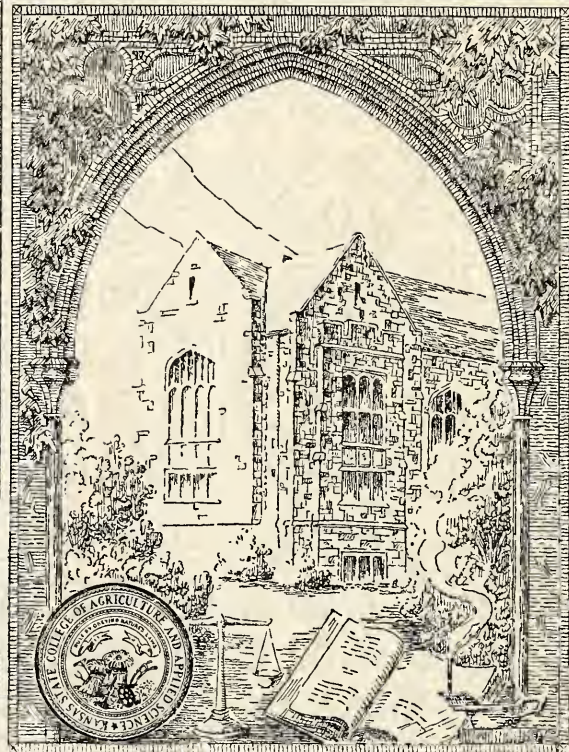
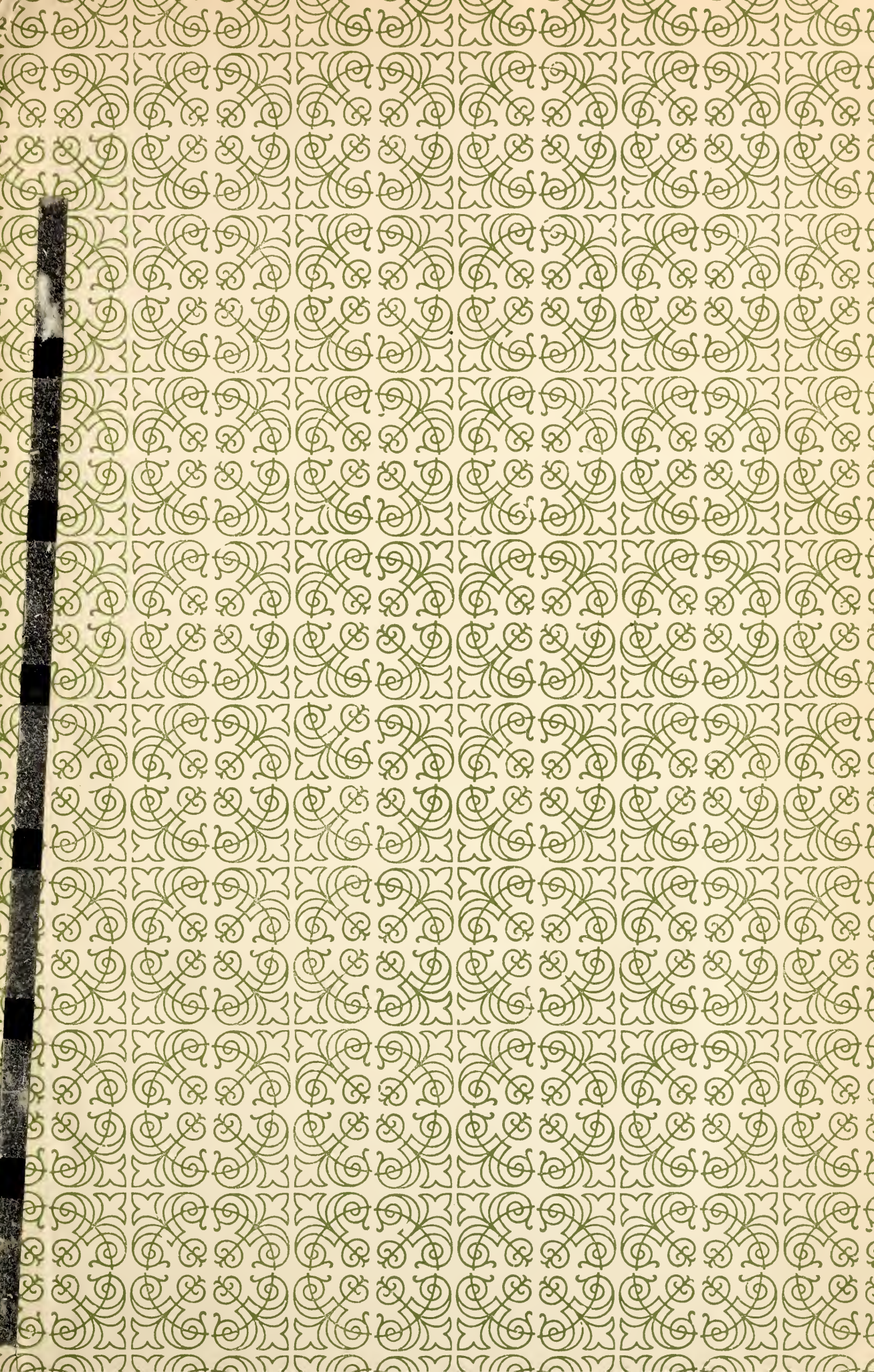


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KANSAS STATE AGRICULTURAL COLLEGE BULLETIN

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JUNE 15, 1930

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SIXTY-SEVENTH SESSION, 1929-'30



ANNOUNCEMENTS FOR 1930-'31
STUDENT LISTS FOR 1929-'30

MANHATTAN, KANSAS

Published by the College

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THE COLLEGE CALENDAR

SUMMER SCHOOL, 1930

- May 31, Saturday.—Registration of students for Summer School begins at 8 a. m.
May 31, Saturday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
May 31, to Aug. 1, Saturday to Friday.—Summer School in session, nine weeks.
June 2 to 6, Monday to Friday.—4-H Club Round-up.
June 14, Saturday.—Preliminary reports on masters' theses are due.
July 4, Friday.—Independence Day, holiday.
July 5 to Aug. 1, Saturday to Friday.—Second session of Summer School, four weeks.
July 15, Tuesday.—Abstracts of masters' theses are due.
July 26, Saturday.—Masters' theses are due.
July 31, Thursday.—Commencement exercises at 8 p. m. for those receiving degrees at end of Summer School.
Aug. 8, Friday.—Reports of all Summer School grades due in registrar's office.

FIRST SEMESTER, 1930-'31

- Sept. 5, Friday.—All members of the instructional force on duty.
Sept. 6, Saturday.—Meeting of assigners with committee on schedule at 2 p. m.
Sept. 6, Saturday.—Meeting of assigners with deans at 3 p. m.
Sept. 8, Monday.—Admission and registration of students begin at 7:45 a. m.
Sept. 8, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
Sept. 10, Wednesday.—Registration of students closes at 9:30 a. m.
Sept. 10, Wednesday.—Opening convocation, 11 a. m. to 12 m.
Sept. 10, Wednesday.—*All classes, except freshmen, meet according to schedule, beginning at 1 p. m.
Sept. 10 and 11, Wednesday and Thursday.—† Mental tests for freshmen, 1 to 4:30 p. m.
Sept. 19, Friday.—† All freshman students meet at 11 a. m.
Sept. 19, Friday.—Annual student-faculty informal reception, 8 p. m.
Oct. 4, Saturday.—Examinations to remove conditions.
Oct. 11, Saturday.—Scholarship deficiency reports to students and deans are due.
Nov. 8, Saturday.—Midsemester scholarship deficiency reports to students and deans are due.
Nov. 15, Saturday.—Preliminary reports on masters' theses are due.
Nov. 26, Wednesday.—Thanksgiving vacation begins at 12 m.
Nov. 29, Saturday.—Thanksgiving vacation closes at 6 p. m.
Dec. 20, Saturday.—Winter vacation begins at 6 p. m.
Jan. 3, 1931, Saturday.—Winter vacation closes at 6 p. m.
Jan. 5, Monday.—Farmers' Short Course and Dairy Manufacturing Short Courses begin.
Jan. 5, Monday.—Abstracts of masters theses are due.
Jan. 19, Monday.—Masters' theses are due.
Jan. 16 to 24, Friday to Saturday.—Examinations at close of semester.
Jan. 24, Saturday.—First semester closes at 11 a. m.
Jan. 24, Saturday.—Semester scholarship deficiency reports to students and deans are due.

SECOND SEMESTER, 1930-'31

- Jan. 26, Monday.—Meeting of assigners with committee on schedule at 2 p. m.
Jan. 26, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
Jan. 27, Tuesday.—Admission and registration of students begin at 7:45 a. m.
Jan. 28, Wednesday.—Registration closes at 5 p. m.
Jan. 29, Thursday.—* All classes meet according to schedule, beginning at 8 a. m.
Feb. 3 to 6, Tuesday to Friday.—Farm and Home Week.
Feb. 7, Saturday.—Reports of all grades for first semester due in registrar's office.
Feb. 21, Saturday.—Examinations to remove conditions.
Feb. 28, Saturday.—Farmers' Short Course and Dairy Manufacturing Short Courses close at 12 m.
Feb. 28, Saturday.—Scholarship deficiency reports to students and deans are due.
Mar. 14, Saturday.—Preliminary reports on masters' theses are due.
Mar. 28, Saturday.—Midsemester scholarship deficiency reports to students and deans are due.
April 2, Thursday.—Easter vacation begins at 6 p. m.
April 6, Monday.—Easter vacation closes at 6 p. m.
April 9, Thursday.—Announcement of elections of seniors to Phi Kappa Phi.
May 4, Monday.—Abstracts of masters' theses are due.
May 12 to 19, Tuesday to Tuesday.—Examinations for seniors.

* Students must be present at the first meeting of each class or render a reasonable excuse. Failure to take out an assignment is not accepted as an excuse for absence from classes. A fee of five dollars is charged those who are assigned after the time set for close of registration.

† Attendance of all freshmen is required on each of the three days.

May 19 to 26, Tuesday to Tuesday.—Examinations at close of semester.
 May 20, Wednesday.—Masters' theses are due.
 May 24, Sunday.—Baccalaureate services, beginning at 8 p. m.
 May 27, Wednesday.—Alumni Day. Business meeting at 2 p. m., banquet at 6 p. m.
 May 28, Thursday.—Sixty-eighth Annual Commencement at 10 a. m.
 May 29, Friday.—Semester scholarship deficiency reports to students and deans are due.
 June 11, Thursday.—Reports of all grades for second semester due in registrar's office.

SUMMER SCHOOL, 1931

May 29, Friday.—Registration of students for first session of Summer School begins at 8 a. m.
 May 29, Friday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
 May 30, Saturday.—Memorial Day, holiday.
 May 29 to July 30, Friday to Thursday. First session of Summer School, nine weeks.
 June 1 to 5, Monday to Friday.—4-H Club Round-up.
 June 15, Monday.—Preliminary reports on masters' theses are due.
 July 4, Saturday.—Independence Day, holiday.
 July 3 to July 30, Friday to Thursday.—Second session of Summer School, four weeks.
 July 15, Wednesday.—Abstracts of masters' theses are due.
 July 25, Saturday.—Masters' theses are due.
 July 30, Thursday.—Commencement exercises at 8 p. m. for those graduating at end of first session of Summer School.
 Aug. 20, Thursday.—Reports of all grades for first session of Summer School due in registrar's office.

FIRST SEMESTER, 1931-'32

Sept. 14, Monday.—Admission and registration of students begin at 7:45 a. m.
 Sept. 14, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
 Sept. 16, Wednesday.—Registration of students closes at 9:30 a. m.

REGISTRATION AND ASSIGNMENT SCHEDULE

The following tabulation shows the schedule of hours for registration and assignment of students for the college year 1930-'31, arranged according to the initial letters of their last names:

FIRST SEMESTER

MONDAY, SEPTEMBER 8, 1930

<i>Hours.</i>	<i>Initial letters.</i>
7:45 to 9:30.....	A, C, L
9:45 to 11:15.....	E, M, N, U, X
12:30 to 2:00.....	G, J, O, W, Y
2:15 to 3:45.....	H, I, K, Z

TUESDAY, SEPTEMBER 9, 1930

8:00 to 9:30.....	P, S
9:45 to 11:15.....	B, T, V
12:30 to 2:00.....	D, F, Q, R
2:15 to 3:45.....	Special students

WEDNESDAY, SEPTEMBER 10, 1930

8:00 to 9:30..... Trade Course students and any other students not yet assigned.

SECOND SEMESTER

TUESDAY, JANUARY 27, 1931

7:45 to 9:30.....	D, F, Q, R
9:45 to 11:15.....	A, C, L
12:30 to 2:00.....	E, M, N, U, X
2:15 to 3:45.....	P, S

WEDNESDAY, JANUARY 28, 1931

8:00 to 9:30.....	B, T, V
9:45 to 11:15.....	H, I, K, Z
12:30 to 1:45.....	G, J, O, W, Y
2:00 to 5:00.....	Special students, Trade Course students, and any other students not yet assigned.

The State Board of Regents

Name and address.	Term expires.
W. Y. MORGAN, <i>Chairman</i> , Hutchinson.....	June 30, 1930
B. C. CULP, Beloit.....	June 30, 1932
OSCAR STAUFFER, Arkansas City.....	June 30, 1933
C. M. HARGER, Abilene.....	June 30, 1930
M. G. VINCENT, Pittsburg.....	June 30, 1930
C. B. MERRIAM, Topeka.....	June 30, 1931
C. C. WILSON, Meade.....	June 30, 1933
C. W. SPENCER, Sedan.....	June 30, 1931
W. E. IRELAND, Yates Center.....	June 30, 1932

H. R. RHODES, *Business Manager*

J. E. BREWER, *Assistant Business Manager*

Administrative Officers of the College

President	F. D. FARRELL
Vice President, and Dean of the Division of General Science	J. T. WILLARD
Dean of the Division of Agriculture, and Director of the Agricultural Experiment Station.....	L. E. CALL
Dean of the Division of Engineering, and Director of the Engineering Experiment Station.....	R. A. SEATON
Dean of the Division of Home Economics.....	MARGARET M. JUSTIN
Dean of the Division of Veterinary Medicine.....	R. R. DYKSTRA
Dean of the Division of College Extension.....	H. J. UMBERGER
Chairman of the Graduate Council.....	J. E. ACKERT
Dean of Women	MARY P. VAN ZILE
Dean of the Summer School.....	E. L. HOLTON
Registrar	JESSIE McD. MACHIE
Librarian	ARTHUR B. SMITH
Custodian of Buildings and Grounds.....	G. R. PAULING

Officers of Instruction and Administration

PRESIDENT

FRANCIS DAVID FARRELL, Agr. D., President of the College (1918, 1925).*

B. S., Utah Agricultural College, 1907; Agr. D., University of Nebraska, 1925.
†A 30; President's House, College Campus.

PROFESSORS

JOHN DANIEL WALTERS,¹ M. S., A. D., Professor of Architecture, Emeritus (1877, 1917—Sept. 30, 1929).

M. S., K. S. A. C., 1883; A. D., *ibid.*, 1908.

JULIUS TERRASS WILLARD, M. S., Sc. D., Vice President of the College (1883, 1918); Dean of Division of General Science (1883, 1909); Professor of Chemistry (1883, 1901); Consulting Chemist, Agricultural Experiment Station (1888, 1918).

B. S., K. S. A. C., 1883; M. S., *ibid.*, 1886; Sc. D., *ibid.*, 1908. A 48; 1014 Houston.

BENJAMIN LUCE REMICK, Ph. M., Professor and Head of Department of Mathematics (1900).

Ph. B., Cornell College, 1889; Ph. M., *ibid.*, 1892. E 223; 613 Houston.

ALBERT DICKENS,² M. S., Professor and Head of Department of Horticulture (1899, 1902); Horticulturist, Agricultural Experiment Station (1899, 1902).

B. S., K. S. A. C., 1893; M. S., *ibid.*, 1901. H 28; 1230 Fremont.

RALPH RAY PRICE, A. M., Professor and Head of Department of History and Government (1903).

A. B., Baker University, 1896; A. M., University of Kansas, 1898. F 57; 615 Humboldt.

JULIUS ERNEST KAMMEYER, A. M., LL. D., Professor and Head of Department of Economics (1903, 1904).

A. B., Central Wesleyan College, 1886; A. M., *ibid.*, 1889; LL. D., Kansas City University, 1912. A 52; 1011 Kearney.

JOHN VANZANDT CORTELYOU, Ph. D., Professor and Head of Department of Modern Languages (1904, 1916).

A. B., University of Nebraska, 1897; A. M., *ibid.*, 1901; Ph. D., University of Heidelberg, 1904. A 71; 325 N. 14th.

* One date standing after the title shows when the office was assumed. In the case of two dates separated by a comma or semicolon, the first date indicates when services with the College began, the second when present office was assumed. Dates separated by a dash indicate time of assumption and termination, respectively, of the duties indicated in the title.

† The College buildings are designated by letters, as follows:

A—Anderson Hall (Administration)	Li—Library
Ag—Waters Hall (Agriculture)	M—Auditorium
Bks—Barracks	MA—Music Annex
C—Denison Hall (Chemistry, Physics)	N—Nichols Gymnasium
CH—College Hospital	P—Stock Judging Pavilion
D—Chemistry Annex No. 2	PP—Heat, Power and Service Building
E—Engineering Hall	R—Farm Machinery Hall
F—Fairchild Hall	S—Engineering Shops
G—Education Hall	T—Thompson Hall (Cafeteria)
H—Horticulture Hall	V—Veterinary Hall
I—Illustrations Hall	VH—Veterinary Hospital
K—Kedzie Hall (Printing)	W—Chemistry Annex No. 1
L—Calvin Hall (Home Economics)	X—Maintenance Building

1. Deceased.

2. Absent on leave, 1929-1930.

JOHN ORR HAMILTON, B.S., Professor and Head of Department of Physics (1901, 1908); Physicist, Engineering Experiment Station (1913).
B. S., University of Chicago, 1900. C 33; 331 N. 14th.

MARY PIERCE VAN ZILE, B.S., Dean of Women (1908, 1918).
Diploma, Iowa State College, B. S., 1904; B. S., K. S. A. C., 1929.
A 40; 800 Houston.

LOWELL EDWIN CONRAD, M.S., Professor and Head of Department of Civil Engineering (1908, 1909); Civil Engineer, Engineering Experiment Station (1913).
B. S., Cornell College, 1904; C. E., *ibid.*, 1906; M. S., Lehigh University, 1908.
E 124; 317 N. 17th.

EDWIN LEE HOLTON, Ph. D., Professor and Head of Department of Education (1910, 1913); Dean of Summer School (1910, 1918).
A. B., Indiana University, 1904; Ph. D., Columbia University, 1927.
G 28A; 217 N. 14th.

ROY ANDREW SEATON, M.S., Dean of Division of Engineering (1904, 1920); Director of the Engineering Experiment Station (1904, 1920).
B. S., K. S. A. C., 1904; M. S., *ibid.*, 1910; S. B., Massachusetts Institute of Technology, 1911.
E 115; 722 Humboldt.

ARTHUR BOURNE SMITH, Ph. B., B. L. S., College Librarian (1911).
Ph. B., Wesleyan University, 1900; B. L. S., University of Illinois, 1902.
Li 31; 1503 Fairchild.

LELAND DAVID BUSHNELL, Ph. D., Professor and Head of Department of Bacteriology (1900, 1912); Bacteriologist, Agricultural Experiment Station (1909, 1912).
B. S., Michigan Agricultural College, 1905; M. S., University of Kansas, 1915; Ph. D., Harvard University, 1921.
V 54; 801 Osage.

LELAND EVERETT CALL, M.S., Dean of Division of Agriculture (1907, 1925); Director of Agricultural Experiment Station (1907, 1925).
B. S. in Agr., Ohio State University, 1906; M. S., *ibid.*, 1912. Ag 112; 223 N. 14th.

GEORGE ADAM DEAN, M.S., Professor and Head of Department of Entomology (1902, 1913); Entomologist, Agricultural Experiment Station (1902, 1913).
B. S., K. S. A. C., 1895; M. S., *ibid.*, 1905. F 52; 1725 Poyntz.

ROBERT KIRKLAND NABOURS,³ Ph. D., Professor and Head of Department of Zoölogy (1910, 1913); Zoölogist, Agricultural Experiment Station (1910, 1913); Curator of the Natural History Museum (1910).
Ed. B., University of Chicago, 1905; Ph. D., *ibid.*, 1911. F 30; 401 Denison.

RALPH R. DYKSTRA, D. V. M., Dean of Division of Veterinary Medicine (1911, 1919); Professor of Surgery and Head of Department of Surgery and Medicine (1911, 1913).
D. V. M., Iowa State College, 1905. V 29; 607 Houston.

MICHAEL FRANCIS AHEARN, M.S., Professor and Head of Department of Physical Education, and Director of Athletics (1904, 1920).
B. S., Massachusetts Agricultural College, 1904; M. S., K. S. A. C., 1913.
N 35; 104 N. Juliette.

CHARLES MOSES SIEVER, Ph. G., M. D., College Physician (1916).
Ph. G., Trinity University, 1903; M. D., *ibid.*, 1903; M. D., University of Kansas, 1907.
A 65; 1719 Laramie.

WALTER WILLIAM CARLSON, M. E., Professor and Head of Department of Shop Practice (1910, 1917); Superintendent of Shops (1910, 1912); Industrial Engineer, Engineering Experiment Station (1913).
B. S., K. S. A. C., 1908; M. E., *ibid.*, 1916. S 62; 1722 Laramie.

3. On sabbatical leave, Oct. 1, 1929, to June 30, 1930.

- SAMUEL CECIL SALMON, M. S.**, Professor of Farm Crops (1913, 1917).
B. S., South Dakota Agricultural and Mechanical College, 1907; M. S., K. S. A. C., 1923.
Ag 217; 1648 Leavenworth.
- HARRY JOHN CHARLES UMBERGER,⁴ B. S.**, Dean of Division of College Extension (1911, 1919); Director of College Extension (1911, 1919).
B. S., K. S. A. C., 1905. A 33; 1412 Leavenworth.
- HERBERT HIRAM KING, Ph. D.**, Professor and Head of Department of Chemistry (1906, 1918); Chemist, Agricultural Experiment Station (1918); Chemist, Engineering Experiment Station (1909, 1918).
B. S., Ewing College, 1904; A. M., *ibid.*, 1906; M. S., K. S. A. C., 1915; Ph. D., University of Chicago, 1918. C 30; 1711 Fairchild.
- CHARLES WILBUR McCAMPBELL, D. V. M.**, Professor and Head of Department of Animal Husbandry (1910, 1918); Animal Husbandman, Agricultural Experiment Station (1910, 1918).
B. S., K. S. A. C., 1906; D. V. M., *ibid.*, 1910; B. S. in Agr., *ibid.*, 1918.
Ag 15; 343 N. 14th.
- RAY IAMS THROCKMORTON, M. S.**, Professor and Head of Department of Agronomy (1911, 1925); Agronomist, Agricultural Experiment Station (1911, 1925).
B. S. in Agr., Pennsylvania State College, 1911; M. S., K. S. A. C., 1922.
Ag 214; 825 Houston.
- JAMES EDWARD ACKERT, Ph. D.**, Professor of Zoölogy (1913, 1918); Parasitologist, Agricultural Experiment Station (1913).
A. B., University of Illinois, 1909; A. M., *ibid.*, 1911; Ph. D., *ibid.*, 1913.
F 27; 1923 Leavenworth.
- ALFRED EVERETT WHITE, M. S.**, Professor of Mathematics (1909, 1918).
B. S., Purdue University, 1904; M. S., *ibid.*, 1909. A 72; 1743 Fairchild.
- JAMES BURGESS FITCH, B. S.**, Professor and Head of Department of Dairy Husbandry (1910, 1918); Dairy Husbandman, Agricultural Experiment Station (1910, 1918).
B. S., Purdue University, 1910. Ag 151; 321 N. 16th.
- HALLAM WALKER DAVIS, A. M.**, Professor of English (1913, 1918); Head of Department of English (1913, 1921).
A. B., Indiana University, 1909; A. M., Columbia University, 1913.
K 52; 1727 Fairview.
- ARAMINTA HOLMAN, B. S.**, Professor and Head of Department of Art (1913, 1918).
Graduate, New York School of Fine and Applied Art, 1912; B. S., Columbia University, 1922. A 67; 513 N. 16th.
- VIVAN LEWIS STRICKLAND, Ph. D.**, Professor of Education (1917, 1922).
A. B., University of Nebraska, 1906; A. M., *ibid.*, 1915; Ph. D., *ibid.*, 1925.
G 28; 1512 Leavenworth.
- JAMES PARK CALDERWOOD, M. E., M. S.**, Professor and Head of Department of Mechanical Engineering (1918, 1922); Mechanical Engineer, Engineering Experiment Station (1918).
M. E., Ohio State University, 1908; M. S., Pennsylvania State College, 1916.
E 106; 321 N. 14th.
- JAMES HENRY BURT, D. V. M.**, Professor and Head of Department of Anatomy and Physiology (1909, 1919).
V. S., Ontario Veterinary College, 1895; D. V. M., Ohio State University, 1905.
V 32; 800 Poyntz.
- LEO EDWARD MELCHERS, M. S.**, Professor and Head of Department of Botany and Plant Pathology (1914, 1919); Plant Pathologist, Agricultural Experiment Station (1914).
B. S., Ohio State University, 1912; M. S., *ibid.*, 1913. H 58; 325 N. 17th.

4. In coöperation with the U. S. Department of Agriculture.

- EDWIN CYRUS MILLER, Ph. D., Professor of Plant Physiology (1910, 1919).
A. B., Lebanon College, 1906; A. B., Yale University, 1907; Ph. D., *ibid.*, 1910.
H 56; 211 N. 18th.
- CYRUS VANCE WILLIAMS, Ph. D., Professor of Vocational Education (1920).
B. Ed., (Peru) Nebraska State Normal School, 1909; A. M., University of Nebraska, 1910; B. S. in Agr., College of Agriculture, *ibid.*, 1919; Ph. D., 1925.
G 29; 1735 Fairview.
- WILLIAM HIDDLESTON ANDREWS, Ph. D., LL. D., Professor of Education (1906, 1920).
A. B., University of Chicago, 1900; M. S., K. S. A. C., 1919; Ph. D., University of Chicago, 1923; LL. D., College of Emporia, 1921.
G 28; 1704 Fairview.
- CHARLES OSCAR SWANSON, M. Agr., Ph. D., Professor and Head of Department of Milling Industry (1906, 1923).
A. B., Carelton College, 1899; M. Agr., University of Minnesota, 1905; Ph. D., Cornell University, 1922.
Ag 119; 1640 Fairview.
- IVOR VICTOR ILES, A. M., Professor of History and Government (1911, 1920).
A. B., University of Kansas, 1905; A. M., *ibid.*, 1905.
F 58; 1725 Fairchild.
- JOSIAH SIMSON HUGHES, Ph. D., Professor of Chemistry (1910, 1920).
B. S., Ohio Wesleyan University, 1908; M. S., *ibid.*, 1910; A. M., Ohio State University, 1910; Ph. D., *ibid.*, 1917.
C 41; 333 N. 15th.
- ROBERT WARREN CONOVER, A. M., Professor of English (1915, 1920).
A. B., Wesleyan University, 1911; A. M., *ibid.*, 1914.
K 52; 1729 Fairchild.
- JOHN CHRISTIAN PETERSON, Ph. D., Professor of Psychology (1917, 1926).
A. B., University of Utah, 1913; Ph. D., University of Chicago, 1917.
G 33; 1330 Laramie.
- HERBERT FREDERICK LIENHARDT, V. M. D., Professor and Head of Department of Pathology (1917, 1920).
V. M. D., University of Pennsylvania, 1916.
V 58; 1118 Bertrand.
- GEORGE ELLSWORTH RABURN, M. S., Professor of Physics (1910, 1920).
A. B., University of Michigan, 1907; M. S., *ibid.*, 1913.
C 34; College Heights.
- ROBERT JOHN BARNETT, M. S., Professor of Horticulture (1920); Acting Head of Department of Horticulture (1929-'30).
B. S., K. S. A. C., 1895; M. S., *ibid.*, 1911.
H 28; 1203 Thurston.
- MARY THERESA HARMAN, Ph. D., Professor of Zoölogy (1912, 1921).
A. B., Indiana University, 1907; A. M., *ibid.*, 1909; Ph. D., *ibid.*, 1912.
F 41; 1430 Poyntz.
- FLOYD WAYNE BELL, B. S. A., Professor of Animal Husbandry, in Charge of Advanced Judging (1918, 1921).
B. S., Cornell University, 1911.
Ag 5; 1736 Fairview.
- EUSTACE VIVIAN FLOYD, B. S., Professor of Physics (1911, 1921).
B. S., Earlham College, 1903.
C 34; 1451 Laramie.
- WALDO ERNEST GRIMES, Ph. D., Professor and Head of Department of Agricultural Economics (1913, 1921).
B. S., K. S. A. C., 1913; Ph. D., University of Wisconsin, 1923.
Ag 350; 203 N. Delaware.
- JOHN HUNTINGTON PARKER, Ph. D., Professor of Crop Improvement (1917, 1921).
B. S. in Agr., University of Minnesota, 1913; M. S. in Agr., Cornell University, 1916; Ph. D., Cambridge University, 1928.
Ag 103; 1728 Fairview.
- HOWARD TEMPLETON HILL, J. D., Professor and Head of Department of Public Speaking (1920, 1922).
B. S., Iowa State College, 1910; J. D., University of Chicago, 1917. G 55; 1616 Osage.

- NOBLE WARREN ROCKEY, A. M., Professor of English (1921).
A. B., Ohio State University, 1905; A. M., *ibid.*, 1916. K 52; 1605 Leavenworth.
- EDWARD GUERRANT KELLY, Ph. D., Professor of Entomology, Division of College Extension (1918, 1922).
B. S., University of Kentucky, 1903; M. S., *ibid.*, 1904; Ph. D., Iowa State College, 1927. F 69; 1621 Humboldt.
- HOWARD W. BRUBAKER, Ph. D., Professor of Chemistry (1913, 1922).
B. S., Carleton College, 1899; Ph. D., University of Pennsylvania, 1904. C 12; 1929 Leavenworth.
- PERCY LEIGH GAINNEY, Ph. D., Professor of Bacteriology (1914, 1922); Soil Bacteriologist, Agricultural Experiment Station (1914).
B. Agr., North Carolina A. and M. College, 1908; M. S., *ibid.*, 1910; A. M., Washington University, 1911; Ph. D., *ibid.*, 1927. V 261; 1123 Houston.
- FORREST FAYE FRAZIER, C. E., Professor of Civil Engineering (1911, 1922).
C. E., Ohio State University, 1910. E 123; 1815 Leavenworth.
- ROYCE GERALD KLOEFFLER,⁵ B. S., Professor and Head of Department of Electrical Engineering (1916, 1927).
B. S. in E. E., University of Michigan, 1913. E 120; 1218 Kearney.
- CLINTON ELLIOTT PEARCE, S. B., Professor and Head of Department of Machine Design (1917, 1922).
S. B., Massachusetts Institute of Technology, 1913. E 210; 615 N. 11th.
- CHARLES HENRY SCHOLER, B. S., Professor and Head of Department of Applied Mechanics (1920, 1922); Engineer of Tests in the Road Materials Laboratory (1920).
B. S., K. S. A. C., 1914. E 11; 806 Bluemont.
- LOYAL FREDERICK PAYNE, M. S., Professor and Head of Department of Poultry Husbandry (1921, 1922); Poultry Husbandman, Agricultural Experiment Station (1921, 1922).
B. S., Oklahoma A. and M. College, 1912; M. S., K. S. A. C., 1925. Ag 245; 4 College Heights Road.
- MARTHA S. PITTMAN,⁵ A. M., Professor and Head of Department of Food Economics and Nutrition (1919, 1922).
B. S., K. S. A. C., 1906; B. S., Columbia University, 1916; A. M., *ibid.*, 1918. L 43; 112 S. 12th.
- GEORGE ALBERT GEMMELL,⁵ M. S., Professor of Education, in Charge of Department of Home Study Service, Division of College Extension (1918, 1922).
B. S., Kansas State Teachers College, Pittsburg, 1917; B. S., K. S. A. C., 1920; M. S., *ibid.*, 1922. A 5; 411 N. 16th.
- WILLIAM TIMOTHY STRATTON,⁵ A. M., Professor of Mathematics (1910, 1923).
A. B., Indiana University, 1906; A. M., *ibid.*, 1913. E 223; 511 N. Sunset.
- ROY MONROE GREEN,⁶ M. S., Professor of Agricultural Economics (1920, 1923).
B. S. in Agr., University of Missouri, 1914; M. S., K. S. A. C., 1922. Ag 345; 855 Anderson.
- MARGARET M. JUSTIN, Ph. D., Dean of Division of Home Economics (1923).
B. S. in H. E., K. S. A. C., 1909; B. S. in Educ., Teachers College, Columbia University, 1915; Ph. D., Yale University, 1923. L 29; 531 N. Manhattan.
- AMY KELLY, B. S., Professor, State Home Demonstration Leader, Division of College Extension (1923).
B. S., South Dakota State College, 1908. A 36; Apt. 603, Wareham Hotel.

5. On sabbatical leave, 1929-'30.

6. On sabbatical leave, Nov. 1, 1929, to June 30, 1930.

- HEMAN LAURITZ IBSEN, Ph. D., Professor of Genetics (1919, 1924).
B. S., University of Wisconsin, 1912; M. S., *ibid.*, 1913; Ph. D., *ibid.*, 1916.
Ag 15A; 1031 Thurston.
- ELDEN VALORIUS JAMES, A. M., Professor of History and Government (1912, 1924).
A. B., Marietta College, 1901; A. B., University of Michigan, 1905; A. M., Marietta College, 1908.
F 62; 1723 Fairview.
- PAUL WEIGEL, B. Arch., Professor and Head of Department of Architecture (1921, 1924).
B. Arch., Cornell University, 1912; Architect, University of State of New York, 1920; Graduate, Buffalo Normal School, 1921.
E 302; 1918 Leavenworth.
- LILIAN CLARA WILLIAMS BAKER, A. M., Professor and Head of Department of Clothing and Textiles (1924).
B. S., K. S. A. C., 1914; A. M., University of Chicago, 1921. L 56; 522 N. 14th.
- WALTER GILLING WARD,⁵ B. S. Arch., Professor in Charge of Rural Engineering, Division of College Extension (1920, 1925).
B. S. in Arch., K. S. A. C., 1912; Architect, *ibid.*, 1922. E 131; 519 N. Manhattan.
- CHARLES ELKINS ROGERS, M. S., Professor and Head of Department of Industrial Journalism (1919, 1926).
A. B., University of Oklahoma, 1914; M. S., K. S. A. C., 1926. K 30; 1740 Fairview.
- EDGAR TALBERT KEITH, B. S., Professor of Industrial Journalism and Printing (1912, 1925).
B. S., K. S. A. C., 1912. K 26; 1421 Poyntz.
- JAMES WALTER MCCOLLOCH,¹ M. S., Professor of Entomology (1910, 1925-Nov. 11, 1929); Associate Entomologist, Agricultural Experiment Station (1910, 1918-Nov. 11, 1929).
B. S., K. S. A. C., 1912; M. S., *ibid.*, 1923.
- CHARLES WILLIAM COLVER, Ph. D., Professor of Organic Chemistry (1919, 1925).
B. S., University of Idaho, 1909; M. S., *ibid.*, 1911; Ph. D., University of Illinois, 1919.
C 56; 1635 Fairchild.
- CHARLES WALTON MATTHEWS⁵ A. M., Professor of English (1920, 1925).
B. S., Kansas State Teachers College, Pittsburg, 1918; A. M., University of Chicago, 1923.
K 52; 1745 Anderson.
- MARTHA MORRISON KRAMER, Ph. D., Professor of Food Economics and Nutrition (1922, 1925).
B. S., University of Chicago, 1916; A. M., Columbia University, 1920; Ph. D., *ibid.*, 1922.
L 43; 1740 Fairview.
- JULES HENRY ROBERT, B. S., Professor of Applied Mechanics and Hydraulics (1916, 1925).
B. S., University of Illinois, 1914. E 113; 1729 Fairchild.
- JAMES MARSHALL PETTY, Col. Inf., U. S. A., Professor and Head of Department of Military Science and Tactics (1926).
Graduate, Infantry and Cavalry School, Fort Leavenworth, 1903; Graduate, Infantry School, Fort Bennington, 1925; Graduate, Command and General Staff School, Fort Leavenworth, 1926.
N 26; Wareham Hotel.
- HARRY WINFIELD CAVE, M. S., Professor of Dairy Husbandry (1918, 1926).
B. S. A., Iowa State College, 1914; M. S., K. S. A. C., 1916. Ag 151; 1638 Osage.
- LOUIS COLEMAN WILLIAMS, B. S., Professor of Horticulture, Division of College Extension (1915, 1926).
B. S., K. S. A. C., 1912; B. S., *ibid.*, 1922. A 34; 1116 Bluemont.

1. Deceased.

5. On sabbatical leave, 1929-'30.

- ROGER CLETUS SMITH,² Ph. D., Professor of Entomology (1920, 1926).
A. B., Miami University, 1911; A. M., Ohio State University, 1915; Ph. D., Cornell University, 1917. F 55; 1605 Leavenworth.
- EDWIN JACOB FRICK, D. V. M., Professor of Medicine (1919, 1926).
D. V. M., Cornell University, 1918. VH 54; 319 N. 16th.
- ALFRED EVANS ALDOUS, B. S., Professor of Pasture Management (1926).
B. S., Utah Agricultural College, 1910. Ag 216; 200 N. 16th.
- LOUIS HENRY LIMPER, A. M., Professor of Modern Languages (1921, 1926).
A. B., Baldwin Wallace College, 1907; A. M., University of Wisconsin, 1914. A 69; 1324 Laramie.
- HENRY ARTHUR SHINN,¹² J. D., Professor of Public Speaking (1923, 1926-May 31, 1930).
A. B., University of Kansas, 1916; J. D., Leland Stanford University, 1926. G 55; 1715 Fairview.
- HELEN WHEELER FORD, Ph. D., Professor and Head of Department of Child Welfare and Euthenics (1926; July 1, 1928).
B. S., Rhode Island State College, 1914; Ph. D., Yale University, 1925. L 64; 531 N. Manhattan.
- WILLIAM LINDQUIST, B. M., Professor of Voice and Head of Department of Music (1925, 1927).
B. M., Cosmopolitan School of Music and Dramatic Art, Chicago, 1925. M 33; 202 S. 17th.
- FLOYD PATTISON, M. S., Professor of Mechanical Engineering, Home Study Service, Division of College Extension (1919, 1927).
B. S., K. S. A. C., 1912; M. S., Massachusetts Institute of Technology, 1929. A 5; 805 Kearney.
- BEATY HOPE FLEENOR, M. S., Professor of Education, Home Study Service, Division of College Extension (1923, 1927).
B. S., K. S. A. C., 1919; M. S., *ibid.*, 1923. A 5; 1635 Osage.
- MAYNARD HENRY COE, B. S., Professor, State Club Leader, Division of College Extension (1922, 1927).
B. S., University of Minnesota, 1917. A 35; 336 N. 16th.
- WILMER ESLA DAVIS, A. B., Professor of Plant Physiology (1909, 1927).
Graduate, Ohio Normal University, 1894; A. B., University of Illinois, 1903. H 76; 1123 Thurston.
- ADA RICE, M. S., Professor of English (1899, 1927).
B. S., K. S. A. C., 1895; M. S., *ibid.*, 1912. A 61; 917 Osage.
- MANFORD W. FURR, C. E., Professor of Civil Engineering (1917, 1927).
B. S. in C. E., Purdue University, 1913; C. E., *ibid.*, 1925; M. S., K. S. A. C., 1926. E 122; 1426 Humboldt.
- JACOB OLIN FAULKNER, A. M., Professor of English (1922, 1927).
A. B., Washington and Lee University, 1907; A. M., Pennsylvania State College, 1920. K 52; 1720 Fairview.
- HERBERT HENLEY HAYMAKER, Ph. D., Professor of Plant Pathology (1917, 1927).
B. S., K. S. A. C., 1915; M. S., University of Wisconsin, 1916; Ph. D., *ibid.*, 1927. H 54; 315 N. 16th.
- ARTHUR BRADLEY SPERRY, B. S., Professor of Geology (1921, 1927).
B. S., University of Chicago, 1919. F 5; 326 N. 16th.
- ALBERT JOHN MACK, M. E., Professor of Mechanical Engineering (1917, 1928).
B. S., K. S. A. C., 1912; M. E., *ibid.*, 1921. E 109; 1619 Osage.

2. Absent on leave, 1928-'30.

12. Absent on leave, 1929-'30; resigned.

GABE ALFRED SELLERS, M.S., Professor of Metallurgy and Metallography (1919, 1928).

B. S., K. S. A. C., 1917; M. S., *ibid.*, 1929. S 62; 927 Moro.

WILLARD HUNGATE MARTIN, M.S., Professor of Dairy Husbandry (1925, 1928).

B. S., Purdue University, 1918; M. S., Pennsylvania State College, 1922.
Ag 151; 1615 Osage.

MERRILL AUGUSTUS DURLAND, M.S., M.E., Professor of Machine Design (1919, 1928); Assistant Dean of Division of Engineering (1919, 1926).

B. S., K. S. A. C., 1918; M. E., *ibid.*, 1922; M. S., *ibid.*, 1923.
E 116; 1715 Houston.

FRANK LESLIE DULEY, Ph. D., Professor of Soils (1925, 1928).

B. S., University of Missouri, 1914; A. M., *ibid.*, 1915; Ph. D., University of Wisconsin, Ag 216; 1814 Laramie.

RUDOLPH HENRY DRIFTMIER, M.S., A.E., Professor of Agricultural Engineering (1920, 1928).

B. S. in A. E., Iowa State College, 1920; M. S., K. S. A. C., 1926; A. E., *ibid.*, 1929.
E 216; 335 N. 15th.

FREDERICK CHARLES FENTON, B.S. in A. E., Professor and Head of Department of Agricultural Engineering (1928).

B. S. in A. E., Iowa State College, 1914. E 214; 401 Denison.

ALVIN NUGENT McMILLIN, Professor of Physical Education and Head Coach of Athletics (1928).

N 35; 1810 Laramie.

FRANK CALEB GATES, Ph. D., Professor of Plant Taxonomy and Ecology (1919, 1928).

A. B., University of Illinois, 1910; Ph. D., University of Michigan, 1912.
H 77; 1515 Humboldt.

JESSE LAMAR BRENNEMAN, E.E., Professor of Electrical Engineering (1920, 1928); Acting Head of Department of Electrical Engineering (1929, 1930).

B. S., University of Chicago, 1908; E. E., University of Wisconsin, 1913.
E 120; 1017 Thurston.

THOMAS JOEL ANDERSON, Jr.,⁵ A. M., Professor of Economics (1922, 1928).

B. S., University of Missouri, 1922; A. M., *ibid.*, 1923. A 74; 1420 Laramie.

MARGARET S. CHANEY, Ph. D., Professor of Food Economics and Nutrition (1926, 1928).

Ph. B. in Ed., University of Chicago, 1914; A. M., University of California, 1923; Ph. D., University of Chicago, 1925. L 47; 1021 Leavenworth.

BESSIE BROOKS WEST, A.M., Professor and Head of Department of Institutional Economics (1928); Manager of Cafeteria (1928).

A. B., University of California, 1924; A. M., *ibid.*, 1928. T 27; 1520 Humboldt.

BERNARD MARTIN ANDERSON, M.S., Professor of Animal Husbandry (1920; July 1, 1929).

B. S. in Agr., K. S. A. C., 1916, 1923; M. S., *ibid.*, 1928. Ag 24; 323 Yuma.

HARRY ERNEST REED, M.S., Professor of Animal Husbandry (1923; July 1, 1929).

B. S. in Agr., University of Missouri, 1914; M. S., K. S. A. C., 1928.
Ag 27; 1119 Laramie.

DON CAMERON WARREN, Ph. D., Professor of Poultry Husbandry (1923; July 1, 1929).

A. B., Indiana University, 1914; A. M., *ibid.*, 1917; Ph. D., Columbia University, 1923.
Ag 249; 1616 Osage.

5. On sabbatical leave, 1929-'30.

LUCILE OSBORN RUST, M. S., Professor of Education (1924; Sept. 1, 1929).
 B. S., Kansas State Teachers College, Pittsburg, 1921; M. S., K. S. A. C., 1925.
 G 29; 710 Humboldt.

ASSOCIATE PROFESSORS

- GRACE EMILY DERBY, A. B., Associate Librarian (1911, 1918).
 A. B., Western College for Women, 1905. Li 55; 1825 Leavenworth.
- INA FOOTE COWLES, B. S., Associate Professor of Clothing and Textiles (1902, 1918).
 B. S., K. S. A. C., 1901. L 55; 513 N. 16th.
- MALCOLM CAMERON SEWELL, Ph. D., Associate Professor of Soils (1914, 1920).
 B. S., K. S. A. C., 1912; M. S., Ohio State University, 1914; Ph. D., University of Chicago, 1922. Ag 213; 315 N. 15th.
- WILLIAM HENRY SANDERS, M. E., Associate Professor of Agricultural Engineering (1912, 1920).
 B. S., K. S. A. C., 1890; M. E., *ibid.*, 1916. R 28; 1208 Kearney.
- CARL G. ELLING, B. S., Associate Professor of Animal Husbandry, Division of College Extension (1918, 1921).
 B. S., K. S. A. C., 1904. A 33; R. R. 1.
- ALONZO FRANKLIN TURNER,⁴ B. S., Associate Professor, Field Agent, Division of College Extension (1917, 1920).
 B. S., K. S. A. C., 1905. A 60; 810 Moro.
- JAMES WALTER ZAHNLEY, M. S., Associate Professor of Farm Crops (1915, 1921).
 B. S., K. S. A. C., 1909; M. S., *ibid.*, 1926. Ag 314; R. R. 8.
- HILMER HENRY LAUDE,⁶ M. S., Associate Professor of Agronomy (1920, 1921).
 B. S., K. S. A. C., 1911; M. S., Texas A. and M. College, 1918. Ag 202; 326 N. 16th.
- JOSEPH PRESTWICH SCOTT, D. V. M., Associate Professor of Pathology (1916, 1921).
 B. S., Scientific Gymnasium, Lausanne, Switzerland, 1910; D. V. M., Ohio State University, 1914; M. S., K. S. A. C., 1924. V 2; 1114 Bertrand.
- WILLIAM MAX McLEOD, D. V. M., Associate Professor of Anatomy (1919, 1921).
 D. V. M., Iowa State College, 1917. V 32; 1114 Bertrand.
- ELSIE HARRIET SMITH, Associate Professor of Piano (1917, 1922).
 Graduate, Certificate Course, Chicago Musical College, 1909; Postgraduate Diploma, Institute of Musical Art, New York City, 1914. M 58; 1704 Fairview.
- EDGAR LEMUEL TAGUE, Ph. D., Associate Professor of Chemistry (1914, 1923); Assistant in Protein Chemistry, Agricultural Experiment Station (1914).
 A. B., University of Kansas, 1908; A. M., *ibid.*, 1909; Ph. D., *ibid.*, 1924.
 C 3; 321 N. Delaware.
- WILLIAM RAYMOND BRACKETT, A. B., Associate Professor of Physics (1919, 1923).
 A. B., University of Colorado, 1905. C 38; 1824 Humboldt.
- HARRISON BOYD SUMMERS,⁵ A. M., Associate Professor of Public Speaking (1923).
 A. B., Fairmont College, 1917; A. M., University of Oklahoma, 1921.
 G 55; 1645 Laramie.

4. In coöperation with the U. S. Department of Agriculture.

5. On sabbatical leave, 1929-'30.

6. On sabbatical leave, Nov. 1, 1929, to June 15, 1930.

- EARL BOOTH WORKING, Ph. D., Associate Professor of Milling Industry (1923).
A. B., University of Denver, 1917; A. M., *ibid.*, 1919; Ph. D., University of Arizona, 1922.
Ag 120; 918 N. 10th.
- ERNEST BLAINE WELLS, M. S., Associate Professor of Soils, Division of College Extension (1920, 1924).
B. S. A., West Virginia University, 1917; M. S., K. S. A. C., 1922.
Ag 202; 1615 Leavenworth.
- ALFRED LESTER CLAPP, B. S., Associate Professor of Crops, Division of College Extension (1920, 1928).
B. S., K. S. A. C., 1914. Ag 250; 1109 Kearney.
- GEORGE EDWIN JOHNSON, Ph. D., Associate Professor of Zoölogy (1924); Mammalogist, Agricultural Experiment Station (1924).
B. S., Dakota Wesleyan University, 1913; M. S., University of Chicago, 1916; Ph. D. Harvard University, 1923.
F 7; 1614 Humboldt.
- ALLAN PARK DAVIDSON, M. S., Associate Professor of Vocational Education (1919, 1924).
B. S., K. S. A. C., 1914; M. S., *ibid.*, 1925. G 29; 1600 Humboldt.
- IRA NICHOLS CHAPMAN, M. S., Associate Professor of Agricultural Economics, Division of College Extension (1922, 1925).
B. S., K. S. A. C., 1916; M. S., *ibid.*, 1926. Ag 345; 1210 Thurston.
- FLOYD ALONZO SMUTZ, B. S., Associate Professor of Engineering Drawing and Descriptive Geometry (1918, 1925).
B. S. in Arch., K. S. A. C., 1914. S 51; 1530 Pierre.
- EARLE REED DAWLEY, M. S., Associate Professor of Engineering Materials (1920, 1926); Assistant Engineer of Tests (1920).
B. S., University of Illinois, 1919; M. S., K. S. A. C., 1927. E 14; 1200 Kearney.
- MORRIS EVANS, M. S., Associate Professor of Agricultural Economics (1920, 1926).
B. S. in Agr., K. S. A. C., 1920; M. S., *ibid.*, 1925. Ag 348; 1601 Poyntz.
- RALPH LANGLEY PARKER, Ph. D., Associate Professor of Apiculture and Entomology (1925, 1926); State Apiarist (1925).
B. S., Rhode Island State College, 1915; Sc. M., Brown University, 1917; M. S., Iowa State College, 1922; Ph. D., Cornell University, 1925. F 82; 1809 Leavenworth.
- HELEN ELIZABETH ELCOCK,⁵ A. M., Associate Professor of English (1920, 1926).
A. B., College of Emporia, 1907; A. M., University of Chicago, 1921.
A 63A; 513 N. 16th.
- EMMA HYDE, A. M., Associate Professor of Mathematics (1920, 1926).
A. B., University of Kansas, 1912; A. M., University of Chicago, 1916.
A 58; 320 N. 15th.
- CLARENCE FLAVIUS LEWIS, M. S., Associate Professor of Mathematics (1920, 1926).
A. B., University of Denver, 1913; M. S., K. S. A. C., 1925. E 223; 1615 Humboldt.
- ANNA MARIE STURMER, A. M., Associate Professor of English (1920, 1926).
A. B., University of Nebraska, 1917; A. M., *ibid.*, 1920. A 53; 1636 Fairchild.
- CHARLES MECLAIN CORRELL, Ph. M., Associate Professor of History and Government (1922, 1926); Assistant Dean, Division of General Science (1927).
B. S., K. S. A. C., 1900; Ph. B., University of Chicago, 1907; Ph. M., *ibid.*, 1908.
F 64 and A 49; 1621 Fairchild.

5. On sabbatical leave, 1929-'30.

- EUGENE CLAYTON GRAHAM, B.S., Associate Professor of Farm Shop Practice (1922, 1926).
B. S., Carleton College, 1898; B. S. in M. E., University of Minnesota, 1902.
S 36; 501 Sunset.
- WALDO HIRAM LYONS, A. M., Associate Professor of Mathematics (1924, 1926).
A. B., University of Denver, 1912; A. M., *ibid.*, 1916. E 223; 1126 Laramie.
- AUGUSTIN WILBER BREEDEN, A. M., Associate Professor of English (1926).
Ph. B., University of Chicago, 1924; A. M., *ibid.*, 1925. K 52; 1728 Laramie.
- FRED ALBERT SHANNON, Ph.D., Associate Professor of History and Government (1926).
A. B., Indiana State Normal School, 1914; A. M., Indiana University, 1918; Ph. D., University of Iowa, 1924. F 60; 1525 Humboldt.
- DWIGHT WILLIAMS, A. M., LL. B., Associate Professor of History and Government (1926).
A. B., University of Minnesota, 1916; LL. B., *ibid.*, 1918; A. M., *ibid.*, 1926.
F 61; 1204 Fremont.
- LUTHER EARL WILLOUGHBY, B.S., Associate Professor of Farm Crops, Division of College Extension (1917, 1927).
B. S., K. S. A. C., 1912; B. S. in Agr., *ibid.*, 1916. Ag 250; 918 Thurston.
- WALTER LEROY LATSHAW, M.S., Associate Professor of Chemistry (1914, 1927).
B. S., Pennsylvania State College, 1912; M. S., K. S. A. C., 1922.
C 3; 927 Fremont.
- ARTHUR CECIL FAY, M.S., Associate Professor of Bacteriology (1921, 1927).
B. S., University of Missouri, 1920; M. S., University of Wisconsin, 1921.
V 28; 1621 Leavenworth.
- ADA GRACE BILLINGS, M.S., Associate Professor of History and Government, Home Study Service, Division of College Extension (1921, 1927).
B. S., K. S. A. C., 1916; M. S., *ibid.*, 1927. A 5; 714 Moro.
- MARCIA HALL, A. B., Associate Professor of English, Home Study Service, Division of College Extension (1923, 1927).
A. B., University of Wisconsin, 1914. A 5; 1626 Laramie.
- JAMES WALTER LINN, B.S., Associate Professor of Dairy Husbandry, Division of College Extension (1923, 1927).
B. S., K. S. A. C., 1915. Ag 147; R. F. D. 1.
- EARL MILO LITWILLER, M.S., Associate Professor of Horticulture, Home Study Service, Division of College Extension (1924, 1927).
B. S., K. S. A. C., 1924; M. S., *ibid.*, 1926. A 5; 916 Vattier.
- HUGH DURHAM, A. M., Assistant Dean, Division of Agriculture (1915, 1927); Assistant Director, Agricultural Experiment Station (1915, 1927); Associate Professor of Agricultural Education (1927).
Graduate, Kansas State Teachers College, Emporia, 1901; A. B., University of Kansas, 1909; A. M., *ibid.*, 1915. Ag 109; 730 Osage.
- LEON VINCENT WHITE, C. E., M. S., Associate Professor of Civil Engineering (1918, 1927).
B. S., K. S. A. C., 1903; C. E., *ibid.*, 1918; M. S., *ibid.*, 1927.
E 122; 1832 Anderson.
- NORA ELIZABETH DALBEY, A. M., Associate Professor of Botany and Plant Pathology (1918, 1927).
A. B., University of Kansas, 1913; A. M., *ibid.*, 1914. H 54; 1424 Fairchild.
- ERNEST BAKER KEITH, Ph.D., Associate Professor of Chemistry (1918, 1927).
B. S., K. S. A. C., 1913; Ph. D., University of Chicago, 1924.
W 27; 1719 Fairchild.

- RUSSELL MARION KERCHNER, M.S., Associate Professor of Electrical Engineering (1922, 1927).
B. S., University of Illinois, 1922; M. S., K. S. A. C., 1927. E 121; 512 N. Denison.
- ARTHUR FREMONT BOWEN, Capt. Inf. U. S. A., Associate Professor of Military Science and Tactics (1925, 1927).
Graduate, U. S. Infantry School, 1924. N 26; 1440 Laramie.
- WILSON FORREST BROWN, Ph.D., Associate Professor of Chemistry (1928).
B. Ch. E., Ohio State University, 1916; M. S., *ibid.*, 1926; Ph. D., *ibid.*, 1928. D 8; 1116 Bluemont.
- CLIFF ERRETT AUBEL, M.S., Associate Professor of Animal Husbandry (1919, 1928).
B. S., Pennsylvania State College, 1915; M. S., K. S. A. C., 1917. Ag 27; 323 N. 15th.
- CHARLES HOWARD KITSELMAN, V. M. D., M.S., Associate Professor Pathology (1919, 1928).
V. M. D., University of Pennsylvania, 1918; M. S., K. S. A. C., 1927. V 55A; 1417 Pierre.
- LEON REED QUINLAN, M. L. A., Associate Professor of Horticulture, in Charge of Landscape Gardening (1927, 1928).
B. S., Colorado Agricultural College, 1920; M. L. A., Harvard University, 1925. H 34; 813 Vattier.
- FRANK JACOBS CHEEK, Jr., C.E., Associate Professor of Structural Design (1923, 1928).
A. B., Center College, 1914; C. E., Rensselaer Polytechnic Institute, 1919. E 304; 1109 Thurston.
- ERIC ROSS LYON, M.S., Associate Professor of Physics (1921, 1928).
A. B., Phillips University, 1911; M. S., *ibid.*, 1923. C 61; 1026 Bertrand.
- LOUIS PIERCE WASHBURN, M.P.E., Associate Professor of Physical Education for Men (1926, 1928).
B. S., Carleton College, 1907; B. P. E., Springfield Y. M. C. A. College, 1911; M. P. E., *ibid.*, 1926. N 36; 1641 Laramie.
- ETHEL MAY ARNOLD, A.M., Associate Professor of Art (1922, 1928).
B. S., K. S. A. C., 1918; Graduate, French-American School of Costume Design, Los Angeles, 1921; A. M., University of Chicago, 1925. A 68; College Hill.
- MARGARET AHLBORN, M.S., Associate Professor of Food Economics and Nutrition (1923, 1928); Assistant Dean of Division of Home Economics (1923; July 1, 1929).
A. B., University of Kansas, 1906; M. S., K. S. A. C., 1924. L 28; 350 N. 15th.
- FRED LOUIS PARRISH, A.M., Associate Professor of History and Government (1927, 1928).
A. B., Northwestern University, 1917; B. D., Garrett Biblical Institute, 1920; A. M., Northwestern University, 1922. F 64; 332 N. 15th.
- HELEN G. SAUM, B.S., Associate Professor of Physical Education for Women (1928).
Diploma, Battle Creek School for Physical Education, 1919; B. S. in Ed., Ohio State University, 1927. N 1; 315 N. 16th.
- LOUISE HELEN EVERHARDY, A.M., Associate Professor of Art (1919; Sept. 1, 1929).
Graduate, New York School of Fine and Applied Art, 1916; B. S., Columbia University, 1925; A. M., *ibid.*, 1926. A 56; 1301 Poyntz.
- BOYD BERTRAND BRAINARD, B.S., Associate Professor of Mechanical Engineering (1923; Sept. 1, 1929).
B. S. in M. E., University of Colorado, 1922. E 109; 1209 Vattier.

CORNELIA WILLIAMS CRITTENDEN, A. M., Associate Professor of Modern Languages (1926; Sept. 1, 1929).

A. B., University of Nebraska, 1918; A. M., *ibid.*, 1926. A 71; 1425 Laramie.

OSCAR WILLIAM ALM, Ph. D., Associate Professor of Psychology (Sept. 1, 1929).

A. B., University of Nebraska, 1917; A. M., Columbia University, 1918; Ph. D., University of Minnesota, 1929. G 33; 804 Moro.

RANDALL CONRAD HILL, Ph. D., Associate Professor of Sociology (Sept. 1, 1929).

B. S., K. S. A. C., 1924; M. S., *ibid.*, 1927; Ph. D., University of Missouri, 1929. A 74; 1611 Laramie.

WILLIAM PETER MORTENSEN, M. S. A., Associate Professor of Agricultural Economics (Sept. 1, 1929).

B. S. A., North Dakota Agricultural College, 1921; M. S. A., *ibid.*, 1923. Ag 351; 426 N. 17th.

WILMER T. SCOTT,* Major C. A. C., U. S. A., Associate Professor of Military Science and Tactics (Sept. 1, 1929-Dec. 4, 1929).

THOMAS OGDEN HUMPHREYS, Major C. A. C., U. S. A., Associate Professor of Military Science and Tactics (Nov. 25, 1929).

Graduate, Command and General Staff School, 1923. N 26; 1420 Humboldt.

ASSISTANT PROFESSORS

DANIEL EMMETT LYNCH, Assistant Professor of Forging (1914, 1920); Foreman of Blacksmith Shop (1914).

S 38; 1528 Pierre.

EDWARD C. JONES, M. E., Assistant Professor of Machine Tool Work (1916, 1920).

B. M. E., Iowa State College, 1905; M. E., *ibid.*, 1922. S 32; R. F. D. 1.

ELIZABETH HAMILTON DAVIS, B. L. L., Reference Librarian (1920).

A. B., Illinois Women's College, 1909; B. L. S., University of Illinois, 1914. Li 51; 1224A Moro.

LAWRENCE WILLIAM HARTEL, M. S., Assistant Professor of Physics (1920).

A. B., Central Wesleyan College, 1911; B. S., *ibid.*, 1912; B. S. in Ed., University of Missouri, 1915; M. S., K. S. A. C., 1924. C 57; 1824 Humboldt.

WILLIAM FRANCIS PICKETT, M. S., Assistant Professor of Horticulture (1917, 1921).

B. S., K. S. A. C., 1917; M. S., *ibid.*, 1923. H 33; 1622 Osage.

CHARLES DEFOREST DAVIS, M. S., Assistant Professor of Farm Crops (1921).

B. S., K. S. A. C., 1921; M. S., *ibid.*, 1926. Ag 309; 1013 Laramie.

DAVID LESLIE MACKINTOSH, M. S., Assistant Professor of Animal Husbandry (1921, 1922).

B. S., University of Minnesota, 1920; M. S., K. S. A. C., 1926. Ag 13; 1425 Humboldt.

WILLIAM ALEXANDER VAN WINKLE, Ph. D., Assistant Professor of Chemistry (1922, 1923).

B. S., University of Michigan, 1911; M. S., University of Illinois, 1917; Ph. D., *ibid.*, 1920. D 30; 1110 Thurston.

JOSEPH LOWE HALL, Ph. D., Assistant Professor of Chemistry (1922, 1923).

B. S., University of Illinois, 1919; M. S., *ibid.*, 1921; Ph. D., *ibid.*, 1922. C 10; 1131; Kearney.

CHARLES WILLIAM CORSAUT, Assistant Professor of Physical Education (1923).

Graduate, Y. M. C. A. College, 1917. N 36; 1601 Humboldt.

* On sick leave after Oct. 31, 1929; died Dec. 4, 1929.

- IRA KAULL LANDON, B.S. in Agr., Assistant Professor of Agronomy (1923).
B. S. in Agr., K. S. A. C., 1921. Ag 201; 3000 Broadway, Parsons, Kan.
- FRANK OTTO BLECHA, M.S., Assistant Professor of Agricultural Extension;
District Agricultural Agent, Division of College Extension (1919, 1923).
B. S., K. S. A. C., 1918; M. S., *ibid.*, 1926. A 60; 1507 Leavenworth.
- RUTH HARTMAN, Assistant Professor of Music (1924).
Graduate, Department of Public School Music, Iowa State Teachers College, 1912; Two-
year Certificate, Northwestern University, 1923. M 58; 1614 Fairchild.
- WALTER BUSWELL BALCH, M.S., Assistant Professor of Horticulture (1921,
1924); Greenhouse Foreman (1921).
B. S., Cornell University, 1919; M. S., K. S. A. C., 1925. H 33; 1734 Fairchild.
- EDGAR McCALL AMOS, B.S., Assistant Professor of Industrial Journalism and
Printing (1920, 1924).
B. S., K. S. A. C., 1902. K 31; 1015 Leavenworth.
- MINNA ERNESTINE JEWELL,¹⁰ Ph.D., Assistant Professor of Zoölogy (1922,
1924-Jan. 30, 1930).
A. B., Colorado College, 1914; A. M., University of Illinois, 1915; Ph. D., *ibid.*, 1918.
- CLARICE MARIE PAINTER, Assistant Professor of Piano (1924).
Diploma in Piano, Hardin College, 1919; Diploma, New England Conservatory of Music,
1922. M 51; 1601 Fairchild.
- FRANK PLETCHER ROOT, M.S., Assistant Professor of Physical Education and
Athletics (1924).
B. S., K. S. A. C., 1914; M. S., *ibid.*, 1924. N 35; 901 Bertrand.
- ALFRED THOMAS PERKINS, Ph. D., Assistant Professor of Chemistry (1925).
B. S., Pennsylvania State College, 1920; M. S., Rutgers College, 1922; Ph. D., *ibid.*,
1923. C 4; 1616 Humboldt.
- HARRY WORKMAN AIMAN, A. B., Assistant Professor of Woodwork (1918, 1925).
A. B., Oskaloosa College, 1921. S 29B; 1200 Bertrand.
- HAZLEY THOMAS GROODY, M.D., Assistant Physician, Department of Student
Health (1925).
B. S., Valparaiso University, 1900; M. D., Chicago College of Medicine and Surgery, 1913.
A 59; 514 N. Juliette.
- EDWIN DONALD SAYRE, M.B., Assistant Professor of Voice (1925).
A. B., DePauw University, 1923; M. B., School of Music, *ibid.*, 1925.
M 54; 1230 Vattier.
- GAY TETLEY KLEIN, M.S., Assistant Professor of Poultry Husbandry, Division
of College Extension (1925, 1926).
B. S., University of Missouri, 1923; M. S., K. S. A. C., 1926.
Ag 245; 1711 Leavenworth.
- JULIAN ADAIR HODGES, M.S., Assistant Professor of Agricultural Economics
(1923, 1926).
B. S. in Agr., University of Kentucky, 1917; M. S. in Agr. Ec., *ibid.*, 1923.
Ag 348; 1649 Fairchild.
- JOHN WALLACE LUMB, D. V. M., Assistant Professor of Veterinary Medicine,
Division of College Extension (1924, 1926).
D. V. M., K. S. A. C., 1910. V 31; 1631 Leavenworth.
- FRANCIS EUGENE CHARLES, M.S., Assistant Professor of Industrial Journalism
(1926).
B. S., K. S. A. C., 1924; M. S., *ibid.*, 1929. K 30A; 1211 Thurston.

10. Resigned.

- MARY FIDELIA TAYLOR, A. M., Assistant Professor of Household Economics (1919, 1928).
B. S., K. S. A. C., 1919; A. M., Teachers College, Columbia University, 1926.
T 56; Paddleford Apts.
- WILLIAM CHARLES JANES, A. M., Assistant Professor of Mathematics (1922, 1926).
B. S., Northwestern University, 1919; A. M., University of Nebraska, 1922.
S 55; 1115 Thurston.
- THIRZA ADALINE MOSSMAN,² A. M., Assistant Professor of Mathematics (1922, 1926).
A. B., University of Nebraska, 1916; A. M., University of Chicago, 1922.
A 62A; 1601 Fairchild.
- ERNEST KNIGHT CHAPIN, M. S., Assistant Professor Physics (1923, 1926).
A. B., University of Michigan, 1918; M. S., *ibid.*, 1923. C 57; 1860 Anderson.
- RANDOLPH FORNEY GINRICH, M. S., Assistant Professor of Engineering Drawing and Descriptive Geometry (1923, 1926).
B. S. in C. E., University of Nebraska, 1923; M. S., K. S. A. C., 1929.
S 51; 1731 Humboldt.
- ORVILLE DON HUNT, B. S. in E. E., Assistant Professor of Electrical Engineering (1923, 1926).
B. S. in E. E., Washington State College, 1923. E 127; 1822 Poyntz.
- JOHN FREDERICK HELM, JR., B. D., Assistant Professor of Free-hand Drawing and Painting (1924, 1926).
B. D., Syracuse University, 1924. E 308; 1508 Humboldt.
- LEO SPURRIER, A. M., Assistant Professor of Economics (1924, 1926).
A. B., University of Kansas, 1923; A. M., *ibid.*, 1924. A 74; 1026 Vattier.
- HENRY MILES HEBERER, A. B., Assistant Professor of Public Speaking (1925, 1926).
A. B., University of Illinois, 1922. G 55; 1611 Laramie.
- LOUIS MARK JORGENSEN, B. S., Assistant Professor of Electrical Engineering (1925, 1926).
B. S., K. S. A. C., 1907. E 24; 730 Laramie.
- REGINALD HENRY PAINTER, Ph. D., Assistant Professor of Entomology (1926).
A. B., University of Texas, 1922; A. M., *ibid.*, 1924; Ph. D., Ohio State University, 1926.
F 81; 501 Sunset.
- RUSSELL SEELEY SINK, M. S., Assistant Professor of Shop Practice (1926).
B. S. in M. E., Purdue University, 1918; M. E., *ibid.*, 1925. S 62; 1634 Laramie.
- OTTO HERMAN ELMER, Ph. D., Assistant Professor of Botany and Plant Pathology (1927).
B. S., Oregon Agricultural College, 1911; M. S., *ibid.*, 1916; Ph. D., Iowa State College, 1924.
H 56; 1612 Osage.
- ALBERT JOHN SCHOTH, B. S., Assistant Professor in Junior Extension, Division of College Extension (1921, 1927).
B. S., Oregon Agricultural College, 1918. A 35; 1116 Bluemont.
- GEORGIANA SMURTHWAITE, B. S., Assistant Professor of Food and Nutrition, Division of College Extension (1924, 1927).
B. S., Utah Agricultural College. A 36; 514 N. 17th.
- JEPHTHA JERRY MOXLEY, B. S., Assistant Professor of Animal Husbandry, Division of College Extension (1925, 1927).
B. S. in Agr., K. S. A. C., 1922. A 34; 1116 Bluemont.

2. Absent on leave, 1929-'30.

- STELLA MAUDE HARRISS, M. S., Assistant Professor of Chemistry (1917, 1927).
Graduate, (Peru) Nebraska State Normal School, 1908; B. S., K. S. A. C., 1917; M. S.,
ibid., 1919. W 26; 311 Denison.
- ANNABEL ALEXANDER GARVEY, A. M., Assistant Professor of English (1920, 1927).
A. B., Wellesley College, 1912; A. M., University of Kansas, 1914.
A 55A; 343 N. 14th.
- HELEN DOROTHY RUSHFELDT,⁵ A. M., Assistant Professor of English (1920,
1927).
A. B., University of Minnesota, 1915; A. M., Columbia University, 1920.
A 63A; 513 N. 16th.
- ESTHER BRUNER, M. S., Assistant Professor of Clothing and Textiles (1920,
1927).
B. S., K. S. A. C., 1920; M. S., ibid., 1921. L 53; 311 Denison.
- INEZ GERTRUDE ALSOP, M. S., Assistant Professor of History and Government
(1923, 1927).
B. S., K. S. T. C., Emporia, 1916; M. S., University of Kansas, 1920.
F 63; 1601 Fairchild.
- JAMES PHILLIP CALLAHAN, A. M., Assistant Professor of English (1924, 1927).
B. S., K. S. T. C., Hays, 1919; A. M., University of Kansas, 1926.
K 54; 908 Leavenworth.
- HARRIET SHIPLEY PARKER, A. M., Assistant Professor of English (1924, 1927).
A. B., University of Kansas, 1909; A. M., Washington University, 1912.
A 53; 1605 Leavenworth.
- HAROLD HOWE, M. S., Assistant Professor of Agricultural Economics (1925,
1927).
B. S., K. S. A. C., 1922; M. S., University of Maryland, 1923. Ag 345; 1204 Fremont.
- ALICE CLAYPOOL JEFFERSON, B. M., Assistant Professor of Piano (1925, 1927).
Graduate, American Conservatory of Music, 1921; B. M., ibid., 1929.
MA 8; 906 Fremont.
- MYRTLE ANNICE GUNSELMAN, A. M., Assistant Professor of Household Eco-
nomics (1926, 1927).
B. S., K. S. A. C., 1919; A. M., University of Chicago, 1926. T 52; 830 Bertrand.
- CARL ALFRED BRANDLY, D. V. M., Assistant Professor of Bacteriology (1927).
D. V. M., K. S. A. C., 1923. V 53; 1026 Kearney.
- MILDRED CAMP, B. L. S., Head of Circulation Department, College Library
(1927).
A. B., Eureka College, 1912; B. L. S., University of Illinois, 1924.
Li; 500 Humboldt.
- MAURICE ROSE, Capt. Inf., U. S. A., Assistant Professor of Military Science and
Tactics (1927).
Graduate, U. S. Infantry School, 1926. N 26; Paddleford Apt. 8.
- CHARLES HARRINGTON STEWART,¹¹ Capt. C. A. C., U. S. A., Assistant Professor
of Military Science and Tactics (1927).
Graduate, Coast Artillery School, 1923. N 26; 1819 Leavenworth.
- ELDEN EMANUEL LEASURE, D. V. M., Assistant Professor of Pathology (1926,
1928).
D. V. M., K. S. A. C., 1923. V 55; 1531 Leavenworth.
- EDWARD RAYMOND FRANK, D. V. M., M. S., Assistant Professor of Surgery and
Medicine (1926, 1928).
B. S., K. S. A. C., 1918; D. V. M., ibid., 1924; M. S., ibid., 1929.
VH 53; 1114 Fremont.

5. On sabbatical leave, 1929-'30.

11. On sick leave beginning Nov. 11, 1929.

- HAROLD MARTIN SCOTT, M. S., Assistant Professor of Poultry Husbandry (1928).
B. S., Oregon Agricultural College, 1924; M. S., K. S. A. C., 1927.
Ag 252; 918 Ratone.
- KATHERINE JANE HESS, M. S., Assistant Professor of Clothing and Textiles (1925, 1928).
B. S., K. S. A. C., 1900; M. S., *ibid.*, 1926. L 53; 601 Fremont.
- MARTIN ADKISSON ALEXANDER, M. S., Assistant Professor of Animal Husbandry (1927, 1928).
B. S., Washington State College, 1923; M. S., Colorado Agricultural College, 1924.
Ag 19; 1114 Bluemont.
- HOMER JAY HENNEY, M. S., Assistant Professor of Agricultural Economics (1927, 1928).
B. S., K. S. A. C., 1921; M. S., *ibid.*, 1928. Ag 353; 1723 Leavenworth.
- MARTINE A. SEATON, B. S., Assistant Professor of Poultry Husbandry, Division of College Extension (1928).
B. S. in Agr., University of Missouri, 1924. Ag 350; 1116 Bluemont.
- HENRY EVERT WICHERS, M. S., Assistant Professor of Rural Architecture (1924, 1928).
B. S. in Arch., K. S. A. C., 1924; M. S., *ibid.*, 1925. E 224; 1501 Humboldt.
- HARRY STEPHEN BUECHE, E. E., Assistant Professor of Electrical Engineering (1925, 1928).
Graduate, U. S. Naval Academy, 1920; B. S. in E. E., Villanova College, 1922; E. E., *ibid.*, 1924. E 19; 1119 Kearney.
- HARRY MARTIN STEWART, M. B. A., Assistant Professor of Accounting (1926, 1928).
A. B., University of Kansas, 1920; M. B. A., *ibid.*, 1926. A 74; 915 Fremont.
- GEORGE WILLARD MAXWELL, A. M., Assistant Professor of Physics (1927, 1928).
A. M., University of Michigan, 1920. C 38; 1004 Thurston.
- DOROTHY BRADFORD PETTIS, A. M., Assistant Professor of Modern Languages (1927, 1928).
A. B., University of Nebraska, 1919; A. M., *ibid.*, 1924. A 70; 1631 Leavenworth.
- MADALYN AVERY, B. S., Assistant Professor of Physics (1928).
B. S., K. S. A. C., 1924. C 36; 1601 Fairchild.
- LYLE WAYNE DOWNEY, B. M., Assistant Professor of Violin (1928); Director of College Band, and Instructor in Band Instruments (1928; Sept. 1, 1929).
A. B., James Millikin University, 1923; B. M., American Conservatory, 1928.
M 30; 1218 Kearney.
- MARY ELIZABETH HOFF, B. S. in L. S., Head of Documents Department, College Library (1928).
A. B., Friends University, 1925; B. S. in L. S., University of Illinois, 1928.
Li 52; 312 N. 15th.
- JOHN HARVEY MADISON, First Lieut. C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (1928).
Graduate of Basic Course, Coast Artillery School, 1920; Graduate of Battery Officers Course, *ibid.*, 1927. N 29; 614 N. 11th.
- RAY EUGENE MARSHALL, First Lieut. Inf., U. S. A., Assistant Professor of Military Science and Tactics (1928).
B. S., K. S. A. C., 1922; Graduate, U. S. Infantry School, 1928.
N 26; 1741 Laramie.
- DONALD ALDEN WILBUR,⁷ A. M., Assistant Professor of Entomology (1928).
B. S., Oregon State College, 1925; A. M., Ohio State University, 1927.
F 55; 1002 Houston.

7. Temporary appointment.

- EDWARD JOSEPH WIMMER, Ph. D., Assistant Professor of Zoölogy (1928).
A. B., University of Wisconsin, 1925; A. M., *ibid.*, 1927; Ph. D., *ibid.*, 1928.
F 40; 1116 Bluemont.
- LEVELLE WOOD, M. S., Assistant Professor of Institutional Economics (1928).
B. S., Oregon Agricultural College, 1921; M. S., Columbia University, 1928.
Van Zile Hall.
- JOHN JAY FEROE, A. M., Assistant Professor of Physics (1928).
A. B., Des Moines University, 1914; A. M., *ibid.*, 1916. C 39; 1108 Bluemont.
- JOHN SNELL GLASS, B. S., Assistant Professor of Rural Engineering, Division of College Extension (1928).
B. S., Iowa State College, 1917. E 131; R. R. 8.
- JOHN COCHRANE NISBET, B. S., Assistant Professor of Dairy Husbandry, Division of College Extension (1928).
B. S., University of Wisconsin, 1923. Ag 147; 1505 Humboldt.
- CLARENCE ROY JACCARD, B. S., Assistant Professor of Agricultural Extension; District Agricultural Agent, Division of College (1922, 1928).
B. S., K. S. A. C., 1914. A 60; 920 Leavenworth.
- HENRY LEWIS LOBENSTEIN, B. S., Assistant Professor of Horticulture, Division of College Extension (1928; Mar. 25, 1929).
B. S., K. S. A. C., 1926. A 34; 1116 Bluemont.
- WILLIS LLOYD LESHER, B. S., Assistant Professor of Highway Materials, (Apr. 1, 1929).
B. S., K. S. A. C., 1924. E 17; 1529 Humboldt.
- ANNA GRACE SEYLER,⁷ M. D., Assistant College Physician (Apr. 7, 1929).
A. B., University of Denver, 1924; M. D., University of Colorado, 1927.
A 64; 1301 Poyntz.
- CARRELL HENRY WHITNAH, Ph. D., Assistant Professor of Chemistry and Associate Food Analyst (June 1, 1929).
A. B., University of Nebraska, 1913; M. S., University of Chicago, 1917; Ph. D., University of Nebraska, 1925. D 14; 1719 Anderson.
- HARRY RAY BRYSON, M. S., Assistant Professor of Entomology (1924; July 1, 1929).
B. S., K. S. A. C., 1917; M. S., *ibid.*, 1924. F 55; 1821 Leavenworth.
- ETHEL JUSTIN MARSHALL,⁸ M. S., Assistant Professor of Home Economics, Home Study Service, Division of College Extension (1928; July 1, 1929).
B. S., K. S. A. C., 1910; M. S., *ibid.*, 1926. A 2; 630 Moro.
- WILLIAM HUGH RIDDELL, M. S., Assistant Professor of Dairy Husbandry (July 1, 1929).
B. S. A., University of British Columbia, 1922; M. S., University of Minnesota, 1924.
Ag 145; 1631 Humboldt.
- CHARLES ALDEN LOGAN, B. S., Assistant Professor of Agricultural Engineering (Aug. 1, 1929).
B. S., K. S. A. C., 1925. E 216; 414 N. Juliette.
- FRANCIS LEONARD TIMMONS, B. S., Assistant Professor of Coöperative Experiments, Department of Agronomy (1928; Aug. 15, 1929).
B. S., K. S. A. C., 1928. Ag 202; 1709 Anderson.
- INA EMMA HOLROYD, A. M., Assistant Professor of Mathematics (1900; Sept. 1, 1929).
B. S., K. S. A. C., 1915; B. S., Kansas State Teachers College, Emporia, 1916; A. M., Columbia University, 1929. A 62A; 1001 Moro.

7. Temporary appointment.

8. On half time.

ELIZABETH QUINLAN, M. S., Assistant Professor of Clothing and Textiles (1925; Sept. 1, 1929).

B. S., K. S. A. C., 1917; M. S., Columbia University, 1924. L 53; 1212 Fremont.

GEORGE FRANCIS CORCORAN, M. S., Assistant Professor of Electrical Engineering (1927; Sept. 1, 1929).

B. S., South Dakota State College, 1923; M. S., University of Minnesota, 1926.
E 127; 1116 Bluemont.

HAROLD NATHAN BARHAM, Ph. D., Assistant Professor of Chemistry (Sept. 1, 1929).

A. B., Bethany College, 1921; M. S., Ohio State University, 1922; Ph. D., University of Kansas, 1928. C 56; 900 Bluemont.

GENEVIEVE JACKSON BOUGHNER, A. B., Assistant Professor of Industrial Journalism (Sept. 1, 1929).

A. B., University of Minnesota, 1916. K 33A; Wareham Hotel.

MENDEL ELMER LASH, Ph. D., Assistant Professor of Chemistry (Sept. 1, 1929).

A. B., Ohio State University, 1920; M. S., *ibid.*, 1922; Ph. D., *ibid.*, 1928.
C 10; 1116 Bluemont.

MAX RULE MARTIN, Assistant Professor of Violin, Viola, and Reed Instruments (Sept. 1, 1929).

Graduate in Violin, William A. Bunzen; Graduate in Orchestra, Sander Harmati; Graduate in Musical Composition, R. Cuscaden. MA 7; 1700 Laramie.

BERNICE LILLIAN PATTERSON, M. S., Assistant Professor of Physical Education for Women (Sept. 1, 1929).

B. S., University of Washington, 1922; M. S. in Phys. Ed., *ibid.*, 1929.
N 1; 1613 Fairchild.

HARRY EDWARD VAN TUYL, D. V. M., Capt. V. C., U. S. A., Assistant Professor of Military Science and Tactics (Sept. 1, 1929).

D. V. M., K. S. A. C., 1917; Honor Graduate, U. S. A. Veterinary School, 1923.
V 27; 807 Osage.

ELLSWORTH YOUNG, B. S., Capt. C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (Sept. 1, 1929).

B. S., Iowa State College, 1916. N 26; 1100 Kearney.

EDWARD HENRY LEKER, M. S., Assistant Professor of Plant Pathology, Division of College Extension (Oct. 1, 1929).

B. S., University of Missouri, 1917; M. S., K. S. A. C., 1927. H 53; 601 N. 14th.

HERMAN FARLEY, D. V. M., Assistant Professor of Pathology (Oct. 1, 1929).

D. V. M., K. S. A. C., 1926. V ; 1020 Kearney.

HALVOR H. MYRAH, First Lieut., C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (Jan. 24, 1930).

Graduate, U. S. Military Academy, 1918; Graduate, Coast Artillery Battery Officers Course, 1927. N 26; Wareham Hotel.

MURVILLE JENNINGS HARBAUGH, A. B., Assistant Professor of Zoölogy (Sept. 1, 1929; Feb. 1, 1930); Instructor in Zoölogy (Sept. 1, 1929-Jan. 31, 1930).

A. B., University of Montana, 1926. F 78; 1116 Bluemont.

ASSOCIATES

BENJAMIN LEVI SMITS, Ph. D., Associate Food Analyst (1926, 1928).

B. S., Michigan State College, 1924; M. S., *ibid.*, 1925; Ph. D., *ibid.*, 1926.
W 29; 1719 Fairchild.

INSTRUCTORS

EDWARD GRANT, Instructor in Foundry (1913); Foreman of Foundry (1913).

S 42; 1814 Anderson.

KATHERINE MAXWELL BOWER, A. M., Instructor in English (1918, 1919).

B. S., K. S. A. C., 1915; A. M., University of Kansas, 1924. A 54; 817 Poyntz.

- W. PEARL MARTIN, R. N., Instructor in Home Health and Sanitation, Division of College Extension (1919).
Graduate, Christ's Hospital, Topeka. A 36; 930 Osage.
- MARION COFFEE, First Sergt. C. A. C., U. S. A., Instructor in Military Science and Tactics (1920).
N 26; 911 Vattier.
- NELLIE ABERLE, M. S., Instructor in English (1921).
B. S., K. S. A. C., 1912; M. S., *ibid.*, 1914. A 63A; 1442 Fairchild.
- ELLEN MARGARET BATCHELOR, B. S., Instructor and Assistant State Home Demonstration Leader, Division of College Extension (1917, 1921).
B. S., K. S. A. C., 1911. A 36; 1212 Fremont.
- JESSIE GULICK, Acting Head Cataloguer in Library (1907, 1923).
Li 52; 421 N. 16th.
- WILLIAM WESLEY CRAWFORD, M. Di., Instructor in Civil Engineering (1923).
A. B., University of Iowa, 1912; B. S. in C. E., Iowa State College, 1917; M. Di., Iowa State Teachers College, 1908. E 220; 715 Poyntz.
- CONIE CAROLINE FOOTE, B. S., Instructor and Specialist in Foods and Nutrition, Division of College Extension (1924).
B. S., K. S. A. C., 1921. A 36; 513 N. 16th.
- MAUD ELIZABETH DEELEY, B. S., Instructor in Clothing and Textiles, Division of College Extension (1923, 1925).
B. S., K. S. A. C., 1923. A 36A; 1000 Kearney.
- FRANCIS DALE PUGH, Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1925).
N 26; R. R. No. 8.
- HAZEL THOMPSON, Supervisor of Vocational Home Making, Department of Education (1925).
- HUBERT WHATLEY MARLOW, M. S., Instructor in Chemistry (1925).
B. S., North Texas Teachers College, 1925; M. S., University of Chicago, 1928. W 31; 113 N. 9th.
- GEORGE MONTGOMERY,⁷ M. S., Instructor in Agricultural Economics, Department of Institutes and Extension Schools, Division of College Extension (1925, 1928).
B. S., K. S. A. C., 1925; M. S., *ibid.*, 1928. Ag 347; 1116 Bluemont.
- ARTHUR CLINTON ANDREWS, M. S., Instructor in Chemistry (1926).
B. S., University of Wisconsin, 1924; M. S., K. S. A. C., 1929. D 30; 428 Humboldt.
- LINUS BURR SMITH, B. S., Instructor in Architecture (1926).
B. S., K. S. A. C., 1926. E 308; 1811 Humboldt.
- EDNA MINERVA BENDER, B. S., Assistant State Club Leader, Division of College Extension (1926).
B. S., University of Minnesota, 1923. A 35; 1649 Fairchild.
- MAY MILES,⁷ B. S., Instructor and Assistant State Home Demonstration Leader, Division of College Extension (1926, 1928).
B. S., University of Illinois, 1926. A 36; 1649 Fairchild.
- RUTH EMMA TUCKER, M. S., Instructor in Food Economics and Nutrition (1925, 1926).
A. B., University of Illinois, 1923; M. S., *ibid.*, 1925. L 69; 1109 Kearney.
- ROY CLINTON LANGFORD, M. S., Instructor in Psychology (1925, 1926).
B. S., K. S. A. C., 1925; M. S., *ibid.*, 1926. G 34; 426 N. 17th.

