will be given those competent to do it. P, 62abc. Text: Sollman's Pharmacology. Laboratory fee $3.00, deposit $3.00 each term.

268 Microscopy of Foods and Drugs 4 credits F

The microscopic structure and characteristics of powdered drugs and foods with methods for the identification of adulterants. P, 23abc. Texts and references: Greenish's Microscopical Examination of Foods and Drugs; Kraemer's Scientific and Applied Pharmacognosy; Leach's Food Inspection and Analysis; and Hanausek's Microscopy of Technical Products. Mrs. Jarratt. Laboratory fee $3.00, deposit $3.00.

Pharmaceutical Chemistry

Professors LeBlanc and Eidsmoe

SENIOR COLLEGE

41ab Drug Assaying 4 credits each term FW

P, Ch 1abc. Mr. LeBlanc. Laboratory fee $3.00, deposit $3.00 each term.

143a Toxicology 2 credits F

An introduction to the study of he 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. Mr. LeBlanc. Primarily for students electing one term's work in the field.

143bc Toxicology 4 credits each term WS

A systematic physiological and chemical study of the more common poisons, together with nature, effects, and antidotes for the same. P, senior standing. Texts and references: Authenrieth's Detection of Poisons; Holland's Toxicology; Sollman's Manual of Pharmacology; Howell's Physiology; Journal of Experimental Medicine. Mr. LeBlanc. Laboratory fee $3.00, deposit $3.00 each term.

152abc Clinical Methods 4 credits each term FWS

The technique of various laboratory tests required of the hospital pharmacist. P, junior standing. Text and references: Laboratory Diagnosis, Osgood; Qualitative Clinical Chemistry, Peters and Van Slyke; Recent Advances in Medicines, Beaumont and Dodds. Mr. Eidsmoe. Laboratory fee $3.00, deposit $3.00 each term.

241c Advanced Drug Assaying 4 credits S

Assays of various foods and pharmaceuticals employing the use of the polariscope, refractometer, colorimeter and types of apparatus used in industrial laboratories. P, first two years of Pharmacy and courses 41ab. Text and references: Thurston's Pharmaceutical and Food Analysis; U.S.P.; N.F.; and selected A.O.A.C. methods. Mr. LeBlanc. Laboratory fee $3.00, deposit $3.00.

Nursing Education

Associate Professor Erickson

The Department of Nursing Education offers to prospective students of nursing a program of study which, combined with an approved course in clinical education, leads to the degree of Bachelor of Science.

Graduate registered nurses who meet the college entrance requirements and whose processional credentials are approved may register in the Department of Nursing Education. A special form to be filled out by the Director of Nursing in the school from which the applicant graduate will be required.

Candidates for the degree must complete 204 credits of satisfactory work distributed as follows:

Group I—Bacteriology, Chemistry, Foods, Hygiene, Physics, Physiology, Zoology, 58-60 credits.

Group II—Art, Economics, English, Speech, Ethics, History, Political Science, Language, Psychology, Sociology, 40-50 credits.

Group III—Nursing and Allied fields, 94-106 credits. (The professional course in nursing is credited toward this requirement.)

Elizabeth Dryborough Loan Fund for Graduate Nurses

The South Dakota State Nurses' Association has created a fund to be used for loans to graduate nurses, registered in South Dakota, who may wish to prepare for teaching, supervisory or administrative positions in schools of nursing, or for those who may wish to enter the field of public health nursing.

For details, write to the Director, Department of Nursing Education.

Program for the Undergraduate Nurse

A degree combined curriculum is being offered by the College in cooperation with hospital schools of nursing with which it may become affiliated. Upon the completion of this curriculum, the student will receive a diploma (Graduate Nurse) from the affiliated institution, and a degree of Bachelor of Science in Nursing from the College.

One such arrangement within the state has been entered into with the Sioux Valley Hospital School of Nursing of Sioux Falls

The program is divided into three periods as follows:

1. **Preclinical Period** consisting of two college years plus one summer session of twelve weeks following the Freshman year. The Nursing Arts courses are given only to students choosing the Sioux Valley Hospital School of Nursing, and consequently are offered at that institution under the direction of the Nursing Education Department of South Dakota State College.

2. **Clinical Period** of thirty to thirty-six months. The length of the period in clinical education depends upon the School of Nursing the student chooses. Approximately twenty-four months will be spent in Sioux Valley Hospital for the clinical education in medicine, surgery, obstetrics and pediatrics. In addition, the student will receive three months training in psychiatric nursing and three months in public health nursing in institutions affiliated with the College.

3. **Post-Clinical Period** to complete 204 credits at South Dakota State College. Special programs of study are planned for students who wish to prepare for positions in school of nursing. Such programs are designed to serve as foundation for the more advanced professional programs in teaching, superivision, and administration.

Curriculum for the Undergraduate Nurse

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
General Zoology, Z 20ab	4	4	
Inorganic Chemistry, Ch 1ab	4	4	
Chem. of Carbon Com., Ch 19			5
English Comp., Engl 1abc	3	3	3
Dev. of Civili., RS 1a, Hist 1bc	4	4	4
Profess. Adjustments, NEd 1			2
Hygiene, NEd 3ab	3	3	
History of Nursing, NEd 4			4
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	19½	19½	19

Freshman Summer Session

Nursing Arts, NEd 2ab	10
	10

Sophomore Year	Fall	Winter	Spring
Physiology, Z 21ab	4	4	
Ele. Bacter., Bac 41 or Bac 143			5
Elementary Psychology, Psy 25			3
Principles of Sociology, RS 20	5		
Pharmacology, Pha 24		4	
Household Physics, Phy 5			5
Foods, HEc 1		4	
American Government, PS 34	4		
English, satisfactory to classifying officer	3	3	
Physical Education, PE 20abc	1	1	1
Elective		2	4
	17	18	18

Curriculum for the Undergraduate Nurse

Junior Year

Upon successful completion of the subjects in the freshman and sophomore years the student will enter a hospital for her clinical education.

Having completed the professional course in nursing she may return to the College and elect one of the following programs, the successful completion of which will entitle her to the Bachelor of Science degree.

SENIOR COLLEGE

Science

Senior Year

Vertebrate Histology, Z 164ab	8
Physiological Chemistry, Ch 162	5
Principles of Infection and Immunity, Bac 142	5
Educational Psychology, Psy 45	3
Introduction to Nursing Education, NEd 81	3
Principles and Methods of Teaching in Schools of Nursing, NEd 92	3
Curriculum of Schools of Nursing, NEd 100	3
Supervised Student Teaching, NEd 93ab	6
Elective	6

Nursing Art

Educational Psychology, Psy 45	3
Introduction to Nursing Education, NEd 81	3
Principles and Methods of Teaching in Schools of Nursing, NEd 92	3
Curriculum of Schools of Nursing, NEd 100	3
Principles of Infection and Immunity, Bac 142	5
Supervised Student Teaching, NEd 93ab	6
Elective	10

Public Health Nursing

Principles of Economics, AgEc 20	5
Rural Sociology, RS 131	3
Urban Sociology, RS 144	3
The Family, RS 168	3
Child Nutrition, HEc 141	3
Principles of Infection and Immunity, Bac 142	5
Public Health, NEd 60	3
Educational Psychology, Psy 45	3
Introduction to Nursing Education, NEd 81	3
Elective	5

Technical Laboratory

Vertebrate Histology, Z 164ab	8
Principles of Infection and Immunity, The Pathogenic Bacteria, Bac 142, 143, 152, 160	15
Clinical Methods, Pha 152abc	12
Physiological Chemistry, Ch 162	5

Program for the Graduate Nurse

In order that the professional program in nursing may serve as an acceptable basis for the college program, the professional subjects should be distributed in approximately the following proportion:

	Credits
1. Science (anatomy, bacteriology, chemistry, physics, physiology)	12 to 14
2. Social and general professional subjects (nursing ethics, history of nursing, professional problems, applied psychology, applied sociology)	8 to 10
3. Subjects in allied fields (dietetics, pharmacology, hygiene, sanitary science)	10 to 12
4. Nursing arts and clinical specialties (general, medical, surgical, pediatric, obstetric, communicable, psychiatric)	40 to 50
Total Credits	70 to 80

When the record from the nursing school is deficient in the subjects of the first three groups, these may be made up by additional college courses. Should the record show de-

ficiencies in the fourth group, students may be required to supplement their work in a school of nursing offering approved post-graduate courses in the clinical services.

Graduate nurses who have had no previous college education will be classified upon entrance as sophomore students. Since each graduate nurse's program depends upon her education prior to entering college, the course of study as outlined must be adjusted accordingly.

Nursing Education

The Department of Nursing Education, as indicated on preceding pages, offers a program of study which leads to the degree of Bachelor of Science (See pages 25 and 26 for requirements for degrees.) The following subjects are offered in the department

JUNIOR COLLEGE

1 Professional Adjustments 2 credits S

A brief survey of ethical theories and an analysis and discussion of ethical problems.

3ab Hygiene 3 credits each term FW

The methods of promoting health; emphasis on such hygienic application as the care of the body, prevention of disease, and general health habits. Open to all students.

4 History of Nursing 4 credits S

The development of nursing under religious, military and secular control from ancient to modern times. P, RS 1a.

22 Principles of Nursing 3 credits S

The scientific principles underlying nursing. P, Physiology 21ab, Bac 41, Ch 19, 20, or 21a, Phy 1a or 5. (Required of students planning to enter certain hospital schools.)

SENIOR COLLEGE

60 Public Health 3 credits S

A survey of present day health problems; the various public and private health agencies, and the principles of sanitary science with their applications to water, milk, food supplies and to disposal of refuse, garbage and sewage.

62 Home Nursing 2 credits F

A course designed to help care for illness in the home. It is based on the Red Cross Home Nursing text and entitles students to the Red Cross Home Nursing Certificates. Open to Home Economics and General Science Senior College students. Special arrangements can be made for others desiring the course.

81 Introduction to Nursing Education 3 credits FW

A survey course introducing the student to the work of the school of nursing as a whole. It includes the historical development of nursing schools, their organization, educational objectives, the content of the educational program and the essentials for efficient operation.

92 Principles and Methods of Teaching in Schools of Nursing 3 credits FW

A course dealing with the general problems of teaching and supervision in schools of nursing, the aim of which is to apply the principles of teaching and supervision to the various subject groups in the nursing school curriculum. P, 81.

93ab Supervised Student Teaching 3 credits each term FWS Su

This course provides an opportunity for the student to gain some practice in teaching nursing subjects. The course consists of observation of teaching, conferences, discussions, and classroom teaching under supervision. P, 81, 92, 100. Senior year. Laboratory fee $2.00 (Su $1.00).

100 Curriculum of Schools of Nursing 3 credits WorS

A study of the curricula of nursing schools with consideration of the principles underlying curriculum construction. P, 81, 92. Text: Committee of N.L.N.E.—Curriculum Guide for Schools of Nursing.

DIVISION OF GENERAL SCIENCE

THIS DIVISION offers two four-year curricula in General Science and a four-year curriculum in Rural Journalism all leading to the Bachelor of Science degree.

In the curricula in Agriculture, Engineering, Home Economics, Pharmacy, and other professional subjects, study is primarily directed to the application of the various sciences in these fields. It is necessary that students pursuing these technical curricula should have a broad training in such subjects as Botany, Zoology, Chemistry, Physics, History, English, Economics, Sociology, and other non-technical subjects.

Since these basic subjects are a necessary part of the technological curricula, they have been organized into two general science curricula, the Natural Science curriculum and the Social Science curriculum. Many students who graduate in these two curricula find their work in Agriculture, Home Economics, Engineering, etc., or in fields closely allied to these subjects. The General Science curricula are also very suitable for students who are interested in securing a general education, or who wish to prepare themselves for teaching positions.

In common with the other divisions the General Science Division is organized into the Junior College and the Senior College.

Limited Credit Subjects

In most colleges today are taught a number of subjects which have not hitherto found a place of credit in regular curricula. In recognition of their educational value this College has made provisions, through minors in art and music and by a system of limited credits, for allowing these subjects to count toward a degree in General Science. Unless these limited credit subjects are part of a course which has been outlined in advance and approved by the Dean of the Division, as for example, in the case of minors in art and music, no more than three credits each year and no more than ten in all will be allowed for such work. If limited credit subjects should be prescribed in a student's course, he will be allowed to count additional limited credits only up to the numbers mentioned.

The rule concerning limited credit subjects applies in the curricula in General Science and in Printing and Rural Journalism.

For information concerning credit, grade-point, and other requirements for graduation and degrees in connection with the various curricula see pages 25 and 26.

The General Science Curriculum

Natural Science Major

This curriculum is adapted to the needs of students who wish to specialize in the physical or biological sciences, or in mathematics. Too narrow specialization is prevented by requiring a sufficient amount of study in Literature, History, and other liberal arts subjects to insure that those who complete the program get a broad training.

The following summary shows the distribution of subject matter of this curriculum:

Group I—Natural Science and Mathematics

Inorganic Chemistry, Ch 1abc	12
College Algebra, Trigonometry, Math 10, 11	10
Elementary or General Physics, Phy 1abc, 21abc	12
General Botany, Bot 10abc	12
Gen. Zoology, Human Physiology, Z 20ab, 22	12
Geology, Agr 171	5
	63

Group II—Language and Social Science

English Composition, Engl 1abc	9
Introduction to Literature, Engl 20 and elective*	6
Extempore Speaking, Sp 22	3
Orientation, 1ab	1
History (Approved sequence)	8
Elementary Psychology, Psy 25	3
Principles of Economics, AgEc 20	5
Principles of Sociology, RS 20	5
American Government, Hist 34	4
	44

Group III—Military Science and Physical Education

Military Science (Men), Mil 1abc, 20abc	6
Physical Education, PE 1abc, 20abc	6
	12

Group IV—Electives

Majors and Minors and General Electives	85
Total required for graduation	204

*Natural Science students who have completed 21 credits in an approved foreign language are exempt from the requirement in English Literature.

The General Science Curriculum

Social Science Major

The special curriculum in the social sciences is designed to furnish a broad background of human societal knowledge, but with considerable room for specialization in either Agricultural Economics, Rural Sociology, History and Political Science, or Rural Journalism.

The offerings in Economics include a number of different courses in each of the following fields: Farm and Ranch Management, Cooperation and Marketing, Public and Agricultural Finance, Land Economics, Statistical Analysis, and Economic Theory.

Sociology courses are organized mainly within the fields of Rural Socioloy, Family Relationships, Population Problems, Sociological Theory, Social Pathology, and Social Welfare.

The fields emphasized in political science are American Government, Comparative Government, Political Theory, and International Relationships. In History, in addition to various standardized courses, special emphasis is given to the fields of Economic History, Agricultural History, and to survey courses in Modern and Contemporary European and American History.

The following summary shows the distribution of subject matter in the Social Science curriculum:

Group I—Natural Science and Mathematics

College Algebra, Math 10	5
Human Physiology, Z 22	4
Inorganic Chemistry, Ch 1abc; or Elemen. or Gen. Physics, Phy 1abc or 21abc	12
General Botany, Bot 10abc; or General Zoology, Z 20ab	8
Geology, Agron 171	5
Electives in Natural or Applied Science*	12
	46

Group II—Social Sciences

History (Approved sequence)	8
American Government, PS 34	4
State and Local Government, PS 44	4
Principles of Sociology, RS 20	5
Electives in Rural Sociology	6
Principles of Economics, AgEc 20	5
Statistical Methods, AgEc 141a	4
Electives in Agricultural Economics	6
	42

Group III—English, Speech, Psychology

English Composition, Engl 1abc	9
Introduction to Literature, Engl 20 and elective	6
Elementary Psychology, Psy 25	3
Orientation, 1ab	1
Extempore Speaking, Sp 22	3
	22

Group IV—Military Science and Physical Education

Military Science (Men), Mil 1abc and 20abc	6
Physical Education, PE 1abc, and 20abc	6
	12

Group V—Electives

Majors and Minors and General electives	82
Total required for graduation	204

*Social science students who have completed 21 credits in an approved foreign language are exempt from the Electives in Natural Science.

Curriculum in Rural Journalism

South Dakota State College is one of the few institutions in America in which a thorough and complete orientation into rural journalism may be had. While many of the courses in this curriculum are standard or conventional journalism courses, the professional work is closely integrated with courses in rural sociology, agricultural economics, and with other subjects contributing to an understanding of rural life. Special courses in the business management of small city newspapers are also included.

Students wishing to obtain training in the technical phases of publishing may take preliminary courses in printing as described under non-degree courses on pages 123 and 124. Upon completion of the 2-year printing curriculum the student is admitted into the collegiate program with a sophomore rating.