7. Temporary appointment.

- HAROLD JEROME BROOKS, M. S., Instructor in Dairy Husbandry (1926).
B. S., University of Missouri, 1924; M. S., South Dakota State College, 1926.
Ag 145; 1130 Bluemont.
- IRENE ELDRIDGE, A. M., Instructor in Mathematics (1926).
B. S., Beloit College, 1920; A. M., *ibid.*, 1924. A 62A; 1613 Fairchild.
- MAYNARD LEE McDOWELL, A. M., Instructor in Chemistry (1926).
A. B., Central College, 1924; A. M., University of Missouri, 1926.
W 30; 520 Thurston.
- THOMAS ISAAC PORTER, A. B., Instructor in Mathematics (1926).
A. B., University of Missouri, 1925; B. S. in Ed., *ibid.*, 1915. F 1; 615 Humboldt.
- MAYBELLE PRITCHARD SMITH, M. S., Instructor in General Chemistry (1926).
A. B., University of Illinois, 1922; M. S., University of Wisconsin, 1926.
W 26; 426 N. 17th.
- HOWARD DALE TYNER, M. S., Instructor in General Chemistry (1926).
B. S., Illinois Wesleyan University, 1925; M. S., K. S. A. C., 1929.
W 31; 1014 Vattier.
- ALDEN HEBBARD LOOMIS, B. S., Instructor in Manual Training (1926).
B. S., Oklahoma A. and M. College, 1916, 1929. S 28; 900 Humboldt.
- JOHN CARL OLSEN, B. S., Instructor in Machine Drawing and Design (1927).
B. S. in M. E., Colorado Agricultural College, 1925. E 209; 1804 El Paso.
- MATTHEW JOSEPH CONNOLLY, Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1927).
N 26; 517 Leavenworth.
- ROYCE OWEN PENCE, B. S., Instructor in Milling Industry (1927).
B. S. in F. M. E., K. S. A. C., 1924. Ag 120; 917 Kearney.
- LILLIAN JULIETTE SWENSON, A. B., Assistant Reference Librarian (1927).
A. B., Colorado College, 1924; B. S., Simmons College, 1927. Li 51; 1203A Moro.
- MARIA MORRIS, M. S., Instructor in Art (1925, 1927).
B. S., K. S. A. C., 1911; Graduate, New York School of Fine and Applied Art, 1924;
M. S., K. S. A. C., 1927. A 67; 816 Juliette.
- ELSA OTTILIA HORN, M. S., Instructor in Botany and Plant Pathology (1926, 1927).
A. B., University of Minnesota, 1919; M. S., Oregon Agricultural College, 1926.
H 76B; 1531 Leavenworth.
- GEORGE FRANCIS BRANIGAN, B. S., Instructor in Engineering Drawing and Descriptive Geometry (1927).
B. S., University of Nebraska, 1927. E 209; 804 Moro.
- WILBUR JOHN CAULFIELD, M. S., Instructor in Dairy Husbandry (1927).
B. S., University of Minnesota, 1924; M. S., Pennsylvania State College, 1926.
Ag 147; 1131 Bluemont.
- HORATIO MINTER FARRAR, A. B., Instructor in Voice (1927).
A. B., Hastings College, 1927; Voice Diploma, *ibid.*, 1927. MA 12; 1116 Bluemont.
- KATHERINE GEYER, B. S., Instructor in Physical Education for Women (1927).
Diploma, Sargent School of Boston University, 1925; B. S., Ohio State University, 1927.
N 1; 514 N. 17th.
- HILDA ROSE GROSSMAN, B. M., Instructor in Voice (1927).
B. M., Chicago Musical College, 1925; Illinois State Certificate in Public School Music,
ibid., 1927. MA 14; 1109 Kearney.
- VIDA AGNES HARRIS, A. M., Instructor in Art (1927).
B. S., K. S. A. C., 1914; A. M., University of Chicago, 1927. A 56; West Anderson.

- LORETTA McELMURRY, B.S., Instructor in Clothing and Textiles, Division of College Extension (1927).
B. S., South Dakota State College, 1901. A 36; 514 N. 17th.
- WILLIAM BOWEN SARLES,² M.S., Instructor in Bacteriology (1927).
B. S., University of Wisconsin, 1926; M. S., *ibid.*, 1927. V 52; 1127 Kearney.
- EARL LE ROY SITZ, B.S., Instructor in Electrical Engineering (1927, 1928).
B. S. in E. E., Iowa State College, 1927. E 24; 1122 Bluemont.
- CHARLES WILLIAM STRATTON,² B.M., Instructor in Piano (1927).
B. M., K. S. A. C., 1926. MA 4; 511 N. Sunset.
- GLADYS ELLEN VAIL, M.S., Instructor in Food Economics and Nutrition (1927).
A. B., Southwestern College, 1924; M. S., University of Chicago, 1927.
L 69; 1203 Moro.
- PERCY LEROY DE PUY, M.S., Instructor in Animal Husbandry, Home Study Service, Division of College Extension (1928).
B. S., K. S. A. C., 1918; M. S., *ibid.*, 1923. A 5; 1725 Leavenworth.
- RUSSELL IRA THACKREY, B.S., Instructor in Industrial Journalism (1928).
B. S., K. S. A. C., 1927. K 30A; 1519 Fairchild.
- MARGUERITE VELMA HARPER, B.S., Instructor in Household Management, Division of College Extension (1928).
B. S., K. S. A. C., 1928. A 36; 1408 Laramie.
- MARGARET ALICE NEWCOMB, M.S., Instructor in Botany and Plant Pathology (1925, 1928).
B. S., K. S. A. C., 1925; M. S., *ibid.*, 1927. H 76; 1733 Laramie.
- GRATIA MARIE BURNS, A. M., Instructor in Modern Languages (1928).
B. S., University of Minnesota, 1926; A. M., *ibid.*, 1928. A 70; 1425 Laramie.
- MARTHA REBECCA CULLIPHER, B.S. in L. S., Loan Assistant in Library (1928).
A. B., Indiana University, 1926; B. S. in L. S., University of Illinois, 1928.
Li 52; 312 N. 15th.
- ARNOLD ROOSEVELT JONES, B.S., Instructor in Accounting (1928).
B. S., University of Kansas, 1927. A 74; 1203 Moro.
- MARION HERFORT PELTON, B.S., Instructor in Piano (1928).
B. M., University of Wisconsin, 1927. MA 5; 1425 Laramie.
- VELMA MAY TALMADGE, B.S., Instructor in Voice (1928).
B. M., Chicago Musical College, 1923. MA 7; 1704 Fairview.
- GLENN LYONAL RUCKER,⁷ B.S., Instructor in Mechanical Engineering, Home Study Service, Division of College Extension (1928).
B. S., K. S. A. C., 1924. A 2; 1023 Laramie.
- ALPHA CORINNE LATZKE, M.S., Assistant State Home Demonstration Leader, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1919; M. S., *ibid.*, 1928. A 36; 344 N. 15th.
- LAWRENCE ORVILLE MOTT, D. V. M., Instructor in Surgery and Medicine (July 1, 1929).
D. V. M., K. S. A. C., 1929. VH 53; VH.
- CHARLES GEORGE DOBROVOLNY, A.B., Technician and Instructor in Zoölogy (Aug. 1, 1929).
A. B., University of Montana, 1928. F 31; 1116 Bluemont.

2. Absent on leave, 1929-'30.

7. Temporary appointment.

- HAROLD EDWIN MYERS, M.S., Instructor in Soils (Aug. 12, 1929).
B. S., K. S. A. C., 1928; M. S., University of Illinois, 1929. Ag 213; 1116 Bluemont.
- LEONE BOWER KELL, M.S., Instructor in Household Economics (1927; Sept. 1, 1929).
B. S., K. S. A. C., 1923; M. S., *ibid.*, 1928. L 35; 727 Leavenworth.
- VERNON DANIEL FOLTZ,⁷ M.S., Instructor in Bacteriology (1927; Sept. 1, 1929).
B. S., K. S. A. C., 1927; M. S., *ibid.*, 1929. V 52; 1531 Leavenworth.
- LEON BATTIG,⁷ A. M., Instructor in Mathematics (Sept. 1, 1929).
A. B., University of Wisconsin, 1917; A. M., *ibid.*, 1929. E 223; 624 Houston.
- MARY MYERS ELLIOTT, A. B., Instructor in Public Speaking (Sept. 1, 1929).
A. B., University of Kansas, 1926. G 55; 426 Leavenworth.
- PAUL LAWRENCE EVANS,⁷ A. B., Instructor in Mathematics (Sept. 1, 1929).
A. B., Baker University, 1916. E 223; 1605 Anderson.
- ROSCOE ORVALE FAUNCE,⁷ A. M., Instructor in Public Speaking (Sept. 1, 1929).
A. B., University of Iowa, 1927; A. M., *ibid.*, 1928. G 55; 1611 Laramie.
- EDITH AGNES GOERWITZ, M. B., Instructor in Piano (Sept. 1, 1929).
M. B., Northwestern University, 1929. MA 4; 211 N. 15th.
- ARTHUR LEONARD GOODRICH, JR., M.S., Instructor in Zoölogy (Sept. 1, 1929).
B. S., College of Idaho, 1928; M. S., University of Idaho, 1929. F 78; 1212 Fremont.
- RUTH JOSEPHINE HLAVATY,⁷ M. B., Instructor in Piano (Sept. 1, 1929).
M. B., Northwestern University, 1929. M; 211 N. 15th.
- RICHARD ROSLYN JESSON, M. B., Instructor in Piano (Sept. 1, 1929).
M. B., Oberlin College, 1929. MA 13; 1324 Laramie.
- LESTER HENRY KOENITZER, M.S., Instructor in Applied Mechanics (Sept. 1, 1929).
B. S., Iowa State College, 1926; M. S., *ibid.*, 1929. E 17; 1721 Laramie.
- DARREL JAY MASE,⁷ B. S.; Instructor in Public Speaking (Sept. 1, 1929).
B. S., Kansas State Teachers College, Emporia, 1928. G 55; 1624 Osage.
- HOWARD OREN MATSON,⁷ M.S., Instructor in Architecture, Division of College Extension (Sept. 1, 1929).
A. B., Cotner College, 1924; B. S., University of Nebraska, 1927; M. S., University of California, 1929. E 131; 518 Leavenworth.
- RACHEL JEAN MORROW, A. B., Instructor in Physical Education for Women (Sept. 1, 1929).
A. B., Ohio Wesleyan University, 1928. N 3; 1631 Leavenworth.
- REED FRANKLIN MORSE, B.S., Instructor in Civil Engineering (Sept. 1, 1929).
A. B., Cornell College, 1921; B. S., Iowa State College, 1923. E 220; 1021 Kearney.
- GERALD PICKETT, B.S., Instructor in Applied Mechanics (Sept. 1, 1929).
B. S., Oklahoma A. and M. College, 1927. E 113; 821 Fremont.
- CARL CLARK RICE,⁷ B.S. Instructor in Electrical Engineering (Sept. 1, 1929).
B. S., K. S. A. C., 1929. E 30; 1218 Bertrand.
- HELEN CARMALETA SHARP, M. D., Instructor in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., University of Kansas, 1927; M. D., *ibid.*, 1928. L 60; 1520 Humboldt.
- VICTORIA GOWER SMITH, Ph. B., Instructor in Art (Sept. 1, 1929).
Ph. B., University of Chicago, 1927. A 78; 1212 Fremont.

7. Temporary appointment.

CHARLES RAY THOMPSON,⁷ A. M., Instructor in Economics and Sociology (Sept. 1, 1929).

A. B., University of Kansas, 1927; A. M., *ibid.*, 1928. A 74; 811 Laramie.

LOWELL RAY TUCKER,⁷ M. S., Instructor in Horticulture (Sept. 1, 1929).

B. S., University of Illinois, 1926; M. S., University of New Hampshire, 1928.
H 32; 1220 Vattier.

JOSEPH THOMAS WARE, JR., B. S., Instructor in Architecture (Sept. 1, 1929).

B. S., Georgia School of Technology, 1929. E 308; 1123 Thurston.

NATHAN REED, M. S., Instructor in Chemistry (Sept. 6, 1929).

B. S., Oklahoma A. and M. College, 1922; M. S., University of Oklahoma, 1924.
D 30; 325 N. 17th.

EARL HENRY HAHN, B. S., Instructor in Machine Drawing and Design (Sept. 21, 1929).

B. S., Iowa State College, 1923. E 209; 825 Bluemont.

CONRAD STEPHEN MOLL, B. P. E., Instructor in Physical Education for Men (Sept. 24, 1929).

B. P. E., Y. M. C. A. College, 1925. N 36; 1424 Houston.

ARTHUR ORAN FLINNER, B. S., Instructor in Mechanical Engineering (Dec. 1, 1929).

B. S. in M. E., K. S. A. C., 1929. E 109; 1130 Vattier.

FRED FOSTER GREELEY, Instructor in Machine Shop and Welding (1923; Jan. 1, 1930); Assistant in Shop Practice (1923; Dec. 31, 1929).

S 30; 931 Fremont.

STERLING MCCOLLOM, Instructor in Shop Practice (Jan. 1, 1930).

S 32; 909 Leavenworth.

ERWIN JOHN BENNE, B. S., Instructor in Chemistry (Jan. 18, 1930).

B. S., K. S. A. C., 1928. W 30; 917 Osage.

NAOMI ZIMMERMAN CRAWFORD,⁷ M. S., Instructor in Zoölogy (Feb. 1, 1930-May 31, 1930).

B. S., University of Nebraska, 1919; M. S., *ibid.*, 1922.

ASSISTANTS

ALANSON LOLA HALLSTED,⁴ B. S., Assistant in Dry Farming, Fort Hays Branch Agricultural Experiment Station (1910).

B. S., K. S. A. C., 1903. Hays, Kan.

NELLIE MAY, Postmistress (1911).

A 44; 717 Laramie.

HATTIE HELEN WHITE, Secretary, Business Office (1912).

A 27; 717 Laramie.

MABEL GERTRUDE BAXTER, Assistant in Charge of Continuations, College Library (1916, 1918).

Li 26; 1624 Fairchild.

ELISABETH PERRY HARLING, Seed Analyst, Department of Agronomy (1912, 1917).

Ag 77; 628 Fremont.

MARY KIMBALL, B. S., First Assistant to the Registrar (1918).

B. S., K. S. A. C., 1907. A 29; 1311 Laramie.

4. In coöperation with the U. S. Department of Agriculture.

7. Temporary appointment.

- MYRTLE EVELYN ZENER, Secretary to the Vice President (1918).
A 47; 1104 Vattier.
- CHESTER WILLIS OAKES, Miller, Department of Milling Industry (1918).
Ag 198A; 1326 Houston.
- LOUISE SCHWENSEN, Secretary to the Dean, Division of Engineering (1915, 1918).
E 115; 1800 Leavenworth.
- BRUCE BUNYAN SMITH, Assistant in Agricultural Engineering (1918).
Bks. 2; 830 Laramie.
- ALICE MAUDE MELTON, B. S., Assistant to the Dean, Division of General Science (1900, 1919).
B. S., K. S. A. C., 1898. A 50; 831 Leavenworth.
- EDWARD L. CLAEREN, Major, D. E. O., Retired, Military Property Custodian, Department of Military Science and Tactics (1910, 1919).
N 29; 900 Pierre.
- GRACE ELLEN UMBERGER, B. S., R. N., Head Nurse, Department of Student Health (1919).
B. S., K. S. A. C., 1905; R. N., Illinois Training School for Nurses, 1909.
A 65; 1412 Leavenworth.
- ARTHUR FRITHIOF SWANSON, B. S., Assistant in Cereal Investigations, Fort Hays Branch Agricultural Experiment Station (1919).
B. S., K. S. A. C., 1919. Hays, Kan.
- DELFA MARY HAZELTINE, Assistant to the Dean, Division of College Extension (1920).
Graduate, Lawrence Business College. A 33; 900 Bluemont.
- CLARENCE OSBORN PRICE, Assistant to the President (1920).
A 30; 501 Bluemont.
- JOSEPH FARRINGTON MERRILL, B. S., Assistant Chemist, Agricultural Experiment Station (1921).
B. S., University of Maine, 1907. C 3; 318 N. 16th.
- FLOYD JOSEPH HANNA, Assistant in Department of Illustrations (1922); Acting Head of Department of Illustrations (July 1, 1929).
I; 1612 Leavenworth.
- CLARA MAGDALENE SIEM, Financial Secretary, Division of College Extension (1920, 1924).
A 33; 1425 Humboldt.
- FLORENCE LILLIAN DIAL,¹⁰ B. S., Class Reserves Assistant in Library (1923-Nov. 30, 1929).
B. S., K. S. A. C., 1919.
- WILLIAM HENRY IRWIN, Assistant in Shop Practice (1923).
S 29; R. R. 2.
- REBECCA SALOME MEYER, R. N., Nurse in College Hospital (1923).
Graduate, Mary Thompson Hospital, 1900. College Hospital.
- HAZEL ELIZABETH TAYLOR PFUETZE, Secretary, Department of Education (1925).
G 28; 1101 Bertrand.
- JEANNE MACBRIDE, Housekeeper in College Hospital, Department of Student Health (1925).
College Hospital.

10. Resigned.

FRANK LEWIS MYERS, B. M., Assistant to the Director of Physical Education (1926).

B. M., K. S. A. C., 1924.

N 35; 1527 Humboldt.

JACK HARRIS LINSOTT, Assistant in Heat and Power (1927).

E 27; 1030 Houston.

ERNEST WILLIAM JOHNSON, B. S., Forest Nurseryman, Fort Hays Branch Agricultural Experiment Station (1927).

B. S., Colorado Agricultural College, 1926.

Hays, Kan.

LISLE LESLIE LONGSDORF, M. S., Extension Editor, Division of College Extension (1927).

B. S., University of Wisconsin, 1925; M. S., *ibid.*, 1926.

A 3; 816 Leavenworth.

CHRISTOPHER HENRY FICKE,⁷ M. S., Assistant Pathologist, Department of Botany and Plant Pathology (1925, 1927-Dec. 31, 1929).

B. S., Iowa State College, 1925; M. S., K. S. A. C., 1927.

H 53; 930 Ratone.

EMERY JACK COULSON, B. S., Assistant Chemist, Agricultural Experiment Station (1927).

B. S., K. S. A. C., 1927.

C 4; 1006 Bertrand.

GLENN EVERETT WEBSTER, Radio Operator, Division of College Extension (1928).

N 83; 359 N. 15th.

JANE WILSON BARNES, B. S., Secretary to the Dean, Division of Home Economics (1928).

B. S., K. S. A. C., 1912.

L 29; 1208 Bluemont.

ROSE LOUISE CHILD, Assistant to the Dean of Women (1928).

A 40A; 1725 Fairchild.

CLARENCE EDWARD CREWS, B. S., Assistant in Agronomy (1928); Foreman of Agronomy Farm (1928).

B. S., K. S. A. C., 1928.

Agronomy Farm; 1830 Poyntz.

CHARLOTTE CROUCH LAMPRECHT, Assistant to the Dean, Division of Home Economics (1928).

Diploma, Kansas State Teachers College, Emporia, 1903.

L 66; 815 Osage.

KARL WILLIAM NIEMANN, B. S., Assistant in Veterinary Medicine (1928).

B. S., K. S. A. C., 1926.

V 2; 1030 Fremont.

LIBBIE ELLEN REEVES, Assistant to the Superintendent, Fort Hays Branch Agricultural Experiment Station (1928).

Hays, Kan.

IVA LARSON, M. S., Assistant in Genetics, Department of Zoölogy (1927, 1928).

A. B., University of South Dakota, 1927; M. S., K. S. A. C., 1929.

Insectary; 918 N. Manhattan.

LAURA BELLE BAXTER, B. S., Assistant in Home Economics Education (1927, 1928).

B. S., K. S. A. C., 1915.

G 29; 610 Vattier.

EFFIE LOVISA HASTINGS, Second Assistant to the Registrar (1927, 1928).

A 29; 122 S. Manhattan.

WARD HILLMAN HAYLETT, A. B., Assistant in Physical Education (1928).

A. B., Doane College, 1926.

N 34; 1642 Laramie.

MYRA THELMA POTTER, B. S., Technician, Department of Food Economics and Nutrition (1928).

B. S., K. S. A. C., 1928.

L 18; 1821 Poyntz.

7. Temporary appointment.

- MYRA EDNA SCOTT,⁷ A. M., Assistant in English (1928).
B. S., K. S. A. C., 1921; A. M., Stanford University, 1928. A 63A; 924 Moro.
- MARY LOIS WILLIAMSON,⁷ B. S., Critic Teacher, Home Economics Education (1928).
M. H. S.; 1514 Humboldt.
- BELLE CLARKE HOWARD, R. N., Nurse, Department of Student Health (1928).
R. N., Charlotte Swift Hospital, 1919. College Hospital.
- CHARLES A. PYLE,⁷ D. V. M., Animal Pathologist, Department of Veterinary Medicine (1928).
D. V. M., K. S. A. C., 1907. Sedan, Kan.
- HARRIET MAY CLARK,⁷ A. M., Assistant in English (Feb. 1, 1929).
A. B., University of Nebraska, 1923; A. M., *ibid.*, 1928. A 54; 1636 Fairchild.
- RALPH OSCAR LEWIS, B. S., Assistant in Soil Survey, Department of Agronomy (May 13, 1929).
B. S., K. S. A. C., 1929. Ag 216; 1409 Fairchild.
- GEORGE HEMROD RAILSBACK, B. S., Laboratory Assistant in Applied Mechanics (July 1, 1929).
B. S., K. S. A. C., 1914. E 112; 615 Kearney.
- LAWRENCE FENER HALL, B. S., Assistant in Education (Sept. 1, 1929).
B. S., K. S. A. C., 1923. G 29; 810 Vattier.
- WILLIAM MCKINLEY STENSAAS,⁷ A. B., Assistant in English (Sept. 1, 1929).
A. B., Bethany College, 1922. K 54; 1728 Laramie.
- FLORENCE HARRIS,¹⁰ M. S., Assistant in Institutional Economics (Sept. 1, 1929-Jan. 20, 1930).
B. S., K. S. A. C., 1925; M. S., *ibid.*, 1929. T 29; 2000 Anderson.
- GLADYS MATILDA BOEHM,⁷ M. S., Assistant in Food Economics and Nutrition (Sept. 1, 1929).
A. B., Drury College, 1925; M. S., K. S. A. C., 1929. L 47; 1633 Anderson.
- EDITH CLARA CAMPBELL,⁷ A. M., Assistant in English (Sept. 1, 1929).
B. S., Kansas State Teachers College, Emporia, 1920; A. M., University of California, 1926. A 63A; 114 S. 8th.
- ALDENE SCANTLIN LANGFORD,⁷ M. S., Assistant in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., K. S. A. C., 1927; M. S., *ibid.*, 1928. L 40A; 426 N. 17th.
- RUTH KELL NOBLE,⁷ M. S., Assistant in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., K. S. A. C., 1925; M. S., *ibid.*, 1927. L 34; 1425 Laramie.
- BELLA CATHERINE ROBERTSON, B. S., Assistant in Education (Sept. 1, 1929).
B. S., K. S. A. C., 1926. Jr. H. S.; 431 Humboldt.
- ESTHER MARGARET THOMAS, B. S., Nurse, Department of Student Health (Sept 1, 1929).
B. S., K. S. A. C., 1927; Graduate, Charlotte Swift Memorial Hospital, 1925. College Hospital.
- LEE RUDELL ST. JOHN, B. S., Laboratory Assistant in Applied Mechanics (Nov. 1, 1929).
B. S. in C. E., K. S. A. C., 1929. E 18; 611 N. 11th.
- ANNA NEAL MULLER, B. S., Class Reserves Assistant in Library (Dec. 1, 1929).
B. S., K. S. A. C., 1921. Li 1; 1115 Bluemont.

7. Temporary appointment.

10. Resigned.

LEONA THUROW HILL, M. S., Assistant in Education (Jan. 16, 1930).

A. B., University of Southern California, Feb., 1923; B. S., K. S. A. C., June, 1923; M. S. *ibid.*, 1926. Manhattan High School; 1611 Laramie.

EMILY BENNETT KERCHNER,⁷ M. S., Assistant in Food Economics and Nutrition (Feb. 1, 1930-May 31, 1930).

A. B., University of Illinois, 1921; M. S., K. S. A. C., 1924.

IVA BELLE WELCH,⁷ A. B., Assistant in Institutional Economics (Feb. 1, 1930).

A. B., Baker University, 1921. T 29; 1704 Fairview.

SUPERINTENDENTS

LOUIS C. AICHER, B. S., Superintendent, Fort Hays Branch Agricultural Experiment Station (1921).

B. S. in Agr., K. S. A. C., 1910. Hays, Kan.

JACOB LUND, M. S., Superintendent of Heat and Power, Emeritus (1883, 1925); Custodian of Buildings and Grounds, Emeritus (1883, 1925).

B. S., K. S. A. C., 1883; M. S., *ibid.*, 1886. E 26B; 1414 Fairchild.

CHARLES WESLEY HOBBS, D. V. S., Superintendent of Vaccine Laboratories (1913, 1919).

D. V. S., Western Veterinary College, 1901. V 31; 1328 Fremont.

GEORGE RICHARD PAULING, Superintendent of Maintenance, in Charge of Building and Repairs, Custodian, and Heat and Power Departments (1916, 1925).

PP 28; 1015 Humboldt.

FAY ARTHUR WAGNER, B. S., Superintendent, Garden City Branch Agricultural Experiment Station (1919).

B. S. in Agr., New Mexico Agricultural College, 1916. Garden City, Kan.

THOMAS BRUCE STINSON, B. S., Superintendent, Tribune Branch Agricultural Experiment Station (1924).

B. S., K. S. A. C., 1924. Tribune, Kan.

ALLEN PEARSON LOOMIS, Superintendent of Poultry Farm (1926).

Poultry Farm, Route 8.

EMBERT HARVEY COLES, B. S., Superintendent, Colby Branch Agricultural Experiment Station (1922; Apr. 15, 1929).

B. S., K. S. A. C., 1922. Colby, Kan.

AGRICULTURAL AGENTS⁴

HERBERT LYNNE HILDWEIN, B. S., Sedgwick County Agricultural Agent, Division of College Extension (1917, 1926).

B. S., K. S. A. C., 1914. Wichita, Kan.

JOE MYRON GOODWIN, Atchison County Agricultural Agent, Division of College Extension (1919, 1923).

Effingham, Kan.

CHARLES ELMER CASSEL, B. S., Butler County Agricultural Agent, Division of College Extension (1912, 1923).

B. S., K. S. A. C., 1910. Lyndon, Kan.

ALBERT BARNEY KIMBALL,¹⁰ B. S., Smith County Agricultural Agent, Division of College Extension (1918, 1925-Nov. 16, 1929).

B. S., K. S. A. C., 1889. Smith Center, Kan.

4. In coöperation with the U. S. Department of Agriculture.

7. Temporary appointment.

10. Resigned.

- ROBERT ELLIOTT CURTIS, B.S., Ottawa County Agricultural Agent, Division of College Extension (1919, 1924).
B. S., K. S. A. C., 1916. Minneapolis, Kan.
- HERMAN FREDERICK TAGGE, B.S., Jackson County Agricultural Agent, Division of College Extension (1920, 1923).
B. S., K. S. A. C., 1914. Holton, Kan.
- JOHN ALBERT HENDRIKS, B.S.A., Anderson County Agricultural Agent, Division of College Extension (1920, 1924).
B. S., Iowa State College, 1913. Garnett, Kan.
- ERNEST LEE MCINTOSH, B.S., Osage County Agricultural Agent, Division of College Extension (1920, 1923).
B. S., K. S. A. C., 1920. Lyndon, Kan.
- HARRY CHARLES BAIRD, B.S., Lane County Agricultural Agent, Division of College Extension (1920; May 1, 1929).
B. S., K. S. A. C., 1914. Dighton, Kan.
- ARTHUR I. GILKISON, Douglas County Agricultural Agent, Division of College Extension (1920, 1926).
Lawrence, Kan.
- CARL LEWIS HOWARD, B.S., Lyon County Agricultural Agent, Division of College Extension (1920, 1926).
B. S., K. S. A. C., 1920. Emporia, Kan.
- ROY ELMER GWIN, B.S., Allen County Agricultural Agent, Division of College Extension (1921, 1924).
B. S., K. S. A. C., 1914. Iola, Kan.
- JOHN VERN HEPLER, B.S., Washington County Agricultural Agent, Division of College Extension (1921).
B. S., K. S. A. C., 1916. Washington, Kan.
- PAUL BERNARD GWIN, B.S., Crawford County Agricultural Agent, Division of College Extension (1921; Feb. 1, 1930).
B. S., K. S. A. C., 1916. Girard, Kan.
- WILLIAM LOUIS TAYLOR,¹⁰ B.S.A., Crawford County Agricultural Agent, Division of College Extension (1921; Dec. 31, 1929).
B. S. A., University of Missouri, 1917. Girard, Kan.
- CHARLES HAROLD STINSON, B.S., Pawnee County Agricultural Agent, Division of College Extension (1921, 1928).
B. S., K. S. A. C., 1921. Larned, Kan.
- ROBERT E. WILLIAMS,¹⁰ B.S., Barton County Agricultural Agent, Division of College Extension (1922-Nov. 16, 1929).
B. S., K. S. A. C., 1907. Great Bend, Kan.
- WILLIAM HERBERT ROBINSON, B.S., Shawnee County Agricultural Agent, Division of College Extension (1923, 1926).
B. S., K. S. A. C., 1916. Topeka, Kan.
- CLARENCE EUGENE AGNEW, B.S., Wilson County Agricultural Agent, Division of College Extension (1923, 1924).
B. S., K. S. A. C., 1923. Fredonia, Kan.
- LOUIS MEYERS KNIGHT, B.S., Sumner County Agricultural Agent, Division of College Extension (1923, 1926).
B. S., K. S. A. C., 1923. Wellington, Kan.

10. Resigned.

- CHARLES ENOCH LYNESS, B. S., Doniphan County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. A. C., 1912. Troy, Kan.
- RAY LEIGHTON GRAVES, B. S., Clay County Agricultural Agent, Division of College Extension (1923, 1928).
B. S., K. S. A. C., 1912. Clay Center, Kan.
- GEORGE W. SIDWELL, A. B., Edwards County Agricultural Agent, Division of College Extension (1913, 1928).
A. B., Fairmount College, 1915. Kinsley, Kan.
- SAMUEL DAVID CAPPER, B. S., Riley County Agricultural Agent, Division of College Extension (1923, 1925).
B. S., K. S. A. C., 1921. Manhattan, Kan.
- MOTT LUTHER ROBINSON, B. S., McPherson County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. A. C., 1923. McPherson, Kan.
- JUNIUS WARREN FARMER, B. S., Greenwood County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. A. C., 1923. Eureka, Kan.
- WILLIAM O'CONNELL, B. S., Marshall County Agricultural Agent, Division of College Extension (1924).
B. S., K. S. A. C., 1916. Marysville, Kan.
- RALPH REUBEN MCFADDEN, B. S., Harvey County Agricultural Agent, Division of College Extension (1922, 1928).
B. S., K. S. A. C., 1921. Newton, Kan.
- DWIGHT ELLSWORTH HULL, B. S., Saline County Agricultural Agent, Division of College Extension (1924, 1927).
B. S., K. S. A. C., 1917. Salina, Kan.
- LEONARD NEFF, B. S. A., Cloud County Agricultural Agent, Division of College Extension (1925).
B. S. A., Purdue University, 1922. Concordia, Kan.
- EDWARD AICHER, D. V. S., Cowley County Agricultural Agent, Division of College Extension (1925).
D. V. S., Colorado State College, 1910. Winfield, Kan.
- DEWEY ZOLLIE McCORMICK, B. S., Morris County Agricultural Agent, Division of College Extension (1925).
B. S., K. S. A. C., 1921. Council Grove, Kan.
- WALTER JONES DALY, B. S., Linn County Agricultural Agent, Division of College Extension (1925, 1927).
B. S. in Agr., K. S. A. C., 1925. Mound City, Kan.
- DUKE DANIEL BROWN, B. S., Wyandotte County Agricultural Agent, Division of College Extension (1925; April 11, 1929).
B. S. in Agr., K. S. A. C., 1921. Kansas City, Kan.
- GLEN MCKINLEY REED, B. S., Nemaha County Agricultural Agent, Division of College Extension (1925, 1928).
B. S., K. S. A. C., 1925. Seneca, Kan.
- WILLIAM SCOTT SPEER, B. S., Kingman County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1925. Kingman, Kan.
- NEIL LEWIS RUCKER, B. S., Ellsworth County Agricultural Agent, Division of College Extension (1926; April 1, 1930).
B. S., K. S. A. C., 1913. Ellsworth, Kan.

- WALTER HENRY VON TREBRA, B.S., Rice County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1924. Lyons, Kan.
- WALTER HENRY ATZENWEILER, B.S., Brown County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1926. Hiawatha, Kan.
- GEORGE SMITH ATWOOD, B.S., Hodgeman County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1924. Jetmore, Kan.
- JOHN HENRY SHIRKEY, B.S., Meade County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1926. Meade, Kan.
- JOHN HERBERT COOLIDGE, B.S., Gray County Agricultural Agent, Division of College Extension (1926).
B. S., Knox College, 1925. Cimarron, Kan.
- FRED JAMES SYKES, B.S., Comanche County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1926. Coldwater, Kan.
- JOHN DELMONT MONTAGUE, B.S., Marion County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1920. Marion, Kan.
- ARTHUR WILLIAM KNOTT, B.S., Montgomery County Agricultural Agent, Division of College Extension (1927).
B. S., University of Wisconsin, 1917. Independence, Kan.
- AMWEL EDWIN JONES, B.S., Dickinson County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1917. Abilene, Kan.
- RALPH PAUL RAMSEY, B.S., Jewell County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1916. Mankato, Kan.
- CARL MILTON CARLSON,¹⁰ B.S., Reno County Agricultural Agent, Division of College Extension (1927-Sept. 21, 1929).
B. S., K. S. A. C., 1927. Hutchinson, Kan.
- EUGENE ARTHUR CLEAVENGER, B.S., Coffey County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1925. Burlington, Kan.
- RAYMOND LUTHER STOVER, M.S., Lincoln County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1924; M. S., Oregon Agricultural College, 1927. Lincoln, Kan.
- CHARLES ARCHER JONES, B.S., Johnson County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1924. Olathe, Kan.
- JOHN HAROLD JOHNSON, B.S., Sedgwick County Club Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1927. Wichita, Kan.
- JOHN TANTON WHETZEL, B.S., Miami County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1927. Paola, Kan.

10. Resigned.

- THEODORE FRANKLIN YOST, B.S., Bourbon County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1920. Fort Scott, Kan.
- ORVILLE RAY CALDWELL, B.S., Finney County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Garden City, Kan.
- VANCE MATHER RUCKER, B.S., Harper County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Anthony, Kan.
- ROBERT THOMAS PATTERSON, B.S., Cherokee County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1924. Columbus, Kan.
- HERMAN ALBERT BISKIE, B.S., Franklin County Agricultural Agent, Division of College Extension (1928).
B. S., University of Nebraska, 1917. Ottawa, Kan.
- LESTER SHEPARD, B.S., Neosho County Agricultural Agent, Division of College Extension (1928).
A. B., University of Iowa, 1913; B. S., Iowa State College, 1916. Erie, Kan.
- LYLE MAYFIELD, B.S., Clark County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Ashland, Kan.
- LEONARD BEATH HARDEN, B.S., Labette County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1926. Altamont, Kan.
- RAGNAR NATHANIEL LINDBURG, B.S., Butler County Club Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1928. El Dorado, Kan.
- EDWARD ALBERT STEPHENSON, JR., B.S., Chase County Agricultural Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1928. Cottonwood Falls, Kan.
- OTIS BENTON GLOVER, B.S., Jefferson County Agricultural Agent, Division of College Extension (Apr. 15, 1929).
B. S., K. S. A. C., 1915. Oskaloosa, Kan.
- ROBERT SAMUEL TRUMBULL, A.M., Ford County Agricultural Agent, Division of College Extension (May 1, 1929).
B. S., Nebraska Wesleyan University, 1907; A. M., University of Nebraska, 1908. Dodge City, Kan.
- IVAN KEITH TOMPKINS, B.S., Sheridan County Agricultural Agent, Division of College Extension (May 28, 1929).
B. S., K. S. A. C., 1929. Hoxie, Kan.
- THEODORE ROOSEVELT WARREN, M.S., Bourbon County Club Agent, Division of College Extension (1927; Jan. 1, 1930).
B. S., University of Idaho, 1927; M. S., K. S. A. C., 1928. Fort Scott, Kan.
- MILBURNE CLINTON AXELTON, B.S., Woodson County Agricultural Agent, Division of College Extension (June 17, 1929).
B. S., K. S. A. C., 1928. Yates Center, Kan.
- LESLIE MELVIN WOLFE, B.S., Ness County Agricultural Agent, Division of College Extension (June 20, 1929).
B. S., K. S. A. C., 1929. Ness City, Kan.

- EARL HICKS TEAGARDEN, B. S., Stafford County Agricultural Agent, Division of College Extension (Jan. 10, 1929; July 1, 1929).
B. S., K. S. A. C., 1920. St. John, Kan.
- JOHN WESLEY ROUSSIN, B. S., Rawlins County Agricultural Agent, Division of College Extension (July 1, 1929).
B. S., K. S. A. C., 1929. Atwood, Kan.
- BERNIE WILLIAM WRIGHT, B. S., Russell County Agricultural Agent, Division of College Extension (July 1, 1929).
B. S., K. S. A. C., 1924. Russell, Kan.
- RAY LEWIS REMSBERG, B. S., Kingman County Club Agent, Division of College Extension (July 15, 1929).
B. S., K. S. A. C., 1929. Kingman, Kan.
- OGDEN WORLEY GREENE, B. S., Pratt County Agricultural Agent, Division of College Extension (Aug. 28, 1929).
B. S., K. S. A. C., 1929. Pratt, Kan.
- PRESTON ORIN HALE, B. S., Leavenworth County Agricultural Agent, Division of College Extension (Oct. 1, 1929).
B. S., K. S. A. C., 1916. Leavenworth, Kan.
- GEORGE WINFRED HINDS, B. S., Reno County Agricultural Agent, Division of College Extension (Oct. 1, 1929).
B. S., K. S. A. C., 1920. Hutchinson, Kan.
- SHERMAN STANLEY HOAR, B. S., Barton County Agricultural Agent, Division of College Extension (Jan. 2, 1929; Dec. 5, 1929).
B. S., K. S. A. C., 1928. Great Bend, Kan.
- ELMER OSCAR GRAPER, B. S., Smith County Agricultural Agent, Division of College Extension (Dec. 20, 1929).
B. S., K. S. A. C., 1913. Smith Center, Kan.
- HARVEY J. STEWART, B. S., Cheyenne County Agricultural Agent, Division of College Extension (Dec. 20, 1929).
B. S., K. S. A. C., 1928. St. Francis, Kan.
- JESTER BAILEY TAYLOR, B. S., Douglas County Club Agent, Division of College Extension (Jan. 18, 1930).
B. S., Oklahoma A. and M. College, 1925. Lawrence, Kan.

HOME DEMONSTRATION AGENTS⁴

- LAURA WINTER, Sedgwick County Home Demonstration Agent, Division of College Extension (1925).
Wichita, Kan.
- FLORENCE DRESSER SYVERUD,¹⁰ B. S., Allen County Home Demonstration Agent, Division of College Extension (1925-Dec. 31, 1929).
B. S., K. S. A. C., 1908. Iola, Kan.
- ESTHER MAE HUYCK, B. S., Rawlins County Home Demonstration Agent, Division of College Extension (1925).
B. S., South Dakota State College, 1925. Atwood, Kan.
- MABEL McCOMB CARLSON, Reno County Home Demonstration Agent, Division of College Extension (1925, 1927).
B. S., K. S. A. C., 1925. Hutchinson, Kan.

4. In coöperation with the U. S. Department of Agriculture.

10. Resigned.

- ELLA M. MEYER, B. S., Ford County Home Demonstration Agent, Division of College Extension (1925; Jan. 1, 1930); Franklin County Home Demonstration Agent, Division of College Extension (1925-Dec. 31, 1929).
B. S., K. S. A. C., 1907. Dodge City, Kan.
- ELIZABETH RANDLE, B. S., Douglas County Home Demonstration Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1907. Lawrence, Kan.
- CHARLOTTE ELIZABETH BIESTER, B. S., Johnson County Home Demonstration Agent, Division of College Extension (1924, 1926).
B. S., University of Illinois, 1921. Olathe, Kan.
- LOIS HOLDERBAUM, B. S., Shawnee County Home Demonstration Agent, Division of College Extension (1927, 1928).
B. S., K. S. A. C., 1925. Topeka, Kan.
- NORA ELIZABETH BARE, B. S., Butler County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1925. El Dorado, Kan.
- LUCRETIA SCHOLER, B. S., Harvey County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1920. Newton, Kan.
- GRACE HERR, B. S., Bourbon County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1922. Fort Scott, Kan.
- SARA JANE PATTON, Neosho County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1915. Erie, Kan.
- MARY DUNLAP ZIEGLER, Pratt County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1916. Pratt, Kan.
- CHRISTIE CYNTHIA HEPLER, B. S., Labette County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1926. Altamont, Kan.
- VERNETTA FAIRBAIRN, A. B., Montgomery County Home Demonstration Agent, Division of College Extension (1928).
A. B., University of Kansas, 1927. Independence, Kan.
- LOUELLA ELIZABETH MARGARET McCALL,¹⁰ M. S., Ford County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1918; M. S., Iowa State College, 1927. Dodge City, Kan.
- RUTH JEANETTE PECK, B. S., Wyandotte County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Kansas City, Kan.
- JESSIE CAMPBELL, B. S., Rice County Home Demonstration Agent, Division of College Extension (1928; Jan. 1, 1929).
B. S., K. S. A. C., 1925. Lyons, Kan.
- MARGARET ANNABEL KOENIG, B. S., Clay County Home Demonstration Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1928. Clay Center, Kan.
- ALBERTA WENKHEIMER, A. B., Harper County Home Demonstration Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1909; A. B., University of Kansas, 1928. Anthony, Kan.

10. Resigned.

- MABEL RACHEL SMITH, B.S., Crawford County Home Demonstration Agent, Division of College Extension (Feb. 1, 1929).
B.S., K. S. A. C., 1926. Girard, Kan.
- ETHEL FAYE WATSON, B.S., Greenwood County Home Demonstration Agent, Division of College Extension (Feb. 13, 1929).
B.S., K. S. A. C., 1926. Eureka, Kan.
- GERTRUDE EDNA ALLEN, B.S., Lyon County Home Demonstration Agent, Division of College Extension (May 15, 1929).
B.S., University of Minnesota, 1929. Emporia, Kan.
- IVA LUELLA HOLLADAY, B.S., Leavenworth County Home Demonstration Agent, Division of College Extension (July 1, 1929).
B.S., K. S. A. C., 1929. Leavenworth, Kan.
- RACHEL MARKWELL, B.S., Morris County Home Demonstration Agent, Division of College Extension (July 1, 1929).
B.S., Oklahoma A. and M. College, 1926. Council Grove, Kan.
- FLORENCE MABLE FUNK, B.S., Cherokee County Home Demonstration Agent, Division of College Extension (July 9, 1929).
B.S., K. S. A. C., 1929. Columbus, Kan.
- LINNEA CARLSON DENNETT, B.S., Riley County Home Demonstration Agent, Division of College Extension (July 16, 1929).
B.S., K. S. A. C., 1929. Manhattan, Kan.
- GRACE MERLE REEDER, A.B., Miami County Home Demonstration Agent, Division of College Extension (Aug. 1, 1929).
A. B., Baker University, 1920. Paola, Kan.
- ALBERTA PAULINE SHERROD, B.S., Kingman County Home Demonstration Agent, Division of College Extension (Aug. 1, 1929).
B.S., Oklahoma A. and M. College, 1926. Kingman, Kan.
- MARY ELSIE BORDER, B.S., Dickinson County Home Demonstration Agent, Division of College Extension (Sept. 16, 1929).
B.S., Ohio State University, 1926. Abilene, Kan.
- GRACE MILDRED HENDERSON, B.S., Assistant Home Demonstration Agent, Division of College Extension (Jan. 1, 1930).
B.S., University of Nebraska, 1924. Manhattan, Kan.
- EDITH O'BRIEN ROSEVEAR, B.S., Allen County Home Demonstration Agent, Division of College Extension (Jan. 1, 1930).
B.S., K. S. A. C., 1911. Iola, Kan.
- EULA MAY NEAL, B.S., Franklin County Home Demonstration Agent, Division of College Extension (Jan. 25, 1930).
B.S., State Teachers College, Kirksville, Mo., 1927. Ottawa, Kan.

GRADUATE ASSISTANTS.

- AUSTIN GERALD GOTH,¹⁰ B.S., Graduate Assistant in Crops, Department of Agronomy (Feb. 1, 1929-Jan. 31, 1930).
B.S., University of Nebraska, 1929. Ag 102; 1725 Fairchild.
- MARY FRANCES WHITE, B.S., Graduate Assistant in Education (July 1, 1929).
B.S., K. S. A. C., 1928. G 33; 1743 Fairchild.
- GLENN ALLEN AIKENS, B.S., Graduate Assistant in Bacteriology (Sept. 1, 1929).
B.S., K. S. A. C., 1924. V 53B; 358 N. 15th.

10. Resigned.

- WILLIAM PURVIS ALBRIGHT, B.S., Graduate Assistant in Poultry Husbandry (Sept. 1, 1929).
B. S., North Carolina State College, 1929. Ag 249; 1116 Bluemont.
- FORREST BENNETT ALSPACH,¹⁰ B.S., Graduate Assistant in Soils, Department of Agronomy (Sept. 1, 1929-Feb. 15, 1930).
B. S., K. S. A. C., 1929. Ag 296; 1101 Moro.
- IDA ANDERSON, B.S., Graduate Assistant in Clothing and Textiles (Sept. 1, 1929).
B. S., Iowa State College, 1927. L 56; 906 Fremont.
- FREDERICK BRUCE BOSLEY, B.S., Graduate Assistant in Botany and Plant Pathology (Sept. 1, 1929).
B. S., K. S. A. C., 1928. H 77; 1015 Vattier.
- MARION ISABELL CAMPBELL, B.S., Graduate Assistant in Zoölogy (Sept. 1, 1929).
B. S., Kansas State Teachers College, Pittsburg, 1924. F 38; 1311 Laramie.
- LAWRENCE WILLIAM DECKER, B.S., Graduate Assistant in Animal Husbandry (Sept. 1, 1929).
B. S., Purdue University, 1929. Ag 24; 1116 Bluemont.
- WINIFRED MAUDE EDWARDS, B.S., Graduate Assistant in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., K. S. A. C., 1927. L 64; 310 N. 16th.
- HELEN EHRHARDT, A.B., Graduate Assistant in Food Economics and Nutrition (Sept. 1, 1929).
A. B., Baker University, 1925. L 28; 1031 Thurston.
- BERNICE LUCILE HARPER, A.B., Graduate Assistant in Zoölogy (Sept. 1, 1929).
A. B., Kalamazoo College, 1929. F 38; 1509 Humboldt.
- LUCRETIA MAYE HOOVER, B.S., Graduate Assistant in Institutional Economics (Sept. 1, 1929).
B. S., Kansas State Teachers College, Pittsburg, 1928. L 30; 610 N. Manhattan.
- OTHO JAY HOPPER, B.S., Graduate Assistant in Animal Husbandry (Sept. 1, 1929).
B. S., University of Missouri, 1929. Ag 24; 1016 Vattier.
- MERLE RAYMOND HUBBARD, A.B., Graduate Assistant in Chemistry (Sept. 1, 1929).
A. B., Southwestern College, 1929. W 30; 1023 Laramie.
- EUNICE LEOLA KINGSLEY, B.S., Graduate Assistant in Botany and Plant Pathology (Sept. 1, 1929).
B. S., North Dakota Agricultural College, 1926. H 76B; 1733 Laramie.
- HAROLD CHRISTIAN LARSEN, B.S., Graduate Assistant in Agricultural Economics (Sept. 1, 1929).
B. S., South Dakota State College, 1929. Ag 363; 1116 Bluemont.
- ARTHUR MEYER, B.S., Graduate Assistant in Horticulture (Sept. 1, 1929).
B. S., Oklahoma A. and M. College, 1929. H 33; 1116 Bluemont.
- MERLIN MUNDELL, B.S., Graduate Assistant in Chemistry (Sept. 1, 1929).
B. S., K. S. A. C., 1929. D 30; 353 N. 15th.
- GENEVIEVE ALICE NOWLIN, B.S., Graduate Assistant in Dean's Office, Division of Home Economics (Sept. 1, 1929).
B. S., K. S. A. C., 1914. G 29; 1104 Vattier.

10. Resigned.

- JOHN HENRY SHENK, B.S., Graduate Assistant in Chemistry (Sept. 1, 1929).
B. S., K. S. A. C., 1929. D 30; 916 Osage.
- CLIFFORD LOVEJOY SMITH, B.S., Graduate Assistant in Dairy Husbandry (Sept. 1, 1929).
B. S., Oregon State College, 1929. Ag 147; 1116 Bluemont.
- ELBERT CECIL TABOR, A. B., Graduate Assistant in Chemistry (Sept. 1, 1929).
A. B., Kentucky Wesleyan College, 1929. W 30; 1116 Bluemont.
- ETHEL FLORENCE TRUMP, B. S., Graduate Assistant in Institutional Economics (Sept. 1, 1929).
B. S., K. S. A. C., 1929. T 31; 1223 Bluemont.
- MARY WOODWARD, A. B., Graduate Assistant in Zoölogy (Sept. 1, 1929).
A. B., Oklahoma City University, 1929. F 38; 1021 Leavenworth.
- HENRY MONROE BEACHELL, B.S., Graduate Assistant in Agronomy (Feb. 1, 1930).
B. S., University of Nebraska, Feb. 1, 1930. Ag 102; ———.
- JESSIE SARAH STEWART, B.S., Graduate Assistant in Institutional Economics (Jan. 13, 1930).
B. S., K. S. A. C., 1929. T 31; 1613 Fairchild.

GRADUATE RESEARCH ASSISTANTS

- COIT ALFRED SUNESON, B.S., Graduate Research Assistant in Agronomy (1928).
B. S., Montana State College, 1928. Ag 217; 426 Leavenworth.
- GEORGE LAURIN GRAHAM, A. B., Graduate Research Assistant in Parasitology, Department of Zoölogy (Sept. 1, 1928).
A. B., Grand Island College, 1927. F 38; 1116 Bluemont.
- ANNA TESSIE AGAN, B.S., Graduate Research Assistant in Food Economics and Nutrition (Sept. 1, 1929).
B. S., University of Nebraska, 1927. L 16; 2000 Anderson.
- GEORGE CAUTHEN, A. B., Graduate Research Assistant in Parasitology (Sept. 1, 1929).
A. B., Austin College, Sherman, Texas, 1928. F 38; 1116 Bluemont.
- FLORA MARIE DEAL,¹⁰ B.S., Graduate Research Assistant in Institutional Economics (Sept. 1, 1929-Jan. 13, 1930).
B. S., K. S. A. C., 1929. T 31; 1716 Fairchild.
- JOY WILLIAM DULL, B.S., Graduate Research Assistant in Civil Engineering (Sept. 1, 1929).
B. S., Oregon State College, 1925. E 27; 1011 Vattier.
- STELLA MAY HEYWOOD, B.S., Graduate Research Assistant in Household Economics (Sept. 1, 1929).
B. S., K. S. A. C., 1927. T 52; 914 Osage.
- RALPH EDWARD HODGSON, B.S., Graduate Research Assistant in Dairy Husbandry (Sept. 1, 1929).
B. S., University of Wisconsin, 1929. W 151; 1116 Bluemont.
- HARRY LLEWELLYN KENT, JR., B.S., Graduate Research Assistant in Mechanical Engineering (Sept. 1, 1929).
B. S., New Mexico A. and M. College, 1929. E 109; 340 N. 16th.

10. Resigned.

- ROBERT RUSSELL MURPHY, B.S., Graduate Research Assistant in Poultry Husbandry (Sept. 1, 1929).
B. S., Pennsylvania State College, 1929. Ag 252; 814 Laramie.
- PHILIP MYRON NOBLE, B.S., Graduate Research Assistant in Highway Materials (Sept. 1, 1929).
B. S., K. S. A. C., 1926. E 16; 1425 Laramie.
- JAMES LEROY POTTER, B.S., Graduate Research Assistant in Electrical Engineering (Sept. 1, 1929).
B. S., K. S. A. C., 1928. E 30; 1423 Fairchild.
- LOLIE SMITH, B.S., Graduate Research Assistant in Household Economics (Sept. 1, 1929).
B. S., Texas State College for Women, 1916. T 56; 1613 Fairchild.
- JULIA LURENA SOUTHARD, B.S., Graduate Research Assistant in Clothing and Textiles (Sept. 1, 1929).
B. S., University of Missouri, 1926. L 67; 522 N. 14th.
- NELSON JOHN WADE, A.B., Graduate Research Assistant in Mammalogy, Department of Zoölogy (Sept. 1, 1929).
A. B., Kalamazoo College, 1929. F 7; 1201 Bluemont.
- MINOR DAY,¹⁰ B.S., Graduate Research Assistant in Animal Husbandry (Oct. 1, 1929-Feb. 1, 1930).
B. S., Pennsylvania State College, 1928. Ag 24; 1116 Bluemont.
- DWIGHT SEATH, B.S., Graduate Research Assistant in Dairy Husbandry (Oct. 1, 1929).
B. S., Iowa State College, 1926. Ag 155; 1104 Vattier.
- RALPH DALE NICHOLS, M.S., Research Assistant in Agricultural Economics (Dec. 2, 1929).
B. S., K. S. A. C., 1920; M. S., *ibid.*, 1923.
- FELLOWS**
- SAMUEL GREENBERRY KELLY, B.S., Industrial Research Fellow of the Commonwealth of Australia, Department of Entomology (June 1, 1929).
B. S., K. S. A. C., 1929. F 67; 1010 Vattier.
- DALE FRANKLIN KING,¹⁰ M.S., Ikton Industrial Fellow, Department of Chemistry (June 15, 1929-Jan. 15, 1930).
B. S., Oregon State Agricultural College, 1928; M. S., K. S. A. C., 1929.
C 41; 1219 Poyntz.
- HARVEY STAFFORD GERMAN, B.S., Ashgrove Lime and Portland Cement Company Fellow, Department of Applied Mechanics (Sept. 1, 1929).
B. S., K. S. A. C., 1929. E 11; 511 N. Juliette.
- FREDERICK EDWARD GOETZ, B.S.A., Kansas C. R. E. A. Fellow, Department of Agricultural Engineering (Sept. 1, 1929).
B. S. A., University of Saskatchewan, 1929. E 217; 1018 Fremont.
- ROBERT EARL McCORMICK, B.S., Association of Operative Millers Fellow, Department of Milling Industry (Sept. 1, 1929).
B. S., K. S. A. C., 1929. Ag 120; 350 N. 15th.
- HARRY EDWIN SKOOG, B.S., Crop Protection Institute Fellow, Department of Entomology (Nov. 1, 1929).
B. S., K. S. A. C., 1926. F 66; Veterinary Hospital.

10. Resigned.

OTHER OFFICERS

JESSIE MCDOWELL MACHIR, Registrar (1913).

A 29; 1641 Fairchild.

KENNEY LEE FORD, B. S., Alumni Secretary (1928).

B. S., K. S. A. C., 1924.

A 38A; 1516 Leavenworth.

ADRIAN AUGUSTUS HOLTZ, Ph. D., Men's Adviser and Secretary of Young Men's Christian Association (1919); Assistant Professor of Sociology (July 1, 1929).

A. B., Colgate University, 1909; Ph. M., University of Chicago, 1910; B. D., *ibid.*, 1911; Ph. D., *ibid.*, 1914.

A; 520 N. Manhattan.

RUTH MEAD FERTIG, A. B., Secretary of the Young Women's Christian Association (1928).

A. B., Mount Holyoke College, 1925.

L 41; 1723 Leavenworth.

STEPHEN ARNOLD GEAUQUE, Custodian (1918, 1926).

PP 37; 1014 Laramie.

LESTER HENRY DRAYER, Chief Engineer, Heat and Power Department (1916, 1927).

E 3; 531 Moro.

Standing Committees of the Faculty

ADMISSION: Jessie McD. Machir, J. V. Cortelyou, B. L. Remick, Ina Holroyd, J. O. Hamilton, W. H. Andrews, H. L. Ibsen, Geo. A. Dean.

ADVANCED CREDIT: L. D. Bushnell, R. R. Price, H. H. King, J. T. Willard, H. W. Davis, R. R. Dykstra, Gladys Vail (in place of Martha Pittman, on leave), L. F. Payne, M. A. Durland.

ASSIGNMENT: Jessie McD. Machir, A. E. White, Araminta Holman, C. H. Scholer, W. E. Grimes, J. H. Robert, C. V. Williams.

ATHLETIC COUNCIL: H. H. King, F. D. Farrell, M. F. Ahearn, E. L. Holton, R. A. Seaton, R. I. Throckmorton, G. A. Dean.

CALENDAR: Mary P. Van Zile, J. C. Peterson, M. F. Ahearn, H. T. Hill, J. T. Willard, Ina Holroyd, Wm. Lindquist, F. E. Charles.

CATALOGUE: J. V. Cortelyou, J. T. Willard, H. W. Davis.

COMMUNITY CHEST EXECUTIVE: F. L. Parrish, H. T. Hill, W. H. Andrews, Mary P. Van Zile, F. D. Farrell, A. A. Holtz, Ruth Fertig.

CONTROL: I. V. Iles, Albert Dickens, Margaret M. Justin, R. A. Seaton, R. R. Dykstra, Mary P. Van Zile.

EXAMINATIONS: A. E. White, C. W. Colver, R. A. Seaton.

FACULTY LOAN FUND: J. V. Cortelyou, Mary P. Van Zile, R. R. Dykstra, L. E. Call, R. A. Seaton, Jessie McD. Machir.

GRADUATE COUNCIL: J. E. Ackert, L. E. Conrad, L. E. Call, H. H. King, L. D. Bushnell, J. H. Burt, Margaret M. Justin.

MAJOR MUSICAL AND DRAMATIC ENTERTAINMENTS: J. C. Peterson, H. T. Hill, Carl Kipp, Mrs. C. O. Swanson, Wm. Lindquist.

PUBLIC EXERCISES: J. E. Kammeyer, J. V. Cortelyou, H. W. Davis, E. L. Holton, W. H. Andrews, Wm. Lindquist.

REINSTATEMENT: R. I. Throckmorton, Elizabeth Quinlan, W. M. McLeod, J. H. Robert, E. C. Miller (in place of W. T. Stratton, on leave).

RELATION WITH JUNIOR COLLEGES AND ARTS COLLEGES: J. H. Parker, B. H. Fleenor (in place of George Gemmell, on leave), Margaret Chaney, R. R. Dykstra, M. A. Durland, F. L. Parrish.

SCHEDULE OF CLASSES: A. E. White, J. T. Willard, W. T. Stratton, L. E. Conrad, W. E. Grimes, Martha Pittman.

STUDENT AFFAIRS: Mary P. Van Zile, A. A. Holtz, L. E. Conrad, R. I. Throckmorton, A. F. Bowen, Grace E. Derby, Harold Howe.

STUDENT HEALTH: L. E. Conrad, L. D. Bushnell, Mary P. Van Zile, C. M. Siever, M. F. Ahearn.

STUDENT HONORS: J. O. Hamilton, R. W. Conover, B. L. Remick, M. W. Furr.

VOCATIONAL GUIDANCE: Mary P. Van Zile, J. T. Willard, R. A. Seaton, R. R. Dykstra, E. L. Holton, Margaret M. Justin, L. E. Call.

Agricultural Experiment Station

OFFICERS OF THE STATION

F. D. FARRELL, President of the College

ADMINISTRATION—

L. E. CALL, Director
H. R. RHODES, Business Manager
HUGH DURHAM, Assistant to Director

AGRICULTURAL ECONOMICS—

W. E. GRIMES, Farm Organization, in Charge
HAROLD HOWE, Land Economics
R. M. GREEN, Marketing (on sabbatical leave)
W. P. MORTENSON, Marketing
MORRIS EVANS, Farm Organization
J. A. HODGES, Farm Organization
HOMER J. HENNEY, Marketing Live Stock
H. C. LARSEN, Graduate Assistant

AGRICULTURAL ENGINEERING—

F. C. FENTON, in Charge
R. H. DRIFTMIER, Farm Machinery
C. A. LOGAN, General Investigations

AGRONOMY—

R. I. THROCKMORTON, in Charge
S. C. SALMON, Crops
J. H. PARKER, Plant Breeding⁴
A. E. ALDOUS, Pasture Management
F. L. DULEY, Soils
M. C. SEWELL, Soils
A. M. BRUNSON, Corn Breeding⁴
J. W. ZAHNLEY, Crops
H. H. LAUDE, Coöperative Experiments (on sabbatical leave)
H. E. MYERS, Soils
F. L. TIMMONS, Coöperative Experiments
C. O. GRANDFIELD, Alfalfa Investigations⁴
I. K. LANDON, Southeastern Kansas Experimental Fields
R. O. LEWIS, Soil Survey
C. W. BOWER, Field Agent, Corn Breeding⁴
C. E. CREWS, Farm Superintendent
ELISABETH HARLING, Seed Analyst
HARLAND STEVENS, Nursery Foreman⁴
A. G. GOTH, Graduate Assistant
F. B. ALSPACH, Graduate Assistant
C. A. SUNESON, Graduate Research Assistant

ANIMAL HUSBANDRY—

C. W. McCAMPBELL, in Charge
H. L. IBSEN, Animal Genetics
B. M. ANDERSON, Cattle Investigations
H. E. REED, Sheep Investigations
D. L. MACKINTOSH, Horse Investigations
C. E. AUBEL, Swine Investigations
M. A. ALEXANDER, Live Stock

4. In coöperation with the U. S. Department of Agriculture.

O. J. HOPPER, Graduate Assistant
 L. W. DECKER, Graduate Assistant
 MINOR DAY, Graduate Research Assistant

BACTERIOLOGY—

L. D. BUSHNELL, in Charge
 A. C. FAY, Dairy Bacteriology
 P. L. GAINNEY, Soil Bacteriology
 C. A. BRANDLY, Poultry Disease Investigations

BOTANY—

L. E. MELCHERS, Plant Pathology, in Charge⁴
 E. C. MILLER, Plant Physiology
 O. H. ELMER, Plant Pathology
 C. O. JOHNSTON, Cereal Disease Investigations⁴
 HURLEY FELLOWS, Cereal Disease Investigations⁴
 EUNICE KINGSLEY, Graduate Assistant
 F. B. BOSLEY, Graduate Research Assistant

CHEMISTRY—

H. H. KING, in Charge
 J. T. WILLARD, Consulting Chemist
 W. L. LATSHAW, in Charge Analytical Laboratory
 E. L. TAGUE, Protein Investigations
 J. S. HUGHES, Animal Nutrition
 C. J. WHITNAH, Feeding Stuffs Analysis
 J. F. MERRILL, Fertilizer Analysis
 A. T. PERKINS, Soil Investigations

DAIRY HUSBANDRY—

J. B. FITCH, in Charge
 H. W. CAVE, Dairy Production
 W. H. MARTIN, Dairy Manufactures
 H. J. BROOKS, Official Testing
 W. H. RIDDELL, Dairy Production
 W. J. CAULFIELD, Dairy Manufactures
 C. L. SMITH, Graduate Assistant
 D. M. SEATH, Graduate Research Assistant
 R. E. HODGSON, Graduate Research Assistant

ENTOMOLOGY—

G. A. DEAN, in Charge
 RALPH L. PARKER, Apiculture, Fruit Insects
 ROGER C. SMITH, Staple Crop Insect Investigations (on leave)
 R. H. PAINTER, Staple Crop Insect Investigations
 H. R. BRYSON, Staple Crop Insect Investigations
 DONALD A. WILBUR, Staple Crop Insect Investigations

HOME ECONOMICS—

MARGARET M. JUSTIN, in Charge
 MARTHA KRAMER, Food Economics and Nutrition
 MARGARET CHANEY, Food Economics and Nutrition
 ESTHER BRUNER, Clothing and Textiles
 KATHERINE HESS, Clothing and Textiles
 MARY F. TAYLOR, Home Management
 TESSIE AGAN, Graduate Research Assistant
 JULIA SOUTHARD, Graduate Research Assistant
 LOLIE SMITH, Graduate Research Assistant

4. In coöperation with the U. S. Department of Agriculture.

HORTICULTURE—

ALBERT DICKENS, in Charge (on leave)
R. J. BARNETT, Pomology
W. F. PICKETT, Orchard Investigations
L. R. QUINLAN, Landscape Gardening
W. B. BALCH, Floriculture and Vegetable Gardening
ARTHUR MEYER, Graduate Assistant

MILLING INDUSTRY—

C. O. SWANSON, in Charge
EARL B. WORKING, Wheat and Flour Investigations
R. O. PENCE, Milling Technology
C. W. OAKES, Milling
ROBERT E. McCORMICK, Graduate Research Assistant

POULTRY HUSBANDRY—

L. F. PAYNE, in Charge
D. C. WARREN, Genetics
H. M. SCOTT, Poultry Production
A. P. LOOMIS, Superintendent of Poultry Plant
WM. P. ALBRIGHT, Graduate Assistant
R. R. MURPHY, Graduate Research Assistant

VETERINARY MEDICINE—

R. R. DYKSTRA, in Charge
C. W. HOBBS, Field Veterinarian
H. F. LIENHARDT, Pathology
J. P. SCOTT, Blackleg Investigations
C. H. KITSELMAN, Abortion Disease Investigations
HERMAN FARLEY, Shipping Fever Investigations

ZOOLOGY—

R. K. NABOURS, in Charge (on sabbatical leave)
J. E. ACKERT, Parasitology
IVA LARSON, Genetics
G. E. JOHNSON, Injurious Mammals
CHARLES G. DOBROVOLNY, Technician
GEORGE L. GRAHAM, Graduate Research Assistant
GEORGE E. CAUTHEN, Graduate Research Assistant
NELSON J. WADE, Graduate Research Assistant

BRANCH EXPERIMENT STATIONS

FORT HAYS—

L. C. AICHER, Superintendent
E. W. JOHNSON, Forest Nurseryman
A. L. HALLSTED, Dry-land Agriculture Investigations⁴
D. A. SAVAGE, Forage Crop Investigations⁴
A. F. SWANSON, Cereal Crop Investigations⁴

GARDEN CITY—

F. A. WAGNER, Superintendent
R. L. VON TREBRA, Dry-land Agriculture Investigations⁴

COLBY—

E. H. COLES, Superintendent⁴
J. B. KUSKA, Dry-land Agriculture Investigations⁴

TRIBUNE—

T. B. STINSON, Superintendent

4. In coöperation with the U. S. Department of Agriculture.

Engineering Experiment Station

OFFICERS OF THE STATION

F. D. FARRELL, President of the College

ADMINISTRATION—

R. A. SEATON, Director
LOUISE SCHWENSON, Secretary
M. A. DURLAND, Bulletin Editor

AGRICULTURAL ENGINEERING—

F. C. FENTON, in Charge
R. H. DRIFTMIER, Farm Machinery
W. H. SANDERS, Tractors
C. A. LOGAN, General Investigations
FREDERICK GOETZ, Rural Electrification

APPLIED MECHANICS—

C. H. SCHOLER, in Charge.
E. R. DAWLEY, Materials of Construction
W. L. LESHER, Road Materials
L. H. KOENITZER, Road Materials
G. H. RAILSBACK, Road Materials
L. R. ST. JOHN, Road Materials
P. M. NOBLE, Road Materials
S. H. GERMAN, Road Materials

CHEMICAL ENGINEERING—

H. H. KING, in Charge
W. F. BROWN, General Investigations

CIVIL ENGINEERING—

L. E. CONRAD, in Charge
J. W. DULL, General Investigations

ELECTRICAL ENGINEERING—

R. G. KLOEFFLER, in Charge (on leave)
J. L. BRENNEMAN, Acting in Charge
J. L. POTTER, General Investigations

MACHINE DESIGN—

C. E. PEARCE, in Charge.
M. A. DURLAND, General Investigations
G. T. BRANNIGAN, General Investigations
E. H. HAHN, General Investigations

MECHANICAL ENGINEERING—

J. P. CALDERWOOD, in Charge
A. J. MACK, General Investigations
A. O. FLINNER, General Investigations
H. L. KENT, JR., General Investigations

PHYSICS—

J. O. HAMILTON, in Charge
G. E. RABURN, General Investigations

SHOP PRACTICE—

W. W. CARLSON, in Charge
G. A. SELLERS, General Investigations
E. C. GRAHAM, Farm Shop Problems
R. S. SINK, Automotive Engineering
E. C. JONES, Machine Tools
EDWARD GRANT, Foundry Practice

Bureau of Research in Home Economics

OFFICERS OF THE BUREAU

F. D. FARRELL, President of the College
MARGARET M. JUSTIN, Director

CHILD WELFARE AND EUTHENICS—

HELEN WHEELER FORD, in Charge
HELEN SHARP, Public Health

CLOTHING AND TEXTILES—

LILIAN BAKER, in Charge
KATHERINE HESS, Physics of Textiles
ESTHER BRUNER, Chemistry of Textiles
JULIA SOUTHARD, Assistant

FOOD ECONOMICS AND NUTRITION—

MARTHA S. PITTMAN, in Charge
MARTHA KRAMER, Nutrition
MARGARET CHANEY, Applied Nutrition
MYRA POTTER, Food and Nutrition
TESSIE AGAN, Assistant

HOUSEHOLD ECONOMICS—

MARGARET M. JUSTIN, in Charge
MYRTLE GUNSELMAN, Household Management
MARY TAYLOR, Equipment

INSTITUTIONAL ECONOMICS—

BESSIE B. WEST, Institutional Economics
LA VELLE WOOD, Institutional Economics

The Kansas State Agricultural College

HISTORY AND LOCATION

The Kansas State Agricultural College was established under the authorization of an act of congress, approved by Abraham Lincoln, July 2, 1862, the provisions of which were accepted by the state February 3, 1863.

Under the enabling act the College received an endowment of 90,000 acres of land and its leading object as stated by the law is—

“Without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.”

The College was located at Manhattan February 16, 1863, partly in order to receive as a gift the land, building, library and equipment of Bluemont Central College, an institution that was chartered by a group of cultured pioneers, February 9, 1858. The Bluemont College building was erected in 1859.

The Agricultural College opened September 1, 1863, in the Bluemont College building. Most of the work of the College was moved to the present site in 1873. This location is adjacent to Manhattan, a city which has a residential population of ten thousand, and is unsurpassed for wholesomeness of influence by any city in the state.

The fertile valleys of the Kansas and the Blue rivers meet here, and these, with their borders of hilly upland drained by many small wooded streams, create a natural environment which is unusually attractive.

Manhattan is reached by the Union Pacific and Rock Island railways and connecting lines, and the following automobile highways: Midland Trail, Victory Highway, Golden Belt, Oklahoma City-Lincoln, Manhattan-Omaha, and state highways Nos. 13 and 29, and U. S. highways 40, 40N, and 40S. It has motor-bus service between the railway stations and the College, and with cities to the east and to the west. Practically all of the streets are paved, and an ample supply of pure water is provided.

The residents of Manhattan give most cordial support to the College and do all that could be desired to make students feel welcome, and to support them in their legitimate undertakings. The student body responds by habitually orderly and law-abiding conduct.

AIMS AND PURPOSES

The Kansas State Agricultural College has three chief aims: To give to the young men and women of Kansas a high standard of collegiate training in agriculture, engineering, home economics, general science, and veterinary medicine; to investigate through its experiment stations, the agricultural and industrial problems of Kansas; and by means of its extension division, to carry the full benefits of the College to the remotest parts of the state.

In all the collegiate curricula particular pains are taken that each student, in connection with the scientific and technical instruction necessary to his vocation, be given thorough training in fundamental cultural subjects which promote sound thinking and good citizenship. The College aims to turn back to the state the type of citizen who is straight-thinking in all lines and a particularly valuable leader in some definite field of human activity. Its chief aim is the development of intelligent, effective leadership.

Besides the full collegiate course the College offers short courses in many fields of agricultural and industrial activity. These courses do not lead to degrees. Their aim is to give in the shortest possible time the gist of the practical training needed by the efficient artisan.

The second important aim of the Kansas State Agricultural College is, to serve the state by investigating in a scientific manner the state's problems in agriculture and the industries. This work is accomplished through the various agricultural and engineering experiment stations. All investigational work is directly connected with the educational work of the College, so that the students are given the widest opportunity for appreciating the true value of scientific investigation. Many opportunities in the United States Department of Agriculture and in the various experiment stations of the country are thus opened to such students as show interest and skill in investigational work.

In addition to the regular instructional work conducted on the campus, the College realizes its third important aim through the Division of College Extension. This is a highly organized system of agricultural education and service carried directly to the homes of the farmers. The work has been so highly developed within the last few years that the College has come to look upon the whole state as its campus. In addition to the regular staff of the Division of College Extension, many members of the College board of instruction and the staff of the experiment stations give several weeks of each year to this public work among the people of the state.

Buildings and Grounds

The College campus occupies a commanding and attractive site upon an elevation adjoining the western limits of the city of Manhattan, with motor-bus service into town and to the railway stations. The grounds are tastefully laid out according to the designs of a landscape architect, and are extensively planted with a great variety of beautiful and interesting trees, arranged in picturesque groups, masses, and border plantings, varied by banks of shrubbery and interspersed with extensive lawns, gardens, and experimental fields. Broad, well-shaped, macadamized avenues lead to all parts of the grounds. Cement walks connect the buildings with one another and with the entrances. Including the campus of 146.6 acres, the College owns 1,420.3 acres of land at Manhattan, valued at \$413,093. Outside the campus proper, all of the land is devoted to educational and experimental work in agriculture. Within the College grounds, much of the space not occupied by buildings and needed for drives and ornamental plantings is devoted to orchards, forest and fruit nurseries, vineyards, and gardens.

The more important buildings of the College are harmoniously grouped and are constructed of limestone obtained from the College quarries. These buildings are listed below, and have a total value of \$2,634,860.

ANDERSON HALL. Erected, 1879, 1883, and 1885; cost, \$79,000; dimensions, 152 x 250 feet; two stories and basement. Contains the offices of administration of the College, a social center hall, the College post office, offices of the Division of College Extension and of the Department of Student Health, and offices and classrooms of the Departments of Applied Art, Economics, English, Mathematics, and Modern Languages. It also contains the alumni and stadium offices.

AUDITORIUM. Erected, 1904; cost, \$40,000; dimensions, 113 x 125 feet. Has a large stage with drop curtain and scenery. Seating capacity, 2,300. Contains also the offices and music rooms of the Department of Music.

CALVIN HALL. Erected, 1908; cost, \$70,000; dimensions, 92 x 175 feet; two stories and basement. The first-floor and basement are occupied by the laboratories, classrooms, and offices of the Departments of Food Economics and Nutrition, and Household Economics; the second floor is occupied by the laboratories, classrooms, and offices of the Department of Clothing and Textiles.

CHEMISTRY ANNEX No. 1. Erected, 1876; cost, \$8,000; dimensions, 35 x 110 feet and 46 x 175 feet, in the form of a cross. Originally erected as a chemical laboratory. Reconstructed at a cost of \$5,000 after fire in 1900. The building was used from 1902 to 1911 as a women's gymnasium; since 1911, used by the Department of Chemistry.

CHEMISTRY ANNEX No. 2. Erected, 1904; cost, \$15,000; dimensions, 72 x 103 feet; one story and basement. Occupied by the Department of Dairy Husbandry from the time of its erection till the fall of 1923, since which time it has been used by the Department of Chemistry.

DENISON HALL. Erected, 1902; cost, \$70,000; dimensions, 96 x 166 feet; two stories and basement. Occupied throughout by the laboratories, classrooms and offices of the Departments of Chemistry and Physics.

EDUCATION HALL. Erected, 1900; cost, \$25,000; dimensions, 90 x 95 feet; two stories and basement. Occupies original site of the president's house, destroyed by lightning in 1896. Formerly housed the Departments of Agronomy and Animal Husbandry, later the Vocational School. The abolition of the latter brought change of name in the summer of 1924. Contains classrooms and offices of the Departments of Education and Public Speaking and offices of the custodian.

ENGINEERING HALL. Erected, east wing, 1909; main portion, 1920. Cost, \$270,000. Dimensions: Main portion, 60 x 236 feet; east wing, 113 x 200 feet. Three stories in height, but much of the east wing is built on the gallery plan rather than by complete floor separation into different stories. This building contains the general offices and library of the Division of Engineering, and the offices, drafting rooms, and laboratories of the Departments of Agricultural Engineering, Applied Mechanics, Architecture, Civil Engineering, Electrical Engineering, Machine Design, Mathematics, and Mechanical Engineering.

ENGINEERING SHOPS. These consist of several connected structures, erected 1875, 1890, 1900, and 1905. The original building, now used as the woodworking shop, was erected in 1875; a series of additions having later been successively made, the present group is the result. Cost of the group, \$35,000. A portion of the building is two stories high. On the upper floor, which has a floor area of 9,260 square feet, are the classrooms, drafting rooms, pattern storage room and offices of the Departments of Machine Design and Shop Practice. The woodworking shop (35 x 219 feet) is equipped with bench tools and woodworking machinery. Adjoining is the machine shop, amply equipped with modern machine tools. The blacksmith shop (50 x 100 feet) contains 30 forges of modern type, connected with power blast and down-draft exhaust. The iron foundry (27 x 100 feet) and brass foundry (24 x 34 feet) are well supplied with the necessary equipment. The wash and locker room contains 250 steel lockers. A general supply room (22 x 24 feet) is conveniently located for storing small supplies. One room is fitted up as a model farm shop and is used in the training of teachers for rural communities in accordance with the Smith-Hughes requirements.

FAIRCHILD HALL. Erected, 1894; enlarged, 1903; remodeled, 1927; cost, \$91,750; dimensions, 100 x 140 feet; two stories, basement, and attic. Occupied by offices, classrooms, and laboratories of the Departments of Entomology, Zoölogy, and History and Government. The museums of natural history also are housed here. For many years, till the fall of 1927, the major part of this building was occupied by the College library.

FARM BARN. Erected, 1913; cost, \$25,000; dimensions, 80 x 160 feet; two stories and basement. Consists of three sections, arranged like the letter H, and a glazed tile silo of 200 tons capacity. The west wing contains nine box stalls and twenty-six single stalls, equipped with sanitary feed mangers and racks, and is designed especially for the housing of horses. The east wing contains twelve box stalls and thirty single stalls for the breeding cattle and the show herd. The central section has an office, feed rooms, a washing floor, and a basement containing the engine room. The loft, to which a driveway leads, has storage space for ten carloads of grain and 100 tons of hay and straw and contains the grinding apparatus. The barn is used by the Department of Animal Husbandry.

FARM MACHINERY HALL. Erected, 1873; cost, \$11,250; dimensions, 46 x 95 feet; two stories. This was the first building erected on the present campus. It was originally designed as a College barn, and first used for that purpose. It has been used as a general College building, and successively by the Department of Botany and the Department of Veterinary Medicine. The first floor, a large hall, was used for many years as an armory by the Department of Military Science. The entire building is now used by the Department of Agricultural Engineering and contains modern types of farm machinery.

HEAT, POWER, AND SERVICE BUILDING. Erected, 1928; cost, with plant equipment, \$375,000; dimensions, 122 x 210 feet; three stories high. The building houses the Departments of Heat and Power, and Building and Repair, and the offices of the custodian and superintendent of maintenance. The heat and power plant furnishes steam for the heating system and power and light for the entire campus. The plant has a rated boiler capacity of 1,900 horsepower and an engine capacity of 1,125 kilowatts. A complete system of underground tunnels connects the main buildings and through these tunnels are carried the steam and electric energy to the different parts of the campus.

HORTICULTURE BARN. Erected, 1917; cost, \$1,500; dimensions, 38 x 55 feet. Two stories, first story stone, second frame. This building is located one mile west of the College campus.

HORTICULTURE HALL. Erected, 1907; cost, \$50,000; dimensions, 72 x 116 feet; two stories and basement. This building is used by the departments of Botany and Plant Pathology, and Horticulture. Its classrooms, laboratories, museums, and equipment are modern and ample.

ILLUSTRATIONS HALL. Erected, 1876; cost, \$4,000; dimensions, 32 x 80 feet; one story and basement. At an early period used as a horticultural hall; later the headquarters for general College repairs; since the summer of 1919 used by the Department of Illustrations.

INFIRMARY. Erected, previous to 1871; rebuilt, 1919; dimensions, 34 x 34 feet; two stories. Originally a farm house, later used as dwelling by the professor of agriculture and more recently by the custodian; has served its present use since 1919. Contains separate wards for men and women, five rooms in each ward.

KEDZIE HALL. Erected, 1897; cost, \$16,000; dimensions, 70 x 84 feet; two stories and basement. Used from its erection till 1908 by the Departments of Domestic Science and Domestic Art. Basement occupied by the printing plant; first floor taken up by the Department of Industrial Journalism and Printing; second floor divided into general class rooms and offices used by the Department of English.

LIBRARY. Erected, 1926; cost, \$250,000; three stories and basement. The floor plan is of "T" shape, with dimensions of 183 x 46 feet and 107 x 64 feet. Three large reading rooms are provided, each 176 x 40 feet, the class reserve reading room being in the basement, the periodical room on the first floor, and the main reading room on the second floor extending through the second and third stories. The remainder of the building is devoted to stack rooms, seminar rooms, offices, working quarters, and an exhibition gallery.

MAINTENANCE BUILDING. Erected, 1888; cost \$5,000; dimensions, 30 x 30 feet; one story and basement. Used for years by Department of Horticulture and Entomology, later by the state dairy commissioner and assistants.

MEMORIAL STADIUM. West wing erected, 1922; east wing erected, 1924; cost of portions now completed, \$260,000; cost of entire structure when completed as planned, \$400,000. The seating decks are constructed of reinforced concrete. The end walls and the east wall are built of limestone; the south entrance and wall and the west wall will be of the same material. Capacity of the seating decks now standing, 15,000; capacity of the completed structure will be 22,500. The stadium is being built as a memorial to alumni, students, former students, and faculty of the College who participated in the World War. The cost is met entirely from funds raised by popular subscription.

NICHOLS GYMNASIUM. Erected, 1911; cost, \$122,000; dimensions, 102 x 221 feet; three stories and basement. The building consists of a main section and two wings. The main section (85 x 141 feet), consisting of two stories and a basement, is used as a men's gymnasium and armory, and contains a running track, sixteen laps to the mile. The east half of the basement of the main section contains a swimming pool, baths, rest rooms, etc., for women; the west half contains a swimming pool and baths for men. The east wing (40 x 102 feet) contains the women's gymnasium, classrooms and offices of the Department of Military Science, and several literary society halls. The west wing (40 x 102 feet) contains the offices of the director of athletics and physical education, a large locker room for men, several literary society halls, and the radio broadcasting studio. This building is constructed on the old armory-castle type and is modern in every respect.

PRESIDENT'S RESIDENCE. Erected, 1924; cost, \$31,000; three stories and basement; built from funds bequeathed by Mehitable Calef Copenhagen Wilson in memory of her husband, Davies Wilson.

THOMPSON HALL. Erected, 1921; cost, \$125,000; dimensions, 138 x 60 feet and 38 x 24 feet; two stories and basement. Basement occupied by receiving and storage rooms for the cafeteria, dishwashing room, refrigeration machinery room, pipe room, locker rooms, and bakery. The first floor is devoted to the cafeteria, including kitchen, dining room, two offices, and lobbies. On the second floor are a tea room, with a main dining room, kitchen, three alcoves, receiving room, serving room, lobby and coat room, office, two classrooms, and the household-management laboratory.

VAN ZILE HALL. Erected, 1926; cost, \$175,000; dimensions, 169 x 85 feet; three stories and basement. The building contains bedrooms, dining hall, kitchen facilities, and social quarters for 125 women students, besides rooms for guests, matron, and social director.

VETERINARY HALL. Erected, 1908; cost, \$70,000; dimensions, 133 x 155 feet; two stories and basement. Occupied by the laboratories, demonstration and dissecting rooms, classrooms, and offices of the Departments of Anatomy and Physiology, Bacteriology, Pathology, and Vaccine Laboratories, and by the offices of the dean of the Division of Veterinary Medicine.

VETERINARY HOSPITAL. Erected, 1923. Contract price, \$118,000. The building is of stone and of fireproof construction throughout, with general dimensions of 145 x 146 feet. It consists of a central portion and two wings, and is two stories and an attic in height, with a basement under one of the wings. The building is used exclusively for the teaching of the practical phases of veterinary medicine and surgery. It is equipped for housing sick animals of all species, such as horses, cattle, sheep, swine, poultry, dogs, and cats. Its equipment includes an hydraulic elevator, large and small animal operating tables, cattle and horse stocks, dog kennels, operating rooms, laboratories for the diagnosis of animal diseases, etc. In addition there are well-equipped rooms for senior students in veterinary medicine, together with a reception room for visitors, and offices for members of the veterinary clinical teaching staff.