Group I—Natural Science and Mathematics

College Algebra, Math 10	5
Inorganic Chemistry, Ch 1abc or 2abc; or Elementary Physics, 1abc	9-12
Gen. Botany or Gen. Zoology, Bot 10ab, Z 20ab	8
Electives in Natural Science, Mathematics, and Applied Science	10
	32 or 35

Group II—English or Social Science

Introduction to Literature, Engl 20 and elective	6
Approved History Sequence	8
Orientation, 1ab	1
American Government, PS 34	4
State and Local Government, PS 44	4
Economic Hist. of the United States, Hist 26ab	6
Principles of Economics, AgEc 20	5
Principles of Sociology, RS 20	5
Elementary Psychology, Psy 25	3
Extempore Speaking, Sp 22	3
Statistical Methods, AgEc 141a	5
	50

Group III—Military Science and Physical Education

Military Science (Men), Mil 1abc, 20abc	6
Physical Education, PE 1abc, 20abc	6
	12

Group IV—Rural Journalism

Newswriting, PRJ 24	3
News Editing, PRJ 25	3
News Reporting, PRJ 26	3
Advertising, PRJ 50ab	6
Feature Writing, PRJ 30	2
Editorial Writing, PRJ 52	3
Advertising Salesmanship, PRJ 55	2
Advanced Reporting, PRJ 64	3
Public Relations, PRJ 65	3
Writing the Special Article, PRJ 41	2
	30

Group V—Electives*

A major in some other department other than Rural Journalism, and other electives, none of which shall be limited credit subjects	77-80
	204

*Students having completed the two-year curriculum in printing will be allowed 45 credits toward meeting the requirements of this group.

Junior College Curricula

As indicated on page 29 the first two years of the College are organized into a Junior College which offers curricula of two kinds: (a) Programs which are intended to prepare students to enter upon the two years of Senior College work in which they may major in the various fields of specialization; (b) Terminal programs which give more liberty to students than to those registered under "a" and will permit the student to complete a fairly well-rounded program at the end of the two years.

There are three preparatory curricula in the Junior College of this division. The preparatory curricula include the Natural Science curriculum, the Social Science curriculum and the curriculum in Printing and Rural Journalism.

The Natural Science Curriculum

The prescribed subjects of the Natural Science curriculum are listed in the following schedule.

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Orientation, 1ab	½	½	
College Algebra, Math 10 or 14	5		
Trigonometry, Math 11 or 15		5	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Optional as indicated below*	8	8	12
History (Approved sequence)	4	4	4
French, 1abc / *German*, 1abc / *Spanish*, 1abc	4	4	4
Inorganic Chemistry, Ch 1abc	4	4	4
Elem. Physics, Phy 1abc; or *General Physics*, Phy 21abc	4	4	4
General Botany, Bot 10abc	4	4	4
General Zoology, Z 20ab; and *Human Physiology*, Z 22	4	4	4

*The student who pursues this program should select two of the following sequences (one of them a science sequence which ordinarily should be in his major departments.)

Sophomore Year	Fall	Winter	Spring
Int. to Liter., Engl and *elec.*†	3	3	3
Extempore Speaking, Sp 22			3
Elemen. Psychology, Psy 25‡	3		
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Electives§	9	12	12
	17	17	17

†Natural Science students may substitute 21 credits in an approved foreign language for the literature requirements.
‡Elementary psychology is required of all sophomores who are preparing to teach.
§Optional subjects should include a second science sequence listed in the Freshman year, as well as a continuation of the science in which the student plans to major. Others should be selected with the advice of the counselor and should include as many as possible of the courses listed as requirements on pages 88 and 89.

The Social Science Curriculum

The Social Science curriculum prepares students for majoring in the departments of Social Science. The prescribed subjects of this curriculum are listed in the following schedule:

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
History (Approved sequence)	4	4	4
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Optional as indicated below*	7	8	8
	16½	17½	17

Sophomore Year	Fall	Winter	Spring
Int. to Liter., Engl 20 and *elect.*	3	3	
Extempore Speaking, Sp 22			3
Elementary Psychology, Psy 25	3		
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
College Algebra, Math 10	5		
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective†	4	7	7
	17	17	17

*The student who pursues this course should select two of the sequences listed as optional in the Natural Science Curriculum, Freshman Year, page 90.
†Optional subjects must include one Natural Science sequence, if not taken in the Freshman year. If a foreign language is begun in the Freshman year, it should be continued in the sophomore year.

The Curriculum in Printing and Rural Journalism

The Junior College curriculum in Printing and Rural Journalism is completed in one year's time, following successful completion of the two-year Smith-Hughes course in printing. The following schedule lists the requirements of this curriculum:

Sophomore Year	Fall	Winter	Spring
Science Sequence	4	4	4
History (Approved sequence)	4	4	4
Int. to Liter., Engl 20 and *elect.*	3	3	
Elementary Psychology, Psy 25			3
Newswriting, PRJ 24			3
News Editing, PRJ 25	3		
News Reporting, PRJ 26		3	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective	2	2	2
	17	17	17

Terminal Curricula

A terminal curricula is one which will permit a student to complete a fairly well-balanced program by the end of his second year. The program in the General Science Division is organized to permit the student to explore the various fields of study available at the College without any particular specialization, but he must of course have completed the prerequisites of any courses he enrolls in. The student is allowed the maximum freedom in choice of his subject matter. Basic requirements are listed on pages 88 and 89.

Senior College Curriculum

Majors and Minors

After the satisfactory completion of the comprehensive examinations, the student is allowed to enter the Senior College to pursue his work toward the Bachelor of Science Degree. Subject to the approval of the Dean of the Division and the heads of the departments concerned, a major and a minor must be chosen each to consist of subjects in one department or of closely related departments as described in the catalog.

Majors may be chosen in Agricultural Economics, Art, Bacteriology, Botany, Chemistry, Entomology, History and Political Science, Mathematics, Physics, Rural Journalism, Rural Sociology, and Zoology. Curricula with these majors have been out-

lined on the following pages. However, the student who wishes to choose his major in one of these fields may outline his own curriculum in accordance with the requirements of the preceding pages subject to the approval of the head of the major department and the dean of his division.

Minors may be chosen in any department other than that in which his major is chosen, subject to the approval of the head of the department and the Dean of his division.

After the choice of a major and a minor has been approved, the student should refer to the curriculum concerned and follow that program as closely as possible.

Preparation for High School Training

Students who plan to teach in high school must meet the requirements set up by the State Department of Public Instruction for the teacher's certificate. The professional education requirement is a minimum of 26 term credits including elementary psychology. With the exception of elementary psychology, which is prerequisite to the other courses and taken in the sophomore year, the education and psychology courses are taken as sequences in the Senior College. These do not count as a major or minor at State College.

In addition to the professional requirements, there are certain subject matter requirements. The State Department recognizes the College subject majors and minors, but also sets up certain subject groups called teaching majors and minors. In addition to this the teacher must meet certain personal and scholastic standards.

See requirements for teaching in catalog description of the Education Department (page 98) and consult the Head of Education Department for requirements and sequences of courses for completing the work.

Departments and Curriculum

On the following pages are curricula which have been outlined in connection with the departments which offer majors that may be selected towards the bachelor's degrees conferred in the General Science division. Both the Junior and Senior College curricula are included in these outlines.

Instead of selecting a curriculum that has been outlined the student may, with the approval of the Dean of the General Science division and the heads of the major and minor departments, formulate his curriculum in accordance with the requirements mentioned on the preceding pages.

The Curriculum in General Science, Agricultural Economics Major

Leading to the degree of Bachelor of Science in General Science

See Agricultural Economics curriculum in Division of Agriculture

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
History (Approved sequence)	4	4	4
Inorg. Chemistry, Ch 1abc; or Elementary Physics, Phy 1abc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
Elective	3	4	4
	16½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Elementary Psychology, Psy 25	3		
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
College Algebra, Math 10	5		
Military Science, Mil 20abc	1	1	1
Prin. of Account., AgEc 35ab	4	4	
Elective		3	7
Physical Education, PE 20abc	1	1	1
	17	17	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Statistical Meth., AgEc 141ab	5	5*	
Financial Organiza., AgEc 48		4	
American Government, PS 34	4		
State and Local Govern., PS 44		4	
General Botany, Bot 10ab; or General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Economic Geography, AgEc 30			3
Interm. Accounting, AgEc 135			4
Elective	4		6
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Prin. of Marketing, AgEc 55		5	
Public Finance, AgEc 145	3		
Business Law, AgEc 41		5	
International Trade, AgEc 110		3	
Production Econ., AgEc 110			3
Money, Bank Credit, and Price, AgEc 148			3
Electives in Natural Science, Mathematics or App. Science	8	4	4
Elective	6		7
	17	17	17

*141a required, 141b recommended.

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: AgEc 20, 48, 55, 100, 141a, plus 17 elective credits.
MINOR: AgEc 20, 48, 55, 141a, plus 5 elective credits.

Suggested electives, Freshman and Sophomore years.

Analytic Geometry, Math 12
Trigonometry, Math 11
French or *German*
Development of Civilization, 1abc
Economic History of the U. S., 26ab
American Nation, 23ab

Department of Art

Professor Ritz, Assistant Professor Ober

The courses offered in this department are intended to stimulate an interest in and an appreciation of the Fine Arts. They are designed to develop a knowledge of the basic principles underlying the various phases of design, drawing, painting, color, applied arts and crafts.

JUNIOR COLLEGE

1abc Design 2 credits each term FWS

A foundation course intended to serve as a basic prerequisite for all other art work. Design and composition are emphasized throughout; color, with consideration of color theory. Designs are created for specific uses, mediums and methods of execution. Miss Ritz, Miss Ober. Laboratory fee 50 cents.

2 Freehand Drawing 1 to 2 credits each term FWS

The principles of perspective; exercises in outline and value from cast, nature forms and still life; interpretative compositions; mediums: charcoal, pencil and pen and ink. Miss Ritz, Miss Ober. Laboratory fee 50 cents.

25 Applied Design 2 credits FWS

The designing and execution of various problems involving definite use, material, tools and processes. Problems such as stenciling, block-printing, needlework, metal, wood, carved plaster, etc., actual application and execution. P, 1abc. Miss Ritz, Miss Ober. Laboratory fee 50 cents.

27 Art Appreciation 3 credits FWS

The place of the Fine Arts in the development of civilization and as part of our cultural heritage with major emphasis on the pleasurable and intelligent appreciation of our artistic achievements. Miss Ritz.

SENIOR COLLEGE

20 Advanced Freehand Drawing and Composition
1 to 2 credits each term FWS

Cast, pose and still life in the construction of heads and figures; the modeling of surfaces and the effects of light; imaginary compositions; mediums: pencil, charcoal, pen and ink. P, six credits in drawing. Miss Ritz, Miss Ober. Laboratory fee 50 cents.

22 Costume Design and Fashion Illustration
2 credits W

Commercial rendering in color and black and white; costumes and accessories built on design principles, with use of research material. P, 1abc and some drawing. Miss Ritz. Laboratory fee 50 cents.

23 Interior Decoration 2 credits S

Technical rendering of design plates in color and in black and white; special consideration of scale, color, texture, and composition in relating interior furnishings to architectural features. P, 1abc and some drawing. Miss Ritz. Laboraotry fee 50 cents.

26 Crafts 1 to 2 credits each term FWS

The principles of design as applied to construction and decoration in the various crafts of leather tooling, pottery, basketry, weaving, stenciling, bastik, block-printing, etc. P, 1abc, or some training in drawing and design. Miss Ritz, Miss Ober. Laboratory fee 50 cents.

28 Advanced Design 1 to 2 credits each term FWS

Further emphasis of design principles; problems of an advanced nature selected from different design fields will be assigned; use of source material considered. P, 1abc and 25. Miss Ritz, Miss Ober. Laboratory fee 50 cents.

40 Painting 1 to 2 credits each term FWS

Color and its properties; exercises in mixing and harmonizing color in painting, in oil, water color or pastel; emphasis given to problems of composition. P, 3 credits in Freehand Drawing. Miss Ritz. Laboratory fee 50 cents.

42 Art Appreciation, Advanced 1 credit FWS

A study of the art of a particular period. A different period will be selected each term and so arranged that over a period of terms, a fairly complete historic survey will be possible. P, 27 suggested. Miss Ritz.

The Curriculum in General Science, Art Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Dev. of Civili., RS 1a, Hist 1bc	4	4	4
French or Spanish, 1abc	4	4	4
Science Sequence	3	3	3
Design, Art 1abc	2	2	2
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
Freehand Drawing, 2	2	2	2
Applied Design, Art 25		2	
Art Appreciation, Art 27			3
Int. to Liter., Engl 20 and elec.	3	3	
Elementary Psychology, Psy 25	3		
Extempore Speaking, Sp 22			3
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20	5		
American Government, PS 34			4
French or Spanish, 21abc	3	3	3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	18	17	17

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Advanced Freehand Drawing and Composition, Art 20	2	2	1
Crafts, Art 26		2	2
Costume Design, Art 22 and/ or Interior Decorat., Art 23		2	2
Algebra, Math 10	5		
French or Spanish, 41abc	3	3	3
Physiology, Z 22			4
Statistical Methods, AgEc 141a			5
Elective in Science	4	4	
Elective in Economics	3	3	
Elective in Art		2	
	17	18	18

Senior Year	Fall	Winter	Spring
Advanced Design, Art 28	2		1
Painting, Art 40		2	
Art Appreciation, Adv., Art 42	1	1	1
Elective in Science	4	4	
Elective in Sociology	3	3	
Elective in Political Science			4
Elective	7	7	11
	17	17	17

Prescribed courses are in Roman type, **electives and optional courses are in** *Italic type*.

MAJOR: Art 1abc; 2 for 6 credits; 20 for 5 credits; 22 or 23; 25; 26 for 4 credits; 27; 28 for 3 credits; 40 for 2 credits; 42 for 3 credits.
MINOR: Art 1abc; 2 for 6 credits; 22 or 23; 25; 26 for 2 credits; 27; 42 for 1 credit; electives, 2 credits.

The Curriculum in General Science, Botany Major

Leading to the degree of Bachelor of Science in General Science

See Botany curriculum in Division of Agriculture.

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
College Algebra, Math 10	5		
Trigonometry, Math 11		5	
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, Bot 10abc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Analytic Geometry, Math 12			5
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
Introd. to Literature, Engl 20	3		
Extempore Speaking, Sp 22		3	
Principles of Sociology, RS 20		5	
Prin. of Economics, AgEc 20			5
Elementary Psychology, Psy 25	3		
Elemen. Organic Chem., Ch 21	5		
Dev. of Civil., RS 1a, Hist 1bc	4	4	4
Local Flora, Bot 27			4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
General Bacteriology, Bac 30		4	
Biography, Engl 25			3
	17	18	18

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
General Physics, Phy 21abc	4	4	4
American Government, PS 34	4		
Plant Microtechnique, Bot 42		4	
Geology, Agron 171			5
*Elective**	6	6	5
	18	18	18

Senior Year	Fall	Winter	Spring
Botany Seminar, Bot 172		1	
Genetics, Z 42	3		
Organic Evolution, Z 60			3
Gen. Plant Pathology, Bot 45	5		
Plant Physiology, Bot 150ab		5	5
Plant Morphology, Bot 140abc	5	5	5
Advanced Comp., Engl 42		3	
*Elective**	4	4	4
	17	18	17

*Students who expect to continue the study of botany at the graduate level should include among their junior and senior electives a minimum of two year-courses in French or German.

Those who expect to teach botany or biology in the secondary schools should include among their electives such courses in the department of Education as are required for teacher certification.

Prescribed courses are in Roman type, **electives and optional courses are in** *Italic type*.

MAJOR: Bot 10, 27, 42, 172 and additional electives to total at least 36 credits.
MINOR: Bot 10, 27 and additional electives to total at least 24 credits.

The Curriculum in General Science, Bacteriology Major

Leading to the degree of Bachelor of Science in General Science

See Bacteriology curriculum in Division of Agriculture.

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
College Algebra, Math 10	5		
Trigonometry, Math 11		5	
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, Bot 10abc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Analytic Geometry, Math 12			5
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	*Fall*	*Winter*	*Spring*
Introdu. to Literature, Engl 20	3		
Extempore Speaking, Sp 22		3	
Principles of Sociology, RS 20		5	
Prin. of Economics, AgEc 20			5
Elementary Psychology, Psy 25			3
Dev. of Civil., RS 1a, Hist 1bc	4	4	4
Ele. Organic Chemistry, Ch 21	5		
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	18	18	18

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Element. Bacteriology, Bac 41	5		
Microbiology of Water and Sewage, Bac 46		4	
Principles of Infection and Immunity, Bac 142		5	
Pathogenic Bacteria, Bac 143			5
General Physics, Phy 21abc	4	4	4
American Government, PS 34	4		
Adv. Composition, Engl 42			3
*Elective**	4	4	5
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Bacteriology Seminar, Bac 160	1	1	1
Geology, Agron 171			5
Soil Bacteriology, Bac 61	5		
Virus & Rickettsi. Dis., Bac 152		4	
Dairy Bacteriology, DH 141		5	
Adv. Dairy Bacteriol., DH 162			3
Gen. Plant Pathology, Bot 45	5		
Parasitology, Z 41			3
*Elective**	6	7	5
	17	17	17

*Students who expect to continue the study of bacteriology at the graduate level should include among their junior and senior electives a minimum of two year-courses in French or German.

Those who expect to teach biology or health subjects in the secondary schools should include among their electives such courses in the department of Education as are required for teacher certification.

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: Bac 41, 46, 142, 143, 160 and additional electives to total at least 36 credits. Such electives may be chosen from offerings of other departments if they are approved as being directly pertinent to a bacteriology sequence.

MINOR: Bac 41, 142, 143 and additional electives to total at least 24 credits.

Department of Chemistry

Professor Webster, Professor Emeritus Dunbar, Professor Moxon, Associate Professor Binnewies, Assistant Professor Duffy.

The courses of the Chemistry Department are organized to serve three purposes: First, since chemistry is so closely related to other fields of study, a number of subjects are offered to give the student sufficient training to meet the needs of chemistry in his profession;

Second, a non-professional major is available to students who wish to take additional work in chemistry, but who do not care for the curriculum in professional chemistry. Graduates with this major are divided into two groups with a somewhat different curriculum for each. One group will be qualified to teach chemistry in the secondary schools and junior colleges and the other group, following twelve to eighteen months training in a clinical or hospital laboratory approved by the Council on Medical Education and Hospitals of the American Medical Association, will be fitted for positions in physicians' offices, clinics, hospitals, or research laboratories. Graduates of the latter curriculum will be eligible to take the examination for registry as a Clinical Laboratory Technician. The requirements of the professional major must be satisfied however before the student may be recommended for graduate work in chemistry.

Finally, a professional major is offered to those students who intend to pursue the profession of chemistry. Only those students who demonstrate definite ability in chemistry will be permitted to choose the professional major. Because of the specialization required in this training, a number of the General Science requirements are dropped, with the substitution of additional chemis-

try, mathematics and foreign language. This department is on the approved list of the American Chemical Society for training professional chemists. Graduates of this curriculum will be certified to the American Chemical Society as being eligible for full membership following two years of graduate work or other experience in chemistry.

Students with the professional major should plan to continue their training in chemistry until the Ph.D. degree is received. Facilities are available in this department for graduate study leading to the Master's Degree. On completion of this graduate work, capable students are usually able to obtain fellowships or assistantships from one of the larger instiutions where study towards the doctorate degree can be continued.

For the curriculum in Agricultural Biochemistry refer to page 36.

JUNIOR COLLEGE

1ab Inorganic Chemistry 4 credits each term FW
A general survey with emphasis on chemical laws and theories and non-metallic elements. P, freshman standing. Staff. Laboratory fee $3.00; deposit $3.00 each term.

1c Inorganic Qualitative Analysis 4 credits S
Analysis of mixtures of common inorganic compounds; systematic study of the metals. (Usually offered during the summer session.) P, 1b. Staff. Laboratory fee $4.00; deposit $3.00.

2abc General Chemistry 3 credits each term FWS
A survey course in general chemistry for general science students. Does not meet the prerequisites of advanced courses in chemistry. P, freshman standing. Laboratory fee $1.00 each term.

19 Survey of the Chemistry of Carbon Compounds 5 credits S
The compounds of carbon with emphasis on those of special interest to students of home economics and nursing education. P, 1ab (open only to home economics and nursing education students). Laboratory fee $3.00; deposit $5.00.

20 Advanced Qualitative Analysis 4 credits F
A continuation of course 1c to meet the needs of chemistry majors. P, 1c. Laboratory fee $4.00; deposit $5.00.

21 Elementary Organic Chemistry 5 credits ForW
The compounds of carbon with emphasis on those of special interest to students of agriculture and general science. (Usually offered during the summer session.) P, 1c. Laboratory fee $6.00; deposit $5.00.

22ab Elementary Organic Chemistry 5 credits each term FW
A general course designed to meet the requirements of the pharmacy division. P, 1c. Laboratory fee $6.00; deposit $5.00 each term.

23 Gravimetric Analysis 4 credits ForW
Theory and practice of elementary gravimetric analysis. P, 1c. Laboratory fee $5.00; deposit $4.00.

24 Volumetric Analysis 4 credits S
Theory and practice of elementary volumetric analysis. P, 1c. Laboratory fee $5.00; deposit $4.00.

25 Food Analysis 3 credits WorS
Quantitative analysis of food materials. P, 19 or equivalent. Laboratory fee $5.00; deposit $5.00.

28ab Stoichiometry 1 credit each term WS
The methods of calculations used in quantitative analysis. Should accompany the course in gravimetric and volumetric analysis. P, 1c.

SENIOR COLLEGE

41 Agricultural Biochemistry 5 credits F
For students of agricultural science. Approximately half of the laboratory work is of quantitative nature. including feed and mineral analysis. P, 21. Laboratory fee $6.00; deposit $5.00.

46 Chemistry of Toxic Gases 2 credits S
The toxic materials used as chemical warfare agents. P, 21 or equivalent. Given in alternate years; not given in 1945-46.

130 Chemical Literature 2 credits F
For students who are majoring in chemistry. P, minor in chemistry; reading knowledge of German or French.

131 Reports and Manuscripts 1 credit W
Standard methods of preparing reports and manuscripts. Typical reports are prepared. P, 130.

141 Advanced Agricultural Biochemistry 5 credits F
The chemistry of biological processes of plants and animals, for chemistry majors. P, 21, 23, 24, and 41. Laboratory fee $6.00; deposit $5.00.

145 General Technical Analysis 3 credits F
Analysis of commercial materials as steels, alloys, ores, etc. P, 24. Laboratory fee $5.00; deposit $5.00.

160abc Organic Chemistry 5 credits each term FWS
A comprehensive study of the compounds of carbon in the aliphatic and aromatic series. The laboratory work of the spring quarter is entirely devoted to systematic qualitative analysis. P, 1c, junior standing. Laboratory fee $6.00; deposit $5.00 each term.

161 Water Analysis 2 or 3 credits FWorS
Analysis of water to determine its potability and value as a boiler water and preparation of reports of such analysis. P, 23, 24. Laboratory fee $5.00; deposit $5.00.

162 Physiological Chemistry 5 credits S
A survey of the field of physiological chemistry. Especially suited for pre-medic students and advanced students in home economics and nursing education. P, 19 or 21 and 23 or 25. Laboratory fee $6.00; deposit $5.00.

163abc Physical Chemistry
5 credits each term FWS
An introductory course. P, 21 or equivalent, 24, Math 25, 26, 27, Physics 21c. Laboratory fee $5.00; deposit $5.00 each term.

173 Undergraduate Research
Credit arranged FWorS
Special problems requiring original research. P, consent of instructor. Laboratory fee $1.00; deposit $1.00 per credit hour.

174 Biochemical Research Credit arranged FWorS
Research problems in applied biochemistry. P, 141. Laboratory fee $1.00; deposit $1.00 per credit hour.

190abc Seminar FWS
Required of all students majoring in chemistry. Presentation of topic based on reference reading or original research. P, minor in chemistry.

230 Chemistry of Colloids 2 credits W
The colloidal systems, including adsorption and surface phenomena. P, 163c.

241 Proximate Organic Analysis 3 credits W
Analysis of various commercial products as petroleum products, beverages, etc. P, 24, 160c. Laboratory fee $5.00; deposit $5.00.

243 Animal Nutrition 2 credits F
Recent developments in the biochemistry of animal nutrition. P, 141, graduate standing. Given in alternate years.

244 Intermediate Metabolism 2 credits F
The intermediate metabolism of carbohydrates, proteins and fats in animals, plants and micro organisms. P, 141, graduate standing. Given in alternate years.

246 Stereochemistry of Carbon Compounds
2 credits W
The compounds of carbon which are isomeric due to a difference in spatial arrangement of the atoms or groups. P, 160c, graduate standing.

247 Solutions of Electrolytes 2 credits S
Electrolytic dissociation in the light of modern theory. P, 163c, graduate standing. Given in alternate years.

262 Thesis Credit arranged FWorS
Required of all candidates for the Master's degree in chemistry. P, graduate standing.

The Curriculum in General Science, Professional Chemistry Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
College Algebra, Math 14	5		
Plane Trigonometry, Math 15		5	
Analytic Geometry, Math 16			5
German or French, 1abc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	*Fall*	*Winter*	*Spring*
Ad. Qualitative Analysis, Ch 20	4		
Quantitative Analy., Ch 23, 24		4	4
Stoichiometry, Ch 28ab		1	1
German or French, 21abc	3	3	3
Differential Calculus, Math 25	5		
Integral Calculus, Math 26		5	
Applied Calculus, Math 27			5
General Physics, Phy 21abc	4	4	4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	18	19	19

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
American Governemnt, PS 34			4
Extempore Speaking, Sp 22		3	
Organic Chemistry, Ch 160abc	5	5	5
Elective in Social Science	6	5	5
Elective in English	3		
Elective	3	4	3
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Physical Chemistry, Ch 163abc	5	5	5
Chemistry Seminar, Ch 190abc	1	1	1
Elective in Chemistry	3		
Elective	5	8	8
	14	14	14

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.
MAJOR: Ch 1abc, 20, 23, 24, 28ab, 160ab, 163abc, 190abc, and 3 hours elective.
MINOR: None available.

The Curriculum in General Science, Chemistry Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
College Algebra, Math 10	5		
Trigonometry, Math 11		5	
Analytic Geometry, Math 12			5
Dev. of Civil., RS 1a, Hist 1bc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

JUNIOR COLLEGE

Sophomore Year	Fall	Winter	Spring
Int. to Liter. Engl 20 and elect.	3	3	
Extempore Speaking, Sp 22			3
Ele. Organic Chemistry, Ch 21	5		
Quantitative Analy., Ch 23, 24		4	4
Stoichiometry, Ch 28ab		1	1
Elementary Psychology, Psy 25	3		
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
General Botany, 10abc	4	4	4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	17	19	19

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Elementary Physics, Phy 1abc	4	4	4
Geology, Agron 171			5
American Government, PS 34	4		
Elective in Chemistry	3	3	
Elective	6	10	8
	17	17	17

Senior Year	Fall	Winter	Spring
Chemistry Seminar, Ch 190abc	1	1	1
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Elective	10	10	10
	15	15	15

Suggested electives:

German 1abc, 21abc; *French* 1abc, 21abc; *Advanced Qualitative Analysis*, Ch 20; *Food Analysis*, Ch 25; *Water Analysis*, Ch 161; *Physiological Chemistry*, Ch 162; *Advanced Composition*, Engl 42; *General Bacteriology*, Bac 30; *Calculus*, Math 25, 26, 27; *Courses in Education to complete teacher training.*

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: Ch 1abc, 21, 23, 24, 190abc, and additional electives to total 36 credits.
MINOR: Ch 1abc, 21, 23, 24, (Ch 25 may be substituted for either Ch 23 or Ch 24.)

Curriculum in Clinical Laboratory Technology

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
College Algebra, Math 10	5		
Trigonometry, Math 11		5	
American Government, PS 34			4
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
	18½	18½	17

Sophomore Year	Fall	Winter	Spring
Adv. Qualitative Analy., Ch 20	4		
Quantitative Analy., Ch 23, 24		4	4
Elementary Physics, Phy 1abc	4	4	4
Special Prob. in Zoolo., Z 201			5
Parasitology, Z 41			3
Principles of Sociology, RS 20	5		
Prin. of Economics, AgEc 20		5	
Introdu. to Literature, Engl 20	3		
Extempore Speaking, Sp 22		3	
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	18	18	18

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Element. Bacteriology, Bac 41	5		
Principles of Infection and Immunity, Bac 142		5	
The Pathogenic Bact., Bac 132			5
Clinical Methods, Pha 152abc	4	4	4
Organic Chemistry, Ch 22ab	5	5	
Physiological Chemist., Ch 162			5
Vertebrate Histology, Z 164ab	4	4	
Elementary Psychology, Psy 25			3
	18	18	17

Senior Year

Twelve months training in a School of Clinical Laboratory Technology approved by the Council on Medical Education and Hospitals of the American Medical Association for which 48 quarter hours credit will be gained.

Department of Education and Psychology (Ed, Psy)

Professor Wiseman, Associate Professor McArthur, Assistant Professors Klein, Sundet, Walker, Martin, Tweeten, Thompson

The department of Education and Psychology has for its chief purpose the training of teachers of agriculture, homemaking, industrial arts and academic branches. Certain of the psychology courses are service courses for students in different divisions of the College who do not plan to teach.

State College has been approved for training teachers of vocational agriculture and vocational homemaking by the State Board

of Vocational Education and approved by the Division of Vocational Education of the U. S. Office of Education which administers vocational education under the Smith-Hughes Act and subsequent acts providing for federal aid for such work. Students planning to prepare to teach should consult the Education Department for advice in selecting their curricula and for sequence of courses.

A graduate major or minor in Education is also available for those interested in and qualified to pursue graduate work.

By action of the Board of Regents, students who are not above freshman rank are not permitted to pursue subjects in this department.

Teaching Certificates

Teaching certificates are issued by the State Superintendent of Public Instruction. The curricula for teachers at State College have been approved by the State Superintendent.

Essentially the High School General Certificate qualifies the holder to teach academic subjects in high school. The certificate states major and minor subjects and subject groups which a teacher may teach. The High School Special Certificate qualifies the holder to teach in special fields of agriculture, home economics, industrial arts, commercial subjects, physical education, music, fine arts, and trades and industries. The special fields of preparation are stamped on the certificate. Holders of this certificate may teach those academic subjects in which they have made adequate preparation. The subjects of preparation are stamped on the certificate. Recently teachers of agriculture, home economics. industrial arts and commercial subjects have been issued the High School General Certificate.

There is also a special vocational certificate which is issued to teachers engaged exclusively in the field of vocational education.

Quality of Work

Students preparing to teach must show reasonably good scholarship in major and minor groups in which they may expect to teach and in their education and psychology courses. To qualify for the course Supervised Student Teaching, the student must have reached senior standing, have taken required courses in education and in subject matter fields and must have at least an average of "C" both in education courses and in the subjects in the field of assigned student teaching.

Placement Service

A placement service for graduates and former students of the College who are prepared to teach is provided in the Bureau of Recommendations in the Department of Education. The Bureau also serves local school officers by helping them find qualified teachers. The annual fee is $1.00 for registration or re-registration in the Bureau.

Curricula for Teachers of Special Branches

Curricula for these teachers are found in the catalogue on pages listed below. Frequently the calls for such special teachers, as from our smaller high schools, specify some teaching in the academic fields. The certificates permit this as the minor preparation warrants it. Consequently, preparation in one or two academic minors in addition to a major is recommended. Also frequently the calls for teachers specify some extra-curricular activity.

Curriculum for Teachers of Vocational Agriculture—See page 40.

Curriculum for Teachers of Vocational Homemaking—See page 79.

Curriculum for Teachers of Industrial Arts—See page 67.

Curricula for Teachers of Academic Branches

These teachers receive the High School General Certificate, as each General Science student has a subject matter major and minor. The education and psychology courses do not count as a major or minor but are one of the requirements for the teaching certificate. Because of the nature of the work of the high school curriculum to be taught and because of calls for teachers from many small and medium high schools in the state requiring more general preparation and less specialization of subject matter preparation, teachers should carefully choose electives to broaden their preparation beyond the specialized subject major and minor requirements of the College. Teachers should prepare themselves to teach in one major field and in one or two minor fields. Also the calls usually specify directing some extra-curricular activity.

Fields. Teachers prepare in different combinations of these fields: Science, Mathematics, Social Studies, English, Foreign Languages, Commercial Subjects, Physical Education, Music, Art.

Subject and Group Majors and Minors. In issuing teaching certificates the State Department of Public Instruction holds these standards as minimums:

For a major ..... 24 sem. cr. (36 term)
For a single subject major ..... 20 sem. cr. (30 term)
For a group minor ..... 15 sem. cr. (22½ term)
For a single subject minor ..... 15 sem. cr. (22½ term)
For a foreign language minor ..... 15 sem. cr. (22½ term)

High school teachers are permitted to teach only in their major or minor fields of preparation. Consult the Education Department for requirements as to subjects and credits required in group majors and minors.

Professional Requirement

Elementary Psychology is prerequisite to a minimum of 23 term credits in Education. Education and psychology credits from another institution must be approved by the Head of the Education Department. It is recommended that prospective teachers complete more than the minimum required since school superintendents expect this.

The outline for the minimum professional requirement is given below:

EDUCATION

Curriculum in Education—Junior College

Sophomore Year	*Fall*	*Winter*	*Spring*
Elementary Psychology, Psy 25	3[1,2]		
Junior Year	*Fall*	*Winter*	*Spring*
Prin. of Secondary Educat., 40	3		
Educational Psychology 45		3	
Meth. of Teaching in H. S., 47			3
Senior Year	*Fall*	*Winter*	*Spring*
Special Methods Course—Major or Minor	3[1]		
Supervised Student Teach., 74	5[2]		
High School Adminitra., 163	3[2]		
Senior Education Option, Ed 137 or Ed 164 or Psy 165	3		

[1]Elementary Psychology is not counted as a part of the 23 credits in Eduaction.

[2]Any term.

In order to complete the above schedule in the regular four-year course it is necessary for students to declare their intention of securing a teaching certificate upon graduation not later than the registration day of the spring term in the sophomore year.

SENIOR COLLEGE

40 Principles of Secondary Education 3 credits F

Aims, functions, population, teaching staff, curriculum and extracurriculum, and relations of American Secondary Schools with emphasis on South Dakota. Required for certification. P, junior standing. Mr. Wiseman.

41 Principles of Vocational Education 3 credits F

Survey of the whole field of vocational education. Open to prospective teachers in all fields. P, junior standing.

42 Observation and Survey of Vocational Agriculture 1 credit F

Study and observations of the work of the teacher of agriculture. Some visitation. To be taken concurrently with Ed 40. P, junior in Agriculture. Mr. Sundet.

45 Educational Psychology WSu

Nature of learning in man, learning curves, economical learning, rates and limits of improvement, the retention of experience, differences in learning capacity, transference and interference. Required for certification. P, Psy 25, junior standing. Mr. Wiseman, Miss Klein.