WATERS HALL. East wing erected, 1912; west wing erected, 1923; cost of portions now completed, \$500,000; cost of building when developed and completed as planned, \$1,000,000. Each of the wings now completed is 80 feet wide and 169 feet long and four stories high. An 80 x 50 foot one-story annex on the east wing serves as a meats laboratory, and a similar annex on the west wing serves as a creamery. A stock-judging pavilion (45 x 100 feet) is located between the two wings and is divided into two large stock-judging rooms, each having a seating capacity of 475. The two wings and the stock-judging pavilion are used by the Departments of Agricultural Economics, Agronomy, Animal Husbandry, Dairy Husbandry, Milling Industry, Poultry Husbandry, and the general offices of the Agricultural Experiment Station and of the Division of Agriculture. The equipment includes an electrically operated flour mill capable of manufacturing 75 barrels of flour a day, a modern creamery, a well-equipped meats laboratory, and modern laboratories for instructional and investigative work in seed testing, market milk, soils, field crops, farm organization, grain grading, etc.

In addition to the substantial stone buildings mentioned above, the College has a number of other buildings, among them the following:

AUTO MECHANICS LABORATORIES. Erected, 1918; moved to the present location in 1927; dimensions, 30 x 75 feet; two stories high. This building is part of the structure erected for the S. A. T. C. as mess hall (barracks No. 5). The building is occupied by the repair and ignition sections of the auto mechanics laboratories.

EXPERIMENT STATION BUILDING. Erected, 1918; dimensions, 40 x 176 feet; two stories. Built as barracks No. 4 for the S. A. T. C., now used by the Agricultural Experiment Station.

GENERAL-PURPOSE BUILDING. Erected, 1918; dimensions, 40 x 80 feet; two stories. Built as barracks No. 6 for the S. A. T. C. This building is used by

the Department of Electrical Engineering and as a hospital for patients with contagious diseases.

GREENHOUSE. Erected, 1909; cost, \$7,000; dimensions, 114 x 150 feet. Contains six sections used by the various departments as follows: Horticulture, three; Botany, one; Agronomy, one; Entomology and Zoölogy, one.

NEW GREENHOUSE. Erected, 1926; cost, \$10,000; dimensions, 29 x 100; occupied by the Departments of Agronomy and Botany.

PLANT MUSEUM. Erected, 1907; cost, \$2,500; dimensions, 20 x 100 feet. Used by the Department of Horticulture. Contains a large number of rare growing plants, including many subtropical species.

SERUM BARN. Erected, 1914; cost, \$3,000; dimensions, 92 x 96 feet; contains 30 pens, each 8 x 12 feet, and two feed rooms of the same dimensions. This is a frame and cement building situated three-quarters of a mile north of the College campus.

SERUM PLANT. Erected, 1914; cost, \$7,000; constructed of brick; dimensions, 20 x 60 feet; two stories.

SHEEP BARN. Erected, 1927; cost, \$10,000; dimensions: main structure, 43 x 51 feet, and wings, 32 x 90 feet. Situated north of the main campus.

TRACTION ENGINE LABORATORIES. Erected, 1918. These are two frame buildings on concrete foundations, built originally as barracks Nos. 2 and 3 for the S. A. T. C.

PUMP HOUSE. The waterworks pump house contains electric motor-driven pumps of an aggregate capacity of 600 gallons per minute. Cast-iron water mains distribute this over the campus, and a steel tank of 110,000 gallons capacity supported on a steel tower provides a reserve supply.

The College Library

The general College Library consists of all books belonging to the College, including the library of the Agricultural Experiment Station, which is incorporated with it. On June 30, 1929, the Library contained 88,800 bound volumes, besides much unbound material. It receives currently about 1,200 serial publications. As a depository the Library receives the documents and other publications of the United States government. The books are classified according to the Dewey system and are indexed in a dictionary card catalogue.

The Library is primarily for free reference use, but the privilege of drawing books is accorded to all those connected with the College as registered students or as members of the faculty. Books not specially reserved may be drawn for home use for two weeks. All books are subject to recall at any time.

General reference books, books reserved for classes, general periodicals, and certain other groups of books are to be consulted only in the reading rooms. They may not be loaned from the Library except when the reading rooms are closed. They must then be returned to the Library by the time it next reopens. Any violation of the regulations of the Library subjects the offender to a fine, or to a withdrawal of library privileges, or to both, according to the gravity of the offense. More serious offenses, such as mutilation or theft of books or periodicals, are considered just causes for suspension or expulsion of the offender, who is also required to make good the loss incurred.

READING ROOMS. Three reading rooms are maintained in connection with the Library: The general reference room, containing encyclopedias, dictionaries, atlases, bibliographies, and general reference books; the special reference room, containing books reserved for classes; and the periodical room, containing current magazines and the important daily and weekly Kansas newspapers. These rooms are freely open to the student and to the public for purposes of reading and study.

DIVISIONAL LIBRARIES. Divisional and departmental collections are deposited in certain College buildings apart from the main Library. These collections are for the special convenience of the instructors and students of the departments concerned. They are under the direction of the librarian and are accessible to all students at regular hours.

Student Health Service

The Department of Student Health was established in order to maintain good health among the students of the College. Two doctors give their entire time and three doctors devote part time to this service. The services of the College physicians are free, but the student may employ, at his own expense, any physician he may desire. Four nurses are employed on full time and the matron of the hospital also devotes all her time to student health needs.

The offices of the department are in Anderson Hall and are open to students each school day from 7:45 a. m. to 5 p. m. It is expected that students who have need of medical services and are able to walk will go to the office, unless there is a possibility that they have a contagious disease. Those who are unable to walk to the physician's office, or who have reason to believe that they have some contagion, should go to the hospital at once.

The College hospital is ready to receive students any hour of the day or night. Free hospital service is given for three days in each case of acute sickness except smallpox. After that period a charge of one dollar a day is made. Smallpox cases are not handled at the hospital except in cases where the disease has been contracted after proper vaccination against it. Patients are admitted to the hospital only on recommendation of the head of the College medical corps. Hospital service does not include major surgical cases, such as appendicitis, hernia, etc. If such a case develops while the student is in the hospital, he will be transferred, at his own expense, to a hospital of his choice. Treatment of chronic cases by the College physicians cannot be guaranteed. However, when practicable, treatment of such cases may be undertaken on the same basis as acute cases. Fractures and dislocations of a serious nature are not treated, but minor cases may be treated at the option of the head physician. Students with fractures are admitted to the hospital.

Standard hospital nursing service is furnished free, but the student may employ, at his own expense, a private nurse at any time he desires to do so. A private nurse must obey the same rules that the College nurses are expected to follow. No ambulance service is maintained by the College, as in practically all cases of beginning sickness patients are able to ride to the hospital in an ordinary conveyance.

In order to help control contagious diseases, a student absent from classes because of illness must, before he returns to his classes, secure from the College physician a return card showing him to be free from all such diseases.

Students have the privilege of consulting any of the College physicians at any time on any question of personal hygiene of whatsoever nature.

The health office observes the same vacations and holidays as the rest of the College. Students admitted to the hospital or remaining in the hospital at a time for which the sick-benefit fee has not been paid or during Christmas holidays, will be charged the actual cost of service.

The department owns equipment valued at \$9,413.

The student health service is maintained by the sick-benefit fee fund. For data concerning this fee see the section on expenses, under General Information.

Requirements for Admission

The entrance requirements of the College are made broad and flexible, only fundamental subjects being definitely required. Those requirements are made upon the supposition that high schools are local institutions in which the courses should be adapted to the needs of the individual localities, and that College entrance requirements should be such as to take the output of the high schools, rather than to determine the nature of the work offered in them.

Any person who has completed a four-year course of study in any high school or academy accredited by the State Board of Education will be admitted to the freshman class. The student should have sent in advance a certificate showing his high-school credits.

In order to carry the several curricula successfully the following subjects must have been completed:

<i>Curricula</i>	<i>Units of fixed entrance requirements</i>
Agriculture (4 years)	English, 3; science, 1; algebra, 1; geometry, 1
Agricultural Administration (4 years).....	Same as for Agriculture
Agricultural Engineering (4 years).....	Same as for Architecture
Animal Husbandry and Veterinary Medicine (6 years)	Same as for Agriculture
Architecture (4 years)	English, 3; science, 1; algebra, 1½; geometry, 1½
Architectural Engineering (4 years).....	Same as for Architecture
Chemical Engineering (4 years)	Same as for Architecture
Civil Engineering (4 years).....	Same as for Architecture
Commerce (4 years)	Same as for General Science
Electrical Engineering (4 years)	Same as for Architecture
Flour-mill Engineering (4 years).....	Same as for Architecture
General Science (4 years).....	English, 3; science, 1; algebra, 1½; geometry, 1
General Science and Veterinary Medicine (6 years)	Same as for General Science
Home Economics (4 years)	English, 3; science, 1; algebra, 1; geometry, 1
Home Economics, with stress upon Art (4 years)	Same as for Home Economics
Home Economics and Nursing (5 years).....	Same as for Home Economics
Industrial Chemistry (4 years).....	Same as for Architecture.
Industrial Journalism (4 years).....	Same as for Agriculture
Landscape Architecture (4 years).....	Same as for Architecture
Landscape Gardening (4 years).....	Same as for Agriculture
Mechanical Engineering (4 years).....	Same as for Architecture
Physical Education for Men (4 years).....	Same as for Agriculture
Physical Education for Women (4 years).....	Same as for Agriculture
Piano (4 years)	English, 3; science, 1; algebra, 1; geometry, 1
Public-school Music (4 years).....	Same as for Piano
Public-school Band and Orchestra (4 years)...	Same as for Piano
Veterinary Medicine (4 years).....	Same as for Agriculture
Violin (4 years)	Same as for Piano
Voice (4 years)	Same as for Piano

These curricula were formulated on the assumption that the high-school subjects named will be offered for admission. Those graduates of accredited high schools who in accordance with a state law are admitted as freshmen without all of the high-school subjects that are prerequisite to carrying the curricula chosen will be assigned to the necessary subjects and allowed College credit toward graduation in them, as follows: Algebra III, two semester hours, and Solid Geometry, two semester hours. No other subjects are taught in classes at the College with a view to providing the high-school work necessary for successfully carrying certain curricula. Students without high-school credit in one unit of Algebra and one unit of Geometry are not permitted to register for an engineering curriculum, the curriculum in general science, or the curriculum in commerce. High-school subjects may be taken by correspondence in the department of home study.

Persons who are not graduates of accredited high schools or academies will be admitted to the freshman class if they have completed fifteen acceptable units of high-school work, including the fixed requirements. (A unit is defined to be the work in an accredited high school or academy in five recitation periods a week for one school year.) One who offers fourteen such units will be admitted as a freshman, but will be conditioned in one unit. Such deficiency (whether fixed or optional requirement) must be made up the first year that the student is in attendance. If the optional requirement is not made up within that time College credits are taken in its place.

Subjects acceptable for entrance, arranged in eight groups, together with the number of units that may be offered, are shown as follows:

GROUP I—ENGLISH.....	Three or four units
GROUP II	Latin, one, two, three, or four units
FOREIGN	Greek, one, two, three, or four units
LANGUAGES	German, one, two, three, or four units
	French, one, two, three, or four units
	Spanish, one, two, three, or four units
GROUP III	Elementary algebra, one or one and one-half units
MATHEMATICS	Plane geometry, one unit
	Solid geometry, one-half unit
	Plane trigonometry, one-half unit
	Advanced algebra, one-half unit
GROUP IV	Physical geography, one-half or one unit
NATURAL	*Physics, one unit
SCIENCES	*Chemistry, one unit
	*Botany, one-half or one unit
	*Zoölogy, one-half or one unit
	*Physiology, one-half or one unit
	*General biology, one-half or one unit
	*General Science, one-half or one unit
GROUP V	Greek and Roman history, one unit
HISTORY AND	Medieval and modern history, one unit
SOCIAL SCIENCES	English history, one unit
	American history, one unit
	Economics, one-half or one unit
	Sociology, one-half unit
	Civics, one-half or one unit
	Constitution, one-half unit
GROUP VI	Psychology, one-half unit
NORMAL TRAINING	Methods and management, one-half unit
SUBJECTS	Higher arithmetic, one-half unit
	Reviews
	Grammar, geography, and reading, twelve } one unit
	weeks each, or
	Two of these, eighteen weeks each
	*Music, one unit
GROUP VII	*Agriculture, one-half, one, two, three, or four units
INDUSTRIAL	*Drawing, one-half or one unit
SUBJECTS	*Woodwork, one-half, one, or two units
	*Forging, one-half or one unit
	*Printing, one-half, one, or two units
	*Domestic science, one-half, one, or two units
	*Domestic art, one-half, one, or two units
GROUP VIII	Commercial law, one-half unit
COMMERCIAL	Commercial geography, one-half unit
SUBJECTS	Bookkeeping, one-half or one unit
	*Stenography and typewriting, one-half or one unit each

DEFICIENCIES

All entrance deficiencies must be made up before the beginning of the sophomore year. Entrance requirements in Elementary Algebra (one unit) and Plane Geometry (one unit) may be made up by correspondence; Advanced Algebra and Solid Geometry may be taken for college credit in classes provided by the College.

No student who fails or is conditioned or found deficient in any subject, or

* In courses consisting of laboratory work wholly or in part, two periods of laboratory work are to be considered the equivalent of one recitation period.

whose average grade in all subjects falls below B in any semester, is allowed to carry extra work during the succeeding semester.

No student is considered a candidate for graduation in the spring who is deficient more than nine semester hours in addition to his regular assignment at the beginning of the first semester.

ADVANCED CREDIT

At the discretion of the president, students who present certificates showing credits for college work done in other acceptable institutions are allowed hour-for-hour credit on courses in this College in so far as they may be directly applied or can be accepted as substitutes or electives. Candidates must present to the Committee on Advanced Credit their high-school and college credits certified to by the proper authorities. It is requested, also, that a *college catalogue covering the period of attendance be furnished with college credentials*. In cases in which it is impossible for one to furnish an acceptable certificate concerning work upon which advanced credit is asked, examinations are given, if the subject has been studied under competent instruction.

It is strongly urged that persons entering with advanced credit send to the registrar, at least two or three weeks in advance of entrance, certified transcripts of their work at other colleges. Transcripts received after September 1, 1930, cannot be acted upon completely before the opening days of College.

Advanced credit in certain subjects of freshman rank may be secured by examination on account of surplus high-school units over and above the fifteen acceptable units required for admission. The registrar, on request, will furnish a statement of such surplus units to the Committee on Advanced Credit and that committee will conduct the examination within the first thirty days of the semester. Examinations, however, which affect the assignment of the first semester will be given the first Saturday of the first semester. After the expiration of the thirty-day period such examinations are authorized by the student's dean.

If the work of the student shows that advanced credits have been wrongly allowed, such credits will be revoked.

ADMISSION

ADMISSION BY EXAMINATION. Examinations for admission will be held at the College on Monday, September 8, 1930; Monday, January 26, 1931; and Saturday, May 29, 1931. These examinations are given for the benefit of those students who need some additional high-school credits to qualify them for entrance to the freshman class. Applications for these examinations should be made in advance to the registrar.

ADMISSION BY CERTIFICATE. The applicant is required to submit to the Committee on Admission a certificate of the high-school or academy credit properly certified to by the authorities of the institution in which the work was done. Blanks will be furnished by the College for this purpose.

It is greatly to the advantage of the prospective student to see to it that this blank, properly filled out and *indicating the curriculum he wishes to take here*, be sent to the College as soon as possible after graduation. A permit to register will then be sent him by the registrar before the first of September. This permit *cannot be sent* unless the prospective student sees that the information as to curriculum is sent to the registrar. This will greatly facilitate the work of entrance. The student will present this permit at the registration room in Nichols Gymnasium, and will not be compelled to wait for his turn to meet the Committee on Admission. High-school transcripts received after September 1, 1930, cannot be acted upon before the opening days of College.

LATE ASSIGNMENT

A considerable amount of extra work and a great deal of confusion is caused by the neglect of students to enroll at the time set for that purpose, and a fee of \$5 will be charged those who are assigned after the time fixed for the close of registration.

SPECIAL STUDENTS

In recognition of the fact that experience and maturity tend to compensate, in a measure at least, for lack of scholastic attainment, the College admits as special students those who are twenty-one years of age or older, without requiring them to meet the regular entrance requirements, provided (1) they show good reason for not taking a regular course; (2) they be assigned only to such work as they are qualified to carry successfully; (3) they do superior work in the subjects assigned. The age limit is not applied to special students of music.

A special student is assigned by the dean of the division in which occurs the major subjects to be pursued.

Special students are subject to all the general regulations and requirements of regular students, such as assignments to physical education and military training.

KANSAS HIGH SCHOOLS AND ACADEMIES IN ACCREDITED RELATIONS WITH THE COLLEGE

(Candidates admitted without examination)

Abbyville	Baldwin	Burdett
Abilene	Bancroft	Burdick
Ada	Barclay	Diamond Valley H. S.
Adams	Barnard	Burlingame
Admire	Barnes	Burlington
Agenda	Basehor	Burns
Agra	Bavaria	Burr Oak
Alden	Baxter Springs	Burrton
Alexander	Bazine	Bushong
Allen	Beattie	Bushton
Alma	Beeler	Byers
Almena	Bellefont	Caldwell
Altamont	Windthorst H. S.	Cambridge
Labette Co. Com.	Belle Plaine	Caneiro
Alta Vista	Belleville	Caney
Alton	Belmont	Canton
Altoona	Beloit	Carbondale
Americus	Beloit H. S.	Cassoday
Andale	St. John's H. S.	Castleton
Andover	Belpre	Cawker City
Anthony	Belvue	Cedar
Anthony, H. S.	Bendena	Cedar Point
Spring Twp.	Benedict	Cedarvale
Antrim	Bennington	Centerview
St. John P. O.	Bentley	Centralia
Appanoose	Benton	Chanute
Pomona P. O.	Bern	Chapman
Arcadia	Berryton	Dickinson Co. Com.
Argonia	Beverly	Chase
Arkansas City	Bird City	Chautauqua
Arlington	Bison	Cheney
Arma	Blaine	Cherokee
Arnold	Bloom	Crawford Co. Com.
Asherville	Blue Mound	Cherryvale
Ashland	Blue Rapids	Chetopa
Assaria	Bluff City	Cimarron
Atchison	Bogue	Circleville
Atchison H. S.	Bonner Springs	Claffin
St. Benedict's College	Brewster	Clay Center
Academy	Brewster H. S.	Clayton
Mt. St. Scholastica	Brownville Con. H. S.	Clearwater
Academy	Bronson	Cleburne
Athens	Brookville	Clements
Glen Elder P. O.	Brownell	Clifton
Athol	Brownville	Climax
Atlanta	Brewster P. O.	Clyde
Attica	Bucklin	Coats
Atwood	Bucyrus	Cockerill
Auburn	Bucyrus H. S.	Mulberry P. O.
Augusta	Wea H. S.	Codell
Aurora	Buffalo	Coffeyville
Axtell	Buhler	Colby
Axtell H. S.	Bunkerhill	Coldwater
St. Michael's H. S.	Burden	Collyer

- Colony
 Columbus
 Cherokee Co. Com.
 Concordia
 Concordia H. S.
 Nazareth H. S.
 Conway Springs
 Coolidge
 Copeland
 Corning
 Cottonwood Falls
 Chase Co. Com.
 Council Grove
 Courtland
 Covert
 Coyville
 Cuba
 Cullison
 Culver
 Cunningham
 Deerfield
 Delavan
 Delia
 Delphos
 Denison
 Dennis
 Densmore
 Denton
 Derby
 De Soto
 Dexter
 Dighton
 Lane Co. Com.
 Dodge City
 Dodge City H. S.
 St. Marys of the Plains
 Academy
 Doniphan
 Dorrance
 Douglass
 Dover
 Downs
 Dresden
 Dunlap
 Durham
 Dwight
 Easton
 Edgerton
 Edmond
 Edna
 Edson
 Edwardsville
 Effingham
 Atchison Co. Com.
 El Dorado
 Elgin
 Elk City
 Elk Falls
 Elkhart
 Ellinwood
 Ellis
 Ellsworth
 Elmdale
 Elsmore
 Elwood
 Emmett
 Emporia
 Englewood
 Ensign
 Enterprise
 Erie
 Esbon
 Eskridge
 Eudora
 Eureka
 Everest
 Fairview
 Fall River
 Falun
 Fellsburg
- Florence
 Fontana
 Osage Twp.
 Ford
 Formoso
 Fort Scott
 Fostoria
 Fowler
 Frankfort
 Franklin
 Fredonia
 Frontenac
 Fulton
 Galena
 Galesburg
 Galva
 Garden City
 Garden Plain
 Gardner
 Garfield
 Garnett
 Garrison
 Gaylord
 Gem
 Geneseo
 Geneva
 Geuda Springs
 Girard
 Glasco
 Glendale
 Brookville P. O.
 Glen Elder
 Goddard
 Goessel
 Goff
 Goodland
 Sherman Co. Com.
 Gorham
 Gorham H. S.
 St. Mary's H. S.
 Gove
 Grainfield
 Great Bend
 Great Bend H. S.
 Immaculate Conception
 Greeley
 Green
 Greenleaf
 Greensburg
 Grenola
 Gridley
 Grinnell
 Gypsum
 Haddam
 Halstead
 Hamilton
 Hamlin
 Hanover
 Hanston
 Hardtner
 Harlan
 Harper
 Hartford
 Harveyville
 Havana
 Haven
 Havensville
 Haviland
 Haviland R. H. S.
 Friends' Academy
 Hays
 Hays H. S.
 Girls Catholic H. S.
 Catholic College Academy
 Hazelton
 Healy
 Hepler
 Herington
 Herndon
- Hesston
 Hesston College Academy
 Hiawatha
 Highland
 Highland Park
 Topeka P. O.
 Hill City
 Hillsboro
 Hillsboro H. S.
 Tabor College Academy
 Hoisington
 Holcomb
 Hollenberg
 Holton
 Holyrood
 Hope
 Horton
 Horton H. S.
 St. Leo's H. S.
 Howard
 Hoxie
 Sheridan Co. Com.
 Hoyt
 Hudson
 Hugoton
 Stevens Co. Com.
 Humboldt
 Hunter
 Hutchinson
 Hutchinson H. S.
 Bressee College Academy
 St. Teresa Academy
 Independence
 Ingalls
 Inman
 Iola
 Ionia
 Irving
 Isabel
 Jamestown
 Jarbalo
 Jennings
 Jetmore
 Jewell City
 Johnson
 Stanton Co. Com.
 Junction City
 Junction City H. S.
 St. Xavier's H. S.
 Kackley
 Kanopolis
 Kanorado
 Kansas City
 Argentine H. S.
 Catholic H. S.
 K. C. Univ. Academy
 Pembroke School
 Rosedale
 State School for Blind
 Sumner H. S.
 Welborn H. S.
 Western Univ. Academy
 Wyandotte H. S.
 Keats
 Kensington
 Kincaid
 Kingman
 Kingsdown
 Kinsley
 Kiowa
 Kipp
 Kirwin
 Kismet
 La Crosse
 La Cygne
 Lafontaine
 La Harpe
 Lake City
 Lakin
 Lane

- Langdon
Lansing
Larned
 Larned H. S.
 Zook H. S.
Latham
Lawrence
 Haskell Institute
 Liberty Memorial H. S.
 Oread Training School
Leavenworth
 Immaculate Conception
 Leavenworth H. S.
 St. Mary's Academy
Lebanon
Lebo
Lecompton
Lehigh
Lenora
Leon
Leona
Leonardville
Leoti
 Wichita Co. Com.
Leoville
Le Roy
Levant
Lewis
Liberal
Lillis
Lincoln
Lincolnville
Lindsborg
Linn
Linwood
Little River
Logan
Lone Elm
Longford
Long Island
Longton
Lorraine
Lost Springs
Louisburg
Louisville
Lovewell
 Sinclair R. H. S.
Lucas
Luray
Lyndon
Lyons
McCracken
McCune
McDonald
McLouth
McPherson
 McPherson H. S.
 Central College Academy
Macksville
Madison
Mahaska
Maize
Manhattan
 Manhattan H. S.
 Sacred Heart Academy
Mankato
Manter
Maplehill
Marion
Marquette
Marysville
Matfield Green
Mayetta
Meade
Medicine Lodge
Melvern
Menlo
Meridan
- Merriam
 Shawnee Mission H. S.
Michigan Valley
Midian
Milan
Mildred
Milford
Miller
Milton
Miltonvale
 Miltonvale R. H. S.
 Miltonvale Wesleyan
 Academy
Minneapolis
Minneola
Moline
Montezuma
Montrose
Monument
Moran
Morehead
Morganville
Morland
Morrill
Morrowville
Moscow
Mound City
Moundridge
Mound Valley
Mount Hope
Mulberry
Mullinville
Mulvane
Munden
Muscotah
Narka
Nashville
Natoma
Neal
Neodesha
Neosho Falls
Neosho Rapids
Ness City
Netawaka
Newton
Nickerson
 Reno Co. Com.
Norcatur
Northbranch
 Northbranch Academy
North Topeka
 Seaman R. H. S.
Norton
Nortonville
Norway
Norwich
Oakley
Oberlin
 Decatur Co. Com.
Offerle
Oketo
Olathe
Olivet
Olpe
 St. Joseph's H. S.
Olsburg
Onaga
Oneida
Osage City
Osawatomie
Osborne
Oskaloosa
Oswego
Otis
Ottawa
Overbrook
Oxford
Ozawkie
- Page City
Palco
Paola
 Paola H. S.
 Ursuline Academy
Paradise
Park
Parker
Parkerville
Parsons
Partridge
Pawnee Rock
Paxico
Peabody
Penalosa
Perry
Peru
Phillipsburg
Piedmont
Pierceville
Piper
Pittsburg
 Pittsburg H. S.
 K. S. T. C. H. S.
Plains
Plainville
Pleasanton
Plevna
Pomona
Portis
Potter
Potwin
Powhattan
Prairie View
Pratt
Prescott
Pretty Prairie
Preston
Princeton
Protection
Quenemo
Quincy
Quinter
Radium
Ramona
Randall
Randolph
Ransom
Rantoul
Raymond
Reading
Reece
Republic
Reserve
Rexford
Richfield
Richmond
Riley
Riverton
Robinson
Rock Creek
Rolla
Rosalia
Rosedale
Rose Hill
Rossville
Roxbury
Roze
Russell
Russell Springs
Sabetha
Saffordville
 Toledo Twp. H. S.
St. Francis
 St. Francis Com.
St. Francis H. S.
 St. Paul P. O.
St. George

St. John	Sterling	Wallace
St. John H. S.	Stilwell	Walnut
Antrim R. H. S.	Stockdale	Walton
St. Marys	Stockton	Wamego
St. Mary's H. S.	Strawn	Washburn R. H. S.
St. Mary's College	Strong City	Topeka P. O.
Academy	Sublette	Washington
Immaculate Conception	Summerfield	Waterville
H. S.	Sun City	Wathena
St. Paul	Sylvan Grove	Waverly
St. Paul H. S.	Sylvia	Wayside
St. Francis H. S.	Syracuse	Wea
Salina	Talmadge	Bucyrus P. O.
Salina H. S.	Tampa	Webber
Sacred Heart H. S.	Tescott	Webster
Marymount Academy	Thayer	Weir
Satanta	Tipton	Welborn
Savonburg	Tonganoxie	Kansas City P. O.
Sawyer	Tonovay	Welda
Scandia	Utopia P. O.	Wellington
Schoenchen	Topeka	Wellsville
Scott City	Topeka H. S.	Weskan
Scottsville	Catholic H. S.	West Mineral
Scranton	Highland Park H. S.	Westmoreland
Seaman	Kansas Vocational School	Westphalia
North Topeka P. O.	Seaman R. H. S.	Wetmore
Sedan	Washburn R. H. S.	Wheaton
Sedgwick	Toronto	White City
Selden	Towanda	White Cloud
Seneca	Tribune	Whitewater
Seneca H. S.	Greeley Co. Com.	Whiting
Sts. Peter and Paul H. S.	Trousdale	Wichita
Severance	Troy	Wichita H. S.
Severy	Turner	American Indian Institute
Shallow Water	Turon	Cathedral H. S.
Sharon	Tyro	Mt. Carmel Academy
Sharon Springs	Udall	St. Johns Academy
Shawnee Mission	Ulysses	Wilburton
Merriam P. O.	Grant Co. Com.	Williamsburg
Silver Lake	Uniontown	Willis
Simpson	Utica	Wilmore
Smith Center	Valley Center	Wilsey
Smolan	Valley Falls	Wilson
Soldier	Vermillion	Winchester
Solomon	Vernon	Windom
South Haven	Vesper	Winfield
Sparks	Victoria	Winona
Spearville	St. Fidelis H. S.	Woodbine
Speed	Vilas	Woodruff
Spivey	Vinland	Woodston
Spring Hill	Viola	Yates Center
Spring Twp.	Virgil	Zenda
Anthony P. O.	Wakeeney	Zook
Stafford	Trego Co. Com.	Larned P. O.
Stanley	Wakefield	
Stark	Waldo	

JUNIOR COLLEGES

Every junior college student who expects to complete his education at this College is urged to model his course in junior college in such a way as to meet all of the requirements for the particular curriculum which he expects to pursue here. Different curricula have different prerequisites; but admission to advanced standing in the College is reasonably flexible, hour-for-hour credit being given for two years' work wherever the work done in an accredited junior college can be directly applied or can be accepted as substitutions or electives in the curriculum chosen. If the work done in junior college has been carefully selected with regard to the curriculum to be pursued here, the average junior college graduate carrying the maximum assignment can usually complete the requirements for the degree of Bachelor of Science in two additional years.

Detailed statements as to the requirements for graduation in each of the several curricula at the College may be found in other sections of this catalogue.

KANSAS JUNIOR COLLEGES IN FULLY ACCREDITED RELATIONS WITH
THE COLLEGE

PUBLIC

Arkansas City Junior College, Arkansas City
Coffeyville Junior College, Coffeyville
El Dorado Junior College, El Dorado
Fort Scott Junior College, Fort Scott
Garden City Junior College, Garden City
Hutchinson Junior College, Hutchinson
Independence Junior College, Independence
Iola Junior College, Iola
Kansas City Junior College, Kansas City
Parsons Junior College, Parsons

PRIVATE

Central Academy and College, McPherson.
Hesston College, Hesston
Highland Junior College, Highland
Kansas City University, Kansas City, Kan.
Mt. Saint Scholastica, Atchison
College of Paola, Paola
St. Marys Junior College, Leavenworth
Tabor College, Hillsboro

Undergraduate Degrees and Certificates

For graduation, one must complete one of the four-year curricula as shown elsewhere. These are believed to provide for the necessities of most students who seek an institution of this kind, and departures from the specified work are not encouraged. Under special conditions, however, such College substitutions are allowed as the interests of the student demand. The total requirement, including military science or physical training, is about 124 to 142 hours, or semester credits, according to the curriculum taken. (A semester credit is one hour of recitation or lecture work, or three hours of laboratory a week, for one semester of eighteen weeks.) A student, to be considered as a candidate for graduation, must have done his last year's work in residence. Not less than 20 semester hours of undergraduate work are to be taken here while this residence requirement is being fulfilled. Not to exceed 16 semester hours of a student's last year's residence work may be taken for graduate credit, provided that all undergraduate requirements will have been satisfied by the close of the second semester of the year of graduation. In special cases candidates will be considered who have done three full years of work here and have done their last year of work in an institution approved by the faculty.

Candidates desiring to be graduated must make application to the registrar at least 30 days before the date that graduation is expected. The responsibility rests with a candidate to see that he has complied with all of the requirements.

Candidates for graduation or for advanced degrees are required to be present in person, unless arrangements have been made in advance for the conferring of the degree in absentia. Application for this privilege should be made to the student's dean. Candidates for graduation are required to be present at the exercises of baccalaureate Sunday, unless excused by the council of deans.

DEGREES

The following degrees are conferred on completion of four-year curricula:

- Bachelor of Science
- Bachelor of Science in Agriculture (Agriculture, Agricultural Administration, Landscape Gardening)
- Bachelor of Science in Agricultural Engineering
- Bachelor of Science in Architecture
- Bachelor of Science in Architectural Engineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Flour-mill Engineering
- Bachelor of Science in Landscape Architecture
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Home Economics (Home Economics, Home Economics and Art)
- Bachelor of Science in Commerce
- Bachelor of Science in Industrial Chemistry
- Bachelor of Science in Industrial Journalism
- Bachelor of Science in Physical Education
- Bachelor of Music
- Doctor of Veterinary Medicine

The degree Bachelor of Science in Home Economics is conferred upon those who complete the five-year curriculum in Home Economics and Nursing.

Upon those who have completed the six-year curriculum in Animal Husbandry and Veterinary Medicine or the six-year curriculum in General Science and Veterinary Medicine the degree, Bachelor of Science, is conferred when the first four years are completed and the degree, Doctor of Veterinary Medicine, is conferred upon completion of the remaining two years of the curriculum.

CERTIFICATES

An appropriate certificate is granted upon completion of any one of the following:

1. The farmers' short course
2. Any one of the dairy-manufacturing short courses
3. Any one of the one-year or two-year courses in trades related to engineering

Graduate Study

JAMES EDWARD ACKERT, *Chairman of Graduate Council*

THE ADMINISTRATION OF GRADUATE COURSES

The administration of the graduate courses is vested in the Graduate Council. This body consists of seven members, selected from the following divisions of the College: Agriculture; Engineering; General Science; Home Economics; and Veterinary Medicine. The members of the Graduate Council are appointed and its chairman designated by the President.

The graduate faculty consists of the President of the College, the deans of the academic divisions, and the staff members recommended by the department heads and approved by the Graduate Council as qualified to give graduate instruction. Its chairman is the President of the College; and its secretary, the secretary of the Graduate Council. The graduate faculty offers all graduate courses, and at the call of the chairman holds meetings for the consideration and adoption of general rules of procedure in the administration of the graduate work.

The Graduate Council determines, subject to the authority of the President of the College and the State Board of Regents and in accordance with any general regulations adopted by the graduate faculty, matters of curriculum, admission to graduate study and to candidacy to advanced degree, and other matters which relate to the proper administration and development of graduate work in the College.

ADMISSION

Admission to graduate courses is granted to graduates of institutions whose requirements for the bachelor's degree are substantially equivalent to those of the Kansas State Agricultural College. Admission to the graduate courses, however, may not be construed to imply admission to candidacy for an advanced degree. Such candidacy is determined by the Graduate Council upon the recommendation of the major instructor after the student has demonstrated by his work for a period of two months or longer that he has the ability to do major work of graduate grade.

Application blanks for admission to graduate courses may be secured from the chairman of the Graduate Council. Every applicant for admission must submit with his application an official transcript of his college record.

REGISTRATION

Students applying for graduate work should present themselves to the chairman of the Graduate Council at Nichols Gymnasium during the regular registration days (see College calendar), and at other times at his office, room 27, Fairchild Hall.

Students who have been admitted to the graduate courses are required to register with the College registrar and be assigned by the chairman of the Graduate Council, at the beginning of each semester, unless special permission for later registration has been granted by the chairman of the Graduate Council. Credit toward the fulfillment of the residence requirements dates from the time of registration and not from the beginning of the semester when the student enters.

DEGREES

Of the advanced academic degrees, the Master of Science degree is conferred. The following professional degrees are conferred. Agricultural Engineer, Architect, Architectural Engineer or Landscape Architect, Chemical Engineer, Civil Engineer, Electrical Engineer, Flour Mill Engineer and Mechanical Engineer.

FEEES AND EXPENSES

TUITION. There is no charge for tuition.

MATRICULATION FEE. A matriculation fee of \$10 for residents of Kansas, or \$15 for nonresidents, is charged all students in College curricula. This fee is not charged Summer School students, short-course students, or students in trade courses, but is payable by special students in the College.

INCIDENTAL FEE. An incidental fee of \$25 a semester or \$20 a summer term is charged residents of Kansas; nonresidents pay \$37 a semester or \$25 a summer term. The incidental fee for the second summer term is \$10. The incidental fee for members of the College faculty, including graduate assistants and graduate research assistants, is prorated.

STUDENT-HEALTH FEE. Graduate students are excused from payment of the student-health fee.

STUDENT-ACTIVITY FEE. The student-activity fee is not assessed graduate students, but they are allowed the privilege of participating in the activity fee plan.

LABORATORY FEES. Laboratory fees, ranging from 50 cents to \$10 a semester, are charged graduate students in the various subjects.

LATE ASSIGNMENT FEE. For assignment after the close of the regular registration period the student is charged \$5. There is no exception to this rule.

COMMENCEMENT FEE. On graduation students pay a commencement fee of \$10 to cover the cost of the diploma and other commencement expenses.

PAYMENT OF FEES. The matriculation fee is paid upon admission to the College. The incidental fee and laboratory fees are payable at the beginning of each semester.

ROOMS. Rooms are not furnished by the College. They are readily obtained in the city at a cost of from \$10 to \$15 a month for a room suitable for two occupants. Less desirable quarters and less desirable locations may be obtained at a lower rate. There are great differences in the accommodations offered. Those for which the higher prices are charged are modern in all respects, and light, heat, and bath are included in the cost stated.

BOARD. The cost of board depends largely upon individual requirements. In clubs and private boarding houses the cost is usually from \$5 to \$7 a week. Students may board themselves at a smaller money outlay. The College operates a first-class cafeteria, where all meals may be obtained, except on Sundays, at moderate prices. Food is furnished at cost and the expense to the student depends upon the care and judgment which he employs.

For additional information address, Chairman of the Graduate Council, Kansas State Agricultural College, Manhattan, Kan.

CANDIDACY FOR MASTER'S DEGREE

Candidates for the degree of Master of Science (M.S.) are required to spend at least one collegiate year in residence, except under certain special conditions when the residence may be reduced to one and one-half semesters. The equivalent of thirty-two semester credits, including a thesis, must be satisfactorily completed. Not more than sixteen credits, including thesis, may be secured in a single semester. Students holding graduate assistantships may not obtain more than twelve credits, including thesis, in one semester.

GRADES. Graduate student's work is graded in eight classes: A, B, C, D, Con., Inc., F, and Wd. The degree will not be conferred on any student who does not receive an average grade of B or higher in three-fourths of the courses taken, including thesis. A failure or absence from examination in any course may prevent the conferring of the degree, and failure in any course in the major field precludes conferring the degree in the same year.

LANGUAGE REQUIREMENTS. A reading knowledge of two modern languages is highly desirable.

MASTER'S THESIS. Each candidate for a master's degree is required to present a thesis on some subject approved by the Graduate Council upon the recommendation of the instructor in charge of his major work.

The thesis ordinarily demands one-fourth of the student's time and may not exceed one-third of it. The thesis and special reports upon it must be prepared in accordance with specifications to be obtained from the office of the chairman of the Graduate Council. (See College calendar for dates.)

A candidate for the master's degree is subject to a rigid oral examination covering his major and minor subjects and thesis by a committee consisting of the dean of the division in which his major subject was taken, a member of the Graduate Council, and the instructors with whom he has taken his major and minor work.

PROGRAM OF STUDY

In carrying graduate work, the student is expected to assume the initiative and the responsibility. It is important to recognize that graduate work does not consist in the fulfillment of routine requirements alone. The various courses as well as the assistance and advice of the instructors are to be regarded simply as aids in acquiring the methods, discipline, and spirit of independent research.

Each candidate for a degree is expected to have a wide knowledge of his subject and of related lines of work. This is usually obtained only by a wide range of private reading and study outside the immediate field covered by the formal courses to which he may be assigned.

The branch of knowledge to which the student expects to devote the larger part of his time is termed his major subject. The other fields of study selected, which will necessarily be more restricted in scope, are termed minor subjects. The latter should be chosen with reference to their direct bearing on the major subject.

Approximately two-thirds of the student's time is devoted to his major subject and one-third to one or more minor subjects. The word subject is used to designate a recognized field of study, and is not defined by the limits of a department. The nature and distribution of the majors and minors are approved by the Graduate Council, upon the recommendation of the major instructor.

The program of study suggested by the major instructor and approved by the Graduate Council is made the basis of the formal assignment to courses at the beginning of each semester and of the summer sessions.

It will be noted that in the announcements of the various departments of the College, certain courses are open to both graduate and undergraduate students. For graduate credit in such courses, the student must do extra work. No credit earned during the undergraduate course may be counted for graduate credit, unless registered, at the time taken, with the chairman of the Graduate Council as credits in excess of those required for the bachelor's degree.

VACATION CREDIT

Upon the recommendation of his major instructor a student not registered in the College may accumulate a limited number of graduate credits in problem or research courses during the period between the close of the first summer school and the beginning of the next succeeding semester under the following provisions: (1) The approval of the Graduate Council must be secured. (2) The work must be done under the supervision of a member of the graduate faculty.

The credit so earned will be included on the student's next regular assignment marked "vacation credit" and will be in addition to the regularly allowed number of credits assigned. Such credits will be forwarded to the registrar by the instructor as soon as the latter receives the class cards after the beginning of the next semester.

GRADUATE WORK IN ABSENTIA

Graduates on full-time employment may be enrolled for from one to six credit hours of research or problem work *in absentia* on a *pro rata* basis, on the recommendation of a member of the graduate faculty and of the Graduate Council.

GRADUATE ASSISTANTSHIPS

In order to encourage graduates of this College and of similar institutions to continue their studies and to pursue advanced work leading to a master's degree, the College has established graduate assistantships in several departments. These assistantships, which may be graduate assistantships or graduate research assistantships, demand approximately one-third of the time of the student for laboratory or research assistance along the line of his major work during the regular collegiate year. The remainder of his time is given to graduate study. No graduate assistant or graduate research assistant may receive more than twelve graduate credits per semester nor satisfy the residence requirements in less than two semesters and one first summer school.

Graduate assistantships, paying a salary fixed each year by the State Board of Regents, have been established as follows:

<i>Subject.</i>	<i>Number.</i>
Agricultural Economics	1
Agronomy	2
Animal Husbandry	2
Bacteriology	1
Botany and Plant Pathology.....	2
Chemistry	4
Child Welfare	1
Clothing and Textiles	1
Dairy Husbandry	1
Education	1
Food Economics and Nutrition.....	1
General Home Economics	1
Horticulture	1
Institutional Economics	2
Poultry Husbandry	1
Zoölogy	3

Graduate research assistantships as listed below usually are maintained in the departments named. Occupants of these positions assist in the conduct of regular research work of the institution.

<i>Subject.</i>	<i>Number.</i>
Agronomy	1
Animal Husbandry	1
Applied Mechanics	2
Civil Engineering	1
Clothing and Textiles	1
Dairy Husbandry	2
Electrical Engineering	1
Food Economics and Nutrition	1
Household Economics	2
Institutional Economics	1
Mechanical Engineering	1
Poultry Husbandry	1
Zoölogy	3

By satisfactorily completing eight credits of graduate work in the first summer session, graduate assistants and graduate research assistants may meet the requirements for a master's degree within one calendar year.

Appointments for all assistantships are made annually in March, or soon thereafter, for the following year. Students desiring such appointments may obtain application blanks from the chairman of the Graduate Council.

GRADUATE FELLOWSHIP

The Manhattan branch of the American Association of University Women offers a graduate fellowship, a gift of \$200 annually, to a woman who has a standard bachelor's degree. The candidate must have an undergraduate

record equivalent to an average of B at Kansas State Agricultural College and give promise of ability to do research work. Work may be pursued in any department recognized by the Graduate Council.

Applications and transcripts of undergraduate work must be sent to the chairman of the A. A. U. W. Fellowship Committee on or before April first prior to the beginning of the academic year in which the scholarship is desired.

SENIORS AND GRADUATE STUDY

A senior who has completed so much of his work for the bachelor's degree that his program for the year is not full may, with the consent of his dean and of the Graduate Council, be assigned to one or more courses for graduate credit. In no case shall such combination of courses exceed the number of credit hours of a normal senior assignment for his curriculum.

GRADUATE WORK IN THE SUMMER SESSIONS

Graduate students desiring to do a part or all of the work for the master's degree in the summer may complete the residence requirements, in certain lines only, by pursuing graduate work for four first summer sessions. Persons interested should correspond with the chairman of the Graduate Council in advance. In special cases it may be possible to complete the residence requirements for the master's degree in three first summer sessions.

A detailed statement concerning the graduate work in the Summer Schools may be obtained by applying to the dean of the Summer School, Kansas State Agricultural College, Manhattan, Kan.

CANDIDACY FOR PROFESSIONAL DEGREES

ENGINEERING AND ARCHITECTURE

A graduate in engineering or in architecture from this College will be granted the professional degree of Mechanical Engineer, Civil Engineer, Chemical Engineer, Electrical Engineer, Agricultural Engineer, Flour Mill Engineer, Architect, Architectural Engineer, or Landscape Architect, under the following conditions:

If he graduated in 1917 or later he must have been engaged in engineering or architectural practice for a period of three years or more; if he graduated previous to 1917 he must have been engaged in engineering or architectural practice for a period of five years or more.

The candidate must submit a statement of his experience and a thesis covering some phase of his practice. The thesis and experience must be approved by the head of the department in which the degree is requested, by the dean of the Division of Engineering, and by the Graduate Council, before the granting of such a degree will be recommended to the College Faculty and to the State Board of Regents.

The candidate must declare his candidacy and file with the dean of the Division of Engineering a detailed statement of his professional study and experience, and an outline of his proposed thesis, not later than the November 15 next preceding the commencement at which the degree is to be conferred.

A preliminary copy of the completed thesis must be submitted for criticism not later than April 1, and the final copy in duplicate must be submitted not later than May 15.

The candidate for a professional degree shall present himself at the commencement exercises in order that the degree may be conferred.

He shall pay a diploma fee of \$10 to the registrar not later than May 15.

THE GRADUATE CLUB

The Graduate Club is an organization composed of graduate students and members of the graduate faculty. Its purpose is to promote sociability and wide acquaintance among its members.

General Information

DUTIES AND PRIVILEGES

Good conduct is expected of all students. Aid and stimulus toward the development of good character is given by the Christian organizations of the College and the town and by the College itself. Every student is expected to render a good account of himself in the College community life. College discipline is confined chiefly to sending away those whose conduct, after fair trial, makes their further attendance at the College unprofitable or inadvisable.

In order that a fine type of democratic sociability may be fostered among students and faculty, a large community recreation and rest center is provided in Anderson Hall, the administrative building. This center, one of the largest rooms on the campus, is furnished with divans, arm chairs, and writing tables in wicker and is neatly and beautifully decorated. During vacant hours and between classes, students and faculty gather here for rest and conversation. The room is available for student and faculty receptions and parties during the late afternoon and the evening hours.

Absences from class or laboratory must be accounted for to the instructor concerned. Permission for absence from College for one or more days must be secured in advance from the dean of the division in which the student is registered. Students cannot honorably leave the College before the close of a semester except by previous arrangement with the deans concerned.

Opportunities for general scientific, literary, music, and forensic training are afforded, in addition to the College courses, by various societies and clubs, which are described elsewhere in the catalogue and afford excellent training in their diverse lines.

At various times during the year College halls are opened for social, literary, musical, and dramatic entertainments furnished by lecture courses, by the literary societies, by the Department of Music, by the Dramatic Club, by the Oratorical Association, and by other organizations of students and instructors. Addresses by prominent speakers, men of affairs, and persons prominent in scientific, educational, and social work are of frequent occurrence.

EXPENSES

TUITION. There is no charge for tuition. Class instruction in music is free, but fees are charged for individual instruction. (See Department of Music for statement of fees for music.)

MATRICULATION FEE. A matriculation or entrance fee of \$10 for residents of Kansas, or \$15 for nonresidents, is charged all students in College curricula. This fee is not charged summer school students, short course students, or students in trade courses, but is payable by special students in the College.

INCIDENTAL FEE. An incidental fee of \$25 a semester or \$20 a summer term is charged residents of Kansas; nonresidents pay \$37 a semester or \$25 a summer term. Eight-week short-course students pay an incidental fee of \$5; the incidental fee for the two-week short courses is \$3. The incidental fee for the second summer term is \$10.

STUDENT-HEALTH FEE. Each undergraduate student in the College pays a student-health fee of \$3 a semester or \$1.50 a summer term. For students in the short courses, lasting eight weeks only, this fee is \$1.50. Graduate students do not pay this fee, nor do they receive the benefits of the student-health service.

The student-health fee entitles the student to receive the services of the College physicians for any illness contracted while in College. It also includes the cost of medicine, and free hospital service up to three days. The fee does

not include the cost of surgical operations, reduction of fractures, or the treatment of chronic conditions.

As in the case of all other fees, the College reserves the right to change this fee or to modify the benefits given for it, without previous notice.

The College maintains on the campus a contagion hospital having separate wards for men and women. This hospital is in charge of a matron who resides continuously in the building and cares for the patients, under the direction of the College physician. Students, when suffering from or suspected of having any contagious disease, except smallpox, are admitted to the hospital on the recommendation of the College physician. The student's only expense for hospital service is a fixed charge of \$1 a day, after three days of free service. The aim of the College in providing this hospital is to prevent contagious diseases among the students and, in case the student should contract such a disease, to make it unnecessary to quarantine a rooming house where there are many students.

STUDENT-ACTIVITY FEE. Each undergraduate student pays a student-activity fee of \$5 a semester. This fee is imposed by the vote of the students themselves, and at their request is collected by the College at the beginning of each semester along with the fees levied by the state. The fund is used to support ten student activities, including athletics, intercollegiate debate, the Student Governing Association, intercollegiate judging contests, and the College Band. Payment of this fee admits the student to all athletic events, to all intercollegiate debates and oratorical contests, and to band concerts, and gives membership in the Student Governing Association. The members of the faculty, the employees of the College, and graduate students are allowed the privilege of participation in the activity-fee plan.

RECAPITULATION. To make plain to prospective students the amount of fees due at the opening of the College year in accordance with the statements of the above paragraphs, the following tabular statement is given:

FOR RESIDENTS OF KANSAS

	<i>Old students</i>	<i>New students</i>
Matriculation (paid only once).....	None.	\$10.00
Incidental (one semester)	\$25.00	25.00
Student-health (one semester)	3.00	3.00
Student-activity (one semester)	5.00	5.00
Totals	\$33.00	\$43.00

FOR NONRESIDENTS OF KANSAS

	<i>Old students</i>	<i>New students</i>
Matriculation (paid only once).....	None.	\$15.00
Incidental (one semester)	\$37.00	37.00
Student-health (one semester)	3.00	3.00
Student-activity (one semester)	5.00	5.00
Totals	\$45.00	\$60.00

FOR ALL SHORT-COURSE STUDENTS

	<i>2 weeks</i>	<i>8 weeks</i>
Incidental	\$3.00	\$5.00
Student-health	None.	1.50
Totals	\$3.00	\$6.50

LATE ASSIGNMENT FEE. For assignment after the close of the regular registration period the student is charged \$5. *There is no exception to this rule.*

LABORATORY EXPENSE. In all laboratories students are required to pay for supplies used and for apparatus broken or lost. The cost in the several subjects ranges from 50 cents to \$10 a semester. These charges, effective September 1, 1928, are noted under the descriptions of the several courses. In the special courses related to engineering, the laboratory charges are fixed at from \$18 to \$36 for the entire course.

COMMENCEMENT FEE. On graduation students pay a commencement fee of \$10 to cover the cost of the diploma and other commencement expenses.

PAYMENT OF FEES. The matriculation fee is paid upon admission to the College. The incidental fee, the student-health fee, laboratory fees, and the student-activity fee are payable at the beginning of each semester.

FEES FOR GRADUATE STUDENTS. Fees to be paid by graduate students are listed fully in the section headed "Graduate Study."

FEE RECEIPTS ARE TO BE SAVED. Receipts for fees must be shown to the assigner at the beginning of each semester before a student is permitted to take out his assignment.

REFUND OF FEES. *No refund is made on the matriculation fee.* Certain refunds are made on other fees, as shown below, and *no exceptions are made to these rules.*

A student permitted to withdraw on or before the end of the first one-fourth of a semester or summer term may receive a refund of one-half the fees paid for that semester.

A student permitted to withdraw after remaining one-fourth and less than one-half semester or summer term may receive a refund of one-fourth the fees paid for that semester.

Refund is made on the unused portion of laboratory fees.

Refunds are given *only* on the presentation of the fee receipt for various fees paid. Refunds are authorized at the office of the registrar. *Fee receipts must be preserved* by the student.

A student dropping music before the end of a term or semester may receive a refund of fees paid corresponding to the remaining time of the first three-fourths of the term or semester; that is, the fees for at least the last one-fourth of a term or a semester are retained.

TEXTBOOKS. The cost of textbooks varies considerably from semester to semester and according to the curriculum pursued. The following tabulation shows the approximate cost of books required during the freshman year.

Curriculum	First semester	Second semester
Agricultural Administration	\$18.85	\$7.60
Agricultural Engineering	20.35	7.60
Agriculture	18.85	7.60
Agriculture with Landscape Gardening.....	18.85	7.60
Animal Husbandry and Veterinary Medicine.....	18.85	7.60
Architectural Engineering	20.55	5.35
Architecture	29.45	5.35
Chemical Engineering	20.35	10.60
Civil Engineering	20.85	8.10
Commerce	12.25	2.90
Electrical Engineering	27.85	11.60
Flour Mill Engineering	20.35	8.60
General Science	18.50	2.90
General Science and Veterinary Medicine (six-year)....	21.85	.....
Home Economics	14.20	6.75
Home Economics and Applied Art.....	8.80	8.00
Home Economics and Nursing.....	15.10	13.00
Industrial Chemistry	23.25	5.85
Industrial Journalism	12.45	.80
Landscape Architecture	23.00	5.10
Mechanical Engineering	22.35	8.60
Physical Education for Men.....	12.25	8.25
Physical Education for Women.....	11.50	3.50
Piano	8.50	2.05
Public-school Band and Orchestra.....	9.00	.....
Public School Music	11.55	1.75
Veterinary Medicine	19.85	3.00
Veterinary Medicine and Animal Husbandry.....	18.85	7.60
Violin	10.50	2.05
Voice	10.50	2.05

DRAWING INSTRUMENTS. In several curricula, especially in architecture and engineering, drawing instruments are required. These range in price from \$7.50 to \$25 a set.

GYMNASIUM SUITS. Each young woman taking physical training must have an approved gymnasium suit costing about \$4.50. Complete gymnasium suits for young men cost about \$5.

MILITARY UNIFORM. Each student who takes military training must have a uniform. For the basic courses the uniform, except shoes, is furnished by the war department. For the advanced courses an allowance is made toward the cost of the uniform used.

ROOMS. Rooms are not furnished by the College. They are readily obtained in the city at a cost of from \$10 to \$15 a month for a room suitable for two occupants. Less desirable quarters and less desirable locations may be obtained at a lower rate. There are great differences in the accommodations offered. Those for which the higher prices are charged are modern in all respects, and light, heat, and bath are included in the cost stated.

BOARD. The cost of board depends largely upon individual requirements. In clubs and private boarding houses the cost is usually from \$5 to \$7 a week. Students may board themselves at a smaller money outlay. The College operates a first-class cafeteria, where all meals may be obtained, except on Sundays, at moderate prices. Food is furnished at cost and the expense to the student depends upon the care and judgment which he employs.

LAUNDRY. The expense for laundry may be estimated at 40 cents to 70 cents a week, depending upon individual requirements.

BOARDING AND ROOMING HOUSES

The Christian Associations of the Agricultural College keep on file the official list of boarding and rooming houses. All correspondence relative to boarding accommodations, in advance of the student's arrival in Manhattan, may be addressed to the secretary of the Young Men's Christian Association, to the secretary of the Young Women's Christian Association, or to the registrar of the College. Upon arrival in Manhattan, young men should go directly to the office of the Y. M. C. A. secretary in Anderson Hall on the College Campus. Young women upon arrival should go directly to the Y. W. C. A. offices in Calvin Hall on the campus. Taxi service may be had from either station.

For three days before the opening of the fall semester and for the first three days after the opening day, committees from these associations meet trains and assist in directing new students, either to the association offices or directly to proper boarding places. The associations make no charge for their services or for lists of all approved boarding places, and new students should depend absolutely upon the recommendations of the association committees.

Van Zile Hall, a dormitory for women students, is located on the campus. It accommodates one hundred twenty-five women. It is a beautifully furnished, well-equipped, fire-proof building of stone. Applications for rooms are considered in the order in which they are received. To validate an application for residence in the Hall a deposit of \$10 is required. This amount is credited on the first payment for room and board, or is refunded provided request is made to the dean of women by August 1. The contract for room and board in Van Zile Hall is for a full semester (eighteen weeks) and the obligation is canceled only for reasons satisfactory to the dean of women. All correspondence in regard to the dormitory should be addressed to "Dean of Women, Kansas State Agricultural College, Manhattan, Kan."

SELF-SUPPORT

The courses of instruction are based upon the supposition that the student is here for study. Therefore a proper grasp of the subjects cannot be obtained by the average student unless the greater part of his time is given to College work. Students of limited means are encouraged and aided in every possible way, but unless exceptionally strong, both mentally and physically, such students are advised to take lighter work by extending their courses, in case they are obliged to give any considerable time to self-support. As a rule, a student should be prepared with means for at least a semester, as some time

is required in which to make acquaintances and to learn where suitable work may be obtained.

There are various lines in which students may find employment. The College itself employs labor to the extent of about \$1,200 a month, at rates varying from 20 to 35 cents an hour, according to the nature of the employment and the experience of the employee. Most of this labor is upon the College farm, in the orchards and gardens, in the shops and the printing office, for the janitor, etc. Various departments utilize student help to a considerable extent during the vacations. Students demonstrating exceptional efficiency, ability and trustworthiness obtain limited employment in special duties about the College. Many students secure employment in various lines in the town, and some opportunity exists for obtaining board in exchange for work, with families either in town or in the neighboring country.

Labor is universally respected in the College community, and the student who remains under the necessity of earning his way will find himself absolutely unhampered by discouraging social conditions. Indeed, over one-third of the students support themselves wholly, while a third support themselves in part. False standards regarding physical work do not exist, and are not tolerated by the board of instruction or by the student body as a whole. Absolutely democratic standards prevail at the College, and students are judged on the basis of their personal worth and efficiency alone.

Students are assisted to obtain employment by means of the employment bureaus maintained by the Young Men's Christian Association and by the Young Women's Christian Association of the College, with the secretaries of which organizations correspondence is encouraged.

STUDENT LOAN FUNDS

THE ALUMNI LOAN FUND. The Alumni Association of the Kansas State Agricultural College has created a loan fund, chiefly by means of payments by which the alumnus is relieved from further regular dues in the association. Members are due to pay the association \$3 a year, and on payment of \$50 in one sum they are relieved from such dues. If a husband and wife are both eligible to membership, joint membership may be obtained by payment of \$75. The fund so created, amounting now to about \$22,500, is lent to students at 6 per cent per annum. The fund is administered by a committee appointed by the directors of the Alumni Association. The committee announces no specific rules governing the granting of loans, but in general gives preference to junior and senior students, and to loans of smaller amounts on short time over larger amounts which cannot be paid for several years. Alumni are urged to take life memberships and thus add to the funds available to worthy students. Students wishing loans from this fund may address Dr. W. E. Grimes, chairman of the Alumni Loan Fund Committee, Manhattan, Kan.

Acknowledgment of additions to the Life Membership Fund is made at this place from year to year. Since the last report and up to November 6, 1929, the following-named persons have completed payments for life membership: Elizabeth Allen, Fred D. Allison, Edith Ames, A. C. Apitz, Irvin Atkins, Milburne Axelton, C. W. Bower, Ruth L. Bowman, Louis Brous, Margaret Burtis, George Bush, Joseph Church, Helen Cortelyou, Fern Cunningham, William Dalton, Esther Dizmang, Kennis Evans, Elizabeth Fairbanks, L. W. Fielding and Crete Spencer Fielding, Clarence Fisher, L. A. Fitz, Olive Flippo, Fred Fockele, Kenney L. Ford, Rose Straka Fowler, W. E. Grimes and Ethel Roseberry Grimes, Theodore Guthrie, Jr., Eldon Harden, Cora Thackrey Harris, Fred M. Hayes, Christie Hepler, Elfrieda Hemker, Katherine Paddock Hess, Sherman Hoar, Wilma Hotchkiss, Vera Howard, Floyd Hull, Emma Knostman Huse, Carl Iles, Glenn Johnson, B. A. Kahn, Leone Bower Kell, Ruth M. Kellogg, Florence Larmer, R. N. Lindburg, Vera Lindholm, Catherine Lorimer, Esther Tracy Luke, Victor Lundry, R. Waldo McBurney, Thomas McCarty, Roy McConnell, LeRoy Melia, Genevieve Michelson, Alice Miller, Sarah Morris, John O. Morse, M. F. Mueller, Merle Mundhenke, Hannah Murphy, Harold Myers, Jennie Nettletrouer, Floyd B. and Edith Beaubien Nichols, V. E. Oman and Susan Davies Oman, Daisy Osborn, Opal Osborne,

Mabel Paulson, Edwin Peterson, Lester B. Pollom, A. J. and Lucy Cottrell Pottorf, Harry Ratcliff, Ada Rice, L. E. Rossel, Ruth Schlotterbeck, May Bowen Schoonover, Susan Scott, Charles W. Shaver, Byron Short, Lonnie Simmons, Mildred Loveless Skinner, Berniece Sloan, Ralph Snyder, Grace A. Steininger, Edna Stewart, Harvey Stewart, Fred Strickler, Robert Tulloss, Crystal Wagner, Jessie Wagner, Louis Williams, M. M. Williamson, F. D. Wilson, and Lucile Berry Wolf. During this period also many pledges have been made and many partial payments have been received.

THE HENRY JACKSON WATERS LOAN FUND. The Henry Jackson Waters loan fund consists of the royalties received from the Kansas sales of Ex-President Waters' textbook, *The Essentials of Agriculture*, for the first five years. The royalties have amounted to approximately \$2,000, which sum has been augmented by gifts of \$100 each from Senator Capper and L. R. Eakin and by smaller amounts received from some others. The entire amount, now over \$3,000, is in constant use. The fund is administered by a committee appointed by the president of the College approved by the Board of Regents. The rules for the loans are likewise approved by the Board. The rules allow emergency loans of \$50 to any student who has completed one semester of work in this college. Juniors may borrow \$100 and seniors may borrow \$150. Applications for loans should be made to Prof. Albert Dickens, chairman of the Waters Loan Fund Committee, Manhattan, Kan.

THE CHAMBER OF COMMERCE LOAN FUND. The members of the Chamber of Commerce of Manhattan have raised a fund which now amounts to \$3,000 and is being augmented constantly. This is loaned to deserving students at 5 per cent per annum. About ninety loans have been made. Applications for loans from this fund should be addressed to the secretary, Chamber of Commerce, Manhattan, Kan.

THE 4-H CLUB LOAN FUND. The Collegiate 4-H Club of the College has created a loan fund of approximately \$1,000 to be loaned to deserving students who were former successful 4-H club members. This fund is loaned in units of \$50, drawing interest at 6 per cent per annum. The fund has been created by the efforts of the members of the Collegiate 4-H Club in editing and publishing the "Who's Who," the annual 4-H Club Year Book of Kansas. It is hoped that the fund will increase in size from year to year and that it will prove helpful to deserving 4-H club members attending college. The fund is administered by the K. S. A. C. Alumni Association in cooperation with the Collegiate 4-H Club.

THE STATE FEDERATION OF WOMEN'S CLUBS LOAN FUND. Each year several of the young women students of the Kansas State Agricultural College are beneficiaries of the State Federation of Women's Clubs through the administration of its liberal Young Women's Student Loan Fund. Information regarding this fund can be obtained by addressing Dean Mary P. Van Zile, Manhattan, Kan.

THE P. E. O. LOAN FUND. The P. E. O., a national organization of women, maintains an education fund to be loaned to girls to help defray college expenses. Information regarding this fund may be obtained from Dean Mary P. Van Zile.

THE SOCIAL CLUB LOAN FUND. This is a fund loaned by the K. S. A. C. Social Club and is administered by the Waters Loan Fund Committee.

THE D. A. R. LOAN FUND. The D. A. R. loan fund is a fund available to both men and women students and is administered by the Waters Loan Fund Committee.

THE WOMEN'S PAN-HELLENIC LOAN FUND. The Alumnae Pan-Hellenic Fund is loaned to women students. Applications should be made to the president, City Pan-Hellenic, through Dean Mary P. Van Zile.

THE WOMAN'S CLUB LOAN FUND. This is a fund established by the Woman's Club of Manhattan, and is available to both men and women students. This loan is administered by the Waters Loan Fund Committee.

THE BELLE SELBY CURTICE LOAN FUND. Mrs. Belle Selby Curtice, a graduate of the class of 1882, established a loan fund of \$1,000 in memory of the influence and inspiration the College has given her life. This fund is available to young women in the curriculum in Home Economics and is administered by the Henry Jackson Waters Loan Fund Committee.

MASONIC LOAN FUNDS. The Scottish Rite Consistory and the Knights Templar Commandery have established loan funds that are available for men and women who have given evidence of scholarship and worth. Applicants should seek recommendations from the consistory and commandery with whose members they may be acquainted.

PRIZES AND MEDALS

STOCK JUDGING. The Block and Bridle Club offers four medals, one gold, one silver, and two bronze, to students obtaining the highest four places in the club's stock-judging contest. The same organization offers prizes of books for stock judging. The faculty of the Department of Animal Husbandry offers prizes of books or papers on stock judging.

DAIRY JUDGING. The Student Dairy Association each year holds a dairy-judging contest, and offers a gold, a silver, and a bronze medal to students obtaining the highest three places.

POULTRY JUDGING. The Department of Poultry Husbandry offers prizes to the value of \$150 to students in poultry-judging contests.

GRAIN JUDGING. The Klod and Kernel Klub holds an annual grain-judging contest. Cash prizes, subscriptions to farm papers, and ribbons are given to the highest ranking students.

AGRICULTURAL ENGINEERING. The Agricultural Engineering faculty offers annually to the senior agricultural engineering student having the highest scholarship standing in his junior and senior subjects a cash prize of \$25.

ARCHITECTURE. The American Institute of Architects offers a medal to the senior architect showing the highest degree of general excellence. The faculty of the Department of Architecture offers prizes of books to those freshmen, sophomores, and juniors who do the best work. Lorentz Schmidt offers a cash prize to the student doing the best work in courses in working drawings and specifications.

CIVIL ENGINEERING. The Kansas section of the American Society of Civil Engineers offers payment of the initiation fee into the American Society of Civil Engineers to the senior civil engineer making the highest grades during his senior year.

ELECTRICAL ENGINEERING. Two medals, first (gold) and second (silver), are awarded those seniors who have made the best records in twenty hours of certain fundamental, required electrical engineering subjects. Also, two medals, first (gold) and second (silver), are awarded to the ranking juniors who have completed not less than eighty semester credits of the required electrical engineering curriculum.

PLAY WRITING. The Purple Masque Dramatic Fraternity offers each year a prize of \$50 for the best original play written by a student of the Kansas State Agricultural College and suitable for presentation by the fraternity.

SCHOLARSHIP. Freshman women. Phi Alpha Mu, the women's honor society of the division of general science, offers each year a prize of \$20 to the young woman making the highest scholarship standing in the freshman work. Omicron Nu, the honor society of the division of home economics, grants annually a prize of \$10 to the young woman achieving highest rank in scholarship among the freshmen of that division.

SHORT-STORY WRITING. The Quill Club offers annually a gold medal to the

student of Kansas State Agricultural College writing the best short story in a contest held by this organization.

JOURNALISM. The United Companies offer two prizes of \$25 each for students in advertising who write the best copy. Professors Rogers and Charles offer \$25 annually for the best rural press team. The outstanding student in Agricultural Journalism each year is honored by having his name engraved upon one of the several smaller shields surrounding a larger shield containing these words: "Recognition for superior attainments in Agricultural Journalism. Presented by Arthur Capper to students in the Department of Industrial Journalism and Printing, Kansas State Agricultural College."

ORATORY. The literary societies, through the Oratorical Board, offer each year, in the Intersociety Oratorical Contest, the following prizes:

First prize, gold medal and \$25.

Second prize, silver medal and \$15.

Third prize, bronze medal and \$10.

The Oratorical Board also finances the sending of a representative from the College to the annual Peace Oratorical Contests, to the winners of which valuable prizes in money are awarded.

The Department of Public Speaking sends to the annual Missouri Valley Contest an orator as the representative of the College. In this contest valuable prizes in money and medals are awarded.

SOCIOLOGY. The Kappa Alpha Chapter of Chi Omega Sorority offers a prize of \$25 to the student who holds the highest grade in sociology at the end of the second semester each year, the standing of the student to be determined by the instructor.

VETERINARY MEDICINE. Dr. Edward A. Schmocker offers two prizes of \$10 and \$5 respectively to the senior veterinarians showing the greatest general proficiency. The Jensen Salsbery Laboratories of Kansas City, Mo., offers two prizes of \$10 and \$5 respectively to junior veterinarians having the highest standing in therapeutics. The veterinary staff offer \$7.50 to the sophomore ranking highest in physiology, and \$7.50 to the senior ranking highest in pathology.

SCHOLARSHIPS

DEBATE. In the Department of Public Speaking two scholarships of the value of \$100 each, one for men and one for women students, are offered annually for proficiency in intercollegiate debating.

FOR HIGH-SCHOOL STUDENTS. The Department of Education offers scholarships to high school students as follows: \$100 for the best score in the annual scholarship contest, \$75 for the second best score, \$50 for the third best score, and \$25 each to individuals scoring fourth, fifth, and sixth highest respectively.

FOR 4-H CLUB MEMBERS. The Union Pacific System offers \$100 scholarships to winners in 4-H Club work (in 36 counties named), the money to be used to enroll for a full term course in agriculture or home economics.

The Folger Coffee Company of Kansas City, Mo., offers \$300 annually for the purpose of providing two 4-H Club scholarships of \$150 each for any full-term course at the Kansas State Agricultural College. One of these scholarships goes each year to the boy standing highest and the other to the girl standing highest in the 4-H leadership project in Kansas.

FOR WORLD WAR VETERANS AND THEIR DESCENDANTS. The trustees of the estate of La Verne Noyes award scholarships annually to various colleges and universities. In 1928-'29 five such scholarships were awarded to the Kansas State Agricultural College and it is expected that a similar or larger number will be awarded annually in the future. These scholarships are available with certain reservations to deserving students who served in the Army or Navy

of the United States between the dates of April 6, 1917, and September 11, 1918, and who need this assistance. Applications for these scholarships should be made through the student's dean.

GRADUATE FELLOWSHIP

The Manhattan branch of the American Association of University Women offers a graduate fellowship, a gift of \$200 annually, to a woman who has a standard Bachelor's degree. The candidate must have an undergraduate record equivalent to an average of B at K. S. A. C., and give promise of ability to do research work. Work may be pursued in any department of the Kansas State Agricultural College recognized by the Graduate Council.

Applications and transcripts of undergraduate work must be sent to the chairman of the A. A. U. W. Fellowship Committee on or before the March first previous to the academic year in which the fellowship is desired.

GRADUATE ASSISTANTSHIPS

Graduate assistantships have been established for some years by action of the Board of Regents, and are available in several departments of the College. For full details see a previous paragraph in the section devoted to graduate study.

BUSINESS DIRECTIONS

General information concerning the College may be obtained from the president or the registrar. Financial matters are handled through the office of the business manager, State Board of Regents, Topeka, Kan.

Prospective students desiring information or catalogues should address the vice president's office.

Scientific and practical questions, and requests for special advice in subjects in which the College and the Experiment Stations are prepared to give information, should be addressed to the heads of the departments concerned with the work regarding which information is sought.

Applications for farmers' institutes should be made as early in the season as possible, to the Division of Extension. Applications for the publications of the Agricultural Experiment Station should be addressed: Director of the Agricultural Experiment Station, Manhattan, Kan. Publications of the Engineering Experiment Station may be had by addressing: Director of the Engineering Experiment Station, Manhattan, Kan.

Donations to the Library should be addressed to the librarian, and donations to the Museum to the curator of the Museum.

STUDENT ASSEMBLY

The Student Assembly is held one hour each week. The library, offices, classrooms, and laboratories are closed and the students gather in the College Auditorium. These assembly exercises consist of devotional services, music, and addresses. The devotional exercises are conducted by members of the faculty, by resident ministers of the various denominations, or by prominent visitors. Excellent music is provided by the College Orchestra, by members of the Department of Music, and by available outside talent. In addition to the addresses delivered by the president and by members of the faculty, many prominent leaders of state and national reputation are invited to address the assembly. Thus the Student Assembly has become a center of true culture and enlightenment. Although attendance is not compulsory it is common to see nearly two thousand students present during these exercises.

COLLEGE PUBLICATIONS

The official organ of the College is *The Kansas Industrialist*, published and printed at the College weekly by the Department of Industrial Journalism and Printing. Its pages are filled with articles of interest, with special reference to agriculture and the industries. Particular attention is paid to information

concerning the work of the College, to investigations of the Experiment Stations, and to local and alumni news. *The Kansas Industrialist* will be sent to any address for \$3 a year. The alumni having active membership in the Alumni Association receive *The Kansas Industrialist* free of charge.

The Division of College Extension issues a monthly publication entitled *Agricultural Education*, of special interest to institute members.

The students of the College publish a semiweekly periodical, *The Kansas State Collegian*, in the interests of the students at large. A humorous magazine, *The Brown Bull*, is published by the students and appears about four times during the college year. *The Kansas State Engineer* is published by students in the Division of Engineering. Students in the Division of Agriculture issue *The Kansas Agricultural Student*. *The Home Economic News* is published quarterly by the faculty and students of the Division of Home Economics. A College annual, *Royal Purple*, is published each year by the senior class.

COLLEGE POST OFFICE

The College operates an office for the reception and delivery of mail. This is not a part of the United States postal service, but students and College officers may have their mail delivered there. Mail is received from the Manhattan post office and taken to it three times a day. Matter may be deposited for registered mail, and postage stamps may be procured, but post office orders cannot be obtained.

The chief purpose of this office is to facilitate intercommunication of College departments and communication of deans and teachers with students. All students are expected to call for their mail at least once each two days and preferably every day.

ASSIGNMENTS

The student, primarily, is responsible for seeing that he conforms to the requirements of the curriculum for which he is enrolled. His assigner and his dean will assist him in planning his work, but are not responsible for his errors. The catalogue is the authentic source of information. College officers try to see that requirements are complied with, but if they fail, the student is not thereby relieved. All of the catalogue statements concerning assignments, and the student's curriculum, should be read.

No student may be enrolled in classes or for private lessons in music or other subjects before receiving an assignment, and no assignment is completed until after the incidental fee and any special fees or charges are paid.

Assignments at the dates shown in the College calendar are made in Nichols Gymnasium, where detailed directions are announced by placards. Later assignments are made by the student's assigner during regular office hours, but are subject to checking by the registrar in respect to availability of classes. Classes are closed when the limits as to numbers are reached. A student is not admitted later than ten days after the opening of the semester except by special permission of his dean. An extra fee of five dollars is charged for assignments secured after the regular dates for assignment of students at the opening of each semester as announced in the College calendar.

A student desiring to take work at any other than the regular time must obtain the written consent of his dean, the head of the department in which the work is to be done, and the dean of the division to which the department belongs.

Each student must take full work unless excused by his dean, and more than regular work is not allowed to any student except by permission of his dean, and under no circumstances to anyone who failed or was conditioned or deficient in any subject the preceding semester, or whose average grade was below B.

A student is not allowed to carry work by correspondence while enrolled here, except by permission of his dean.

Special requests concerning assignments, and permission to make up deficiencies by outside study under an approved tutor, are acted upon by the student's dean in conference with the heads of the departments involved.

CHANGES IN ASSIGNMENTS

Subjects are not dropped from assignments within two weeks preceding the close of a period covered by midsemester or final scholarship-deficiency reports.

No student may drop a study or modify his assignment except by a re-assignment, and any student desiring a change in his assignment must apply to his dean. Any change in a student's assignment is made in the office of his dean. Teachers desiring that assignments be changed send requests to the proper deans. Notices of changes are furnished the registrar, the student, and the student's assigner. Changes are effective at once, and the registrar, through the heads of departments, sends notices or enrollment cards to the teachers affected.

A student receiving a notice of reassignment must at once report to classes in accordance therewith. If not content with the revised assignment, he may confer with his dean concerning it. All absences caused by a student's dropping out of class without a proper reassignment are reported by the instructor as unexcused absences.

SCHOLARSHIP DEFICIENCIES

Any freshman student who receives deficiencies (grades of F or Con.) in one-third of the work to which he is assigned, or any other student who receives deficiencies in one-fourth of his work, at the end of the semester, is automatically placed on probation for one semester and the parent or guardian of the student is informed of the fact. A third such probation automatically includes dismissal from the College.

Any freshman student who receives deficiencies in one-half of his work, or any other student who receives deficiencies in two-fifths of his work, at the end of the semester, is automatically dismissed from the College. The deans notify parents and guardians of the fact when students are dismissed or put on probation on account of scholarship deficiencies.

Students dismissed at the end of the first semester shall be excluded until the beginning of the next summer session. Those dismissed at the end of the second semester shall be excluded till the end of the next fall semester. During this period of dismissal the student must not habitually appear upon the campus nor enter any classes. Any student dismissed for scholarship deficiencies may petition in writing, on a form provided by the College, for immediate reinstatement. Petitions presented by such students are considered by a committee appointed for that purpose. Reinstatement is granted only in exceptional and meritorious cases.

ABSENCE AND TARDINESS

Each student must appear at the first exercises of his classes after he is assigned. Students must be present the very first day of each semester or render a reasonable excuse. All absences are reported from the first day of the semester, even though the student enrolled late. Failure to take out an assignment is not accepted as an excuse for absence from classes. A student is not admitted later than ten days after the opening of the semester except by special permission of his dean.

Each student is required to attend every exercise of a class to which he is assigned. All absences and all cases of tardiness must be promptly accounted for on the "absence blanks." Permission for necessary absences from College for a day or more must, in all cases, be previously obtained from the dean. Any student present at College and desiring to be excused for the day from certain classes must apply in advance to the teachers of those subjects.

The student's attendance record is considered by each instructor as an important factor in determining the grade given in a subject.

The class record of attendance is marked immediately after the beginning of the class period. For students who come in late the record of absence may be changed to that of tardiness, but the teacher is not obliged to make such

change unless the student on the day of tardiness hands to him at the close of the hour, on the "absence blank," a statement that he was present. In such a case the record is changed to agree with the facts. When a student who has been absent from College because of sickness returns, he must present to each instructor a certificate of good health from the College physician before he is permitted to remain in any classroom. The aim is to prevent the spread of any contagious disease.

Any class is excused if for any reason the instructor fails to report at the end of ten minutes after the beginning of the recitation period, unless the instructor sends word that he will be there later.

Signed reports of absences for each day are sent to the deans by the teachers before five o'clock p. m. Excuses submitted by students are transmitted with a recommendation in respect to excusing the absence. Action concerning excuse for absence is taken by the student's dean. Excuse for an absence does not relieve the student from responsibility for lecture, recitation or laboratory work lost while absent.

Any student who is found to be persistently inattentive in his College work is at once temporarily suspended by his dean, and reported by the president for permanent suspension.

EXAMINATIONS

Examinations are held during the last eight days of the semester in accordance with a definite examination schedule which, as far as possible, gives the student not more than two examinations on any one day.

No regular examination may be given at a date in advance of that provided except that, at the discretion of the head of the department, a student may be permitted to take his examination with another class in the same subject instead of his own class, and that in cases of extreme importance the dean of the student may authorize an examination at an earlier date.

Any student who receives a grade of A for the semester, in any subject, and whose absences for all causes from the class in each subject do not exceed one-tenth of the number of times the class is scheduled to meet during the semester, may be excused from the final examination in that subject, at the discretion of the instructor; provided, however, that instructors are to announce such exemption lists in their respective subjects not earlier than the last session of the class preceding the final examination.

Examinations to remove conditions are held on the fourth Saturday of each semester. A student who has received the grade of Con. is entitled to take such special examination, provided the instructor or the department head be notified of the student's desire to take the examination not later than the Tuesday evening preceding the Saturday set for the examination. If a subject in which a student is conditioned is not passed at the first opportunity, the grade is changed from Con. to F, except that in individual instances, where the reason is sufficient, the student's dean may authorize such examination at a date different from that provided by the rule.

Permission for examination in subjects not taken in class or to make up failures by special examination must be obtained, on recommendation of the professor in charge, from the dean of the division in which the student is assigned. Permission to take such examination is not granted unless the preparation for it is made under an approved tutor. All such examinations are under the immediate supervision of the professor in whose department the subject falls.

Examinations in high-school subjects for admission to the College are held at the beginning of each semester and of the summer school. Students desiring such examinations should consult the registrar in advance.

GRADES

Student grades are designed by A, B, C, D, Con., Inc. and F, having the following significance and order of rank:

The grade A designates really distinguished achievement, and is the net resultant of exceptionally good mental ability in conjunction with serious

application. It is expected that this grade will not include more than ten per cent of all grades given a class, and usually will include about five per cent.

The grade B represents superior achievement, better than that exhibited by the average student, but not distinguished. It is recognized as a mark of considerable honor and is the resultant of high ability and fair application, or of fair ability and serious application. The percentage of students assigned this grade will depend somewhat on the number assigned grade A, but the sum of grades A and B should approximate twenty-five per cent of all grades assigned.

The grade C represents the standing of about half of all students in the College. It means achievement equal to that of the average of students, and includes about half of all student grades. It indicates neither superior nor inferior accomplishment.

The grade D, meaning passed, represents achievement of a grade below that of the average of students. It indicates a student's position as being in the upper part of the lower fourth of the class, and his work as being such as may be described as poor, or inferior. The number of grades D awarded, together with the grades Con. and F, should not, on the whole, exceed twenty-five per cent of all, and are expected to include about that proportion.

The grade Con., meaning conditioned, is the symbol used to represent work which is deficient in quality. The results of examinations to remove conditions are reported simply as D (passed) or F (failed). In case such examinations are not taken at the first opportunity offered, the grade Con. automatically becomes an F.

The grade F, meaning failed, is used to indicate work that is so unsatisfactory as to require that the work be repeated in class or under an approved tutor.

Inc., meaning incomplete, is reported when, in the judgment of the instructor, the student deserves further time to complete work which has been interfered with by illness or other excusable cause of absence or disability. Inc., is also reported when the work of the student is satisfactory as to quality but inadequate as to quantity. This is only a temporary report and in no way prejudices the student's final grade in a course. Incomplete work for which a grade of Inc., has been reported, if not made up within the first semester the student is in attendance automatically becomes an F.

The distribution of grades indicated above applies to large numbers, at least a hundred or several hundred, and is not necessarily true of small numbers. It is not a foregone conclusion, for example, that one in a class of twenty must fail nor even that one in the class must have an A grade. In a small group the chances are very much greater that there may be a departure from the normal. If there be such a departure it should of course be recognized in the grades issued. In the long run the accumulated grades for a series of small classes should, however, approach the normal distribution.

REPORTS OF GRADES

On the fifth Saturday and the ninth Saturday of each semester, on the last day of the first semester, and within two days after the close of the second semester, reports of all grades below passing at those dates are sent to the students and the deans. The dates are shown in the College calendar, and these reports are an imperative duty of all teachers. The first two of these reports are made in percentages on a scale of seventy for passing. The reports at the end of the semester are on the letter system in use.

Students desiring reports of intrasemester grades must supply their teachers with properly filled officially prepared cards between the fourth and the eleventh days after the fifth or the ninth Saturday of a semester. Reports so requested are to be made by the teachers, and may be sent to the students through the College post office, or otherwise.

The instructor prepares for each student a semester grade based on the examination and class work, and is required to report this to the registrar for record within two weeks after the close of the semester. If a student goes through the first half of the semester, but not the second half, a half-semester grade is reported for record, and designated as such. If the student drops out

of College before midsemester a grade of Wd (withdrawn) is reported for each subject, irrespective of the standing of the student in the subject. Similarly, if a student drops a subject before midsemester a grade of Wd is reported. However, subjects are not dropped from assignments within two weeks preceding the close of a period covered by midsemester or final scholarship-deficiency reports. A subject dropped at any time after midsemester on account of failure is given a semester grade of F.

The result of an examination to remove a condition is reported in quadruplicate to the dean of the student, who transmits copies to the registrar, the student and the student's assigner. The same procedure is followed in reporting grades to replace "Inc.'s" and in reporting corrections of grades.

In case of absence from the final examination at the end of a semester, a semester grade is not reported until the reason for such absence has been learned; and if the absence is excused or excusable, a reasonable time, usually not over one month, is allowed within which the examination may be taken. In such cases, however, within two weeks after the end of the semester the teacher reports to the registrar a mark of Inc. with a grade for the first half of the semester. If the student's absence is inexcusable a semester grade is reported on the basis of zero for the final examination.

Students in laboratory and industrial work must put in at least four-fifths of the required time in order to get a passing grade in the subject. Should the required time minimum not be reached a mark of Inc. is reported if the quality of the work done is satisfactory and one of F if it is unsatisfactory.

Instructors are enjoined to leave all class books on file in the proper department or with the president of the College when severing their connections with the institution.

THE POINT SYSTEM

For each semester credit of work assigned, the student receives points, according to the grade attained, on the following scheme: Grade A, 3 points; B, 2 points; C, 1 point; and D (or lower), no points. For graduation the total requirement in points is the same as in credits. Above the freshman year classification is based on the same requirement in points as in credits.

Seniors meeting the graduation requirements in credits but failing to meet it in points are required to take further courses designated by the dean of the division in which their major work lies, until the requirement in points is met.

CREDITS FOR EXTRA WORK

Activities connected with the College, but not provided for by any of the curricula, either as required subjects or as electives, are designated as *extra subjects*.

Credit for extra work may be given when the student is regularly assigned to the work in accordance with the general rules governing assignments. A student may be assigned to extra work for credit upon the written recommendation of the instructor in charge of the work. This recommendation is filed in the office of the student's dean, and is effective until revoked.

Credits earned for extra work may be counted as part or all of the electives in any of the College curricula. In curricula that do not include electives, credits for extra work are available only as substitutions for required work, and must be approved in the regular way before becoming effective. A total of not more than eight semester credits may be allowed a student for extra work, and not more than two of these may be obtained in any one semester.

The number of semester credits that may be allowed for extra work is as follows:

<i>Subject</i>	<i>Per semester</i>	<i>Total</i>
Orchestra	1	4
Band	1	4
Debate	2	4
Oratorical Contest	2	4
<i>Kansas State Collegian</i> journalism.....	1	4
<i>Home Economics News</i> journalism.....	1	4
<i>Agricultural Student</i> journalism.....	1	4
<i>Kansas State Engineer</i> journalism.....	1	4

BIBLE STUDY

Bible study is an elective. Two semester credits are granted for each completed one-year course. Credit may be granted to any one student for not more than two courses. Teachers of classes are to be approved as tutors, and the supervision of the work is placed in the Department of Education. This department also conducts the examination for credit in Bible study.