47 Methods of Teaching in High School 3 credits S

A general methods course. Deals with standard and newer classroom procedures. Required for certification. P, 40, 45, junior standing. Mr. Wiseman.

51ab, 52, 53, 78 Special Methods in Home Economics

(See Home Economics Division.)

54 History of Education 3 credits S

Any one of two types of material given: (a) an intensive course in the history of education in the United States; (b) the history of modern education. P, 40, 45. Miss Klein.

62 Special Methods of Teaching High School Subjects 3 credits

For students with majors or minors in academic branches or for teachers of agriculture or home economics. Deals with aims and values, use in high school, selection and organization of subject matter, classroom procedures, and measurement of results.

P, Ed 40, 45, 47 and at least a minor in that branch.

(a) Teaching Social Studies, Miss Klein, 3 credits F
(b) Teaching Science, Mr. Wiseman 3 credits W
(c) Teaching English, Miss Klein 3 credits S
(d) Teaching Mathematics 3 credits S

69 Special Methods of Teaching Industrial Arts 3 credits S

For Industrial Arts students preparing to teach. Deals with aims and values, selection and organization of shop projects and activities, teaching techniques, and shop organization. P, 40, 45, 47, and a major or minor in industrial arts. For seniors.

70 Special Methods of Teaching Vocational Agriculture 3 credits F

Vocational agriculture in high schools; aims, course of study, selection and organization of subject matter, methods in field, laboratory and class room. Special attention given to supervised practice. Required of agriculture students for certification. P, 40, 42, 45, 47.

71 Organization and Management of Vocational Agriculture 3 credits W

Various phases of work of the vocational agriculture teacher are taken up for analysis and for constructing a program. P, 70. Required for certification of teachers of agriculture.

72 Teaching Farm Mechanics 3 credits S

Objectives, materials and methods and management in teaching farm mechanics in vocational agriculture schools. Required of agricultural education students. P, 70.

73 Supervised Student Teaching in Vocational Agriculture 5 credits FWS

Required of seniors in agricultural education for teacher certification. Application for the course must be made on approved form during the junior year. Student must have completed the required junior education courses and at least 40 credits in technical agriculture. He must have at least an average of "C" in both education and technical agriculture courses. P, senior standing and Ed 70. Mr. Thompson. Fee $3.00.

74 Supervised Student Teaching in High School 5 credits FWS

This work is in the academic branches. Application must be made on approved form during junior year. P, senior standing, junior Education courses completed, teaching minor in subject field, average "C" in education courses and in assigned teaching subjects. One period daily to fit Brookings High School schedule and one conference period per week. Miss Klein, Mr. Wiseman, Mr. Martin, Fee $3.00.

75 Supervised Student Teaching in Industrial Arts W

Required of seniors for certification. Students must have completed the junior Education courses and have at least 30 credits in industrial arts. Must have at least an average of "C" in both education courses and in the assigned field of teaching. One period daily arranged to fit the Brookings High School schedule and one conference hour. Fee $3.00.

137 Educational and Vocational Guidance 3 credits WSu

Educational and vocational guidance; needs, aims and functions, means and methods; testing and counseling; programs of guidance in junior and senior high schools. P, 40, 45, 47. Mr. Wiseman.

160 Public School Administration 3 credits WSu

Organization and administration of the school system in state, county, and various types of school districts. Consideration of work and responsibilities of State Department of Public Instruction, the County Superintendent, the public, school boards and superintendents and principals. Considers financial problems. P, 45, 47. Mr. Wiseman.

163 High School Organization and Administration 3 credits FWSSu

The high school and its problems; the schedule, extra-curricular activities, student participation, student management, guidance: (a) For teachers, (b) for superintendents and principals. P, 40, 45, 47. Mr. Wiseman.

164 Educational Measurements 3 credits FSSu

Test movement in education and the principal tests designed to measure achievement in secondary school subjects. The value of educational measurements. P, 40, 45, 47. Miss Klein. Fee $1.00.

165 Mental Tests and Measurements

(See under Psychology)

168 Educational Statistics 3 credits Su

Methods of dealing with quantitative educational data; exercises in tabulation, graphical representation, and in the calculation of statistical constants, measures of dispersion and correlation. Illustrative material from school costs and school census, retardation, and standard achievement tests will be used. May be given in alternate years. P, 40, 45, 47.

169 The School Curriculum 3 credits SSu

Nature, principles, applications, and purposes of the curriculum in American public schools. P, 40, 45, 47, senior in education. Mr. Wiseman.

175 Education Seminar 2 credits SSu

Reviews of scientific investigations of problems of education. Problems for investigation and research assigned to students. P, open to seniors and graduate students in education by permission of instructor. Staff.

176 Seminar in Agricultural Education 2 credits SSu

Specific problems dealing with instruction in vocational agriculture, such as project work, course of study, farm enterprise analysis, the local survey, etc. Readings, and the work is actually carried out, recorded and reported. P, 70, 71, 73.

***220 Organization and Administration of Elementary Education** 3 credits Su

The problems of the superintendent in organizing and administering the work of the elementary school. P, Education 160 and graduate standing.

***260 Principles of Supervision** 3 credits Su

Problems in the scientific supervision of teachers in elementary and secondary schools; organization of supervision; studies of supervisory functions; procedures for classroom visitation and conferences; rating of teachers; improvement of teachers in service; evaluation of supervision. P, 160, and graduate standing.

***262 Business Administration of Schools** 3 credits Su

Business aspects of public school administration including such problems as organization and work of the school board, equipment and supplies, janitor

*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.

nors in English should take 30, 31, and at least one course numbered 50 or above.

All freshmen are required to take 1abc. Sophomores in General Science and Home Economics must take 20, and, unless English minors, either 21, 22, 23, 24 or 25. Juniors in the Division of Engineering must take English 42. Students in the Division of Agriculture may take 20 and 42 to meet the English-Journalism requirement.

A preliminary examination in English is given all freshmen when they enter college. Those whose deficiencies indicate that they were unable to carry English 1a successfully are required to enroll in English 0. After passing English 0, these students are required to complete English 1abc.

Courses 21, 22, 23, 24, and 25 will not be offered any one term. From this group those courses will be scheduled for which a sufficient number of students have expressed a preference.

JUNIOR COLLEGE

0 English Composition 3 credits F

Thorough drill in grammar, punctuation, spelling, and sentence structure. Required of all freshmen who show deficiencies in the preliminary English examination. (See above.)

1abc English Composition
3 credits each term FWS

Drill in grammar, punctuation, and vocabulary and study of the principles of rhetoric to teach the student to use clear and correct English. Training is also given in accurate, intelligent reading. Required of all freshmen.

10 Reading 1 credit each term WS

A course in general reading. Books are selected by the student with the instructor's approval and oral reports made on them. The student is expected to read one book every two weeks.

This course may not be substituted for any of the required courses nor counted toward a minor in the department.

20 Introduction to Literature 3 credits FWS

The principal literary types—fiction, drama, essay, biography, and poetry. Although primarily a literature course, a great deal of attention is given to composition also.

Required of every sophomore unless some other arrangement obtains in his division. P, 1abc.

21 Fiction 3 credits WS

Study of narrative writing with emphasis on the novel and the short story. May be elected to complete the sophomore English requirement. P, 20.

22 Drama 3 credits WS

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

23 Poetry 3 credits WS

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

24 Essay 3 credits WS

Essays, ancient and modern. May be elected to complete the English requirement. P, 20.

25 Biography 3 credits WS

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

30abc English Literature 3 credits each term FWS

A historical survey of English literature from Beowulf to modern times. P, 20.

31ab American Literature
3 credits each term WS

American Literature from its beginning to the present day. P, 20 or 30.

SENIOR COLLEGE

42 Advanced Composition 3 credits FS

An advanced course in writing. Required of juniors in the Division of Engineering.

44 Short Story Writing 3 credits W

In addition to the writing, extensive reading in modern fiction is required. The aim of the course is cultural, not professional. P, 20 or 30.

50 Great Novelists of the Eighteenth Century
3 credits W

The principal novelists studied are Defoe, Richardson, Fielding, Smollet, and Sterne, P, 20.

52 Great Novelists of the Nineteenth Century
3 credits

The novelisst studied in this course include: Austen, Scott, Dickens, Thackeray, Eliot, the Brontes, Hardy, Conrad, and Galsworthy. P, 30.

56 The English Language 3 credits W

The development and structrue of the language. Special emphasis placed on grammar, treated with historical perspective. Attention will also be given to etymology and the development of the meaning of words.

Students intending to teach English are expected to take this course. P, 30.

60 Shakespeare 3 credits F

A study of representative comedies and tragedies. P, 30 or 22.

102 Social Ideals 3 credits Su

The literature of the last two centuries with emphasis on such concepts as liberty, democracy, and totalitarianism. The course is designed to give a background for understanding the present clash of ideologies. May be counted toward a major or minor in history when consent is obtained from the history department. P, 30 or English History.

Curriculum in General Science, Journalism-English Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Newswriting, PRJ 24			3
College Algebra, Math 10	5		
Physical Education, PE 1abc	1	1	1
Military Science, Mil 1abc	1	1	1
Orientation, 1ab	½	½	
Devel. of Civilization, Hist 1bc		4	4
Foreign Language	4	4	4
Press & Public Opinion, PRJ 10	3		
Elective		3	1
	17½	16½	17

Sophomore Year	Fall	Winter	Spring
Introdu. to Literature, Engl 20	3		
Extempore Speaking, Sp 22		3	
Elementary Psychology, Psy 25			3
News Edit. & Makeup, PRJ 25	3		
News Reporting, PRJ 26		3	
Prin. of Economics, AgEc 20			5
Inorganic Chem, Ch 1abc; or Elementary Physics, Phy 1abc	4	4	4
Physical Education, PE 20abc	1	1	1
Military Science, Mil 20abc	1	1	1
Foreign Language (2nd year)	3	3	3
Elective	2	2	
	17	17	17

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
English Literature, Engl 30abc	3	3	3
Botany, Bot 10abc; or General Zoology, Z 20ab	4	4	4
Human Physiology, Z 22			4
Principles of Sociology, RS 20			5
American Government, RS 34	4		
State and Local Gov't., PS 44		4	
Statistical Methods, AgEc 141a	5		
Elective in Economics		3	3
Elective in English		3	
	16	17	19

Senior Year	Fall	Winter	Spring
American Literature, Engl 31ab		3	3
Feature Writing, PRJ 30	2		
Writing the Spec. Arti., PRJ 41		2	
Editorial Writing, PRJ 52		3	
English Elective above 50			3
Short Story Writing, Engl 44		3	
Sociology Elective	3		3
Electives in Science or Math	4	4	4
Elective	7	2	3
	17	17	16

*Students who complete 21 credits in an approved foreign language may substitute these for 12 credits of electives in natural science and mathematics.

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: PRJ 24, 25, 26, 30, 41, 52; Engl 1abc, 20, 30abc, one course with a number above 50, plus electives to total 39 hours of English.
MINOR: Combination Journalism-English minor not available.

The Curriculum in General Science, Entomology Major

Leading to the degree of Bachelor of Science in General Science

See curriculum in Entomology in Agricultural Division.

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
College Algebra, Math 10 or 14	5		
Trigonometry, Math 11 or 15		5	
Analytic Geom., Math 12 or 16			5
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Military Science, Mil 1abc	1	1	1
Physical Training, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
Taxonomy of Insects, Ent 44ab	3	3	
Gen. Agr. Entomology, Ent 20			4
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
General Botany, Bot 10abc	4	4	4
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
General Bacteriology, Bac 30	4		
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Genetics, Z 42	3		
	19	17	18

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Field Crops Entomolo., Ent 40		3	
External and Internal Insect Morphology, Ent 43ab	3	3	
Vterin. and Med. Ent., Ent 60		3	
Parasitology, Z 41			3
American Government, PS 34			4
Elementary Psychology, Psy 25	3		
History Sequence	4	4	
Elementary Physics, Phy 1abc	4	4	4
Prin. of Beekeeping, Ent 61	3		
Elective			6
	17	17	17

Senior Year	Fall	Winter	Spring
Insectary Methods, Ent 161	3		
Insecticides, Ent 163		3	
Seminar, Ent 165abc	1	1	1
Vertebrate Histology, Z 164b		4	
Elective	13	9	16
	17	17	17

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: Ent 20, 40, 43ab, 44ab, 60, 161, 165abc, Z 164b and electives to total 30 credit hours.
MINOR: Ent 20, 40, 44ab, and electives to total 24 credit hours.
Suggested electives: French or German for students wishing to engage in postgraduate work.

The Curriculum in General Science, Zoology Major

Leading to the degree of Bachelor of Science in General Science

See curriculum in Zoology in Agricultural Division.

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
College Algebra, Math 10 or 14	5		
Trigonometry, Math 11 or 15		5	
Analytic Geom., Math 12 or 16			5
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
General Botany, Bot 10abc	4	4	4
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
Elementary Psychology, Psy 25	3		
Invertebrate Zoology, Z 40abc	3	3	3
Genetics, Z 42	3		
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	18	17	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
American Government, PS 34			4
History sequence	4	4	
Elementary Physics, Phy 1abc	4	4	4
Parasitology, Z 41	3		
Vertebrate Embryolo., Z 162ab		3	3
Agricultu. Entomology, Ent 20			5
Veterin. and Med. Ent., Ent 60		3	
Elective	6	3	1
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Vertebrate Zoology, Z 161ab	3	3	
Vertebrate Histology, Z 164ab	4	4	
Seminar, Z 165abc	1	1	1
Elective	9	9	16
	17	17	17

Prescribed courses are in Roman type, electives and optional courses are in *Italic type.*

MAJOR: Z 20ab, 22, 40abc, 41, 42, 161ab, 164ab, 165abc.
MINOR: Z 20ab, 22, 42, and electives to total 24 credit hours.

Suggested electives:

French or German for students wishing to engage in post-graduate study.

Department of Foreign Languages (FL)

Professor MacLaggan, Assistant Professor Wente

The methods employed in this department are intended to establish a broad and thorough foundation for literary and linguistic students. Constant reference is made to the relation between English and foreign languages. Thus a more perfect comprehension of our own English languages is obtained.

Merely to acquire a good reading knowledge of a modern language, or to study a living language from the standpoint of grammar alone no longer suffices.

The student is expected to develop an ability to understand and to use the foreign language in simple conversation.

Foreign language courses beyond those of the freshman year are designed to meet the needs of students in the various divisions of the college. Courses in technical reading are offered for students in engineering and aviation, courses in scientific reading for students specializing in science, and courses in conversation, composition and literature for students wishing to obtain a speaking and writing knowledge of foreign languages and and a knowledge of foreign literatures.

Not less than one year of any foreign language will be counted towards a degree unless the student has credit for at least one year of high school work. At least two years of work should be taken in one or more of the languages chosen and students are urged not to allow an interruption to occur in their language study whereby their knowledge of the language may slip away from them.

Students with special qualifications may choose a minor in a foreign language. A minimum of eighteen hours in any one language is required, exclusive of course 1abc. The head of the department should be consulted by students who wish such a minor no later than the close of the second year's study.

To meet this need the following courses are offered:

FRENCH

Miss MacLaggan

JUNIOR COLLEGE

1abc French 4 credits each term FWS

The formation of French sounds, drill in use of symbols of International Phonetic Association, the rules of French pronunciaion; drill in inflection, in reading, and writing. Elements of French grammar.

21abc Second Year Literary French
3 credits each term FWS

Review of grammar, study of irregular verbs and phonetics. Advanced work in composition. Sight reading of idiomatic French prose. Outside reading. Study of French pronunciation continued.

SENIOR COLLEGE

41abc French 3 credits each term FWS

Advanced composition and study of the French grammar; review of irregular verbs and their compounds; idiomatic French, oral, and written drill. Reading of prose and poetry of standard French authors. Conversation and the presentation of short plays. Drill in pronunciation with use of phonograph for corrective purposes; personal conferences with instructor. Outside reading of novels and reports.

SPANISH

Miss MacLaggan

JUNIOR COLLEGE

1abc Spanish 4 credits each term FWS

Elements of Spanish grammar with oral and written exercises. Intensive study of pronunciation; memorization work; Individual and group readings of selections pertaining to geography, customs and life of Spain, Central and South America.

21abc Second Year Literary Spanish
3 credits each term FWS

Review of grammar and special study of irregular verbs. Advanced work in composition, conversation, memory selections, and sight reading. The outside reading of short stories or a novel. Some time given to commercial correspondence.

31abc Second Year Spanish
3 credits each term FWS

For Engineers and Aviators. Must be preceded by Spanish 1abc. Current numbers of Spanish technical journals used as texts. Readings from Spanish American countries. Stress upon practical and technical knowledge of texts of most value to the nidividual student. Practice in speaking Spanish.

SENIOR COLLEGE

41abc Spanish 3 credits each term FWS

Advanced composition; conversation and memorization of poetry and prose selections; sight reading; commercial correspondence; reading of modern prose and drama; outside reading of a novel and report; review of grammar as a whole including all verbs. Intensive drill in pronunciation and presentation of short plays and dialogues.

GERMAN

Miss Wente

1abc German 4 credits each term FWS

Elements of German grammar with oral and written exercises; intensive readings of selections pertaining to German life; memorizing of poetry and idiomatic prose; reading in various fields of particular interest to the individual student.

21abc German 3 credits each term FWS

Review of grammar with special emphasis on subjunctive mode; oral and written compositions; reading of modern prose; memorizing of poetry and idiomatic prose; reading in various fields of particular interest to the individual student.

41abc German 3 credits each term FWS

Selected reading in prose and poetry from standard German authors, with composition.

PORTUGUESE and ITALIAN

Miss MacLaggan

Courses in Italian and Portugese are also offered if a sufficient number of students enroll in the course.

Department of History and Political Science (Hist, PS)

Professor Parker, Professor Emeritus Harding, Associate Professor Young, Associate Professor Volstorff, Assistant Professor Hemdahl

The courses in this department, in addition to their cultural values, are designed to serve as a necessary background for intelligent citizenship. They aim to meet the needs of the following groups of students: First, students in the General Science division who are majoring in any of the social sciences; second, those majoring in History and Political Science; and lastly, those in the General Science or other divisions not majoring in this department.

The courses in Political Science are designed to introduce the student to the political institutions, practical politics and international relations of the United States and leading foreign states.

All students majoring in this department should pay careful attention to sequences,

and build a program based on continuity and development.

JUNIOR COLLEGE

1bc Development of Civilization
4 credits each term WS

These courses cover the historic period of a three term survey of world civilization. While major emphasis is upon European culture, non-European civilizations, including those of India, China, Japan and Oceana, receive considerable attention. Course 1b carries the survey to approximately 1650; the third course contains relatively more material on the twentieth century than is ordinarily the case, with special attention to the ordeal of our own time.

The first term's work of the year's course, 1a, covers the prehistoric period and is taught by the Rural Sociology department. The year's work as a whole is designed as an orientation course in the social science for freshmen. Mr. Parker.

20ab Modern Europe 4 credits each term WS

Europe from 1500 to 1914. P, sophomore standing. Miss Young.

23ab The American Nation
4 credits each term FW

Period covered, 1783 to 1914. P, sophomore standing. Mr. Parker, Mr. Hemdahl.

24 Recent American History 4 credits S

First World War to the present. P, sophomore standing. Mr. Parker, Mr. Hemdahl.

26ab Economic History of the United States
3 credits each term FW

26a, Period covered, approximately to 1860; 26b, 1860 to present time. P, sophomore standing. Mr. Harding.

28 History of Agriculture in the United States
4 credits W

P, sophomore standing.

SENIOR COLLEGE

127 Economic History of Europe 4 credits S

Agriculture, industry, commerce, banking and economic policy. Major emphasis upon the period since 1700. P, Junior standing.

137 The United States in the Pacific 4 credits F

Geographic, racial, cultural backgrounds. Early contacts with West. United States expansion in the Pacific. The present situation. P, one year of college history and junior standing. Miss Young.

141ab American Diplomacy
4 credits each term WS

Historical treatment of American foreign policy. P, three courses in history and junior standing. Alternate years. Not given in 1945-46. Mr. Harding.

142abc Contemporary Europe
4 credits each term FWS

142a Background and the First World War

142b Europe Between Two Wars

142c The Second World War

P, junior standing and one year of college history. Miss Volstorff.

143ab Latin America and the United States
4 credits each term WS

143a Emergence of the Latin American republics

143b International relations of Latin Americans with special reference to the U. S.

P, one year of college history and junior standing. Miss Young.

144 Bibliography and Criticism 3 credits S

Historiography and historical bibliography. Brief survey of historical method. Members of staff.

Political Science

JUNIOR COLLEGE

31 Reading on Public Affairs 2 credits F

Designed to interest students in the more consistent and selective reading of the better newspapers. Miss Volstorff.

34 American Government 4 credits FS

Emphasis on the Constitution, federalism and the national government. P, sophomore standing. Mr. Hemdahl.

SENIOR COLLEGE

44 State and Local Government 4 credits W

Emphasis on State government, with rapid survey of local organization. P, sophomore standing. Mr. Hemdahl.

46 Political Parties 4 credits S

P, 44 or 23ab. Mr. Hemdahl.

47 Municipal Government 4 credits F

P, 44 or 23b. Alternates with Rural Local Government. Given in 1945-46. Mr. Harding.

48 Rural Local Government 4 credits F

Problems of rural government in rural-farm and non-farm areas. Alternates with Municipal Government. Not given in 1945-46.

60 Political Geography 3 credits

Geographical basis of national power and international relations, in terms of the material cultural and human resources of the major countries: the United States, the British Empire, France, Germany, Italy, Japan, Russia, China and Latin America. A background in physical and economic geography is recommended but not required. Prerequisite, junior standing.

160 Comparative Government 4 credits S

P, 34 and 44 and junior standing. Mr. Hemdahl.

162ab International Relations
4 credits each term WS

162a Background course; 162b, problems of international organization. P, junior standing and one year of college history. Alternates with American Diplomacy. Not given in 1945-46. Miss Volstorff.

171 American Political Theory 4 credits S

P, junior standing and 12 hours of political science and history. Given in 1945-46. Mr. Hemdahl.

250ab Special Problems in Political Science 3 or 4 credits Su

Principles of Public Administration, dealing with basic principles of underlying organization, personnel, finance, and relationships of the administrator with the public; further advanced work, to suit the graduate student's needs.

The Curriculum in General Science, History Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chem., Ch 1abc; or Elementary Physics, Phy 1abc	4	4	4
Dev. of Civil., RS 1a; Hist 1bc	4	4	4
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective	4	4	4
	17½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Elementary Psychology, Psy 25	3		
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
College Algebra, Math 10	5		
American Government, PS 34	4		
State and Local Gov't., PS 44		4	
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Economic Geography, AgEc 30			3
*Elective in Science or Math.**		3	4
	17	17	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Ameri. Nation, Hist. 23ab; or Ec. Hist. of U. S., Hist 26ab	3/4	3/4	
General Botany, Bot 10ab; or General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Statistical Methods, AgEc 141a	4		
Rural Sociology, RS 131			3
Mod. European His., Hist 20ab		4	4
Elective	5/6	5/6	6
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Biblio. and Criticism, Hist 144			3
The Family, RS 168		3	
Public Finance, AgEc 145	3		
International Trade, AgEc 110		3	
Population Problems, RS 145		3	
*Elective in Science, Mathematics or Applied Science**	5		5
Elective	9	8	9
	17	17	17

*Social science students who complete 21 credits in an approved foreign language may substitute these for 12 credits in natural science, mathematics, or applied science.

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: Hist 1bc or 20ab, 23ab or 26ab, 144 and electives to total 36 credits in History.
MINOR: Hist 1bc or 20ab, 23ab, and additional electives to total 24 credits in history.

The Curriculum in General Science, Political Science Major

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Orientation, 1ab	½	½	
Inorganic Chem., Ch 1abc; or Elementary Physics, Phy 1abc	4	4	4
Dev. of Civil., RS 1a; Hist 1bc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective	4	4	4
	17½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
Elementary Psychology, Psy 25	3		
College Algebra, Math 10	5		
Economic Geography, AgEc 30			3
American Government, PS 34	4		
State and Local Gov't., PS 44		4	
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective		3	4
	17	17	17

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Statistical Methods, AgEc 141a	4		
Rural Sociology, RS 131			3
General Zoology, Z 20ab; or Elementary Botany, Bot 10ab	4	4	
Human Physiology, Z 22			4
Political Parties, PS 46			4
Rural Local Govern't., PS 48	4		
Comparative Govern't., PS 160			4
Amer. Political Theory, PS 171			4
Elective	5	13	
	17	17	19

Senior Year	Fall	Winter	Spring
Geology, Agron 171			5
The Family, RS 168		3	
Public Finance, AgEc 145	3		
Biblio. and Criticism, Hist 144			3
*Elective in Natural Science, Mathematics or Ap. Science**	4	4	4
Elective	10	10	5
	17	17	17

*Social science students who complete 21 credits in an approved foreign language may substitute those for 12 credits in natural science, mathematics, or applied science.

Prescribed courses are in Roman type, **electives and optional courses are in** *Italic type*.
MINOR: PS 34, 44, 46, 48, 160, Hist 144, and additional electives to total 36 credits.
MINOR: PS 34, 44, 46, and additional electives to total 24 credits.

Suggested electives, Freshman and Sophomore years.
American Nation, Hist 23ab; *Recent American History*, Hist 24

Department of Library Study

While the instruction in the use of the Library is not organized into a department the following courses are offered in this field.

1 Library Use 1 credit FWS

This course, designed to give an acquaintance with the library so that it can be used to the fullest extent in connection with other classes includes a study of the various parts of the library such as, card catalog, reference books, indexes, bibliographies and documents.

60a Library Administration 2 credits FSu

A general course stating the problem of school libraries. Objectives and methods of service in the small high school libraries, organization, budget and ordering, classification and cataloging, student library club, housing and equipment, records to be kept, reports to make, and methods of publicity.

60b Book Selection and Reference 2 credits WSu

Standards of criteria which may be used in appraising books for school libaries.

60c Cataloging and Classification 2 credits SSu

This course is to teach students how to catalog and classify books for high school libraries.

The Curriculum in General Science, Mathematics Major

Leading to the degree of Bachelor of Science in General Science

See Mathematics curriculum in Division of Engineering.

JUNIOR COLLEGE

Freshman Year	Fall	Winter	Spring
English Comp., Engl 1abc	3	3	3
College Algebra, Math 14	5		
Trigonometry, Math 15		5	
Analytic Geometry, Math 16			5
Inorganic Chemistry, Ch 1abc	4	4	4
General Botany, 10abc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	18

Sophomore Year	Fall	Winter	Spring
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Differential Calculus, Math 25	4		
Integral Calculus, Math 26		4	
Applied Calculus, Math 27			4
General Physics, Phy 21abc	4	4	4
History Sequence	4	4	
Elementary Psychology, Psy 25			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	17	17	16

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
Theory of Equations, Math 141	3		
Differential Equat., Math 148			4
Prin. of Economics, AgEc 20	5		
Principles of Sociology, RS 20		5	
American Government, PS 34			4
Solid Analyt. Geom., Math 144		3	
Elective	9	9	9
	17	17	17

Senior Year	Fall	Winter	Spring
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Elective	13	13	13
	17	17	17

Prescribed courses are in Roman type, **electives and optional courses are in** *Italic type*.
MAJOR: Math 14, 15, 16, 25, 26, 27, 141, 148, plus three hours of elective credit.
MINOR: Math 14, 15, 16, 25, 26, 27.

Department of Military Science and Tactics

Colonel Beatty, Captain Olson*, Lieutenants Reynard, Sand, Sergeants Dyball, McFarren, Treacy*

Under the provisions of the Act of Congress approved July 2, 1862, usually referred to as the Morrill Act, South Dakota State College of Agriculture and Mechanic Arts was designated as a land-grant college. The Act requires that the College maintain military training in its curriculum as its contribution towards National Defense, in return for which instructors, equipment, uniforms and funds are furnished to the College by the United States.

Military training is offered through the maintenance as a unit of the Reserve Officer's Training Corps, a Senior Infantry Unit which was established in 1920. Military training has been given since the beginning of State College in 1884. A Junior Unit (School of Agriculture) was also established in 1920 but was discontinued in April, 1942.

The ROTC course is planned with a view to enriching the educational resources of the institution by supplying additional equipment and emphasizing civic responsibility. Its aim is to coordinate discipline of mind and body, the development of character, initiative, all vital elements to executive leadership; and to furnish the Armed Forces with officer personnel during an emergency. Only ten per cent of the officers during War are regular Army Officers and therefore it is essential that during peace and war time civilians (such as students taking ROTC training) be trained so that they will be well prepared for the greatest usefulness to their country. It is the ROTC policy to encourage and support the physical training given by the college civilian instructors and thus to cooperate with all other effective agencies in an effort to promote a more vigorous American manhood.

Completion of the Basic and Advanced courses qualifies for a comission in the Reserve Corps of the Army of the United States, upon graduation from the institution and the completion of three months special service school, which takes the place of the summer camp that was required between the Junior and Senior school years up to the summer of 1942.

Basic work in the Reserve Officers' Training Corps has been carried on throughout the war years. Although the course has been modified to follow a "branch immaterial" schedule, the number of hourly credits has remained the same as in the pre-war years. All physically qualified male students(except veterans) are required to complete the two-year course in ROTC.

The Advanced Reserve Officers' Training Corps has been recently reactivated. The objectives of the program are: (a) To produce college-trained junior officers to meet the needs of the Army during the post-war period. (b) To preserve and expand the Reserve Officers' Training Corps organization in anticipation of post-war Reserve Officer requirements.

To date complete assignment has not been made as to instruction in Arms of the Service to be offered at State College, other than "branch immaterial," which will define instructional goals until definite branches are assigned. Three branches of service, however, are contemplated. They are Infantry, Air Corps, and Ordnance.

Otherwise qualified veterans between the ages of nineteen and twenty-six (inclusive) who have had one or more full year of active duty with any of the armed forces of the United States, which is accepted in lieu of the two years of basic ROTC, are eligible to apply for entry into the Advanced ROTC as far as the quota will allow.

Six months of service with any of the armed forces is accepted in lieu of the first year's work in basic ROTC.

All discharges and separations must have been of honorable nature. The contract with Advanced students is essentially a contract between the War Department and a civilian.

All members of the Advanced ROTC will be given, in addition to a uniform allowance, a monetary allowance equal to the garrison ration. This figure as currently set is sixty-six cents per day over a period not to exceed two calendar years.

*Inactivated during the year.

JUNIOR COLLEGE

1abc Military Science 1 credit each term FWS
First year basic course in military science. Required of all able-bodied male students except veterans. Laboratory fees 25c.

20abc Military Science 1 credit each term FWS
Second year basic course in military science. Required of all able-bodied male students except veterans. Laboratory fees 25c.

SENIOR COLLEGE

40abc Military Science 3 credits each term FWS
First year advanced course in military science. Laboratory fee 25c.

60abc Military Science 3 credits each term FWS
Second year advanced course in military science. Laboratory fees 25c.

Department of Music

Professor Christensen, Associate Professor Peterson, Assistant Professor Theman

The study of music is an important factor which should not be overlooked in any scheme of intellectual development. A practical knowledge of music has very frequently been the deciding qualification which has resulted in the election of our graduates to good positions.

In recognition of its desirability for students in the technical courses, the Regents have provided for both private and group instruction in the various musical arts.

A resolution of the Regents, adopted March 18, 1933, provided that students may study music for college credit if at the same time they pursue an equal number of hours in some other subjects unrelated to music.

There are many opportunities for high school teachers who are trained in music to give instruction in band, orchestra and chorus while teaching other subjects. A minor in music may be chosen in the department in preparation for such positions. The minor should be outlined in advance of entering upon it with the head of the department.

With the exception of the head of the department, the members of the music staff are employed part time by the College and are free to give to any person individual lessons which do not carry college credit.

In addition to individual lessons, excellent training is afforded in the following student organizations: Chorus, Symphony Orchestra, Women's Band and Military Band.

The Chorus presents an annual concert. The oratorio "The Messiah" by Handel, is also presented by this group just prior to the Christmas vacation. A standard operetta is also given in the spring term. The orchestra of 60 pieces gives an annual concert and appears frequently at assemblies and other college gatherings. The military band of more than 100 pieces gives a formal annual concert, outdoor concerts in the Sylvan theater, plays for all athletic events, and in other ways makes a large contribution to college life.

The following subjects are offered by the department:

1abc Harmony 1 credit each term FWS
Scales, intervals, principal and secondary triads, melody writing, chords of the seventh and dominant ninth. Mr. Peterson.

21abc Harmony 1 credit each term FWS
Second dominant forms, dominant forms of principal and secondary triads, altered chords, modulation, and non-essential tones. Mr. Peterson.

31abc Counterpoint 1 credit each term FWS
Single and double counterpoint, canon, invention, and fugue. Mr. Peterson.

41abc Composition 1 credit each term FWS
Composition in various forms; waltz, march, rondo, and sonata. In classes of four or more, two half-hour lessons per week, $5.00 each term. Mr. Peterson.

32abc Music History 2 credits each term FWS
Primitive attempts, ancient systems, early Christian influence, origin of contropuntal methods, medieval secular folk music, beginnings of opera and homophonic structure, development of the symphony and string quartet, biographies, operas, the Wagner Leit-motif, and modern tendencies. Three one-hour classes per week. Mr. Peterson. No fee.

3abc Sight Singing and Ear Training
1 credit each term FWS
A course designed to develop, through singing a recognition of melodic groups, in various rhythmic structures, involving intervals in major and minor modes, chromatics, modulations, individual and class group singing of melodies and part songs. Writing from dictation in all major and minor keys and rhythmic pattern. Mr. Theman.
In classes of four or more, two one-hour lessons per week, each term $5.00.

4ab Choral Technique and Materials, Vocal Groups 1 credit each term WS
A consideration of the aims and philosophy of choral education, rehearsal and performance techniques, based on principles of esthetics, musicology, psychology and educational philosophy.

The course will include a study of the principles of singing, conducting techniques, voice classification and study of choral literature and its interpretation. All forms of singing groups will be considered, including the church choir. Mr. Theman.

In classes of four or more, two one-hour lessons per week, each term $5.00.

45abc Conducting, Orchestration, and Teaching of Instrumental Groups 1 credit FW

a. Technique of the baton, various tempi, pick-up notes, pauses, transpositions, tempo rubato, use of the left hand, expression, interpretation and score reading. Mr. Christensen.

b. A study of the pecularities and possibilities of the different instruments, their effectiveness in various combinations and groups; arranging for orchestra and band from piano score or original manuscript. Mr. Christensen.

c. The study of the different string, wind and percussion instruments, with the idea of forming a general acquaintance with the methods used in playing and teaching them. Mr. Christensen.