COURSE NUMBERS

Each course offered bears a number indicating in a general way the standing of students for whom it is given. Courses for undergraduates bear numbers 101 to 199, courses for undergraduates and graduates bear numbers 201 to 299, and courses for graduates only bear numbers 301 to 399. The numbers 1 to 29 are applied to studies offered for short-course students, the numbers 31 to 49 are assigned to Summer School subjects not taught for entrance credit or for College credit, and subjects which give credit for admission to the College are numbered 51 to 99.

In applying this system, the courses offered by any department are numbered independently of all other departments of the College.

CLASSES

The minimum numbers for which classes are organized are as follows:

Freshmen or sophomores	12
Juniors or seniors	7

This rule is varied only by special permission of the Board of Regents.

THE STUDENT GOVERNING ASSOCIATION

The governing association of the student body was organized in the spring of 1919, as the Student Self-governing Association, and reorganized in the spring of 1926 as the Student Governing Association.

The executive council of the association consists of seven members, elected each spring for the following school year by the student body as a whole. The council discharges all executive functions of the association, and sits as a court in disciplinary cases. Actions of the council are subject to approval by the faculty council. In cases of disagreement which are not compromised successfully, the decision of the president of the college is final.

Officers of the association are a president, vice president, secretary, and treasurer, elected by the council. Though the council sits as a committee of the whole in all its affairs, certain members are put in charge of certain activities, such as discipline, social affairs, etc. Membership in the student association is contingent upon payment of the varsity activity fee.

THE CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association and the Young Women's Christian Association are organizations of the greatest worth and value in the College community, forming centers of moral culture and religious stimulus among the young men and women during their development period. As is well known, the Christian associations in colleges stand for the best ideals among the students, and are always accorded the cordial support of the authorities. In addition to general moral and spiritual development, the college Christian associations have a practical and efficient influence among the students in many directions.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION

The College Y. M. C. A. has always been a strong and influential body among the students. All young men of the College are welcomed into membership of the organization. No fixed fee is charged, each member giving whatever he feels able to afford. The work of the organization is carried on by a student cabinet, which is composed of the chairmen of the standing com-

mittees and officers. Each year there is organized a freshman commission for the benefit of the new men, especially those who have had Hi-Y experience. One of the useful and practical features of the Y. M. C. A. is the student's employment bureau, which is maintained for all students seeking employment. Especial attention is given the new students on and after arrival in helping them to find rooms and boarding places and to get the right start in College life. The association maintains a regular secretary, with whom prospective students are cordially encouraged to correspond. Address, General Secretary Y. M. C. A., Kansas State Agricultural College, Manhattan, Kan.

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION

Similar in aim and purpose to the organization of the young men is the Young Women's Christian Association. Calvin Hall is the headquarters of the Association, to which all young women of the College are at all times cordially welcome. An office for the general secretary and rest rooms for the young women are maintained in this building during the College year.

An employment bureau for women students is maintained by the general secretary, without charge to its beneficiaries. Various committees are responsible for the lines of work of the association. At the opening of the College semesters the incoming trains are met by "Big Sisters" who assist new women students, the "Little Sisters," in securing suitable lodging and boarding places. If any prospective woman student will write to the general secretary of the association, her "Big Sister" will correspond with her during the summer vacation.

During the College year various social functions are given for the young women. The first of these is an informal reception to enable the College girls to become acquainted with one another. Once each year the two Christian associations entertain jointly.

The religious life of the young women is fostered by the weekly vesper services held in Recreation Center. The different churches of the city extend a cordial welcome to the College women, and through the efforts of the association they are encouraged to active participation in the services of the church of their choice.

THE NEWMAN CLUB

The Newman Club, an organization of Catholic students, holds meetings devoted to religious study on alternate Sundays. This work is carried on under the local pastor. The College authorities recognize this Bible study by allowing a two-hour credit for it when duly certified. In further recognition of the club's efforts the College has placed a set of the Catholic Encyclopedia in the library, where there is also a comprehensive selection of Catholic books and pamphlets purchased by the club. In addition to the meetings devoted to religious study, social meetings are held.

The club is affiliated with the national organization of Newman clubs of the state universities and colleges. Its aim is to foster sound morality, to develop character, and to promote the knowledge and practice of their faith among Catholic students.

LITERARY SOCIETIES

The literary societies of the College, eight in number, are wholly student organizations, holding weekly meetings in the College buildings. The Alpha Beta and Franklin literary societies are open to both sexes; the Ionian, Eurodelphian and Browning societies admit only young women to membership; the Webster, Hamilton and Athenian societies admit young men only. Students are encouraged to join one of these organizations for the sake of practice in the use of language, training in debate, and general experience in conducting meetings and in dealing with their fellows. These societies jointly maintain a debating council which coöperates with a faculty committee in arranging for all intercollegiate and interstate debates participated in by representatives of the College. The oratorical board, similarly maintained by these societies, arranges for the intersociety oratorical contest.

SCIENCE CLUB

The Science Club, meeting monthly, is an organization of instructors, students and others interested in science. Its programs include popular lectures by prominent men of science, and papers giving the result of research work at the College. The meetings are also characterized by free discussion of the subjects presented.

AGRICULTURAL SOCIETIES

The Agricultural Association meets Monday evenings. All students interested in agriculture are eligible to membership. The object of the association is to promote the general interests of agriculture in the College and in the state.

The Agricultural Economics Club meets on the second and fourth Tuesdays of each month. Membership is open to undergraduate students majoring in agricultural economics, graduate students majoring or minoring in agricultural economics, and to members of the faculty whose work is of an agricultural economic character. The object of the club is to promote interest in agricultural economic topics, to encourage sound economic thinking, and to further the acquaintanceship of faculty and students. Outside speakers are frequently secured for special meetings which are open to the public.

The Block and Bridle Club meets on the first and third Mondays of each month. Membership is open to all animal husbandry students above the freshman year. The object of the club is to promote the interests of animal husbandry in the College and in the state. Live-stock problems of all kinds are taken up, and the members of the faculty and outside speakers are secured for addresses on special topics.

The Dairy Club meets on the first and third Mondays of each month. Membership is open to anyone who is taking any four-year curriculum in the Division of Agriculture and also to anyone actively engaged in dairy work at the College. The object of the organization is the furtherance of dairying in Kansas. Current topics and records of the dairy breeds are read and lectures on special subjects are given by faculty and outside speakers.

The Horticultural Club meets the first and third Tuesdays of each month during the College year. Its object is to promote the horticultural interests of the state and to afford opportunity for students to improve their knowledge of horticulture. Students of the College interested in horticulture and faculty members are eligible for membership. Students present the majority of the programs.

The Klod and Kernel Klub meets on the second and fourth Tuesdays of each month. Membership is open to junior and senior agronomy students and members of the agronomy faculty. The object of the society is to arouse more interest in agronomic work and to help students and faculty members of the Department of Agronomy to become better acquainted. Faculty and outside speakers are secured for programs.

ENGINEERING SOCIETIES

The students in agricultural, civil, electrical, and mechanical engineering are organized as student branches of the American Society of Agricultural Engineers, the American Society of Civil Engineers, The American Institute of Electrical Engineers, and The American Society of Mechanical Engineers, respectively. The Architects Club conducts the meetings of the students in architecture.

The purpose of these various societies is to acquaint the students with the latest development in the fields of engineering and architecture, to give them more definite ideas as to the opportunities in their professions and the requirements for success in their professions, to promote acquaintance and fellowship among the students, and to further the interest of the Division of Engineering in the College and the state.

GENERAL SCIENCE SOCIETIES

The Popenoe Entomological Club meets twice a month. The object of the club is to promote interest in entomological work at the College. Membership is open to students and faculty members interested in insects. Entomological topics are discussed by members of the club and outside speakers. Occasional field trips are sponsored by the club.

HOME ECONOMICS SOCIETIES

The Home Economics Association is an organization in which membership is open to any student in the Division of Home Economics.

Its purpose is to promote professional interest by means of social contact and through talks by leaders in the field of home economics. It aids in the publication of *Home Economics News*, the divisional magazine issued four times a year. It is affiliated with the American Home Economics Association and is designed to lead to continued membership in that organization after graduation from college.

HONORS

In each of the divisions of the College, "sophomore honors" are awarded at Commencement to not more than five per cent of the sophomore class having the highest standing up to the close of the sophomore year.

In a similar manner "senior honors" are awarded to not exceeding ten per cent of the senior class having the highest standing during their junior and senior years.

In awarding honors, the following values are assigned: Grade A, 3; B, 2; C, 1; D, 0; Con., minus 1; and F, minus 2. The honor grade is found by dividing the sum of the product of the grade values and the credit hours by the number of credit hours of work taken. In order to receive honors, the student's average must be B or higher.

The diplomas of the highest three per cent of the senior class are inscribed "with high honor" and of the remainder of the highest ten per cent "with honor."

HONOR SOCIETIES

A chapter of Phi Kappa Phi, an honor scholarship society, membership in which is open to honor graduates of all departments of American universities and colleges, was installed at the Kansas State Agricultural College on November 15, 1915. The eligibility of undergraduates to membership is determined on the basis of their scholarship. The candidates are elected to membership at the October, April, and July meetings of the chapter.

The honor society of agriculture, Gamma Sigma Delta, has as its object the encouragement of high standards of scholarship in all branches of agricultural science and education, and the encouragement of a high degree of excellence in the practice of agricultural pursuits. Seniors whose grades place them in the upper one-fourth of their class are eligible for membership. Election is in the hands of faculty members of the local chapter.

A chapter of Sigma Xi was installed at this institution in March, 1928. The object of this society is to encourage original investigations in pure and applied science. Members of the faculty and graduate students who have shown noteworthy achievement in original investigations are eligible for election to active membership; seniors who have shown marked excellence in two or more departments of pure or applied science are eligible for election to associate membership.

Besides these above mentioned there are a number of honor fraternities, sororities, and societies which are open to students in different divisions of the College or in different activities. These are treated below.

HONORARY AND PROFESSIONAL ORGANIZATIONS

The honorary and professional organizations of the College consist of fraternities, sororities, and societies. Membership in these organizations is based on scholarship and achievement. They seek to stimulate effort and to pro-

mote the interests of the various divisions or departments which they serve or represent. The list of organizations follows:

<i>Organization</i>	<i>Division or department</i>
Alpha Kappa Psi	Commerce
Alpha Zeta	Agriculture
K Fraternity	Athletics
Mu Phi Epsilon.....	Music
Omicron Nu	Home Economics
Phi Alpha Mu	Women's Science
Phi Delta Kappa	Education
Phi Mu Alpha	Music.
Pi Kappa Delta.....	Debating
Purple Masque	Dramatics
Quill Club	College Writers
Scabbard and Blade	Military
Sigma Delta Chi	Industrial Journalism
Sigma Tau	Engineering
Theta Sigma Phi	Industrial Journalism

In addition to these student organizations there are chapters of Phi Kappa Phi, Gamma Sigma Delta and Sigma Xi. In these societies election is based on scholarship and is in the hands of faculty members. (See "Honor Societies," above.)

THE COLLEGE BAND

The College Band is a military organization, composed of cadets assigned to this duty for the College year in lieu of drill and technical military instruction. The Band is limited in its membership, and attendance of the members upon its exercises is obligatory. It has proved an effective aid to the cadet corps, stimulating a love for martial music, and affording an attractive feature of the various public ceremonial occasions at the College.

THE COLLEGE ORCHESTRA

The Orchestra is a student organization connected with the Department of Music, membership in which is voluntary. Its daily training under competent leadership results in the acquisition of a considerable repertoire of musical compositions of the best quality. Those connected with the Orchestra obtain in this way familiarity with the works of many of the great composers, and among the students at large the orchestra is an efficient aid in cultivating a taste for, and appreciation of, good music.

ATHLETIC ORGANIZATIONS

By means of the gymnasium the College is prepared to give complete physical as well as mental training. This building, which is equipped with all the usual accessories, assists in developing and maintaining physical tone and health in the student body. In addition to the gymnasium classes, and physical training in the military corps of cadets, all young men are encouraged to develop their physical skill by playing on practice teams in various athletic lines. In the fall football teams are organized; in the fall and winter, basket ball; while in the spring, baseball, tennis, and track athletics prevail. Every possible encouragement is given all students desirous of participating in these games to enter the practice teams and receive the necessary instruction. The most proficient of these have opportunity to enter the first teams and participate in intercollegiate contests. The College authorities encourage all reasonable and sane athletic development, as a means for the training of physical qualities desirable in men everywhere. Professionalizing tendencies are strictly repressed, and the athletic rules adopted by the faculty prevent by proper regulation all participation in intercollegiate games on the part of students deficient in their studies.

The women students have equal opportunity with young men for general physical training. In the gymnasium, under a physical director, they receive training suitable for their needs. Basket ball and tennis teams are organized among the young women.

The Division of Agriculture

LELAND EVERETT CALL, *Dean*

The teaching of rational, practical agriculture is fundamental to development in a state whose principal industries are agricultural. Kansas prospers in direct proportion to the productivity of her soil and to the effectiveness with which it is utilized. Effective utilization of the agricultural resources of the state depends upon the success with which the agricultural industries of the state are developed. In order to succeed in farming it is necessary to know something of the soil, the conservation of its fertility and moisture, and its proper cultivation; the kinds of plants to grow and how to improve them; the selection, breeding, and feeding of live stock; the maintenance of orchards, gardens, and attractive surroundings; farm buildings, and the equipment of the farm and the farm house with modern conveniences; the best methods of marketing the product of the farm; and in addition to all this, how to make the farm home the center of influence for good citizenship in the agricultural community.

A man may learn many of these things through practical experience, and thus become successful in modern farming. But practical experience alone is slow and expensive. The Kansas State Agricultural College furnishes a means of acquiring systematic training in agriculture which fits young men adequately for the farm and at a moderate expenditure of time and money.

In addition to training men for service as farmers, the College prepares students for various other activities which must be carried on if the agriculture of the state and nation is to be developed properly. These activities include scientific investigation of agricultural problems in state and national institutions, agricultural extension work, teaching of agriculture, service in the industries directly involving agriculture, and a variety of other lines of public and private service of an agricultural nature. The demand for well-trained, reliable men in all these lines is always extensive. The primary aim of the College in training men in agriculture is to fit them for service in which they will develop into agricultural leaders, either as farmers or in some other capacity, and as such, contribute to the upbuilding of rural institutions and the improvement of American country life.

EQUIPMENT

The facilities for such training at this College are of a high order. The College owns 1,420.3 acres of land, which is used for investigation, instruction, and demonstration in the various courses in agriculture and allied branches. The campus, which comprises 160 acres, is one of the best examples of ornamental tree planting and forestry in the state. Students working daily amid such surroundings can scarcely fail to gain an appreciation or love for the beautiful. A tract of 320 acres is devoted to the work in agronomy; for horticulture and forestry work, 80 acres are used; for dairy work, about 160 acres; and for animal husbandry, about 550 acres. The herds and flocks contain high-class representatives of the important breeds of dairy and beef cattle, hogs, horses, and sheep. With this class of stock available for the work in judging, the student is supplied with types of the best breeds and becomes familiar with these types by actual handling of the stock.

CURRICULA IN AGRICULTURE

The various needs of the student of agriculture are met by the following curricula:

A four-year curriculum in agriculture.

A four-year curriculum in agricultural administration.

A four-year curriculum in agriculture with special training in landscape gardening.

A six-year curriculum in animal husbandry and veterinary medicine.

Various special courses. (The work of these courses is discussed in another section of the catalogue.)

DEGREES

The four-year curricula in agriculture lead to the degree of Bachelor of Science (in agriculture).

The six-year curriculum in animal husbandry and veterinary medicine, the last two years of which are given in the Division of Veterinary Medicine, leads to the degree of Bachelor of Science at the end of four years, and to the degree of Doctor of Veterinary Medicine at the end of two more years.

CHOOSING A CURRICULUM

The curriculum in agriculture and the curriculum in agricultural administration have a common freshman year. It isn't necessary until near the end of this freshman year that any student of agriculture state formally which of these curricula he will pursue.

Students selecting the curriculum in agriculture are not required until the second semester of the sophomore year to name the department in which they will major. A student may major not only in any department in the Division of Agriculture but also in the Departments of Botany and Plant Pathology, Entomology, Zoölogy, Bacteriology, Chemistry, or Agricultural Engineering. Liberal provision is also made for substitutions to meet definite and purposeful objectives. See "Substitutions to Meet Certain Objectives," following the outline of "Curriculum in Agriculture."

THE CURRICULUM IN AGRICULTURE

The four-year curriculum in agriculture is designed primarily to meet the needs of the students who expect to return to the farm. However, the student who completes the curriculum will have had sufficient training to enable him to enter some one of the many lines of agricultural industry as a specialist. The demand for men thus trained is constantly increasing, and such positions offer attractive opportunity for men who by nature and training are adapted to the work. The United States Department of Agriculture, the state colleges and departments of agriculture, high schools, private institutions of secondary and college rank, and a great variety of commercial interests, are constantly demanding men trained in agriculture.

The young man who expects to make farming his life work can start with no better asset than the thorough training in practical and scientific agriculture afforded by the four-year curriculum. The American farmer needs more of the skill that comes through the training of the hand, in order that he may better do the work of farming; but much more he needs the training of the mind in the fundamental truths that underlie every operation in farming, in order that he may use the skill of the craftsman with reason and judgment. One may learn to plow a field with the greatest skill; the work may be a model of its kind. If, however, it is plowed with utter disregard of the moisture conditions which prevail the result may be a failure. To understand the conditions which should determine when and how to plow is the work of the trained mind; the other is the work of the trained hand. The farmer and the teacher of agriculture must possess both kinds of training, and the curriculum has been organized with this fact in view, and has been so arranged that the student begins his practical training in agriculture on the first day he enters College.

ANALYSIS OF THE CURRICULUM IN AGRICULTURE

One hundred twenty-four semester credits in addition to military science are required for graduation, as follows:

	<i>Semester credits</i>
Prescribed in agriculture.....	31
Electives in agriculture, required with the prerequisites.....	21
Required in agriculture.....	52
Prescribed in nonagriculture.....	47
Electives in nonagriculture, required.....	6
Electives that may be nonagricultural.....	19
Total allowed in nonagriculture.....	72
Required in military science.....	4
Total semester credits for graduation.....	128

Any candidate for a degree in agriculture must have had at least six months' farm experience approved by the dean of the Division of Agriculture. A formal statement giving information regarding this experience must be filed in the dean's office during the last semester of the senior year.

The student who completes the freshman and sophomore years will have had, in addition to the fundamental work in chemistry, zoölogy, geology, botany, and English, basic studies in soils, farm crops, live stock, dairying, poultry husbandry, horticulture, and agricultural economics. These two years give the student a general knowledge of the whole range of agriculture, more than one-third of his time being devoted to strictly agricultural courses.

During the junior and senior years the student continues his studies of fundamental science and learns to apply science to agriculture. He is led step by step to understand the scientific relations to every farming operation. There is so much agriculture to be taught that it becomes necessary for the student to determine which of the general lines he should emphasize. This is made possible by numerous electives in soils, crops, agricultural economics, animal husbandry, dairy husbandry, horticulture, milling, and poultry husbandry.

THE CURRICULUM IN AGRICULTURAL ADMINISTRATION

The curriculum in agricultural administration is planned to meet the needs of students preparing for industries that are closely related to farming and in which basic training in both agriculture and business principles is desirable. Important among such industries and occupations are: Rural banking, the marketing and processing of grains, the sale and development of lands, hardware and implement retailing, promotion and sales, writing on farm subjects or in other phases of agricultural journalism, and the teaching of agriculture in high schools and elsewhere. Those wishing to engage in certain specialized types of farming will find this curriculum suited to their needs. An increasing demand for men trained in the business phases of agriculture and closely related industries is coming from industries whose customers are primarily in rural communities. The United States Department of Agriculture, the state agricultural colleges and departments of agriculture, high schools, and many other interests are also in need of men trained along these lines.

The interdependence of town and farm is increasing. Recognition of this increased interdependence is to be found in many of the activities of farmers' and civic organizations in which the farmers and the business men of the towns join to attain mutually desired ends. The business man of the rural town must render service to farmers and service can be rendered best when the needs of customers are understood. In addition, every business man needs to know the principles underlying successful business activity. The curriculum in agricultural administration is planned to give this combined understanding of the needs and problems of agriculture and of the principles that must be observed to make a business successful. Ample opportunity is given to elect business subjects such as accounting, business organization, credit and finance, business law, marketing, and subjects in other related fields.

ANALYSIS OF CURRICULUM IN AGRICULTURAL ADMINISTRATION

One hundred twenty-four semester credits in addition to military science are required for graduation. For the field of agricultural education, field 6

as presented under "Electives" in the outline of the curriculum, these requirements may be classified as follows:

	<i>Semester credits</i>
Prescribed in agriculture.....	25
Electives in agriculture required with the prerequisites.....	27
Required in agriculture.....	52
Prescribed in nonagriculture.....	38
Electives in nonagriculture, required.....	15
Electives that may be nonagricultural.....	19
Total allowed in nonagriculture.....	72
Required in military science.....	4
Total semester credits for graduation.....	128

For fields 1 to 5 the credits may be grouped as follows:

	<i>Semester credits</i>
Prescribed in agriculture.....	25
Electives in agriculture required with the prerequisites.....	30
Required in agriculture.....	55
Prescribed in nonagriculture.....	38
Electives in nonagriculture, required.....	15
Electives that may be nonagricultural.....	16
Total allowed in nonagriculture.....	69
Required in military science.....	4
Total semester credits for graduation.....	128

The fifteen hours of major electives are chosen from courses in agricultural economics. The other electives in agricultural and nonagricultural subjects are grouped according to the industry or occupation for which the student is preparing.

STATE TEACHER'S CERTIFICATE

By the selection of proper electives in the Department of Education, the four-year curriculum in agriculture or in agricultural administration may not only lead to the degree of Bachelor of Science in agriculture, but also qualify the student for the three-year Kansas state teacher's certificate, renewable for life and valid in any high school or other public school in the state. A student in the curriculum in agriculture, desiring to qualify for teaching, should begin his professional preparation by electing Psychology, first semester, junior year. (This course is required in the first semester of the sophomore year in the curriculum in agricultural administration.) A total of eighteen semester credits in the Department of Education is required for this certificate. These must include the following courses: Psychology, Educational Administration, and Educational Psychology.

STATE CERTIFICATE FOR TEACHERS OF VOCATIONAL AGRICULTURE

Electives in the curriculum in agricultural administration and in the field of agricultural education may be so chosen as to meet the requirements for the state certificate for the teaching of vocational agriculture in Kansas high schools participating in the federal Smith-Hughes funds. In this case the group of minor electives in related nonagricultural subjects must complete the candidate's professional preparation in education and the group of general electives must include the necessary training in mechanical lines for the handling of farm shop problems. These groups must, therefore, include the following courses or their equivalents:

	<i>Semester credits</i>
Minor electives	15
Educational Administration B.....	3
Educational Psychology	3
Special Methods of Teaching Agriculture.....	3
Supervised Observation and Teaching in Agriculture.....	3
Vocational Education	3
General electives	18
Gas Engines and Tractors.....	3
Farm Buildings	3
Farm Equipment	3
Farm Carpentry I.....	3
Farm Blacksmithing I.....	1
Farm Blacksmithing II.....	1
Farm Shop Methods.....	3
Total	32

THE CURRICULUM IN LANDSCAPE GARDENING

This four-year curriculum leading to the degree of Bachelor of Science in agriculture with special training in landscape gardening is planned to prepare those who complete it for the practice of general landscape gardening. The training given includes the engineering features of the profession, the design of landscape improvements, and the plant materials and architectural structures which are used in the arrangement and beautification of both public and private grounds.

As the general culture and wealth of the country increases, one of their most common expressions is the improvement of home surroundings, for both utility and beauty, and the enlargement and beautification of public parks, recreational areas, school grounds, and cemeteries. The design and supervision of this work requires professionally trained men. Those so trained have increasingly great opportunity for profitable, interesting, and valuable employment in a profession which requires the talents of an artist and the practicality of a builder.

THE CURRICULUM IN ANIMAL HUSBANDRY AND VETERINARY MEDICINE

A combined curriculum in animal husbandry and veterinary medicine has been outlined so that students may receive the degree of Bachelor of Science in agriculture at the end of four years, and the degree of Doctor of Veterinary Medicine at the end of two years more, thus securing both degrees in six years.

The outline of this curriculum is to be found in the section of this catalogue under the heading "Division of Veterinary Medicine."

Curriculum in Agriculture

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
College Rhetoric I, Engl. 101.....*3(3-0)	Gen. Geology, Geol. 103.....3(3-0)
Gen. Botany I, Bot. 101.....3(1-4, 2)	Gen. Botany II, Bot. 105.....3(1-4, 2)
Gen. Chemistry, Chem. 110.....5(3-6)	Gen. Org. Chemistry, Chem. 122.....5(3-6)
El. of An. Husb., An. Husb. 125...3(2-4)or	El. of Dairying, Dairy Husb. 101...3(2-3)or
El. of Dairying, Dairy Husb. 101...3(2-3)	El. of An. Husb., An. Husb. 125...3(2-4)
Freshman Lect., Gen. Agric. 102.....1(2-0)	Library Methods, Lib. Ec. 101.....1(1-0)
Infantry I, Mil. Tr. 101A.....1(0-3)	Infantry II, Mil. Tr. 102A.....1(0-3)
Phys. Education M, Phys. Ed. 103..R(0-2)	Phys. Education M, Phys. Ed. 104..R(0-2)
Agric. Seminar, ¹ Gen. Agric. 103.....R	Agric. Seminar, ¹ Gen. Agric. 103.....R
Total..... 16	Total..... 16

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER ²
El. of Horticulture, Hort. 107.....3(2-3)	Prin. of Feeding, An. Husb. 152.....3(3-0)
Agric. Economics, Ag. Ec. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Anat. and Physiol., Anat. 131.....3(2-3)or	
Plant Physiology I, ³ Bot. 208.....3(3-0)	
Soils, Agron. 130.....4(3-3)or	Farm Crops, Agron. 101.....4(2-6)or
Farm Crops, Agron. 101.....4(2-6)	Soils, Agron. 130.....4(3-3)
Farm Poul. Pro., Poul. Husb. 101, 2(1-2, 1)	General Zoölogy, Zoöl. 105.....5(3-6)
Infantry III, Mil. Tr. 103A.....1(0-3)	Infantry IV, Mil. Tr. 104A.....1(0-3)
Phys. Education M, Phys. Ed. 105..R(0-2)	Phys. Education M, Phys. Ed. 106..R(0-2)
Agric. Seminar, ¹ Gen. Agric. 103.....R	Agric. Seminar, ¹ Gen. Agric. 103.....R
Total..... 16	Total..... 16

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parentheses indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory each week.

1. Four meetings each semester.

2. Sometime during the second semester of the sophomore year each student is required to file a written statement in the office of the dean of the Division of Agriculture, designating the department of the division in which he will major.

3. Students who do not expect to major in animal husbandry, dairy husbandry, or poultry husbandry may, with the approval of the head of the department in which they expect to major, take Plant Physiology I (Bot. 208) instead of Anatomy and Physiology.

JUNIOR

FIRST SEMESTER		SECOND SEMESTER	
Genetics, An. Husb. 221.....	3(3-0)	Gen. Entomology, Ent. 203.....	3(2-3)
Plant Pathology I, Bot. 205.....	3(1-4, 2)	Farm Organization, Ag. Ec. 106.....	3(2-3)
Agric. Microbiology, Bact. 106.....	3(1-6)	Agric. Journalism, Ind. Jour.....	3(2-3)
Electives	7	Electives	7
Agric. Seminar, ¹ Gen. Agric. 103.....	R	Agric. Seminar, ¹ Gen. Agric. 103.....	R
Total.....	16	Total.....	16

SENIOR

FIRST SEMESTER		SECOND SEMESTER	
Electives	16	Agric. Relationships, Gen. Agric. 105, R(1-0)	16
Agric. Seminar, ¹ Gen. Agric. 103.....	R	Electives	16
Total.....	16	Agric. Seminar, ¹ Gen. Agric. 103.....	R
Total.....	16	Total.....	16

Number of semester hours required for graduation, 128.

Electives

The electives in the curriculum in agriculture are grouped as follows:

	<i>Semester credits</i>
MAJOR ELECTIVES	12
These electives may be taken in any one of the departments of the Division of Agriculture. In certain cases also a science department outside of the division may be selected for a major department; <i>e. g.</i> , Chemistry, Entomology, Bacteriology.	
MINOR AGRICULTURAL ELECTIVES	9
These electives may be taken from one or more departments but must directly strengthen the student's preparation in agriculture.	
MINOR NONAGRICULTURAL ELECTIVES	6
These electives must be chosen from one or more of the following departments: Education, Economics and Sociology, History and Government, Mathematics, Modern Languages.	
GENERAL ELECTIVES	19
These electives are expected to be chosen because they are adapted to meet individual needs and to round out the preparation provided by the rest of the student's curriculum. All students not offering one unit of high-school physics for entrance are required to include three credit hours of general physics in their electives.	

All electives must be officially approved before assignment by both the dean of the Division of Agriculture and the head of the department in which the student majors.

SUBSTITUTIONS TO MEET CERTAIN OBJECTIVES

Students desiring more definitely to prepare themselves for scientific or special work in the field of agriculture may, with the approval of the dean of the Division of Agriculture and the head of the department in which they expect to major, substitute courses in the Department of Mathematics, Physics, Chemistry, Bacteriology, Entomology, Zoölogy, Botany and Plant Pathology, Education, Agricultural Engineering, Modern Languages, and other approved departments, in place of twenty-five credit hours in the curriculum in agriculture. Provided that no student may receive a degree in agriculture who does not have at least twenty-five credits in technical agriculture in not fewer than three departments.

Curriculum in Agricultural Administration

FRESHMAN

FIRST SEMESTER		SECOND SEMESTER	
College Rhetoric I, Engl. 101.....	3(3-0)	Gen. Geology, Geol. 103.....	3(3-0)
Gen. Botany I, Bot. 101.....	3(1-4, 2)	Gen. Botany II, Bot. 105.....	3(1-4, 2)
Gen. Chemistry, Chem. 110.....	5(3-6)	Gen. Org. Chemistry, Chem. 122.....	5(3-6)
El. of An. Husb., An. Husb. 125..	3(2-4)or	El. of Dairying, Dairy Husb. 101..	3(2-3)or
El. of Dairying, Dairy Husb. 101..	3(2-3)	El. of An. Husb., An. Husb. 125..	3(2-4)
Freshmen Lect., Gen. Agric 102.....	1(2-0)	Library Methods, Lib. Ec. 101.....	1(1-0)
Infantry I, Mil. Tr. 101A.....	1(0-3)	Infantry II, Mil. Tr. 102A.....	1(0-3)
Phys. Education M, Phys. Ed. 103..	R(0-2)	Phys. Education M, Phys. Ed. 104..	R(0-2)
Agric. Seminar,* Gen. Agric. 103.....	R	Agric. Seminar,* Gen. Agric. 103.....	R
Total.....	16	Total.....	16

* Four meetings each semester.

SOPHOMORE

FIRST SEMESTER		SECOND SEMESTER	
Psychology A, Educ. 101.....	3(3-0)	El. of Hort., Hort. 107.....	3(2-3)
Agric. Economics, Agric. Ec. 101.....	3(3-0)	Feeding L. S., An. Husb. 172.....	3(3-0)
College Algebra A, Math. 107.....	5(5-0)	College Rhetoric II, Engl. 104.....	3(3-0)
Soils, Agron. 130.....	4(3-3)or	Soils, Agron. 130.....	4(3-3)or
Farm Crops, Agron. 101.....	4(2-6)	Farm Crops, Agron. 101.....	4(2-6)
Infantry III, Mil. Tr. 103A.....	1(0-3)	Farm Poul. Pro., Poul. Husb. 101, 2(1-2, 1)	
Phys. Education M, Phys. Ed. 105..R(0-2)		Infantry IV, Mil. Tr. 104A.....	1(0-3)
Agric. Seminar,* Gen. Agric. 103.....	R	Phys. Education M, Phys. Ed. 106..R(0-2)	
		Agric. Seminar,* Gen. Agric. 103.....	R
Total.....	16	Total.....	16

JUNIOR

FIRST SEMESTER		SECOND SEMESTER	
Agric. Journalism, Ind. Jour.....	3(2-3)	Agric. Seminar,* Gen. Agric. 103.....	R
Agric. Seminar,* Gen. Agric. 103.....	R	Electives	16
Electives	13	Total.....	16
Total.....	16		

SENIOR

FIRST SEMESTER		SECOND SEMESTER	
Agric. Seminar,* Gen. Agric. 103.....	R	Agric. Relationships, Gen. Agric. 105, R(1-0)	
Electives	16	Agric. Seminar,* Gen. Agric. 103.....	R
Total.....	16	Electives	16
		Total.....	16

Number of semester hours required for graduation, 128.

Electives

The electives in the curriculum in agricultural administration are grouped as indicated below in the following fields: (1) Rural banking, (2) land economics, (3) grain industries, (4) agricultural journalism, (5) agricultural engineering, and (6) agricultural education.

SEMESTER CREDITS OF ELECTIVES REQUIRED FOR VARIOUS FIELDS

GROUP.	Credits	
	in fields 1, 2, 3, 4, 5	Credits in fields 6
Major electives in agricultural economics.....	15	10
Minor agricultural electives (not more than nine semester credits from one department)	15	17
Minor electives in related nonagricultural subjects.....	15	15
General electives	16	19
Total	61	61

NOTE.—All students not offering one unit of high-school physics for entrance are required to include three credit hours of general physics in their electives.

All electives must be officially approved before assignment by both the dean of the Division of Agriculture and the head of the Department of Agricultural Economics.

Adaptation of Curriculum in Agricultural Administration for Class of 1931

The class of 1931 will be held for the freshman year as outlined on page 100 of the catalogue issued under date of May 1, 1927. The other years will be the same as outlined on a preceding page of this catalogue, except that in the second semester of the sophomore year, three semester credits of options will displace College Rhetoric II.

Number of semester credits required for graduation, 134.

* Four meetings each semester.

Curriculum in Agriculture, with Special Training in Landscape Gardening

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Botany I, Bot. 101.....	3(1-4, 2)
Gen. Chemistry, Chem. 110.....	5(3-6)
Engr. Draw., Mach. Des. 101.....	2(0-6)
Library Methods, Lib. Ec. 101.....	1(1-0)
Freshman Lect., Gen. Agric. 102.....	1(2-0)
Infantry I, Mil. Tr. 101A (men).....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 151A, R(0-3)	
Agric. Seminar,* Gen. Agric. 103.....	R

Total men	16
Total women	15

SECOND SEMESTER

Gen. Geology, Geol. 103.....	3(3-0)
Gen. Botany II, Bot. 105.....	3(1-4, 2)
Gen. Org. Chemistry, Chem. 122.....	5(3-6)
Extempore Speech I, Pub. Spk. 106..	2(2-0)
Domestic Arch., Arch. 124.....	2(2-0)
Infantry II, Mil. Tr. 102A (men).....	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 152A, R(0-3)	
Agric. Seminar,* Gen. Agric. 103.....	R

Total men	16
Total women	15

SOPHOMORE

FIRST SEMESTER

Object Draw., Arch. 111.....	2(0-6)
Agric. Economics, Agric. Ec. 101...	3(3-0)
Plant Physiology I, Bot. 208.....	3(3-0)
Soils, Agron. 130.....	4(3-3)
Landscape Gardening I, Hort. 125...	3(3-0)
Infantry III, Mil. Tr. 103A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 153..	R(0-3)
Agric. Seminar,* Gen. Agric. 103.....	R

Total men	16
Total women	15

SECOND SEMESTER

Object Draw. II, Arch. 114.....	2(0-6)
Plane Trigonometry, Math. 101.....	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
El. of Horticulture, Hort. 107.....	3(2-3)
College Rhetoric II, Engl. 104.....	3(3-0)
Infantry IV, Mil. Tr. 104A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 154..	R(0-3)
Agric. Seminar,* Gen. Agric. 103.....	R

Total men	16
Total women	15

JUNIOR

FIRST SEMESTER

Plant Materials I, Hort. 224.....	3(2-3)
Plant Pathology I, Bot. 205.....	3(1-4, 2)
Surveying I, Civ. Engr. 102.....	2(0-6)
Theory of Lands. Design, Hort. 243..	2(2-0)
Greenhouse Con. & Man., Hort. 128..	3(3-0)
Taxo. Bot. of Fl. Plants, Bot. 225..	3(1-4, 2)
Agric. Seminar,* Gen. Agric. 103.....	R

Total.....	16
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SECOND SEMESTER

General Entomology, Ent. 203.....	3(2-3)
Agric. Journalism, Ind. Jour. 160....	3(2-3)
Surveying II, Civ. Engr. 111.....	2(0-6)
Plant Materials II, Hort. 226A.....	3(2-3)
Plant Ecology, Bot. 228.....	2(2-0)
Floriculture Problems, Hort. 220....	2(-)
Electives ¹	1
Agric. Seminar,* Gen. Agric. 103.....	R

Total.....	16
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SENIOR

FIRST SEMESTER

Landscape Gardening II, Hort. 238..	3(1-6)
Dendrology, Hort. 117.....	3(2-3)
Spraying, Hort. 207.....	3(2-3)
Pencil Rend. & Sketch., Arch 116....	2(0-6)
Landscape Constr., Hort. 227.....	3(2-3)
Electives ¹	2
Agric. Seminar,* Gen. Agric. 103.....	R

Total.....	16
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SECOND SEMESTER

Agric. Relationships, Gen. Agric. 105, R(1-0)	
Silviculture, Hort. 119.....	3(2-3)
Landscape Gardening III, Hort. 246, 3(1-6)	
Water Color I, Arch. 118.....	2(0-6)
Civic Art, Hort. 223.....	3(1-6)
Landscape Gard. Prob., Hort. 240...4(-)	
Electives	1
Agric. Seminar,* Gen. Agric. 103.....	R

Total.....	16
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Number of semester hours required for graduation: Men, 129; women, 125.

Electives in Industrial Journalism

Provision is made for students desiring to prepare for the field of agricultural journalism to major in industrial journalism. They thus secure to a large extent the agricultural training provided in either the curriculum in agriculture or the curriculum in agricultural administration, but instead of securing advanced intensive training in some field of agricultural production or agri-

* Four meetings each semester.

1. All students not offering one unit of high-school physics for entrance are required to include three credit hours of general physics in their electives.

cultural administration, secure some fundamental training in journalism. They are then well prepared for a large vocational field as agricultural writers, magazine and newspaper publishers, or leaders in other journalistic activities, especially those closely related to agriculture. The electives provided for students selecting such a field for major work are as follows:

Electives for Students of Agriculture Majoring in Industrial Journalism

FIRST SEMESTER	SECOND SEMESTER
Principles of Advertising..... 3(3-0)	Industrial Writing 2(2-0)
Industrial Feature Writing..... 2(2-0)	Editorial Practice 2(2-0)
Copy Reading 2(0-6)	Ethics of Journalism 2(2-0)
The Rural Press..... 2(2-0)	Journalism Surveys 2(0-6)

Agricultural Economics

Professor GRIMES
 Professor GREEN
 Associate Professor EVANS
 Associate Professor MORTENSON

Assistant Professor HODGES
 Assistant Professor HOWE
 Assistant Professor HENNEY
 Graduate Assistant LARSEN

The investigational work in agricultural economics brings together the latest information concerning the business of farming and of closely related industries. These data are used in the instructional work of the department and illustrate the principles of successful farm organization and operation, the marketing of farm products, and the conduct of business enterprises that are closely related to agriculture. The student has an opportunity to learn of the factors and economic forces involved in marketing, credit, taxation, land utilization, conservation, and similar subjects. Attention is given to the probable future consequences of various policies and practices, in addition to providing opportunity to become acquainted with existing conditions. The student in agricultural economics has exceptional opportunity to work with facts taken from the actual business of farming and of other industries that are closely related to agriculture.

The department is expanding its facilities to meet the growing demand for advanced study. Opportunities of careers for those who are well trained in this field are increasingly favorable, because of the growing importance of agricultural economics to the farmer and in our national life.

The equipment belonging to the department is valued at \$4,733.†

COURSES IN AGRICULTURAL ECONOMICS

FOR UNDERGRADUATE CREDIT

101. § AGRICULTURAL ECONOMICS. 3(3-0);* I. Prerequisite: Sophomore standing. Dr. Grimes, Mr. Howe, Mr. Henney and Mr. Larsen.

Economic principles as they relate to agriculture.

106. FARM ORGANIZATION. 3(2-3); I and II. Prerequisites: Ag. Ec. 101, Agron. 130, and An. Husb. 152. Dr. Grimes, Mr. Evans, Mr. Hodges, and Mr. Larsen.

The economic factors affecting the organization and operation of the farm business, and their effect on profits. Results from actual farms are studied in the laboratory. Charge, \$1.

*The number before the parenthesis indicates the number of semester hours of credit; the first number within the parentheses indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory required each week. I, II, and SS indicate that the course is given the first semester, second semester, and summer session, respectively.

† The figures for equipment given here and on pages following are based on the official reports of June 30, 1929.

‡ Absent on leave year of 1929-'30.

§ For an explanation of the system used in numbering courses, see the paragraph on "Course Numbers," given elsewhere in this catalogue.

112. FARM COST ACCOUNTING. 3(2-3); I and II. Prerequisite: Ag. Ec. 101. Mr. Evans and Mr. Hodges.

Various systems of farm records and accounts. In the laboratory, problems from actual farms. Cost of producing farm products; analysis and utilization of cost of production data. Charge, \$1.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. MARKETING OF FARM PRODUCTS. 3(3-0); I and II. Prerequisite: Ag Ec. 101. Mr. Green, Mr. Mortenson, and Mr. Henney.

Price problems affecting time of buying and selling; buyers' and sellers' relations; marketing organizations and the control of marketing, and the adaptability of products to market demands and preferences.

203. GRAIN MARKETING. 3(3-0); I. Prerequisite: Ag. Ec. 202. Mr. Green.

Price influences and price relationships, buying and selling problems; domestic and export trade in grain; grain trade organization; regulation and control of the trade.

204. TRANSPORTATION OF FARM PRODUCTS. 3(3-0); I. Prerequisite: Ag. Ec. 101. Mr. Henney.

Rate making and other transportation problems having an important influence on the marketing of farm products.

206A. ADVANCED FARM ORGANIZATION. 3(2-3); II. Prerequisite: Ag. Ec. 106. Dr. Grimes and Mr. Evans.

Factors affecting the successful organization and operation of the farm business; effects of external factors. A number of the better and more profitable farms are visited.

212. CONSERVATION OF AGRICULTURAL RESOURCES. 2(2-0); II. Prerequisites: Ag. Ec. 101; junior standing. Mr. Howe.

The world's agricultural resources, the economics of their utilization, and their present and future relationship to human well-being.

218. AGRICULTURAL LAND PROBLEMS. 3(3-0); I. Prerequisite: Ag. Ec. 101. Mr. Howe.

A study of the relation of population to land supply and the conditions affecting tenure, ownership, and valuation of land.

219. TAXATION AND LAND OWNERSHIP. 3(3-0); II. Prerequisite: Ag. Ec. 101, or consult instructor. Mr. Howe.

Analysis of public expenditures and revenues, public credit, and fiscal administration with special emphasis upon the effects of each upon agriculture.

LAND LAW. See Land Law (Hist. 276).

221. AGRICULTURAL FINANCE. 2(2-0); II. Prerequisite: Ag. Ec. 101. Mr. Howe.

Sources and kinds of credit for purchasing farm land and financing farm operations.

227. FARMER MOVEMENTS. 3(3-0); I. Prerequisite: Ag. Ec. 101. Dr. Grimes.

Farmers' efforts to improve economic status through organization. Principles underlying successful organization of farmers.

231. AGRICULTURAL ECONOMICS SEMINAR. 1(1-0); I and II. Prerequisites: Ag. Ec. 101. Dr. Grimes, Mr. Green, Mr. Mortenson, Mr. Evans, Mr. Howe, Mr. Hodges, and Mr. Henney.

Current questions in agricultural economics reviewed and discussed; topics prepared and presented by students.

235. LIVE-STOCK MARKETING. 3(3-0); II. Prerequisite: Ag. Ec. 202. Mr. Henney.

The economics of live-stock marketing and factors affecting live-stock prices.

240. PRINCIPLES OF COÖPERATION. 3(3-0); II. Prerequisite: Ag. Ec. 101. Dr. Grimes.

A study of the principles underlying coöperative endeavor. Experiences of coöperative associations of farmers are used as illustrative material.

270. AGRICULTURAL ECONOMIC PROBLEMS. 1 to 4 credits; I, II, and SS. Prerequisites: Ag. Ec. 106 or 202, or such other courses as are necessary for the study of the problem selected. Dr. Grimes, Mr. Green, Mr. Mortenson, Mr. Evans, Mr. Hodges, Mr. Howe, and Mr. Henney.

FOR GRADUATE CREDIT

301. RESEARCH IN AGRICULTURAL ECONOMICS. 1 to 5 credits; I, II and SS. Prerequisites: Consult instructors. Dr. Grimes, Mr. Green, Mr. Mortenson, Mr. Evans, Mr. Hodges, Mr. Howe, and Mr. Henney.

Individual research problems in the marketing of farm products, coöperation among farmers, farmer movements, land problems, taxation, tenancy, agricultural industries, agricultural finance, farm labor, farm power, farm organization, and cost of producing farm products. Any of the subjects assigned may furnish data for a master's thesis.

305. ADVANCED AGRICULTURAL ECONOMICS. 3(3-0); I. For prerequisites, consult instructor. Mr. Green and Mr. Mortenson.

The basic principles of economics, a strengthened foundation in fundamentals; planned readings in the works of leading economists, and discussion of principles and their application to problems confronting specialists in agricultural economics.

310. HISTORY OF AGRICULTURAL ECONOMIC THOUGHT. 3(3-0); II. Prerequisites: Consult instructor. Dr. Grimes.

Development of agricultural economics and relation of agricultural economic doctrines to conditions existing when they were formulated.

Agronomy

Professor THROCKMORTON

Professor SALMON

Professor PARKER

Professor ALDOUS

Professor DULEY

Associate Professor SEWELL

Associate Professor ZAHNLEY

Associate Professor LAUDE

Assistant Professor DAVIS

Assistant Professor TIMMONS

Instructor MYERS

Assistant LEWIS

Assistant HARLING

Farm Superintendent CREWS

Graduate Research Assistant SUNESON

Graduate Assistant GOTH

Graduate Assistant ALSPACH

The College farm used by the Department of Agronomy comprises 320 acres of medium rolling upland soil, well suited to experimental and demonstration work. It is well equipped with all kinds of farm machinery necessary in crop production. The general fields and experimental plots used for the breeding and testing of farm crops, and for conducting experiments in soil fertility and methods of culture, afford the student excellent opportunities for study and investigation.

Large and well equipped laboratories for soil and crop work are maintained for the regular use of students. Material is provided for the study of the grain and forage crops best adapted to different purposes and most suitable for growing in the state. Ample greenhouse space is provided for problems and research work in crops and soils.

The Department of Agronomy offers courses in cereal and forage crop production and improvement, in pasture management, in soils, soil fertility, soil survey, and dry land farming.

This department owns equipment valued at \$28,869.

COURSES IN FARM CROPS

FOR UNDERGRADUATE CREDIT

101. FARM CROPS. 4(2-6); I and II. Prerequisite: Bot. 101. Mr. Davis.

The distribution, relative importance, value, and production of the more important grain and forage crops. Deposit, \$5.

105. SEED IDENTIFICATION AND WEED CONTROL. 2(1-3); I. Prerequisite: Agron. 101. Mr. Zahnley and Mrs. Harling.

Methods of propagation, control, and eradication of weeds.

Laboratory.—Identification of weed plants and seeds; germination and purity testing; field trips. Charge, \$2.50.

108. GRAIN GRADING AND JUDGING. 2(0-6); II. Prerequisite: Agron. 101. Mr. Zahnley.

Practice in grading and judging crops and crop products, including wheat, corn, oats, barley, rye, buckwheat, flax, rice, alfalfa, clover, soybeans, cowpeas, and various kinds of hay. Charge, \$3.50.

114. ADVANCED GRAIN JUDGING. 2(0-6); I. Prerequisite: Agron. 108. Mr. Zahnley.

Identification, commercial grading and judging, and presenting orally and in writing the merits of samples of the various kinds of field crops. Charge, \$3.50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. CROP IMPROVEMENT. 3(2-3) or 4(2-6); II. Prerequisites: Agron. 101. and An. Husb. 221. Dr. Parker.

Principles of plant breeding reviewed and applied to the principal groups of field crops; methods of selection, hybridization, and breeding for special qualities.

Laboratory.—A study of heritable characters in crop plants and of laboratory, greenhouse, and field methods of plant breeding. Charge, \$2.50.

203. ADVANCED FORAGE CROPS. 2(1-3); I. Prerequisite: Agron. 101. Mr. Zahnley.

Results of the most recent investigations in forage crops here and abroad; a more intensive study of the sorghums, alfalfa, sweet clover, soybeans, and other important or promising forage crops.

Laboratory.—The growth habits of crops considered in the lecture, especially as related to the production and improvement of these crops, storing, market grading, and marketing of hay. Charge, \$1.

205B. PRINCIPLES OF AGRONOMIC EXPERIMENTATION. 3(2-3); I. Prerequisites: Agron. 101 and 130. Mr. Salmon.

The principles of experimentation in general, and their application to agronomic problems; important contributions to agronomic science studied from the historical and statistical viewpoint. Charge, \$2.50.

206. AGRONOMY SEMINAR. 1(1-0); II. Prerequisites: Agron. 101 and 130. Mr. Throckmorton.

Students review before the class timely articles appearing in bulletins and current journals.

207A. PASTURE IMPROVEMENT. 3(2-3); II. Prerequisites: Bot. 102 and Agron. 101. Mr. Aldous.

Native forage plants, their distribution, value, life history and habits, and their management; management of pastures and ranges, including determination of their carrying capacity, character of stock best suited to a range or pasture, and proper methods of handling areas for maintenance or increase of forage cover.

208. PLANT GENETICS. 3(3-0); I. Prerequisite: An. Husb. 221. Dr. Parker.

An advanced course for students interested in plant breeding and principles of genetics. Offered in 1928-'29 and alternate years thereafter.

209. GENETICS SEMINAR. 1 credit; the year. Prerequisite: Consult instructors. Dr. Nabours, Dr. Parker, Dr. Warren, Dr. Ibsen, and Dr. Brunson.

Study and criticism of genetic experiments in plants and animals, of the biological and mathematical methods employed, and of the validity of conclusions drawn.

210. CROP PROBLEMS. 1(0-3) to 4(0-12); I, II and SS. Prerequisite: Agron. 203. Mr. Salmon, Dr. Parker, Mr. Aldous, and Mr. Zahnley.

Special problems chosen or assigned; written reports upon completion of problems; credit varies with amount and quality of work done. Deposit, \$5.

211. CROP ECOLOGY. 2(2-0); II. Prerequisite: Agron. 101. Mr. Salmon.

Distribution of farm crops with special reference to the climatic, edaphic, economic, and social factors primarily responsible for the concentration of crop production in certain countries; possibilities of further increases in crop-producing areas and probable nature and direction of such increases.

212. ORIGIN AND CLASSIFICATION OF CROP PLANTS. 3(1½-4½); I. Prerequisite: Agron. 101. Offered in 1929-'30 and alternate years thereafter. Dr. Parker, Mr. Zahnley, and Mr. Laude.

Geographical and botanical origin of crop plants; characters used in identification of varieties of crop plants and related wild forms. Charge, \$2.50.

213. SPECIAL CROPS. 2(2-0); II. Prerequisite: Agron. 101. Mr. Zahnley.

Distribution, climatic and soil requirements, relative importance, and production of sugar beets, cotton, flax, hemp, tobacco, and other minor crops.

FOR GRADUATE CREDIT

301. CROP RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisite: Agron. 203. Mr. Salmon, Dr. Parker, Mr. Aldous, and Mr. Zahnley.

Special problems chosen or assigned, resulting data being available for master's thesis. Charge, \$5.

302. PASTURE IMPROVEMENT RESEARCH. 1 to 5 credits; I, II, and SS. Prerequisites: Agron. 207, Civ. Engr. 111, and Bot. 225. Mr. Aldous.

Special problems chosen or assigned; investigations may furnish data for master's thesis.

303. PLANT BREEDING LITERATURE. 1(0-3); I, II, and SS. Prerequisite: An. Husb. 221. Dr. Parker.

An opportunity is offered to familiarize students with current literature in genetics and plant breeding.

COURSES IN SOILS

FOR UNDERGRADUATE CREDIT

130. SOILS. 4(3-3); I and II. Prerequisites: Chem. 110 and Geol. 103. Mr. Throckmorton, Dr. Sewell, and Mr. Myers.

Fundamental principles underlying the management of soils. Charge, \$3.50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

231. DRY-LAND FARMING. 2(2-0); I. Prerequisite: Agron. 130. Mr. Myers. Principles underlying the cultivation methods and farming systems under light rainfall conditions.

232A. ADVANCED SOIL FERTILITY. 3(2-3); I. Prerequisite: Agron. 130. Dr. Duley.

Physical, chemical, and biological factors which influence the fertility of the soil and practical use of manure, fertilizer, lime, and legumes. Charge, \$5.

233. SOIL SURVEY. 2(1-3); II. Prerequisite: Agron. 130. Mr. Myers and Mr. Lewis.

Types of soils of the United States and methods of mapping soil areas; special attention to study of Kansas soils in the field. Charge, \$1.

235. ADVANCED SOILS LABORATORY. 1(0-3) to 4(0-12); I, II, or the year. Prerequisite: Agron. 130. Dr. Duley, Dr. Sewell, and Mr. Myers.

The more advanced problems of soil physics and fertility, the making of mechanical analyses; determination of moisture equivalent; specific heat; pot work with soils in the greenhouse. Charge, \$2.50.

236. SOIL PROBLEMS. 1(0-3) to 4(0-12); I, II, and SS. Prerequisites depend on problem assigned. Mr. Throckmorton, Dr. Sewell, and Dr. Duley.

Special problems in soils, chosen or assigned. Deposit, \$5.

243. SOIL AND CROP MANAGEMENT. 3(2-3); II. Prerequisites: Agron. 101 and 130. Dr. Duley.

Discussion and investigation of practical management of soils and crops.

247. INTERRELATIONS OF SOILS AND CROP PLANTS. 3(3-0); II. Prerequisites: Agron. 130 and Bot. 208. Dr. Sewell.

Chemical laws, plant physiology, and ecological factors applied to soil problems in relation to crop production.

FOR GRADUATE CREDIT

331. SOIL RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisites: Agron. 130 and Chem. 250. Mr. Throckmorton, Dr. Duley, and Dr. Sewell.

Special soil problems, which may extend throughout the year and furnish data for a master's thesis. Charge, \$5.

Animal Husbandry

Professor McCAMPBELL
 Professor BELL
 Professor IBSEN
 Professor REED
 Professor ANDERSON
 Associate Professor AUBEL

Assistant Professor MACKINTOSH
 Assistant Professor ALEXANDER
 Graduate Assistant HOPPER
 Graduate Assistant DECKER
 Graduate Research Assistant DAY

The courses of study in this department are arranged to give the student special instruction in the selection, breeding, feeding, marketing, and management of all classes of live stock.

The department devotes 624 acres of land to the maintenance of herds and flocks of pure-bred horses, cattle, sheep, and hogs. The College live stock has attained a national reputation among breeders and feeders on account of the many prize-winning animals produced.

This department feeds experimentally from 750 to 1,000 animals each year. This affords excellent opportunity to study feeding animals and problems in feeding.

The feed yards and barns are well arranged for experimental feeding and the maintenance of the herds. The laboratory of the animal husbandry student is the feed lot and the judging pavilion. He studies the animal from the standpoint of the breeder and the feeder. He learns to combine the needs of each and to find those qualities in the animal best suited to meet these needs.

The department owns equipment valued at \$38,545. This includes live stock having a value of \$26,796.

COURSES IN ANIMAL HUSBANDRY

FOR UNDERGRADUATE CREDIT

125. ELEMENTS OF ANIMAL HUSBANDRY. 3(2-4); I and II. Mr. Bell, Mr. Mackintosh, and Mr. Alexander.

A general survey of the field of animal husbandry with special emphasis on the relation of live stock to agriculture in general. Type, conformation, quality, character, and breed characteristics in animals are stressed in the laboratory. Charge, 50 cents.

140. ADVANCED STOCK JUDGING I. 2(0-6); I. Prerequisite: An. Husb. 125. Mr. Bell.

The judging of market animals and of different breeds of pure-bred stock, four to six animals in a group as is customary at county and state fairs. Charge, 50 cents.

143. **ADVANCED STOCK JUDGING II.** 2(0-6); II. Prerequisite: An. Husb. 140. Mr. Bell.

Continuation of An. Husb. 140; occasional trips to the best live-stock farms of the state, where the management of herds and flocks as handled by the most successful stockmen of the state are judged and observed. Charge, 50 cents.

146. **FORM AND FUNCTION IN LIVE STOCK.** 2(0-6); I. Prerequisites: An. Husb. 143 and 180. Mr. Bell.

A detailed and specific study of animal form and type, and influence of type upon function; relation of form, type and condition to growth and development; comparative measurements of growing and fattening animals, speed and draft horses, mutton and wool sheep, and lard and bacon types of hogs; special training in presenting orally the relative merits of animals of all breeds. Charge, 50 cents.

152. **PRINCIPLES OF FEEDING.** 3(3-0); II. Prerequisites: Anat. 131 and Chem. 122. Mr. Anderson.

The digestive system and processes of nutrition; the origin, chemical analysis, grades, and feeding values of different feeds; the theory of practical economy of rations for the maintenance and for the fattening of all classes of farm animals.

155. **BEEF-CATTLE PRODUCTION.** 3(2-3); II. Prerequisites: An. Husb. 120, 180, and 152. Dr. McCampbell and Mr. Anderson.

Economical methods of growing and fattening market cattle; practice in feeding, management, and housing of cattle.

158. **SWINE PRODUCTION.** 3(2-3); II. Prerequisites: An. Husb. 120, 180, and 152. Mr. Aubel.

Economical methods of growing swine for the market; practice in the feeding, management, and housing of swine.

161. **SHEEP PRODUCTION.** 3(2-3); I. Prerequisites: An. Husb. 120, 180, and 152. Mr. Reed.

Economical methods of growing, fitting, and finishing sheep for market; practice in the feeding, management, and housing of sheep.

164. **HORSE PRODUCTION.** 3(2-3); I. Prerequisites: An. Husb. 120, 180, and 152. Mr. Mackintosh.

Economical methods for growing, handling, and housing horses for breeding purposes, for work, and for the market; practice in feeding, handling, and housing horses.

167. **MEATS.** 2(1-3); II. Prerequisites: An. Husb. 120 and 152. Mr. Mackintosh.

Killing and dressing, cutting, and curing meats. Charge, \$1.

171. **LIVE-STOCK PRODUCTION.** 3(3-0); II and SS. Prerequisite: An. Husb. 152 or 172. Open only to juniors and seniors not majoring in animal husbandry. Mr. Bell.

Practical insight into the production of beef cattle, horses, swine, and sheep.

172. **FEEDING LIVE STOCK.** 3(3-0); II. Open only to students in agricultural administration and agricultural engineering. Mr. Alexander.

The processes of digestion and assimilation, the food requirements of different animals, methods of calculating rations, and the relative feeding value of different feeds.

176. **MEATS HE.** 1(0-3); II. For juniors and seniors in home economics. Prerequisite: Food and Nut. 106. Mr. Mackintosh.

The selection, cutting, and curing of meats; particular attention to grading of carcasses and the uses of the various cuts of meats. Charge, \$1.

181. **BREEDS OF LIVE STOCK.** 3(3-0); I. Prerequisite: An. Husb. 120. Mr. Mackintosh.

A study of the origin, development, adaptability, families, strains, noted sires, and noted breeders of the leading breeds of farm live stock other than dairy cattle.

182. MEAT STUDIES HE. 1(0-3); I. For juniors and seniors in home economics. Prerequisite: Food and Nut. 106. Mr. Mackintosh.

Lectures and demonstrations illustrating wholesale and retail cuts of meat and their utilization; also the factors determining quality and palatability in meat. Not accepted as a prerequisite for Advanced Meats.

FOR GRADUATE AND UNDERGRADUATE CREDIT

221. GENETICS. 3(3-0); I, II, and SS. Prerequisites: Zoöl. 105 and Bot. 105. Dr. Ibsen.

A general study of variation, Mendelian inheritance, and related subjects.

223. ANIMAL BREEDING. 3(3-0); I. Prerequisite: An. Husb. 221. Mr. Aubel.

The physiology of reproduction; general principles of heredity; variation; systems of mating; influence of pedigrees and herdbook standard; and an analysis of the breeding practices of leading breeders.

225. ADVANCED GENETICS. 4(3-3); II. Prerequisite: An. Husb. 221. Dr. Ibsen.

Genetics studied in greater detail than in An. Husb. 221; particular attention to the relation of chromosomes to heredity.

227. GENETICS SEMINAR. 1 credit; the year. Prerequisites: Consult instructors. Dr. Nabours, Dr. Ibsen, Dr. Parker, and Dr. Warren.

Genetic experiments in plants and animals, the biological and mathematical methods employed, and validity of conclusions drawn.

229. RESEARCH IN GENETICS. 1 to 10 credits; I and II. Prerequisite: An. Husb. 225. Dr. Ibsen.

A two-semester course offering opportunity for individual study of problems in which small mammals are used as the experimental animals.

231. ADVANCED STUDIES IN PEDIGREES. 3(1-6); II. Prerequisite: An. Husb. 181. Mr. Mackintosh.

Pedigrees and prepotency of individuals representing the more important strains and families of beef cattle, horses, sheep, and swine.

233. ADVANCED FEEDING. 2(2-0); I. Prerequisite: An. Husb. 152. Mr. Anderson.

A survey of the experimental feeding of horses, cattle, sheep, and hogs; fundamental and practical feeding problems of the various sections of the country; results obtained in experimental investigation of these problems.

244. ANIMAL HUSBANDRY SEMINAR. (1-0); II. Open only to seniors and graduate students majoring in animal husbandry. Prerequisite: An. Husb. 152. Mr. Reed.

245. ANIMAL HUSBANDRY PROBLEMS. 1 to 5 credits; I, II, and SS. Prerequisites: An. Husb. 152 and other courses; consult instructor. Dr. McCampbell.

250. PURE-BRED LIVE-STOCK PRODUCTION. 2(2-0); II. Prerequisite: An. Husb. 181 and 223; senior or graduate standing. Mr. Reed.

The real function of pure-bred live stock; the many factors upon which the successful production of pure-bred live stock depends; and possibilities in pure-bred live-stock production.

260. THE AMERICAN LIVE-STOCK AND MEAT INDUSTRY. 3(3-0); II. Prerequisites: An. Husb. 120 and 152. Dr. McCampbell.

An advanced study of the live-stock and meat industry; its organization, operation, and development; and the relation of its diversified activities to each other and to the public. Lectures, assigned readings, and reports.

268. LIVE-STOCK EXPERIMENTAL METHODS. 2(2-0); II. Prerequisites: An. Husb. 152 and 221. Dr. McCampbell and Dr. Ibsen.

How to plan, conduct, and interpret experiments involving the use of animals.

270. LIVE-STOCK MANAGEMENT. 3(2-3); I. Prerequisites: An. Husb. 125 and 152 or 172. Dr. McCampbell and other members of the department.

This course deals with the details of management, including general care, shipping, fitting, showing, etc.

274. ADVANCED MEATS. 1 to 4 credits; II. Prerequisite: An. Husb. 167. Mr. Mackintosh.

Grading of carcasses; studies in nutritive value of different grades of meat; factors influencing the quality of meats; factors influencing dressing percentages of meat animals; and identification of meats from different animals.

290. PROBLEMS IN TRAINING AGRICULTURAL JUDGING TEAMS. Class 2 hours daily; 2 credits. 2d SS. Prerequisites: An. Husb. 125, Agron. 101, Poult. Husb. 101, Dairy Husb. 101, one year's teaching experience. Mr. Bell in charge, cooperating with Mr. Zahnley, Mr. Scott, Mr. Cave, and Mr. Davidson.

A seminar course in problems involved in training agricultural judging teams in animal husbandry, agronomy, poultry husbandry, and dairy husbandry. Practice in each field is a part of the course.

FOR GRADUATE CREDIT

301. RESEARCH IN ANIMAL HUSBANDRY. 1 to 10 credits; I and II. Prerequisites: An. Husb. 155, 158, 161, and 164. Dr. McCampbell.

Special problems in beef-cattle production, swine production, sheep production, horse production, pure-bred live-stock production, and genetics.

305. ANIMAL NUTRITION SEMINAR. 1 credit; the year. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Leinhardt, Dr. Burt, Dr. Kramer, Mr. Payne, and Mr. Fitch.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of the validity of conclusions drawn.

311. THE WOOL INDUSTRY. 3(2-3); II. Prerequisite: An. Husb. 161. Mr. Reed.

The supply of wool and the demand for it; and the method of producing, marketing, storing, grading, and manufacturing wool.

Dairy Husbandry

Professor FITCH
 Professor CAVE
 Professor MARTIN
 Assistant Professor RIDDELL
 Instructor BROOKS

Instructor CAULFIELD
 Graduate Assistant SMITH
 Graduate Research Assistant HODGSON
 Graduate Research Assistant SEATH

The activities of the Department of Dairy Husbandry may be divided into two groups; those that deal with the production of milk and those that deal with the marketing and manufacturing of the several dairy products. In order to get first-hand information a dairy herd is maintained and a creamery operated. The animals in the dairy herd are used by judging classes and in experiments in the feeding, care, and management of dairy animals. Up-to-date methods in creamery operation are exemplified in the creamery.

The dairy herd consists of excellent types of the four dairy breeds: Jersey, Guernsey, Ayrshire, and Holstein. These animals are pure-bred, and a number have been entered in the advanced registry of their respective breeds. The excellence of the herd is shown by the yearly records of the cows that have been officially tested. The average for the Guernseys is 9,532 pounds of milk and 432 pounds of butter fat; for the Ayrshires, 11,614 pounds of milk

and 442 pounds of butter fat; for the Holsteins 13,925 pounds of milk and 492 pounds of butter fat; and for Jerseys 6,897 pounds of milk and 400 pounds of butter fat.

The Department of Dairy Husbandry is provided with ample room in the west wing of Waters Hall. The creamery is located in a one-story annex on the north end of this wing. In this building the department has the most up-to-date equipment available for handling butter, cheese, milk, ice cream, and condensed milk on a quantity basis, and is equipped far better than ever before to instruct students interested in the manufacturing side of dairying.

Students who have specialized in dairying are now among the leading dairy-cattle breeders of the state. Others who were interested in the manufacturing side of dairying are in responsible positions with creameries and milk companies or in business for themselves. The dairy industry is expanding in Kansas, and this is bringing a greater demand for men with experience and knowledge of dairying.

The instruction in the Department of Dairy Husbandry includes the study of the selection and breeding of dairy animals, the production of milk, its manufacture into butter, cheese, and other dairy products, and its sale on the market. The success of the instruction in judging dairy animals may be assumed from the fact that in thirteen contests the Kansas team has averaged better than third place.

This department owns equipment valued at \$51,516. This figure includes live stock to the value of \$26,365.

COURSES IN DAIRY HUSBANDRY

FOR UNDERGRADUATE CREDIT

101. ELEMENTS OF DAIRYING. 3(2-3); I and II. Mr. Cave, Mr. Caulfield, Mr. Brooks, Mr. Smith, and Mr. Hodgson.

The secretion, composition, and properties of milk; factors influencing the quantity and quality of milk; care of milk and cream on the farm; different methods of creaming; construction and operation of farm separators; principles and application of the Babcock test; use of the lactometer; and butter making on the farm.

Laboratory.—Practice in making the Babcock test, in use of the lactometer, in separation of milk, and in farm butter making. Charge, \$2.

104. DAIRY JUDGING. 1(0-3); I and II. Mr. Brooks.

Judging dairy stock from the standpoint of economical production and breed type.

106. DAIRY INSPECTION I. 2(1-3); I. Prerequisites: Bact. 106 and Dairy Husb. 101. Mr. Caulfield.

Advanced work in the testing of dairy products and testing for adulterations; practice in use of score cards for inspecting and grading milk plants, farm dairies, and creameries; outlining of state and city ordinances governing the handling and public sale of dairy products; training in duties of city, state, and government inspectors. Charge, \$3.

108. MILK PRODUCTION. 3(3-0); II. Prerequisites: Dairy Husb. 101 and An. Husb. 152 or 172. Mr. Fitch.

Economical production of milk and the most approved method of handling the dairy herd; construction of dairy barns and buildings; other subjects relating to the dairy farmer.

109. BUTTER MAKING I. 3(2-3); I. Prerequisites: Dairy Husb. 101 and Bact. 211. Mr. Martin.

Principles of creamery butter making; construction and care of creameries and their appliances; methods of sampling and grading cream; pasteurization; starter making; cream ripening; and creamery accounting.

Laboratory.—Practice in the sampling and grading of milk and cream, etc.; the making of salt, fat, and moisture determinations of the finished product; judging and scoring butter. Charge, \$3.

111. BUTTER MAKING II. 4(2-6); I. Prerequisites: Dairy Husb. 101 and Bact. 211. Mr. Martin.

Similar to course 109; for students specializing in dairy manufacturing. Charge, \$3.

116A. MARKET MILK. 3(2-3); II. Prerequisites: Dairy Husb. 101 and Bact. 211. Mr. Martin.

Classes of market milk; equipment and methods for clean milk production; relation of clean milk to producer, dealer, and consumer; systems of milk inspection, score cards, and milk and cream contests; milk plants, including their methods and equipment.

Laboratory.—Actual practice in all the steps in the production of market milk and cream in the College milk plant. Charge, \$3.

118. DAIRY INSPECTION II. (Vet.) 1(0-3); II. Mr. Caulfield.

The testing of dairy products; the inspection and scoring of dairies and milk depots; the testing for adulterants in dairy products. Charge, \$3.

120. ADVANCED DAIRY JUDGING. 1(0-3); II. Mr. Cave.

Continuation of Dairy Husb. 104; visits to the best farms of the state; opportunity to judge and handle stock kept by the most successful breeders.

127. CONDENSED AND POWDERED MILK. 2(1-3); I. Prerequisites: Dairy Husb. 116 and Bact. 211. Mr. Martin.

The history of milk condensing, methods of manufacture, condensing machinery, and the powdered-milk industry.

Laboratory.—Condensing milk in the college plant. Charge, \$3.

130. ICE CREAM MAKING. 3(2-3); II. Prerequisites: Dairy Husb. 106 and 116. Mr. Martin and Mr. Caulfield.

A thorough study of the science and practice of the commercial manufacture of ice cream and ices.

Laboratory.—Practice in all phases of the manufacture of ice cream and ices in the college plant. Charge, \$3.

135A. CHEESE MAKING. 2(1-3); II. Prerequisites: Dairy Husb. 106 and Bact. 211. Mr. Caulfield.

Manufacture of American cheddar cheese, soft cheeses, and the most important foreign varieties.

Laboratory.—Actual manufacture of the various types of cheese. Charge, \$3.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. DAIRY SEMINAR. 1(1-0); II. Prerequisites: Dairy Husb. 101, 106, and 108. Mr. Fitch.

A study and review of dairy periodicals and experiment station bulletins, books, and other dairy literature.

207. FEEDING AND MANAGEMENT OF DAIRY CATTLE. 3(2-3); II. Prerequisites: Dairy Husb. 108 and An. Husb. 152. Mr. Cave.

An advanced course in feeding as it applies to dairy cattle under ordinary conditions and to cows on advanced registry test; general management problems and the fitting of animals for show and sale. Charge, \$1.

211. DAIRY BREEDS AND PEDIGREES. 2(1-3); I. Prerequisite: Dairy Husb. 108. Mr. Brooks.

The history and development of the different breeds of dairy cattle.

Laboratory.—Study of the herdbooks of the dairy breeds and study of the pedigrees of some of the prominent animals of each breed. Charge, \$1.

216. DAIRY PRODUCTION PROBLEMS. 1 to 5 credits; I and II. Prerequisites: Dairy Husb. 101, 104, and 108, and An. Husb. 152. Mr. Fitch and Mr. Cave.

An investigation pertaining to dairy production problems, plans for said investigation to be so formulated that the study may be continued for more than one semester, if necessary.

221. DAIRY MANUFACTURING PROBLEMS. 1 to 5 credits; I and II. Prerequisites: Dairy Husb. 101, 106, 108, 111, and 114. Mr. Martin.

An investigation pertaining to dairy manufacturing problems, plans for said investigation to be so formulated that, if necessary, the study may be continued for more than one semester.

226. CREAMERY MANAGEMENT. 2(2-0); II. Prerequisite: Dairy Husb. 111. Mr. Martin.

An advanced course in creamery management for students specializing in dairy manufacturing.

FOR GRADUATE CREDIT

301. DAIRY RESEARCH. 1 to 10 credits; I and II. Prerequisites: Dairy Husb. 108, 109, 211, or 108, 111, 116, and 226.

Special investigations in dairy husbandry or dairy manufactures which may form the basis of a thesis in partial fulfillment of the requirement for the degree of master of science.

305. ANIMAL NUTRITION SEMINAR. 1 credit; the year. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Leinhardt, Dr. Burt, Dr. Kramer, Mr. Payne, and Mr. Fitch.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of the validity of conclusions drawn.

General Agriculture

Dean CALL

102. FRESHMAN LECTURES. 1(2-0); I. Dean, assistant dean, heads of departments and freshman advisers of the Division of Agriculture, assisted by a professor of education and various other members of the College faculty.

A two-fold object: (1) To assist in development of ability to study effectively, and (2) to inform regarding prospective opportunities for service in various fields of work open to agricultural graduates, and requirements for success in these fields; and regarding the relationship between agricultural and other subject matter in well-balanced agricultural training.

103. AGRICULTURAL SEMINAR. R(four meetings each semester).

Discussion of general agricultural questions and of agricultural student affairs; programs presented by students, members of the faculty, and invited speakers from outside.

105. AGRICULTURAL RELATIONSHIPS. R(1-0); II.

Agricultural graduates and their duties, responsibilities, and opportunities for service as citizens of the agricultural community and as specialists in various phases of agricultural activity.

Horticulture

Professor DICKENS*
 Professor BARNETT†
 Associate Professor QUINLAN
 Assistant Professor PICKETT

Assistant Professor BALCH
 Instructor TUCKER
 Graduate Assistant MEYER

Instruction offered in the Department of Horticulture covers pomology, vegetable gardening, greenhouse practice, forestry, and all phases of landscape gardening.

The horticultural farm consists of eighty acres of land devoted exclusively to horticultural and forestry work. A full equipment of garden tools, spraying

* Absent on leave, year 1929-'30.

† Acting head, year 1929-'30.

machinery and accessories, pruning tools, and special apparatus for floriculture is available at all times for the use of students. The College grounds furnish one of the finest and most complete laboratories in the state for the study of landscape gardening and on them are located the vegetable gardens.

Instruction in landscape gardening is planned to meet the requirements of two classes of students: (1) Students who wish a general knowledge of the principles underlying landscape gardening; (2) students who wish to specialize in landscape gardening. A complete curriculum, with the coöperation of the Departments of Civil Engineering and Architecture, is offered the latter students. (See "Curriculum in Agriculture With Special Training in Landscape Gardening.")

The value of the equipment belonging to this department is \$7,142.

COURSES IN HORTICULTURE

FOR UNDERGRADUATE CREDIT

105. SYSTEMATIC POMOLOGY. 4(2-6); I. Prerequisite: Hort. 107. Mr. Barnett and Mr. Pickett.

Technical study of fruit varieties, including varietal relationships; principles underlying pomological nomenclature, variety description, and artificial and natural systems of variety classifications.

Laboratory.—Study of actual fruits, from many parts of the United States; description, identification, judging and preparation of fruit displays. Charge, \$1.

107. ELEMENTS OF HORTICULTURE. 3(2-3); I and II. Prerequisite: Bot. 105. Mr. Barnett, Mr. Pickett and Mr. Tucker.

The relation of the more important subdivisions of horticulture to general agriculture and to advanced courses in pomology and olericulture; practices necessary for success in orcharding and gardening and the principles on which these practices are based.

Laboratory.—Study of fruit-bearing habits, propagation, pruning, spraying, transplanting, cover crops, fruit varieties, etc. Charge, \$1.

110. SMALL FRUITS. 2(2-0); II and SS. Prerequisite: Bot. 105. Mr. Pickett. Culture, harvesting and marketing small fruits; management of home and commercial plantations.

114. FARM FORESTRY. 3(2-3); I. Prerequisite: Bot. 105. Mr. Pickett.

The needs of Kansas farms for windbreaks and wood lots for post and fuel production; forest conservation and methods of handling timber; the growing of trees in locations better suited for timber than for other crops; composition of windbreaks and their value as protection to home orchards and fields.

Laboratory.—Identification of species, methods of forming windbreaks, nursery work in transplanting trees of various sizes, determination of rate of growth of trees under various conditions.

117. DENDROLOGY. 3(2-3); I. Prerequisite: Bot. 105. Mr. Pickett.

Classification and identification of forest trees; forest ecology and taxonomy; classification of commercial species; relative importance of timber species; the life history and requirements of trees.

Laboratory.—Studies in the College arboretum and excursions to near-by wood lots; becoming acquainted with trees that do well in Kansas.

119. SILVICULTURE. 3(2-3); II. Prerequisite: Hort. 114 or 116. Mr. Pickett.

The business of tree growing for economic purposes; requirements of species, their range and requirements as to soils, climate and the various factors that determine their reproduction and rate of growth; protection of forests from fires and insects; and the applications of various systems of silviculture.

125. LANDSCAPE GARDENING I. 3(3-0); I and SS. Mr. Quinlan.

An introductory course in the fundamental principles of landscape gardening.

128. GREENHOUSE CONSTRUCTION AND MANAGEMENT. 3(3-0); I. Mr. Balch.
The more important points of greenhouse construction and the proper methods of greenhouse management; the commercial standpoint and private conservatories.

129. FLORAL ARRANGEMENT. 2(1-3); I. Mr. Balch.

The use of flowers and floral pieces for the home and the store.

Laboratory.—The arrangement of seasonable flowers for various uses.

130. SCHOOL GARDENING. 2(2-0); SS. Mr. Balch.

A general study of soils, insects, diseases, and machinery as related to vegetable crops and their culture.

133. ELEMENTS OF VEGETABLE GARDENING. 3(2-3); II. Mr. Balch.

The practices necessary for success in vegetable gardening—the fundamentals for the student who becomes a teacher, a county agricultural agent or a vegetable grower, and a foundation for advanced courses in vegetable production. Charge, \$1.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. PRACTICAL POMOLOGY. 3(2-3); II. Prerequisite: Hort. 105. Mr. Barnett and Mr. Pickett.

Fruit geography, orchard locations, financing the orchard, orchard equipment, orchard economics, fruit manufactured products, and fruit marketing. Lectures and recitations.

Laboratory.—Laboratory practice in grading and packing fruits, intensive field work in identification of fruit plant varieties; propagation and advanced pruning of fruit plants. Charge, \$1.

202. SUBTROPICAL POMOLOGY. 2(2-0); II. Prerequisite: Hort. 105. Mr. Barnett.

The geography and methods of production of the principal subtropical fruits grown in the United States. Lectures and assigned readings.

205. ADVANCED POMOLOGY. 3(2-3); I. Prerequisite: Hort. 105. Mr. Barnett and Mr. Pickett.

A course on the fundamentals of orcharding.

Laboratory.—Advanced apple judging; production and marketing studies. Charge, \$1.

207. SPRAYING. 3(2-3); I. Prerequisite: Chem. 110. Mr. Pickett.

Spray machinery and accessories; chemical properties, manufacture and use of the important insecticides and fungicides; determination of spray dates.

Laboratory.—Preparation and testing of spray materials; special study of spray machinery and accessories. Charge, \$1.

209. ORCHARD PROBLEMS. 1 to 5 credits; I, II, and SS. Prerequisites: Hort. 105, and senior or graduate standing. Mr. Barnett and Mr. Pickett.

Problems related to commercial orcharding, such as orchard surveys, production costs, root-stock adaptations, pruning tests, and studies of fruit in common storage. A charge may be made.

210. MARKET GARDENING. 3(2-3); II. Prerequisites: Agron. 130 and Hort. 133. Mr. Balch.

The business side of market gardening; preparation of seed orders; estimates of cost per acre of growing various garden crops; harvesting, storing, and marketing vegetables.

Laboratory.—Each student is assigned a plot of ground to plant and care for during the semester. Careful records of cultural operations and of yields; disease and insect control. Charge, \$1.

218. MARKET-GARDENING PROBLEMS. 1 to 5 credits; I and II. Prerequisite: Hort. 210. Mr. Balch.

The important methods of production of standard vegetables of both garden and greenhouse: problems of marketing, storage, and shipping.

220. FLORICULTURAL PROBLEMS. 1 to 5 credits; I, II, and SS. Prerequisite: Hort. 128. Mr. Balch.

Propagation and culture of floricultural crops under glass or in the garden.

223. CIVIC ART. 3(1-6); II. Prerequisite: Hort. 243. Mr. Quinlan.

A study of the growth and development of cities and towns. Emphasis is laid on the design of community and civic centers, parks, land subdivisions, etc.

224. PLANT MATERIALS I. 3(2-3); I. Prerequisite: Bot. 105. Mr. Quinlan.

Study and identification of perennials and annuals for general ornamental planting; planting plans.

226A. PLANT MATERIALS II. 3(2-3); II. Prerequisite: Hort. 224. Mr. Quinlan.

Study and identification of trees, shrubs, and vines for general ornamental planting. Planting plans, sketches, and written reports are required.

227. LANDSCAPE CONSTRUCTION. 3(2-3); I. Prerequisite: Civil Engr. 111. Mr. Quinlan.

Interpretation of topographic maps, preparation of grading plans; structures in relation to the topography, sewage, water supply, lighting, and drainage on the private estate.

235. HORTICULTURE SEMINAR. 1(1-0); I and II. Prerequisites: Hort. 105, 133 or 128. Mr. Barnett.

A study and critical discussion of recent horticultural publications and of experimental and research projects now under way in this and other agricultural experiment stations.

238. LANDSCAPE GARDENING II. 3(1-6); I. Prerequisites: Hort. 125 and 226. Mr. Quinlan.

An elementary course in the designing of the home grounds, the country estate, special gardens, and playgrounds. Several sketch problems will be given during the course. Charge, \$1.

240. LANDSCAPE GARDENING PROBLEMS. 1 to 5 credits. Prerequisites: Hort. 238 and 243. Mr. Quinlan.

In this course the student solves original advanced problems in landscape design, construction, maintenance, and materials for landscape gardening. The course may extend through the school year.

243. THEORY OF LANDSCAPE DESIGN. 2(2-0); I. Prerequisite: Hort. 125. Mr. Quinlan.

The economic and æsthetic theory of design; taste, character, historic styles, composition; natural elements in design; and planting design.

246. LANDSCAPE GARDENING III. 3(1-6); II and SS. Prerequisites: Hort. 226, 243, and 238. Mr. Quinlan.

Advanced course in designing of large parks, cemeteries, golf courses, educational groups, and high-class land subdivisions; construction details; contracts and specifications. Several sketch problems will be given during the course. Charge, \$1.

FOR GRADUATE CREDIT

301. HORTICULTURAL RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructor. Mr. Dickens, Mr. Barnett, Mr. Balch, and Mr. Quinlan.

Any feasible problem relating to the student's major line of graduate study—pomology, olericulture, forestry, or landscape gardening. Data collected may form basis for a master's thesis.

Milling Industry

Professor SWANSON
Associate Professor WORKING
Instructor PENCE

Miller OAKES
Research Fellow McCORMICK

The milling of wheat and other cereals is one of the leading manufacturing industries of the United States, and milling products constitute over one-third of the total food materials produced in the United States. An industry of such magnitude calls for technically trained men. Kansas is the center of the hard-winter-wheat belt, and flour milling is the second manufacturing industry in the state.

The department has a well-equipped flour mill, consisting of six double stand rolls with necessary wheat-cleaning machinery, sifters, purifiers, and dust collectors. The equipment is equal to that found in the commercial mills of the same capacity.

The baking laboratory is equipped with dough mixer, proofing closet, baking oven, and other necessary apparatus. The chemical laboratory contains the apparatus needed for flour and wheat testing. For advanced work there are available a hydrogen-ion potentiometer, and apparatus for making conductivity measurements and viscosity tests.

The department owns equipment valued at \$40,238.

COURSES IN MILLING INDUSTRY

FOR UNDERGRADUATE CREDIT

104. PRINCIPLES OF MILLING I. 2(1-3); I. Dr. Swanson and Mr. Oakes. The theory and principles of flour-milling operations; practice work on an experimental mill. Charge, \$2.

106. PRINCIPLES OF MILLING II. 1(0-3); II. Mr. Pence and Mr. Oakes. Wheat conditioning and the study of the course of different products through the mill with the aid of a flow-sheet. Charge, \$2.

109. MILLING PRACTICE I. 3(1-6); I. Prerequisite: Mill. Ind. 106. Mr. Pence and Mr. Oakes. A study of the operation of wheat-cleaning machines, tempering controls, grinders, sifters, and purifiers. Charge, \$2.

111. MILLING PRACTICE II. 3(1-6); II. Prerequisite: Mil. Ind. 109. Mr. Pence and Mr. Oakes. Relation of roll and bolting surfaces, flour blending, redressing, principles of bleaching, belt management, lubrication, spout construction, methods of checking mill operation. Charge, \$2.

115. THESIS. 1 to 5 credits; I and II. Dr. Swanson, Dr. Working, and Mr. Pence.

Experimental work on problems connected with flour milling or the testing of wheat and flour, the subject of investigation to be selected in consultation with the head of the department at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. MILLING TECHNOLOGY I. 2(0-6); I. Prerequisite: Mill. Ind. 111. Mr. Pence. Problems related to management of flour-mill operations, variation in wheat conditioning, corrugation, roll spiral, roll surfaces, purifiers, and bolters. Charge, \$2.

202. MILLING TECHNOLOGY II. 2(0-6); II. Prerequisite: Mill. Ind. 201. Mr. Pence. Study of the influence of external conditions on flour-mill operations, management of air control, exhaust, dust collectors, flour bleachers, determining the flow of mill streams. Charge, \$2.