In classes of four or more, two one-hour lessons per week, each term $5.00.

Private Lessons

In addition to the subjects listed in the above courses, private lessons in Voice, Piano, Organ, Harmony, Violin and other instruments may be arranged by payment of the following special fees for private lessons per term carrying college credits:

Mr. Christensen, Mr. Peterson, Mr. Theman.

Lessons in violin, wind instruments, organ, and vocal

Two half-hour lessons per week	$30 per term
One half-hour lesson per week	$15.00 per term

Lessons in piano and harmony, Mr. Peterson.

Two half-hour lessons per week	$ 24.00 per term
One half-hour lesson per week	$12.00 per term

Practice pianos may be rented at the following rates:

One hour per day per term	$2.50
Two hours per day per term	$4.00
Organ practice, per hour	.20

Department of Physical Education and Recreation

Professor McCrady, Miss Kendall, Mr. Emmerich, Mr. Johnson, Mr. Pitts, Mr. Greeno

The importance of Physical Education in the curriculum is fully recognized by the College, and all students are encouraged to participate in the various activities. All students are required to take Physical Education during the freshman and sophomore years. All freshmen, both men and women, are required to take physical examinations and any physical defects are brought to their attention.

The minor in Physical Education and Recreation is offered to qualify men and women to fill positions as teachers of physical education, directors of play and recreation, and coaches in secondary schools; to give training to prospective county agents, home demonstration agents, 4-H Club leaders and others in the field of recreation leadership.

A complete program of intramural athletics is offered for men and women and an adequate program of intercollegiate athletics is offered for men and women and an adequate program of intercollegiate athletics for men.

Uniforms

Both men and women are required to provide themselves with a standard gym suit and a pair of gym shoes. While the suit proper can readily be secured after the student's arrival on the campus, the same assurance cannot be given with respect to the availability of rubber-soled gym shoes. For this reason it is strongly urged that students bring with them a pair of gym shoes. Rubber soled street shoes will not be considered satisfactory for physical education classes.

Physical Education Minor for Men and Women

A total of eighteen credit hours is required for a minor in Physical Education for both men and women, of which twelve must be required courses and six optional.

Required courses for men are the following: Physical Education 1abc and 20abc; Organization and Administration of Physical Education; Teaching of Physical Education; Nature, Function, and Organization of Play. **Optional courses are the following:** Football Coaching; Basketball Coaching; Track and Field Coaching; Elements of Scout Leadership; First Aid Specialization; Athletic Conditioning and Training; Theory and Practice of Officiating; Principles of Scoutmastership; Community Recreation and Administration of Intramural Sports.

Required courses for women are the following: Physical Education 1abc and 20abc; Organization and Administration of Physical Education; Teaching of Physical Education; Nature, Function, and Organization of Play. **Optional courses for women are the following:** Physical Education 40abc; Teaching of Soccer; Basketball Coaching; Community Recreation; First Aid Specialization; The Educational Dance; Coaching of Volley Ball; and Teaching of Archery.

MEN

JUNIOR COLLEGE

1abc Physical Education 1 credit each term FWS

Theories and practice through class and squad work, of techniques, fundamental conditioning exercises, apparatus, tumbling and stunts, and games of low organization. Laboratory fee, including towel service, etc., $1.50.

12 Athletic Conditioning and Training 2 credits W

General care and treatment of athletic injuries, training rules, conditioning and training, equipment of the training room, types of taping for athletic injuries. Minimum of ten hours of laboratory work in taping required. Notebook required. This course is essential for men going out in the coaching field who will be responsible for the injuries incurred in competitive athletics.

13 First Aid Specialization 2 credits F

Standard Red Cross First Aid Course given under the auspices of the American Red Cross. Students completing this course will receive a card showing registration with the National Red Cross. A certificate is also given by the National Boy Scout Office which is required for all Scoutmasters who wish to receive the Scoutmasters' Key.

14 Elements of Scout Leadership 2 credits W

This course offers advanced work in scouting, including details of building and administering a scout troop, principles of boy leadership, and the organization and philosophy of scouting. Through cooperation of the Sioux Area Council with State College officials certificates for scoutmaster training are awarded to men who complete Elements of Scout Leadership.

15 Principles of Scoutmastership 2 credits S

A course devoted to the study of the relationship of the scoutmaster to the community and the various civic organzations affiliated with scouting.

Elements Part III will be given in connection with this course which provides training in camping and campcraft. This course requires students to participate in one day and evening work in a supervised camp.

20abc Physical Education 1 credit each term FWS

Continuation of Physical Education 1abc, with the addition of advanced work such as squad work, personal efficiency, complete study of theory, games of higher organization, and the study of skills. Laboratory fee, including towel service, etc., $1.50.

22 Theory and Practice of Officiating 1 credit FWS

A complete study of the methods of directing intramural sports on the high school level. Required of all students in intramural sports. This course is given each quarter and sports studied are of seasonal nature. Mr. McCrady and staff.

SENIOR COLLEGE

42 Basketball Coaching 2 credits W

Open to all juniors and seniors who intend to coach or teach. A thorough study of both the theory and practice of individual and team play; the proper technique for the extension of the fundamentals of basketball, the theory of offensive and defensive team play. Mr. McCrady and staff.

43 Administration of Intramural Sports 3 credits W

A complete study of the methods of directing intramural sports on the high school level. Opportunity will be given to assist in supervising and managing various intramural sports.

46 Track and Field Coaching 2 credits S

Open to all juniors and seniors who intend to coach or teach. The course will consist of text book work, lectures, practice drills and demonstrations of each of the track and field events. Mr. McCrady.

48 Nature, Function, and Organization of Play 2 credits S

A discussion of the historical significance of play, meaning and value of play, theories and philosophies of play, play as a social movement, practical conduct of the play ground, and constructive recreational programs for all-year systems.

60 Teaching of Physical Education 2 credits W

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. Students have opportunity of lesson planning, group teaching, and criticism of the class. Games included as soccer, speedball, playground ball, tennis, touch football, captain ball. Mr. McCrady and staff.

61 Organization and Administration of Physical Education 3 credits F

Brief history and principles which have determined the past and present programs, aims and objectives of physical education, curriculum content and construction, administration of curricula, professional attitudes and ethics, administration of facilities, equipment and supplies, and problems in planning of physical education facilities. Mr. McCrady and staff.

62 Football Coaching 2 credits F

Open to juniors and seniors. Each student will be required to purchase a rule book, text book, and notebook. A thorough study will be made of the theory of both offensive and defensive team play and strategy; the correct technique and execution of the fundamentals of the grame. Mr. McCrady.

66 Community Recreation 3 credits W

The community and its recreational programs for winter, spring, summer, and fall. The fundamental relation of recreation and the community. Physical education leaders are often called upon to direct social and recreational activities and frequently are unable to formulate programs, especially those of a social nature. This course attempts to furnish materials and methods for such leadership.

WOMEN

JUNIOR COLLEGE

1abc Physical Education 1 credit each term FWS
Laboratory fee, including towel service, etc., $1.50.

20abc Physical Education 1 credit each term FWS
This course of two years work which is required of all women below junior standing consists of games, folk dancing, clogging and development of rhythm as a translation of musical construction and note values into bodily movement. Interclass tournaments are played in basketball, soccer, volley ball, golf, archery, and tennis. Miss Kendall.
Laboratory fee, including towel service, etc., $1.50.

SENIOR COLLEGE

40abc Physical Education 1 credit each term FWS
The theory and practice of organized play. Miss Kendall.
Laboratory fee, including towel service, etc., $1.50.

41 Basketball Coaching for Women 2 credits F
A thorough study of both the theory and practice of individual and team plays; the proper technique for the extension of the fundamentals of basketball; the theory of offensive and defensive team plays. Miss Kendall.

47 Coaching of Soccer for Women 2 credits F
A study of both the theory and practice of fundamentals; the theory of offensive and defensive team play. Miss Kendall.

50 Coaching of Volley Ball 2 credits W
A thorough study of both the theory and practice of individual and team plays. Miss Kendall.

51 Teaching of Archery 2 credits S
This course offers work in care of equipment and details of technique. Open to juniors and seniors. Miss Kendall.

59 The Educational Dance 2 credits F
This course includes dance appreciation and fundamental movements of true dance form. Its aim is to teach correct body mechanics, develop balance, control and coordination in relation to the modern dance.
Additional subjects for Women: 13, 48, 60, 61, and 66 as described under courses for men.

Curriculum in General Science, Physical Education Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chemistry, Ch 1abc	4	4	4
Develop. of Civiliza., Hist 1bc		4	4
College Algebra, Math 10	5		
General Physical Edu., PE 1abc	1	1	1
Physical Edu. Activ., PE 11abc	1	1	1
Theory of Officiating, PE 22abc	1	1	1
First Aid Specialization, PE 13		2	
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
*Elective**			2
	16½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Prin. of Economics, AgEc 20			5
Principles of Sociology, RS 20		5	
American Government, PS 34	4		
Elementary Psychology, Psy 25	3		
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
General Physical Ed., PE 20abc	1	1	1
Physical Edu. Activi., PE 21abc	1	1	1
Preven., Care of Injuries, PE 12		2	
Military Science, Mil 20abc	1	1	1
*Elective**			2
	17	17	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Organiza. of Phys. Edu., PE 61	3		
Nat., Func., Or. of Play, PE 48			2
Admin. of Intra. Sports, PE 43		3	
Prin. of Secondary Edu., Ed 40	3		
Educational Psychology, Ed 45		3	
Meth. of Teach. in H. S., Ed 47			3
Public Address, Sp 43		2	
Government Elective			4
Economics Elective	3	3	
*Elective**	8	6	8
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Spec. Prob. in Zoology, Z 201			5
Sp. Meth. in H. S. Sub., Ed 62	3		
Sup. Teaching in H. S., Ed 74		5	
H. S. Org. and Admin., Ed 163			3
Community Recreation, PE 66		3	
Teach. of Physical Ed., PE 60		2	
Sup. Teach. in Phys. Ed., PE 70	2	2	2
Theo. of Coach., PE 42, 46, 62	2	2	2
Sociology elective	3	3	
Education elective			3
*Elective**	7		2
	17	17	17

*A minor of 24 quarter hours in an academic field is required for graduation. See page ?? under Education Department for detailed requirements.

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: PE 1abc, 11abc, 12, 13, 20abc, 21abc, 22abc, 42, 43, 46, 48, 60, 61, 62, 66, Z 201.
MINOR: PE 1abc, 11abc, 20abc, 21abc, 42, 48, 60, 61, 62.

Department of Physics

The Curriculum in General Scienec, Physics Major

Leading to the degree of Bachelor of Science in General Science

See Engineering Physics curriculum in Division of Engineering.

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
College Algebra, Math 14	5		
Trigonometry, Math 15		5	
Analytic Geometry, Math 16			5
Elementary Physics, Phy 1abc	4	4	4
French or German	4	4	4
Library Use, Lib 1			1
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
	18½	18½	19

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Differential Calculus, Math 25	4		
Integral Calculus, Math 26		4	
Applied Calculus, Math 27			4
General Physics, Phy 21abc	4	4	4
Inorganic Chemistry, Ch 1abc	4	4	4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
	17	17	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
Adv. Gen. Physics, Phy 131abc	3	3	3
Approved History Sequence	4	4	
American Government, PS 34			4
Elementary Psychology, Psy 25	3		
Elementary Botany, Bot 10abc	4	4	4
Differential Equat., Math 148			4
Advanced General Physics Laboratory, Phy 132abc	1	1	1
Elective	2	5	
	17	17	16

Senior Year	*Fall*	*Winter*	*Spring*
Prin. of Economics, AgEc 20	5		
Principles of Sociology, RS 20		5	
General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Modern Physics, Phy 135ab	3	3	
Mod. Physics Lab., Phy 136ab	1	1	
Heat, Sound, Light, Phy 140ab, 141ab, 142ab	3	3	
Alter. Current Circuits, EE 161			4
Elective	2	2	9
	18	18	17

Prescribed courses are in Roman type, electives and optional courses are in *Italic type*.

MAJOR: Phy 1abc, 21abc, 131abc, 132abc.

MINOR: Phy 21abc, 135ab, 136ab, plus three hours of elective credit.

Department of Rural Journalism

Professor Burchard, Superintendent of Printing Straw, Assistant Professor Scott, Mr. Harding, Mr. Evenson, Mrs. Korstad, Mr. Abel, Mr. Lippert, Mr. Wentzy, Mr. Bales

The courses listed in this department are designed to serve three classes of students; those interested in securing a standard preparation in journalism, those who are interested in journalism relating to agriculture, home economics, pharmacy, and other specialized fields, and those who wish to prepare themselves to become operators and managers of newspaper establishments. Students interested in the publishing phase of newspaper work are urged to prepare themselves in technical printing before embarking upon the collegiate program in journalism. A description of instruction in printing available on the Campus will be found under Non-Degree courses on pages 123 and 124.

It is essential that students of journalism learn to operate a typewriter early in the course. A knowledge of the fundamentals of shorthand will also be of value to one engaged in journalistic writing.

JUNIOR COLLEGE

16abc Typewriting 1 or 2 credits each term FWS
Graded exercises to learn "touch method" are first given. Care of machines; correspondence and various forms; billing and tabulating. Mrs. Korstad. Fee $1.00 for practice periods per term.

18abc Shorthand 5 credits each term FWS
This course continues throughout the year. The Gregg system is taught. Mrs. Korstad.

19ab Advanced Shorthand 5 credits each team FW
An intensive review of shorthand with special emphasis on dictation and development of speed. P, 18abc or one year of shorthand. Mrs. Korstad.

20 Applied Secretarial Practice 5 credits S
A course presenting instruction in modern office procedure, including filing, mimeographing and dictaphone operation and office ethics. P, 18abc or consent of instructor. Mrs. Korstad.

10 Press and Public Opinion 3 credits F

The nature of public opinion, with special emphasis on the newspaper's role in its formation and how the press, in turn, is influenced by public opinion.

24 Newswriting 3 credits S

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

25 Newspaper Editing and Makeup 3 credits F

A course giving practice in elementary copy reading and headline writing. Also includes make-up methods for weekly and daily papers. P, 24.

26 News Reporting 3 credits W

This course puts into active practice the information obtained in 24 and 25. P, 24, 25.

27abc Journalism Laboratory (Collegian editorial) 1 credit each term FWS

In this course, students write and edit news for the South Dakota Collegian under the guidance of the instructor and the editor of the paper. Limited to five hours of credit. P, 24. Mr. Scott.

SENIOR COLLEGE

32 Typography 3 credits F

The fundamental operations and materials used in printing, use of type, illustrations, and other elements of layout and composition for advertisements, bulletins and other publications. P, 25. Mr. Straw.

50ab Advertising 3 credits each term WS

The course deals with the history, principles, psychology and practice of advertising. Includes study and use of type. Mr. Straw.

30 Feature Writing 2 credits F

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

41 Writing the Special Article 2 credits W

The production of non-literary material, with special emphasis on magazine, trade and farm magazines. Submission for publication is required. P, 30.

52 Editorial Writing 3 credits W

A study of the theory and practice of editorial writing; includes an analysis of editorial policies as well as the actual preparation of editorials. P, 24.

53 Publishing and Office Management 3 credits F

This course covers main points in financing, organization, location, equipment, revenue, circulation, advertising and audits. P, 50a. Mr. Straw.

55 Advertising Salesmanship 2 credits S

Methods of cultivating new business for the weekly or daily newspaper or commercial job printing plant, fitting the student for practical salesmanship. P, 50a.

58ab Photography 2 credits each term WS

A study of general elementary principles of photography and visual discussion. The class will be limited to fifteen students. Mr. Bales. Laboratory fee $2.00.

60 Problems and Methods 2 to 4 credits FWS

Individual work, fitted to the special needs of the specific students as determined by his interests and aptitudes. Maximum credit, 10 hours. P, 26.

65 Public Relations 3 credits S

A study of the relations between industry, business or public institutions and the general public through the medium of the written and spoken word. P, 24.

66 Publicity Methods 3 credits

A course for students expecting to become county agents, home economics leaders, or vocational teachers. Newswriting, agricultural advertising and writing of agricultural sales letters. P, English 1abc. Not for Journalism majors or minors.

67 Journalism for Teachers 2 credits Su

A course for high school journalism instructors or advisers; includes journalism coursework, instruction in various types of school publications, school relations. P, English 1abc.

23 History and Principles of Journalism 2 credits W

A study of the development of journalism in the United States. Includes ethics of the profession of journalism.

8 Accounting for Printers 2 credits S

The first half of the course is devoted to lectures on postal regulations, types of advertising and rate structures, accounting and cost-finding systems. During the last half of the course, books are set up and entries made for a typical rural weekly newspaper plant. Required of two-year printing students.

54 Proofreading 2 credits F

History and background of proofreading. Work of the proofroom. Proofreading in practice which includes study of signs, grammar, diction, punctuation, word division, compounding, capitalization, spelling, dictionary and material on libel. Also covers editing and copyfitting, postal and copyright information. Required of two-year printing students.

9ab Printers' Mathematics 2 credits each term FW

Review of fundamental operations. Interrelation of printers' measure to inches. Unit line spacing and justification. Division of labors, and time elements in production. Copy fitting and type composition estimating. Paper buying, selling and cutting, spoilage tables, elementary problems in costs and estimating. Required of and open only to two-year printing students.

5 Graphic Arts Survey 2 credits F

A study of the history of graphic communications. Methods, processes and printing machines with their historical background. Required of and open only to two-year printing students.

3ab Layout and Design 2 credits each term WS

Balance, color and composition theory. Layout and design of typographic printing. Type specification and copy fitting. Required of and open only to two-year printing students.

54ab Costs and Estimating 3 credits each term WS

Study of time standards for printers and publishers. Training in use of the Franklin Printing Catalog, Printed Products and Par for Printers. Required of and open only to two-year printing students.

73 Plant Organization and Layout 2 credits S

A study of job analysis and straight line production. Movement of various types of work through a shop. Whenever possible an actual shop is used for project work. Templates and floor plans are developed by the student. Required of and open only to two-year printing students.

The Curriculum in General Science, Rural Journalism Major

Leading to the degree of Bachelor of Science in General Science

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Inorganic Chem., Ch 1abc; or Elementary Physics, Phy 1abc	4	4	4
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Orientation, 1ab	½	½	
Dev. of Civili., RS 1a, Hist 1bc	4	4	4
Elective	4	4	4
	17½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
College Algebra, Math 10	5		
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
Elementary Psychology, Psy 25	3		
Newswriting, PRJ 24	3		
News Editing & Make., PRJ 25		3	
News Reporting, PRJ 26			3
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective	2	4	4
	18	17	17

SENIOR COLLEGE

Junior Year	*Fall*	*Winter*	*Spring*
American Government, PS 34	4		
State and Local Gover't., PS 44		4	
General Botany, Bot 10ab; or General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Advertising, PRJ 50ab		3	3
Feature Writing, PRJ 51	3		
Political Parties, PS 46			4
Electives in Agricul. Economics		3	3
Genetics, Z 42	3		
Organic Evolution, Z 60			3
Elective	3	3	
	17	17	17

Senior Year	*Fall*	*Winter*	*Spring*
Advanced Reporting, PRJ 64			3
Editorial Writing, PRJ 52		3	
Public Relations, PRJ 65		3	
Statistical Methods, AgEc 141a	4		
Advertising Salesman., PRJ 55			2
Elective in Rural Sociology	3	3	
Elective	10	8	12
	17	17	17

*Students who complete the two-year curriculum in printing will be allowed 45 credits toward the requirements for the degree in Rural Journalism. See page ??.

Prescribed courses are in Roman type, **electives and optional courses are in** *Italic type*.

MAJOR: PRJ 24, 25, 26, 50ab, 51, 64, 65 plus nine hours of elective credit.

MINOR: PRJ 24, 25, 26, 51, 52 plus nine hours of elective credit.

The Curriculum in General Science, Rural Sociology Major

Leading to the degree of Bachelor of Science in General Science

See Rural Sociology curriculum in Division of Agriculture.

JUNIOR COLLEGE

Freshman Year	*Fall*	*Winter*	*Spring*
English Comp., Engl 1abc	3	3	3
Dev. of Civili., RS 1a, Hist 1bc	4	4	4
Inorganic Chemistry, Ch 1abc	4	4	4
Orientation, 1ab	½	½	
Military Science, Mil 1abc	1	1	1
Physical Education, PE 1abc	1	1	1
Elective	4	4	4
	17½	17½	17

Sophomore Year	*Fall*	*Winter*	*Spring*
Int. to Liter., Engl 20 and *elec.*	3	3	
Extempore Speaking, Sp 22			3
Elementary Psychology, Psy 25	3		
College Algebra, Math 10	5		
Prin. of Economics, AgEc 20		5	
Principles of Sociology, RS 20			5
General Botany, Bot 10ab; or General Zoology, Z 20ab	4	4	
Human Physiology, Z 22			4
Military Science, Mil 20abc	1	1	1
Physical Education, PE 20abc	1	1	1
Elective		3	3
	17	17	17

SENIOR COLLEGE

Junior Year	Fall	Winter	Spring
American Government, PS 34	4		
State and Local Gover't., PS 44		4	
Statistical Methods, AgEc 141a	4		
Rural Sociology, RS 131			3
Social Pathology, RS 143	3		
Urban Sociology, RS 144			3
Population Problems, RS 145		3	
Political Parties, PS 46; or *Municipal Government*, PS 47			4
Genetics, Z 42	3		
Organic Evolution, Z 60			3
Electives in Economics	3	3	
Elective		7	4
	17	17	17

Senior Year	Fall	Winter	Spring
The Family, RS 168			3
Social Psychology, Psy 167			3
Marriage, RS 167	3		
Social Legislation, RS 171		3	
In. to Soci. Case Work, RS 182		3	
Elective in Rural Sociology	3		
*Elective in Science or Math**		5	5
Elective	11	6	6
	17	17	17

*Social science students who complete 21 credits in an approved foreign language may substitute these for 12 credits in natural science or mathematics.

Prescribed courses are in Roman type, **electives and optional courses are in** *Italic type*.

MAJOR: RS 1a, 20, 131, 143, 168, AgEc 141a, and electives to total 36 credits.
MINOR: RS 1a, 20, 143, 168, and electives to total 24 credits.

Department of Speech

Professor McCarty

The Department of Speech assists the individual in perfecting his speech, and in aiding him to present his thought effectively to others.

In addition to the experience of speaking in classroom situations made possible in the courses listed below, opportunity is provided for a variety of practical experience through intercollegiate forensic activity. (See page 18.) The institution is a member of the State Forensic Association, and has a chapter of Pi Kappa Delta, National Honorary Speech Society.

Intercollegiate Speech Contests

Each year representatives of the college meet students from other institutions in speech contests, competing for honors in debate, oratory, and extempore speaking. These representatives are chosen by means of local preliminary contests. Only those pursuing regular work for the Bachelor's degree are eligible to represent the college. Excellence in achievement in all these activities is recognized by appropriate awards and prizes.

Upon recommendation of the instructor in charge, college credit may be given students who participate in intercollegiate speech activities (see Rules and Regulations of the College for conditions governing such credit.)

JUNIOR COLLEGE

10 Argumentation and Debating 2 credits F

The nature, kinds and tests of evidence; structure, brief-drawing. Text book. The analysis of public opinion. Practice in debating and extemporaneous speaking. Open to all students. Mr. McCarty.

11 Intercollegate Oratory and Extempore Speaking 1 or 2 credits W

Open to students who become eligible through competitive activity in oratory and extempore speaking. One or two hours credit upon recommendation of the instructor in charge. Mr. McCarty.

12 Intercollegiate Debating 1 to 3 credits W

Study of debate questions chosen for intercollegiate competition, and practical experience in speaking on these questions. Open to all students who qualify in a preliminary local debate tournament. From one to three credits given on the basis of individual achievement. Mr. McCarty.

13 Elements of Acting 2 credits F

The basic principles of acting and stage deportment, with main emphasis upon understanding and mastering of techniques.

14abc Dramatic Production 2 credits each term FWS

Runs through the year with two hours credit per quarter to give an understanding of, and practice in, dramatic activity, including history of the theater, theory and directing experience in producing a one-act play and participation in a major production; elements of stagecraft and lighting, and practice in theatrical make-up.

22 Extempore Speaking 3 credits FWorS
This course, required for graduation, may be taken during any term of the year. To assist the student in acquiring an effective oral style. Attention to the selection, organization and presentation of material. P, Engl 1abc. Mr. McCarty.

23ab Oral Reading and Interpretation of Literature 3 credits each term WS
Intended to develop skill in oral interpretation and emotional and imaginative literature. Voice training with exercises and selections.

SENIOR COLLEGE

41 Speech Composition 2 credits F
The principles of practical effective speech. Students who desire to participate in intercollegiate oratory should take this course. P, 22, or by special permission. Hours to be arranged. Mr. McCarty.

43 Practical Persuasive Speech 2 credits
The various forms of public address and public discussion; the elements of persuasive speech. Original work by members of the class. P, 22. Two recitations a week. Mr. McCarty.

44 Community Drama 2 credits F
A beginner's dramatic production course; the minimum essentials of the theory and practice of directing, theory and practice of production. P, open to juniors and seniors.

55a Radio Speech 2 credits
To train for work in radio techniques. A study of the problems of radio in communication. P, English 1abc, and Speech 22. For credit both 55a and 55b must be completed. Hours to be arranged. Mr. McCarty. (Not offered in 1945-46.)

55b Radio Speech 3 credits
The work of 55a continued with projects assigned. P, 55a. Hours to be arranged. Mr. McCarty. (Not offered in 1945-46.)

Graduate Study*

Organization

The graduate work of the College is administered by a graduate committee of seven members appointed by the President from the Graduate Faculty, which is composed of the members of the teaching staff who are eligible to offer courses for graduate credit. In order to be eligible for such work the teacher's training and experience must conform to certain requirements which are determined by the Graduate Faculty. These requirements are recorded in the office of the chairman of the Graduate Committee.

Graduate Work

Persons who hold bachelors' degrees or higher degrees from standard colleges are admitted to the College as graduate students upon the presentation of their transcripts of undergraduate credit, and may enroll in any subjects which carry graduate credit, provided the prerequisites to these subjects have been completed. However, admission as a graduate student does not imply approval of the student as a candidate for a degree.

A student who at the beginning of a term does not have more than 9 credits to complete for the degree of Bachelor of Science, may with approval of the Graduate Committee be admitted with partial enrollment in graduate work, carrying it simultaneously with work for the completion of his undergraduate course.

The Master's Degree

The College confers the degree of Master of Science for graduate work done in various scientific and technological departments and in education. It does not confer the Master of Arts nor the Doctor of Philosophy degree. The requirements for the graduate degree in Education may be met either with (Plan A) or without (Plan B) a thesis.

Admission to Candidacy

For admission to candidacy for the Master's degree there are (a) general requirements, and (b) departmental requirements.

A. General Requirements for Candidacy: Since the degree of Master of Science is the only advanced degree the College confers, the student should have completed a course leading to the degree of bachelor of science in this College, or a similar course in some other institution of standing. A student who holds a baccalaureate degree other than the degree of bachelor of science (for instance, bachelor of arts) must of necessity have done considerable work in the natural sciences as a part of his undergraduate course, in order to be eligible. If the preliminary work necessary for entrance upon the work for the master's degree has not been completed as a part of the undergraduate course, it may be possible for the student to complete the remaining work in this College. The Graduate Committee cannot pass definitely upon this and other details before seeing the transcript of the student.

In general, one year of graduate work in residence at the College is required for the master's degree. However, in special cases arrangements may be approved by the Graduate Committee to provide for the transfer of graduate credit earned in residence in other approved schools.

Residence requirements may be satisfied by attendance at the College during four summer sessions of six weeks each, provided full time is given to graduate work during that time. However, if the requirements are not completed within a period of six years, a reconsideration of the student's plan of study will be necessary.

B. Departmental Requirements for Candidacy: The student must have completed the prerequisites to the graduate major and minor of the departments in which he wishes to study for the master's degree. (See following pages.)

A student who wishes to become a candidate for this degree should make application to the Graduate Committee, naming the departments in which he wishes to major and minor.† If his application is approved by the Committee, with the help of the Committee and departments concerned, he should out-

*Further details concerning the Master's degree and professional degrees in Engineering may be obtained by writing to the Registrar for bulletin concerning Graduate Study.

†In general a graduate student is not admitted to candidacy for the Master's Degree unless, or until his record shows evidence of ability to do thorough and satisfactory work of the grade required for a graduate degree.

line the plan of study which he is to pursue. If, after one term's study, his work is found to be satisfactory, he will be admitted to full candidacy.

Examinations

The candidate must pass a satisfactory oral examination in all the work which has been taken for credit for the degree, and may be required to pass a satisfactory written examination on all work not taken in regular classes at this institution.

Majors and Minors

A full year of work consisting of 45 credits is required for the master's degree. These may be divided into a major and minor of approximately 30 and 15 credits respectively. A department major or minor may include subjects outside the department in which the major or the minor is chosen if the subjects are closely related to the major or minor fields.

All credit submitted for the degree must be in subjects designated as "advanced undergraduate and graduate," or "primarily for graduates."

Credit may not be counted towards the master's degree unless it has been earned after the student has been formally admitted to graduate standing, and has indicated that the subject is being taken for graduate credit. No work will be given credit towards the degree if the grade received is below "C," and all work offered for the degree must average "B."

Credit for work done by correspondence or group study courses will not be accepted towards the master's degree. However, students may, with the approval of the head of the department concerned, make up any prerequisite by such study.

Thesis

With the exception of individuals qualfying for the graduate degree in Education under Plan B, all students must submit a thesis in partial fulfillment of the requirements for the Master of Science degree.

The thesis should consist of an original and scholarly discussion of some suitable problem related to the major subject. The scope of the problem or the extent of the original contribution cannot be prescribed in exact terms. From seven to ten credits are allowed for the thesis, and neither the effort put forth nor the results accomplished should leave any doubt as to the justification for such credit. The thesis must bear the approval of the major department.

Three copies of the thesis must be filed by the candidate with the Chairman of the Committee on Graduate Study at least ten days before the oral examination. Two of these copies must be bound by the College Printing Laboratory in order that they may be deposited in the College Library after the examination. Specifications as to form and paper may be obtained from the Committee on Graduate Study.

The time for the oral examination must be arranged with the chairman of the Graduate Committee and the major and minor departments.

Graduate Degree in Education Without a Thesis

Graduate students in Education who find it to their interests to do so may meet the requirements for the Master's degree by substituting certain specified graduate Education courses in lieu of the nine credits of thesis work. This arrangement is referred to as "Plan B" and differs from the conventional program of "Plan A" only with respect to the thesis requirement. All other requirements, such as those pertaining to admission to graduate standing, provisions for majors and minors, types of courses taken, quality of work, and final examinations are identical under both plans.

The nine hours of work to be substituted for the thesis must include the course in Educational Statistics, Ed 168; Research Methods in Education, Ed 270; and Research Problems in Education, Ed 280. The latter course may be devoted to the study of one research project of three or four credits in value, or the student may elect to work out smaller projects in conjunction with certain starred courses. The research projects must meet the approval of the major adviser and the instructor in the course. The problem must be organized, investigated, and reported in approved form. These projects usually will involve some statistical treatment.

Under "Plan B" the student will ordinarily find it necessary to spend five summer terms in residence, while those who enroll under "Plan A" may meet the residence re-

quirement in four summer school terms by arranging to write the thesis in absentia.

Following is a list of departments that offer graduate work, with statements as to the work that must be completed in the undergraduate major and minor, before the student may enter upon work for the master's degree.

Purposely these statements are for the most part rather general, inasmuch as undergraduate schemes of study in different institutions vary a great deal in their specific requirements.

The subjects that carry graduate credit may be found in the catalog, those numbered above 200 being primarily for graduate students, and those numbered from 100 to 199 being open to either graduates or undergraduates. In the latter group graduate students are required to do about twenty-five per cent more work than undergraduates.

Departments Offering Work for Graduate Study; Undergraduate Requirements for Entering Upon Graduate Majors and Minors

AGRICULTURAL ECONOMICS

For a graduate major: 36 credits in the Social Sciences of which 24 must be in the field of Economics.

For a graduate minor: 24 credits in the Social Sciences of which 16 must be in the field of Economics.

AGRICULTURAL ENGINEERING

No graduate major offered.

For a graduate minor: Prerequisites to subjects elected.

AGRONOMY

For a graduate major: An undergraduate major in either Soils or Crops.

For a graduate minor: An undergraduate minor in either Soils or Crops.

ANIMAL HUSBANDRY

For a graduate major: An undergraduate major in Animal Husbandry.

For a graduate minor: An undergraduate minor in Animal Husbandry.

BOTANY AND BACTERIOLOGY

For a graduate major: An undergraduate major, amounting to 33 credits including General Botany (10abc), The Local Flora (27), Plant Microtechnique (42), and Seminar (172).

For a graduate minor: An undergraduate minor of not less than 24 credits which must include Botany (10abc). Remaining credits should be selected with respect to major field.

CHEMISTRY

For a graduate major: An undergraduate professional major in Chemistry.

For a graduate minor: An undergraduate minor in Chemistry.

CIVIL ENGINEERING

For a graduate major: Bachelor of Science degree in Civil Engineering or equivalent.

For a graduate minor: Mathematics through Integral Calculus (Math 26), Engineering Mechanics (142abc), General Physics (21abc), and General Inorganic Chemistry (1abc).

DAIRY HUSBANDRY

For a graduate major: An undergraduate major in Dairy Industry or Dairy Husbandry.

For a graduate minor: An undergraduate minor in Dairy Industry, Dairy Husbandry or its equivalent.

EDUCATION AND PSYCHOLOGY

For a graduate major or minor:

(a) The certificate to teach in South Dakota High Schools.

(b) It is strongly recommended that candidates should have had successful experience in teaching.

(c) In exceptional cases persons who have completed the Education courses prescribed for the teaching certificate may enroll for graduate work in education.

ELECTRICAL ENGINEERING

For a graduate major: Bachelor of Science degree in Electrical Engineering or equivalent.

For a graduate minor: Mathematics through Integral Calculus (Math 26), Engineering Mechanics (142abc), General Physics (21abc), and General Inorganic Chemistry (1abc).