205. WHEAT AND FLOUR TESTING. 3(0-9); I. Prerequisites: Mill. Ind. 212 and Chem. 123 and 251 or 260. Dr. Working.

Special quantitative tests applied to cereals and their products; methods of analysis and interpretation of results. Deposit, \$7.50.

206. EXPERIMENTAL BAKING. 3(1-6); II. Prerequisite: Mill. Ind. 205. Dr. Working.

Practice in baking tests; comparison of methods, formulas, and flours; interpretation of results. Charge, \$4.

210. ADVANCED WHEAT AND FLOUR TESTING. 1 to 5 credits; I and II. Prerequisites: Mill. Ind. 205 and other courses; consult instructors. Dr. Swanson and Dr. Working.

Physiochemical and other methods used in testing wheat and flour. Deposit, \$2.50 per credit.

212. MILLING QUALITIES OF WHEAT. 3(3-0); II. Prerequisite: Chem. 123. Dr. Swanson.

Factors which affect the milling qualities of wheat and the quality of flour, such as moisture, respiration, enzymes, harvesting, storage, climate, and soil.

214. MILLING INDUSTRY PROBLEMS. 1 to 5 credits; I, II, and SS. Prerequisites: Mill. Ind. 212, or such other courses as are necessary for the problem selected. Dr. Swanson, Dr. Working, and Mr. Pence. Charge, \$2.50 per credit hour.

FOR GRADUATE CREDIT

301. MILLING INDUSTRY RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisite: Mill. Ind. 205 and 206, and other courses required by the problem selected. Dr. Swanson, Dr. Working, and Mr. Pence.

A definite line of investigation which may, if sufficient as to quality and quantity, be used as a basis for a thesis presented in partial fulfillment of the requirements for the degree of Master of Science.

Poultry Husbandry

Professor PAYNE
Professor WARREN
Assistant Professor SCOTT

Graduate Assistant ALBRIGHT
Graduate Research Assistant MURPHY
Superintendent LOOMIS.

The poultry plant, occupying twenty-four acres and situated just north of the northeast corner of the College campus, is devoted to the breeding and rearing of the stock used for class and experimental work. It is equipped with various types of houses, runs, incubators and brooders, and with flocks of the leading breeds of fowls.

There is in the government and state experiment stations and in schools and colleges an increasing demand for men with experience and systematic training in handling poultry. There is likewise a growing demand for men to enter poultry-packing houses and for men capable of managing poultry-farming enterprises of considerable proportions.

The department owns equipment valued at \$13,517.

COURSES IN POULTRY HUSBANDRY.

FOR UNDERGRADUATE CREDIT

101. FARM POULTRY PRODUCTION. 2(1-3); I and II. Mr. Payne and Mr. Scott.

Problems of poultry management on the general farm. Charge, \$2.

104. PRACTICE IN POULTRY FEEDING. 1(3 times a day, 7 days a week, for 3 weeks, at hours outside the regular schedules); II. Prerequisite: Poult. Husb. 101. Mr. Scott.

A flock of fowls cared for under supervision of an instructor; careful records kept of feeds consumed and eggs produced; survey of recent literature on poultry feeding. Charge, \$2.

109. POULTRY JUDGING. 3(1-6); I. Prerequisite: Poult. Husb. 101. Mr. Scott.

A historical study of the various breeds commonly found on the Kansas farm; particular attention to production characteristics and tracing evolution of present breed types.

Laboratory.—Judging the standard breeds and varieties by score card and by comparison; judging hens for egg production on the basis of their trap-nest records. Charge, \$3.

116. MARKET POULTRY AND EGGS. 4(2-6); I. Prerequisite: Poult. Husb. 101. Mr. Payne.

Methods of handling market eggs and live and dressed poultry.

Laboratory.—Candling and grading eggs; crate-feeding, killing, dressing, grading, and packing market poultry. Charge, \$3.

120. ARTIFICIAL INCUBATION AND BROODING. 3(1-6) (laboratory 3 times a day, 7 days a week for not less than 8 weeks, at hours outside the regular schedule); II. Prerequisite: Poult. Husb. 101. Mr. Scott and Mr. Albright.

Survey of the literature upon incubation and brooding; actual care of an incubator throughout the incubation period; bringing off the hatch; care of chicks in brooder for three weeks. Charge, \$3.

125. ADVANCED INCUBATION. 1 credit (3 times a day, 7 days a week, for not less than three weeks, at hours outside the regular schedule); II. Prerequisites: Poult. Husb. 101 and 120. Mr. Payne and Mr. Albright.

Study of the baby chick industry; operation of a Mammoth incubator; packing and shipping of baby chicks. Charge \$2.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. POULTRY BREEDING. 2(2-0); II. Prerequisite: An. Husb. 221. Dr. Warren.

Experimental work on inheritance in poultry is reviewed.

POULTRY FARM ORGANIZATION. See Advanced Farm Organization (Ag. Ec. 206A).

POULTRY BACTERIOLOGY. See Poultry Bacteriology. (Bact. 216.)

POULTRY ANATOMY. See Special Anatomy (Anat. 202).

206. POULTRY PROBLEMS. 1 to 5 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, and such other courses as required. Mr. Payne.

A definite investigation covering some phase of poultry work, to be continued into the next semester if necessary.

210. GENETICS SEMINAR. 1 credit; the year. Prerequisites: Consult instructors. Dr. Nabours, Dr. Ibsen, Dr. Warren, and Dr. Parker.

Genetic experiments in plants and animals, the biological and mathematical methods employed, and validity of conclusions drawn.

215. POULTRY MANAGEMENT. 2(2-0); II and SS. Prerequisites: Poult. Husb. 101; senior or graduate standing. Mr. Payne and Mr. Scott.

A detailed study of all phases of farm and commercial flocks, including cost of production.

220. POULTRY SEMINAR. 1(1-0); I. Prerequisite: Poult. Husb. 101. Required of all graduate students and of both juniors and seniors majoring in poultry husbandry. Dr. Warren.

A review of current literature appearing in periodicals and bulletins and reports on research projects and topics of special interest.

FOR GRADUATE CREDIT

301. POULTRY RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, 109, 116, 120, or their equivalent, and such other courses as required. Mr. Payne and Dr. Warren.

A definite line of investigation which may form the basis of a master's thesis.

305. ANIMAL NUTRITION SEMINAR. 1 credit; the year. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Leinhardt, Dr. Burt, Dr. Kramer, Mr. Payne, and Mr. Fitch.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of the validity of conclusions drawn.

Agriculture in the Summer School

Teachers in the high schools and grade schools of Kansas appreciate the value of the work offered in the Summer School of Kansas State Agricultural College. Besides first-class professional courses in education and other regular standard courses of college grade, courses in agriculture and agricultural engineering furnish unusual opportunities to teachers preparing for large usefulness in Kansas communities. Basic college courses are offered in most of the departments in the Division of Agriculture, and opportunity for graduate work is being broadened each year. This is especially true as regards graduate work provided for high school teachers of vocational agriculture. Brief information regarding many of these courses offered in the Summer School may be found in the department descriptions of courses in this catalogue. Further information may be secured by addressing a request to Dean of the Summer School, Kansas State Agricultural College, Manhattan, Kan.

SPECIAL COURSES IN AGRICULTURE

The Farmer's Short Course and the Dairy Manufacturing Short Courses are discussed with other special courses in another part of this catalogue. They may be found by reference to the general index.

The Division of Engineering

ROY ANDREW SEATON, *Dean*

The Division of Engineering offers curricula in agricultural engineering, architectural engineering, architecture, chemical engineering, civil engineering, electrical engineering, flour mill engineering, landscape architecture, and mechanical engineering, each leading to the degree of Bachelor of Science in the profession selected.

While the curricula, as scheduled, are believed to be sufficient to cover the needs of the average young man, it is possible to combine portions of the work of two or more of them in such a way that one may be prepared to take up a special line of work for which he desires to fit himself. For example, by substituting certain courses from the departments of chemistry and geology for some of those in the curriculum in mechanical engineering, a young man can fit himself for work in connection with the oil industry. By combining some of the courses in civil and mechanical engineering and by taking additional work in chemistry and geology, a young man may fit himself for special work in connection with the development of the coal fields of the country. In special cases permission will be granted to combine the work on the lines here indicated. With the permission of the dean of the division students desiring to do so may substitute work in the reserve officers' training corps for certain subjects in any of the curricula of the division.

It is believed that the curricula as tabulated give the best preparation for students expecting to follow general work in the profession selected and for those who are not certain what particular branch of the profession they will follow. The substitutions and combinations indicated, and others similar to them, will be permitted only when there is good evidence that the student desiring such work is practically certain to follow the branch selected.

In the case of any of these modifications, the degree granted will be that of the course in which the major portion of the work is taken. In no case will the substitution of an additional amount of technical work for any of the general cultural work in the course be allowed.

Besides the four-year professional curricula, the Division of Engineering offers one- or two-year courses in auto mechanics and machine shop work.

STATE TEACHER'S CERTIFICATE

By substituting nine specified credit hours of work in the Department of Education a four-year curriculum in engineering may lead not only to the degree of Bachelor of Science in Engineering, but at the same time qualify the student for a three-year Kansas state teachers' certificate, renewable for three-year periods. By taking nine additional credit hours of work in the Department of Education, graduates in engineering are qualified for the three-year Kansas state teachers' certificate, renewable for life and valid in any high school or any other public school in the state. A student desiring to qualify for teaching should begin his professional preparation by electing psychology in his junior year.

CURRICULUM IN AGRICULTURAL ENGINEERING

The curriculum in agricultural engineering is designed to qualify men for engineering work in the science of agriculture; for positions in the farm-machinery and farm-motor industry; for the management of farms where drainage, irrigation, or power-farming methods are prevalent; and for the positions as advisers, consulting engineers, or architects in connection with agricultural development.

The work of the first year is similar to the other engineering curricula. During the last three years about one-fourth of the time is devoted to agricultural subjects, in order to familiarize the students with the modern methods of scientific agriculture and to enable them to apply engineering principles to agricultural problems. Considerable time is devoted to farm machinery, farm motors, rural architecture, highway engineering, irrigation, drainage, and concrete construction.

CURRICULUM IN ARCHITECTURAL ENGINEERING

The curriculum in architectural engineering as herein outlined is designed primarily for the student who wishes to specialize in the constructional side of the building profession.

The field of the architectural engineer is wide and varied. It comprises the superintending of building construction, general contracting, the estimating of costs for construction projects, and the designing of the structural members of steel, timber and concrete.

Because of the nature of the work of the architectural engineer in the profession, it is necessary that he be also well grounded in the underlying principles of art and architectural design. In addition to the necessary architectural and engineering requirements the curriculum also provides for general cultural courses. These courses are designed to provide the student with the essentials of a liberal education.

CURRICULUM IN ARCHITECTURE

The curriculum in architecture aims to provide the technical training which will give a broad and sound foundation for the needs of the practicing architect, as well as the essentials of a liberal education. Although closely associated with, and somewhat dependent upon, science and engineering, architecture is primarily a fine art; hence the training of the architect, while including the general fundamentals of engineering and science, must be based primarily upon a study and understanding of the basic architectural principles together with the canons of art and good taste. A major portion of the curriculum is therefore devoted to the study of architectural design, supplemented by those subjects preparatory or contributory to it.

Supporting this line of study the student is given a comprehensive view of the development of civilization together with a more detailed study of the history of architecture and of art. Throughout the course draughtsmanship as applied to architectural design and construction, as well as to free-hand drawing and sketching, is given constant attention. Courses dealing with the fundamental principles of building construction, sanitation, heating, and lighting, together with a careful study of the properties and uses of building materials, are given simultaneously with the courses in design and drawing.

In addition to the above-outlined professional and technical studies, approximately one-quarter of the curriculum is devoted to more general studies designed to broaden the student's view and to give him the essentials of a liberal education. Thus it is the aim not only to provide a fundamental training upon which the student may base his professional development and advancement, but to afford a training which is in the broadest sense educational.

Students pursuing the curriculum in architecture are urged to devote a fifth year to the work. By so doing the student can combine the curricula in architectural engineering and architecture and receive the Bachelor of Science degree in both architectural engineering and architecture.

CURRICULUM IN CHEMICAL ENGINEERING

Though the progress of chemical science and of the chemical industries has been rapid in the last twenty-five years, their development really has only begun. One need but survey briefly the hosts of industries which are dependent upon chemistry for their improvement to realize what opportunities await the trained chemical engineer. Industries which have been more or less em-

pirically developed include those concerned with the manufacture of paints and varnishes, soaps, glass, leather, rubber, and ceramic materials. Industrial products which are the direct result of chemical research include dyes, synthetic essential oils, drugs, food products, and all electrochemical and electrothermal products, such as calcium carbide, carborundum, graphite, caustic soda, chlorine, chlorates, aluminum and other metals, and atmospheric nitrates. Still further improvements are possible in the present processes and a vast number of entirely new industries are waiting to be developed.

The training offered in the chemical engineering curriculum gives the student knowledge of the theoretical phases of chemistry and engineering which are fundamental to further development in many lines of industrial work. It is intended to fit him to enter the professional field of chemical engineering. In addition to sound training in chemical laws and processes, considerable work is given in the mathematical and physical sciences, drawing, economics, and engineering methods and operations.

CURRICULUM IN CIVIL ENGINEERING

The aim of the curriculum in civil engineering, as outlined in this catalogue, is to give the young men taking the work the best possible preparation for entering upon the active practice of the profession under present conditions. It will be noted that the first and second years are devoted largely to general cultural studies and the sciences, including mathematics. This follows the arrangement generally found in the engineering curricula of American colleges, and it finds its justification in the well-nigh universally accepted idea that any engineering education worthy of consideration must be grounded upon ample preliminary education in the allied sciences. An introduction to the technical work is given in these years through courses in drawing, shopwork, surveying, and the elementary phases of engineering.

The last two years are devoted largely to technical work. In recognition of the mechanical trend of the age, liberal provision is made for class and laboratory work in mechanical and electrical engineering. In view of the growing importance of municipal problems, such as paving, sewerage, and water supply, the curriculum in civil engineering includes required courses in these subjects.

Advanced elective courses in railway, highway, and irrigation and drainage engineering are offered in the second semester of the senior year.

CURRICULUM IN ELECTRICAL ENGINEERING

The curriculum in electrical engineering aims to prepare the student for leadership in the field of his chosen profession. The graduate may enter upon one of several divisions in the field of electrical engineering, such as electrical design, application, commercial, or operation in either the electric power or the electric communication industry.

In order to qualify for the various division of the profession, the student should have a thorough grounding in mathematics and the sciences; practice and theoretical training in drawing, surveying, and shop practice; and a liberal training in the cultural subjects of English, history and economics. Such a broad foundation serves as the basis for the more technical training in electrical engineering. This technical training begins with a course during the first year in College, is followed by another course during the second year and is completed by several courses extending through the junior and senior years. The curriculum provides, in addition, for approximately one semester of elective work, giving the student ample opportunity for the selection of extra work along cultural, economic or technical lines.

Instruction is provided by lecture, recitation, and laboratory methods, with particular stress on the deductions and reports of laboratory experiments.

An opportunity for contact with the field of electrical engineering is offered by special lectures and by inspection trips. The student is aided in securing professional experience during the summer vacation periods.

CURRICULUM IN FLOUR-MILL ENGINEERING

The milling of wheat and other cereals is an important industry in this state. The curriculum in flour-mill engineering is designed to prepare men for the management of mills, for work in connection with the designing of milling plants, and for research work in preparation and utilization of mill products.

The work of the freshman year is the same as in the other engineering courses. The sophomore year is similar to that of the mechanical engineering course, but includes additional chemistry and a beginning course in milling practice. In the junior and senior years, besides the courses dealing with the production, marketing, testing, and milling of grain products, a considerable amount of time is devoted to mechanics, chemistry, history, economics, steam and gas engineering, and flour-mill design.

CURRICULUM IN LANDSCAPE ARCHITECTURE

The aim of the curriculum in landscape architecture is to give to the student such technical training as will equip him for successful practice as a landscape architect.

The work of the landscape architect embraces the design, construction, execution, planting, and maintenance of farmsteads, estates, and other home grounds. In his work he is also called upon to plan parks, playgrounds, real estate subdivisions, country clubs, and boulevards and street systems. City planning and the laying out of town sites is probably the most important work of the landscape architect.

The function of the landscape architect is the fitting of land for human use, convenience, and enjoyment, whether it be in the city or in the country. The work requires a thorough knowledge of the fundamentals of architecture, engineering, and horticulture. Because landscape architecture is primarily a fine art, especial emphasis is given to the study of the fundamental principles of design. A major portion of the curriculum is therefore devoted to the study of architectural and landscape design. These courses are supplemented with courses in drafting, free-hand drawing, and sketching, so the student may develop a facility for expressing his ideas on paper. Throughout the course the student is also given intensive training in the study of plant materials, forestry, and soil conditions.

In addition to professional courses of study the curriculum provides general cultural courses. These courses are designed primarily to give the student the basic elements of a liberal education.

CURRICULUM IN MECHANICAL ENGINEERING

The work in mechanical engineering prepares for the successful management and superintendence of factories and power plants; for the design of power machinery installations; for the design and construction of machine tools, steam and gas engines, compressors, hydraulic machinery, etc.; and for the design and erection of engineering buildings and factories, including the selection, purchasing, and location of the equipment.

The curriculum has been laid out with the aim of securing a judicious mixture of theory and practice, such as will not only give the student the technical skill required for engineering operations, but will also endow him with an understanding of the scientific and economic principles necessary for the solution of engineering and industrial problems.

Throughout the four years the theoretical studies in the classroom are supplemented by practical work in the laboratories in such a manner as very materially to strengthen both. In the testing laboratories the work does not end when the test is completed, but the entire problem must be written up in such a manner as would be approved in the best commercial testing laboratories. The laboratory work in the shops not only gives the student practice in operating the machinery and performing the various mechanical operations, but includes a scientific study of the factors of production, so that the loss of material and expenditure of human effort will be a minimum.

Optional and elective courses are available in the senior year and give the

student an opportunity for instruction in the more specialized branches of mechanical engineering, including factory engineering, power production, and aeronautical engineering.

Students pursuing a mechanical engineering curriculum are urged to spend at least two summers in some shop or commercial plant in order to broaden their training.

Curriculum in Agricultural Engineering

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Chemistry E-I, Chem. 107.....*4(3-3)	Chemistry E-II, Chem. 108.....4(3-3)
College Algebra,† Math. 104.....3(3-0)	Plane Trigonometry, Math. 101.....3(3-0)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Engr. Draw., Mach. Design 101.....2(0-6)	Descriptive Geom. Mach. Des. 106...2(0-6)
Agric. Mach. & Con., Agr. Engr. 122, 2(1-3)	Feeding Livestock, An. Husb. 172...3(3-0)
Extempore Speech I, Pub. Spk. 106..2(2-0)	Forging I, Shop 150.....1(0-3)
Artillery I, Mil. Tr. 113A.....1(0-3)	Artillery II, Mil. Tr. 114A.....1(0-3)
Engr. Lectures, Gen. Engr. 101.....R	Engr. Lectures, Gen. Engr. 101.....R
Phys. Education M, Phys. Ed. 103..R(0-2)	Phys. Education M, Phys. Ed. 104..R(0-2)
Total 16	Total 17

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Engr. Physics I, Phys. 145.....5(4-3)	Engr. Physics II, Phys. 150.....5(4-3)
Plane Analytical Geom. Math. 110...4(4-0)	Calculus I, Math. 205.....5(5-0)
American Industrial Hist., Hist. 105, 3(3-0)	General Geology, Geol. 103.....3(3-0)
Mechanism, Mach. Design 121.....3(3-0)	Mach. Draw. I, Mach. Design 111...2(0-6)
Surveying I, Civ. Engr. 102.....2(0-6)	Surveying II, Civ. Engr. 111.....2(0-6)
Artillery III, Mil. Tr. 115A.....1(0-3)	Artillery IV, Mil. Tr. 116A.....1(0-3)
Seminar, Gen. Engr. 105.....R	Seminar, Gen. Engr. 105.....R
Phys. Education M, Phys. Ed. 105..R(0-2)	Phys. Education M, Phys. Ed. 106..R(0-2)
Total 18	Total 18

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Applied Mechanics, Ap. Mech. 202...4(4-0)	Str. of Mat., Ap. Mech., 211, 220...6(5-3)
Calculus II, Math. 206.....3(3-0)	Livestk. Production, An. Husb. 171...3(3-0)
Soils, Agronomy 130.....4(3-3)	Farm Crops, Agronomy 101.....4(2-6)
Fld. & Power Mach., Agr. Engr. 111..4(2-6)	Farm Motors, Ag. Engr., 125, 127...4(2-6)
Carpentry, Shop 149 .....2(0-6)	Foundry Production, Shop 161.....1(0-3)
Seminar, Gen. Engr. 105.....R	Seminar, Gen. Engr. 105.....R
Total 17	Total 18

SENIOR §

FIRST SEMESTER	SECOND SEMESTER
Economics, Econ. 101 .....3(3-0)	Farm Organization, Ag. Econ. 106...3(2-3)
Farm Structures, Ag. Engr. 105.....4(2-6)	Land Reclamation, Ag. Engr. 150...3(2-3)
Highway Engineering I, Civ. Engr. 231 .....2(2-0)	Electrical Engineering C, Elect. Engr., 160, 165 .....3(2-2, 1)
Hydraulics, Ap. Mech. 230, 235.....4(3-3)	Heating & Ventilation A, Mech. Engr., 135 .....3(3-0)
Highway Materials Lab., Ap. Mech. 250 .....1(0-3)	Modern Farm and Home Equipment, Ag. Engr. 115 .....3(2-3)
Machine Tool Work I, Shop 170....2(0-6)	Elective‡ .....2(-)
Law for Engineers, Hist. 167.....2(2-0)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	
Total 18	Total 17

Number of hours required for graduation, 140.

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parenthesis indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory each week.

† Students who offer but one unit of algebra for admission take a five-hour course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

‡ Electives are to be chosen with the advice and approval of the head of the department and the dean.

§ Optional subjects are offered during the senior year for those wishing to specialize in rural electrification.

Curriculum in Architectural Engineering

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Chemistry E-I, Chem. 107.....4(3-3)	Chemistry E-II, Chem. 108.....4(3-3)
College Algebra,* Math. 104.....3(3-0)	Plane Trigonometry, Math. 101.....3(3-0)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Descr. Geom. A, Mach. Design 107...3(0-9)	Shades and Shadows, and Perspective, Mach. Design 108.....3(0-9)
El. of Arch. I, Arch. 106A.....3(0-9)	El. of Architecture II, Arch. 107A...3(0-9)
Artillery I, Mil. Tr. 113A.....1(0-3)	Artillery II, Mil. Tr. 114A.....1(0-3)
Engr. Lectures, Gen. Engr. 101.....R	Engr. Lectures, Gen. Engr. 101.....R
Phys. Education M, Phys. Ed. 103..R(0-2)	Phys. Education M, Phys. Ed. 104..R(0-2)
Total 17	Total 17

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Engr. Physics I, Phys. 145.....5(4-3)	Engr. Physics II, Phys. 150.....5(4-3)
Hist. of Arch. I, Arch. 154A.....2(2-0)	Hist. of Arch. II, Arch. 157A.....2(2-0)
Plane Analytical Geom. Math. 110...4(4-0)	Calculus I, Math. 205.....5(5-0)
Object Drawing I, Arch. 111.....2(0-6)	Object Drawing II, Arch. 114.....2(0-6)
Extm. Speech I, Pub. Spk. 106.....2(2-0)	Electrical Machinery and Construction, Elec. Engr. 170.....2(0-6)
Surveying I, Civ. Engr. 102.....2(0-6)	Artillery IV, Mil. Tr. 116A.....1(0-3)
Artillery III, Mil. Tr. 115A.....1(0-3)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	Phys. Education M, Phys. Ed. 106..R(0-2)
Phys. Education M., Phys. Ed. 105..R(0-2)	
Total 18	Total 17

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Applied Mechanics, Ap. Mech. 202...4(4-0)	Str. of Mat., Ap. Mech. 211, 220...6(5-3)
Calculus II, Math. 206.....3(3-0)	Work. Draw. and Speci., Arch. 191...3(0-9)
Hist. of Arch. III, Arch. 158A.....2(2-0)	Hist. of Arch. IV, Arch. 160A.....2(2-0)
Masonry and Found., Civ. Engr. 120, 2(2-0)	
Design I, Arch. 142.....3(0-9)	Design II, Arch. 144.....3(0-9)
Pen. Rend. & Sketch., Arch. 116....2(0-6)	Water Color I, Arch. 118.....2(0-6)
Elective† .....2(-)	Elective† .....2(-)
Seminar, Gen. Engr. 105.....R	Seminar, Gen. Engr. 105.....R
Total 18	Total 18

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Str. in Framed Struc., Civ. Engr. 201, 4(4-0)	Des. of Fr. Struc., Civ. Engr. 246...3(0-9)
Civil Engr. Draw. II, Civ. Engr. 205..2(0-6)	Concrete Design, Civ. Engr. 250, 255..3(2-3)
Design III, Arch. 145.....5(0-15)	Design IV, Arch. 147 .....5(0-15)
Rural Architecture, Arch. 153.....2(0-6)	Heating and Ventilation A, Mech. Engr. 135 .....3(3-0)
Economics, Econ. 101 .....3(3-0)	Business Management, Econ. 126...2(2-0)
Law for Engineers, Hist. 167.....2(2-0)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	Inspection Trip, Arch. 199.....R
Total 18	Total 16

Number of semester hours required for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Architecture

FRESHMAN

FIRST SEMESTER

College Algebra,* Math. 104.....	3(3-0)
Hist. of Arch. I, Arch. 154A.....	2(2-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Desc. Geom. A, Mach. Des. 107.....	3(3-9)
Object Drawing I, Arch. 111.....	2(0-6)
El. of Arch. I, Arch. 106A.....	3(0-9)
Artillery I, Mil. Tr. 113A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A..	R(0-3)
Engr. Lectures, Gen. 101.....	R

Total, men	17
Total, women	16

SECOND SEMESTER

Plane Trigonometry, Math. 101.....	3(3-0)
Hist. of Arch. II, Arch. 157A.....	2(2-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Sh. & Shad. & Per., Mach. Des. 108,	3(0-9)
Object Drawing II, Arch. 114.....	2(0-6)
El. of Arch. II, Arch. 107A.....	3(0-9)
Artillery II, Mil. Tr. 114A (men)....	1(3-0)
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	
Engr. Lectures, Gen. Engr. 101.....	R

Total, men	17
Total, women	16

SOPHOMORE

FIRST SEMESTER

Gen. Physics I, Phys. 135.....	4(3-3)
Hist. of Arch. III, Arch. 158A.....	2(2-0)
Bld. Mat. & Con., Arch. 187A.....	3(3-0)
Pencil. Rend. & Sketch., Arch. 116..	2(0-6)
Design I, Arch. 142	3(0-9)
French I, Mod. Lang. 151.....	3(3-0)
Artillery III, Mil. Tr., 115A (men)...	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total, men	18
Total, women	17

SECOND SEMESTER

General Physics II, Phys. 140.....	4(3-3)
Hist. of Arch. IV, Arch. 160A.....	2(2-0)
Work. Draw. & Spec., Arch. 191....	3(0-9)
Water Color I, Arch. 118.....	2(0-6)
Design II, Arch. 144.....	3(0-9)
French II, Mod. Lang. 152.....	3(3-0)
Artillery IV, Mil. Tr. 116A (men)...	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total, men	18
Total, women	17

JUNIOR

FIRST SEMESTER

Ap. Mech. A, Ap. Mech. 102.....	3(3-0)
Still-life Drawing, Arch. 117.....	2(0-6)
Design III, Arch. 145.....	5(0-15)
Rural Architecture, Arch. 153.....	2(0-6)
Economics, Econ. 101	3(3-0)
Hist. of Civ. & Art I, Arch 178.....	2(3-0)
Seminar, Gen. Engr. 105.....	R

Total	17
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SECOND SEMESTER

Str. of Mat. A, Ap. Mech. 116, 121, 4(3-3)	
Life Drawing I, Arch. 121.....	2(0-6)
Design IV, Arch 147.....	5(0-15)
Extrem. Speech I, Pub. Spk. 106....	2(2-0)
Law for Engineers, Hist. 167.....	2(2-0)
Hist. of Civ. & Art II, Arch. 182....	2(3-0)
Seminar, Gen. Engr. 105.....	R

Total	17
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SENIOR

FIRST SEMESTER

Interior Design, Arch. 120.....	2(0-6)
Design V, Arch. 253.....	8(0-24)
Theory of Struc. I, Arch. 192.....	4(2-6)
Elective†	4(-)
Seminar, Gen. Engr. 105.....	R

Total	18
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SECOND SEMESTER

Life Drawing II, Arch. 123.....	2(0-6)
Design VI, Arch. 256	8(0-24)
Theory of Struc. II, Arch. 194A....	5(3-6)
Elective†	2(-)
Seminar, Gen. Engr. 105.....	R
Inspection Trip, Arch. 199.....	R

Total	17
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Number of semester hours required for graduation: Men, 139; Women, 135.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum for Chemical Engineering

FRESHMAN

FIRST SEMESTER

Chemistry I, Chem. 101.....	5(3-6)
College Algebra,* Math. 104.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
German I, Mod. Lang. 101.....	3(3-0)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 103..	R(0-2)

Total 17

SECOND SEMESTER

Chemistry II, Chem. 102.....	5(3-6)
Plane Trigonometry, Math. 101.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Des. Geometry, Mach. Des. 106.....	2(0-6)
German II, Mod. Lang., 102.....	3(3-0)
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104..	R(0-2)

Total 17

SOPHOMORE

FIRST SEMESTER

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analytical Geom., Math. 110...	4(4-0)
Adv. Inorganic Chem., Chem. 207...	3(3-0)
Cryst. and Min., Geol. 209.....	4(2-6)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M., Phys. Ed. 105..	R(0-2)

Total 17

SECOND SEMESTER

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
Quantitative Analysis, Chem. 241...	5(1-12)
Metallurgy, Shops 165	2(2-0)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106..	R(0-2)

Total 18

JUNIOR

FIRST SEMESTER

Calculus II, Math. 206.....	3(3-0)
Ap. Mech., Ap. Mech. 202.....	4(4-0)
Steam and Gas Engr. I, Mech. Engr.	
201, 202	5(4-3)
Organic Chemistry I, Chem. 218.....	4(2-6)
Mach. Drawing I, Mach. Des. 111...	2(0-6)
Seminar, Gen. Engr. 105.....	R

Total 18

SECOND SEMESTER

Str. of Mat. E, Ap. Mech. 216, 220..	4(3-3)
Steam and Gas Engr. II, Mech. Engr.	
204, 205	4(3-3)
Organic Chem. II, Chem. 219.....	4(2-6)
Elec. Engr. C, Elec. Engr. 160, 165,	3(2-2, 1)
Economics, Econ. 101	3(3-0)
Seminar, Gen. Engr. 105.....	R

Total 18

SENIOR

FIRST SEMESTER

Industrial Chem. I, Chem. 203.....	5(3-6)
El. of Chemical Engr., Chem. 280...	3(2-3)
Phys. Chem. I, Chem. 206.....	5(3-6)
Mechanism, Mach. Des. 121.....	3(3-0)
Fire Assaying, Chem. 242.....	2(0-6)
Seminar, Gen. Engr. 105.....	R

Total 18

SECOND SEMESTER

Industrial Chem. II, Chem. 204.....	5(3-6)
Chemical Engr. Prin., Chem. 281.....	2(2-0)
Chemical Problems, Chem. 270.....	3(0-9)
Physical Chemistry II, Chem. 272...	3(3-0)
Electives†	4(-)
Seminar, Gen. Engr. 105.....	R
Inspection Trip, Chem. 130.....	R

Total 17

Number of semester hours required for graduation, 140.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Civil Engineering

FRESHMAN

FIRST SEMESTER

Chemistry E-I, Chem. 107.....	4(3-3)
Plane Trigonometry,* Math. 101.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
Surveying I, Civ. Engr. 102.....	2(0-6)
Extm. Speech I, Pub. Spk. 106.....	2(0-2)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 102..	R(0-2)
Total	17

SECOND SEMESTER

Chemistry E-II, Chem. 108.....	4(3-3)
College Algebra,* Math. 104.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Des. Geometry, Mach. Des. 106.....	2(0-6)
Surveying II, Civ. Engr. 111.....	1(0-6)
Engr. Woodwork I, Shop 101.....	1(0-3)
Forging I, Shop 150.....	1(0-3)
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104..	R(0-2)
Total	17

SOPHOMORE

FIRST SEMESTER

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analytical Geom. Math. 110..	4(4-0)
Amer. Industrial Hist., Hist. 105...	3(3-0)
Surveying III, Civ. Engr. 151, 155..	3(2-3)
Mach. Drawing I, Mach. Des. 111..	2(0-6)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 105..	R(0-2)
Total	18

SECOND SEMESTER

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
Metallurgy, Shop 165	2(2-0)
Surveying IV, Civ. Engr. 156, 157..	3(2-3)
C. E. Drawing I, Civ. Engr. 125....	2(0-6)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106..	R(0-2)
Total	18

JUNIOR

FIRST SEMESTER

Applied Mech., Ap. Mech. 202.....	4(4-0)
Calculus II, Math. 206.....	3(3-0)
Highway Engr. I, Civ. Engr. 231....	2(2-0)
Engr. Geology, Geol. 102.....	4(3-3)
Masonry & Found., Civ. Engr. 120..	2(2-0)
Law for Engineers, Hist. 167.....	2(2-0)
Seminar, Gen. Engr. 105.....	R
Total	17

SECOND SEMESTER

Str. of Mat., Ap. Mech. 211, 220....	6(5-3)
Hydraulics, Ap. Mech. 230, 235....	4(3-3)
Ry. Engr. I, Civ. Engr. 145.....	2(2-0)
Drain. & Irrig. I, Civ. Engr. 161...	2(2-0)
Steam & Gas Engr. C, Mech. Engr.	
120, 125	3(2-3)
Seminar, Gen. Engr. 105.....	R
Total	17

SENIOR

FIRST SEMESTER

Str. in Fr. Struc., Civ. Engr. 201....	4(4-0)
C. E. Drawing II, Civ. Engr. 205....	2(0-6)
Astr. & Geod., Civ. Engr. 211, 216..	4(2-6)
Water Supply, Civ. Engr. 220.....	2(2-0)
Sewerage, Civ. Engr. 225.....	2(2-0)
Highway Materials Lab., Ap. Mech.	
250	1(0-3)
Economics, Econ. 101	3(3-0)
Seminar, Gen. Engr. 105.....	R
Total	18

SECOND SEMESTER

Des. of Fr. Struc., Civ. Engr. 246...	3(0-9)
Elec. Engr. C, Elec. Engr. 160, 165,	3(2-2, 1)
Engr. English, Engl. 110	2(2-0)
Business Management, Econ. 126....	2(2-0)
Con. Design, Civ. Engr. 250, 255...	3(2-3)
Ry. Engr. II, Civ. Engr. 260, 265...	4(2-6)
Hy. Engr. II, Civ. Engr. 270, 275..	4(2-6)or
Drain. & Irrig. II, Civ. Engr.	
280, 285	4(2-6)
Seminar, Gen. Engr. 105.....	R
Inspection Trip, Civ. Engr. 180.....	R
Total	17

Number of semester hours for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Plane Trigonometry and two hours of other work until the second semester.

Curriculum in Electrical Engineering

FRESHMAN

FIRST SEMESTER		SECOND SEMESTER	
Chemistry E-I, Chem. 107.....	4(3-3)	Chemistry E-II, Chem. 108.....	4(3-3)
Plane Trigonometry,* Math. 101.....	3(3-0)	College Algebra,* Math. 104.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)	College Rhetoric II, Engl. 104.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)	Desc. Geom., Mach. Des. 106.....	2(0-6)
Engr. Woodwork I, Shop 101.....	1(0-3)	Extens. Speech I, Pub. Spk. 106.....	2(2-0)
Forging I, Shop 150.....	1(0-3)		
Elec. Mach. & Con., Elect. Engr.		Elect. Mach. & Con., Elect. Engr.	
170	2(0-6)or	170	2(0-6)or
Surveying I, Civ. Engr. 102.....	2,0-6)	Surveying I, Civ. Engr. 102.....	2(0-6)
Artillery I, Mil. Tr. 113A.....	1(0-3)	Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R	Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 103..	R(0-2)	Phys. Education M, Phys. Ed. 104..	R(0-2)
Total	17	Total	17

SOPHOMORE

FIRST SEMESTER		SECOND SEMESTER	
Engr. Physics I, Phys. 145.....	5(4-3)	Engr. Physics II, Phys. 150.....	5(4-3)
Plane Analytical Geom. Math. 110..	4(4-0)	Calculus I, Math. 205.....	5(5-0)
Mechanism, Mach. Des. 121.....	3(3-0)	Amer. Indus. History., Hist. 105..	3(3-0)
Mach. Draw. 1, Mach. Des. 111.....	2(0-6)	Mach. Draw. E-II, Mach. Des. 117..	2(0-6)
Metallurgy, Shop 165	2(2-0)or		
Prin. of Elec. Engr., Elect. Engr. 179,	2(2-0)	Prin. Elect. Engr., Elect. Engr. 179,	2(2-0)or
Foundry Production, Shop 161.....	1(0-3)	Metallurgy, Shop 165	2(2-0)
Artillery III, Mil. Tr. 115A.....	1(0-3)	Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R	Seminar, Gen. Engr. 105.....	R
Phys. Education M., Phys. Ed. 105..	R(0-2)	Phys. Education M, Phys. Ed. 106..	R(0-2)
Total	18	Total	18

JUNIOR

FIRST SEMESTER		SECOND SEMESTER	
Steam & Gas Engr. I, Mech. Engr.		Steam & Gas Engr. II, Mech. Engr.	
201, 202	5(4-3)	204, 205	4(3-3)
Calculus II, Math. 206.....	3(3-0)	Applied Mech., Ap. Mech. 202.....	4(4-0)
Direct-current Mach. I, Elect. Engr.		Direct-current Mach. II, Elect. Engr.	
203, 204	4(3-2, 1)	206, 207	3(2-2, 1)
Elect. Meas., Elect. Engr. 227, 228..	3(2-3)	Alternating-current Mach. I, Elect.	
Economics, Econ. 101	3(3-0)	Engr. 209, 211	5(4-2, 1)
Seminar, Gen. Engr. 105.....	R	Elect. Mach. Des. I, Elect. Engr. 270,	1(0-3)
Total	18	Seminar, Gen. Engr. 105.....	R
		Total	17

SENIOR

FIRST SEMESTER		SECOND SEMESTER	
Str. of Mat. E, Ap. Mech. 216, 220..	4(3-3)	Machine Tool Work I, Shop 170....	2(0-6)
Hydraulics, Ap. Mech. 230, 235.....	4(3-3)	Alternating-current Mach. III, Elect.	
Alternating-current Mach. II, Elect.		Engr. 224, 225	5(3-3)
Engr. 214, 216	4(3-3)	Nontechnical elective	6(-)
Electrical Communication I, Elect.		Elective†	4(-)
Engr. 217, 218	3(2-2, 1)	Seminar, Gen. Engr. 105.....	R
Elective†	2(-)		
Seminar, Gen. Engr. 105.....	R		
Inspection Trip, Elect. Engr. 190.....	R		
Total	17	Total	17

Number of semester hours required for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Plane Trigonometry and two hours of other work until the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Flour-mill Engineering

FRESHMAN

FIRST SEMESTER

Chemistry E-I, Chem. 107.....	4(3-3)
College Algebra,* Math. 104.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Prin. of Milling I, Mill. Ind. 104....	2(1-3)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
Engr. Woodwork I, Shop 101.....	1(0-3)
Forging I, Shop 150	1(0-3)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 103...R	(0-2)

Total 17

SECOND SEMESTER

Chemistry E-II, Chem. 108.....	4(3-3)
Plane Trigonometry, Math. 101.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Des. Geom., Mach. Des. 106	2(0-6)
Extem. Speech I, Pub. Spk. 106.....	2(2-0)
Surveying I, Civ. Engr. 102.....	2(0-6)
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104...R	(0-2)

Total 17

SOPHOMORE

FIRST SEMESTER

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analyt. Geom., Math. 110.....	4(4-0)
Elem. Organic Chem., Chem. 123....	3(2-3)
Mach. Draw. I, Mach. Des. 111.....	2(0-6)
Quantitative Analysis A, Chem. 250..	3(1-6)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M., Phys. Ed. 105...R	(0-2)

Total 18

SECOND SEMESTER

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
Mechanism, Mach. Des. 121.....	3(3-0)
Mach. Draw. II, Mach. Des. 116.....	3(0-9)
Prin. of Mill. II, Mill. Ind. 106.....	1(0-3)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106...R	(0-2)

Total 18

JUNIOR

FIRST SEMESTER

Applied Mechanics, Ap. Mech. 202...4	4(4-0)
Calculus II, Math. 206.....	3(3-0)
Ad. Quantitative Anal., Chem. 260...1	1(0-3)
American Ind. Hist., Hist. 105.....	3(3-0)
Farm Crops Laboratory, Agron. 101..2	2(0-6)
Milling Practice I, Mill. Ind. 109...3	3(1-6)
Milling Entomology, Ent. 116.....	1(1-0)
Seminar, Gen. Engr. 105.....	R

Total 17

SECOND SEMESTER

Str. of Mat. E, Ap. Mech. 216, 220..4	4(3-3)
Economics, Econ. 101	4(3-0)
Grain Grad. and Judg., Agron. 108...2	2(0-6)
Mill. Qual. of Wheat, Mill. Ind. 212,3	3(3-0)
Milling Practice II, Mill. Ind. 111...3	3(1-6)
Machine Tool Work I, Shop 170.....	2(0-6)
Seminar, Gen. Engr. 105.....	R

Total 17

SENIOR

FIRST SEMESTER

Wheat and Flr. Test., Mill. Ind. 205,3	3(0-9)
Grain Marketing, Ag. Ec. 203.....	3(3-0)
Flow Sheet Design, Mach. Des. 214..2	2(0-6)
Mill. Tech. I, Mill. Ind. 201.....	2(0-6)
Steam and Gas Engr. I, Mech. Engr.	
201, 202	5(4-3)
Elective†	3(-)
Seminar, Gen. Engr. 105.....	R

Total 18

SECOND SEMESTER

Exper. Baking, Mill. Ind. 206.....	3(1-6)
Elec. Engr. C., Elec. Engr. 160, 165,3	3(2-2,1)
Flour-mill Design, Mach. Des. 215...2	2(0-6)
Mill. Tech. II, Mill. Ind. 202.....	2(0-6)
Steam and Gas. Engr. II, Mech.	
Engr. 204, 205	4(3-3)
Elective†	4(-)
Seminar, Gen. Engr. 105.....	R

Total 18

Number of semester hours required for graduation, 140.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Landscape Architecture

FRESHMAN

FIRST SEMESTER

Plane Trigonometry,* Math. 101.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
General Botany I, Bot. 101.....	3(1-4, 2)
Des. Geom. A, Mach. Des. 107.....	3(0-9)
Object Drawing I, Arch. 111.....	2(0-6)
Surveying I, Civ. Engr. 102.....	2(0-6)
Artillery I, Mil. Tr. 113A (men).....	1(0-3)and
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A..R(0-3)	
Engr. Lectures, Gen. Engr. 101.....	R

Total, men	17
Total, women	16

SECOND SEMESTER

College Algebra,* Math. 104.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Botany II, Bot. 105.....	3(1-4, 2)
Sh. & Shad., & Per., Mach. Des. 108, 3(0-9)	
Object Drawing II, Arch 114.....	2(0-6)
Surveying II, Civ. Engr. 111.....	2(0-6)
Artillery II, Mil. Tr. 114A, (men), 1(0-3)and	
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	
Engr. Lectures, Gen. Engr. 101.....	R

Total, men	17
Total, women	16

SOPHOMORE

FIRST SEMESTER

Hist. of Arch. I, Arch 154A.....	2(2-0)
El. of Arch. I, Arch. 106A.....	3(0-9)
Surveying III, Civ. Engr. 151, 155..	3(2-3)
General Chem., Chem. 110.....	5(3-6)
Land. Gardening I, Hort. 125.....	3(3-0)

Artillery III, Mil. Tr. 115A (men), 1(0-3)and	
Phys. Education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..R(0-3)	

Seminar, Gen. Engr. 105.....	R
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Total, men	17
Total, women	16

SECOND SEMESTER

Hist. of Arch. II, Arch. 157A.....	2(2-0)
El. of Arch. II, Arch. 107A.....	3(0-9)
Water Color I, Arch. 118.....	2(0-6)
Plant Ecology, Bot. 228.....	2(2-0)
El. of Hort., Hort. 107.....	3(2-3)
General Geology, Geol. 103.....	3(3-0)

Artillery IV, Mil. Tr. 116A, (men), 1(0-3)and	
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154....R(0-3)	

Elective†	1(-)
Seminar, Gen. Engr. 105.....	R

Total, men	17
Total, women	16

JUNIOR

FIRST SEMESTER

Hist. of Arch III, Arch. 158A.....	2(2-0)
Pen. Rend. and Sketch., Arch 116..	2(0-6)
Design I, Arch. 142.....	3(0-9)
Bldg. Mat. & Con., Arch. 187A.....	3(3-0)
Theory of Land. Des., Hort. 243....	2(2-0)
Plant Materials I, Hort. 224.....	3(2-3)
Plant Physiology I, Bot. 208.....	3(3-0)
Seminar, Gen. Engr. 105.....	R

Total	18
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SECOND SEMESTER

Hist. of Arch. IV, Arch. 160A.....	2(2-0)
Silviculture, Hort. 119	3(2-3)
Design II, Arch. 144.....	3(0-9)
Plant Materials II, Hort. 226A.....	3(2-3)
Work. Draw. & Spec., Arch. 191....	3(0-9)
Soils, Agron. 130	4(3-3)

Seminar, Gen. Engr. 105.....	R
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Total	18
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SENIOR

FIRST SEMESTER

Landscape Construct., Hort. 227.....	3(2-3)
Greenhouse Const. & Mngt., Hort. 128.	3(3-0)
Highway Engr. I, Civ. Engr. 231.....	2(2-0)
Highway Materials Lab., Ap. Mech.	
250	1(0-3)
Rural Architecture, Arch. 153.....	2(0-6)
Land. Gard. II, Hort. 238.....	3(1-6)
Plant Pathology I, Bot. 205.....	3(1-4, 2)
Seminar, Gen. Engr. 105.....	R

Total	17
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SECOND SEMESTER

Civic Art, Hort. 223.....	3(1-6)
Land. Gard. III, Hort. 246.....	3(1-6)
City Planning, Arch. 249.....	3(0-9)
Economics, Econ. 101	3(3-0)
Inspection Trip, Arch. 199.....	R
Seminar, Gen. Engr. 105.....	R
Elective†	6(-)

Total	18
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Number of semester hours required for graduation: Men, 139; women, 135.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Plane Trigonometry and two hours of other work until the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Mechanical Engineering

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Chemistry E-I, Chem. 107.....4(3-3)	Chemistry E-II, Chem. 108.....4(3-3)
College Algebra,* Math. 104.....3(3-0)	Plane Trigonometry, Math. 101.....3(3-0)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Engr. Draw., Mach. Des. 101.....2(0-6)	Des. Geom., Mach. Des. 106.....2(0-6)
Extm. Speech I, Pub. Spk. 106....2(2-0)	Surveying I, Civ. Engr. 102.....2(0-6)
{ Engr. Woodwork I, Shop 101....1(0-3) }	Elements of Steam and Gas Power,
{ Forging I, Shop 150.....1(0-3) } or	Mech. Engr. 130.....2(0-6)or
Elements of Steam and Gas Power,	{ Engr. Woodwork I, Shop 101....1(0-3) }
Mech. Engr. 130 .....2(0-6)	{ Forging I, Shop 150 .....1(0-3) }
Artillery I, Mil. Tr. 113A.....1(0-3)	Artillery II, Mil. Tr. 114A.....1(0-3)
Engr. Lectures, Gen. Engr. 101.....R	Engr. Lectures, Gen. Engr. 101.....R
Phys. Education M, Phys. Ed. 103..R(0-2)	Phys. Education M, Phys. Ed. 104..R(0-2)
Total 17	Total 17

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Engr. Physics I, Phys. 145.....5(4-3)	Engr. Physics II, Phys. 150.....5(4-3)
Plane Analytical Geom. Math. 110...4(4-0)	Calculus I, Math. 205 .....5(5-0)
Mechanism, Mach. Design 121.....3(3-0)	American Indus. Hist., Hist. 105....3(3-0)
Mach. Drawing I, Mach. Des. 111...2(0-6)	Mach. Drawing II, Mach. Des. 116..3(0-9)
Metallurgy, Shop 165.....2(2-0)	Foundry Production, Shop 161.....1(0-3)
Metallography, Shop 167.....1(0-3)	Artillery IV, Mil. Tr. 116A.....1(0-3)
Artillery III, Mil. Tr. 115A.....1(0-3)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	Phys. Education M, Phys. Ed. 106..R(0-2)
Phys. Education M., Phys. Ed. 105..R(0-2)	
Total 18	Total 18

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Ap. Mech., Ap. Mech. 202.....4(4-0)	Str. of Mat., Ap. Mech. 211, 220...6(5-3)
Calculus II, Math. 206.....3(3-0)	Graphic Statics, Ap. Mech. 225....1(0-3)
Steam and Gas Engr. I, Mech. Engr.	Steam and Gas Engr. II, Mech.
201, 202 .....5(4-3)	Engr. 204, 205 .....4(3-3)
Machine Tool Work I, Shop 170....2(0-6)	Machine Tool Work II, Shop 192....2(0-6)
Economics, Econ. 101.....3(3-0)	Nontechnical Elective† .....4(-)
Seminar, Gen. Engr. 105.....R	Seminar, Gen. Engr. 105.....R
Total 17	Total 17

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Electrical Engr. M-I, Elect. Engr.	Electrical Engr. M-II, Elect.
230, 231 .....4(3-2, 1)	Engr. 242, 243 .....4(3-2, 1)
Power Plant Engr., Mech. Engr. 206..3(0-9)	Refrig., Heat. and Vent.,
Mach. Design I, Mach. Des. 204, 205..5(3-6)	Mech. Engr. 210, 215.....3(2-3)
Hydraulics, Ap. Mech. 230, 235.....4(3-3)	Machine Design II, Mach. Des. 210..2(0-6)
<i>Factory Option:</i>	Commercial Engr., Elect. Engr. 250..2(2-0)
Factory Engr., Shop 245A.....2(2-0)	<i>Factory Option:</i>
<i>Power Option:</i>	Factory Design, Shop 255.....2(0-6)
Ad. Thermody., Mech. Engr. 230...2(2-0)	Machine Tool Work III, Shop 193, 1(0-3)
Seminar, Gen. Engr. 105.....R	Elective† .....3(-)
Total 18	<i>Power Option:</i>
	Steam Turb., Mech. Engr. 235....2(2-0)
	Elective† .....4(-)
	Seminar, Gen. Engr. 105.....R
	Inspection Trip, Mech. Engr. 180.....R
	Total 17

Number of semester hours required for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Agricultural Engineering

Professor FENTON
 Professor DRIFTMIER
 Associate Professor SANDERS

Assistant Professor LOGAN
 Assistant SMITH

This department gives instruction in such branches of engineering as are directly related to agriculture. It also correlates and gives general supervision to such courses presented in other engineering departments as are open to students in agriculture and agricultural engineering, in order that the agricultural application and uses of engineering principles, methods, and materials may be kept clearly before the student.

In all the courses given, the time is carefully apportioned between the classroom and laboratory, in order to present the subject in the clearest and most forceful way. The practical application of theoretical principles is emphasized.

The laboratory equipment is unusually ample and complete; all kinds of modern farm implements and equipment, to the value of \$30,000, are available, hence their construction, operation, adjustment, and care may be fully covered in the field and laboratory studies. The study of traction engines is arranged to cover thoroughly the construction, operation and repair of the numerous modern tractors which are part of the regular equipment; traction tests in conjunction with various types of farm power machinery are also made. The tractor laboratory is equipped with four tractor power units mounted on bases, with various types of tractor ignition apparatus, and with complete apparatus for power and draft tests. All farm machinery and tractor equipment is kept up to date through a system of exchange with the manufacturers whereby old machines are replaced, when advisable, by new ones.

The comparatively recent development of this work, and its rapidly growing importance, render investigational study very valuable, and special attention is given to the courses covering this phase of the subject.

The department possesses equipment valued at \$10,110.

COURSES IN AGRICULTURAL ENGINEERING

FOR UNDERGRADUATE CREDIT

103. FARM BUILDINGS. 3(1-6)*; II. Mr. Driftmier and assistants.

Requirements, details of arrangements, and materials of construction for barns, storage, and work buildings for the farm; preparation of specifications, bills of material, and estimates of costs.

105. FARM STRUCTURES. 4(2-6); I. Prerequisite: Applied Mechanics (Ap. Mech. 202). Mr. Fenton and assistants.

Design of farm structures, details and materials of construction; specifications and estimates.

108. FIELD AND POWER MACHINERY C. 3(2-3); I. Mr. Driftmier and assistants.

Construction, operation and use of tillage, seeding, harvesting and miscellaneous farm machinery operated by animal and mechanical power. Charge, \$2

111. FIELD AND POWER MACHINERY. 4(2-6); I. Prerequisites: Mechanism (Mach. Des. 121), Engineering Physics II (Phys. 150). Mr. Driftmier and assistants.

Development, design, and utilization of tillage, seeding, and harvesting machinery for all forms of farm power. Charge, \$2.

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parentheses indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory required each week. I, II, and SS indicate that the course is given the first semester, second semester, and summer session respectively.

115. MODERN FARM AND HOME EQUIPMENT. 3(2-3); II. Prerequisite: Hydraulics (Ap. Mech. 230, 235). Mr. Fenton and Mr. Driftmier.

Water supply, sewage disposal, lighting, heating, and ventilation of farm buildings; refrigeration; and rural electrification. Charge, \$1.

122. AGRICULTURAL MACHINES AND CONSTRUCTION. 2(1-3); II. Mr. Driftmier and assistants.

Introductory principles of mechanics and physics as applied to agricultural equipment. Charge, \$1.

123, 124.† FARM EQUIPMENT. 3(2-3); II and SS. Mr. Driftmier and assistants.

Basic principles of mechanics, farm construction methods, farm surveying, lighting, water, and sewage disposal systems. Charge, \$1.

125, 127. FARM MOTORS. 4(2-6); II. Prerequisites: Engineering Physics II (Phys. 150) and Calculus I (Math. 205). Mr. Sanders and assistants.

Theory, principles of construction, operation and adjustment, and the application of tractors, trucks, and other internal combustion engines to agricultural uses. Charge, \$3.

130. GAS ENGINES AND TRACTORS. 3(2-3); I, II, and SS. Mr. Sanders and assistants.

Principles and application of the internal combustion engine, engine mechanisms, carburetion, valve timing, cooling, lubrication, and ignition. Charge, \$2.

140, 145. ELEMENTS OF IRRIGATION AND DRAINAGE. 3(2-3); I. Prerequisite: Soils (Agron. 133). Mr. Fenton and Mr. Driftmier.

The fundamental principles of land reclamation by drainage and irrigation, with special reference to agricultural development. Charge, \$1.

150. LAND RECLAMATION. 3(2-3); II. Prerequisites: Hydraulics (Ap. Mech. 230, 235) and Soils (Agron. 133). Mr. Fenton and assistants.

Principles and methods of bringing waste lands into production by drainage, irrigation, terracing, and land clearing. Charge, \$1.

FOR GRADUATE AND UNDERGRADUATE CREDIT

205. FARM MACHINERY RESEARCH. 2(0-6) to 5(0-15); II. Prerequisites: Field and Power Machinery (Ag. Engr. 111), such other courses as required, and permission of instructors. Mr. Fenton and Mr. Driftmier.

Original investigations along the lines of draft requirements, power consumption, or operation of farm machinery.

215. TRACTOR RESEARCH. 2(0-6) to 5(0-15); I. Prerequisite: Farm Motors (Ag. Engr. 125, 127) or its equivalent. Mr. Driftmier and Mr. Sanders.

Research studies relating to tractor construction and operation.

FOR GRADUATE CREDIT

301. AGRICULTURAL ENGINEERING RESEARCH. 1 to 10 credits; I and II. Prerequisites: Soils (Agron. 133), and Engineering Physics II (Physics 150) or equivalent. Mr. Fenton and Mr. Driftmier.

The laboratories of the College are available for research in the design, use, and application of machinery and equipment in the development of agriculture. The results of such investigations, if suitable, may be incorporated in bulletins of the Engineering Experiment Station, or the work may furnish material for the master's thesis.

† In the case of many of the engineering courses, one course number is used for the recitation and another for the laboratory part of the course.

Applied Mechanics

Professor SCHOLER
 Professor ROBERT
 Associate Professor DAWLEY
 Assistant Professor CHEEK
 Assistant Professor LESHNER

Instructor KOENITZER
 Instructor PICKETT
 Assistant RAILSBACK
 Graduate Research Assistant NOBLE
 Research Fellow GERMAN

The aim of the course in applied mechanics is to give to the engineering student a practical working knowledge of those fundamental principles of mechanics upon which his future work in structural and machine design may be based.

The materials-testing laboratory is well equipped with machines and apparatus for making physical tests of materials of construction, such as tension, compression, flexure, shear, torsion, hardness, and impact tests, and tests under repeated load. Some of the machines are of sufficient capacity to test full size structural and machine members to destruction, among them being a universal machine of 200,000 pounds capacity, with extension members for testing long beams and columns. Facilities are provided for making, curing, and testing concrete and reinforced concrete test specimens.

The materials-testing laboratory also has complete equipment for the testing of highway materials, and has been designated as the official laboratory of the Kansas Highway Commission.

The hydraulics laboratory has facilities for furnishing water under a considerable range of pressures and volumes. It contains devices for measuring and recording the flow of water, including measuring pits, water meters, weirs, nozzles, pitometer, and a Venturi meter. It is also provided with pumps, a standpipe, water motors, and a turbine water wheel for testing purposes, and a supply of pressure gauges, weighing scales, and other auxiliary apparatus. The equipment belonging to the department is valued at \$33,755.

COURSES IN APPLIED MECHANICS

FOR UNDERGRADUATE CREDIT

102. APPLIED MECHANICS A. 3(3-0); I. Prerequisites: Plane Trigonometry and Engineering Physics I. Mr. Robert and Mr. Cheek.

A study of statics, with applications to stresses in structures; center of gravity; and moment of inertia.

116. STRENGTH OF MATERIALS A RECITATION. 3(3-0); II. Prerequisite: Applied Mechanics A. Mr. Robert and Mr. Cheek.

Behavior of materials subjected to tension, compression, and shear; strength and stiffness of simple beams; moment and shear in flexure of beams, with diagrams; designs of beams of wood, steel and reinforced concrete, and design and investigation of columns.

121. STRENGTH OF MATERIAL A LABORATORY. 1(0-3); II. Prerequisite: Applied Mechanics A. Mr. Robert and Mr. Cheek.

A study of various testing machines; tension, compression, shear, and bending tests on iron, steel, wood, and concrete; tests on cement and on the fine and coarse aggregates for concrete. Charge, \$2.

150. THESIS. 1(0-3), I; and 2(0-6), II. Mr. Scholer and Mr. Robert.

An excellent opportunity for experimental work in strength of materials, road materials, concrete and hydraulics, suitable for thesis projects in any branch of engineering; subject of investigation to be selected in consultation with the head of the department at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. APPLIED MECHANICS. 4(4-0); I, II, and SS. Prerequisites: Calculus I and Engineering Physics II. Mr. Scholer, Mr. Robert and Mr. Pickett.

Composition, resolution, and conditions of equilibrium of concurrent and nonconcurrent forces; center of gravity; friction; laws of rectilinear and curvilinear motion of material points; moments of inertia; relations between

forces acting on rigid bodies and the resulting motions; and of work, energy, and power.

211. STRENGTH OF MATERIALS RECITATION. 5(5-0); I, II, and SS. Prerequisite: Applied Mechanics. Mr. Scholer, Mr. Robert and Mr. Koenitzer.

Behavior of materials subjected to tension, compression, and shear; riveted joints; torsion; shafts, and the transmission of power; strength and stiffness of simple and continuous beams; bending moments and shear forces in beams; design of beams; stresses in columns and hooks; and the design of columns.

216. STRENGTH OF MATERIALS E RECITATION. 3(3-0); I, II, and SS. Prerequisite: Applied Mechanics. Mr. Robert, Mr. Dawley, and Mr. Pickett. Similar to course 211, but much less time given to study of continuous girders and of reinforced concrete.

220. STRENGTH OF MATERIALS LABORATORY. 1(0-3); I, II, and SS. Must accompany or follow course 211 or 216. Mr. Robert, Mr. Dawley, and Mr. Pickett.

Tension, compression, shear, and bending tests on specimens of iron, steel, wood and concrete; torsion tests on steel shafting; standard tests on fine and coarse aggregates for concrete. Charge, \$2.

225. GRAPHIC STATICS. 1(0-3); II. Must accompany or follow course 102 or 202. Mr. Robert.

Graphical solutions of the stresses existing in a number of typical trusses, under a variety of loadings.

230. HYDRAULICS RECITATION. 3(3-0); I, II, and SS. Prerequisite: Applied Mechanics. Mr. Robert, Mr. Dawley, and Mr. Pickett.

Fluid pressures, center of pressure, immersion and flotation; Bernoulli's theorem; orifices, weirs, short and long pipes; flow of water in open channels, and its measurement; elements of water power, impulse wheels, reaction turbines, and centrifugal pumps.

235. HYDRAULICS LABORATORY. 1(0-3). I, II, and SS. Prerequisite: Applied Mechanics. Mr. Robert, Mr. Dawley, and Mr. Pickett.

Tests to determine the coefficients of weirs and orifices, loss of head in pipes, water wheels, water turbines, rams, and pumps, also use and calibration of water meters. Charge, \$1.

250. HIGHWAY MATERIALS LABORATORY. 1(0-3); I. Prerequisite: Strength of Materials Laboratory. Mr. Scholer, Mr. Leshner, and Mr. Koenitzer.

A comprehensive course in the examination and testing of road materials. Charge, \$1.50.

260. ADVANCED APPLIED KINETICS. 2(2-0); II. Prerequisite: Strength of Materials or Strength of Materials E. Mr. Robert.

Advanced problems in kinetics with special attention to kinetics of rigid bodies.

265. ADVANCED MECHANICS OF MATERIALS. 2(2-0); I. Prerequisite: Strength of Materials. Mr. Scholer.

Theory of elasticity and its applications; advanced problems in continuous girders involving general three-moment equations.

270. HYDRAULIC MACHINERY. 2(2-0); I. Prerequisite: Hydraulics. Mr. Robert.

Characteristics and applications of water wheels, turbines, pumps, and other hydraulic machinery.

275. ADVANCED HIGHWAY MATERIALS. 2(1-3); II. Prerequisite: Highway Materials I Laboratory. Mr. Scholer.

An advanced course in the properties and testing of the various materials used in road construction.

280. MECHANICS OF REINFORCED CONCRETE. 2(2-0); I. No credit for students who have had Strength of Materials. Prerequisite: Strength of Materials E. Mr. Scholer.

The behavior of reinforced concrete structural elements, including slabs, rectangular beams, T-beams, columns, and special floor systems under load.

FOR GRADUATE CREDIT

301. RESEARCH IN MATERIALS OF CONSTRUCTION. 1 to 10 credits; I or II. Mr. Scholer, Mr. Robert, and Mr. Dawley.

Many problems related to materials used in engineering construction offer attractive fields for research. A number of special pieces of apparatus in addition to the usual equipment of strength-of-materials laboratory are available for this work. The results of such investigations, if suitable, may be incorporated in bulletins of the Engineering Experiment Station; this work may furnish materials for the master's thesis.

Architecture

Professor WEIGEL
Associate Professor CHEEK
Assistant Professor HELM

Assistant Professor WICHERS
Instructor SMITH
Instructor WARE

The courses in architecture are offered not only to provide for the fundamental training necessary for the practice of architecture, but also to give the student a facility and working knowledge which will be of immediate value to him upon graduation. The foundation which the student acquires in college should be supplemented by continual professional study, especially during those years immediately following graduation, when it is desirable that he should acquire practical experience in the employ and under the guidance of capable and experienced members of the profession. Students are most urgently advised to acquire practical experience in an architect's office during the summer vacations of their college course.

Throughout the course the instruction by lectures, recitations and drafting-room practice is fully amplified and expanded by a free use of the equipment of the Department of Architecture. Within the department is housed a good working library of the standard architectural works and leading professional magazines, together with the collections of lantern slides and photographs, to all of which the student has free access. Placed about the amply lighted and well-equipped rooms of the department is a generous collection of plaster casts, including important examples of architectural fragments and ornaments from historical monuments. On the walls of the drafting rooms, where they are constantly before the student, are hung selected examples from the department's collection of original drawings, including specimens of both academic and current professional work. From time to time this exhibit is changed.

At frequent intervals, representative men actually engaged in the practice of architecture and the allied arts and trades are invited to talk to and to advise the student. During the junior or senior year under the direction of and in company with a member of the departmental faculty, each student is expected to make a visit to one or more of the neighboring cities, thus enabling him to acquaint himself with the representative work of the profession as well as with the operations and processes involved in the conduct of allied professions and industries.

Students pursuing the curriculum in architecture are urged to devote a fifth year to the work. By so doing, a student can combine the curricula in architectural engineering and architecture and receive the bachelor of science degree in both.

All drawings or designs made during the student's course are to become the property of the department, to be used or returned at the discretion of the faculty.

The department owns equipment valued at \$15,151.

COURSES IN ARCHITECTURE

FOR UNDERGRADUATE CREDIT

106A. ELEMENTS OF ARCHITECTURE I. 3(0-9); I and SS. Mr. Wichers and Mr. Ware.

A thorough treatment of the orders and fundamental elements of architectural forms; special attention to the development of a high standard of lettering and draftsmanship. Charge, \$1.

107A. ELEMENTS OF ARCHITECTURE II. 3(0-9); II and SS. Prerequisite: Elements of Architecture I. Mr. Wichers and Mr. Ware.

Simple application of the forms studied in course 106A; simple architectural rendering. Charge, \$1.

111. OBJECT DRAWING I. 2(0-6); I, II, and SS. Mr. Helm and Mr. Wichers.

The drawing of simple geometric objects; studies from fragments of antique architectural ornament.

114. OBJECT DRAWING II. 2(0-6); II, and SS. Prerequisite: Object Drawing I. Mr. Helm and Mr. Wichers.

An application and expansion of the principles taught in Object Drawing I.

116. PENCIL RENDERING AND SKETCHING. 2(0-6); I, and SS. Prerequisite: Object Drawing II. Mr. Helm and Mr. Wichers.

The drawing of architectural ornament, architectural fragments, and pencil sketches from nature.

117. STILL LIFE DRAWING. 2(0-6); I, and SS. Prerequisite: Water Color I (Arch. 118). Mr. Helm.

Advanced studies from full-length plaster casts in charcoal; pen and ink rendering.

118. WATER COLOR I. 2(0-6); II, and SS. Prerequisite: Arch. 116 or approval of instructor. Mr. Helm.

Exercises in the handling of the medium and of the translation of color; theory of color.

119. WATER COLOR II. 2(0-6); I, II, and SS. Prerequisite: Arch. 118. Mr. Helm.

Advanced study in the technique of the medium. Includes both studio work and out-of-door sketching.

120. INTERIOR DESIGN. 2(0-6); I, and SS. Prerequisites: Arch. 118, 145, and 244. Mr. Helm.

The principles of interior architecture with special attention to period design.

121. LIFE DRAWING I. 2(0-6); II. Prerequisite: Arch. 118. Mr. Helm. Drawing from the living model in charcoal. Deposit, \$5.

123. LIFE DRAWING II. 2(0-6); II. Prerequisite: Arch. 121. Mr. Helm. A continuation of Life Drawing I. Deposit, \$5.

124. DOMESTIC ARCHITECTURE. 2(2-0); I and II. Mr. Wichers.

The course is designed to help the student understand home building problems. A detailed study is made of home designing and planning with the help of lantern slides.

133. CLAY MODELING. 2(0-6); I. Prerequisite: Arch. 117. Mr. Weigel and Mr. Helm.

The making of clay models, plaster casts of simple decorative fragments and anatomical forms; and construction of relief maps. Charge, \$1.

134. PEN AND INK DRAWING I. 2(0-6); I, II, and SS. Prerequisite: Arch. 116 or approval of instructor. Mr. Helm.

A study of the technique and drawing of fragments, casts, still-life, etc., in this medium, also outdoor sketching.

142, 144. DESIGN I AND II. 3(0-9) each; I and II respectively. Prerequisites: For I, Arch. 107A and 114; for II, Arch. 142. Mr. Weigel and Mr. Smith.

An analysis of architectural composition and rendering. Charge, \$1 for each course.

145, 147. DESIGN III AND IV. 5(0-15) each; I and II respectively. Prerequisites: For III, Arch. 117 and 144; for IV, Arch. 145. Mr. Weigel and Mr. Smith.

Continuation of Design II; time problems and rapid design sketches required, at frequent intervals. Charge, \$1 for each course.

153. RURAL ARCHITECTURE. 2(0-6); I. Prerequisites: Arch. 144 and 191. Mr. Wichers.

A detailed study of the small home and the architectural needs of rural communities.

154A, 157A. HISTORY OF ARCHITECTURE I AND II. 2(2-0) each; I and II respectively. Mr. Smith.

The history of architecture from the dawn of civilization to the end of the Roman Empire, in I; II covers the Gothic period, to 1400.

158A, 160A. HISTORY OF ARCHITECTURE III AND IV. 2(2-0) each; I and II respectively. Prerequisites: Arch. 114 and 157A. Mr. Smith.

Continuation of Arch 157A; finishes the history of architecture to modern times.

163, 164. HISTORIC ORNAMENT I AND II. 2(1-3) each; I and II respectively. Prerequisites: Arch. 118 and Arch. 160A. Mr. Helm.

The study and analysis of historic ornament and its application to architectural and decorative design. Charge, \$1 for each course.

165, 170. COMMERCIAL ILLUSTRATION I AND II. 2(0-6) each; I and II respectively. Mr. Helm.

The principles of advertising arrangements; making various types of advertising designs, such as newspaper advertisements, lettering, and posters; making cover designs for magazines, books, and trade catalogues; for headings, tail pieces, and decorative page arrangements; drawings carried out in black and white and in one or more colors.

178, 182. HISTORY OF CIVILIZATION AND ART I AND II. 2(3-0) each; I and II respectively. Mr. Smith.

In course 178, a study of development of painting, sculpture, furniture and the minor arts to the fifteenth century. In course 182, continuation to the beginning of the twentieth century.

187A. BUILDING MATERIALS AND CONSTRUCTION. 3(3-0); I. Prerequisite: Elements of Architecture II (Arch. 107A). Mr. Cheek.

An introduction to the properties and uses of the materials of construction; also plumbing, heating, and lighting systems; occasional visits to buildings under construction.

191. WORKING DRAWINGS AND SPECIFICATIONS. 3(0-9); II. Prerequisites: Arch. 142 and 187A. Mr. Weigel and Mr. Wichers.

Preparing working drawings and specifications for suburban residences; drawing complete details for buildings, working out heating, plumbing, and structural problems.

192. THEORY OF STRUCTURES I. 4(2-6); I. Prerequisites: Arch. 191, Applied Mechanics A (Ap. Mech. 102), and Strength of Materials A (Ap. Mech. 116, 121). Mr. Cheek.

Mathematical and graphical solutions of stresses in framed structures under static loading; practical problems in the design of wood construction; occasional inspection trips to buildings under construction.

194A. THEORY OF STRUCTURES II. 5(3-6); II. Prerequisite: Arch. 1792. Mr. Cheek.

A continuation of Theory of Structures I applied to steel and masonry structures.

196, 198. STRUCTURAL DESIGN I AND II. 3(1-6) each; I and II, respectively Prerequisite: Theory of Structures II (Arch. 194A). Mr. Cheek.

Application of the principles covered under Theory of Structures to the coordinated, grouped design of an entire structure with complete working drawings and details; preferably a problem simultaneously under consideration in an architectural design course.

199. INSPECTION TRIP. R; II. Prerequisite: Senior classification. Mr. Weigel and assistants.

An inspection trip is made to one of the larger cities of the Middle West by the senior students in Architectural Engineering, Architecture, and Landscape Architecture. The inspection party is under the charge of one or more faculty members of the Department of Architecture. Time allotted to the trip is from three days to one week. Cost to each student for trip, including meals, lodging and transportation, approximately \$50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201, 206. ADVANCED FREE-HAND DRAWING I AND II. 2(0-6) each; I and II, respectively. Prerequisites: Arch. 117 and 118. Mr. Helm.

Study of the human figure and exercises in original composition of architectural ornament, various mediums being employed.

208. FURNITURE DESIGN. 3(1-6); I. Prerequisites: Arch. 120 and Arch. 160A. Mr. Helm.

A study of the history of furniture design and its relationship to architectural development.

211, 216. ADVANCED HISTORY OF CIVILIZATION AND ART I AND II. 2(2-0) each; I and II respectively. Prerequisite: Arch. 182. Mr. Weigel.

In course 211, a detailed study of civilization from the Babylonian and Assyrian empires to the fifteenth century, tracing the artistic development of each epoch; in course 216, a continuation of course 211.

217, 218. ETCHING I AND II. 2(0-6) each; I and II respectively. Prerequisites: Arch. 117 and Arch. 134. Mr. Helm.

Instruction is given in the technical principles of etching on copper and zinc plate.

221. PROBLEMS IN ARCHITECTURAL DEVELOPMENT. 1 to 5 credits; I and II. Mr. Weigel.

Under direct supervision of some member of the departmental staff, study of historic problems in architectural development.

230, 235. OIL PAINTING I AND II. 2(0-6) each; I and II, respectively and SS. Prerequisite: Water Color I (Arch. 118) or approval by instructor. Mr. Helm.

Rudiments of painting in oil; sketching of simple objects and drapes. In course 235, painting of larger still-life groups and out-door sketching.

244. GENERAL HISTORY OF ARCHITECTURE. 3(3-0); I and II. Prerequisite: Object Drawing II (Arch. 114) or Design A (Ap. Art. 106). Mr. Weigel.

The historic architectural styles of the world studied and analyzed; written papers, with sketches, required of each student.

249. CITY PLANNING. 3(0-9); II. Prerequisites: Arch. 144, Hort. 223, and Hort. 245. Mr. Weigel.

A detailed study of city planning, including transportation and street systems, parks and recreation facilities, public buildings and civic centers, subdivisions of land, restrictions and zoning.

253, 256. DESIGN V AND VI. 8(0-24) each; I and II respectively. Prerequisites: For V, Arch. 118 and 147; for VI, Arch. 253. Mr. Weigel and Mr. Smith.

Continuation of Design IV; special training in interior design and decoration. Charge, \$1 for each course.

FOR GRADUATE CREDIT

301, 304. ADVANCED DESIGN I AND II. 3(0-9) to 10 (0-30) each; I and II respectively. Mr. Weigel.

A study of the planning of important buildings and groups of buildings. Course 304, a continuation of 301, may furnish material for the master's thesis.

324. RESEARCH IN ARCHITECTURE. 1 to 10 credits; I and II.

The study of a research problem in architecture, determined by conferences between Mr. Weigel and the student and approved by the Graduate Council. This course may furnish material for the master's thesis.

Civil Engineering

Professor CONRAD
Professor FRAZIER
Professor FURR
Associate Professor WHITE

Instructor CRAWFORD
Instructor MORSE
Graduate Research Assistant DULL

The purpose of the instruction in the Department of Civil Engineering is to give the student a thorough knowledge of the fundamental principles of engineering and to develop his ability to analyze engineering problems, and thus prepare the graduate to enter any one of the many special fields which are usually included under the title of civil engineering.

In addition to the laboratory equipment of the other engineering departments, which is available to civil-engineering students, the Department of Civil Engineering possesses a good assortment of transits, levels, plane tables, compasses, tapes, and chains. It also owns a precise level, a direction theodolite, a repeating theodolite, four different kinds of solar attachments, and a base-line outfit.

Approximately 90 per cent of the graduates of this department are now engaged in engineering work in cities, in the oil fields, in the government reclamation and valuation service, in consulting engineering, in highway work, in construction work, and in other work in which a knowledge of civil engineering is a prerequisite.

The department owns equipment valued at \$19,739.

COURSES IN CIVIL ENGINEERING

FOR UNDERGRADUATE CREDIT

102, 111. SURVEYING I AND II. 2(0-6) each; I, II, and SS each. Prerequisite or parallel (for I): Plane Trigonometry (Math. 101); prerequisite (for II): Surveying I. Mr. White, Mr. Crawford, and Mr. Morse (for I); Mr. Furr and Mr. White (for II).

Course 102, the use and care of engineer's surveying instruments; course 111, land and topographic surveying. Charge, \$1 for each course.

120. MASONRY AND FOUNDATIONS. 2(2-0); I. Prerequisite: Engineering Physics II (Physics 150); prerequisite or parallel: Applied Mechanics I (Ap. Mech. 202). Mr. Frazier.

Design and construction of foundations; stresses in plain masonry structures; the method of designing such structures.

125. CIVIL ENGINEERING DRAWING I. 2(0-6); II. Prerequisite: Machine Drawing I (Mach. Design 111). Mr. White.

Stereotomy, shades and shadows, isometric and perspective drawing; copying working drawings of engineering structures.

145. RAILWAY ENGINEERING I. 2(2-0); II. Prerequisites: Surveying IV and C. E. Drawing I (Civ. Engr. 125, 156, and 157). Mr. Frazier.
Railway engineering based on Wellington's economic theory; study of track construction and maintenance; design of yards and terminals.

151, 155. SURVEYING III. 3(2-3); I. Prerequisite: Surveying II. Mr. Furr and Mr. White.

Topographic, hydrographic, city, and mine surveying.

Laboratory.—Topographic surveying and topographic mapping.

156, 157. SURVEYING IV. 3(2-3); II. Prerequisite: Surveying III; prerequisite or parallel: Calculus I (Math. 205). Mr. Furr.
Railroad curves and earthwork.

161. DRAINAGE AND IRRIGATION I. 2(2-0); II and SS. Prerequisite and parallel: Hydraulics (Ap. Mech. 230, 235). Mr. Conrad and Mr. White.

Design and construction of drainage and irrigation works.

170. THESIS. 1(0-3), I; and 2(0-6), II respectively. Mr. Conrad.

A report on a proposed design, and original investigation, or a library research. With approval of Mr. Conrad, thesis work may be taken in some other department, the thesis subject to be selected and approved by the department head before the October first next preceding the student's graduation. An equivalent amount of work in an elective subject approved by the dean of this division may be substituted for thesis.

180. INSPECTION TRIP. R; II. Prerequisite: Senior classification. Mr. Conrad and assistants.

A trip of three to four days to Kansas City and other near-by industrial centers for the purpose of inspecting industrial plants and projects of special interest to civil engineers. The plants inspected are carefully selected to exemplify various engineering applications in practice. Cost to each student, including meals, lodging and transportation, approximately \$25.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. STRESSES IN FRAMED STRUCTURES. 4(4-0); I and SS. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Conrad.

Computation of stresses in bridges and buildings.

205. CIVIL ENGINEERING DRAWING II. 2(0-6); I and SS. Prerequisite: Strength of Materials Rec. (App. Mech. 211). Mr. Conrad.

Graphic statics and design of simple roof trusses in timber and steel.

211, 216. ASTRONOMY AND GEODESY. 4(2-6); I. Prerequisites: Surveying III (Civ. Engr. 151, 155) and Calculus II (Math. 206). Mr. Frazier.

The elements of practical astronomy; precise methods of surveying and leveling.

Laboratory.—Astronomical observations, principally for determining true meridian and latitude; base-line measurements and triangulation work.

220. WATER SUPPLY. 2(2-0); I. Prerequisite: Hydraulics (Ap. Mech. 230, 235). Mr. Frazier.

Water supply from the standpoint of consumption, collection, storage, distribution and purification.

225. SEWERAGE. 2(2-0); I. Prerequisite: Hydraulics (Ap. Mech. 230). Mr. Frazier.

Design and construction of sewer systems and disposal plants.

230. HIGHWAY ENGINEERING I RECITATION. 2(2-0); I. Prerequisite: Surveying II (Civ. Engr. 111). Mr. Furr.

Location, construction, and maintenance of roads and pavements.

246. DESIGN OF FRAMED STRUCTURES. 3(0-9); II and SS. Prerequisite: Stresses in Framed Structures (Civ. Engr. 201). Mr. Conrad.

The making of general drawings for a highway truss bridge, a railroad truss bridge, and a railroad deck plate girder.

250, 255. CONCRETE DESIGN. 3(2-3); II. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Conrad.

Design of reënforced buildings, retaining walls, dams and bridges.

Laboratory.—Drawing reënforced concrete retaining walls, dams, slab bridges, and girder bridges.

256. REËNFORCED CONCRETE ARCHES. 3(3-0); II. Prerequisite: Concrete Design (Civ. Engr. 250, 255). Mr. Conrad.

Various types of reënforced concrete arches adapted for use in bridges, buildings, and dams; computation of stresses; arrangement of details.

260, 265. RAILWAY ENGINEERING II. 4(2-6); II. Prerequisite: Railway Engineering I (Civ. Engr. 145). Mr. Frazier.

Railway operation and maintenance.

Laboratory.—A reconnoissance and survey of a short railroad; making the maps, profiles, and estimates from the survey.

270, 275. HIGHWAY ENGINEERING II. 4(2-6); II. Prerequisite: Highway Engineering I (Civ. Engr. 230). Mr. Furr.

Highway laws, highway administration, and highway economics.

Laboratory.—A reconnoissance and survey for a highway a few miles long; making the maps, profiles, and estimates from the survey.

276. HIGHWAY ECONOMICS. 3(3-0); I. Prerequisite: Highway Engineering II. Mr. Furr.

Highway transport and construction problems as affected by recent findings of research agencies.

280, 285. DRAINAGE AND IRRIGATION II. 4(2-6); II. Prerequisite: Drainage and Irrigation I (Civ. Engr. 161). Mr. Conrad.

Design of irrigation structures and management of irrigation projects.

Laboratory.—Making the survey for a drainage or irrigation project; making maps, estimates, and designs, using the survey as a basis.

FOR GRADUATE CREDIT

301. ADVANCED BRIDGE STRESSES. 3(3-0); I. Prerequisite: Stresses in Framed Structures (Civ. Engr. 201). Mr. Conrad.

A study of deflections; stresses in continuous, movable, cantilever, suspension, and steel arch bridges; and secondary stresses.

304. CIVIL ENGINEERING RESEARCH. 3 to 10 credits; I, II, and SS. Prerequisites depend on subject of research. Mr. Conrad, Mr. Frazier, or Mr. Furr.

Original investigation or advanced study in some field relating to the practice of civil engineering.

316. RAILROAD TRANSPORTATION. 3(3-0); II. Prerequisite: Railway Engineering I (Civ. Engr. 146). Mr. Frazier.

A study of the function of the railway system; its relation to industrial development and its correlation with other methods of transportation.

Electrical Engineering

Professor KLOEFFLER*
 Professor BRENNEMAN†
 Associate Professor KERCHNER
 Assistant Professor HUNT
 Assistant Professor JORGENSEN

Assistant Professor BUECHE
 Assistant Professor CORCORAN
 Instructor SITZ
 Instructor RICE
 Graduate Research Assistant POTTER

Instruction in the Department of Electrical Engineering is planned to give the student a thorough training in the underlying principles of electrical phenomena, direct and alternating current, and in the application of electrical theory to the solution of the practical problems in the many fields of the industry. The textbook, lectures and classroom instruction is accompanied by extended courses in the laboratories.

The main dynamo laboratory contains examples of many types of electrical machinery and control apparatus, including more than 50 direct and alternating-current generators and motors ranging from 1 to 15 kilowatts capacity. The instrument room in connection contains more than 140 instruments for the measurement of current, voltage, power, frequency and other electrical quantities. The dynamo laboratory also includes a complete electric-railway test set, consisting of two modern railway motors, geared to a load and operated by a modern pneumatic type of control equipment. Supplementary to this laboratory is another dynamo laboratory fitted with direct-current motor-generator sets and accessory equipment for the first-year course in electric-machine construction and operation.

An electrical measurement laboratory is equipped with standards of resistance, electromotive force, self-induction and capacity and many types of bridges and apparatus for the measurement of magnetic and electric quantities. The main electrical measurement laboratory is supplemented by a standardizing laboratory which contains all the necessary precision instruments, sine wave generating equipment and control apparatus for calibrating voltmeters, ammeters, wattmeters, watt-hour meters, and rotating standards.

There are two communication laboratories: The wire communication laboratory contains several demonstration panels and switchboards for magneto, common battery (manual) and automatic telephone systems, and oscillators, bridges, and artificial telephone lines for making measurements at the various frequencies encountered in telephone practice. The radio communication laboratory is supplied with equipment for high frequency measurements and the study of radio phenomena.

An illumination laboratory is equipped with bar, spherical and portable photometers and accessory equipment such as lamps, reflectors and luminaires.

The wiring laboratory for the freshman course contains sixteen booths or rooms, in imitation of buildings both finished and in process of construction, and a complete stock of supplies for concealed knob and tube, conduit, and conduit construction which provides students with actual practice in wiring buildings.

The equipment belonging to the department is valued at \$50,971.

COURSES IN ELECTRICAL ENGINEERING

FOR UNDERGRADUATE CREDIT

160, 165. ELECTRICAL ENGINEERING C. 3(2-2, 1); II. Prerequisite: Engineering Physics II (Physics 150). Mr. Jorgenson.

The fundamental principles of direct-current and alternating-current electricity, with emphasis upon proper installation and operation of different classes of machines.

Laboratory.—Practice to give a knowledge of the most important commercial tests; proper use of electrical instruments; a written report of each test. Charge, \$1.50.

* On sabbatical leave, year 1929-'30.

† Acting head, year 1929-'30.

170. ELECTRICAL MACHINERY AND CONSTRUCTION. 2(0-6); I and II. Prerequisite: High-school Physics. Mr. Hunt, Mr. Jorgenson and Mr. Sitz.

An introductory course in applied electricity; various modern methods of interior wiring, and installation, care, operation and repair of electrical machinery. Charge, \$3.

179. PRINCIPLES OF ELECTRICAL ENGINEERING. 2(2-0); I and II. Prerequisites: Electrical Machinery and Construction (Elec. Engr. 170) and Trigonometry (Math. 101). Mr. Kloeffer and Mr. Jorgenson.

The fundamental principles of electrical circuits; an introduction to later courses in direct and alternating-current machines.

190. INSPECTION TRIP. R; I. Prerequisite: Senior classification. Mr. Kloeffer and assistants.

A trip of four to six days to Kansas City, St. Louis and other cities for the purpose of making inspections of power plants and various industries illustrating the application of electrical engineering principles. Cost to each student, approximately \$45.

195. THESIS. 1(0-3), I; and 2(0-6), II. Mr. Kloeffer, Mr. Brenneman, Mr. Kerchner, Mr. Hunt, Mr. Bueche and Mr. Corcoran.

Subject for thesis work selected in consultation with the department head at the beginning of the senior year; every opportunity given to work out original ideas as to design and operation of electrical apparatus and machinery.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203, 204. DIRECT-CURRENT MACHINES I. 4(3-2, 1); I, II, and SS. Prerequisites: Calculus I (Math. 205) and Engineering Physics II (Physics 150). Mr. Brenneman, Mr. Sitz and Mr. Rice.

A detailed study of the fundamental principles of magnetic and electric circuits and their application to the various types of direct-current machines.

Laboratory.—A series of experiments designed to show the fundamental principles and characteristics of direct-current machines. Charge, \$1.75.

206, 207. DIRECT-CURRENT MACHINES II. 3(2-2, 1); I, II, and SS. Prerequisites: Direct-current Machines I. Mr. Brenneman, Mr. Hunt, Mr. Jorgenson, Mr. Sitz and Mr. Rice.

A detailed study of special types of direct-current machinery, dynamo losses, and commutation.

Laboratory.—Special attention to the different methods of determining generator and motor efficiencies and to proper tabulation and interpretation of results. Charge, \$1.50.

209, 211. ALTERNATING-CURRENT MACHINES I. 5(4-2, 1); I, II, and SS. Prerequisites: Calculus II (Math. 206) and Direct-current Machines I (Elec. Engr. 203, 204). Mr. Kerchner, Mr. Hunt, Mr. Jorgenson, and Mr. Corcoran.

A mathematical treatment of alternating-current phenomena.

Laboratory.—A series of experiments illustrating the theoretical work; practice in accurate measurement of capacity and inductance, and the effect of each upon the circuit; study of polyphase circuits. Charge, \$1.75.

214, 216. ALTERNATING-CURRENT MACHINES II. 4(3-3); I, II, and SS. Prerequisite: Alternating-current Machines I. Mr. Kerchner, Mr. Hunt, and Mr. Corcoran.

Principles of design, construction and operation of transformers and alternating-current generators.

Laboratory.—A series of experiments involving commercial and special tests of transformers and alternators. Charge, \$1.50.

217, 218. ELECTRICAL COMMUNICATION I. 3(2-2, 1); I. Prerequisite: Alternating-current Machines I (Elec. Engr. 209, 211). Mr. Kloeffer, Mr. Bueche, and Mr. Rice.

The principles of telephone communications as applied to the apparatus and circuits used on magneto, common battery (manual), Strowger automatic, and machine switching systems; toll telephone practice, involving the use of line loading, repeaters, and carrier currents.

Laboratory.—Study of telephone apparatus and circuits on magneto, common battery, and automatic systems; measurements made on artificial telephone lines. Charge, \$1.50.

219, 223. RADIO COMMUNICATION. 3(2-3); II. Prerequisite: Alternating-current Machines I (Elec. Engr. 209, 211). Mr. Kloeffler and Mr. Bueche.

The production, measurement, and control of high-frequency alternating currents and electro-magnetic waves, and their application to radio telegraphy and telephony and carrier current transmission; principles of operation of thermionic vacuum tubes and a proper consideration of these principles in their application to the generation, modulation, amplification, and detection of continuous waves.

Laboratory.—Characteristics of vacuum tubes; high frequency measurements. Charge, \$1.50.

224, 225. ALTERNATING-CURRENT MACHINES III. 5(3-3, 3); I, II, and SS. Prerequisite: Alternating-current Machines II. Mr. Kerchner, Mr. Hunt, Mr. Jorgenson, and Mr. Corcoran.

Continuation of Alternating-current Machines II (E. E. 214), including synchronous motors, parallel operation of alternators, converters, induction and commutator alternating-current motors, rectifiers, alternating-current instruments, and accessory apparatus.

Laboratory.—Continuation of Alternating-current II Laboratory. (Elect. Engr. 216.) Tests on machines listed in Elect. Engr. 224. Charge, \$2.

227, 228. ELECTRICAL MEASUREMENTS. 3(2-3); I and II. Prerequisites: Calculus I (Math. 205) and Engineering Physics II (Physics 150). Mr. Kloeffler and Mr. Bueche.

Methods for electric and magnetic measurements; resistance, quantity, current, electromotive force, capacity, inductance.

Laboratory.—Applications of fundamental principles studied in the class room. Charge, \$2.

230, 231. ELECTRICAL ENGINEERING M-I. 4(3-2, 1); I. Prerequisites: Calculus I and Engineering Physics II. Mr. Hunt and Mr. Rice.

Direct-current machines with reference to the fundamental laws of the electric circuit, the principles of direct-current machinery, and the more important commercial tests; an introduction to alternating-current circuits.

Laboratory.—A series of experiments covering the fundamental principles and characteristics of direct-current machines. Charge, \$1.50.

232, 233. ELECTRICAL COMMUNICATION II. 3(2-3); II. Prerequisite: Electrical Communication I. Mr. Kloeffler and Mr. Bueche.

Transmission problems, telephonic efficiencies, telephone repeaters, wave filters, and carrier currents.

Laboratory.—High frequency measurements as applied to wire communication. Charge, \$1.50.

235, 236. ILLUMINATING ENGINEERING. 3(2-3); I. Prerequisites: Calculus I and Engineering Physics II. Mr. Kloeffler and Mr. Hunt.

Photometry, light standards, principles of illumination and illumination design.

Laboratory.—Photometric measurements of light intensity, luminous flux, brightness, and illumination; the determination of light distribution about various illuminants and luminaries. Charge, \$1.50.

238, 239. ELECTRICAL INSTRUMENTS AND METERS. 3(2-3); II. Prerequisite: Alternating-current Machines I. Mr. Kloeffler and Mr. Bueche.

The operation, construction and testing of indicating instruments, watt-hour meters, instrument transformers, and relays.

Laboratory.—Various methods of testing and calibrating electrical instruments and meters. Should accompany the class work. Charge, \$1.50.

240. ELECTRIC RAILWAYS. 2(2-0); II. Prerequisite: Alternating-current Machines II. Mr. Kerchner and Mr. Sitz.

The development of electric traction; conditions and train schedules; speed-time curves; power generation and distribution for electric railway signal systems; types of cars and locomotives in use; various control systems; and adaptability of electric traction to steam railroads.

242, 243. ELECTRICAL ENGINEERING M-II. 4(3-2, 1); II. Prerequisite: Electrical Engineering M-I (Elec. Engr. 230, 231). Mr. Hunt.

The important principles of alternating-current machinery of primary importance to mechanical engineers.

Laboratory.—Standard tests of alternators, motors, and transformers, and methods of operating the different types of alternating-current machinery. Charge, \$1.50.

246. STORAGE BATTERY ENGINEERING. 2(2-0); I. Prerequisites: Chemistry E-I (Chem. 108) and Engineering Physics II (Physics 150). Mr. Brenneman.

Process of manufacture, molecular and chemical theory of operation, behavior on charge and discharge, rating, life, and applications of a storage battery.

250. COMMERCIAL ENGINEERING. 2(2-0); II. Prerequisite: Economics (Econ. 101). Mr. Kloeffler and Mr. Jorgenson.

The relation of the engineer to commercial life; salesmanship.

270, 271. ELECTRICAL MACHINE DESIGN I AND II. 1(0-3) and 2(0-6), I and II, respectively. Prerequisite: Direct-current Machines I (Elec. Eng. 203). Mr. Brenneman and Mr. Hunt.

In I, the principles of electrical design, each student makes calculation for electromagnets and a direct-current motor. In II, study of the principles of alternating-current design, each student makes the necessary design calculation for a transformer and an alternator.

275. ADVANCED CALCULATIONS IN ALTERNATING-CURRENT CIRCUITS. 2(2-0); I. Prerequisite: Alternating-current Machines I (Elec. Engr. 209). Mr. Kerchner.

Use of the vector methods in solving alternating-current problems; solving of single-phase, balanced or unbalanced three-phase problems in networks; computations of real and reactive power or the reverse handled by symbolic notation.

280. GENERATION, TRANSMISSION, AND DISTRIBUTION OF ELECTRICAL ENERGY. 3(3-0); II. Prerequisite: Elec. Engr. 213. Mr. Brenneman.

Transmission line design, economic and technical features; and properties of cables and insulators.

284. TRANSIENT ELECTRICAL PHENOMENA. 3(3-0); II. Prerequisites: Alternating-current Machines I and II, and Differential Equations (Math. 201). Mr. Brenneman.

Two phases of electrical phenomena; (a) transients in time, and (b) transients in space.

286. ADVANCED ILLUMINATION. 2(2-0); II. Prerequisite: Illuminating Engineering (Elec. Engr. 235). Mr. Kloeffler and Mr. Hunt.

Continuation of the work of Illuminating Engineering I with special emphasis upon problems on the illumination of stores, offices, drafting rooms, machine shops, railway shops, hospitals, and city streets.

FOR GRADUATE CREDIT

336. ELECTRICAL ENGINEERING RESEARCH. 1 to 10 credits; I or II. Prerequisite: Alternating-current Machines II (Elec. Eng. 214). Mr. Kloeffler, Mr. Brenneman, Mr. Kerchner, and Mr. Corcoran.

An introduction to more elaborate work of special investigation; adapted to meet the needs and attainments of individual students; particular problems which must be studied by reference to existing literature and by experimental work, and on which completed reports must be submitted.

General Engineering

Dean SEATON

Assistant Dean DURLAND

101. ENGINEERING LECTURES. R(1-0); entire freshman year. Dean Seaton, other members of the engineering faculty, and visiting practicing engineers.

Designed to acquaint freshmen engineers and architects with fundamental principles of their profession and to give a general survey of the field. Charge, 75 cents.

105. SEMINAR. R(1-0); sophomore, junior and senior years. Members of the engineering faculty.

Presentation by students of abstracts and reviews of articles appearing in the journals of their respective societies or in the technical press of their profession, and as far as possible is conducted by the student branches of the professional engineering societies. Occasionally these individual groups unite in the General Engineering Society, under whose auspices lectures are given by practicing engineers and by members of the engineering and college faculty on topics of general interest to engineering students. Charge, 75 cents.

Machine Design

Professor PEARCE
 Professor DURLAND
 Associate Professor SMUTZ
 Assistant Professor GINGRICH

Instructor OLSEN
 Instructor BRANIGAN
 Instructor HAHN

The courses in engineering drawing and machine drawing deal principally with the training of the freshman and sophomore students in visualization, and the application of graphical language to engineering problems, with particular reference to commercial drafting-room methods. The object of these courses is primarily to develop this graphical language as a tool to be used in all future engineering work.

The courses in machine design deal with the mechanical transmission of power, the analysis of the action of machine parts, and the design of machine elements and of complete machines with regard to strength, stiffness and general operating efficiency. In this group may be included also the courses in flour-mill design, which deal with the layout of flow sheets and the selection and arrangement of milling machinery.

The department owns equipment valued at \$8,207.

COURSES IN DRAWING AND MACHINE DESIGN

FOR UNDERGRADUATE CREDIT

101. ENGINEERING DRAWING. 2(0-6); I, II, and SS. Mr. Smutz, Mr. Gingrich and Mr. Hahn.

The selection and use of drawing instruments, construction of geometrical figures, lettering, orthographic projections and sections, and pictorial methods of representation.

106. DESCRIPTIVE GEOMETRY. 2(0-6); I, II, and SS. Prerequisites: Course 101, and Solid Geometry. Mr. Smutz, Mr. Gingrich, and Mr. Branigan.

More advanced problems than in Engineering Drawing, involving the point, line, and plane; the intersection and development of the surfaces of geometric solids; practical applications of the principles involved; emphasis on developing the student's ability to visualize drawings in the third angle.

107. DESCRIPTIVE GEOMETRY A. 3(0-9); I. Mr. Gingrich and Mr. Branigan. This course is primarily for architectural students, and its problems are all related to their work.

108. SHADES AND SHADOWS, AND PERSPECTIVE. 3(0-9); II. Prerequisites: Descriptive Geometry A, and Elements of Architecture I (Arch. 106A). Mr. Smutz and Mr. Gingrich.

Conventional shades and shadows of common geometrical solids, solids of revolution, and simple architectural members; the theory of perspective as applied to the same simple solids and to problems from architectural practice. Charge, \$1.50.

111. MACHINE DRAWING I. 2(0-6); I, II, and SS. Prerequisite: Engineering Drawing (Mach. Design 101). Mr. Durland, Mr. Olsen, Mr. Branigan, and Mr. Hahn.

Conventional representations, working drawings, modern drafting-room systems, and the reproduction of drawings; special emphasis given to proper selection of views to present the necessary information in convenient forms, dimensioning, checking for errors, and the subject matter and arrangement of titles and notes.

116. MACHINE DRAWING II. 3(0-9); I, II, and SS. Prerequisite: Machine Drawing I (Course 111). Mechanism (Course 121) must precede or accompany this course. Mr. Durland, Mr. Olsen, and Mr. Hahn.

The making of free-hand sketches of simple machine parts and complete working drawings from these sketches without further reference to the objects; kinematic problems, including belting, cams, linkages, and gears to fulfill specified conditions.

117. MACHINE DRAWING E-II. 2(0-6); I, II, and SS. Prerequisite: Machine Drawing I. Mr. Pearce, Mr. Olsen, and Mr. Hahn.

Machine sketching from parts of actual machines; complete working and assembly drawings. Practice is given in tracing and blue printing.

121. MECHANISM. 3(3-0); I, II, and SS. Prerequisites: Plane Trigonometry (Math. 101) and Descriptive Geometry (Mach. Design 106). Mr. Pearce, Mr. Olsen, and Mr. Hahn.

A careful study of the fundamental elements of machinery with reference to the transmission of motion and force, and to their forms and arrangements in actual machines; the solution of a large number of graphical and mathematical problems is required.

126. THESIS. 1(0-3), I, and 2(0-6), II, respectively. Mr. Pearce and Mr. Durland.

Excellent material for thesis study furnished by projects in machine design or flour-mill design; subject of the investigation selected in consultation with the head of the department at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

204, 205. MACHINE DESIGN I. 5(3-6); I. Prerequisites: Strength of Materials (Ap. Mech. 211), Machine Drawing II (Mach. Design 116), and Steam and Gas Engineering II. Mr. Pearce and Mr. Durland.

The straining actions in machine elements; frictions and lubrication; the action of reciprocating parts in engines; problems arising in the transmission of power and in the design of high-speed machinery.

Laboratory.—Riveted joints of a steam boiler designed in strict conformity to the A. S. M. E. Boiler Code; calculations for a number of simple machines and machine parts, paralleling the recitation class assignments.

210. MACHINE DESIGN II. 2(0-6); II. Prerequisite: Courses 204, 205. Mr. Pearce and Mr. Durland.

Design of a small power shear; calculations made for all parts; a graphical analysis made of the stress in the shaft; working drawings made; and the rotative effect diagram of a steam engine.

214. FLOW SHEET DESIGN. 2(0-6); I. Prerequisites: Machine Drawing II (Mach. Design 116) and (Mill. Ind. 110). Mr. Pearce.

The construction of complete flow sheets for medium capacity flour mills.

215. FLOUR-MILL DESIGN. 2(0-6); II. Prerequisites: Strength of Materials E (Ap. Mech. 216) and Milling Practice I (Mill. Ind. 109). Mr. Pearce.

The making of a design for a medium capacity flour mill, including the construction of a complete flow sheet, and the selection and planning of the arrangement of the machinery.

225. GRAPHICS OF ENGINEERING FORMULAS. 2(2-0); II. Prerequisite: Plane Analytical Geometry (Math. 110). Mr. Pearce.

Design of empirical equations according to the methods of selected points, averages, or least squares, and a consideration of general methods of plotting; the diagramming of formulas; construction of nomographic or alignment charts, in which all the variables of a formula are along any straight transversal cutting the lines of the diagram.

250. AËRODYNAMICS. 4(3-3); I. Prerequisite: Applied Mechanics (App. Mech. 202). Mr. Pearce and Mr. Durland.

A general introduction into aërodynamics, particularly as regards the action of air foils, the effects of parasite drag, the prediction of performance, and the analysis of stability and control.

255. AIRPLANE DESIGN. 2(0-6); II. Prerequisites: Aërodynamics, and Strength of Materials (App. Mech. 211 and 220). Mr. Pearce and Mr. Durland.

A general presentation of the problems involved in the design and stress analysis of an airplane structure, particularly as regards the requirements of the United States Department of Commerce.

FOR GRADUATE CREDIT

301. ADVANCED MACHINE DESIGN. 1 to 10 credits; I or II. Mr. Pearce and Mr. Durland.

At the option of the student this course may include either the design of a machine or a study of the advanced dynamics of machinery, with special reference to inertia effects, torque characteristics, fly-wheel design, and balancing of multiple cylinder engines and compressors, the design of turbine drums and disks, the critical speed of rotating parts, and gyroscopic action. The course may furnish material for the master's thesis.

Mechanical Engineering

Professor CALDERWOOD
Professor MACK
Associate Professor BRAINARD

Instructor FLINNER
Graduate Research Assistant KENT

The object of the instruction in this department is to give to the student the fundamental principles underlying the design, construction, selection, operation and testing of steam boilers; steam engines and steam turbines; gas producers; gas and petroleum engines; compressed-air and refrigerating machinery; condensers and evaporators. These subjects are developed by courses in engineering thermodynamics and in steam and gas engineering, and are followed in the fourth year by courses in power-plant engineering, in refrigeration, and in heating and ventilation. The classroom instruction of every course consists of lectures and recitations, which are paralleled by work in the drafting room and laboratory, and supplemented by numerous practical problems, trade catalogues, notes, and inspection trips requiring written reports.

The mechanical-engineering laboratories are well equipped for the testing of boilers, steam engines, gas engines, refrigeration machinery, fuels, lubricants, airplane motors, and other equipment and materials met with in the practice

of mechanical engineering. In addition to the equipment installed especially for experimental purposes, all the heating, power, ventilating, and pumping equipment of the College subserves the further purpose of experimental work.

The equipment belonging to this department is valued at \$28,776.

COURSES IN MECHANICAL ENGINEERING

FOR UNDERGRADUATE CREDIT

120, 125. STEAM AND GAS ENGINEERING C. 3(2-3); I and II. Prerequisites: Engineering Physics II and Calculus II. Mr. Brainard and Mr. Flinner.

Steam boilers, steam engines, steam turbines, gas and oil engines, including the various auxiliaries.

Laboratory.—Study and calibration of steam gauges, indicators, and planimeters; calorimeters; evaporative tests of steam boilers; determination of the heating value of liquid and gaseous fuels; tests of steam engines; operation and testing of refrigerating machines. Charge, \$1.50.

130. ELEMENTS OF STEAM AND GAS POWER. 2(0-6); I and II. Mr. Brainard and Mr. Flinner.

An elementary study of steam engines, steam turbines, steam boilers, steam power-plant auxiliaries, gas and oil engines, natural and manufactured gas, gas power-plant auxiliaries, and the elements of automotive engineering.

135. HEATING AND VENTILATION A. 3(3-0); II. Prerequisite: Engineering Physics II. Mr. Mack.

Fundamental principles of heating and ventilation; heat transmission of materials; furnace, steam, hot-water, and fan systems of heating.

170, 175. DAIRY REFRIGERATION. 2(1-3); I. Mr. Brainard.

The elementary theory and principles of operation of various refrigerating and ice-making machinery and of cold storage, with special reference to the dairy industry.

Laboratory.—Various types of refrigeration systems and their operation; steam engine operation; tests of refrigeration machines. Charge, \$1.

180. INSPECTION TRIP. R; II. Prerequisite: Senior classification. Mr. Calderwood and assistants.

A trip of three to four days to Kansas City and other nearby industrial centers for the purpose of inspecting industrial plants of special interest to mechanical engineering students. The plants inspected are carefully selected to exemplify various engineering applications in practice. Cost to each student, including meals, lodging and transportation, approximately \$25.

195. THESIS. 1(0-3), I, and 2(0-6), II; respectively. Mr. Calderwood and Mr. Mack.

The department laboratories are well equipped with apparatus suitable for experimental and research work in the field of heat-power engineering. Subject for investigation to be selected in consultation with the department head at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201, 202. STEAM AND GAS ENGINEERING I. 5(4-3); I, and II. Prerequisites: Mechanism (Mach. Design 121) and Calculus II (Math. 206). Mr. Calderwood, Mr. Mack, Mr. Brainard, and Mr. Flinner.

Heat-power engineering, including valve gears and thermodynamics, with special stress upon the thermodynamics of gases and vapors, and gas and vapor cycles.

Laboratory.—Study and calibration of steam gauges, indicators, and planimeters; valve-setting and steam-engine operation; study of calorimeters, flow meters, and feed-water heaters; determination of the indicated and brake horsepower, mechanical efficiency and the steam consumption of high-speed

automatic cut-off, Corliss, simple and compound engines; tests of DeLaval, Kerr and Terry steam turbines. Charge, \$1.50.

204, 205. STEAM AND GAS ENGINEERING II. 4(3-3); I, and II. Prerequisite: Course 201. Mr. Calderwood, Mr. Mack, Mr. Brainard, and Mr. Flinner.

A detailed study of steam engines, steam boilers, steam turbines, internal-combustion engines, fuels and combustion, gas producers, and other power-plant equipment.

Laboratory.—Proximate analysis of coal; determination of the calorific values of solid, liquid and gaseous fuels; evaporative tests of steam boilers; tests of internal-combustion engines; test of compressed air and refrigerating machinery. Charge, \$1.50.

206. POWER-PLANT ENGINEERING. 3(0-9); I. Prerequisite: Mech. Eng. 204. Mr. Mack, Mr. Brainard, and Mr. Flinner.

Complete power-plant testing; special investigations of steam-engine performance; operation of gas producers; advanced laboratory work on internal-combustion engines; the designing of a complete power plant; and the solution of special problems dealing with power generation. Charge, \$1.50.

210, 215. REFRIGERATION, HEATING AND VENTILATION. 3(2-3); II. Prerequisite: Mech. Eng. 204. Mr. Mack.

Fundamental principles of refrigerating systems; the application of refrigeration to ice making, cold storage, and the cooling of air, liquids, and solids; fundamental principles of heating and ventilation.

Laboratory.—Tests of refrigerating machinery and of the thermal conductivity of insulating materials; tests of fans and blowers, radiators and house-heating boilers; the design of heating and ventilating systems for buildings. Charge, \$1.

221. REFRIGERATION. 2(2-0); II. Prerequisite: Mech. Eng. 201. Mr. Mack.

Thermodynamics of refrigeration; systems of refrigeration and their operation; application of refrigeration to ice making, cold storage and the cooling of gases, liquids, and solids.

230. ADVANCED THERMODYNAMICS. 2(2-0); I. Prerequisite: Mech. Eng. 201. Mr. Calderwood.

The advanced phases of engineering thermodynamics, including research work along fundamental properties of gases and vapors.

235. STEAM TURBINES. 2(2-0); II. Prerequisite: Mech. Eng. 204. Mr. Calderwood.

The theoretical principles involved in the various important types of steam turbines and the construction and operation of some of the commercial types; the selection of a steam turbine as a prime mover for power plants operating under particular operating conditions; the effect of factors such as superheat, vacuum, and pressure.

240. AIRPLANE MOTORS. 2(2-0); II. Prerequisite: Mech. Eng. 204. Mr. Calderwood.

General principles, cycles of operation, efficiency, engine requirements, fuels, altitude performance, reliability, and types of airplane engines.

FOR GRADUATE CREDIT

305. ENGINEERING RESEARCH. 1 to 10 credits; I or II. Mr. Calderwood and Mr. Mack.

The laboratory work is correlated with the work of the Engineering Experiment Station. Investigations on lubricants, fuels, combustion, internal-combustion engines, steam engines, steam turbines, steam boilers, gas producers, refrigeration, heat-insulating materials, heating and ventilation, compressed air, and similar subjects are carried on. Data secured in this course may be used as the basis for a master's thesis.

Shop Practice

Professor CARLSON
 Professor SELLERS
 Associate Professor GRAHAM
 Assistant Professor JONES
 Assistant Professor LYNCH
 Assistant Professor AIMAN

Assistant Professor SINK
 Instructor GRANT
 Instructor LOOMIS
 Assistant GREELEY
 Assistant IRWIN

The work in the shops is planned to meet the needs of three classes of students: (1) those in the special courses related to engineering and agriculture who expect to make use of the knowledge gained in their subsequent work in the shops and on the farm; (2) those who are training themselves for teaching and need a general knowledge of the principles underlying shop work, together with sufficient skill in the performance of various operations to be able to instruct others; and (3) those in the courses in engineering whose need is to secure a thorough knowledge of the methods of performing various kinds of shop work, of the machines best suited for the different purposes, of the amount of work that may be expected of the different machines and of the workman under different conditions.

The shop building is a series of connected structures. The woodworking shop consists of two rooms, 40 by 90 and 35 by 42 feet, respectively. The wood machinery room is 45 by 81 feet and contains an excellent assortment of machines used in exemplifying commercial woodworking methods. The farm shop, 65 by 75 feet, is equipped for handling farm shop projects. The machine shop, 40 by 170 feet, is one of the best equipped shops of its kind in the country. The blacksmith shop is 50 by 100 feet and is equipped with thirty modern down-draft forges, oxyacetylene welding outfits and other important equipment. The iron and brass foundries, 27 by 100 and 24 by 34 feet, respectively, are modern in every respect.

A locker room of ample capacity is conveniently located near the shops building for the use of students taking work in the department.

The value of equipment belonging to the department is \$44,221.

COURSES IN SHOP PRACTICE

FOR UNDERGRADUATE CREDIT

101. ENGINEERING WOODWORK I. 1(0-3); I and II. Mr. Aiman and Mr. Irwin.

Importance of the use of methods, machinery, and men in connection with an industrial woodworking plant; forest conditions, wastage, the structural growth of wood, and the kiln drying of lumber.

117. MANUAL TRAINING FOR PRIMARY GRADES. 2(0-6); SS. Mr. Aiman.

Exercises suitable for pupils from the primary to the eighth grade; selection of suitable problems, material and equipment; special instruction in methods of teaching this work. Charge, \$2.50.

119. REED FURNITURE CONSTRUCTION. 2(0-6); I, II, and SS. Prerequisite: Shop 125. Mr. Loomis.

Exercises with reed and art fiber in constructing commercial articles; special instruction in methods of teaching this work. Charge, \$2.50.

120. WOODWORKING FOR GRAMMAR GRADES. 2(0-6); I, II, and SS. Mr. Loomis.

Elementary manual training for those who are preparing to teach problems suitable for grammar grades. Charge, \$2.50.

125. WOODWORKING I FOR HIGH SCHOOLS. 2(0-6); I, II, and SS. Prerequisite: Shop 120. Mr. Loomis.

Continuation of course 120; problems suitable for high-school students; special attention to the study of woods, methods of finishing, and use and care of tools. Charge, \$2.50.

130. WOODWORKING II FOR HIGH SCHOOLS. 2(0-6); I, II, and SS. Prerequisite: Shop 125. Mr. Loomis.

Advanced work in cabinet construction by the use of woodworking machinery, and such bench work as is necessary; both quantity and quality are emphasized, in order that proper use be made of time; the use, care, and selection of machines for a manual training shop. Charge, \$2.50.

135. WOOD TURNING. 2(0-6); I, II, and SS. Prerequisite: Shop 130. Mr. Irwin.

Practice in handling the lathe and turning tools. Charge, \$2.50.

140. ADVANCED WOODWORK. 2(0-6); I, II, and SS. Prerequisite: Shop 130. Mr. Loomis.

An opportunity to specialize in wood finishing, cabinet work, or some other work of special interest to the student. Charge, \$2.50.

142, 143. AUTOMOBILES I AND II. 2(2-0), I, and 3(1-6), II; respectively. Prerequisite: High School Physics. Mr. Sink.

In I, the general principles of construction and operations of the automobile; in II, a continuation of Automobiles I supplemented by laboratory practice. Charge (for II), \$5.

147. FARM CARPENTRY I. 3(1-6); I and SS. Mr. Graham.

Rafter cutting and erection, studding and siding work, making window and door frames, hanging doors, and similar operations on full-size construction work; making out bill of material; care and upkeep of tools; designed for training of teachers who must solve problems in connection with carpentry work on the farm. Charge, \$2.50.

149. CARPENTRY. 2(0-6); I. Mr. Graham.

Discussions, demonstrations and practice in connection with tools and materials used in carpenter work on the farm. For students in agricultural engineering. Charge \$2.50.

150. FORGING I. 1(0-3); I and II. Mr. Lynch and Mr. Sink.

Practice, demonstrations and discussions covering: (a) forging of iron and steel; (b) production equipment as used in the commercial forge shop; (c) operation of gas, oil and electric furnaces, heat-treating steel and oxyacetylene and electric welding. Charge, \$2.50.

157, 158. FARM BLACKSMITHING I AND II. 1(0-3) each; I and SS, and II and SS, respectively. Mr. Lynch.

In I, preliminary work same as in Shop 150; exercises closely related to work on the farm; designed to train teachers for work in rural communities. Charge, \$2.50.

In II, more advanced instruction in the working of iron and steel, and in the annealing, hardening, and tempering of tools. Charge, \$2.50.

161. FOUNDRY PRODUCTION. 1(0-3); I and II. Mr. Grant and Mr. Sink.

(a) Bench, floor and pit molding, use of molding and core machines, operating nonferrous furnaces and the cupola; (b) study of commercial foundry equipment and the operation and control of the foundry. Charge, \$1.

165. METALLURGY. 2(2-0); I, II, and SS. Prerequisites: Chemistry E-I and E-II; or may be taken with Chemistry E-II. Mr. Sellers.

Manufacture and use of iron, steel, copper, and their alloys; proper selection and use of these in the manufacturing industries.

167. METALLOGRAPHY. 1(0-3); I and II. Prerequisites: Shop 150 and 165, or may be taken with the latter. Mr. Sellers and Mr. Greeley.

The microscopic constituents of the different grades of iron, steel, and the more common nonferrous alloys; changes in the structure and properties of the metals as produced by heat treatment, mechanical working, and composition. Charge, \$2.50.

168. AIRPLANE FABRICATION. 1(0-3); I and II. Prerequisites: Shop 150 and 167. Mr. Greeley.

Demonstrations, discussions and practice in the construction and testing of airplane parts. Consideration is also given to equipment used in the construction of the airplanes. Charge, \$2.50.

170. MACHINE TOOL WORK I. 2(0-6); I, II, and SS. Prerequisite: Shop 161. Mr. Jones.

Practice in chipping, filing, shaper and planer work; scraping, drilling, and turning on the lathe. Charge, \$5.

175. FARM SHOP METHODS. 3(1-6); I and SS. Prerequisites: Shop 147 and 157. Mr. Graham.

Babbitting, soldering, drilling, and drill grinding, thread cutting with dies and taps, tool sharpening, belt lacing, repair of machinery, and other practical operations; designed to train teachers in farm-shop work. Charge, \$2.50.

186. SHOP PRACTICE TEACHING. 1 to 6 credits; I, II, and SS. For prerequisites consult instructor. Mr. Carlson and assistants.

Actual laboratory teaching experience under the supervision of an instructor. Work covers the outlining, preparation and presentation of assignments and the supervision of the work; procurement of materials and equipment, shop layouts and upkeep, and general considerations. In so far as possible the course is adapted to the particular needs of the student.

192, 193. MACHINE TOOL WORK II and III. 2(0-6) and 1(0-3), respectively; I, II, and SS. Prerequisite: Shop 170. Mr. Jones.

In II, progressive problems in turning, calipering, boring, reaming, taper turning, threading on the lathe, in chucking, use of forming tools, gear cutting; study of cutting edges and tool adjustments best suited to the different metals, cutting speeds and feeds. Charge, \$5.

In III, work on the turret lathe, boring mill, hand and automatic screw machines, and grinder; practical work with jigs and fixtures and a study of rapid production of duplicate parts. Charge, \$2.50.

195. THESIS. 1(0-3); I, and 2(0-6), II, respectively. Mr. Carlson and Mr. Sellers.

The student works out problems of interest and value to himself under his own initiative, but subject to the supervision of his instructors. Ample facilities are available for carrying on work of a constructive or investigative nature.

FOR GRADUATE AND UNDERGRADUATE CREDIT

245A. FACTORY ENGINEERING. 2(2-0); I and II. Prerequisites: Shop 170 and Ap. Mech. 211. Mr. Carlson.

Problems of the factory executive, such as the selection, installation, and arrangement of direct and indirect equipment, the standardization of machines and tools, stock and store methods, and the various other factors that have to do with the design and control of factories.

255. FACTORY DESIGN. 2(0-6); II. Prerequisite: Shop 245. Mr. Carlson.

Knowledge gained in shops and laboratories and in Factory Engineering (Shop 245A) is used in the design of a factory.

260. ADVANCED SHOP PRACTICE. 1 to 5 credits; I, II, and SS. Mr. Carlson and assistants.

Continuation of courses Shop 101, 135, 140, 143, 147, 150, 158, 161, 167, 175, 193, 255 or 275. Opportunity is also offered to specialize to a limited degree along certain lines of shop practice, such as heat treatment of steel, oxyacetylene and electric welding, jig fixture and die work, patternmaking and any shop work that may be of special interest to the student. All assignments must be approved by the head of the Department of Shop Practice. Charge varies with subject matter.

270, 275. AUTOMOTIVE ENGINEERING. 2(1-3); II. Prerequisites: Ap. Mech. 211, 220 and Mach. Design 204, 205. Mr. Sink.

The design and operation of the various parts of the automobile. A course adapted to the needs of those who expect to follow some phase of automobile work or to take up employment in automobile factories. Charge, \$2.50.

FOR GRADUATE CREDIT

301. SHOP PRACTICE RESEARCH. 1 to 10 credits; I, II, and SS. Mr. Carlson, Mr. Sellers and assistants.

The problems related to shop practice offer a broad field for research. Authoritative data are needed by industry in many fields dealing with metallurgy, metallography, foundry, blacksmithing, woodworking, machine-shop practice, the farm shop and the automobile. The results of such investigations, if suitable, may be incorporated in bulletins of the Engineering Experiment Station; this work may furnish material for the Masters thesis. All assignments must be approved by the head of the Department of Shop Practice.

Engineering in the Summer School

In order to encourage the introduction of manual training and industrial drawing in the common schools and high schools of the state, and to improve the quality of work now being given, the College offers summer courses in mechanical drawing, manual training, and shop practice for high-school and grade teachers.

In addition various courses required in the several engineering curricula are offered in the Summer School. This enables teachers who wish to take an engineering curriculum to get a considerable start on the work during their summer vacations, and also enables College students who are irregular to make up their back courses.

For full information in regard to the courses offered, a special circular giving details concerning the Summer School may be had upon application to the vice president of the College.

Special Course Related to Engineering

Special one- and two-year courses in trades related to engineering dealing with automobile repair and machine shop work are grouped with other special courses in another part of this catalogue, and are there described in detail. Reference should be made to the general index in the back of this book.

The Division of General Science

JULIUS TERRASS WILLARD, *Dean*

In the land-grant colleges, of which this institution is one, the classical studies of the older type of college are replaced by work in the sciences and in professional and vocational subjects. A sound basis for technical training includes thorough training in mathematics, physical science, and biological science. It is believed also that education should include some preparation for the discharge of one's duties to the state and to the community in which he lives. It should afford him that discipline and culture which alone can give him a grasp of the relations among persons and activities, peoples and events, with breadth of view and tolerance of attitude, and hence an influence over his associates and fellow citizens of every station of life.

It is the province of the departments grouped in this division of the College to give this basic, scientific, cultural and disciplinary training. Their work is not only foundational, but it penetrates through all of the characteristic vocational courses of the institution, as the structural steel of the modern skyscraper penetrates the entire building and forms a secure framework and support for the more readily visible and evidently important parts. The departments of this division thus give unity to all of the four-year curricula offered in the institution. Eleven of these are in charge of this division, and some of them, by means of electives and options, are susceptible of manifold modification and application.

CURRICULUM IN GENERAL SCIENCE

The curriculum in general science includes the fundamental training in English, mathematics, science, history, economics, military science, and physical training required in the several specialized curricula now offered by the College. Its required subjects constitute the central educational basis of the institution. By means of a number of groups of electives, it gives an opportunity to students to advance themselves still further in these fundamental lines and to give special attention to some, instead of taking the technical subjects characterizing other courses. This opportunity meets the needs of several types of young people, among whom are: (1) Those who have not yet fully decided as to their vocation, but who wish an education that is strong and well balanced in respect to modern science and cultural subjects, as a foundation for further education or as a preparation for sound citizenship, and intellectual, esthetic and ethical satisfaction in life. (2) Those who are looking forward to teaching in the high schools of the state. The electives offered allow one to give special attention to mathematics, physical science, biological science, agriculture, home economics, history, economics, English, journalism, music, professional educational subjects, and several other lines. (3) Those who are fitting themselves for research work in the sciences, especially as applied to agriculture, engineering, and other industries. (4) Those for whom a good general education is required or desirable before studying a profession such as law or medicine.

The elective groups offered in this curriculum are to a considerable extent made up of studies required in one or more of the specialized curricula. They provide, also, advanced work not included in the other curricula. The scientific work in connection with the Agricultural and Engineering Experiment Stations, and several fields of state investigation and service, calls for the operation of unusually well-equipped departments in the sciences, and excellent facilities for practical training in this work are thus afforded.

While the curriculum in general science offers a wide choice of electives,

these may not be selected aimlessly, or with the idea of choosing the easiest, or of obtaining credit for miscellaneous subjects taken elsewhere or in other curricula. The studies of the freshman and sophomore years are basic and are required of all, without exception. They insure a broad and adequate foundation for subsequent work in the several lines of electives. The electives are to be chosen in groups, approved by the faculty or by the dean of the Division of General Science, and in such a manner as to give logical coherence to the curriculum as a whole. Special combinations in home economics and mechanic arts have been planned to meet the needs of prospective teachers of household arts and manual training. Students changing from other curricula to that in general science receive credit for work done in the other curricula in so far as it can be fitted into the general plan of this one.

The curriculum in general science is thus many in one. Such various combinations of groups are possible that it is not practicable to print all of them in extended form. There are, therefore, formally presented here the required subjects of the curriculum in their specified order by years and semesters, and on later pages a considerable number of groups of electives. Most of these groups may be considerably extended by including other acceptable subjects.

CURRICULUM IN INDUSTRIAL JOURNALISM

Knowledge is power only as it comes into the possession of those who can use it; it gives pleasure in direct proportion to the extent of its diffusion. A discovery is of little value as long as the discoverer is the only one who knows of its existence, and the printed page is by far the most effective means of extending knowledge concerning it. Magazines and newspapers never sleep, nor do they take vacations, and their power to elevate mankind is incalculable. But printed knowledge becomes effective only as it is read, and to be widely read in this day it must stand out from the great mass of other matter and gain the attention and hold the interest of the reader. To do this its points must be sharp and easily seen, and the style must be attractive. On the other hand, if the presentation is not essentially true, the more attractive it is the worse it is, and the greater the harm that follows wide reading of it.

The curriculum in industrial journalism endeavors to give young men and women training which will enable them to write both truthfully and effectively, particularly upon industrial subjects. To such subjects the modern newspaper and the general magazine are giving constantly more attention while there are also 500 agricultural publications and a greater number of class and trade publications which are largely or exclusively concerned with matters relating to industrial life. The training given by the College has enabled a goodly number of alumni to do successful work upon these publications.

The aim of the curriculum is to present such subjects as will enable the writer to see his work in proper perspective, to obtain authoritative knowledge of some field of industrial activity, and to write acceptably. The curriculum consequently offers, in the first place, fundamental studies of literary, social, and scientific character. Because of the materials with which journalism deals, it is highly desirable that the student obtain a clear knowledge of the social sciences and be able to read at least one current foreign language. In the second place, the student is required to elect subjects in agriculture, mechanic arts, applied science, or home economics, depending on the portion of the field of industrial journalism which he desires to enter, it being expected that every student graduated from the curriculum shall have special knowledge of some prominent line of industry. In the third place, the theory and practice of journalism are presented in a series of courses extending throughout the sophomore, junior, and senior years, and opportunity is offered for taking additional electives in journalism simultaneously with the required courses.

The College thus affords preparation for work in a wide and inviting field. Our unprecedented industrial achievements have been made by the application of discoveries in physical and biological science. Much of discovery and much of application are yet to come, and one who can write truthfully and attractively of that which is, and of that which comes, will find ample reward.

CURRICULUM IN INDUSTRIAL CHEMISTRY

The facilities for instruction in chemistry are ample, and the demand of students for a curriculum planned especially to give chemical training is such that a formulation has been made to meet the needs of those desiring to specialize in industrial chemistry. A curriculum in chemical engineering is also offered in the Division of Engineering. The instruction facilities of the Department of Chemistry, reinforced by opportunities for practical work in connection with the researches of the experiment stations, are such as to provide amply for this specialized training.

CURRICULA IN MUSIC

A knowledge of music contributes to the satisfaction in life of practically all cultivated people. This College throughout its history has maintained a department of music for the purpose of affording culture in this art to any of its students. In recent years the excellence of the instruction offered has created a demand for curricula in music.

Four-year curricula are offered in voice, piano, and violin, and the last may be adapted to the needs of students who adopt some other major instrument. Curricula are also offered in public-school music, with specialization in either voice or instrument, and in public-school band and orchestra. Students completing one of these four-year curricula are awarded the degree of Bachelor of Music, and are eligible to receive a three-year state certificate, renewable for life.

The curriculum in public-school band and orchestra is designed to train the student in the practical problems of amateur and semiprofessional bands and orchestras. The curriculum is comprehensive in that it provides for sixty-five hours of general college work in addition to the general courses in the theory of music, and also specific preparation in the organizing, managing and conducting of bands and orchestras. The courses in dramatic production should prepare the student to produce and direct operettas.

CURRICULA IN PHYSICAL EDUCATION

Within recent years a great awakening has taken place in respect to physical development. The prevalence of bodily conditions and defects that systematic and intelligently directed exercise would have corrected has been found to be serious. Since the situation has been recognized there has been in schools of all grades a great increase in the provision for physical education and training. Success in teaching this work requires vigorous health, a normal condition of the hands, feet, joints, muscles and internal organs, and eyes that do not require glasses. The curricula offered at this institution are designed to prepare teachers of physical education who are fundamentally trained. This is a much broader field than mere coaching of athletics. At the same time it is fully recognized that the impulse to play is instinctive, and that wisely chosen games, conducted under adequate supervision, constitute attractive and effective agencies for physical development. The theoretical and practical instruction given in these curricula amply prepares students for coaching athletic games. The curricula are also so planned as to enable the student to get the work in professional education necessary for a state certificate, and to elect work in English, mathematics, history or some other subject which one may teach in connection with physical education in the smaller schools.

CURRICULUM IN COMMERCE

The curriculum in commerce was established chiefly because of the relationship of this College to the business activities of the state and nation that directly involve agriculture and rural affairs. The commercial prosperity of Kansas depends primarily upon the business success of its farming population. The success of the farmer is determined to a large extent by his relations

with those who handle its products or furnish him with goods and service. The towns of the state and the strictly rural districts about them constitute an economic unit, the members of which are mutually dependent. A knowledge of the economic, financial, social, and business principles affecting the country and the towns, in themselves and in their interrelations, is of the greatest importance. The curriculum in commerce is designed primarily to train men and women for citizenship and business service in these communities, but the information acquired, and the general principles involved are applicable everywhere and in all lines of business.

The completion of this curriculum should not only enable one to conduct his own business more successfully, but give him an insight into the problems of others in their occupations. A general diffusion of such knowledge promotes tolerance, consideration for the general public with which each deals, and social unity.

Choice of electives is rather free in this curriculum, and any agricultural, industrial, commercial or social subjects of study will be approved if they are chosen in such relationships as to give promise of usefulness.

SIX-YEAR CURRICULUM IN GENERAL SCIENCE AND VETERINARY MEDICINE

A six-year curriculum has been formulated which combines many of the advantages of a course of general scientific study with preparation for the profession of veterinary medicine. During the first four years science work of a general character is combined with subjects fundamental in veterinary medicine, and on completion of these four years the degree of Bachelor of Science is conferred. The last two years are given almost exclusively to professional veterinary subjects, and complete the requirements for the degree of Doctor of Veterinary Medicine.

SPECIAL COURSES FOR TEACHERS

At the present time teaching of vocational subjects in the public schools is undergoing great development. Many schools are introducing manual training, agriculture, food and nutrition, and clothing and textiles, and many others are extending the work hitherto given. The state law requiring the teaching of agriculture in the rural schools is also creating a strong movement in the same direction. There is an active demand for teachers who can handle such work successfully.

The college offers to graduates of other institutions, and indeed to all who have studied such subjects as may be prerequisite, unexcelled facilities for securing training in the industrial subjects indicated. Courses extending over one or two years may be arranged by means of which the student who is already prepared in English, mathematics, and to a certain extent in the sciences, may prepare himself to enter a broader and, frequently, a more remunerative field.

Nos. 31, 32, 35 and 36 of the groups of electives illustrate the possibilities in work of this character, and other arrangements may be made. Those taking such courses will be cared for in the regular classes provided for other students, and no limitation is imposed except that the prerequisites for any subject must have been taken previously, here or elsewhere. These prerequisites are stated in this catalogue in connection with the description of each subject. The catalogue also shows the semester in which a subject is regularly given.

The conditions and requirements for the different classes of state certificates are stated in the introductory paragraphs for the Department of Education.

The course for persons who wish to prepare for teaching vocational agriculture under the Smith-Hughes law is outlined under the Division of Agriculture, and the course for those wishing to qualify as teachers of vocational home economics, under the same law, is given under the Division of Home Economics.

Curriculum in General Science

In effect September, 1929, for class of 1933 and later classes.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
College Rhetoric I, Engl. 101.....*3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Chemistry I, Chem. 101.....5(3-6)	Chemistry II, Chem. 102.....5(3-6)
College Algebra,† Math. 104.....3(3-0)	Plane Trigonometry,† Math. 101.....3(3-0)
General Botany I, Bot. 101.....3(1-4, 2)	General Botany II, Bot. 105.....3(1-4, 2)
Library Methods, Lib. Ec. 101.....1(1-0)	Current History, Hist. 126.....1(1-0)
Infantry I, Mil. Tr. 101A (men).....1(0-3)	Infantry II, Mil. Tr. 102A (men).....1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or	Phys. Education M, Phys. Ed. 104, R(0-2)or
Phys. Education W, Phys. Ed. 151A, R(0-3)	Phys. Education W, Phys. Ed. 152A, R(0-3)
Total .....15 or 16	Total .....15 or 16

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
English Literature, Engl. 172.....3(3-0)	American Literature, Engl. 175.....3(3-0)
English History, Hist. 121.....3(3-0)	Modern Europe II, Hist. 223.....3(3-0)
General Physics I, Physics 135.....4(3-3)	General Physics II, Physics 140.....4(3-3)
General Zoölogy, Zoöl. 105.....5(3-6)	Psychology A, Educ. 101.....3(3-0)
	Elective‡ .....2(-)
Infantry III, Mil. Tr. 103A (men)....1(0-3)	Infantry IV, Mil. Tr. 104A (men)....1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or	Phys. Education M, Phys. Ed. 106, R(0-2)or
Phys. Education W, Phys. Ed. 153..R(0-3)	Phys. Education W, Phys. Ed. 154..R(0-3)
Total .....15 or 16	Total .....15 or 16

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Hist. of Engl. Literature, Engl. 181..3(3-0)	American History I, Hist. 201.....3(3-0)
Amer. Govt., Hist. 151, 152 or 153...3(3-0)	Economics, Econ. 101.....3(3-0)
Current History, Hist. 126.....1(1-0)	Gen. Microbiology, Bact. 101.....3(1-6)
Extm. Speech I, Publ. Spk. 106.....2(2-0)	Elective‡ .....6(-)
Elective‡ .....6(-)	
Total..... 15	Total..... 15

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Elective‡ .....15(-)	Elective‡ .....15(-)

Summary.—Men: Physical education, two years, required; military science, 4 hours; other prescribed subjects, 76 hours; elective 44 hours; total 124 semester hours. Women: The same, except no military science. Total, 120 semester hours.

Adaptation, Classes of 1931 and 1932

The required subjects are the same for these classes as for the class of 1933. The elective hours are: Class of 1931, fifty; class of 1932, forty-seven.

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parenthesis indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory each week.

† Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107. The additional credits are applied against electives.

‡ Electives are to be chosen, with the advice and approval of the dean, in groups of not less than eight semester credits, or in courses which extend fields already entered in the required work.

Curriculum in Industrial Chemistry

Effective September 1, 1929, for class of 1933 and later years.

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Chemistry I, Chem. 101.....	5(3-6)
College Algebra, Math. 104.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
General Geology, Geol. 103.....	3(3-0)
Infantry I, Mil. Tr. 101A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total.....16 or 17

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Chemistry II, Chem. 102.....	5(3-6)
Plane Trigonometry, Math. 101.....	3(3-0)
Des. Geometry, Mach. Des. 106.....	2(0-6)
Machine Drawing I, Mach. Des. 111..	2(0-6)
Library Methods, Lib. Ec. 101.....	1(1-0)
Infantry II, Mil. Tr. 102A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

Total.....16 or 17

SOPHOMORE

FIRST SEMESTER

Inorg. Preparations, Chem. 202.....	2(0-6)
Plane Anal. Geometry, Math. 110....	4(4-0)
Engr. Physics I, Physics 145.....	5(4-3)
Adv. Inorg. Chemistry, Chem. 207....	3(3-0)
Commercial Law, Hist. 160.....	1(1-0)
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 153..R(0-3)	

Total.....15 or 16

SECOND SEMESTER

Quant. Analysis, Chem. 241.....	5(1-12)
Calculus I, Math. 205.....	5(5-0)
Engr. Physics II, Phys. 150.....	5(4-3)
Infantry IV, Mil. Tr. 104A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 154..R(0-3)	

Total.....15 or 16

JUNIOR

FIRST SEMESTER

German I, Mod. Lang. 101.....	3(3-0)
Organic Chemistry I, Chem. 218....	4(2-6)
Physical Chemistry I, Chem. 206....	5(3-6)
Calculus II, Math. 206.....	3(3-0)
Fire Assaying, Chem. 242.....	2(0-6)

Total..... 17

SECOND SEMESTER

German II, Mod. Lang. 102.....	3(3-0)
Organic Chemistry II, Chem. 219....	4(2-6)
Physical Chemistry II, Chem. 272....	3(3-0)
Elec. Engr. C, Elec. Engr. 160, 165, 3(2-2, 1)	
History of Chemistry, Chem. 208....	1(1-0)
Electives†	3(-)

Total..... 17

SENIOR

FIRST SEMESTER

Amer. Govt., Hist. 151, 152, or 153..	3(3-0)
Indust. Chemistry I, Chem. 203.....	5(3-6)
Scientific German, Mod. Lang. 237..	4(4-0)
Electives†	5(-)

Total..... 17

SECOND SEMESTER

Economics, Econ. 101	3(3-0)
Indust. Chemistry II, Chem. 204.....	5(3-6)
Chemistry Problems, Chem. 270....	3(0-9)
Inspection Trip, Chem. 130.....	R
Electives†	5(-)

Total..... 16

Summary.—Men: Physical education, required; military science, 4 hours; chemistry, 52 hours; engineering, 9 hours; other prescribed subjects, 55 hours; elective, 13 hours. Total, 133 semester hours. Women: The same, except no military science. Total, 129 semester hours.

Adaptation, Classes of 1931 and 1932

Members of these classes should take the subjects provided for the class of 1933, arranging for them by appropriate substitutions made in the dean's office, or as electives.

† Electives are to be chosen, with the advice and approval of the dean, in groups of not less than eight semester credits, or in courses which extend fields already entered in the required work.

Curriculum in Industrial Journalism

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
General Chemistry, Chem. 110.....	5(3-6)
French I, Mod. Lang. 151.....	3(3-0) <i>or</i>
Spanish I, Mod. Lang. 176.....	3(3-0) <i>or</i>
German I, Mod. Lang. 101.....	3(3-0)
Pre-Journalism Lec. I, Ind. Jour. 141..	1(1-0)
Option related to an Industry or to Applied Science*	3(-)
Infantry I, Mil. Tr. 101A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total..... 15 or 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
General Geology, Geol. 103.....	3(3-0)
Modern Language, continued.....	3(3-0)
Pre-Journalism Lec. II, Ind. Jour. 142,	1(1-0)
Option related to an Industry or to Applied Science*	4(-)
Library Methods, Lib. Ec. 101.....	1(1-0)
Infantry II, Mil. Tr. 102A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

Total.....15 or 16

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

FIRST SEMESTER

El. Journalism, Ind. Jour. 151.....	2(2-0)
Prin. of Typography, Ind. Jour. 101..	3(2-3)
General Zoölogy, Zoöl. 105.....	5(3-6) <i>or</i>
General Botany I, Bot. 101.....	3(1-4, 2)
Modern Language Readings.....	3(3-0)

Option related to an Industry or to Applied Science*	2 or 4(-)
Industrial Journalism Lecture	R
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total..... 15 or 16

SECOND SEMESTER

Industrial Writing, Ind. Jour. 161....	2(2-0)
English Literature, Engl. 172.....	3(3-0)
General Botany II, Bot. 105....	3(1-4, 2) <i>or</i>
General Microbiology, Bot. 101....	3(1-6) <i>if</i>
General Botany I is chosen the first semester.	

Psychology A, Educ. 101.....	3(3-0)
Option related to an Industry or to Appl. Sc. or Social Science*..	7 or 4(-)
Industrial Journalism Lecture	R
Infantry IV, Mil. Tr. 104A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total.....15 or 16

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

FIRST SEMESTER

Advanced Reporting, Ind. Jour. 163..	3(3-0)
Ind. Feature Writing I, Ind. Jour. 167,	2(2-0)
Prin. of Adv., Ind. Jour. 179.....	3(3-0)

American Literature, Engl. 175.....3(3-0)

Current History, Hist. 126.....1(1-0)

Option related to an Industry or to
Appl. Sc. or Social Science*.....

Industrial Journalism Lecture

Total..... 15

SECOND SEMESTER

Jour. for Women, Ind. Jour. 172...2(2-0) <i>or</i>	
The Rural Press, Ind. Jour. 181....2(2-0) <i>or</i>	
Adv. Practice I, Ind. Jour. 220.....2(2-0)	
Copy Reading, Ind. Jour. 254.....2(0-6)	
History of English Lit., Engl. 181....3(3-0)	
Extempore Speech I, Pub. Spk. 106..2(2-0)	
Current History, Hist. 126.....1(1-0)	
Options and Electives*.....	5(-)

Industrial Journalism Lecture

Total..... 15

SENIOR

Effective September 1, 1930, for class of 1931 and later classes.

FIRST SEMESTER

Circ. & Adv. Pro., Ind. Jour. 251A...2(2-0)	
Editorial Practice, Ind. Jour. 257....2(2-0)	
Contem. Thought, Ind. Jour. 255....3(3-0)	
Electives and Options*.....	8(-)
Industrial Journalism Lecture	R

Total..... 15

SECOND SEMESTER

Ethics of Journalism, Ind. Jour. 260,	2(2-0)
American Govt., Hist. 151.....	3(3-0)
Electives and Options*.....	10(-)
Industrial Journalism Lecture	R

Total..... 15

Summary.—Men: Physical education, two years required; military science, 4 hours; industrial journalism, 30 hours; restricted options, 27 hours; modern language, 9 hours; in prescribed subjects, 39 or 40 hours; general electives, 14 or 15 hours; total, 124 semester hours. Women: The same, excepting no military science, total 120 semester hours.

* The options and electives are chosen with the advice and approval of the dean. The options are in two general groups: (1) fifteen semester hours in courses related to an indus-

Curriculum in Piano

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

FIRST SEMESTER

Piano I, Mus. 170A	4(1-12)
Harmony I, Mus. 101	2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105	2(2-0)
Ensemble I, Mus. 190A, 193A, or 196A	R(1-0)
College Rhetoric I, Engl. 101	3(3-0)
Hist. & Apprec. of Mus. I, Mus. 112	3(3-0)
Current History, Hist. 126	1(1-0)
Piano Ensemble I, Mus. 176A	R(1-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103	R(0-2)or
Phys. Education W, Phys. Ed. 151A	R(0-3)

Total.....15 or 16

SECOND SEMESTER

Piano II, Mus. 170B	4(1-12)
Harmony II, Mus. 102	2(2-0)
Ear Tr. & Sgt. Singing II, Mus. 106	2(2-0)
Ensemble II, Mus. 190B, 193B, or 196B	R(1-0)
College Rhetoric II, Engl. 104	3(3-0)
Hist. & Apprec. of Mus. II, Mus. 113	3(3-0)
Current History, Hist. 126	1(1-0)
Library Methods, Lib. Ec. 101	1(1-0)
Piano Ensemble II, Mus. 176B	R(1-0)
Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 104	R(0-2)or
Phys. Education W, Phys. Ed. 152A	R(0-3)

Total.....16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

FIRST SEMESTER

Piano III, Mus. 170C	4(1-12)
Voice B-I, Mus. 164A	2(1-6)
Harmony III, Mus. 103	2(2-0)
Ensemble III, Mus. 190C, 193C, or 196C	R(1-0)
Recital I, Mus. 184A	R(-)
English Literature, Engl. 172	3(3-0)
Psychology B, Educ. 102	3(3-0)
Piano Ensemble III, Mus. 176C	R(1-0)
Elective, nonmusic	2(-)
Infantry III, Mil. Tr. 103A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105	R(0-2)or
Phys. Education W, Phys. Ed. 153	R(0-3)

Total.....16 or 17

SECOND SEMESTER

Piano IV, Mus. 170D	4(1-12)
Voice B-II, Mus. 164B	2(1-6)
Harmony IV, Mus. 104	2(2-0)
Ensemble IV, Mus. 190D, 193D, or 196D	R(1-0)
Recital II, Mus. 184B	R(-)
American Literature, Engl. 175	3(3-0)
Harmonics, Physics 222	2(2-0)
Piano Ensemble IV, Mus. 176D	R(1-0)
Elective, nonmusic	3(-)
Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 106	R(0-2)or
Phys. Education W, Phys. Ed. 154	R(0-3)

Total.....16 or 17

JUNIOR

FIRST SEMESTER

Piano V, Mus. 170E	4(1-12)
Counterpoint, Mus. 108A	2(2-0)
Ensemble V, Mus. 190E, 193E, or 196E	R(1-0)
Recital III, Mus. 184C	R(-)
German I, Mod. Lang. 101	3(3-0)
Normal Piano Methods, Mus. 140	2(2-0)
Piano Ensemble V, Mus. 176E	R(1-0)
Conducting I, Mus. 117	1(1-0)
Elective, nonmusic	5(-)

Total..... 17

SECOND SEMESTER

Piano VI, Mus. 170F	4(1-12)
Musical Form and Anal., Mus. 109	2(2-0)
Ensemble VI, Mus. 190F, 193F, or 196F	R(1-0)
Recital IV, Mus. 184D	2(2-0)
German II, Mod. Lang. 102	3(3-0)
Practice Teaching of Mus., Mus. 188	2(-)
Piano Ensemble VI, Mus. 176F	R(1 0)
Elective, nonmusic	3(-)

Total..... 16

try or to applied science, and (2) twelve semester hours in courses in political or social history, government, economics or sociology. The options taken in the freshman year, and a large part of those in the sophomore year, must be those related to an industry or applied science. In the tabulated presentation of electives for students in the Division of General Science, groups may be found that will be accepted as the required options and electives. These are printed immediately following the presentation of the curricula. Group 31 (applied science), group 32 (home economics), group 35 (agriculture), group 36 (architecture), or group 37 (manual training), may be chosen in satisfaction of the fifteen hours required related to an industry or applied science. From group 30, twelve hours are to be chosen in satisfaction of the social science option.

The electives are to be chosen in groups of usually not fewer than eight semester credits, unless they are courses which extend fields already entered through the required subjects or the options.

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Piano VII, Mus. 170G.....4(1-12)	Piano VIII, Mus. 170H .....4(1-12)
Instrumentation, Mus. 130 .....2(2-0)	Orchestration, Mus. 133 .....2(2-0)
Ensemble VII, Mus. 190G, 193G, or 196G .....R(1-0)	Ensemble VIII, Mus. 190H, 193H, or 196H .....R(1-0)
Recital V, Mus. 184E.....R(-)	Recital VI, Mus. 184F .....2(2-0)
Educational Psychology, Educ. 109..3(3-0)	French II, Mod. Lang. 152.....3(3-0)
French I, Mod. Lang. 151.....3(3-0)	Piano Ensemble VIII, Mus. 176H...R(1-0)
Piano Ensemble VII, Mus. 176G....R(1-0)	Elective, nonmusic .....6(-)
Elective, nonmusic .....5(-)	
Total..... 17	Total..... 17

Summary.—Women: Physical education, required; music, 71 hours; education, 6 hours; other prescribed subjects, 29 hours; elective, 24 hours. Total, 130 semester hours. Men: The same, except that military science, 4 hours, is also required. Total, 134 semester credits.

Curriculum in Public-school Band and Orchestra

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Instrument I, Mus. 137A .....3(1-9)	Instrument II, Mus. 137B .....3(1-9)
Piano D-I, Mus. 177A .....1(½-6)	Piano D-II, Mus. 177B .....2(1-6)
Harmony I, Mus. 101 .....2(2-0)	Harmony II, Mus. 102 .....2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105, 2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106, 2(2-0)
Ensemble I (Band or Orchestra), Mus. 193A or 196A .....R(1-0)	Ensemble II (Band or Orchestra), Mus. 193B or 196B .....R(1-0)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Psychology B, Educ. 102 .....3(3-0)	Surv. of Pub.-Sch. Mus., Mus. 110..2(2-0)
Elective, nonmusic .....1(1-0)	Extm. Speech I, Pub. Spk. 106.....2(2-0)
Infantry I, Mil. Tr. 101A (men)....1(0-3)	Infantry II, Mil. Tr. 102A (men)...1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) <i>or</i> Phys. Education W, Phys. Ed. 151A, R(0-3)	Phys. Education M, Phys. Ed. 104, R(0-2) <i>or</i> Phys. Education W, Phys. Ed. 152A, R(0-3)
Total.....15 or 16	Total.....16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Instrument III, Mus. 137C .....3(1-9)	Instrument IV, Mus. 137D.....3(1-9)
Piano D-III, Mus. 177C .....1(½-6)	Piano D-IV, Mus. 177D .....2(1-6)
Orch. Instruments I, Mus. 142A...1(½-6)	Orch. Instruments II, Mus. 142B...1(½-6)
Ensemble III (Band or Orchestra), Mus. 193C or 196C .....R(1-0)	Ensemble IV (Band or Orchestra), Mus. 193D or 196D.....R(1-0)
Harmony III, Mus. 103 .....2(2-0)	Harmony IV, Mus. 104 .....2(2-0)
Ear Tr. & Sgt. Singing III, Mus. 107, 2(2-0)	Ear Tr. & Sgt. Singing IV, Mus. 108, 2(2-0)
Hist. & Apprec. of Music I, Mus. 112, 3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113, 3(3-0)
English Literature, Engl. 172.....3(3-0)	American Literature, Engl. 175.....3(3-0)
Conducting I, Mus. 117.....1(1-0)	Infantry IV, Mil. Tr. 104A (men)...1(0-3)
Infantry III, Mil. Tr. 103A (men)....1(0-3)	Phys. Education M, Phys. Ed. 106, R(0-2) <i>or</i> Phys. Education W, Phys. Ed. 154..R(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) <i>or</i> Phys. Education W, Phys. Ed. 153..R(0-3)	
Total.....16 or 17	Total.....16 or 17

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Instrument V, Mus. 137E.....3(1-9)	Instrument VI, Mus. 137F.....2(1-6)
Counterpoint, Mus. 108A .....2(2-0)	Musical Form & Anal., Mus. 109....2(2-0)
Instrumentation, Mus. 130 .....2(2-0)	Ensemble VI (Orchestra), Mus. 193F, 1(1-0)
Ensemble V (Orchestra), Mus. 193E,..1(1-0)	Dramatic Pro. II, Pub. Spk. 135...2(2-0)
Conducting II, Mus. 128 .....1(1-0)	Modern Language II, Mod. Lang. 102 or 152 .....3(3-0)
Dramatic Pro. I, Pub. Spk. 130.....2(2-0)	Educational Psychology, Educ. 109...3(3-0)
Mod. Lang. I (French or German), Mod. Lang. 101 or 151.....3(3-0)	Elective, nonmusic .....5(5-0)
Educational Adm. A, Educ. 105.....3(3-0)	
Total..... 17	Total..... 18

SENIOR

Effective September 1, 1930, for class of 1931 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Instrument VII, Mus. 137G .....2(1-6)	Instrument VIII, Mus. 137H.....1(½-6)
Orchestration, Mus. 133 .....2(2-0)	Harmonics, Physics 222 .....2(2-0)
Practice Conducting, Mus. 135 .....1(½-2)	
Ensemble VII (Orchestra), Mus. 193G .....1(1-0)	Ensemble VIII (Orchestra), Mus. 193H .....1(1-0)
Chorus, Mus. 190 .....R(1-0)	Prac. Teaching of Mus., Mus. 188A, 1(-)
Modern Language (continued).....3(3-0)	Modern Language (continued).....3(3-0)
Elective in Education .....3(3-0)	Elective in Education .....6(6-0)
Elective, nonmusic .....3(3-0)	Elective, nonmusic .....3(3-0)
Total..... 15	Total..... 17

Summary.—Men: Physical education, required; military science, 4 hours; music, 68 hours; education, 18 hours; other prescribed subjects, 32 hours; nonmusic electives, 12 hours. Total, 134 semester hours. Women: The same, except no military science. Total, 130 semester hours.

Curriculum in Public-school Music

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Public-school Music I, Mus. 120...2(2-0)	Public-school Music II, Mus. 121...2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105, 2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106, 2(2-0)
Harmony I, Mus. 101 .....2(2-0)	Harmony II, Mus. 102.....2(2-0)
Piano A-I,* Mus. 171A .....1(½-6)	Piano A-II, Mus. 171B.....2(1-6)
Voice A-I,* Mus. 162A.....2(1-6)	Voice A-II, Mus. 162B.....1(½-6)
	Conducting I, Mus. 117.....1(1-0)
Chorus I, Mus. 190A .....R(1-0)	Chorus II, Mus. 190B.....R(1-0)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Psychology B, Educ. 102.....3(3-0)	Extem. Speech I, Pub. Spk. 106.....2(2-0)
Phys. Ed. W, Phys. Ed. 151A....R(0-3)or	Phys. Ed. W, Phys. Ed. 152A....R(0-3)or
Phys. Education M, Phys. Ed. 103..R(0-2)	Phys. Ed. M., Phys. Ed. 104.....R(0-2)
Infantry I, Mil. Tr. 101A (men)....1(0-3)	Infantry II, Mil. Tr. 102A (men)....1(0-3)
Total.....15 or 16	Total.....15 or 16

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Public-school Music III, Mus. 122. 2(2-0)	Public-school Music IV, Mus. 123...2(2-0)
Ear Tr. & Sgt. Singing III, Mus. 107, 2(2-0)	Ear Tr. & Sgt. Singing IV, Mus. 108, 2(2-0)
Harmony III, Mus. 103.....2(2-0)	Harmony IV, Mus. 104.....2(2-0)
Piano A-III, Mus. 171C.....1(½-6)	Piano A-IV, Mus. 171D.....2(1-6)
Voice A-III, Mus. 162C.....2(1-6)	Voice A-IV, Mus. 162D.....1(½-6)
Orch. Instruments I, Mus. 142A....1(½-6)	Orch. Instruments II, Mus. 142B....1(½-6)
Chorus III, Mus. 190C .....R(1-0)	Chorus IV, Mus. 190D.....R(1-0)
English Literature, Engl. 172.....3(3-0)	American Literature, Engl. 175.....3(3-0)
Hist. & Apprec. of Mus. I, Mus. 112. 3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113, 3(3-0)
Phys. Education W, Phys. Ed. 153, R(0-3)or	Phys. Education W, Phys. Ed. 154, R(0-3)or
Phys. Education M, Phys. Ed. 105..R(0-2)	Phys. Education M, Phys. Ed. 106..R(0-2)
Infantry III, Mil. Tr. 103A (men)....1(0-3)	Infantry IV, Mil. Tr. 104A (men)....1(0-3)
Total.....16 or 17	Total.....16 or 17

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Public-school Music V, Mus. 124...2(2-0)	Public-school Music VI, Mus. 125...2(2-0)
Counterpoint, Mus. 108A.....2(2-0)	Musical Form and Anal., Mus. 109..2(2-0)
Voice or Instrument, Mus.....2(1-6)	Voice or Instrument, Mus.....2(1-6)
	Methods of Teach. Mus., Mus. 145, 1(-)
Chorus V, Mus. 190E .....R(1-0)	Chorus VI, Mus. 190F .....R(1-0)
A Modern Language .....3(3-0)	Modern Language (continued) .....3(3-0)
Elective in English .....3(3-0)	
Elective in Education .....3(3-0)	Elective in Education .....3(3-0)
Elective, nonmusic .....2(-)	Elective, nonmusic .....5(-)
Total..... 17	Total..... 18

* The relative amounts of vocal and instrumental study in the several years are subject to change on recommendation of the head of the Department of Music on a request for substitution blank, the total being three semester hours each semester the first two years, and two semester hours each semester of the last two years.

SENIOR

Effective September 1, 1930, for class of 1931 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Public-school Music VII, Mus. 126, 2(2-0)	Public-school Music VIII, Mus. 127..2(2-0)
Instrumentation, Mus. 130 .....2(2-0)	Orchestration, Mus. 133 .....2(2-0)
Voice or Instrument, Mus.....2(1-6)	Voice or Instrument, Mus.....2(1-6)
Practice Teach. of Mus., Mus. 188A, 1(-)	
Chorus VII, Mus. 190G .....R(1-0)	Chorus VIII, Mus. 190H.....R(1-0)
Modern Language (continued).....3(3-0)	Modern Language (continued) .....3(3-0)
Elective in Education .....3(3-0)	Elective in Education.....6(6-0)
Elective, nonmusic .....3(-)	Elective, nonmusic .....3(-)
<hr/> Total..... 16	<hr/> Total..... 18

SUMMARY.—Women: Physical education, required; music, 71 hours; other prescribed subjects, 17 hours; electives in education, 15 hours; electives in one modern language, 12 hours; general electives, 16 hours; total, 131 hours. Men: The same, except that military science, 4 hours, is also required. Total, 135 semester hours.

Curriculum in Violin

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Violin I, Mus. 165A .....4(1-12)	Violin II, Mus. 165B .....4(1-12)
Harmony I, Mus. 101 .....2(2-0)	Harmony II, Mus. 102 .....2(2-0)
Hist. & Apprec. of Mus. I, Mus. 112..3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113, 3(3-0)
Current History, Hist. 126 .....1(1-0)	Current History, Hist. 126.....1(1-0)
	Library Methods, Lib. Ec. 101.....1(1-0)
Ear Tr. & Sgt. Singing I, Mus. 105..2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106, 2(2-0)
Ensemble I, Mus. 190A, 193A, or 196A .....R(1-0)	Ensemble II, Mus. 190B, 193B, or 196B .....R(1-0)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Infantry I, Mil. Tr. 101A (men)....1(0-3)	Infantry II, Mil. Tr. 102A (men)...1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or Phys. Education W, Phys. Ed. 151A, R(0-3)	Phys. Education M, Phys. Ed. 104, R(0-2)or Phys. Education W, Phys. Ed. 152A, R(0-3)
<hr/> Total.....15 or 16	<hr/> Total.....16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Violin III, Mus. 165C .....4(1-12)	Violin IV, Mus. 165D.....4(1-12)
Piano B-I, Mus. 173A .....2(1-6)	Piano B-II, Mus. 173B.....2(1-6)
Harmony III, Mus. 103.....2(2-0)	Harmony IV, Mus. 104.....2(2-0)
Ensemble III, Mus. 190C, 193C, or 196C .....R(1-0)	Ensemble IV, Mus. 190D, 193D, or 196D .....R(1-0)
Recital I, Mus. 184A .....R(-)	Recital II, Mus. 184B .....R(-)
English Literature, Engl. 172.....3(3-0)	Harmonics, Physics 222 .....2(2-0)
Psychology B, Educ. 102.....3(3-0)	American Literature, Engl. 175.....3(3-0)
Elective, nonmusic .....3(-)	Elective, nonmusic .....3(-)
Infantry III, Mil. Tr. 103A (men)....1(0-3)	Infantry IV, Mil. Tr. 104A (men)...1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or Phys. Education W, Phys. Ed. 153..R(0-3)	Phys. Education M, Phys. Ed. 106, R(0-2)or Phys. Education W, Phys. Ed. 154..R(0-3)
<hr/> Total.....17 or 18	<hr/> Total.....16 or 17

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Violin V, Mus. 165E .....6(1-24)	Violin VI, Mus. 165F.....6(1-24)
Counterpoint, Mus. 108A .....2(2-0)	Mus. Form and Anal., Mus. 109....2(2-0)
Ensemble V, Mus. 190E, 193E, or 196E .....R(1-0)	Ensemble VI, Mus. 190F, 193F, or 196F .....R(1-0)
Recital III, Mus. 184C .....R(-)	Recital IV, Mus. 184D.....2(2-0)
Piano B-III, Mus. 173C.....2(1-6)	Piano B-IV, Mus. 173D.....2(1-6)
German I, Mod. Lang. 101.....3(3-0)	German II, Mod. Lang. 102.....3(3-0)
Methods of Teach. Mus., Mus. 145, 1(-)	Prac. Teach. of Mus. A, Mus. 188A..1(-)
Conducting I, Mus. 117.....1(1-0)	
Elective, nonmusic .....3(-)	Elective, nonmusic .....1(-)
<hr/> Total..... 18	<hr/> Total..... 17

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Violin VII, Mus. 165G.....6(1-24)	Violin VIII, Mus. 165H .....6(1-24)
Instrumentation, Mus. 130 .....2(2-0)	Orchestration, Mus. 133 .....2(2-0)
Ensemble VII, Mus. 190G, 193G, or 196G .....R(1-0)	Ensemble VIII, Mus. 190H, 193H, or 196H .....R(1-0)
Recital V, Mus. 184E .....R(-)	Recital VI, Mus. 184F.....2(2-0)
French I, Mod. Lang. 151.....3(3-0)	French II, Mod. Lang. 152.....3(3-0)
Educational Psychology, Educ. 109...3(3-0)	
Elective, nonmusic .....3(-)	Elective, nonmusic .....3(3-0)
Total..... 17	Total..... 16

Summary.—Women: Physical education, required; music, 81 hours; education, 6 hours; other prescribed subjects, 29 hours; elective, 16 hours. Total, 132 semester hours. Men: the same, except that military science, 4 hours, is also required. Total, 136 semester hours.

Curriculum in Voice

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Voice I, Mus. 160A .....4(1-12)	Voice II, Mus. 160B.....4(1-12)
Hist. & Apprec. of Mus. I, Mus. 112, 3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113, 3(3-0)
Current History, Hist. 126.....1(1-0)	Current History, Hist. 126.....1(1-0)
Harmony I, Mus. 101 .....2(2-0)	Library Methods, Lib. Ec. 101.....1(1-0)
Ear Tr. & Sgt. Singing I, Mus. 105, 2(2-0)	Harmony II, Mus. 102 .....2(2-0)
Choral Ensemble I, Mus. 192A.....R(1-0)	Ear Tr. & Sgt. Singing II, Mus. 106, 2(2-0)
College Rhetoric I, Engl. 101.....3(3-0)	Choral Ensemble II, Mus. 192B....R(1-0)
Infantry I, Mil. Tr. 101A (men)...1(0-3)	College Rhetoric II, Engl. 104.....3(3-0)
Phys. Education M, Phys. Ed. 103, R(0-2)or	Infantry II, Mil. Tr. 102A (men)...1(0-3)
Phys. Education W, Phys. Ed. 151A, R(0-3)	Phys. Education M, Phys. Ed. 104, R(0-2)or
	Phys. Education W, Phys. Ed. 152A, R(0-3)
Total.....15 or 16	Total.....16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Voice III, Mus. 160C.....4(1-12)	Voice IV, Mus. 160D.....4(1-12)
Piano B-I, Mus. 173A .....2(1-6)	Piano B-II, Mus. 173B.....2(1-6)
Harmony III, Mus. 103.....2(2-0)	Harmony IV, Mus. 104.....2(2-0)
Choral Ensemble III, Mus. 192C....R(1-0)	Choral Ensemble IV, Mus. 192D....R(1-0)
Recital I, Mus. 184A .....R(-)	Recital II, Mus. 184B.....R(-)
English Literature, Engl. 172.....3(3-0)	Harmonics, Physics 222.....2(2 0)
Psychology B, Educ. 102.....3(3-0)	American Literature, Engl. 175.....3(3-0)
Elective, nonmusic .....3(-)	Elective, nonmusic .....3(-)
Infantry III, Mil. Tr. 103A (men)...1(0-3)	Infantry IV, Mil. Tr. 104A (men)...1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or	Phys. Education M, Phys. Ed. 106, R(0-2)or
Phys. Education W, Phys. Ed. 153..R(0-3)	Phys. Education W, Phys. Ed. 154..R(0-3)
Total.....17 or 18	Total.....16 or 17

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Voice V, Mus. 160E .....4(1-12)	Voice VI, Mus. 160F .....4(1-12)
Methods of Teach. Mus., Mus. 145, 1(-)	Prac. Teach. of Mus. A, Mus. 188A, 1(-)
Counterpoint, Mus. 108A .....2(2-0)	Mus. Form and Anal., Mus. 109....2(2-0)
Choral Ensemble V, Mus. 192E....R(1-0)	Choral Ensemble VI, Mus. 192F....R(1-0)
Recital III, Mus. 184C .....R(-)	Recital IV, Mus. 184D.....2(2-0)
Piano B-III, Mus. 173C.....2(1-6)	Piano B-IV, Mus. 173D.....2(1-6)
German I, Mod. Lang. 101.....3(3-0)	German I, Mod. Lang. 102.....3(3-0)
Conducting I, Mus. 117 .....1(1-0)	
Elective, nonmusic .....5(5-0)	Elective, nonmusic .....2(-)
Total..... 18	Total..... 16

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Voice VII, Mus. 160G.....4(1-12)	Voice VIII, Mus. 160H.....4(1-12)
Instrumentation, Mus. 130 .....2(2-0)	Orchestration, Mus. 133 .....2(2-0)
Choral Ensemble VII, Mus. 192G...R(1-0)	Choral Ensemble VIII, Mus. 192H...R(1-0)
Recital V, Mus. 184E.....R(-)	Recital VI, Mus. 184F.....2(2-0)
Educational Psychology, Educ. 109..3(3-0)	
French I, Mod. Lang. 151.....3(3-0)	French I, Mod. Lang. 192.....3(3-0)
Repertoire I, Mus. 185A.....1(1-0)	Repertoire II, Mus. 185B .....1(1-0)
Elective, nonmusic .....3(-)	Elective, nonmusic .....3(-)
Total..... 16	Total..... 15

Summary.—Women: Physical education, required; music, 75 hours; education, 6 hours; other prescribed subjects, 29 hours; elective, 19 hours. Total, 129 semester hours. Men: The same, except that military science, 4 hours, is required. Total, 133 semester hours.

Curriculum in Physical Education for Men

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Gymnastics I, Phys. Ed. 115A.....2(1-3)	Gymnastics II, Phys. Ed. 117A.....2(0-6)
Football I, Phys. Ed. 126A.....2(1-3)	Track and Field Sports, Phys. Ed. 140A .....2(1-3)
Basket Ball, Phys. Ed. 130A.....2(1-3)	General Zoölogy, Zoöl. 105.....5(3-6)
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
General Chemistry, Chem. 110.....5(3-6)	El. Org. Chemistry, Chem. 123.....3(2-3)
Extm. Speech I, Pub. Spk. 106.....2(2-0)	Extm. Speech II, Pub. Spk. 108....2(2-0)
Infantry I, Mil. Tr. 101A.....1(0-3)	Infantry II, Mil. Tr. 102A.....1(0-3)
Phys. Education M, Phys. Ed. 103..R(0-2)	Phys. Education M, Phys. Ed. 104..R(0-2)
Total..... 17	Total..... 18

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

FIRST SEMESTER	SECOND SEMESTER
Apparatus, Phys. Ed. 109.....1(0-3)	Personal Hygiene, Phys. Ed. 119....2(2-0)
Football, Phys. Ed. 127.....2(1-3)	Baseball, Phys. Ed. 135A.....2(1-3)
Swimming M-I, Phys. Ed. 121.....1(0-3)	Swimming M-II, Phys. Ed. 122.....1(0-3)
Human Anatomy, Zoöl. 123A.....5(3-6)	Kinesiology M, Phys. Ed. 141B.....3(3-0)
Embryology A, Zoöl. 135.....3(2-3)	Physiology, Zoöl. 130 .....4(3-3)
Psychology A, Educ. 101.....3(3-0)	History and Principles of Phys. Ed., Phys. Ed. 192 .....3(3-0)
Library Methods, Lib. Ec. 101.....1(1-0)	Playground Management and Games M, Phys. Ed. 145A .....2(2-0)
Infantry III, Mil. Tr. 103A.....1(0-3)	Infantry IV, Mil. Tr. 104A.....1(0-3)
Phys. Education M, Phys. Ed. 105..R(0-2)	Phys. Education M, Phys. Ed. 106..R(0-2)
Total..... 17	Total..... 18

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

FIRST SEMESTER	SECOND SEMESTER
School Hygiene, Phys. Ed. 196.....3(3-0)	Gen. Microbiology, Bact. 101.....3(1-6)
Boxing, Phys. Ed. 132.....1(0-3)	Sociology, Econ. 151 .....3(3-0)
First Aid and Mas., Phys. Ed. 113A, 3(3-0)	Wrestling, Phys. Ed. 128.....1(0-3)
Organization and Administration of Phys. Ed. M, Phys. Ed. 146B....2(2-0)	Psychology of Childhood and Adoles- cence, Educ. 208 .....3(3-0)
El. Jour., Ind. Jour. 151.....2(2-0)	Educ. Admin. A, Educ. 105.....3(3-0)
Practice Teaching in Physical Educa- tion I, Phys. Ed. 136A.....2(0-6)	Practice Teaching in Physical Educa- tion II, Phys. Ed. 136B.....2(0-6)
Elective† .....3(-)	Elective† .....3(-)
Total..... 16	Total..... 18

† All electives are to be chosen in accordance with the general rules governing electives and taken in departments other than that of physical education.

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Phys. Diag. & Presc., Phys. Ed. 124A .....3(3-0)	Physiol. of Exercise, Phys. Ed. 123.....2(2-0)
Practice Teaching in Physical Edu- cation III, Phys. Ed. 136C.....2(0-6)	Practice Teaching in Physical Edu- cation IV, Phys. Ed. 136D.....2(0-6)
Educ. Psychology, Educ. 109.....3(3-0)	Methods of Teaching B, Educ. 112..3(3-0)
Special Histology, Path. 252.....3(1-6)	Current History, Hist. 126.....1(1-0)
	Public-school Program in Physical Education, Phys. Ed. 142A.....2(2-0)
Elective† .....4(-)	Elective† .....5(-)
Total..... 15	Total..... 15

Summary.—Military science, 4 hours; physical education, 52 hours; professional education, 15 hours; other prescribed subjects, 48 hours; general electives, 15 hours. Total, 134 semester hours.

Curriculum in Physical Education for Women

Effective September 1, 1930, for class of 1934 and later years.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
General Chemistry, Chem. 110.....5(3-6)	El. Org. Chemistry, Chem. 123.....3(2-3)
Extem. Speech I, Pub. Spk. 106.....2(2-0)	Extem. Speech II, Pub. Spk. 108.....2(2-0)
Library Methods, Lib. Econ. 101...1(1-0)	General Zoölogy, Zoöl. 105.....5(3-6)
Hygiene, Child Welfare 101.....2(2-0)	First Aid, Phys. Ed. 158.....1(1-0)
Phys. Education W, Phys. Ed. 151A, R(0-3)	Phys. Education W, Phys. Ed. 152A, R(0-3)
Gen. Technic I, Phys. Ed. 157A.....2(1-3)	Gen. Technic II, Phys. Ed. 157B...2(1-3)
Total..... 15	Total..... 16

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Human Anatomy, Zoöl. 123A.....5(3-6)	Psychology A, Educ. 101.....3(3-0)
English Literature, Engl. 172.....3(3-0)	Kinesiology W, Phys. Ed. 189.....3(3-0)
Embryology A, Zoöl. 135.....3(2-3)	American Literature, Engl. 175.....3(3-0)
Playground Management and Games W, Phys. Ed. 182A.....2(1-3)	Physiology, Zoöl. 130 .....4(3-3)
El. Journalism, Jour. 151.....2(2-0)	History and Principles of Physical Education, Phys. Ed. 192.....3(3-0)
Phys. Education W, Phys. Ed. 153..R(0-3)	Phys. Education W, Phys. Ed. 154..R(0-3)
Gen. Technic III, Phys. Ed. 157C...2(1-3)	Gen. Technic IV, Phys. Ed. 157D...2(1-3)
Total..... 17	Total..... 18

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
School Hygiene, Phys. Ed. 196.....3(3-0)	Educ. Admin. A, Educ. 105.....3(3-0)
Hist. of Engl. Lit., Engl. 181.....3(3-0)	Psychology of Childhood and Adoles- cence, Educ. 208 .....3(3-0)
Gen. Microbiology, Bact. 101.....3(1-6)	Therap. and Mas., Phys. Ed. 172...2(1-3)
Phys. Diagnosis W, Phys. Ed. 170..3(3-0)	American History I, Hist. 201.....3(3-0)
Folk Dancing I, Phys. Ed. 160.....1(0-3)	Folk Dancing II, Phys. Ed. 161.....1(0-3)
General Technic V, Phys. Ed. 157E..2(1-3)	General Technic VI, Phys. Ed. 157F..2(1-3)
	Methods of Teaching Gymnastics, Phys. Ed. 168.....1(1-0)
Elective† .....2(-)	Elective† .....2(-)
Total..... 17	Total..... 17

† All electives are to be chosen in accordance with the general rules governing electives and taken in departments other than that of physical education.