ENTOMOLOGY

For a graduate major: An undergraduate major in Entomology.

For a graduate minor: An undergraduate minor in Entomology.

HISTORY AND POLITICAL SCIENCE

For a graduate minor: An undergraduate minor in History or Political Science, according to the field chosen for a minor.

HORTICULTURE

For a graduate major: Bachelor of Science in Agriculture and the prerequisites to subjects pursued.

For a graduate minor: Courses in Botany, Entomology, and other subjects which are related to the work taken up in Horticulture.

MATHEMATICS

For a graduate minor: Prerequisites to the subjects giving graduate credit.

MECHANICAL ENGINEERING

For a graduate major: Bachelor of Science degree in Mechanical Engineering or equivalent.

For a graduate minor: Mathematics through Integral Calculus (Math 26), Engineering Mechanics (142abc), General Physics (21abc), and General Inorganic Chemistry (1abc).

PHARMACY

For a graduate major: The Bachelor of Science degree in Pharmacy or equivalent.

For a graduate minor: Prerequisites to graduate subjects desired.

PHYSICS

For a graduate major: An undergraduate major in Physics or equivalent.

For a graduate minor: An undergraduate minor in Physics or equivalent.

POULTRY HUSBANDRY

For a graduate major: General Poultry Culture (20), Judging Poultry (41), Advanced Poultry Husbandry (155), Poultry Breeding (156), Egg and Poultry Marketing (157), and Poultry Nutrition (159) or equivalent, and such other sources as are required, according to the branch in which the student wishes to specialize.

For a graduate minor: An undergraduate major or minor in Poultry Husbandry.

RURAL SOCIOLOGY

For a graduate major: 36 credits in the Social Sciences, of which 17 credits must be in Sociology.

For a graduate minor: 25 credits in the Social Sciences, of which at least 11 must be in Sociology.

ZOOLOGY

For a graduate major: An undergraduate major in Zoology.

For a graduate minor: An undergraduate minor in Zoology.

Professional Degree in Engineering

The degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), or Electrical Engineer (E.E.), may be conferred upon a graduate of this College who has made a superior record in college and in the practice of his profession, in accordance with the regulations that have been adopted by the College.

Further details concerning the Master's degree and Professional degree in Engineering may be obtained by writing to the Registrar.

Non-Degree Courses

The College offers the following special and non-degree courses:
The School of Agriculture Course.
The Three-Month Creamery Course.
The Summer Shop Instruction for Printers.
The Summer School.

The School of Agriculture

The School of Agriculture is open to both young men and young women who have reached their seventeenth birthday. Applicants who are high school graduates or who have had high school experience must present credentials, showing a complete record of their work. Candidates who have not attended high school must present a certificate showing that they have satisfactorily completed the eighth grade of the public schools, or its equivalent.

The program of work is outlined on a two-year basis for a total of 36 weeks. Each period runs for six weeks, and a student may enter at the beginning of any six weeks period. The purpose of the course is to give practical training to young men and young women who intend to stay on the farm, and want to supplement their high school or grade school education to better fit them for their life's work.

For special bulletin giving outlines of this course and other information, write to the Director of the School of Agriculture, South Dakota State College, Brookings.

The Creamery Short Course

This course is especially designed for young men who desire to fit themselves for various positions connected with the dairy industry, such as helpers, buttermakers, ice cream makers and managers.

Prospective students are urged to get at least six months of practical experience in a creamery before taking the course. It is found that much greater benefit is derived from the work by students who have had previous creamery experience.

The more general application of scientific principles to the manufacturing industries as well as the increasing competition on all sides demands a more thorough training in scientific and business methods than heretofore. This is no less true with regard to the creamery industry; and while the practical work of the school is by no means neglected, special pains are taken to teach the underlying principles and the "reason why" for many of our dairy operations. The increas-

ing interest in dairying in South Dakota is creating a demand for men well trained along dairy lines, and requests for men at excellent salaries are constantly being received. Worthy students may count on the cooperation of the dairy department in helping them to secure positions at the completion of their course. The work is as follows:

Buttermaking, 3 hours recitation work per week.

Ice Cream Making, 2 hours recitation work per week.

Cheese Making, 1 hour recitation work per week.

Laboratory work for the above courses consists of practical work in creamery, 18 hours per week.

Creamery Calculations and Bookkeeping, 3 hours per week.

Testing Milk and Its Products, 4 hours per week.
Dairy Bacteriology, 4 hours per week.
Creamery Mechanics, 2 hours per week.
Dairy Cattle Management, 3 hours per week.
Poultry Husbandry, 3 hours per week.

Tuition is $23.00 ($34.50 for non-resident students) for the three months' term with a small additional fee for laboratory expenses.

Students of this course are also required to pay a health fee of $2.50 for the term.

A certificate of standing will be issued to all students passing satisfactory examinations in the above subjects.

Address the Dairy Husbandry Department for information concerning this and other courses in the Dairy Department.

The Two-Year Smith-Hughes Trades Course in Printing

The two-year Smith-Hughes Trades Course in Printing is designed to give students an excellent working foundation in printing which will prepare them to accept responsible positions in the trade at the end of the two-year training period. Students who are high school graduates will be allowed 45 quarter hours of college credit toward the Bachelor's degree in Printing and Rural Journalism upon successful completion of the two year program.

Upon completion of the two-year course, the student will be competent to execute virtually all operations in connection with the printing and publishing of rural newspapers and printshops, and will be acceptable for employment in larger commercial printing concerns. Students enrolling in this course will be required to carry out the complete course as it is outlined and to show satisfactory progress and aptitude to indicate that they will become competent printers.

Students who are not graduates of a four-year high school course will be admitted to this two-year course in printing only upon furnishing satisfactory evidence of being able to carry the work successfully. Enrollment will be limited to the number that can be given thorough and practical training.

The regular college tuition fee of $70.00 a year is charged for this two-year course ($105 for non-residents).

Each student pays in addition a laboratory fee of $7.25 per quarter for the use of composing machines, presses, and other equipment, and to cover cost of material used, breakage, etc.

Each student is charged a health service fee of $7.50 for the year ($2.50 for each term).

Smith-Hughes Trades Curriculum in Printing

First Year	*Fall*	*Winter*	*Spring*
	Recitation or laboratory hours per week		
English Comp., Engl 1abc	3	3	3
Elementary Typography, 12ab	9	9	
Newspaper Display, 12c			9
Platen Presswork, 11ab	9	9	
Intro. to Cylinder Press, 32a			9
Intro. to Compos. Mach., 13a	6		
Operation and Mechanism of Composing Machines, 13b,		6	
Mechanism and Operation of Composing Machines, 13c			6
Accounting for Printers, 8			2
Printers' Mathematics, 9ab	2	2	
Layout and Design, 3ab		3	3
Bindery Operations, 14ab	3	3	
Graphic Arts Survey, 5	2		
	34	35	32

Second Year	*Fall*	*Winter*	*Spring*
Proofreading, 55	2		
Cylinder Presswork, 32b	6		
Advanced Presswork, 72ab		6	6
Machine Composition—Newspaper and Book, 24a	8		
Adv. Compos. Machines, 24b		8	
Adv. Compos. Machines, 24c			8
Newspaper Composition and Makeup, 57a	6		
Imposition and Lockup, 57b		6	
Production Problems, 57c			6
Job Composition—Hand, 31a	8		
Advanced Typography, 31bc		8	8
Plant Organi. and Layout, 73			3
Costs and Estimating, 54ab		3	3
Publishing and Office Mgt., 53	3		
	33	31	34

Printing

Assistant Professor Straw, Instructors Harding, Evenson, Abel, Lippert, Wentzy

FIRST YEAR PRINTING

3ab Layout and Design 2 credits each term WS

Balance, color and composition theory. Layout and design of typographic printing. Type specifications and copy fitting. Photoengraving specifications. Required of two-year printing students.

5 Graphic Arts Survey 2 credits F

A study of the history of graphic communications. Methods, processes and printing machines with their historical background. Required of two-year printing students.

8 Accounting for Printers 2 credits S

The first half of the course is devoted to lectures on postal regulations, types of advertising and rate structures, accounting and cost-finding systems. During the last half of the course, books are set up and entries made for a typical rural weekly newspaper plant. Required of two-year printing students.

9ab Printers' Mathematics 2 credits each term FW

Review of fundamental operations. Interrelation of printers' measure to inches. Unit line spacing and justification. Division of labor, and time elements in production. Copy fitting and type composition estimating. Paper buying, selling and cutting, spoilage tables, elementary problems in costs and estimating. Required of two-year printing students.

11ab Platen Presswork 3 credits each term FW

An introduction to platen presswork, including types of presses, care, feeding, oiling, washing, and simple make-ready. A study of paper, inks, rollers, and common pressroom troubles.

12ab Elementary Typography
3 credits each term FW

Care of equipment, learning the case, setting and distributing type, spacing, indentions, study of type faces and where and how to use them, problems in legibility and readability, newspaper and book tabular matter, footnotes, captions and insets.

12c Newspaper Display 3 credits S

Tools and procedure in developing layouts, copy markup, study of styles in display, procedure in setting up advertisements, art principles applied to conventional and modern display, correct use of borders, use of initials, pictures in advertising.

13a Introduction to Composing Machines
2 credits F

Elementary keyboard practice. Carefully prepared progressive exercises which include simple word and sentence practice; and introduction to simple newspaper styles. Emphasis on correct keyboard fingering.

13b Operation and Mechanism of Composing Machines 2 credits S

Keyboard operation combined with a study of mechanism. Straight matter composition with a view to improving rhythm, cadence, accuracy and speed. Starting and stopping mechanisms. Daily and weekly cleaning, and oiling.

13c Mechanism and Operation of Composing Machines 2 credits W

Emphasis on mechanical problems, with organized laboratory projects. Continuation of keyboard work, introducing simple tabular work and styles encountered in newspaper composition.

14ab Bindery Operations 1 credit each term FW

Hand bindery work, including counting, jogging, folding, tabbing, punching, types of bindings, and hand binding of books. Practice adjusting and operating power cutter, folding machine, stitchers, punch and drill.

32a Introduction to Cylinder Presswork
3 credtis S

The mechanism and care of the cylinder press. Practice feeding with both push and pull guides. Positioning, make-ready and running of simple forms. A further study of paper and inks.

SECOND YEAR PRINTING

24a Machine Composition, News and Book
3 credits F

Work on the college newspaper and other publications. Continued study of and shop work in mechanism. Additional work in routine maintenance.

24b Advanced Composing Machines 3 credits W

Combination of varying styles of composition and intricate forms. Practical mechanical problems for students who have proved ability to do such work. Definite schedule of mechanical project work. Ad composition.

24c Advanced Composing Machines 3 credits S

Thorough review of work covered in past five quarters, stressing matters of importance in machine maintenance. Review of all adjustments. Setting of jobs which are to be carried on through the press room to completion.

31a Job Composition—Hand 3 credits F

Includes a study of wholesale and retail advertisements; copy analysis, aim of advertisement, appeal and reader group, choice of type face, layout techniques, visualizing the idea with pictures and type, laying out and setting advertisements.

31bc Advanced Typography
3 credits each term WS

This unit covers an analysis of local printing needs, preparation of layouts and designing printing pieces, setting and printing these jobs. Includes a wide variety of printing forms familiar to every printer in both small and large shops.

32b Cylinder Presswork 2 credits F

A continuation of course 32a with more complex forms and press adjustments. Jobs set in the typography course are used as projects on the presses. Halftone and ruled forms.

54ab Costs and Estimating 3 credits each term WS
Study of time standards for printers and publishers. Training in use of the Franklin Printing Catalog, Printed Products and Par for Printers. Required of two-year printing students.

55 Proofreading 2 credits F
History and background of proofreading. Work of the proofroom. Proofreading in practice which includes study of signs, grammar, diction, punctuation, word division, compounding, capitalization, spelling, dictionary and material on libel. Also covers editing and copyfitting, postal and copyright information. Required of two-year printing students.

57a Newspaper Composition and Makeup 2 credits F
The theory and practice of interesting newspaper pages. The student practices on setting the ads and making up the South Dakota Collegian, the all-student managed weekly newspaper on the campus.

57b Imposition and Lockup 2 credits W
The science of properly positioning type pages and their lockup for the printing press. The time is spent calculating margins, various folds and actual lockup.

57c Production Problems 2 credits S
A further study of special problems of the stone room and more complicated and specialized impositions.

72ab Advanced Presswork 2 credits each term WS
Complex jobs on both platens and cylinders. Work on automatic jobber and Kelly cylinder. Color printing. Some work on the college yearbook in the spring quarter. Hand cut and mechanical overlays.

73 Plant Organization and Layout 2 credits S
A study of job analysis and straight line production. Movement of various types of work through a shop. Whenever possible an actual shop is used for project work. Templates and floor plans are developed by the student. Required of two-year printing students.

Summer Shop Instruction for Printers

Special trade courses are offered by the Department of Printing and Rural Journalism in presswork, typography and composing machine operation, and care and maintenance of line casting machines, during the summer session for members of the printing trades who wish to broaden their experience and develop their skill in the various phases of printing. Compositors often desire to learn the operation of printing presses and composing machines. Composing machine operators often wish to learn the fundamentals of typography and presswork. The courses are designed to afford these opportunities.

Applicants may register for one or all of the courses given.

Shop courses are offered in the summer session for teachers of printing. These courses aim to develop right lesson analysis and operation outline, proper method of instruction and the accepted trade techniques in each branch.

The only entrance requirement is previous experience as a printer. The usual tuition fee of $12.00 ($18.00 for non-resident students) will be charged with a small laboratory fee ranging from $1.50 to $5.00 for each course. The total fees will not exceed $30.00 for the six weeks session. Those who wish to remain longer than six weeks may do so for a fee of $5.00 a week.

The courses offer an excellent opportunity for taking a six weeks vacation from one's regular work, at the same time spending the time profitably in self-improvement. For further information about the special courses for printers, write to the Department of Printing and Rural Journalism.

Special Printing Courses

For the war period, the Printing Laboratory will offer special two-week courses in Linotype, hand composition and presswork to students either sent by or recommended by publishers. These courses are designed to give men on the job an opportunity to extend their abilities in departments other than the one in which they are working, and to give beginners in the trade the rudiments of the particular department in which the publisher wishes to use them. The student will put in 44 hours per week on theory and practice. Tuition and laboratory fees will be $5.00 per week.

Printers' Mechanical Conference

On the last two days of each regular summer session the Printing Laboratory holds a two-day Printers' Mechanical Conference. All back-office workers in the state are invited to attend. The time is spent in roundtable discussions and demonstrations on Costs, Composing Machine Problems, Pressroom Problems, Typography, Layout and Imposition. All the equipment and facilities of the printing department are placed at the disposal of those who attend.

The Summer Quarter

In planning its offering for the Summer quarter of 1946, South Dakota State College will endeavor to provide such work and courses as will effectively meet the needs and demands of the summer quarter student body.

For 1946, the summer work is being expanded beyond that of previous years to provide work for a summer quarter of two terms, giving students the opportunity of enrolling in either or both terms. The divisions of the College expect to offer such work in the summer quarter and to fit it in with the work of the regular three quarters so that students may, if they wish, by attending the summer quarter, shorten the total period of time necessary to complete work for a degree. This plan accommodates different groups of students: graduates of high schools just beginning their college work, the regular college students, graduate students (usually teachers), and others seeking advanced work.

Since one of the principle functions of the College is to train teachers along vocational lines, its shops, laboratories, experimental plots, and livestock are available for this purpose. Many experienced teachers find it to their advantage to attend the Summer Session here and appreciate the relatively wide range of courses offered. Many of the departments of the College offer work during the summer for graduate credit. In certain of the departments it is desirable that students plan to do at least some of their graduate work during the Sumer Session.

An interesting social and recreational program is maintained. The Pugsley Union Building is the center of social activities. Freshman women students are required to room in the dormitories. Men students will find good housing accommodations in the private rooming houses near the campus.

The Grill room in the Union Building is open for service, and board can be obtained at other eating places or in private homes near the college campus.

Courses are offered in the divisions of Agriculture, Engineering, Home Economics, General Science and Pharmacy. The faculty of the summer quarter will almost entirely be members of the regular faculty of the College.

Tuition and fees are $17.25 per term for students who are residents of the state. Fifty percent higher tuition will be charged students who are not residents of the state.

For fourther information write the Registrar for the Summer School Bulletin.

Summary of Enrollment—1945-46

COLLEGIATE

Academic Year 1945-46	Men	Women	Total	Grand Total
Graduates	30	6	36	
Seniors	55	42	97	
Juniors	64	31	95	
Sophomores	138	103	241	
Freshmen	399	162	561	
Specials	18	5	23	
Total Academic Year 1945-46	704	349	1053	
Summer Session, 1945	**61**	**104**	**165**	
(Unclassified counted below in short courses)				
Army Specialized Training Program	**522**		**522**	
Total Collegiate Enrollment	1287	453	1740	1740
School of Agriculture				
First Year	77	4	81	
Second Year	3	1	4	
Total School of Agriculture	80	5	85	85

SHORT COURSES

Creamery Short Course	10		10	
Unclassified Summer School (See Collegiate)	5	13	18	
Total Short Courses	15	13	28	28
GRAND TOTAL	1382	471	1853	1853
Names Repeated	–29	–51	–80	–80
Net Total Enrollment, June, 1945 to June, 1946	**1353**	**420**	**1773**	**1773**