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Educ. Psychology, Educ. 109.....3(3-0)	Educ. Sociology A, Educ. 118.....3(3-0)
Supervised Teaching in Physical Education, Phys. Ed. 186.....3(-)	Organization and Administration of Phys. Ed. W, Phys. Ed. 176....2(2-0)
Teaching and Adaptation of Physical Education, Phys. Ed. 188.....3(3-0)	Applied Nutrition, Food & Nut. 121..2(2-0)
Theory and Technic of Dancing, Phys. Ed. 163 .....1(1-0)	Current History, Hist. 126.....1(1-0)
Gen. Technic VII, Phys. Ed. 157G...2(1-3)	Gen. Technic VIII, Phys. Ed. 157H..2(1-3)
Elective† .....5(-)	Elective† .....6(-)
Total..... 17	Total..... 16

Summary.—Physical education, 44 hours; professional education, 18 hours; other prescribed subjects, 56 hours; general electives, 15 hours. Total, 133 semester hours.

Adaptation, Classes of 1931 and 1932.

Junior and Senior years. Omit Sports Technic I to IV. Take General Technic V, VI, VII, and VIII, 2(1-3) each instead of 1(0-3) each.

Curriculum in Commerce

Effective September 1, 1929, for class of 1933.

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
College Rhetoric I, Engl. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Phy. or Bio. Science*.....5(-) or 3(-)	Phy. or Bio. Science*.....3(-) or 5(-)
Modern Language* .....3(3-0)	Modern Language* .....3(3-0)
Current History, Hist. 126.....1(1-0)	Current History, Hist. 126.....1(1-0)
Psychology A, Educ. 101.....3(3-0)	College Algebra,* Math. 104.....3(3-0)
Extem. Speech I, Pub. Spk. 106....2(2-0)	Infantry II, Mil. Tr. 102A (men)...1(0-3)
Infantry I, Mil. Tr. 101A (men)...1(0-3)	Phys. Education M, Phys. Ed. 104, R(0-2)or
Phys. Education M, Phys. Ed. 103, R(0-2)or	Phys. Education W, Phys. Ed. 152A, R(0-3)
Phys. Education W, Phys. Ed. 151A, R(0-3)	
Total.....15 or 16	Total.....15 or 16

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Com'l Correspondence, Engl. 122....3(3-0)	Writ. & Oral Salesmanship, Engl. 123, 3(3-0)
Accounting I, Econ. 133.....3(2-3)	Accounting II, Econ. 134.....3(2-3)
Modern Language .....3(3-0)	English Literature, Engl. 172.....3(3-0)
Economic Geography, Econ. 122....2(2-0)	Economics, Econ. 101 .....3(3-0)
Am. Ind. History, Hist. 105.....3(3-0)or	History Elective* .....3(-)
Hist. of Commerce & Ind.; Hist. 110..3(3-0)	
Extem. Speech II, Pub. Spk. 108....2(2-0)	Infantry IV, Mil. Tr. 104A (men)...1(0-3)
Infantry III, Mil. Tr. 103A (men)...1(0-3)	Phys. Education M, Phys. Ed. 106, R(0-2)or
Phys. Education M, Phys. Ed. 105, R(0-2)or	Phys. Education W, Phys. Ed. 154..R(0-3)
Phys. Education W, Phys. Ed. 153..R(0-3)	
Total.....16 or 17	Total.....15 or 16

* Eight hours of physical or biological science are to be elected in this curriculum, if possible in the freshman year. Subject to any prerequisites, chemistry, physics, botany, zoölogy and geology are available. If Chemistry I is taken, Chemistry II is required also. In one modern language a student must attain the proficiency given by nine semester hours of College work. If the language has been studied in high school, elementary work may be avoided in College, and the time saved used for elective studies. Students who have had only one year of high-school algebra are assigned to a five-credit course in College Algebra, Math. 107. Because of the various contingencies and elective possibilities in the sciences and modern languages, the proper planning of the work of the freshman year requires great care and foresight.

† All electives are to be chosen in accordance with the general rules governing electives and taken in departments other than that of physical education.

JUNIOR

FIRST SEMESTER

Elements of Statistics, Math. 126, 3(3-0) or	
Math. of Investments, Math. 150....	3(3-0)
Business Management, Econ. 126....	2(2-0)
Money and Banking, Econ. 116....	3(3-0)
Marketing, Econ. 245	2(2-0)
Special Electives,† minimum	2 or 3(-)
General Electives	5 or 4(-)

Total..... 17

SECOND SEMESTER

Math. of Investments, Math. 150..	3(3-0) or
Elements of Statistics, Math. 126....	3(3-0)
Business Finance, Econ. 217.....	3(3-0)
Amer. Govt., Hist. 151, 152, or 153..	3(3-0)
Sociology, Econ. 151	3(3-0)
Special Electives,† minimum	3 or 2(-)
General Electives	2 or 3(-)

Total..... 17

SENIOR

FIRST SEMESTER

Business Law I, Hist. 163.....	3(3-0)
Public Finance, Econ. 213.....	2(2-0)
Labor Problems, Econ. 233	2(2-0)
Special Electives,† minimum.....	2 or 3(-)
General Electives	7 or 6(-)

Total..... 16

SECOND SEMESTER

Business Law II, Hist. 164.....	3(3-0)
Investments, Econ. 221	2(2-0)
Special Electives,† minimum.....	3 or 2(-)
General Electives	8 or 9(-)

Total..... 16

Summary.—Men: Physical education required; military science, 4 hours; commerce courses, 48 hours; other prescribed courses, 47 hours; special and general electives, 32 hours. Total, 131 semester hours. Women: The same except military science, 4 hours, not required. Total, 127 semester hours.

Adaptation, Class of 1932

Freshman year as given 1928-'29. Later years as for the class of 1933 excepting that in the sophomore year, first semester, Psychology A replaces Extempore Speech II.

Adaptation, Class of 1931

Freshman and sophomore years as provided for 1927-'28 and 1928-'29, respectively. Junior year as for the class of 1933 excepting that in the first semester English Literature replaces Business Management, and the general electives are reduced to 3 or 2 semester hours. The senior year is the same as for the class of 1933 excepting that Business Law I is replaced by two hours of general electives.

Groups of Electives and Options for Students in the Division of General Science

In addition to the courses included in the following groups, others will be found described in the exposition of the work of the respective departments. From any group elected a sufficient number of courses to constitute an effective block of knowledge must be taken. At least eight semester credits in any new field are usually required, but a smaller number will be honored if in a field already entered upon. In a modern language a student must reach a point equivalent to that obtained by college courses aggregating at least eight or nine semester hours. For strong preparation in any field the student should take a total of twenty to forty hours in a department, or in closely related departments, a large part of this work should be in courses designed for juniors and seniors.

Any student desiring to major in a certain field should confer with the head of the department in which most of the work is given. This conference should be held in the sophomore year, or earlier, so that a decision may be made in respect to the subjects that should be taken in that and other departments, and their proper sequence. These will vary with the objective of the student which may be general culture, or preparation for teaching, research, or some other profession.

In connection with some of the groups listed below are brief statements giving the order in which the earlier courses in a field should be taken. Department heads should be consulted for additional advice.

† Special electives recommended for students in the curriculum in commerce are: Economics, 131, 229, 242, 244, 248, 251, 280, 282, 283A and 285; Education, 170 and 243; English, 223; History and Government, 260; Industrial Journalism, 179.

1. English Language

Students majoring in English should elect courses 113 and 116, and twelve to twenty additional hours of English language and literature, under the guidance of the head of the department. Twelve hours of a modern foreign language is strongly recommended.

FIRST SEMESTER

Advanced Composition I, Engl. 113...2(2-0)
Com'l Correspondence, Engl. 122....3(3-0)
Oral English, Engl. 128.....3(3-0)
The Short Story I, Engl. 251.....3(3-0)
The Light Essay, Engl. 225.....2(2-0)
Engineering English, Engl. 110.....2(2-0)
Agricultural English, Engl. 137.....3(3-0)

SECOND SEMESTER

Advanced Composition II, Engl. 116...2(2-0)
Writ. & Oral Salesmanship, Engl. 123, 3(3-0)
Methods of Teaching Engl., Engl. 134, 3(3-0)
The Short Story II, Engl. 252.....3(3-0)
Critical Writing, Engl. 202.....3(3-0)
Technical Writing, Engl. 207.....2(2-0)
Adv. Problems in Commercial Correspondence, Engl. 223.....3(3-0)

2. English Literature

FIRST SEMESTER

Chaucer, Engl. 260.....3(3-0)
The English Bible, Engl. 271.....3(3-0)
Shakespearean Drama I, Engl. 273...3(3-0)
The English Romantic Revival,
Engl. 2783(3-0)
World Classics I, Engl. 280.....3(3-0)
Contemporary Fiction, Engl. 283....3(3-0)
The Novel I, Engl. 286.....2(2-0)
English Survey I, Engl. 288.....2(2-0)
American Literature, Engl. 175.....3(3-0)
Kansas Literature, Engl. 267.....2(2-0)

SECOND SEMESTER

Milton and the Puritan Revolt,
Engl. 2623(3-0)
American Survey, Engl. 265.....2(2-0)
Shakespearean Drama II, Engl. 274...3(3-0)
English Essayists of the Eighteenth
and Nineteenth Cent., Engl. 276...3(3-0)
World Classics II, Engl. 281.....3(3-0)
Contemporary Drama, Engl. 284....3(3-0)
The Novel II, Engl. 287.....3(3-0)
English Survey II, Engl. 290.....2(2-0)
Browning and Tennyson, Engl. 293...3(3-0)
Contemporary Poetry, Engl. 297....3(3-0)

3. German

FIRST SEMESTER

German I, Mod. Lang. 101.....3(3-0)
German Readings, Mod. Lang. 111...3(3-0)
Scientific German, Mod. Lang. 237...4(4-0)
German Classics, Mod. Lang. 226...3(3-0)
German Prose, Mod. Lang. 231.....3(3-0)

SECOND SEMESTER

German II, Mod. Lang. 102.....3(3-0)
Ger. Short Stories, Mod. Lang. 201...3(3-0)
German Comedies, Mod. Lang. 206...3(3-0)

4. French and Spanish

Students who wish to major in Romance Languages should take such of the following courses as they have not already pursued: In French, courses 151, 152, 161, 251, 256, 261, and, if they expect to teach French, course 270; in Spanish, courses 176, 177, 180, 195A, 272, 275, and 280. In each group the courses should be taken approximately in the order here shown and always in conformity with requirements as to prerequisites.

FIRST SEMESTER

French I, Mod. Lang. 151.....3(3-0)
French Readings, Mod. Lang. 161...3(3-0)
Spanish I, Mod. Lang. 176.....3(3-0)
Spanish Readings, Mod. Lang. 180...3(3-0)
The Spanish Novel, Mod. Lang. 275...3(3-0)
Spanish Conv., Mod. Lang. 195A...3(3-0)

SECOND SEMESTER

French II, Mod. Lang. 152.....3(3-0)
French Sh. Stories, Mod. Lang. 251...3(3-0)
French Drama, Mod. Lang. 256.....3(3-0)
Fr. Comp. & Conv., Mod. Lang. 261, 3(3-0)
Spanish II, Mod. Lang. 177.....3(3-0)
Span. Sh. Stories, Mod. Lang. 272...3(3-0)
Spanish Drama, Mod. Lang. 280....3(3-0)

5. Mathematics

Students continuing work in mathematics beyond trigonometry are advised to take courses in the following order: Math. 110, 205, 206, 122, 201, 210, 213, and 216, and in any event strictly in accordance with the stated prerequisites.

FIRST SEMESTER

Plane Anal. Geometry, Math. 110...4(4-0)
Calculus II, Math. 206.....3(3-0)
Differential Equations, Math. 201...3(3-0)
Advanced Calculus II, Math. 213...3(3-0)

SECOND SEMESTER

Calculus I, Math. 205.....5(5-0)
Special Methods in the Teaching of
Mathematics, Math. 1223(3-0)
Advanced Calculus I, Math. 210....3(3-0)
Theory of Equations, Math. 216....3(3-0)

6. Inorganic and Physical Chemistry

Students desiring extensive training in Chemistry are advised to take the curriculum in industrial chemistry, supplementing the required work by electives chosen with the advice of the head of the department. Those who wish to prepare for teaching chemistry in high schools, in addition to courses 101 and 102, should elect courses 121 or 218 and 219, and courses 207, 241 and 206. Math. 110, 205 and 206 are very desirable and Physics 135 and 140, or 145 and 150 are essential.

FIRST SEMESTER

Adv. Inorg. Chem., Chem. 207.....3(3-0)
 Industrial Chemistry I, Chem. 203...5(3-6)
 Physical Chemistry I, Chem. 206....5(3-6)
 Surface Tension and Related
 Phenomena, Chem. 2092(2-0)

SECOND SEMESTER

Ind. Electrochem., Chem. 205.....2(2-0)
 Industrial Chemistry II, Chem. 204..5(3-6)
 Physical Chemistry II, Chem. 272...3(3-0)
 Chemical Statics and Dynamics.
 Chem. 2102(2-0)
 Colloidal Chemistry, Chem. 213....2(2-0)
 Chemical Thermodyn., Chem. 215...3(3-0)
 Theoretical Electrochem., Chem. 216, 3(3-0)
 Electrochemistry Lab., Chem. 217...2(0-6)
 Selected Topics in Inorganic Chem-
 istry, Chem. 2712(2-0)

7. Organic and Physiological Chemistry

Preparation for work in biological chemistry or nutrition should include courses Chem. 101, 102, 121 or 118 and 119, 241, 206, 231, 237 and 239; Physics 135 and 140; Zoöl. 105 and 235, and Bact. 101, 106 or 121A.

FIRST SEMESTER

Organic Chemistry I, Chem. 218....4(2-6)
 Organic Chemistry HE, Chem. 121...5(3-6)
 Organic Preparations, Chem. 223....5(0-15)
 Physiological Chemistry, Chem. 231..5(3-6)
 Pathological Chem., Chem. 235.....2(2-0)
 Biochemistry Analysis, Chem. 237....2(0-6)

SECOND SEMESTER

Organic Chemistry II, Chem. 219...4(2-6)
 Stereoisomeric and Tautomeric Com-
 pounds, Chem. 225.....2(2-0)
 Carbocyclic and Heterocyclic Com-
 pounds, Chem. 2262(2-0)
 Qual. Org. Anal., Chem. 224.....2(0-6)
 Laboratory Technique in Animal
 Nutrition, Chem. 2392(0-6)

8. Analytical Chemistry

After completing Chem. 241 or 250 and 251, the student may take one or more courses in several different fields of analysis, such as soils, fertilizers, gases, feeds, foods, dairy products, etc.

FIRST SEMESTER

Adv. Qual. Anal., Chem. 240.....3(1-6)
 Quan. Analysis A, Chem. 250.....3(1-6)

SECOND SEMESTER

Quan. Analysis, Chem. 241.....5(1-12)
 Quan. Analysis B, Chem. 251.....3(1-6)

9. Physics

Students who expect to teach physics in high schools should complete a course in college physics and at least ten hours additional as advised by the head of the department, followed by course 224. Students who wish to major in physics may, with the advice of the major instructor, choose from courses 250, 220, 230, 233, 252, 254, 256, 258 and 260, preferably in the order given. Math. 110, 205 and 206 are desirable or necessary for the more advanced courses. Physics 120, 133A and 155 are available for commerce and journalism students.

FIRST SEMESTER

Household Physics, Phys. 101.....4(3-3)
 Photography, Phy. 120.....2(1-3)
 Modern Physics, Phys. 250.....3(2-3)
 Molecular Phys. & Heat, Phys. 220..3(2-3)
 Wireless Telephony, Phys. 130.....2(1-3)
 Spectroscopy, Phys. 2303(1-6)
 Radio Measurements, Phys. 245.....2(1-3)
 Advanced Electrical Laboratory,
 Phys. 2561(0-3) or 2(0-6)
 Advanced Mechanics Laboratory,
 Phys. 2521(0-3) or 2(0-6)
 Experimental Problems in Physics,
 Phys. 2601(0-3) or 2(0-6)

SECOND SEMESTER

Harmonics, Phys. 2222(2-0)
 Special Methods in the Teaching of
 Physics, Phys. 224.....3(2-3)
 Meteorology, Phys. 133A3(3-0)
 Descriptive Astronomy, Phys. 155...3(3-0)
 Storage Batteries, Phys. 2352(1-3)
 Radioactivity and Electron Theory,
 Phys. 2333(3-0)
 Advanced Light Laboratory,
 Phys. 2581(0-3) or 2(0-6)
 Advanced Heat Laboratory, Phys.
 2541(0-3) or 2(0-6)
 Biophysics, Phys. 2643(2-3)

10. Microbiology

Courses 101, 106 or 121A may be followed in order by 202, 204, 211 and 206.

FIRST SEMESTER

General Microbiology, Bact. 101.....3(1-6)
 Agricultural Microbiology, Bact. 106.....3(1-6)
 Hygienic Bacteriology, Bact. 206.....4(2-6)
 Pathogenic Bacteriology II, Bact. 116.....4(2-6)

SECOND SEMESTER

Household Microbiology, Bact. 121A, 3(1-6)
 Soil Microbiology, Bact. 202.....3(3-0)
 Soil Microbiology Lab., Bact. 204...2(0-6)
 Pathogenic Bacteriology, I, Bact. 111, 4(2-6)
 Dairy Bacteriology, Bact. 211.....3(1-6)
 Poultry Bacteriology, Bact. 216.....3(1-6)

11. Botany

Courses 101 and 105 are prerequisites to all other courses, following which students specializing in plant diseases should take, in order, courses 205, 202, 240 and 232; those in plant physiology, courses 208, 209 and 232; those in taxonomy and ecology, courses 225, 228 or 234 and 232. For general training, all are available if the prerequisites have been taken.

FIRST SEMESTER

General Botany I, Bot. 101.....3(1-4, 2)
 Plant Pathology I, Bot. 205.....3(1-4, 2)
 Morph. of the Fungi, Bot. 206.....3(1-6)
 Plant Physiology I, Bot. 208.....3(3-0)
 Fruit Crop Diseases, Bot. 202.....2(1-2, 1)
 Botanical Problems, Bot. 232.....1 to 5(-)
 Taxonomic Botany of the Flowering
 Plants, Bot. 2253(1-4, 2)

SECOND SEMESTER

General Botany II, Bot. 105.....3(1-4, 2)
 Plant Histology, Bot. 215.....2(0-6)
 Phytogeography, Bot. 234.....2(2-0)
 Plant Physiology II, Bot. 209.....2(0-4, 2)
 Plant Ecology, Bot. 228.....2(2-0)
 Field Crop Diseases, Bot. 240....2(1-2, 1)
 Vegetable Diseases, Bot. 245.....2(1-2, 1)

12. Zoölogy

A student who wishes to major in zoölogy should in connection with the required work in this field or after completing it elect from the courses listed below subjects varying with his special interest, such as parasitology, embryology, genetics, etc. Consult the head of the department.

FIRST SEMESTER

Adv. Human Physiology, Zoöl. 235...4(3-3)
 Cytology, Zoöl. 2144(2-6)
 Parasitology, Zoöl. 208.....3(2-3)
 Comp. & Human Neur., Zoöl. 250...3(2-3)
 Taxonomy of Parasites, Zoöl. 240...2(1-3)
 Field Zoölogy, Zoöl. 205.....3(1-6)
 Heredity and Eugenics, Zoöl. 216...2(2-0)
 Zoöl. Problems, Zoöl. 203.....1 or 2(-)
 Genetics Seminar, Zoöl. 227.....1(1-0)
 Research in Zoöl., Zoöl. 301.....1 to 8 cr.

SECOND SEMESTER

Comp. Anat. of Vertebrates, Zoöl. 245, 3(1-6)
 Evol. & Heredity, Zoöl. 217...2(2-3) or 4(2-6)
 Animal Ecology, Zoöl. 211...2(2-0) or 3(2-3)
 Ornithology, Zoöl. 230A3(2-3)
 Embryology B, Zoöl. 219A.....4(3-3)
 Adv. Embryology, Zoöl. 220.....4(2-6)
 Human Parasitology, Zoöl. 218.....3(3-0)
 Zoöl. Technic, Zoöl. 206.....1 or 2(-)
 Zoöl. and Ent. Seminar, Zoöl. 225...1(1-0)
 Research in Zoöl., Zoöl. 301.....1 to 8 cr.

13. Geology

Comprehensive study of geology involves a knowledge of astronomy, chemistry, physics, botany and zoölogy, but some phases of the field may be studied with profit without acquaintance with all of these sciences.

FIRST SEMESTER

Engineering Geology, Geol. 102.....4(3-3)
 Economic Geology, Geol. 207.....4(3-3)
 Crystallography and Mineralogy,
 Geol. 2094(2-6)

SECOND SEMESTER

General Geology, Geol. 103.....3(3-0)
 Historical Geology, Geol. 203.....4(3-3)

14. Entomology

Students majoring in entomology, with due regard for prerequisites, should take courses: Ent. 203, 211, 212, 231, 216, 217, 218, 226, 206, 221 and 238, and preferably in this order.

FIRST SEMESTER

General Entomology, Ent. 203.....3(2-3)
 Insect Morphology I, Ent. 211.....3(1-6)
 Insect Morphology II, Ent. 212.....3(0-9)
 Ent. & Zoöl. Literature, Ent. 231...3(2-3)
 Medical Entomology, Ent. 226.....3(2-3)
 Advanced Apiculture B, Ent. 228...3(2-3)

SECOND SEMESTER

Principles of Taxonomy, Ent. 216...1(1-0)
 Taxonomy of Insects I, Ent. 217...2(0-6)
 Taxonomy of Insects II, Ent. 218...3(0-9)
 Adv. Gen. Entomology, Ent. 221...3(3-0)
 Gen. Eco. Entomology, Ent. 206.....3(2-3)
 Entomological Prob., Ent. 238....2 to 4 cr.
 General Apiculture, Ent. 111.....3(2-3)
 Insect Physiology, Ent. 234.....2(2-0)

15. History and Government

To prepare for teaching history in high school the student should have at least ten semester hours of college history following two years of history in high school, or its equivalent in college. History 232, Problems in History Instruction, may then be pursued in summer school. The advice of the head of the department should be followed in each case.

FIRST SEMESTER

- Medieval Europe, Hist. 102.....3(3-0)
- English History, Hist. 121.....3(3-0)
- American History I, Hist. 201.....3(3-0)
- American History II, Hist. 202.....3(3-0)
- American Agr'l History, Hist. 204.....3(3-0)
- Modern Europe I, Hist. 115.....3(3-0)
- History of the Far East, Hist. 229..2(2-0)
- Hist. of Com. & Ind., Hist. 110.....3(3-0)
- Am. Political Parties, Hist. 206.....2(2-0)
- Immig. & Inter'l Rel., Hist. 228.....2(2-0)
- Am. Government, Hist. 151.....3(3-0)
- Am. Nat'l Government, Hist. 152.....3(3-0)
- Comparative Government, Hist. 252..2(2-0)

SECOND SEMESTER

- Ancient Civilizations, Hist. 101.....3(3-0)
- Current History, Hist. 126.....1(1-0)
- Am. Indust. History, Hist. 105.....3(3-0)
- American History III, Hist. 203.....3(3-0)
- Latin America, Hist. 207.....2(2-0)
- Modern Europe II, Hist. 223.....3(3-0)
- 20th Century Europe, Hist. 224.....2(2-0)
- The British Empire, Hist. 226.....2(2-0)
- History of the Home, Hist. 225.....3(3-0)
- International Law, Hist. 256.....2(2-0)
- Gov't Regulations of Bus., Hist. 260, 2(2-0)
- Am. State Gov't, Hist. 153.....3(3-0)
- History of Religions, Hist. 231.....2(2-0)

16. Law

FIRST SEMESTER

- Farm Law, Hist. 175.....2(2-0)
- Business Law I, Hist. 163.....3(3-0)
- Land Law, Hist. 276.....2(2-0)

SECOND SEMESTER

- Commercial Law, Hist. 160.....1(1-0)
- Business Law II, Hist. 164.....3(3-0)
- International Law, Hist. 256.....2(2-0)

17. Economics, Sociology and Accounting

Some of the subjects in this list are required in the several curricula of the institution, and the others are available as electives if any prerequisites have been satisfied. Additional work is offered in the department of agricultural economics.

FIRST SEMESTER

- Economics, Econ. 1013(3-0)
- Public Finance, Econ. 213.....2(2-0)
- Labor Problems, Econ. 233.....2(2-0)
- Marketing, Econ. 245.....2(2-0)
- Economic Geography, Econ. 122.....2(2-0)
- Advanced Economics, Econ. 251.....3(3-0)
- Sociology, Econ. 1513(3-0)
- Rural Sociology, Econ. 156.....3(3-0)
- Social Problems, Econ. 257.....2(2-0)
- Accounting I, Econ. 133.....3(2-3)
- Cost Accounting, Econ. 287.....3(3-0)
- Adv. Accounting I, Econ. 280.....3(3-0)
- Income Tax Accounting, Econ. 282...2(2-0)
- Auditing, Econ. 2853(3-0)

SECOND SEMESTER

- Money and Banking, Econ. 116.....3(3-0)
- Business Finance, Econ. 217.....3(3-0)
- Transportation Prob., Econ. 229.....2(2-0)
- Business Management, Econ. 126...2(2-0)
- Economic Problems, Econ. 248.....(-)
- Community Organization, Econ. 267. 3(3-0)
- Advanced Sociology, Econ. 273.....3(-)
- Adv. Rural Sociology, Econ. 270...3(-)
- Property Insurance, Econ. 242.....2(2-0)
- Life Insurance, Econ. 244.....2(2-0)
- Accounting II, Econ. 134.....3(2-3)
- Investments, Econ. 2212(2-0)
- Accounting Systems, Econ. 283A...2(2-0)
- Institutional Accounting, Econ. 132, 3(3-0)

18. Education and Psychology

Students desiring to qualify for the state teacher's certificate based on sixty hours of college work should take course 101 or 102 in psychology, and course 107 and 111 in education. Those qualifying for the certificate based on graduation from a four-year curriculum should, in addition to 101 or 102, take 109, and 105 or 106. If without teaching experience course 112 is recommended for this group also. Advice should be obtained from the head of the Department of Education in respect to additional courses necessary or advisable. See, also, "Education" in this catalogue for information concerning special certificates.

FIRST SEMESTER

- Psychol. A, B or C, Educ. 101-103..3(3-0)
- School Management, Educ. 107.....3(3-0)
- Educational Administration A or B,
Educ. 105 or 106.....3(3-0)
- Hist. of Education A, Educ. 113.....3(3-0)
- Applied Psychology, Educ. 170.....3(3-0)
- Mental Measurements, Educ. 211...3(3-0)
- Educl. Measurements, Educ. 212....3(3-0)
- Technic of Mental Testing, Educ. 235, 3(1-6)
- Introd. to Philosophy, Educ. 150...3(3-0)
- Statistical Methods Applied to Edu-
cation, Educ. 223.....3(3-0)
- Vocational Education A, Educ. 125. 3(3-0)
- Agric. Educ. B, Educ. 330.....3(3-0)
- Supervised Observation and Teaching in
Science, Educ. 1633(3-0)
- Special Methods in the Teaching of
Home Economics, Educ. 132.....3(3-0)
- Supervised Observation and Teaching
in Agriculture, Educ. 1613(3-0)

SECOND SEMESTER

- Methods of Teaching A, Educ. 111. 3(3-0)
- Educl. Psychology, Educ. 109.....3(3-0)
- Methods of Teaching B, Educ. 112. 3(3-0)
- Educl. Sociology A, Educ. 118.....3(3-0)
- Psychology of Childhood and Ado-
lescence, Educ. 2083(3-0)
- Abnormal Psychology, Educ. 213...3(3-0)
- Advanced Psychology, Educ. 216...3(3-0)
- Philosophy of Education, Educ. 206. 3(3-0)
- Rural Life and Educ., Educ. 201...3(3-0)
- Rural Secondary Educ., Educ. 204...3(3-0)
- Vocational Education B, Educ. 226. 3(3-0)
- Special Methods in Teaching of In-
dustrial Arts, Educ. 140.....3(3-0)
- Supervised Teaching in Home Eco-
nomics, Educ. 160.....3(3-0)
- Special Methods in the Teaching of
Agriculture, Educ. 1363(3-0)

20. Industrial Journalism

While those who wish to give much attention to journalism will choose the curriculum in industrial journalism, many in other curricula desire some training in this field. Selection from the following list may be made in so far as the prerequisites permit.

FIRST SEMESTER

El. Journalism, Ind. Jour. 151.....2(2-0)
 Ind. Feature Writ., Ind. Jour. 167....2(2-0)
 Materials of Jour., Ind. Jour. 265....2(2-0)
 History of Jour., Ind. Jour. 274.....2(2-0)

SECOND SEMESTER

Industrial Writing, Ind. Jour. 161....2(2-0)
 Jour. for Women, Ind. Jour. 172....2(2-0)
 Magazine Features, Ind. Jour. 270....2(2-0)
 Jour. Surveys, Ind. Jour. 278.....2(2-0)

23. Music

Students in the various curricula are permitted to study theoretical or applied music, but the acceptability for elective credit of work in voice or instrumental music is contingent upon the attainment of an effective degree of proficiency. Certification to this is made by the head of the department of music.

Voice B (Music 164A to 164H)
 Two private lessons a week. Two credits per semester.
 Violin A (Music 166A to 166H)
 Two private lessons a week. Two credits per semester.
 Piano B (Music 173A to 173H)
 Two private lessons a week. Two credits per semester.
 Violoncello A (Music 178A to 178H)
 Two private lessons a week. Two credits per semester.
 Double bass (Music 179A to 179H)
 Two private lessons a week. Two credits per semester.
 Wind Instruments (182A to 182H)
 Two private lessons a week. Two credits per semester.

FIRST SEMESTER

Harmony I, Music 1012(2-0)
 Harmony III, Music 1032(2-0)
 Counterpoint, Music 108A2(2-0)
 Hist. & Apprec. of Mus. I, Mus. 112..3(3-0)
 Public-school Music I, Music 120....2(2-0)
 Public-school Music III, Music 122..2(2-0)
 Choral Ensemble, Mus. 192A to 192H, 1(0-3)
 Orchestra, Music 193A to 193H.....1(0-3)
 Band, Music 196A to 196H.....1(0-3)

SECOND SEMESTER

Harmony II, Music 102.....2(2-0)
 Harmony IV, Music 104.....2(2-0)
 Musical Form and Anal., Mus. 109..2(2-0)
 Hist. & Apprec. of Mus. II, Mus. 113..3(3-0)
 Public-school Music II, Music 121....2(2-0)
 Public-school Music IV, Music 123..2(2-0)
 Choral Ensemble, Mus. 192A to 192H, 1(0-3)
 Orchestra, Music 193A to 193H.....1(0-3)
 Band, Music 196A to 196H.....1(0-3)

25. Military Science and Tactics

Men who have completed the basic course in infantry may elect the advanced course if approved by the president, the dean and the head of the department of military science and tactics.

FIRST SEMESTER

Infantry V, Mil. Tr. 109.....3(2-3)
 Infantry VII, Mil. Tr. 111.....3(2-3)

SECOND SEMESTER

Infantry VI, Mil. Tr. 110.....3(2-3)
 Infantry VIII, Mil. Tr. 112.....3(2-3)

26. Physical Education and Athletics

In connection with the required work or after its completion, students may elect courses in physical education. For a special state certificate at least forty hours are required. The courses listed below, and others on the advice of the head of the department, are available.

FOR MEN

FIRST SEMESTER

Gymnastics I, Phys. Ed. 115A.....2(1-3)
 Football I, Phys. Ed. 126A.....2(1-3)
 Football II, Phys. Ed. 127.....2(1-3)
 Basket Ball, Phys. Ed. 130A.....2(1-3)
 Swimming M-I, Phys. Ed. 121.....1(0-3)
 Boxing, Phys. Ed. 132.....1(0-3)
 School Hygiene, Phys. Ed. 196.....3(3-0)
 Apparatus, Phys. Ed. 109.....1(0-3)
 First Aid and Mas., Phys. Ed. 113A,..3(3-0)

SECOND SEMESTER

Gymnastics II, Phys. Ed. 117A.....2(0-6)
 Track & Field Spts., Phys. Ed. 140A, 2(1-3)
 Baseball, Phys. Ed. 135A2(1-3)
 Wrestling, Phys. Ed. 128.....1(0-3)
 Swimming M-II, Phys. Ed. 122.....1(0-3)
 Playground Management and Games
 M, Phys. Ed. 145A2(2-0)
 Personal Hygiene, Phys. Ed. 119.....2(2-0)

FOR WOMEN

The following courses are available after completing the two years of required work:

FIRST SEMESTER	SECOND SEMESTER
Folk Dancing I, Phys. Ed. 160.....1(0-3)	Folk Dancing II, Phys. Ed. 161.....1(0-3)
Playground Management & Games W, Phys. Ed. 182A .....2(1-3)	First Aid, Phys. Ed. 158.....1(1-0)
General Technic III, Phys. Ed. 157C, 2(1-3)	General Technic IV, Phys. Ed. 157D, 2(1-3)
General Technic V, Phys. Ed. 157E..2(1-3)	General Technic VI, Phys. Ed. 157F, 2(1-3)

27. Public Speaking

Courses covering various aspects of public speech are open for election after completing any prerequisites. The head of the department should be consulted for advice as to the individual needs.

FIRST SEMESTER	SECOND SEMESTER
Extempore Speech I, Pub. Spk. 106..2(2-0)	Extempore Speech II, Pub. Spk. 108..2(2-0)
Oral Interpretation, Pub. Spk. 101..2(2-0)	Dramatic Reading, Pub. Spk. 102....2(2-0)
Parliamentary Proced., Pub. Spk. 126, 1(1-0)	Lecture Recital, Pub. Spk. 115.....2(2-0)
Dramatic Produc. I, Pub. Spk. 130...2(2-0)	Dramatic Produc. II, Pub. Spk. 135..2(2-0)
Argumentation and Debate I, Pub. Spk. 121 .....2(2-0)	Argumentation and Debate II, Pub. Spk. 122 .....2(2-0)
Pageantry, Pub. Spk. 251.....3(3-0)	Pageantry, Pub. Spk. 251.....3(3-0)

30. Social Science

(Political and Social History, Government, Economics, and Sociology.)

In the curriculum in industrial journalism students are required to elect twelve hours in a social science option. The following list includes some subjects, and many more are offered by the several departments. See, also, groups 15, 16 and 17.

FIRST SEMESTER	SECOND SEMESTER
American History I, Hist. 201.....3(3-0)	American History II or III, Hist. 202 or 203 .....3(3-0)
American Government, Hist. 151...3(3-0)or	Amer. State Govt., Hist. 153.....3(3-0)
Amer. Nat'l Government, Hist. 152...3(3-0)	Modern Europe I, Hist. 115.....3(3-0)
Latin America, Hist. 207.....2(2-0)	Modern Europe II, Hist. 223.....3(3-0)
Agric. Economics, Ag. Ec. 101.....3(3-0)	English History, Hist. 121.....3(3-0)
Money and Banking, Econ. 116.....3(3-0)	Economics, Econ. 101 .....3(3-0)
Business Finance, Econ. 217.....3(3-0)	Public Finance, Econ. 213.....2(2-0)
Market. of Farm Prod., Ag. Ec. 202..3(3-0)	Labor Problems, Econ. 233.....2(2-0)
Agric. Land Prob., Ag. Ec. 218.....3(3-0)	Sociology, Econ. 151 .....3(3-0)

31. Applied Science

Students in the curriculum in industrial journalism who do not wish to elect subjects directly related to a single industry are permitted to elect sciences that support industries, and subjects that involve applications of the sciences, in so far as they have satisfied requirements as to prerequisites.

FIRST SEMESTER	SECOND SEMESTER
General Botany I, Bot. 101.....3(1-4, 2)	General Botany II, Bot. 105.....3(1-4, 2)
Plant Pathology I, Bot. 205.....3(1-4, 2)	Field Crop Diseases, Bot. 240...2(1-2, 1)
Fruit Crop Diseases, Bot. 202...2(1-2, 1)	Vegetable Diseases, Bot. 245.....2(1-2, 1)
Farm Forestry, Hort. 114.....3(2-3)	Plant Ecology, Bot. 228.....2(2-0)
Seed Identification and Weed Control, Agron. 105 .....2(1-3)	
General Zoölogy, Zoöl. 105.....5(3-6)	El. of Horticulture, Hort. 107.....3(2-3)
Parasitology, Zoöl. 208 .....3(2-3)	Small Fruits, Hort. 110.....2(2-0)
Zoöl. and Embryol. (Vet.), Zoöl. 109, 5(3-6)	General Microbiology, Bact. 101....3(1-6)
Landscape Gardening I, Hort. 125....3(3-0)	Gen. Ec. Entomology, Ent. 206.....3(2-3)
Hygienic Bacteriology, Bact. 206....4(2-6)	General Apiculture, Ent. 111.....3(2-3)
General Entomology, Ent. 203.....3(2-3)	Applied Nut., Food & Nut. 121.....2(2-0)
Hort. Entomology, Ent. 201.....2(2-0)	General Geology, Geol. 103.....3(3-0)
El. Org. Chemistry, Chem. 123.....3(2-3)	Historical Geology, Geol. 203.....4(3-3)
Dairy Chemistry, Chem. 254.....3(1-6)	Meteorology, Physics 133A.....3(3-0)
Economic Geology, Geol. 207.....4(3-3)	Household Physics, Physics 101.....4(3-3)
Human Nutrition, Food & Nut. 112..3(3-0)	Photography, Physics 120 .....2(1-3)

32. Home Economics

This group is suggestive to young women in the curriculum in industrial journalism. It states the fundamental subjects in the three lines, food, clothing and applied art. The required option related to an industry may be satisfied by fifteen hours in one or more of these lines. Additional subjects in each line are described in the department sections of the catalogue. Prerequisites count on the group requirement.

FIRST SEMESTER

Household Physics, Physics 101.....4(3-3)
Organic Chem. (HE), Chem. 121...5(3-6)
Foods I, Food & Nut. 101A....3(1½-4½)
Foods II, Food & Nut. 106.....5(3-6)
Human Nutrit., Food & Nut. 112...3(3-0)
Dietetics, Food & Nut. 201.....5(3-6)
Applied Nutrit., Food & Nut. 121....2(2-0)
Clothing II, Clo. & Text. 111.....3(1-6)
Elementary Design, Art. 101.....3(1-6)
Intermediate Design, Art. 102.....3(1-6)

SECOND SEMESTER

Household Microbiology, Bact. 121A..3(1-6)
Clothing I, Clo. & Text. 101.....2(1-3)
Costume Design I, Art 130.....2(0-6)
Textiles, Clo. & Text. 116.....3(2-3)
House Furnishings, Art 108.....2(1-3)
Int. Dec. and Furn., Art 114.....3(1-6)
Principles of Art and Their Appre-
ciation, Art 1243(3-0)
Advanced Design, Art 1052(0-6)

35. Agriculture

This group, compiled for the use of young men who elect the agriculture option in connection with their work in industrial journalism, gives the basic subjects in some agricultural lines. Subjects for which these are prerequisite are also acceptable. See the expositions of the work of the several departments in the division of agriculture.

FIRST SEMESTER

General Botany I, Bot. 101.....3(1-4, 2)
Live-stock Judging, An. Husb. 120..3(2-4)
El. of Dairying, Dairy Husb. 101...3(2-3)
El. Org. Chemistry, Chem. 123.....3(2-3)
Plant Pathology I, Bot. 205.....3(1-4, 2)
Soils, Agron. 1304(3-3)
Farm Poultry Production, Poultry
Husb. 1012(1-2, 1)

SECOND SEMESTER

General Botany II, Bot. 105.....3(1-4, 2)
El. of Horticulture, Hort. 107.....3(2-3)
Dairy Judging, Dairy Husb. 104....1(0-3)
Prin. of Feeding, An. Husb. 152....3(3-0)
Field Crop Diseases, Bot. 240....2(1-2, 1)
Farm Crops, Agron. 101.....4(2-6)
Genetics, An. Husb. 221.....3(3-0)

36. Architecture

Students in industrial journalism, with due regard for prerequisites, may elect fifteen hours from this group in order to fulfill the requirement in respect to subjects related to an industry.

FIRST SEMESTER

Engr. Drawing, Mach. Des. 101.....2(0-6)
El. of Arch. I, Arch. 106A.....3(0-9)
Object Drawing I, Arch. 111.....2(0-6)
Design I, Arch. 142.....3(0-9)
Coml. Illustration I, Arch. 165....2(0-6)
General Hist. of Arch., Arch. 244...3(3-0)
Pencil Rend. & Sketch., Arch. 116..2(0-6)
Water Color II, Arch. 119.....2(0-6)

SECOND SEMESTER

Deser. Geom., Mach. Des. 106.....2(0-6)
El. of Arch. II, Arch. 107A.....3(0-9)
Object Drawing II, Arch. 114.....2(0-6)
Design II, Arch. 144.....3(0-9)
Coml. Illustration II, Arch. 170....2(0-6)
Domestic Arch., Arch. 124.....2(2-0)
Pen and Ink Drawing I, Arch. 134..2(0-6)
Water Color I, Arch. 118.....2(0-6)

37. Manual Training and Engineering.

Fifteen hours may be chosen from this group by students in industrial journalism in satisfaction of the option related to an industry. Students preparing to teach manual training will require credits in at least forty semester hours in that line. Prerequisites must be observed.

FIRST SEMESTER

Engr. Drawing, Mach. Des. 101.....2(0-6)
Deser. Geom., Mach. Des. 106.....2(0-6)
Woodworking for Grammar Grades,
Shop 1202(0-6)
Woodworking II for High Schools,
Shop 1302(0-6)
Forging I, Shop 150.....1(0-3)
Machine Tool Work I, Shop 170....2(0-6)
Machine Tool Work III, Shop 193...1(0-3)
Gas Engine and Tractors, Ag.
Engr. 1303(2-3)
Machine Drawing I, Mach. Des. 111..2(0-6)
Reed Furn. Constr., Shop 119.....2(0-6)
Foundry Production, Shop 161.....1(0-3)
Shop Practice Tehg. I, Shop 184....3(2-3)
Adv. Shop Practice, Shop 260.....1 to 5 cr.

SECOND SEMESTER

Engr. Woodwork I, Shop 101.....1(0-3)
Manual Training for Primary Grades,
Shop 1172(0-6)
Woodworking I for High Schools,
Shop 1252(0-6)
Wood Turning, Shop 135.....2(0-6)
Farm Carpentry I, Shop 147.....3(1-6)
Machine Tool Work II, Shop 192...2(0-6)
Metallurgy, Shop 1652(2-0)
Farm Buildings, Ag. Engr. 103.....3(1-6)
Surveying I, Civ. Engr. 102.....2(0-6)
Farm Shop Methods, Shop 175.....3(1-6)
Metallography, Shop 167.....1(0-3)
Shop Practice Tehg. II, Shop 185....2(2-6)

45. Milling Industry

Students in general science or industrial chemistry may elect work in milling industry for which they have taken the prerequisites.

FIRST SEMESTER

Milling Practice I, Mill. Ind. 109....	3(1-6)
Wheat and Flour Testing, Mill. Ind. 205	3(0-9)
Advanced Wheat and Flour Testing, Mill. Ind. 210	1 to 5(-)
Farm Crops, Agron. 101.....	4(2-6)
Grain Marketing, Ag. Ec. 203.....	3(3-0)
Quantitative Analysis A, Chem. 250..	3(1-6)
El. Org. Chemistry, Chem. 123.....	3(2-3)
Milling Technology I, Mill. Ind. 201..	2(0-6)
Mill. Ind. Problems, Mill. Ind. 214, 1 to 5 cr.	

SECOND SEMESTER

Prin. of Milling I, Mill. Ind. 104....	2(1-3)
Prin. of Milling II, Mill. Ind. 106....	1(0-3)
Milling Practice II, Mill. Ind. 111....	3(1-6)
Milling Qualities of Wheat, Mill. Ind. 212	3(3-0)
Exptl. Baking, Mill. Ind. 206.....	3(1-6)
Grain Grading and Judging, Agron. 108	2(0-6)
Quant. Analysis B, Chem. 251.....	3(1-6)
The Chemistry of Proteins, Chem. 236A	3(2-3)
Milling Technology II, Mill. Ind. 202, 2(0-6)	
Colloidal Chemistry, Chem. 213	2(2-0)

Bacteriology

Professor BUSHNELL
Professor GAINNEY
Associate Professor FAY

Assistant Professor BRANDLY
Instructor FOLTZ
Graduate Assistant AIKINS

The department of Bacteriology occupies parts of the first and second floors of Veterinary Hall. The space is divided into offices and private laboratories, an experiment station and research laboratory, two large general laboratories, incubator or temperature room, preparation room, and stock room. The laboratories are well lighted and equipped with gas, lockers, ice chests, sterilizers, wall cases, microscopes, and other modern facilities necessary for bacteriological work.

The instruction consists of lectures, recitations, demonstrations, and laboratory practice. Printed synopses of lectures and printed laboratory directions are furnished the students in some of the courses; in others textbooks are required. The department library contains textbooks on bacteriology and allied subjects, also the current files of the important technical periodicals relating to bacteriology. These are at the constant disposal of the students for reference. To those who desire graduate work the department offers excellent facilities.

Bacteriology is presented to the students as a biological science and as a practical factor in everyday life. In this subject only the simplest forms of life, consisting almost invariably of one-celled organisms, are studied. It is now possible to study these microscopical forms with ease and accuracy, thus paving the way for a more complete study and better understanding of cells in the aggregate. The second point of view from which this subject is approached is that of its practical application in agriculture, medicine, domestic science, and sanitation.

This department owns equipment valued at \$14,178.

COURSES IN BACTERIOLOGY

FOR UNDERGRADUATE CREDIT

101. GENERAL MICROBIOLOGY. 3(1-6); I and II.* Not open to students who have credit in Bact. 106 or 121. Prerequisite: Chemistry II, or General Chemistry. Dr. Gainey and Mr. Foltz.

Morphological and biological characters, classification and distribution of bacteria, factors necessary for the development of bacteria, culture media, cul-

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parentheses indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory required each week. I, II, and SS indicate that the course is given the first semester, second semester, and summer session respectively.

tural features, staining values, and fundamental principles of applied bacteriology.

Laboratory.—The student prepares culture media and becomes familiar with principles of sterilization and incubation, and with general laboratory technic. Deposit, \$10.

106. AGRICULTURAL MICROBIOLOGY. 3(1-6); I and II. Not open to students who have credit in Bact. 101 and 121. Prerequisites: Chem. 122, Gen. Org. Chemistry. Dr. Gainey and Mr. Fay.

A general course emphasizing particularly the relation of microorganisms to agriculture.

Laboratory.—Methods of cultivating and studying bacteria, yeasts, and molds; methods for quantitative and qualitative analysis of water, milk, etc.; methods of sterilization and use of germicidal agents. Deposit, \$10.

111, 116. PATHOGENIC BACTERIOLOGY I AND II. 4(2-6) each; II and I respectively. Prerequisite: Chem. 123, El. Org. Chemistry. Dr. Bushnell and Dr. Brandly.

I: Distribution and morphological and biochemical features of microorganisms; factors necessary for the development and cultivation of bacteria; fundamental principles of bacteriology as applied to veterinary medicine. II: Morphology, powers of resistance, pathogenesis, distribution, channels of infection, and means of dissemination of pathogenic bacteria; epizootic and epidemic diseases of unknown etiology; manufacture, standardization, preparation for the market and use of vaccines, antitoxins, and other biological products related to diagnosis, prevention, and treatment of specific infectious diseases; and various other topics.

Laboratory.—I: General laboratory technic; pathogenic microorganisms studied morphologically, culturally, and biochemically; quantitative and qualitative examinations of milk, and of water. II: Microscopical and cultural characteristics of pathogenic microorganisms continued; laboratory animal inoculations, autopsy, and diagnosis; prevention and treatment of specific infectious diseases; experimental production of opsonins, antitoxins, agglutinins, precipitins, and cytolysins; etc. Deposit, \$10.

121A. HOUSEHOLD MICROBIOLOGY. 3(1-6); I and II. Not open to students who have credit in Bact. 101 or 106. Prerequisite: Chem. 121, Organic Chemistry HE. Mr. Fay and Mr. Foltz.

Classification, distribution, and relative importance of bacteria; morphological and biochemical characters of microorganisms; factors necessary for the proper development of bacteria; fundamental principles of the science as applied to household economics.

Laboratory.—Practical applications of theories discussed in the classroom, such as bacteriological study of water, milk, and foods; determination of the potability of water; microscopical study of yeasts and molds; methods of food preservation; the germicidal action of various disinfectants, etc. Deposit, \$10.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. SOIL MICROBIOLOGY. 3(3-0); II. Prerequisite: Course 101 or 106. Dr. Gainey.

The influences of depth and character of soil, temperature, moisture, chemical action, aëration, and other factors upon the activities of soil microorganisms; the influence of such phenomena as ammonification, nitrification, denitrification, symbiotic and nonsymbiotic nitrogen fixation upon crop production. Various texts recommended as reference books.

204. SOIL MICROBIOLOGY LABORATORY. 2(0-6); II. Prerequisite: Course 101 or 106. To accompany or follow course 202. Dr. Gainey.

The preparation of various special culture media and reagents necessary to conduct bacteriological analyses of the soil; qualitative and quantitative analysis and the laboratory study of nitrification, denitrification, and nitrogen fixation; plot experiments and field work illustrating the influence of various

factors upon the bacterial flora and the inoculation of soil with nitrogen-fixing bacteria. Deposit, \$10.

206. HYGIENIC BACTERIOLOGY. 4(2-6); I. Prerequisite: Course 101, 106, or 121A. Dr. Bushnell.

Pathogenic bacteria, especially those related to disease in man; channels of infection, and means of dissemination of pathogenic bacteria; epidemics, their cause and control; and other topics dealing with bacteria in connection with health. Various books recommended as textbooks.

Laboratory.—Microscopical and cultural study of pathogenic bacteria; technique involved in the diagnosis of *Bacterium tuberculosis* in sputum; culture of pathogenic anaërobic bacteria; the isolation and identification of pathogenic bacteria; and other practical studies of theories discussed in the classroom. Deposit, \$10.

211. DAIRY BACTERIOLOGY. 3(1-6); II. Prerequisite: Course 101, 106 or 121. Mr. Fay.

Bacterial flora of milk, butter and cheese; infectious diseases conveyed through dairy products; bacterial contaminations of milk by air, water, utensils, etc.; normal and abnormal fermentations in milk, their significance and control.

Laboratory.—Preparation of culture media necessary for dairy bacteriological work; bacteriological analysis of milk; microscopical and cultural characters of the types of miscoorganisms representing the flora of milk, butter, and cheese; and kindred practical bacteriological studies relating to dairy products. Deposit, \$10.

216. POULTRY BACTERIOLOGY. 3(1-6); II. Prerequisites: Course 101, course 106 or 111. Dr. Brandly.

Etiology, sources, and modes of infection of diseases of poultry; microbial content of freshly laid eggs, cold-storage eggs, and egg products; conditions tending toward increase or decrease of this microbial content.

Laboratory.—Study of microorganisms pathogenic for poultry; microbial content of eggs and egg preparations handled and produced under various conditions. Deposit, \$10.

217. POULTRY DISEASES. 2(2-0); II. Prerequisites: Courses 111 and 116, and Therapeutics (Surg. and Med. 162). Dr. Brandly.

Anatomy of the fowl; poultry sanitation and hygiene; a complete systematic study of the infectious diseases of all classes of domestic fowl; general diseases of a noninfectious nature; external and internal parasites of domestic fowl; minor surgical operations.

226. BACTERIOLOGICAL PROBLEMS. 1 to 4 credits; I, II and SS. Prerequisite: course 101, 106, 111 or 121A. Dr. Bushnell, Dr. Gainey, Mr. Fay, and Dr. Brandly.

Special problems assigned, credit depending upon amount and quality of work done. Deposit by arrangement with professor in charge.

230. BACTERIOLOGY SEMINAR. 1(1-0); I and II. For prerequisites, consult professor in charge. Dr. Bushnell.

Papers and discussion by members of the department and the more advanced students on all phases of current research work in bacteriology, serology, and related subjects. Graduate students in this department may be assigned to this subject for credit; others interested may visit the meetings at any time.

FOR GRADUATE CREDIT

310. RESEARCH IN BACTERIOLOGY. Credit to be arranged; I, II and SS. Prerequisites: At least two courses in this department. Dr. Bushnell, Dr. Gainey, Mr. Fay, and Dr. Brandly.

Properly qualified advanced students admitted to this course upon approval of the department head; supervision by a faculty member of the department, and subject for investigation chosen and outlined in consultation with him; opportunity to do experiment-station and advanced research work during vaca-

tion periods under faculty supervision; individual research problems for students working toward an advanced degree; upon completion, results presented in form of a thesis which, when accepted, fulfills part of the requirements for the master's degree. Amount of deposit to be arranged with the professor in charge.

Botany and Plant Pathology

Professor MELCHERS
 Professor MILLER
 Professor DAVIS
 Professor HAYMAKER
 Professor GATES
 Associate Professor DALBEY
 Assistant Professor ELMER

Instructor HORN
 Instructor NEWCOMB
 Assistant Pathologist FICKE
 Associate Pathologist FELLOWS*
 Associate Pathologist JOHNSTON*
 Graduate Assistant KINGSLEY
 Graduate Assistant BOSLEY

The instruction given in the Department of Botany and Plant Pathology has a threefold purpose: To give a training in botany for the general broadening of the student's knowledge; to give a training in the knowledge of plants that will serve as a foundation for the student's further college courses in agricultural subjects; and to instruct and direct those students who desire to investigate such problems in plant life as affect agriculture. Investigations may be undertaken in plant pathology, plant physiology, taxonomy, and ecology of plants.

In the general courses each student is supplied with a compound microscope and with all the other accessories of a modern well-equipped botanical laboratory. The laboratory for advanced study is provided with the general equipment for investigational work, and additional facilities are readily available for those who desire to pursue special lines of research. The department has an excellent herbarium, especially complete for Kansas, and a botanical library containing the usual standard texts and the principal botanical journals. The equipment owned by the department has a value of \$45,370.

COURSES IN BOTANY

FOR UNDERGRADUATE STUDY

101, 105. GENERAL BOTANY I AND II. 3(1-4, 2) each; I and SS, and II and SS., respectively. Mr. Melchers, Dr. Miller, Mr. Davis, Dr. Haymaker, Dr. Gates, Miss Dalbey, Miss Horn, Miss Newcomb, Miss Kingsley.

I: The principal life functions of plants; response of plants, such as photosynthesis, digestion, respiration, transpiration, and growth; the responses of plants to environmental conditions and physical stimuli; and the anatomy of the plant.

II: The significance of plant morphology to the allied branches of botany, such as plant physiology, taxonomy and ecology; the economic importance of the fungi and other pathogenic plants; the evolution of plants, as developed by morphological criteria.

Laboratory.—I: A series of typical experiments followed out in the laboratory and in the greenhouse. Charge, \$3.50.

II: Study of the morphology of the typical representatives of the great groups of the plant kingdom, the ecological factors affecting plants, and their identification under both winter and summer conditions by use of an identification key. Charge, \$3.50.

126. MEDICAL BOTANY. 2(1-3); I. Prerequisite: High-school botany or its equivalent. Dr. Gates.

The principal stock-poisoning plants of the range; habitat, poisonous properties, and methods of control and elimination of native poisonous plants.

Laboratory.—A study of the native poisonous plants of the United States, but chiefly of the Western states. Charge, \$2.

* In cooperation with the U. S. Department of Agriculture.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. FRUIT CROP DISEASES. 2(1-2, 1); I. Prerequisite: Course 205. Offered in 1929-'30 and in alternate years thereafter. Dr. Haymaker.

Diseases affecting fruit crops of all kinds; methods and measures for controlling these diseases; preparation and practical application of standard sprays.

Laboratory.—A detailed study of each disease affecting the major fruit crops; a detailed microscopic study of the organism causing the disease. Charge, \$2.

205. PLANT PATHOLOGY I (or ECONOMIC PLANT DISEASES). 3(1-4, 2) or 3(2-3); I and SS. Prerequisites: Courses 101 and 105. Mr. Melchers, Dr. Haymaker and Dr. Elmer.

Causes and symptoms of plant diseases, infection phenomena, control of plant diseases, breeding for resistance, and plant quarantine.

Laboratory.—Work in the recognition of all the more common plant diseases of the farm, orchard, and garden; detailed microscopic studies of diseased tissues and identification of the fungous pathogens which cause them. Charge, \$2.

206. MORPHOLOGY OF THE FUNGI. 3(1-6); I. Prerequisite: Course 205. Offered in 1930-'31 and in alternate years thereafter. Dr. Haymaker.

Structure of slime molds, mold-like bacteria, and fungi studied to determine taxonomic relationships; especial attention to organisms capable of causing disease in plants.

208. PLANT PHYSIOLOGY I. 3(3-0); I. Prerequisites: Courses 101 and 105, and Chemistry I and II. Dr. Miller.

A detailed study of such subjects as the root systems of plants, absorption, wilting coefficient, resistance to drought, transpiration, water requirement, photosynthesis, respiration, digestion, and growth with special stress on the phases pertaining to agriculture.

209. PLANT PHYSIOLOGY II. 2(0-4); II. Prerequisite: Course 208. Dr. Miller.

Methods used in obtaining experimental data in regard to the more common functions of plants. Charge, \$5:

212. PROBLEMS IN BOTANICAL INSTRUCTION. 3(2-3); SS. Prerequisite: Ten credit hours in botany or in courses of botanical nature. Dr. Haymaker.

Advanced work in the morphology, anatomy, physiology, taxonomy, and diseases of plants; special methods of teaching technic in presenting botany to high-school and college students. This course may be used in fulfilling the educational requirements for the state teacher's certificate. Charge, \$2.

215. PLANT HISTOLOGY. 2(0-6); II. Prerequisite: Course 101 or 105. Offered in 1929-'30 and in alternate years thereafter. Miss Dalbey.

A thorough training in the principles and practice of microtechnical methods in botany, including the study of anatomy of the higher plants.

218. FIELD BOTANY. 3 credits; SS. Prerequisites: Courses 101 and 105. Dr. Haymaker.

A study of the technical terms used in different keys and texts for the identification of various plants; the different systems of classification and nomenclature considered from historical and utilitarian standpoints; history of the higher plants from an evolutionary viewpoint.

Laboratory.—Study and identification of the vegetation of nearby prairies, woodland, and swamps; morphological characteristics, distribution, habits of plants and their relation to different environmental conditions; poisonous or medicinal properties of native plants; and allied subjects. Charge, \$2.

220. BOTANICAL SEMINAR. 1(1-0); I and II. For prerequisites, consult professor in charge.

Presentation of investigational work in botany, including plant pathology, plant physiology, plant ecology, taxonomy, morphology, and genetics; funda-

mental papers along botanical lines reviewed and a digest presented. Graduate students taking major or minor work in the Department of Botany are expected to attend these sessions and take part in the programs.

225. TAXONOMIC BOTANY OF THE FLOWERING PLANTS. 3(1-4,2); I. Prerequisites: Courses 101 and 105. Dr. Gates.

Terms employed; development of the more important systems of classification; and consideration of families of plants.

Laboratory.—Study of selected flower types representing the principal orders and families of plants; identification of plants in field and in the laboratory. Charge, \$2.

228. PLANT ECOLOGY. 2(2-0); II. Prerequisites: Courses 101 and 105. Dr. Gates.

The structure and dynamics of vegetation.

Laboratory.—With the opening of vegetation in the spring, field trips are taken to selected places.

232. BOTANICAL PROBLEMS. 1 to 5 credits; I, II and SS. Prerequisites: Courses 101 and 105, and approval by the head of the department. Mr. Melchers, Dr. Miller, Mr. Davis, Dr. Haymaker, Dr. Gates, Miss Dalbey, Dr. Elmer, and Miss Horn.

A student wishing to pursue a special field of work not definitely represented by one of the undergraduate elective courses may do so upon consultation with the instructor. Charge, \$2.

234. PHYTOGEOGRAPHY. 2(2-0); II. Prerequisites: Courses 101 and 105. Offered in 1929-'30 and in alternate years thereafter. Dr. Gates.

The distribution and characteristics of vegetation.

240. FIELD-CROP DISEASES. 2(1-2, 1); II. Prerequisite: Course 205. Offered in 1930-'31 and in alternate years thereafter. Mr. Melchers.

The historical development of phytopathology; the various factors entering into the problem of disease resistance in plants; Breeding for resistance; the most important literature on the subject.

Laboratory.—A detailed microscopic and symptom study of the fungous, bacterial, and nonparasitic plant diseases attacking cereal and forage crops other than those considered in Plant Pathology I. Charge, \$2.

245. VEGETABLE DISEASES. 2(1-2, 1); II. Prerequisite: Course 205. Offered in 1929-'30 and in alternate years thereafter. Mr. Melchers.

The problem of disease resistance in plants; breeding for disease resistance in vegetables.

Laboratory.—A detailed microscopic and symptom study of the fungous, bacterial, nonparasitic, and degenerative diseases attacking vegetables. Charge, \$2.

265. LITERATURE OF BOTANY. 1(1-0); I and II. Prerequisites: Courses 101, 105, and 205. Miss Horn.

Aims of the course: (1) To become acquainted with the more important sources of botanical literature, including the texts, monographs, etc., of noted authors; (2) to study the periodicals containing articles relating to botany; (3) to learn to use the publications containing citations and abstracts of papers; and (4) to become acquainted with the work of modern botanists by reviewing the articles appearing in current periodicals, experiment station reports, etc. Graduate students majoring in botany are expected to take the course. The subject may be continued the second semester for credit.

FOR GRADUATE CREDIT

301A. PLANT PATHOLOGY III. 3(1-4,2); I. Prerequisite: Course 205. Offered in 1930-'31 and in alternate years thereafter. Dr. Elmer.

A course in phytopathological technic; a close and extended study of the pathogenic organisms which cause plant disease; preparation of various kinds of culture media, isolation and culture of pathogenic organisms, nutrition of

fungi, studies in enzyme secretion and action, micrometry, incubation and infection phenomena, etc. Charge, \$5.

310. RESEARCH IN BOTANY. 1 to 12 credits; I, II, and SS.

Research in the various fields of botany may be outlined. A member of the department staff is chosen by the student as his major instructor in the line of work which he wishes to pursue. Upon the completion of the work it may be submitted in part or as a whole towards the masters's thesis. Work is offered in the following lines:

Plant Pathology. Mr. Melchers, Dr. Haymaker, and Dr. Elmer.

Plant Physiology. Mr. Davis and Dr. Miller.

Taxonomy and Ecology. Dr. Gates and Miss Horn.

Histology, Morphology and Anatomy. Miss Dalbey.

Chemistry

Professor KING
 Professor HUGHES
 Professor BRUBAKER
 Professor COLVER
 Associate Professor TAGUE
 Associate Professor LATSHAW
 Associate Professor KEITH
 Associate Professor BROWN
 Assistant Professor VAN WINKLE
 Assistant Professor HALL
 Assistant Professor PERKINS
 Assistant Professor HARRISS
 Assistant Professor WHITNAH

Assistant Professor LASH
 Assistant Professor BARHAM
 Instructor MARLOW
 Instructor ANDREWS
 Instructor MCDOWELL
 Instructor TYNER
 Instructor SMITH
 Instructor REED
 Instructor _____
 Graduate Assistant SHENK
 Graduate Assistant MUNDELL
 Graduate Assistant TABOR
 Graduate Assistant HUBBARD

All of the industries are becoming more and more dependent for their highest success upon intelligent application of the physical and biological sciences, and the social sciences are making their greatest progress by tracing their phenomena back to the physical and chemical changes that accompany them. A study of chemistry and physics is therefore essential to any understanding of the processes of nature or of human industry. In the instruction in chemistry the aim is to insist upon a mastery of the chief concepts of the pure science through the agency of textbook drill, accompanied by demonstrations in the lecture room, and experimental observation by the student himself in the laboratory. As the course proceeds, illustrations of chemical principles are drawn from the industrial processes of the chemical, agricultural, domestic, and other arts, thus impressing upon the mind the practical nature of the study. The ultimate object of instruction in this science is to develop in the student the power to form independent judgments upon the manifold problems of daily life in which chemistry plays a part.

The lecture rooms are amply equipped for experiments and demonstrations, and laboratories are designed to accommodate 1,363 students each semester in freshman work and qualitative analysis. The laboratories for more advanced work provide space for 324 students, and are well supplied with general and special facilities. The state work in foods, feeding stuffs, and fertilizers, and the chemical investigations of the Experiment Station in soils, crops, animal nutrition, etc., afford unusually good opportunities for students to obtain experience in practical chemistry. In all of the laboratory work the student is required to give the designated amount of time, and at least a certain amount of work must be satisfactorily performed in order to obtain credit.

The Department of Chemistry possesses equipment valued at \$67,817.

COURSES IN CHEMISTRY

FOR UNDERGRADUATE CREDIT

101, 102. CHEMISTRY I AND II. 5(3-6) each; I and II, and SS. each. Not open to students who have credit in Chem. 105, 107, 108 or 110. Prerequisite: for II, Chemistry I. Dr. King, Dr. Keith, Miss Harriss, Dr. Lash, Mr. Marlow, Mr. McDowell, Mr. Tyner, Miss Smith, Mr. Tabor, and Mr. Hubbard.

I: The principal theoretical conceptions of chemistry, principles of nomenclature, significance of formulas, chemical equations, etc.; practical uses of the substances and processes used in metallurgy, engineering, agriculture, and other arts.

II: Completion of the study of general chemistry; general principles of qualitative analysis.

Laboratory.—I: Experiments touching preparation and properties of the more important substances performed independently by the student, the objects being here as in other courses to illustrate chemical phenomena, to teach care in manipulation, attentive observation, logical deduction, and discrimination and accuracy in recording results and conclusions. Deposit, \$10.

II: Ordinary methods of separation and detection of the more common metals, nonmetals, acids, bases, and salts. Deposit, \$10.

105. CHEMISTRY (VET.). 5(3-6); I and II. Not open to students who have credit in Chem. 101, 102, 107, 108 or 110. Dr. Lash.

Fundamental laws and theories of chemistry, elements and their inorganic compounds; emphasis on the application of chemistry to the arts and industries.

Laboratory.—Training in manipulation and first-hand knowledge of the important laws of chemistry and the properties of substances studied, by use of appropriate experiments performed by the student himself. Deposit, \$10.

107, 108. CHEMISTRY E-I AND E-II. 4(3-3) each; I and II respectively. Not open to students who have credit in Chem. 101 and 102, respectively. Dr. King, Dr. Van Winkle, Mr. Andrews, Mr. Reed, Mr. Shenk, and Mr. Mundell.

I: General chemistry; fundamental principles of chemistry which have a special bearing upon engineering and engineering material.

II. General chemistry and qualitative analysis.

Laboratory.—I: Experimental work on the topics considered in the classroom. Deposit, \$7.50.

II: Qualitative analysis; a systematic study of the chemistry of the more common metals and acids; analysis of alloys, minerals, and ores. Deposit, \$7.50.

110. GENERAL CHEMISTRY. 5(3-6); I. Not open to students having credit in any college course in inorganic chemistry. Dr. King, Mr. Wampler, Miss Harriss, Dr. Lash, Mr. Marlow, Mr. McDowell, Mr. Tyner, Miss Smith, Mr. Tabor, and Mr. Hubbard.

A general treatment of some of the principal laws and theories of chemistry; preparation, properties, and uses of some of the important metallic and non-metallic substances.

Laboratory.—Actual preparation and study of the properties of many of the elements and compounds mentioned in the lectures; applications of some of the laws. Deposit, \$10.

121. ORGANIC CHEMISTRY (HE). 5(3-6); I and II. Not open to students who have credit in Chem. 122, 218 or 219, and for only two hours to those having credit in Chem. 123. Prerequisite: Chemistry II. Dr. Colver and Dr. Barham.

The more important classes of organic compounds, with special attention to those organic compounds which are used for clothing, fuel, light, antiseptics, disinfectants, anæsthetics, medicinals, solvents, in the commercial manufacture of other important products, as well as to many other compounds which contribute to a fuller understanding of the systematic relations existing among all organic compounds.

Laboratory.—Preparation of one or more representative examples of most of the classes of compounds taken up in the classroom; study of their physical properties and of their chemical properties as shown by typical reactions. Deposit, \$10.

122. GENERAL ORGANIC CHEMISTRY. 5(3-6); I and II. Not open to students who have college credit in organic chemistry, except that it may be taken for two hours credit by students who have completed Chem. 123. Prerequisite: Chem. 105 or 110. Dr. Colver, Dr. Barham, Mr. Marlow, and Mr. Tyner.

General study of some of the more important classes of organic compounds; a more detailed study of those hydrocarbons, alcohols, ethers, aldehydes, ketones, organic acids, waxes, fats, carbohydrates, and proteins which are of general interest to agricultural students.

Laboratory.—Preparation of a few organic compounds and the study of their physical and chemical properties. Deposit, \$10.

123. ELEMENTARY ORGANIC CHEMISTRY. 3(2-3); I and II. Not open to students who have college credit in organic chemistry. Prerequisite: Chem. 105 or 110. Miss Harriss.

An elementary outline dealing with some of the more important hydrocarbons, alcohols, aldehydes, ketones, organic acids, and various esters, waxes, fats, carbohydrates, and proteins, with special emphasis on their toxicological and physiological properties.

Laboratory.—Preparation of a few organic compounds and the study of their physical and chemical properties. Deposit, \$7.50.

130. INSPECTION TRIP. No credit hours. Dr. Brown.

A large number of manufacturing plants of chemical and chemical engineering nature are visited. Different types of plants are selected, only one of each type being visited. An effort is made to vary the trip from year to year and to include such manufacturing centers as Kansas City, St. Louis, and Chicago. The cost of the trip varies from about \$30 to not more than \$50, depending on the places visited.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. INORGANIC PREPARATIONS. 1 credit for each 3 hrs. of laboratory; I and II. Prerequisite: Chemistry II. Dr. Brubaker.

Preparation and purification of some typical inorganic compounds, of those of more complex composition, and compounds of the rarer elements. Charge, \$10.

203, 204. INDUSTRIAL CHEMISTRY I AND II. 5(3-6) each; I and II respectively. Prerequisite or concurrent: Physical Chemistry. Dr. Brown.

The fundamental course in industrial chemistry, dealing with the problems of the chemical industries, and placing stress upon the economic questions involved in chemical manufacturing, materials of plant construction, as well as the engineering operations involved in chemical engineering, and the principles underlying the applications of chemistry and engineering to a selected number of chemical industries.

Laboratory.—An introduction to industrial chemical research through assigned manufacturing problems, beginning with the general chemical industries. Deposit, \$10.

205. INDUSTRIAL ELECTROCHEMISTRY. 2(2-0); II. Offered in case of sufficient demand. Prerequisites: College courses in general chemistry and physics. Dr. Brown.

The principles of voltameters, electrochemical methods of analysis, electroplating, electrotyping, and the production of metallic objects by electroplating methods, electrolytic refining of metals, manufacture of various industrial products by electrolytic and electrothermic methods, etc.

206. PHYSICAL CHEMISTRY I. 5(3-6); I. Prerequisites: Organic Chemistry and Quantitative Analysis; Calculus, though not a prerequisite, is recommended. Dr. King and Dr. Hall.

The modern conception of the atom and radioactive phenomena; relations with matter in the gaseous, liquid, and solid states; emphasis placed upon osmosis, solution including colloids, surface tension, adsorption, equilibria, ionization, hydrolysis, electromotive force, and hydrogen ion concentration.

Laboratory.—The laboratory follows the subject matter of the lectures very closely. Deposit, \$10.

207. ADVANCED INORGANIC CHEMISTRY. 3(3-0); I. Prerequisite: Chemistry II. Dr. Keith.

A thorough study of the facts of chemistry and their theoretical interpretations according to the views of the present; special stress upon the properties of the elements as a basis for methods of classification, and upon the rarer elements and compounds. Students electing this course are advised to take course 202.

208. HISTORY OF CHEMISTRY. 1(1-0); II. Prerequisite: Chem 206. Dr. Van Winkle.

History of the development of the principal laws and theories of chemistry, with special emphasis upon the failures and triumphs of the founders of chemical science.

209. SURFACE TENSION AND RELATED PHENOMENA. 2(2-0); I or II, when requested by a sufficient number. Prerequisite: Chem. 206. Dr. King.

Methods of measuring surface tension; surface energetics; relation of surface tension to absorption; and colloidal formation.

210. CHEMICAL STATICS AND DYNAMICS. 2(2-0); II, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry and calculus. Dr. King.

Chemical equilibria, velocity of chemical reactions, hydrolysis, catalysis, etc.

211. PAINT OILS AND PIGMENTS. 2(2-0); I, by appointment. Prerequisites: Satisfactory courses in organic chemistry and qualitative analysis. Dr. King.

Extraction, purification, and properties of the oils commonly used in paints; manufacture and properties of paint pigments; the products employed as protective coverings for both wood and metal.

213. COLLOIDAL CHEMISTRY. 2(2-0); II, when requested by a sufficient number. Prerequisite: Chem. 206. Dr. Tague.

Suspensoids and emulsoids, optical and electrical properties of colloids, Brownian movement, action of electrolytes on colloids, adsorption and surface phenomena, and short review of the method for the preparation of colloids.

215. CHEMICAL THERMODYNAMICS. 3(3-0); II, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry and calculus. Dr. Keith.

Those fundamental principles of thermodynamics which are particularly applicable to chemistry, such as the first and second laws of thermodynamics and their application to fusion, evaporation, phase rule, chemical equilibrium, chemical affinity, electromotive force, surface tension and adsorption.

216. THEORETICAL ELECTROCHEMISTRY. 3(3-0); I, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry. Dr. Keith.

The theory of electrolytic cells, the electrochemical series of metals, electrodes, potentials, polarization, overvoltage, and deposition of metals by electrolysis.

217. ELECTROCHEMISTRY LABORATORY. 2(0-6); II. Prerequisite; Physical Chemistry I or equivalent. Dr. Hall.

A laboratory course designed and recommended to accompany or follow Theoretical Electrochemistry. Selected experiments in electrometric titrations, storage battery efficiency, polarization, overvoltage, electrode potentials, and related subjects. Deposit, \$10.

218, 219. ORGANIC CHEMISTRY I AND II. 4(2-6) each; I and II, respectively. Prerequisite: Chemistry II. Dr. Colver.

I: The aliphatic hydrocarbons, alcohols, ethers, aldehydes, ketones, acids, esters, amides, and related compounds considered particularly from the standpoint of structure, methods of laboratory and commercial preparation, reactions and uses; special attention to such topics as structural, geometrical, and optical isomerism, and the use of acetoacetic ester in organic synthesis.

II. Structure, methods of laboratory and commercial preparation, reactions and uses of the aromatic compounds, orientating influence of various groups; structure and reactions of the diazonium compounds; the different classes of dyes, the alkaloids, the terpenes, and a few heterocyclic compounds.

Laboratory.—I: Preparation, purification, and reactions of one or more typical examples of most of the groups of compounds studied in the classroom. Deposit, \$10.

II: Various preparations that illustrate the reactions characteristic of aromatic compounds; determination of carbon, hydrogen, and nitrogen in pure unknown organic compounds by the combustion method. Deposit, \$10.

223. ORGANIC PREPARATIONS. 1(0-3) to 5(0-15); I. Prerequisite: Organic Chemistry II. Dr. Colver.

Such compounds prepared as give a thorough knowledge of the fundamental principles of synthetic organic chemistry. Deposit, \$10.

224. QUALITATIVE ORGANIC ANALYSIS. 2 (0-6); II, when requested by sufficient number. Prerequisite: Course 219. Dr. Colver.

Characteristic reactions of the various classes of organic compounds; class reactions, using known compounds; classification and identification of pure, unknown substances and mixtures. Charge, \$10.

225. STEREOISOMERIC AND TAUTOMERIC COMPOUNDS. 2(2-0); II, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Optical isomerism and methods of determining the configuration of the asymmetric carbon atoms of sugar; geometrical isomerism; and keto-enol tautomerism.

226. CARBOCYCLIC AND HETEROCYCLIC COMPOUNDS. 2(2-0); II, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Structure, orientation, methods of synthesis, and reactions of benzene, naphthalene, anthracene and derivatives; furane, pyrrol, thiophene, pyridine, quinoline, isoquinoline, purine, pyrimidine, hydantoin, and some structurally related substances.

228. SPECIAL REACTIONS OF ORGANIC COMPOUNDS. 2(2-0); I, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Some of the less common reactions which take place with certain aliphatic and aromatic compounds.

230. PRINCIPLES OF ANIMAL NUTRITION. 3(3-0); II. Prerequisite: Organic Chemistry. Dr. Hughes.

The relation of animals to matter and energy, and the physiological principles involved.

231. PHYSIOLOGICAL CHEMISTRY. 5(3-6); I. Not open to students who have credit in Chem. 232 or 233. Prerequisite: An acceptable course in organic chemistry. Dr. Hughes.

The synthetic and analytical chemical changes that accompany the physiological processes of animals and plants.

Laboratory.—Practical work with the compounds and processes discussed in the classroom. Deposit, \$10.

234. BIOCHEMICAL PREPARATIONS. 5(0-15); II. Prerequisites: Organic Chemistry II, and Physiological Chemistry. Dr. Hughes.

The isolation, purification, and analysis of a number of compounds which are of importance in biochemistry and nutrition. Deposit, \$10.

235. PATHOLOGICAL CHEMISTRY. 2(2-0); when requested by a sufficient number. Prerequisite: An approved course in physiological chemistry. Dr. Hughes.

The chemical facts involved in the causation, progress, and results of disease discussed under the following heads: Inflammation, degeneration, infection, anæmia, tuberculosis, dyspepsia, typhoid fever, jaundice, nephritis, diabetes, gout, rheumatism, and intoxication.

236A. THE CHEMISTRY OF THE PROTEINS. 3(2-3); I, when requested by a sufficient number. Prerequisite: An approved course in organic chemistry. Dr. Tague.

The chemistry of the proteins, particularly as regards their sources, isola-

tion, purification and uses, their derivatives and degradation products. Deposit, \$7.50.

237. **BIOCHEMICAL ANALYSIS.** 2(0-6); I and II. By appointment. Prerequisite: Physiological Chemistry. Dr. Hughes.

Quantitative determinations of the organic and inorganic constituents of blood, urine, and other biological material. Deposit, \$10.

238. **CHEMISTRY OF ENZYME ACTION.** 2(2-0); I. Prerequisite: Physical Chemistry. Dr. Hughes.

A brief review of catalysis; physical and chemical properties of enzyme preparations, and the reactions catalyzed by them.

238A. **CATALYSIS IN ORGANIC CHEMISTRY.** 3(3-0); I. Prerequisites: Organic Chemistry II and Physical Chemistry. Dr. Barham.

The theories of catalysis and its applications along with some of the most recent developments in that field.

239. **LABORATORY TECHNIQUE IN ANIMAL NUTRITION.** 2(0-6); I and II. Prerequisite: An acceptable course in nutrition or physiological chemistry. Dr. Hughes.

Preparations of diet and the care of experimental animals used in the study of various nutritional problems. Deposit, \$10.

240. **ADVANCED QUALITATIVE ANALYSIS.** 3(1-6); I, when requested by a sufficient number. Prerequisite: Chemistry II. Dr. Van Winkle.

A systematic study of the properties of the acid and basic elements and their compounds as shown in a detailed study of systematic analysis; the application of chemistry theory to analytical reactions. Deposit, \$10.

241. **QUANTITATIVE ANALYSIS.** 5(1-12); II. Prerequisite: Chemistry II or equivalent. Dr. Brubaker.

Practically the same as course 250 and 251. Deposit, \$10.

242. **FIRE ASSAYING.** 2(0-6); I. Prerequisite: Course 241. Dr. Brown.

The ordinary methods of fire assaying, with some attention to wet assaying. Fire assays of ores containing such metals as copper, zinc, lead, bismuth, tin, silver, and gold. Deposit, \$10.

243. **GAS ANALYSIS.** 1(0-3); I. Prerequisite: Quantitative Analysis. Dr. Brown.

Use of standard apparatus in analysis of gases; analysis of air, flue and furnace gases, and illuminating gas. Deposit, \$7.50.

245. **MICROCHEMICAL METHODS OF ANALYSIS.** 1(0-3); I and II, when requested by a sufficient number. Prerequisites: Organic Chemistry and Quantitative Analysis I. Dr. Brubaker.

The various methods of using the microscope in chemical analysis, both qualitative and quantitative, applied to both inorganic substances and to vegetable and animal products. Deposit, \$7.50.

250, 251. **QUANTITATIVE ANALYSIS A AND B.** 3(1-6) each; I and II, respectively. Prerequisites: For A, Chemistry II; for B, course A. Dr. Brubaker.

Course A: General procedures of gravimetric analysis; chemical theory as applied to quantitative reactions. Deposit, \$10.

Course B: General procedures in volumetric analysis; preparation of standard solutions and their uses. Deposit, \$10.

252A. **CHEMISTRY OF SOILS AND FERTILIZERS.** 2(0-6); I. Prerequisite: Quantitative Analysis I, or equivalent. Dr. Perkins.

The most important chemical methods used in the analysis and investigations of soils and fertilizers. Deposit, \$10.

253A. **CHEMISTRY OF CROPS.** 2(0-6); II. Prerequisites: Organic Chemistry and Quantitative Analysis I, or equivalent. Dr. Perkins.

The most important chemical methods used in the analysis and investigations of substances present in plants and plant products. Deposit, \$10.

254. DAIRY CHEMISTRY. 3(1-6); I. Prerequisites: Organic Chemistry and Chem. 250. Dr. Whitnah.

Chemical compounds present in milk, butter, cheese, and other dairy products; chemical changes effected by conditions of handling dairy products; a review of literature relating to recent investigational work in dairy chemistry.

Laboratory.—The most important chemical methods used in the analysis and investigation of dairy products. Deposit, \$10.

256. INSECTICIDES AND FUNGICIDES. 2(2-0); given when requested by a sufficient number. Prerequisites: Satisfactory courses in organic chemistry and quantitative analysis. Mr. Latshaw.

The manufacture of spray materials; the chemistry involved in mixing, and the theory of their toxic actions.

257. FOOD ANALYSIS. 3(0-9); II, when requested by a sufficient number. Prerequisites: Organic Chemistry and course 250. Dr. Brubaker.

The quantitative methods employed in the analysis of foodstuffs; practice in testing for the presence of adulterants, preservatives, and coloring materials. Deposit, \$10.

260. ADVANCED QUANTITATIVE ANALYSIS. 1 credit for each 3 hrs. of laboratory; I. Prerequisites: Courses 250 and 251. Dr. Brubaker.

Included here, any kind of quantitative chemical work not otherwise designated; a large opportunity for advanced work afforded by the various research and state laboratories. Deposit, \$10.

270. CHEMISTRY PROBLEMS. 1 to 5 credits; I, II, and SS.

Individual problems to fulfill the thesis requirements of students in agricultural chemistry, biochemistry, and industrial curricula.

271. SELECTED TOPICS IN INORGANIC CHEMISTRY. 2(2-0); II. Prerequisite: A course in physical chemistry. Dr. Lash.

Material from such topics as thermal analysis, temperature measurements, atomic hydrogen, the hydrides, the halogens, corrosion of metals, and the ammonia system.

272. PHYSICAL CHEMISTRY II. 3(3-0); II. Prerequisite: A beginning course in physical chemistry. Dr. King.

A continuation of the general principles of physical chemistry, with particular attention given to the elementary principle of thermodynamics, chemical kinetics, homogeneous and heterogeneous equilibrium, electromotive force, photochemistry, electrical theory of matter, radio activity, and atomic structure.

275. CHEMISTRY SEMINAR. Once a week, throughout the year, the officers of the department, with the more advanced students and such others as wish to, meet for papers and discussion upon topics representing the progress of chemical science, chiefly as found in the current journals. The preparation of subjects for presentation at these meetings may be made a part of the credit work of advanced students.

280. ELEMENTS OF CHEMICAL ENGINEERING. 3(2-3); I. Prerequisites: Calculus, Physical Chemistry. Physical Chemistry may be taken concurrently. Dr. Brown.

The design and use of chemical engineering equipment; chemical engineering operations such as storage, disintegration, mechanical separation, heat flow, fluid flow, filtration, crystallization, calcination drying, evaporation, distillation, conveying, refrigeration, absorption, mixing and high pressure work. Deposit, \$7.50.

281. CHEMICAL ENGINEERING PRINCIPLES. 2(2-0); II. Prerequisites: Same as for Elements of Chemical Engineering. Dr. Brown.

The principles of plant location, plant layout and design; the principles of organization and control of chemical plants, utilization of fuels and energy, and chemical engineering operation costs; laboratory research and technical development.

FOR GRADUATE CREDIT

301. **CHEMICAL RESEARCH.** Excellent opportunities are offered students to undertake research work in chemistry. Such work is being constantly conducted in the laboratories of the department in connection with the Agricultural and Engineering Experiment Stations. The State Food Laboratory and the laboratories for analysis of feeds and fertilizers are also accessible to students desiring research along such lines. Much emphasis is placed upon research in the department, and all graduate students whose training is adequate are encouraged to participate. Students working out their master's thesis in the Department of Chemistry are assigned to this course. Work is offered in the following lines:

Agricultural Chemistry. Dr. King, Mr. Latshaw, and Dr. Perkins.

Industrial and Engineering Chemistry. Dr. Brown and Dr. Van Winkle.

Analytical Chemistry. Dr. Brubaker and Mr. Latshaw.

Organic Chemistry. Dr. Colver and Dr. Barham.

Biochemistry. Dr. Hughes, Dr. Tague, and Dr. Whitnah.

General and Physical Chemistry. Dr. King, Dr. Hall, Dr. Keith, Dr. Lash.

305. **ANIMAL NUTRITION SEMINAR.** 1 credit for the year. For prerequisites, consult instructor. Dr. Hughes.

Experiments in nutrition, the methods employed, and validity of conclusions drawn.

Economics and Sociology

Professor KAMMEYER
Professor ANDERSON*
Associate Professor HILL
Assistant Professor SPURRIER

Assistant Professor STEWART
Assistant Professor HOLTZ
Instructor JONES
Instructor THOMPSON†

Some of the courses offered by this department are either required or elective in most of the curricula of the several divisions of the College. In the curriculum in commerce more than twenty-eight per cent of the required courses are given by this department; and of the sixteen special electives recommended for students in this curriculum, eleven are courses offered by this department. This shows a wide distribution of courses among the curricula and a concentration of courses in the curriculum in commerce. While special emphasis is placed on the relation of these courses to commerce and industry, their cultural advantage is not neglected. Vocational training is essential and important to students in their preparation for occupational activity, but the state also needs men and women trained for citizenship. It is the purpose of this department to plan and direct its work with these ends in view.

The department has equipment valued at \$840.

COURSES IN ECONOMICS

FOR UNDERGRADUATE CREDIT

101. **ECONOMICS.** 3(3-0); I, II, and SS. Not open to students who have credit in Agricultural Economics. Dr. Kammeyer, Mr. Spurrier, Mr. Stewart, and Mr. Thompson.

An introductory study of the fundamental facts, concepts, and principles pertaining to modern economic phenomena; a foundation course for all specialized studies in economics.

116. **MONEY AND BANKING.** 3(3-0); I, II, and SS. Prerequisite: Economics. Dr. Kammeyer and Mr. Thompson.

The nature, history, and functions of money; its place as a factor in man's economic progress, and its importance as such in his business activities as organized to-day; banking in its historic forms; the federal reserve system, the

* Absent on leave, year 1929-'30.

† Appointed for the year 1929-'30.

federal farm loan system, and state banks; savings banks, trust companies, building and loan associations and other institutional forms of credit.

122. ECONOMIC GEOGRAPHY. 2(2-0); I and SS. Dr. Holtz. Mr. Spurrier. The major facts and principles relative to the origin, distribution, and development of the industries and commerce of the world.

126. BUSINESS MANAGEMENT. 2(2-0); I, II, and SS. Prerequisite: Economics, or may be taken concurrently. Dr. Kammeyer and Mr. Spurrier.

The business structure and executive functions—an analysis of management factors such as personnel, finance, accounting, production, and marketing. An elementary course covering the entire range of business endeavor.

FOR GRADUATE AND UNDERGRADUATE CREDIT

213. PUBLIC FINANCE. 2(2-0); I. Prerequisite: Economics. Mr. Thompson.

The major facts and principles relative to public expenditures; public revenues, especially taxation; the administration of public funds; fiscal emergencies and public indebtedness; the budget and other means of control over expenditures and revenues.

217. BUSINESS FINANCE. 3(3-0); II. Prerequisite: Money and Banking (Econ. 116). Mr. Thompson.

Business financing, with special emphasis upon the problems of financing corporations; the securing of capital, internal financial management, financial methods in case of receivership and corporate reorganization.

221. INVESTMENTS. 2(2-0); II and SS. Prerequisite: Money and Banking (Econ. 116). Mr. Spurrier.

Financial types of investment securities; investment risks; effect of economic trends upon investment values; functions of investment banks; investment policies suitable for various investment classes.

229. TRANSPORTATION PROBLEMS. 2(2-0); II. Prerequisite: Economics. Mr. Thompson.

A brief review of the development of transportation, followed by a study of the economic characteristics of the railroad industry, results of unrestrained competition in the industry, adoption of public regulation, and the legal and economic phases of regulation.

233. LABOR PROBLEMS. 2(2-0); I and II. Prerequisite: Economics or Sociology. Dr. Holtz.

Present status and trends in industrial relations; the background in history and activities of labor organizations and employers' associations; legislation bearing upon industrial relations; new problems of personnel administration, coöperation, profit-sharing, industrial partnership, etc.

242. PROPERTY INSURANCE. 2(2-0); I, SS. Prerequisite: Economics. Mr. Spurrier.

Fire, marine, automobile, title, and credit insurance, and corporate bonding; also other forms of property insurance, such as burglary and theft, plate glass, steam boiler, windstorm and tornado, etc.

244. LIFE INSURANCE. 2(2-0); II, SS. Prerequisite; Economics. Mr. Spurrier.

Nature and uses of life insurance, kinds of policies, determination of premiums, reserves, surrender values, dividends, etc.; the organization and management of legal reserve companies, and important legal phases of life insurance.

245. MARKETING. 2(2-0); I. Prerequisite: Economics. Mr. Spurrier.

Marketing functions, such as assembling and grading of products, storing, transportation, financing and risk taking, stimulation of demand, and merchandising; marketing agencies and methods by means of which products are moved from producer to consumer; basic marketing systems; retailing as

carried on by department, specialty, and chain stores, and mail order houses; marketing problems of the individual business; prices and price policies, sales planning and management, salesmanship, and advertising campaigns.

248. **ECONOMIC PROBLEMS.** Credits and hours arranged by consultation with the head of the department. Prerequisites: Economics, and a two-hour course in advanced economics. Dr. Kammeyer and Mr. Spurrier.

251. **ADVANCED ECONOMICS.** 3(3-0); I and SS. Open only to seniors and graduates. Dr. Kammeyer.

A critical study of fundamental economic principles and the writings of leading economists of the past and present. The course is designed for mature students in the field of economics.

FOR GRADUATE CREDIT

301. **RESEARCH IN ECONOMICS.** 1 to 10 credits; I, II, and SS. Prerequisites: Such courses as the problem undertaken may require. Dr. Kammeyer and Mr. Spurrier.

Graduate students who enroll in this course may elect for original investigation any acceptable problem in the general field of economics.

COURSES IN SOCIOLOGY

FOR UNDERGRADUATE CREDIT

151. **SOCIOLOGY.** 3(3-0); I, II, and SS. Dr. Hill.

The fundamental principles of social life as related to other scientific principles; their practical application to social action and organization; normal constructive social evolution emphasized; the processes of socialization, social forces, and social control, particularly in their relation to commercial, industrial, and professional leadership.

156. **RURAL SOCIOLOGY.** 3(3-0); I. Preferably a course in sociology should precede this. Dr. Hill.

The fundamental principles of the science of sociology applied to rural society; social phases of agricultural and economic movements; the relation of nation, state and county to socializing projects in rural society.

FOR GRADUATE AND UNDERGRADUATE CREDIT.

257. **SOCIAL PROBLEMS.** 2(2-0); I, II, and SS. Prerequisite: Sociology. Dr. Hill.

The social phases of population movements, dealing with the problems of quantity and quality; charity and reform organization and technique; professional social work.

267. **COMMUNITY ORGANIZATION.** 3(3-0); II and SS. Prerequisite: Sociology. Dr. Hill.

A study, on a functional basis, of organizations working in the urban and rural fields; the principles involved and the technique of organization. The student has opportunity to choose for special study an organization or institution in which he hopes to have a position of leadership for his life work. Special assistance will be given in these special studies, which may afford the capable student valuable means of approach to future employment.

270. **ADVANCED RURAL SOCIOLOGY.** 3 credits. Prerequisite: Rural Sociology. Dr. Hill.

A continuation of Rural Sociology; a wide field of reading in the literature of rural life; original research work and a thesis required.

273. **ADVANCED SOCIOLOGY.** 3 credits. Prerequisite: Course 151 (Sociology). Dr. Holtz.

A continuation of Sociology, with the view of examining critically the sociological theories of recent writers, and of laying a foundation for a constructive theory of social life.

277. HISTORY OF SOCIAL THOUGHT. 3(3-0); I. Prerequisite: Sociology. Dr. Holtz.

The development of social thought from ancient civilization to the present—the social philosophies of Plato, Aristotle, St. Augustine, Thomas Aquinas, Machiavelli, Hobbes, Locke, Hume, Montesquieu, Condorcet; and the sociological systems of Comte, Spencer, Sumpłowicz, Ratzenhofer, Tarde, Ward, and others.

279. SOCIOLOGY SEMINAR. I, II, and SS. Prerequisite: Sociology. Credits to be arranged in consultation. Dr. Hill.

Selected literature and investigation of social problems.

FOR GRADUATE CREDIT

351. RESEARCH IN SOCIOLOGY. 1 to 10 credits; I, II, and SS. Prerequisites: Such courses as the problem undertaken may require. Dr. Hill.

Graduate students who enroll in this course may elect for original investigation any acceptable problem in the field of sociology.

COURSES IN ACCOUNTING

FOR UNDERGRADUATE CREDIT

132. INSTITUTIONAL ACCOUNTING. 3(3-0); II. Mr. Stewart.

A study of elementary accounting principles and their application to the home, cafeteria, lunch and tea rooms, dormitories, clubs, hospitals, and other institutions.

133, 134. ACCOUNTING I AND II. 3(2-3) each; I, II, and SS. Prerequisite: For 134, course 133. Mr. Stewart and Mr. Jones.

I: A study of the principles and structure of accounts designed to give power to analyze commercial accounts and statements; problems and practice sets used as an application of principles to practice.

II: Partnership and corporation accounting and problems peculiar to them; valuation of balance-sheet items with special reference to depreciation, inventories, and intangibles; and several other topics.

280. ADVANCED ACCOUNTING. 3(3-0); I. Prerequisite: Course 134. Mr. Stewart and Mr. Jones.

Advanced course in accounting theory relating to depreciation, goodwill, intangibles, funds, reserves, inventories, capital accounts, income and its determination, and other special topics.

282. INCOME-TAX ACCOUNTING. 2(2-0); II. Given in 1929-'30 and alternate years thereafter. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

Preparation of federal income-tax returns, and a study of accounting problems arising in connection with them.

283. ACCOUNTING SYSTEMS. 2(2-0); II. Given 1930-'31 and alternate years thereafter. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

The construction and installation of accounting systems for commercial enterprises.

285. AUDITING. 3(3-0); I. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

Auditing accounts of commercial enterprises; attention to balance sheet and detail audits with study of both principles and practice.

287. COST ACCOUNTING. 3(3-0); II. Prerequisite: Course 134. Mr. Stewart.

A study of cost accounting principles and the principal types of cost systems now in use; methods of estimating and charging production, administrative, and selling costs.

289. GOVERNMENTAL ACCOUNTING. 2(2-0); I. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart.

Federal, state, and municipal accounts, and accounts for certain public institutions.

292. C. P. A. PROBLEMS. 3(3-0); II. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

Advanced problems taken from numerous certified public accountant examinations and covering various accounting fields. Aim is to familiarize students with typical problems used in such examinations.

Education

Professor HOLTON
 Professor ANDREWS
 Professor WILLIAMS
 Professor PETERSON
 Professor STRICKLAND
 Professor RUST
 Associate Professor DAVIDSON
 Associate Professor ALM

Instructor LANGFORD
 Instructor BAXTER
 Assistant HALL
 Assistant WILLIAMSON
 Assistant ROBERTSON
 Doctor HOLTZ
 Graduate Assistant WHITE

The courses in this department have for their controlling purpose the professional training of teachers. Two types of courses are offered: (1) courses that give the broad, fundamental principles upon which public education is based, and (2) courses that develop technic and skill in school management and the organization of the subject matter of the curricula. All courses are based upon the proposition that education supported by public taxation should function in social and vocational efficiency. The department possesses equipment valued at \$4,317.

The State Board of Education has set up the following standards or their equivalents for the certification of teachers:

1. Three-year Certificates Renewable for Life.

a. Complete four years of college work with degree.

b. At least eighteen hours of the four years' work must be taken in the Department of Education, as follows:

(1) Three semester hours in Psychology, three in Educational Administration, and three in Educational Psychology.

(2) Nine additional semester hours elected from the Department of Education, and approved by head of department.

c. Credit obtained in college courses in the teaching of special subjects will be accepted to the extent of three semester hours to apply on the required credits in Education, provided that these courses are conducted with the approval of the College Department of Education and are offered in the junior or senior year, with preliminary preparation as follows:

English.—Not less than fifteen semester hours of college credit, following at least three high-school units.

Foreign Languages.—Not less than fifteen semester hours of college credit in the language in which the teachers' course is taken, following at least three high-school units or equivalent in some foreign language or languages.

Mathematics.—Not less than fifteen semester hours of college credit, following at least two high-school units.

Physical Science.—Not less than ten semester hours of college credit in the science in which the teachers' course is taken, following at least two high-school units or equivalent in physical science.

Biological Science.—Not less than ten semester hours of college credit in the science in which the teachers' course is taken,

following at least two high-school units or its equivalent in biological science.

History.—Not less than ten semester hours of college credit, following at least two high-school units or equivalent.

In any of the above, six hours of college credit will be regarded as the equivalent of one high-school unit.

- d. Valid in any elementary or high school in Kansas.
2. Three-year Certificates Renewable for Three-year Periods.
 - a. Complete at least two years of college work, including three semester hours in Psychology, three in School Management, and three in Methods of Teaching.

Not more than fifteen semester hours in any one department of education will be accepted on transcripts showing only sixty hours of credit.
 - b. Valid in any elementary school, junior high school or high school offering not more than a two-year course of study.
 3. Certificates for Teachers of Vocational Agriculture.
 - a. Complete four years of college work, including the following:
 - (1) Not less than fifty semester hours in technical or practical agriculture.
 - (2) Not less than twenty-one hours of science related to agriculture.
 - (3) Eighteen semester hours in the Department of Education: viz., three in Psychology, three in Educational Administration, three in Educational Psychology, three in Vocational Education, three in Special Methods in Agriculture, and three in Supervised Observation and Teaching.
 - (4) Eighteen semester hours in mechanical lines related to farm-shop problems.
 - b. Valid for three years and may be renewed for life.
 4. Certificates for Teachers of Vocational Home-making.
 - a. Complete four years of college work, including the following:
 - (1) Thirty-four semester hours in technical home economics, as required in the curriculum in Home Economics, and six semester hours of electives: viz., three semester hours in Child Welfare, and three semester hours in Practice Work in Household Management.
 - (2) Eighteen hours in the Department of Education: viz., three in Psychology, three in Educational Administration, three in Educational Psychology, three in Vocational Education, three in Special Methods in Home Economics, and three in Supervised Observation and Teaching.
 - b. Valid for three years and may be renewed for life.

COURSES IN EDUCATION

FOR UNDERGRADUATE CREDIT

Psychology A, B and C are parallel courses in introductory psychology. The content of these courses is fundamentally the same, but emphasis differs according to the preparation and needs of the various groups of students as indicated below. Only one of these three courses may be taken for credit.

101. PSYCHOLOGY A. 3(3-0); I or II. Not open to juniors or seniors, or to those who have credit in courses 102 or 103. Dr. Alm and Mr. Langford.

An introduction to the fundamental facts and principles of general psychology. The physiological and neural basis of behavior; innate and acquired tendencies to reaction; the nature of the learning process and the methods and conditions which favor rapid and effective learning; individual differences as related to vocational and personal efficiency.

102. PSYCHOLOGY B. 3(3-0); I. Not open to students who have credit in courses 101 and 103. Dr. Alm.

Based on the same facts and principles as course 101, but draws largely from musical material for illustration and application; includes experimental work in the analysis and measurement of musical talent, and bears directly upon the teaching and learning of vocal and instrumental music.

103. PSYCHOLOGY C. 3(3-0); I or II. Not open to freshmen or sophomores, nor to students who have credit in courses 101 or 102. Dr. Peterson and Mr. Langford.

The same general content as course 101, with some additional materials in the application of psychology; more attention given to the methods by which new facts are discovered and interpreted.

105, 106. EDUCATIONAL ADMINISTRATION A AND B. 3(3-0) each; I or II. Only one of these courses may be taken for credit. Dr. Andrews.

Course A: The organization of state, city and county school systems; organization of school systems in Kansas, both rural and city; the school laws of Kansas.

Course B: Similar to course A in that it discusses the general principles of educational administration in a democracy, but differs from it in that it gives special emphasis to the administration and supervision of vocational agriculture, home-making, and trades and industry.

107. SCHOOL MANAGEMENT. 3(3-0); I or II. Limited to freshmen and sophomores. Dr. Strickland.

A survey of classroom and school administration and management of pupils in groups; problems of discipline, school sanitation and hygiene and school health, and general classroom efficiency. The student is shown how to develop an efficient classroom routine and class program.

109. EDUCATIONAL PSYCHOLOGY. 3(3-0); I or II. Prerequisite: General Psychology. Dr. Strickland.

The native equipment of human beings which serves as a basis for education, individual differences, and the psychology of learning.

111. METHODS OF TEACHING A. 3(3-0); I or II. Prerequisite: General Psychology. Open to freshmen and sophomores only. Dr. Strickland.

Problems of general method in classroom procedure in grades and junior high school. Required of candidates for three-year certificate renewable for three-year periods.

112. METHODS OF TEACHING B. 3(3-0); I or II. Prerequisite: General Psychology. Open to juniors and seniors only. Dr. Strickland.

Problems of general method in classroom procedure from the high school viewpoint.

113. HISTORY OF EDUCATION A. 3(3-0); I or II. Dr. Andrews.

An outline survey of the development of educational institutions and practice in Europe and America; emphasis upon institutional history rather than theory; the history of education as a conscious evolution of society.

118. EDUCATIONAL SOCIOLOGY A. 3(3-0); I, II and SS. Dr. Holton.

The group activities of the school in relation to personality traits; psychology of personality; the school's responsibility in the development of socialized personality traits.

125. VOCATIONAL EDUCATION A. 3(3-0); I or II. Prerequisite: Course 105 or 106. Dr. Williams.

A comparative study of the provisions for the different phases of vocational education in Kansas and other states and countries, and of the principles underlying such education, with emphasis upon the relation of vocational education to the community, county, state, and nation, and the part to be played by each in its development. The aim is to fit the student to plan, teach, and administer or supervise vocational work, especially in high schools.

132. SPECIAL METHODS IN THE TEACHING OF HOME ECONOMICS. 3(3-0); I, II, and SS. Prerequisites: Foods I and II, Clothing I and II, and Psychology. Mrs. Rust.

The principles of teaching applied to the selection and development of home-economics subject matter in lessons for all types of pupils, and to the conduct of laboratory and classroom exercises.

136.- SPECIAL METHODS IN THE TEACHING OF AGRICULTURE. 3(3-0); I, II, and SS. Prerequisite: Psychology. Mr. Davidson.

Training in planning lessons, organizing materials, and conducting class, laboratory, and field instructional work in vocational agriculture is the purpose of this course. The individual and class project are studied, as well as the problem of coordinating farm mechanics work.

140. SPECIAL METHODS IN THE TEACHING OF INDUSTRIAL ARTS SUBJECTS. 3(3-0); II. Prerequisites: Mechanical Drawing II, Woodworking II, and Educational Psychology. Dr. Williams.

The various lines of work included under the head of industrial arts; a series of progressive lessons worked out in each of these lines, with emphasis upon important elements; the various materials employed and the methods of utilizing them for the needs of pupils; the arrangement of courses; the outlining and presentation of assignments; preparation of assignments; preparation of laboratory material and the conduct of laboratory exercises.

141. SPECIAL METHODS IN THE TEACHING OF PHYSICS. 3(2-3).
(See Department of Physics, course 224.)

142. SPECIAL METHODS IN THE TEACHING OF MATHEMATICS. 3(3-0).
(See Department of Mathematics, course 122.)

144. METHODS OF TEACHING ENGLISH. 3(3-0); II and SS.
(See Department of English, course 134.)

145. SPECIAL METHODS IN ARITHMETIC. 2(2-0); SS.
(See Department of Mathematics, course 123.)

146. SUPERVISED TEACHING IN PHYSICAL EDUCATION. 3(0-0); I.
(See Department of Physical Education for Women, course 186.)

150. INTRODUCTION TO PHILOSOPHY. 3(3-0); I. Prerequisite: Junior standing or better. Dr. Andrews.

A study of the more important interpretations of experience and an examination of the bases of values in modern life.

160. SUPERVISED TEACHING IN HOME ECONOMICS. 3 credits; I, II, and SS. Prerequisites: Foods I and II, and Clothing I and II; prerequisite or parallel: Educ. 132. Mrs. Rust.

Supervised teaching carried on in the home economics classes of the Manhattan high school.

161. SUPERVISED OBSERVATION AND TEACHING IN AGRICULTURE. 3 credits; I and II. Prerequisites: Courses 109 and 136. Mr. Davidson.

Three weeks of observation and practice teaching in vocational agriculture classes in the Manhattan high school and other high schools by arrangement; group study of classroom problems; lesson plans and presentation criticized by the College instructor and the vocational teacher in the practice department.

163. SUPERVISED OBSERVATION AND TEACHING IN SCIENCE. 3 credits; I and II. Prerequisites: Methods of Teaching, or Educational Psychology, and at least ten hours of college credit in the science to be taught. Dr. Strickland.

Three weeks of observation and practice teaching in a science; group study of lesson plans, special methods and devices, organization of courses, etc.

170. APPLIED PSYCHOLOGY. 3(3-0); I or II. Prerequisite: Psychology. Dr. Peterson.

The psychological conditions of personal, industrial, and business efficiency as determined by observation and experiment in such special fields as adver-

tising, salesmanship, employment, scientific management, etc.; use of psychological tests in employment, vocational guidance, etc.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. RURAL LIFE AND EDUCATION. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Mr. Davidson.

Historical and social study of rural life; institutions and organizations that have contributed to rural life development; evolution from the one-room rural school to the rural high school and consolidated schools; farmers' organizations and all forms of organized community life in the open country, in relation to the problems of public education.

202. EXTRA-CURRICULAR ACTIVITIES. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Dr. Holton and visiting instructors.

A careful survey of the extra-curricular activities in the junior and senior high schools; determination of the educational objectives of these activities and the most effective methods and means employed in the accomplishment of the objectives.

203. PROBLEMS IN TEACHING. 3(3-0); SS. Prerequisites: Educational Psychology, and senior or graduate standing. Visiting instructors.

What the superintendents expect of the teacher in (1) classroom instruction and standrads, (2) attitudes and ideals, (3) coöperation and teamwork, and (4) professional growth.

204. RURAL SECONDARY EDUCATION. 3(3-0); I or II. Prerequisite: Educational Administration. Dr. Williams.

A brief historical study of rural secondary education with special emphasis on objectives of junior and senior high-school organization; curriculum and methods of organizing and conducting rural secondary schools; field problems in rural secondary education set up. A certain amount of field work is required.

205. THE JUNIOR COLLEGE. 3(3-0); SS. Prerequisite: Educational Administration. Dr. Andrews and the dean of a junior college.

A study of the historical development of the junior college and its place in the American public school system; its curricula and administration; the present-day trends in its development and extension.

206. PHILOSOPHY OF EDUCATION. 3(3-0); II and SS. Prerequisite: Educational Sociology and Educational Psychology. Dr. Holton.

A critical study of the controlling and unifying philosophy of the American public school system and its European background.

207. PROBLEMS OF THE PRINCIPAL. 3(3-0); SS. Prerequisite: Educational Administration. Visiting city superintendents.

A careful survey of the work of the principals of junior and senior high schools.

208. THE PSYCHOLOGY OF CHILDHOOD AND ADOLESCENCE. 3(3-0); I or II. Prerequisite: Psychology A, B, or C. Dr. Alm.

A genetic study of the developing child with applications valuable to parents and teachers. The course is conducted in two sections: Section A, with emphasis on the psychology of childhood; and section B, with emphasis on the psychology of adolescence.

211. MENTAL MEASUREMENTS. 3(3-0); I. Prerequisite: Psychology. Dr. Peterson.

The methods and devices employed and the more significant results so far obtained in the measurement of mental alertness, special aptitudes, and character traits.

212. EDUCATIONAL MEASUREMENTS. 3(3-0); I or II. Prerequisites: General Psychology and Educational Psychology. Dr. Strickland.

The scientific measurement of achievement as distinguished from intelligence testing.

213. ABNORMAL PSYCHOLOGY. 3(3-0); II. Prerequisite: Psychology A, B, or C. Dr. Peterson.

Such manifestations of faulty integration of bodily activities and mental functions as are found in hysteria, dreams, hypnotism, trances, multiple personality, etc.; certain questionable concepts of abnormal psychology in current literature; prevalent practices in dealing with mental disorders.

215. PROBLEMS IN PSYCHOLOGY. 1 to 3 credits; I, II, and SS, by appointment. Prerequisite: Superior performance in one or more courses in psychology and general scholarship standing of B or better. Dr. Peterson, Dr. Alm, and Mr. Langford.

Each student studies an individual problem appropriate to his degree of advancement in the field of psychology. A written report is required. The amount of credit depends upon the work done. Enrolment by recommendation of the instructor not later than mid-semester.

216. ADVANCED PSYCHOLOGY. 3(3-0); I or II. Prerequisite: Psychology. Mr. Langford.

Fundamental problems, methods, and interpretations of general psychology.

217. EXPERIMENTAL PSYCHOLOGY. 3(3-0); I or II. Prerequisite: Psychology A, B, or C. Dr. Peterson.

A few representative experiments in animal and sensorimotor learning, as an introduction to the types of problems encountered and to the basic methods of procedure essential to the analysis of the thought processes; a survey of the experimental literature on the higher mental processes, with special attention to the more objective studies in the experimental analyses of the thought processes.

219. THE CURRICULUM. 3(3-0); I or II. Prerequisites: Six hours in education, and junior standing. Dr. Andrews.

The fundamental requirements of our modern life upon the schools; educational objectives in the light of these requirements; each subject in the curriculum examined for its minimum essentials both in the elementary school and in the high school.

221. EXTENSION METHODS AND PROBLEMS. 2(2-0); II. Prerequisites: Educational Administration, and Vocational Education A. Dr. Williams and members of the Division of College Extension.

Origin and development of extension work, its aim and purposes, and its relation to other general educational activities; organization and administration of extension work under the Smith-Lever law and the part taken by colleges and the Department of Agriculture; types of extension work conducted by bankers, railroads, manufacturers, and other agencies; and future problems of extension work.

223. STATISTICAL METHODS APPLIED TO EDUCATION. 3(3-0); I, II, and SS. Prerequisites: Six hours in education, and junior standing. Not open to students who have credit in Math. 203. Dr. Andrews.

Aims of the course: To organize material and data of educational experience and research for statistical interpretation; to develop skill and confidence in the use of statistical methods; to provide discussions and interpretations of statistical methods employed in scientific studies in education; and to give experience in the computation of statistical constants and develop the ability of graphical representation and interpretation.

225. FOUNDATIONS OF METHOD. 2(2-0). Dr. Strickland.

A critical study of the underlying principles by which current methods of teaching may be evaluated and the development of method may be gained.

226. VOCATIONAL EDUCATION B. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Dr. Williams.

The administration and supervision of the different fields of vocational education, including agriculture, home making, trade, and industrial and commercial education; curricula and curriculum building in the different vocational fields in relation to community needs.

230A. VOCATIONAL GUIDANCE. 3(3-0); I, II, and SS. Prerequisites: Educational Administration, Psychology, and Vocational Education. Dr. Williams.

The best methods and practices now used in the field of pupil guidance in study of vocations and career planning; analysis of a number of the more desirable trades, professions, and business callings; guidance problems of the elementary, junior high school, senior high school and continuation schools.

235. THE TECHNIC OF MENTAL TESTING. 3(1-6); I or II. Prerequisites or parallels: Courses 211 and 223. Dr. Peterson.

Methods of giving and scoring the Stanford Revision of the Binet Scale, with practice under the observation of the instructor until sufficient reliability is secured; the principal standard group tests of intelligence and special abilities analyzed and finally given and scored under observation; choice of tests for specific purposes; tabulation and interpretation of scores.

240. SOCIAL PSYCHOLOGY. 3(3-0); II. Prerequisites: Psychology A, B, or C. Mr. Langford.

The reactions of individuals to the behavior of their fellow beings; the genesis and motivation of group habits, such as language, money, customs, conventions, fashions, laws, etc., and of group norms of capacity and achievement as they affect the relations of social classes, nationalities, and races.

241. HISTORY OF MODERN PSYCHOLOGY. 3(3-0); I. Prerequisite: Psychology A, B, or C. Dr. Alm.

A study of trends in modern psychology traced back to their origins. The various schools of thought are compared and their views are evaluated.

243. PSYCHOLOGY AND PERSONNEL MANAGEMENT. 3(3-0); I. Prerequisites: A grade above M in Psychology A, B, or C, and consent of the instructor. Dr. Peterson.

Scientific principles and procedures involved in employment; promotion, motivation of work, measurement and reward of achievement, etc.

245. THE JUNIOR HIGH SCHOOL. 3(3-0); SS. Prerequisites: Six semester hours of Psychology and Education. Dr. Andrews.

Educational and social bases of the intermediate school, its method of teaching, its administration and discipline; the curriculum of the junior high school and its articulation with the elementary school and the senior high school.

250. PROBLEMS IN SPECIAL TEACHING METHODS. 3(3-0); I, II, and SS. Prerequisites: Psychology, and Special Methods of Teaching Home Economics. Mrs. Rust.

Objectives and principles involved in teaching subjects related to home economics; planning of courses of study which are based upon the problem methods of teaching. (Designed for teachers of science and art related to vocational home-making, required in the Smith-Hughes high-school courses.)

253. ADMINISTRATION AND SUPERVISION OF SECONDARY SCHOOLS. 2(2-0); 2d SS. Prerequisites: Psychology, Educational Administration, and Educational Psychology. Dr. Williams.

Problems of organization, administration, and supervision covering the complete program of an administrative head of a school system in a small city. (Designed for principles of rural high schools and superintendents of small city systems.)

255. THE PROJECT METHOD IN AGRICULTURAL EDUCATION. 2(2-0); 2d SS. Prerequisites: Education 136 and 161. Mr. Davidson.

The project as a teaching device, with intensive treatment of project values, project analysis, project accounting, project supervision, project types, project results, project records, project reports, etc. The course is conducted on the problem basis.

257. ORGANIZATION AND CONDUCT OF CLASS PROJECTS. 2 credits; 2d SS. Prerequisites: Education 106 and 125. Mr. Davidson.

Fundamentals and principles on which productive class projects should be organized. Research and field work in class project study will be undertaken.

258. ADMINISTRATION AND SUPERVISION OF VOCATIONAL EDUCATION. 2(2-0); 2d SS. Prerequisites: Educational Administration, Psychology, and Educational Psychology. Dr. Williams.

Objectives, curriculum organization and content, administrative and supervisory problems from the viewpoint of the city superintendent—leadership needs which must be met in a school system offering vocational education. The problem basis of treatment is used.

262. COMMUNITY PROBLEMS IN VOCATIONAL AGRICULTURE. 2 credits; 2d SS. Prerequisites: Dr. Williams.

Methods, organization, and conduct of club work, junior project work, class projects, and community projects in general—a course conducted on the problem basis and designed specifically for teachers, supervisors, and directors of agricultural work.

263. PROBLEMS IN EVENING SCHOOL CLASSES. Class, 2 hours, daily; 2 credits; 2d SS. Open to college graduates who have taught one year of vocational agriculture. Dr. Williams or Mr. Davidson.

Problems of organization, curriculum, and methods of teaching evening schools and classes sponsored by the national vocational education act. Designed for teachers in service.

264. ORGANIZATION PROBLEMS IN TEACHING FARM MECHANICS. Class, 2 hours, daily; 2 credits; 2d SS. Prerequisites: Educ. 136 and 161. Mr. Bradford.

An analysis of the farm mechanics course of study; needs and interests of boys, learning difficulties, skills and technical knowledge required. Correlation with agriculture. Application of laws of learning to the teaching process. Determining objectives.

265. PROBLEMS IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 5 credits; I, II, and SS. Prerequisite: Senior or graduate standing. Dr. Justin, dean of the Division of Home Economics, and Mrs. Rust.

This course permits opportunity for study of problems of organization and administration in this field.

FOR GRADUATE CREDIT

301, 302. EDUCATIONAL SEMINAR I AND II. 4 credits for both (2-0); I and II, respectively. Prerequisites: Psychology, Educational Psychology, and Educational Administration. Dr. Holton and other members of the graduate faculty.

A topic for special investigation chosen by each member of the seminar early in the term; preliminary reports, and the final results of the study embodied in a carefully prepared report.

303. EDUCATIONAL SOCIOLOGY C. 3(3-0); I, II, and SS. Prerequisites: Psychology, Educational Psychology, and Educational Sociology A. Dr. Holton.

Fundamental social objectives for the curricula in high schools and colleges. Research and critical study of curricula.

306. EDUCATIONAL ADMINISTRATION C. 3(3-0). Dr. Andrews.

Fundamental problems in public school administration are assigned to each student for investigation and report.

307. HISTORY OF EDUCATION B. 3(3-0). Dr. Andrews.

The history of education in the United States, with a consideration of the more important present-day problems in the organization, administration, and adjustment of public education in the light of historical development.

309. PROBLEMS IN EDUCATIONAL PSYCHOLOGY. 3(3-0); I, II, and SS. Prerequisites: General Psychology, Educational Psychology. Dr. Strickland.

A study of problems, recent experimentations, and applications of the principles of educational psychology.

310A. PSYCHOLOGY OF TEACHING AND LEARNING. 3(3-0); I or II. Dr. Peterson.

An analysis of the various forms of learning and of the conditions favorable to the rapid development and effective functioning of knowledge, skills, attitudes, and purposes.

313. RESEARCH IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 10 credits; I, II, and SS. Prerequisite: Graduate standing. Dr. Justin, dean of the Division of Home Economics, and Mrs. Rust.

Individual research problems in phases of organization and administration for home economics. May be chosen as the basis for thesis for the master's degree. The nature of the problem will depend upon the student's major interest.

315. SUPERVISION IN HOME ECONOMICS. 2 credits; by appointment. Prerequisites: Psychology, Special Methods in Teaching Home Economics, and experience in teaching home economics. Mrs. Rust.

Problems met by a supervisor or director of home economics in the public schools; standardization of work; relation of supervisor to teacher; modernization of plant and equipment; course of study, etc.

320. RESEARCH IN PSYCHOLOGY. 1 to 10 credits; I and II. Members of Graduate Faculty.

Individual research problems in the field of psychology.

325. RESEARCH IN EDUCATION. 1 to 10 credits; I and II. Members of Graduate Faculty.

Individual research problems in the general field of education and in the fields of psychology—mental testing, administration, and vocational education.

330. AGRICULTURAL EDUCATION B. 3(3-0); I or II. Dr. Williams.

A research survey course in the field of agricultural education required of all candidates for the degree of Master of Science whose major work in the Department of Education is in the field of agricultural education.

COURSES IN RELIGIOUS EDUCATION

The purpose of courses in religious education is twofold: To train students in the method of establishing social control through the implanting and careful nurture of ideals; and to serve as a basis for preministerial or prereligious vocational training. (Not accepted as part of the requirements in education for a teacher's certificate.)

FOR UNDERGRADUATE CREDIT

180. RELIGIOUS EDUCATION A. 2(2-0); I. Dr. Holtz.

The origin of the Bible; the Bible as a social inheritance; Old Testament history with special emphasis upon the social message of the prophets; the New Testament with attention given to the social teachings of Christ.

182. RELIGIOUS EDUCATION B. 2(2-0); II. Dr. Holtz.

The fundamental instincts; the physiological and psychological characteristics of the various stages of development; and the best methods of moral and religious instruction suited to these stages.

184. RELIGIOUS EDUCATION C. 2(2-0); II. Prerequisite: Psychology. Dr. Holtz.

The recognized principles underlying modern religious education; organization of Sunday schools, the subject matter best adapted to each department of the organization, and the application of modern methods of teaching.

English

Professor DAVIS
 Professor CONOVER
 Professor ROCKEY
 Professor MATTHEWS*
 Professor RICE
 Professor FAULKNER
 Associate Professor STURMER
 Associate Professor ELCOCK*
 Associate Professor BREEDEN
 Assistant Professor GARVEY

Assistant Professor RUSHFELDT*
 Assistant Professor CALLAHAN
 Assistant Professor PARKER
 Instructor BOWER
 Instructor ABERLE
 Assistant SCOTT
 Assistant CLARK
 Assistant STENSAAS
 Assistant CAMPBELL

Ability to think accurately and speak well, and capacity to appreciate the world's best literature are recognized essentials of a liberal education. The work of the Department of English is to acquaint the student with the best standards of English practice and appreciation and to encourage him to maintain these standards in all his work. To this end the department offers studies in cultural and technical English and special drills in expressing thought freely and effectively in matters touching the vital interests of the student. The study of the English language and literature is thus made the means of increasing his power and efficiency.

The equipment owned by the department is valued at \$1,929.

COURSES IN ENGLISH LANGUAGE

FOR UNDERGRADUATE CREDIT

101. COLLEGE RHETORIC I. 3(3-0); I, II, and SS. Prerequisites: Three units of high-school English. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Miss Sturmer, Miss Elcock, Mr. Breeden, Miss Garvey, Miss Rushfeldt, Mr. Callahan, Mrs. Parker, Miss Bower, Miss Aberle, Miss Scott, Mr. Stensaas, Miss Clark, and Miss Campbell.

The improvement of students' written and spoken English by reviewing the principles of correct and effective diction, grammar, and sentence structure; by discussing models of good contemporary writing; by studying and practicing various types of paragraph; and by writing expository themes with guidance in selecting material, planning, writing, and revision.

104. COLLEGE RHETORIC II. 3(3-0); I, II, and SS. Prerequisite: Course 101. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Mr. Breeden, Miss Sturmer, Miss Elcock, Miss Bower, Miss Garvey, Miss Rushfeldt, Miss Aberle, Mr. Callahan, Mrs. Parker, Miss Scott, Mr. Stensaas, and Miss Campbell.

The principles of argument, description, and narration, illustrated by standard and contemporary literature, and applied in frequent themes; correct form, structure, and diction of some common business letters; organization and writing of one extended composition.

107. SPECIAL ENGLISH. No credit. (3-0); I and II, when need arises. Miss Rice, Miss Elcock, and Miss Aberle.

A review of English grammar, spelling, and diction with drill exercises, and individual consultations, required of students in courses 101 and 104 who show marked inability to write clearly and accurately.

110. ENGINEERING ENGLISH. 2(2-0); I and II. Prerequisites: College Rhetoric II, and junior standing. Mr. Rockey, Mr. Matthews, and Mr. Faulkner.

The general problems of engineering writing: technical descriptions, and the exposition of ideas, mechanisms, and processes; the preparation of engineering talks, business letters, technical manuscripts, and reports. A brief review of composition essentials is included.

* Absent on leave, year 1929-'30.

113. **ADVANCED COMPOSITION I.** 2(2-0); I. Prerequisite: College Rhetoric II. Mr. Conover and Mr. Matthews.

Special emphasis given to exposition; subjects selected from the student's particular field of work; exposition of mechanisms, processes, and general expository writing carefully studied.

116. **ADVANCED COMPOSITION II.** 2(2-0); II. Prerequisite: Advanced Composition I. Mr. Conover and Mr. Matthews.

Narrative writing both in its relation to the other forms of composition and as an independent form; practical forms of the narrative, special attention to the short story.

122. **COMMERCIAL CORRESPONDENCE.** 3(3-0); I, II, and SS. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Faulkner, and Mr. Callahan.

A thorough review of the routine types of business correspondence; the writing of adjustment, credit, collection, and sales letters; the principles of effective writing as seen in the best writing in the commercial world.

123. **WRITTEN AND ORAL SALESMANSHIP.** 3(3-0); I and II. Prerequisite: College Rhetoric II. Mr. Faulkner and Mr. Callahan.

Special attention to the writing of follow-up systems of sales letters and to the composition and display of circular material and catalogues; the basic principles of advertising and the psychology of selling; special practice in the various forms of sales talks; arrangement made for actual sales practice with commercial concerns.

128. **ORAL ENGLISH.** 3(3-0); I, II, and SS. Prerequisite: College Rhetoric I. Mr. Rockey and Mr. Matthews.

The principles of oral composition as applied to conversation and informal discussion; the correction of the grammatical faults of everyday speech; the application of rhetorical principles to informal speech and discussion. Subjects selected from the fields of painting, politics, music, and literature.

134. **METHODS OF TEACHING ENGLISH.** 3(3-0); II and SS. Prerequisite: College Rhetoric II. Mr. Davis, Miss Rice, and Miss Elcock.

The course of study, the application of English instruction to life needs, and definite methods of motivating English instruction especially considered. (For those called upon to teach English in connection with the applied sciences.)

137. **AGRICULTURAL ENGLISH.** 3(3-0); I. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Conover, Mr. Matthews, and Mr. Faulkner.

A brief review of the composition essentials, business correspondence, bulletin writing, the organization of short business talks, the principles of farm advertising; and writing the problems that confront the county agent, the high-school teacher of agriculture, and the farm manager.

140. **LITERATURE FROM THE READERS.** 3(3-0); SS. Miss Bower, Miss Aberle, and Mrs. Parker.

Reading considered both as a fundamental means of acquiring knowledge and as a stepping stone to the appreciation of literature. (Planned to meet the needs of teachers of rural and graded schools.)

143. **ADVANCED GRAMMAR.** 3(3-0); SS. Miss Bower, Miss Aberle, and Mrs. Parker.

A systematic study of grammar with emphasis on English etymology, inflections, syntax, and modern usage in both England and America. Especially those details of grammar closely related to the use of English as a tool are stressed.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. **CRITICAL WRITING.** 3(3-0); II. Prerequisite: College Rhetoric II. Mr. Matthews.

Representative examples of criticism from English and American literature, from leading critics, and from standard newspapers and magazines; assignment to musical programs and art exhibits on the campus, and writing of reviews of books published by the faculty.

207. TECHNICAL WRITING. 2(2-0); II. Prerequisite: One of the following courses: 113, 116, 122. Mr. Davis, Mr. Conover, Mr. Matthews, and Mr. Faulkner.

Fundamental principles of technical and scientific writing, with such practice as will necessitate clearness, accuracy, and effectiveness.

223. ADVANCED PROBLEMS IN COMMERCIAL CORRESPONDENCE. 3(3-0); II. Prerequisite: Commercial Correspondence. Mr. Faulkner.

Problems in special types of business letters; writing of adjustment, credit, and collection letters; specialized study and writing of sales and business promotion letters; composition of form paragraphs, circular letters, and business reports; correspondence supervision.

225. THE LIGHT ESSAY. 2(2-0); I and SS. Prerequisite: College Rhetoric II. Mr. Davis.

Much writing practice, with light essays and sketches from current standard magazines as models; the writing of humor.

251, 252. THE SHORT STORY I AND II. 3(3-0) each; I and II respectively. Prerequisites: For I, English Literature; for II, The Short Story I. Miss Rice.

I: The world's best short stories; practice in writing sketches and short stories; special emphasis on the elements of the story—plot, setting, action, and characterization.

II: Special stress on the preparation of the short story for publication; the short story in America, with special attention to types, characteristics, and tendencies; standards set by the leading magazines; market problems.

COURSES IN ENGLISH LITERATURE

FOR UNDERGRADUATE CREDIT

172. ENGLISH LITERATURE. 3(3-0); I, II, and SS. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Mr. Breeden, Miss Sturmer, Miss Elcock, Miss Bower, Miss Garvey, Miss Rushfeldt, Miss Aberle, Mr. Callahan, Mrs. Parker, Miss Scott, Mr. Stensaas, and Miss Campbell.

The application of principles of literary appreciation to representative texts in narrative, lyric, and dramatic poetry, and to examples of the essay and the novel.

175. AMERICAN LITERATURE. 3(3-0); I, II, and SS. Prerequisite: English Literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Mr. Breeden, Miss Sturmer, Miss Elcock, Miss Bower, Miss Garvey, Miss Rushfeldt, Miss Aberle, Mr. Callahan, Mrs. Parker, Miss Scott, Mr. Stensaas, and Miss Campbell.

A study of American prose and poetry, the purpose being to acquaint the student with representative American writers by intensive study of illustrative selections, and to present the historical background and the tendencies of American literature.

181. HISTORY OF ENGLISH LITERATURE. 3(3-0); I and II. Prerequisite: English Literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Miss Sturmer, Miss Elcock and Miss Aberle.

A study in the history of English literature, the object being to give the student a perspective of the field of English letters, and to study the works of authors in relation to their own periods.

FOR GRADUATE AND UNDERGRADUATE CREDIT

260. CHAUCER. 3(3-0); I. Prerequisite: English Literature. Miss Elcock. The life, times, works, and characteristic language of Chaucer, with the emphasis upon the study of his principal works.

262. MILTON AND THE PURITAN REVOLT. 3(3-0); II. Prerequisite: English Literature. Miss Elcock.

The life and times of Milton and his chief works; the conflict in the seven-

teenth century between the reverence for authority in government, religion, and literature, and the growing spirit of intellectual inquiry.

265. AMERICAN SURVEY. 2(2-0); II. Prerequisites: Courses 172 and 175. Mr. Davis and Mr. Breeden.

An advanced study in the history of American literature beginning with colonial literature and continuing through the period of the Civil War down to the present time.

267. KANSAS LITERATURE. 2(2-0); I and SS. Prerequisite: American Literature. Mr. Callahan.

A study of the novels, short stories, essays, and poems written about the state. Especially the literature produced by Kansas authors.

271. THE ENGLISH BIBLE. 3(3-0); I, II, and SS. Prerequisite: English Literature. Mr. Conover.

The Bible as literature, with special stress on the narratives of the Old Testament, poetry, wisdom literature, and the book of Job.

273, 274. SHAKESPEAREAN DRAMA I AND II. 3(3-0) each; I and II, respectively. Prerequisite for each. English Literature. Mr. Davis and Miss Sturmer.

I: The life and times of Shakespeare and the background of Shakespearean tragedy; intensive study of five of Shakespeare's tragedies: Macbeth or Othello, Hamlet, King Lear, Coriolanus, and Romeo and Juliet.

II: An intensive study of five of Shakespeare's comedies: The Winter's Tale, As You Like It, Twelfth Night, Cymbeline, and The Tempest; collateral readings of earlier comedy, Shakespearean comedy, that of his contemporaries, and present-day criticism of Shakespeare.

276. ENGLISH ESSAYISTS OF THE EIGHTEENTH AND NINETEENTH CENTURIES. 3(3-0); II. Prerequisite: English Literature. Mr. Davis and Mr. Conover.

Two periods of especially notable English prose. Among the authors discussed are Swift, Addison, Steele, Johnson, Burke, Lamb, Hazlitt, DeQuincey, Wilson, Newman, Ruskin, Spencer, Huxley, Pater, and Wilde.

278. THE ENGLISH ROMANTIC REVIVAL. 3(3-0); I. Prerequisite: English Literature. Mr. Rockey.

The chief poetical works of Wordsworth, Shelley, Keats, Coleridge, and Byron, with some consideration to the period as a revival of romanticism.

280, 281. WORLD CLASSICS I AND II. 3(3-0) each; I and II, respectively. Prerequisites for each: English Literature and American Literature. Mr. Faulkner.

I: The literary masterpieces (in translation) of early times, particular attention being paid to Greek and Latin classics.

II: The literary masterpieces (in translation) of Western Europe, with particular attention to the works of Italian, Spanish, French, and German writings that have attained lasting world fame.

283. CONTEMPORARY FICTION. 3(3-0); I. Prerequisite: American Literature. Mr. Conover.

The more important British and American fiction since Hardy.

284. CONTEMPORARY DRAMA. 3(3-0); II. Prerequisite: American Literature. Mr. Conover.

Development of the drama since Ibsen; types of modern drama; works of important English, Irish, and American dramatists.

286, 287. THE NOVEL I AND II. 3(3-0) each; I and II, respectively. Prerequisites: For I, American Literature; for II, The Novel I. Mr. Breeden.

I: The English novel, its historic development, its relation to other forms of fiction, and its place in contemporary literature; especial attention to representative works of modern English and American writers.

II: Continuation of The Novel I. Review of essentials in study of the novel; readings of representative modern novels continued; class reports.

288, 290. ENGLISH SURVEY I AND II. 2(2-0) each; I and II, respectively. Prerequisites: For I, History of English Literature; for II, I. Mr. Davis, Mr. Conover, and Mr. Breeden.

I: An advanced study in the history of English Literature from Anglo-Saxon times down to the close of the Elizabethan period.

II: The rise of Puritanism and its influence on English literature; the classical movement emphasized; romanticism and its development.

293. BROWNING AND TENNYSON. 3(3-0); II. Prerequisite: English Literature. Mr. Rockey.

Interpretation of the most important poetic and dramatic works of Alfred Tennyson and of Robert Browning.

297. CONTEMPORARY POETRY. 3(3-0); II. and SS. Prerequisite: History of English Literature. Mr. Davis and Mr. Conover.

A study of representative contemporary poetry.

298. PROBLEMS IN THE TEACHING OF ENGLISH. 3(3-0); SS. Prerequisites: 15 hours of English and 9 hours of Education. Mr. Davis and Miss Elcock.

The history of the teaching of English both in England and in America; an investigation of English curricula in representative high schools of the United States; and a thorough consideration of the subject matter for both composition and literature courses in the high-school teaching of English.

299. RESEARCH IN ENGLISH. Advanced students with acceptable fundamental training may, with the approval of the head of the department, undertake original investigation in some definitely prescribed field of English literature or applied English. Such work must be pursued under the direct supervision of some member of the faculty of the department, and the final results may be used to fulfill the thesis requirements for the master's degree. Students doing research in English will be required to give evidence of approved training in the subject and to have a broad general knowledge of English literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Sturmer, and Miss Elcock.

FOR GRADUATE CREDIT

Classes in courses listed under the graduate group are organized whenever the demand for them is sufficient. When the demand does not justify the organization of a class, the work may be arranged for by appointment. Special arrangements for work should be made with the head of the department.

301, 302. HISTORY OF THE ENGLISH LANGUAGE I AND II. 2(2-0) each; I and II, respectively. Prerequisite: History of English Literature. Mr. Conover and Miss Sturmer.

I: The origin and development of the English language, with special stress on Old English.

II: A continuation of course 301, with special emphasis on Middle English, and Modern English.

304. RESEARCH IN APPLIED ENGLISH. 2(2-0); II. Prerequisite: History of English Literature. Mr. Davis.

Individual assignments in fundamental fields of research in applied English, an original investigation, and an acceptable report thereon being required.

315. RESEARCH IN THE LITERATURE OF INDUSTRY. 2(2-0); I. Prerequisite: History of English Literature. Mr. Davis and Mr. Conover.

This is an investigation and research course based on a careful study of the development of the distinctive literature of industry.

Entomology

Professor DEAN
 Professor McCOLLOCH†
 Professor SMITH‡
 Associate Professor PARKER

Assistant Professor PAINTER
 Assistant Professor WILBUR ||
 Assistant Professor BRYSON

In all courses a special effort is made to make the student realize that he is studying living things which form a part of his daily environment, and upon which his welfare in many cases vitally depends. In courses in which both class and laboratory instruction is given, the closest correlation is striven for, and whenever possible the same form is studied simultaneously in laboratory and class. The student is led to integrate his classroom knowledge with local animal life by means of frequent and carefully planned field excursions and by the free use of vivaria in laboratory and museum. The courses offered are intended to awaken in the student a keen appreciation of the general principles underlying insect life, of the life economy of the more beneficial as well as the more injurious species, and of the general principles governing methods for their control.

Standard anatomical charts, a representative collection (especially of local species), a high-grade lantern for the projection of lantern and microscope slides, a large and excellent series of lantern slides (many of them colored), and a series of microscope slides are available for illustration. Compound and dissecting microscopes sufficient for the needs of laboratory classes have been provided.

Facilities for advanced work are provided for graduate students and others who expect to pursue the subject professionally. An advanced laboratory is equipped with individual desks, binocular microscopes, compound microscopes, rotary microtome, imbedding ovens, drawing apparatus, and a supply of glassware and reagents sufficient for histological work and for research. A well-equipped insectary is available for training in insectary methods. An air-conditioning machine in the insectary adds materially to the possibilities for experimental work. A field station with all the necessary equipment provides means for the study of insects under normal field conditions.

The department owns equipment valued at \$26,834.

COURSES IN ENTOMOLOGY

FOR UNDERGRADUATE CREDIT

111. GENERAL APICULTURE. 3(2-3); II. Prerequisite: General Entomology. Dr. Parker.

A general study of the structure, life history, general behavior, activities, and products of the honeybee; practice beekeeping and best methods used among beekeepers; bee diseases and the standard methods to be used in their eradication and control; relation of bees to agriculture and horticulture. Charge, \$1.

116. MILLING ENTOMOLOGY. 1(1-0); I. Offered 1930-'31 and alternate years thereafter. Mr. Dean.

Insect pests of flour mills, elevators, granaries, warehouses, and bakeries and standard methods of dealing with them; inspection trips to flour mills and warehouses.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. HORTICULTURAL ENTOMOLOGY. 2(2-0); I. Prerequisite: General Entomology. Dr. Parker.

The most important insect pests of orchard, garden, and forest, and standard methods of controlling their ravages.

203. GENERAL ENTOMOLOGY. 3(2-3); I, II. Prerequisite: General Zoölogy. Mr. Dean and Mr. Bryson.

† Died November 11, 1929.

‡ Absent on leave to March 31, 1930.

|| Temporary appointment.

The elementary anatomy and physiology of insects, complete enough to give a thorough understanding of the life history and habits of the most important species and the general principles upon which the control of these economic forms is based; the more important general facts about insects as a class; main characters of the different orders and groups; how they survive and multiply; and why measures of control differ for different groups. Charge, \$1.

206. GENERAL ECONOMIC ENTOMOLOGY. 3(2-3); II. Prerequisite: General Entomology. Mr. McCulloch.

The life history of the more important economic insects of field crops, methods to be used in dealing with them, and the literature of economic entomology.

Laboratory.—Practical problems in insect surveys, control, rearing, collecting, and life histories, in the course of which the student gains a first-hand acquaintance with the more important injurious insects at home in nature. Charge, 50 cents.

211, 212. INSECT MORPHOLOGY I AND II. 3(1-6) and 3(0-9), respectively; 211, I; 212, I or II. Prerequisites: For I, General Entomology; for II, course 211. Dr. Painter.

I: The external anatomy of representative insects belonging to a number of orders, the types studied being selected to present the essentials of the structure of the exoskeleton and to afford a basis for the courses in taxonomy and for professional studies in hexapod morphology. Charge, \$1.

II: The internal anatomy of representative insects, the dissections of which present the general plan and structure of the internal systems; one conference each week, with assigned readings in selected texts and papers. Charge, \$1.

216. PRINCIPLES OF TAXONOMY. 1(1-0); II. Prerequisites: (1) For students taking course 217, courses 203 and 211; (2) for students taking General Zoölogy. This course must be taken with course 217 or with one of the taxonomic courses in zoölogy. Dr. Painter.

Fundamental principles of zoölogical taxonomy. In detail: Systems of classification; terminology of taxonomic groups; criteria of species and genera; binomial nomenclature, pre-Linnæan and modern nomenclature; international code of zoölogical nomenclature, and other codes; laws of priority; professional ethics and modern tendencies in taxonomy.

217, 218. TAXONOMY OF INSECTS I AND II. 2(0-6) and 3(0-9), respectively; II each. Prerequisites: For I, General Entomology and Insect Morphology I. Principles of Taxonomy must be taken with this course. For II, Taxonomy of Insects I. Dr. Painter.

I: Practice in the determination of insects, at least of all the major orders to genera, sometimes species; an acquaintance with the most useful taxonomic literature in each group and the use of catalogues. Charge, \$1.

II: A group is selected, and intensive study of the insects and literature of the group is made in order to become proficient in their determination. Charge, \$1.

221. ADVANCED GENERAL ENTOMOLOGY. 3(3-0); II. Prerequisite: General Entomology. Mr. Wilbur.

A comprehensive view of the broad biological aspects of the subject and an understanding of the relation of insects to the complex of environmental factors; the various subdivisions of entomology correlated and used as a basis in the presentation of general principles as well as illustrating the problems of maintenance and the various ways in which insects have solved them.

226. MEDICAL ENTOMOLOGY. 3(2-3); I. Prerequisites: General Entomology. Mr. Wilbur.

Insects and other arthropods as parasites and disseminators of diseases of man and domestic animals; the life cycles, biology and control of insect parasites.

Laboratory.—A detailed study in order to recognize the various stages of

the insect parasites of man and domestic animals; a study of the organisms of insect-borne diseases; house fumigation and observation of local sanitation problems bearing on the subject. Charge, \$1.

227. **ADVANCED APICULTURE A.** 3(2-3); SS. Prerequisite: Apiculture. Dr. Parker.

A continuation of apiculture. The principles of bee behavior studied under actual conditions during the active season; practical work in the manipulation of bees during the production of the honey crop, in swarm-control methods, and making increases in the colony; queen rearing. Charge, 50 cents.

228. **ADVANCED APICULTURE B.** 3(2-3); I. Prerequisite: Apiculture or its equivalent. Dr. Parker.

A continuation of apiculture. The principles of bee behavior, and how these are related to practice of good beekeeping; preparation for wintering, feeding for winter, and winter protection; merits and demerits of different systems of wintering; extracting honey, preparing it for market, marketing, and other advanced subjects. Charge, 50 cents.

231. **ENTOMOLOGICAL AND ZOÖLOGICAL LITERATURE.** 2(2-0); I. Prerequisite: General Entomology. Dr. Painter.

The literature of entomology which is inseparably associated with that of zoölogy and hence of equal importance to students of both subjects; general and special biographical sources; foreign and American scientific journals and serials; the construction of special bibliographies according to approved methods; a study of the biographies of leading world biologists of all ages and their publications, particularly of those in the College library. All advanced students of entomology and zoölogy are expected to take this course.

234. **INSECT PHYSIOLOGY.** 2(2-0); given when requested by two or more students. Prerequisites: Insect Morphology II, Cytology or Histology, and Physiological Chemistry. Dr. Parker.

Physiology of the cell, respiration, metabolism, reproduction, muscular activity, nervous responses, sense organs and senses, circulation, glandular system, and the metamorphosis of insects.

235. **FIELD ENTOMOLOGY.** 2(0-6); I and SS. Prerequisite: General Entomology.

Study of insects in the field, methods of collecting, mounting, preserving, and rearing; identification of some of the commoner insects in the field; ecological phases stressed, especially with regard to communities and apparatus for measuring factors. Charge, \$1.

236. **ZOÖLOGY AND ENTOMOLOGY SEMINAR.** 1(2-0); I and II. For prerequisites, consult seminar committee.

Presentation of original investigations, reviews of papers appearing in current journals, summaries of recent advances in various fields and discussion of various aspects of the fundamental problems of modern biology.

238. **ENTOMOLOGICAL PROBLEMS.** 2 to 4 credits; I and II. For prerequisites, consult instructors. Mr. Dean, Mr. McColloch, Dr. Parker, Dr. Painter, Mr. Bryson, and Mr. Wilbur.

Students having sufficient training may, with approval of the head of the department, pursue under the direct supervision of some members of the departmental staff a special problem in one of the following subjects: Insect life history, insect control, insect classification, apiculture, insects injurious to stored grain and milled products, and household insects.

FOR GRADUATE CREDIT

316. **RESEARCH IN ENTOMOLOGY.** Prerequisites: (1) For research in taxonomy and morphology, Entomology 203, 211, 217, and Cytology; (2) for research in economic entomology, Entomology 203, 206, and 217. Mr. Dean, Mr. McColloch, Dr. Parker, Dr. Painter, Mr. Bryson, and Mr. Wilbur.

With the approval of the head of the department, advanced students having sufficient fundamental training may undertake original investigation in one of the following fields of entomology: Taxonomy, morphology, economic entomology. Such work is pursued under the direct supervision of some member of the departmental faculty and the final results, if of sufficient merit, may be used to fulfill the thesis requirement for the master's degree. If willing and capable, special students may be drawn into the research work of the Agricultural Experiment Station during the summer vacation and receive training in the investigation of economic problems.

Geology

Professor SPERRY.

The courses offered in geology are designed to meet the needs of three kinds of students: The technical student in agriculture, civil engineering or chemistry who must know something of the relationship of geology to his particular field; the general student who desires some knowledge of the world about him, and who realizes the cultural and economic value of understanding his physical environment; and finally the student who wishes to major in geology.

The equipment consists of collections of rocks, fossils, and minerals and the laboratory instruments necessary to study these materials. The country around Manhattan, in addition to splendid Permian and Late Pennsylvanian invertebrate fossils, offers considerable variety of geologic phenomena such as limestone outcrops, sand dunes, glacial drift, a small volcanic plug, and the physiographic features characteristic of the prairie-plains. To take advantage of this outdoor laboratory, field trips are given in most courses as a regular part of the laboratory work.

COURSES IN GEOLOGY

FOR UNDERGRADUATE CREDIT

102. ENGINEERING GEOLOGY. 4(3-3); I. Prerequisite: Chemistry 105, or equivalent. Mr. Sperry.

The general principles of geology and their application to engineering problems.

Laboratory.—Observation and description of the structural and dynamic features of this locality; the study of topographic and geologic maps. Charge, \$1.50.

103. GENERAL GEOLOGY. 3(3-0); I and II. Three or four field trips are taken during the semester. Not open to students having credit in Geology 102. Prerequisite: High school or general chemistry. Mr. Sperry.

The structural and dynamic features of the earth; the rock-forming minerals; the rocks and their decay; a short history of the earth.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. HISTORICAL GEOLOGY. 4(3-3); II. Prerequisites: Course 102 or 103. Mr. Sperry.

The procession of physical and biological events through which the earth has gone, with stress on the philosophical side of earth history.

Laboratory.—Collection and study of local fossils, and their application in the identification of the rock measures; study of museum specimens and of paleogeographic maps. Charge, \$1.50.

207. ECONOMIC GEOLOGY. 4(3-3); I. Prerequisite: Course 103. Mr. Sperry.

The origin and mode of occurrence of nonmetallic minerals, including coal and petroleum, and of metallic mineral deposits.

Laboratory.—Identification and study of the ore-forming minerals; map studies of the economic areas. Charge, \$1.50.

209. CRYSTALLOGRAPHY AND MINERALOGY. 4(2-6); I. Prerequisite: General Chemistry. Mr. Sperry.

The fundamentals of crystallography and mineralogy.

Laboratory.—The measurement of crystal angles and the determination of crystal constants; identification of minerals by physical characters and with the blowpipe. Charge, \$1.50.

210. FIELD GEOLOGY. SS. Credit to depend upon the amount of work done. Opportunity is offered students to do field work in the Rocky Mountains. Students interested should consult Mr. Sperry.

FOR GRADUATE CREDIT

301. RESEARCH IN GEOLOGY. Credit to be arranged; I and II.

Students with adequate preparation may undertake original investigations in geology.

History and Government

Professor PRICE
Professor ILES
Professor JAMES
Associate Professor CORRELL

Associate Professor SHANNON
Associate Professor WILLIAMS
Associate Professor PARRISH
Assistant Professor ALSOP

Training for citizenship, breadth of view, historic-mindedness, fairness of judgment and general culture are constant and specific aims of each course offered by the Department of History and Government. As a result of the training received in these courses the student is better prepared to understand and appreciate the institutions in the midst of which he lives and of which he is a part. He is also prepared to act more wisely his part as a leader in good citizenship wherever his lot may be cast. In our modern age and self-governing nation, and in an institution supported by the state and nation, it would seem to be the imperative duty of every student to secure specific training for wise and effective leadership in the governmental affairs of the state and nation that are thus preparing him for life and its duties.

Equipment valued at \$1,006 is owned by this department.

COURSES IN HISTORY

FOR UNDERGRADUATE STUDY

101. ANCIENT CIVILIZATIONS. 3(3-0); II and SS. Mr. Parrish.

The beginnings and growth of western culture; early civilizations of the Near East and Mediterranean regions, from the rise of Egypt and Babylonia to the decline of the Roman Empire (395 A.D.). Special attention is given to the achievements of the Greeks and Romans.

102. MEDIEVAL EUROPE. 3(3-0); I and SS. Mr. Parrish.

The development of civilization in Europe from the decline of the Roman Empire (395 A.D.) to the discovery of the new world (1500 A.D.). Changes which laid the foundation for modern Europe: Interaction of forces of Roman Empire, organized Christianity, barbarians, Islam, Arabic and Byzantine culture; monasticism, feudalism; beginnings of modern states; universities and cathedrals; towns and trade; the intellectual awakening and a new world.

103. AMERICAN HISTORY LECTURES. 0(2-0); SS. Mr. Price.

A series of lectures on American history; no recitations and no examinations.

105. AMERICAN INDUSTRIAL HISTORY. 3(3-0); I, II, and SS. Not open for credit to students who have credit in course 203. Dr. Shannon.

History of American agriculture, manufactures, and commerce with related activities from their colonial beginnings to the present; survey of the physical

basis of American history, the growth of population and its expansion across the continent, and the reflection of these things on our industrial, social and political life; European developments, as a side light on American history; growth of our national industrial organization and its present-day aspects.

110. HISTORY OF COMMERCE AND INDUSTRY. 3(3-0); I. Dr. Shannon.

The evolution of industry and commerce from primitive beginnings to present-day organization traced in broad outline, and economic survey of world history, with special stress on the modern period.

115. MODERN EUROPE I. 3(3-0); I or II. Miss Alsop.

The evolution of modern institutions from the renaissance to the opening of the nineteenth century, the principal movements being the commercial revolution through which European trade turned from Mediterranean to Atlantic ports; the Reformation; the earlier phases of the development of political democracy through the Puritan revolt in England and the French Revolution; and the Napoleonic era.

121. ENGLISH HISTORY. 3(3-0); I, II, and SS. Mr. James.

A general survey of the whole field of English history, including the outlines of political history and the essentials of English constitutional development and stressing the development of the empire, the English background of American history, and the industrial and social development of the English people.

126. CURRENT HISTORY. 1(1-0); I, II, and SS. May not be taken more than four semesters for credit. Mr. Price, Mr. Iles, Mr. James, Mr. Correll, Dr. Shannon, Mr. Williams, Mr. Parrish, and Miss Alsop.

The essentials of American and foreign governments, of international relations, of international law, of biography, of industrial developments, and of the larger world issues as they appear in current news reports giving a wide outlook on the world of to-day and a better understanding of conditions and institutions in the midst of which we live.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. AMERICAN HISTORY I. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Price.

Beginning of the American nation: The origin and development of American nationality and democracy to the end of the War of 1812, with special stress on the industrial phases, but including our constitutional and political development, with the European background in each case.

202. AMERICAN HISTORY II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Price.

Western expansion and sectionalism: The industrial conditions, the political issues, and the leaders of the middle period of our history, from the close of the War of 1812 to the Civil War.

203. AMERICAN HISTORY III. 3(3-0); II and SS. Prerequisite, when taken for graduate credit: Course 105, 201, or 202.

The new industrial age: Review of the industrial conditions in America just before the Civil War; industrial effects of that war; the political and governmental activities of the last half century in the light of the industrial conditions and developments of that period.

204. AMERICAN AGRICULTURAL HISTORY. 3(3-0); I. Prerequisite, when taken for graduate credit: Three credits of college history. Dr. Shannon.

European background and Indian beginnings; agricultural development during the colonial period; the westward movement into the prairie regions of the Mississippi valley, with the distinctive American developments in methods, live stock, and especially farm machinery; the last quarter century with its varied industries, more intensive farming, and higher cost of living.

206. AMERICAN POLITICAL PARTIES. 2(2-0); I. Intended to supplement

course 105 or 204. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Iles.

Origin, development, leaders, and function of political parties in America; issues and results of the more important presidential elections; growth of nationality and development of self-government through American history, with special reference to present tendencies.

207. LATIN AMERICA. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. James.

History, government, and industrial and social conditions of Mexico, Central America, and the South American nations; the interrelations of each of these and the United States; particular attention given to contemporary Latin America.

223. MODERN EUROPE II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 115. Mr. Parrish.

Evolution of the modern European nations since 1814, with special attention to political organization, industrial development and colonial expansion; political problems and social and economic adjustments due to the Great War.

224. TWENTIETH CENTURY EUROPE. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 223. Mr. Correll.

The causes of the World War; the nations that entered it and why; the war; the making of the treaty, and its provisions; the League of Nations; and postwar reconstruction.

225. HISTORY OF THE HOME. 3(3-0); II. Prerequisite, when taken for graduate credit: Three credits of college history. Miss Alsop.

The primitive family; the Hebrew family; family life of the Greeks and of the Romans; the home and family life during the Middle Ages, including the influence of the Christian church; the English family in the seventeenth and eighteenth centuries; the American colonial home; the industrial revolution and its effects upon family life; the family during the nineteenth century; the present situation and tendencies.

226. THE BRITISH EMPIRE. 2(2-0); II and SS. Prerequisite: For undergraduates, entrance credit in English history or three credits of college history; for graduate credit, the latter. Mr. James.

The English phase of the European expansion movement, with consideration to the forces and influences promoting the "swarming of the English" overseas; growth and development of the English provinces into self-governing colonies and the union of these into practically independent dominions; the drawing together of the widely scattered English people into a British commonwealth of nations, and the significance of this fact in the struggle for democracy.

228. IMMIGRATION AND INTERNATIONAL RELATIONS. 2(2-0); I and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Price.

Causes and effects—economic, social, and political—of the coming of the foreigner to our shores, from the colonial period to the present, with special reference to the recent changes as to the character of the immigrants and as to the conditions in Europe and in America that affect the number and quality of immigrants; a clear survey of the important epochs in our diplomatic history.

229. HISTORY OF THE FAR EAST. 2(2-0); I. Prerequisite, when taken for graduate credit; three credits of college history. Mr. Parrish.

Rise, development and spread of Chinese civilization in the Far East; achievements in politics, economics, philosophy, science, art, literature; impact of the modern West, including United States; special attention is given to China's economic, social and diplomatic problems since 1840; rise of Japan; partial dismemberment of China under the Manchus, and rise of the republic; new role of China and of Japan in world commerce, trade and politics.

231. HISTORY OF RELIGIONS. 2(2-0); I or II, and SS. Prerequisite, when taken for graduate credit: 3 credits of college history. Mr. Parrish.

Rise and growth of historic religions which influence most of the peoples of the world to-day; relation of each religion to race, physical environment, and advance in culture; the leading personalities, religious conceptions, and historic events and movements which modify life and thought in Hinduism, Buddhism, Confucianism, Taoism, Zoroastrianism, Mohammedanism, Judaism, and Christianity.

232. PROBLEMS IN HISTORY INSTRUCTION. 2(2-0); SS. May be taken for three graduate credits, in which case ten credits in history and nine credits in education are prerequisites, and a series of problems must be worked out from first-hand material. Mr. Iles or Dr. Shannon.

The different texts in history and civics critically compared as to points of excellence or weakness, including lectures on the content and viewpoint of each; the best available illustrative material and helps in the teaching of history and civics; evolution in the writing of history; the growing importance of history and civics in the modern school curriculum; the improving viewpoint as to content of both the history and civics courses; for the more advanced students, special attention to the bibliography of history, to the better known collections of sources, and to the more approved methods of taking and using notes in teaching history.

250. SEMINAR IN HISTORY AND GOVERNMENT. 2 to 5 credits; I, II, and SS. Prerequisite: Six credits of college history of a type that will serve as a proper background for the subject to be studied. Mr. Price, Mr. Iles, Mr. James, Mr. Correll, Dr. Shannon, and Mr. Parrish.

Preference to special fields connected with the history of agriculture, of industry, or of commerce, though other fields may be studied at the discretion of the department.

FOR GRADUATE CREDIT

301. RESEARCH IN HISTORY. 1 to 6 credits; I, II, and SS. For prerequisites, consult instructor. Mr. Price, Mr. Iles, Mr. James, Mr. Correll, Dr. Shannon, and Mr. Parrish.

Individual research problems in European or American history, including international relations. Conclusions will generally take the form of a thesis.

COURSES IN GOVERNMENT

FOR UNDERGRADUATE CREDIT

151. AMERICAN GOVERNMENT. 3(3-0); I, II, and SS. Not open to students having credit in History and Government 152 or 153. Mr. Iles.

A definite review of the fundamental principles and operations of our state and national governments, including the principles of constitutional law, but giving special emphasis to present-day conditions and movements in our governmental and political life.

152. AMERICAN NATIONAL GOVERNMENT. 3(3-0); I. No credit for students having credit in course 151. Mr. Iles.

The mechanism, functions, and control of the government of the United States, with considerable attention to principles and problems. With course 153, this course affords a comprehensive study of American national, state, and local government.

153. AMERICAN STATE GOVERNMENT. 3(3-0); II. No credit for students having credit in course 151. Mr. Iles.

State and local government, with special attention to functions and problems.

155. OUR NATIONAL AND STATE CONSTITUTIONS. 2(2-0); SS. Mr. Iles and Mr. Williams.

The state texts, supplemented by an abundance of illustrative material intended to be specifically useful in presenting the subject to pupils. For teachers required by law to teach the constitution of the United States; of value also to those preparing for a course in law.

160. COMMERCIAL LAW. 1(1-0); I. Mr. Williams.

The elementary principles of contracts, agency, sales, and negotiable instruments. Business Law A may be substituted for Commercial Law, where the requirements of the curricula permit, and the extra credit used as an elective.

163, 164. BUSINESS LAW I AND II. 3(3-0) each. Prerequisite for II: Course 163 or 167. Mr. Williams.

I: Contracts, agency, and sales.

II: Negotiable instruments, partnership, and corporations.

167. LAW FOR ENGINEERS. 2(2-0); I and II. Mr. Williams.

A study, chiefly through cases, of such rules of law as will prove most useful to engineers and architects, with special emphasis on the law of contracts.

175. FARM LAW. 2(2-0); I. Offered 1929-'30 and alternate years thereafter. Not open to students having credit in Business Law I or II. Mr. Williams.

A study of the particular rules in various branches of the law, such as property (including deeds, mortgages, the relation of landlord and tenant) contracts, negotiable instruments, sales, agency, insurance, and police regulation, a knowledge of which is most useful to the conduct of the business of a farmer.

FOR GRADUATE AND UNDERGRADUATE CREDIT

252. COMPARATIVE GOVERNMENT. 2(2-0); I or II, and SS. Mr. Iles.

The leading features, especially with regard to administration, of certain European governments such as England, France, and Germany, and a comparison of essential feature with government in the United States. (A supplement to the course in American Government.)

256. INTERNATIONAL LAW. 2(2-0); II. Mr. James.

Fundamental principles of international law and international relations; public and private rights and obligations in time of peace and in time of war, especially in the light of recent developments, such as the Hague conference.

260. GOVERNMENT REGULATION OF BUSINESS. 2(2-0); II. Prerequisite, when taken for graduate credit: Course 151, 161, or 163. Mr. Williams.

Government powers; trade regulations; labor unions; protection of debtors; business affected with a public interest; conservation of natural resources; vested rights; confiscatory legislation; and certain positive governmental activities.

276. LAND LAW. 2(2-0); I or II. Planned to supplement Agricultural Land Problems (Ag. Ec. 218.) Mr. Williams.

The estates, interests, and rights in land, including relation of landlord and tenant, future interests, joint estates, easements, equitable interests, and mortgages; acquisition of land, including conveyances, descent, devise, adverse possession; notice of rights of power owner or incumbrancer, including notice by recording, notice by possession, etc.

FOR GRADUATE CREDIT

351. RESEARCH IN GOVERNMENT. 1 to 6 credits; I, II, and SS. For Prerequisites in each case, consult instructor. Mr. Price, Mr. Iles, Mr. James, Dr. Shannon, and Mr. Williams.

Individual research problems in national or local government, American or European, including studies in comparative government or international law. The conclusions generally take the form of a thesis.

Industrial Journalism and Printing

Professor ROGERS
 Professor KEITH
 Assistant Professor AMOS

Assistant Professor CHARLES
 Assistant Professor BOUGHNER
 Instructor THACKREY

The work in industrial journalism and printing is designed to accomplish two purposes—the preparation of students in other fields to do occasional writing for newspapers and other periodicals on subjects of special interest; and the training of students fundamentally interested in journalism for positions on farm journals, newspapers and other publications, particularly where writing on agriculture and other industrial subjects is in demand. The instruction considers the requirements of newspapers, agricultural papers, trade publications, and general magazines, and the ethical problems of the profession of journalism. *The Kansas Industrialist*, the official paper of the College, is under the editorial and mechanical direction of the department. The office of *The Kansas State Collegian*, the student semiweekly newspaper, is in the department practice room. *The Brown Bull*, a humorous magazine is published by students in the department. Students write also for general newspapers, farm journals, and magazines.

Attention is given to the mechanical side of the profession in the instruction in printing, which is required of all students taking the curriculum in industrial journalism. Printing has been taught in the institution continuously since 1873—the longest period during which instruction in the subject has been given in any American college.

The equipment for instruction in journalism and printing is that of a practical publishing and printing plant. This department owns equipment valued at \$14,785.

A large amount of timely agricultural and other information is furnished regularly to Kansas newspapers, farm journals, and other publications. Special assignments are covered for these periodicals, and special inquiries are answered.

All students enrolled in the curriculum in industrial journalism and all students electing journalism practice or laboratory courses pay a laboratory charge of \$1.50 a semester.

COURSES IN PRINTING

FOR UNDERGRADUATE CREDIT

101. PRINCIPLES OF TYPOGRAPHY. 3(2-3); I and II. Mr. Amos.

The case, the point system, and the measurement of type and stock; the history of printing; development of the various typographic styles; practice in setting straight matter, with emphasis on accuracy. Type faces and the typography of advertisements and head display; principles of effective make-up.

108, 111, 112. AD. COMPOSITION, I, II AND III. 2(0-6) each; I and II each. Prerequisites: For I, course 101; for II, course 108; for III, course 111. Mr. Amos.

I: Principles of display and design as applied to newspaper and magazine advertisements; practical work in setting ads. for magazines.

II and III: Course 108 continued; more complicated work studied.

114, 118, 120. JOB COMPOSITION I, II AND III. 2(0-6) each; I and II each. Prerequisites: For I, course 101; for II, course 114; and for III, course 118. Mr. Amos.

I: Emphasis on differences in requirements for job composition and ad. composition; proper selection of type faces, borders, and ornaments; setting jobs and locking them up for the pressroom.

II and III: Color work, tabular forms, and other complicated kinds of job work.

122, 126. PLATEN PRESS WORK I AND II. 2(0-6) each; I and II each. Prerequisites: For I, course 108 or 114; for II, course 122. Mr. Amos.

I: Practical platen presswork under ordinary printing-office conditions; feeding of the press and preparation of the jobs by the student; selection of inks and care of printing rollers.

II: I continued, with more advanced work in mixing inks and in color work.

131, 136. CYLINDER PRESS WORK I AND II. 2(0-6) each; I and II each. Prerequisites: For I, course 126; for II, course 131. Mr. Amos.

I: The fundamentals for work on all kinds of cylinder presses; how to make the work ready and how to feed; the general care and handling of cylinder presses.

II: A continuation of Cylinder Presswork I.

COURSES IN INDUSTRIAL JOURNALISM

FOR UNDERGRADUATE CREDIT

141, 142. PRE-JOURNALISM LECTURES I AND II. 1(1-0) and 1(1-0); I and II, respectively. Mr. Rogers.

I. Examination and description of the publishing field, the daily newspaper, press services and syndicates, the weekly newspaper, the trade and business press, the agricultural press, preparatory to entering professional courses in journalism.

II. Continuation of I. Women in journalism, the field of advertising, circulation, magazines, free-lance writing, information services, the printing trades, photography and art, accounting and executive work.

151. ELEMENTARY JOURNALISM. 2(2-0); I and SS. Prerequisites: Courses 141 and 142. Mrs. Boughner.

Methods of obtaining news of various types, the writing of the lead, and the general styles of the news story.

160. AGRICULTURAL JOURNALISM. 3(2-3); I and II. Mr. Charles.

The course is intended to supply sufficient knowledge of the principles of news writing as applied to agriculture to enable students in agriculture to become occasional contributors to newspapers and farm journals. Much practice given in agricultural writing.

161. INDUSTRIAL WRITING. 2(2-0); I. Prerequisite: Course 151. Mrs. Boughner and Mr. Thackrey.

Application of the principles of journalism to the treatment of industrial subjects, such as are found in agriculture, engineering, home economics, and more general scientific research.

163. ADVANCED REPORTING. 3(3-0); I. Prerequisite: Course 161. Mrs. Boughner and Mr. Thackrey.

Recitation and practice covering the work of the reporter in connection with local, state, and national government; the reporting of conventions, exhibitions, and large public gatherings. Special assignments in connection with industrial and scientific news. (For students who are familiar with the fundamentals of news reporting.)

167. INDUSTRIAL FEATURE WRITING. 2(2-0); I and SS. Prerequisite: Course 161. Mr. Rogers.

The feature article; its underlying principles applied to writing on agricultural and other industrial subjects; demands of newspapers, farm journals, and general magazines for writing of this character; agricultural journals, trade journals, and other publications of highly specialized character; actual writing for publications of these types and submission of material to editors.

172. JOURNALISM FOR WOMEN. 2(2-0); II. Prerequisite: Course 167. Mrs. Boughner.

A course for women students in news and feature writing for women's pages and women's magazines, and consideration of specialized fields for the woman writer.

179. PRINCIPLES OF ADVERTISING. 3(3-0); I and II. Prerequisites: For in-

dustrial journalism students, course 161; for commerce students, Written and Oral Salesmanship. Mr. Keith.

Study of the goods to be advertised, analysis of the market, psychology of advertising, preparation of advertising copy, and other important matters; application of the principles involved.

181. THE RURAL PRESS. 2(2-0); I and II. Prerequisite: Course 151. Mr. Charles.

Nature and needs of the community newspaper, with emphasis on its presentation of the agriculture and rural life in its field; actual writing of news stories and items gathered on the campus for publication in Kansas community newspapers.

183. NEWS BUREAU METHODS. 2(2-0); I. Mr. Charles.

A study of publicity methods, accepted and condemned practices, the psychology of the press agent's copy, its effect on the editor and the reader. Lecture and recitation supplemented with practice writing for the College news bureau.

FOR GRADUATE AND UNDERGRADUATE CREDIT

220, 221. ADVERTISING PRACTICE I AND II. 2(2-0) each; II and I respectively. Prerequisites: For I, course 179; for II, course 220. Mrs. Boughner.

I: Practice in advertising writing, with special attention to copy and display problems; practical problems in the advertising of student activities and of local merchants; actual commercial work.

II: Making of layouts and consideration of advertising production methods such as art work, typography, engraving processes.

251A. CIRCULATION AND ADVERTISING PROMOTION. 2(2-0); I. Prerequisite: Course 171 or equivalent. Mr. Keith.

Building up of circulation of periodical publications; soliciting of advertising; premiums and other plans for increasing circulation; the advertising agency, circulation analysis, and the fixing of advertising rates.

254. COPY READING. 2(0-6); II. Prerequisite: Course 163. Mr. Charles, Mrs. Boughner, and Mr. Thackrey.

Practice in the work required of a copy reader, whether on a newspaper, an agricultural journal, or some other publication.

255. CONTEMPORARY THOUGHT. 3(3-0); I. Prerequisite: Course 254. Mr. Rogers.

Correlation and unification of various subjects previously pursued in college; unbiased presentation of contemporary development and contemporary figures in science, the arts, and philosophy.

257. EDITORIAL PRACTICE. 2(2-0); I. Prerequisite: Course 254. Mrs. Boughner.

The writing of editorials suitable for farm papers, trade papers, and newspapers; the shaping of editorial policies.

260. ETHICS OF JOURNALISM. 2(2-0); II. Prerequisite: Course 255. Mr. Rogers.

The ethics of journalism as exemplified in the use of contributed matter, in the work of the reporter or staff writer, in the editorial conduct of the paper, and in the handling of circulation and advertising; federal and state laws relating to periodical publications, to advertising, to libel, and to author's rights.

265. MATERIALS OF JOURNALISM. 2(2-0); I. Mr. Charles.

The principal newspapers and magazines; accuracy and adequacy of news reports and other published matter; materials handled by the publications; methods of treatment; character of editorial comment.

270. MAGAZINE FEATURES. 2(2-0); I, II, and SS. Prerequisite: Permission of the instructor. Mr. Rogers and Mrs. Boughner.

The matter of the course is varied to suit the needs and desires of the students, emphasis being laid upon such types of magazine writing as members of the class wish to practice.

274. HISTORY OF JOURNALISM. 2(2-0); I. Prerequisite: One semester of college American History. Mrs. Boughner.

The history of journalism from its beginning and the history of printing as far as this is concerned with periodical publications.

278. JOURNALISM SURVEYS. 2(0-6); II. Mr. Rogers and Mrs. Boughner.

Careful investigation of the periodical reading matter of communities; tabulation of information obtained; relation of the reading matter to the industrial, economic, social and moral life of the communities.

282. COLUMN CONDUCTING. 2(2-0); II, when requested by a sufficient number. Mr. Davis, of the Department of English.

The conducting of the so-called column, humorous or semiserious; writing paragraphs, light verse, and similar material, with stress on practice in writing humor.

287. CURRENT PERIODICALS. 3(3-0); II. Mrs. Boughner.

The material contained by current periodicals of various types, and the nature of its appeal to the reader.

FOR GRADUATE CREDIT

351. RESEARCH IN INDUSTRIAL JOURNALISM. 2 to 5 credits: I and II. Mr. Rogers.

Several courses embodying creative literary work or detailed research in specialized journalism are arranged to meet the specific needs and desires of the individual graduate students.

Library Economics

Librarian SMITH
Associate Librarian DERBY
Acting Reference Librarian DAVIS
Loan Librarian CAMP

Reference Assistant SWENSON
General Assistant HOFF
Loan Assistant CULLIPHER

The Library supplements the work of every department of the College. It is a storehouse of knowledge for every student. It supplies information and the latest results of scientific research for every instructor. The Library is thus essential to the College, forming, as it were, a center from which its various activities radiate.

In order that the Library may perform its functions with the highest degree of efficiency it is necessary that instruction be given regarding its use. With this thought in mind a course is offered, the purpose of which is to familiarize the student with scientific, up-to-date methods in the use of books and to acquaint him with the best general reference books as well as with standard works on various subjects. Placed at the beginning of his College course it should tend to increase largely his efficiency in study throughout the entire course.

The books and pamphlets in the library are valued at \$280,919; other equipment has a value of \$58,738.

COURSES IN LIBRARY ECONOMICS

FOR UNDERGRADUATE CREDIT

101. LIBRARY METHODS. 1(1-0); I and II. Miss Derby, Miss Hoff, Miss Davis, Miss Camp, Miss Swenson, and Miss Cullipher.

Classification and arrangement of books in the library; card catalogues; the principal works of reference, such as dictionaries, encyclopedias, atlases, and standard works in history, literature, economics, quotations, statistics, etc.; public documents and their indexes; indexes to periodicals, etc.; methods of indexing current reading for purposes of future reference.

Mathematics

Professor REMICK
 Professor WHITE
 Professor STRATTON*
 Associate Professor HYDE
 Associate Professor LEWIS
 Associate Professor LYONS
 Assistant Professor JANES

Assistant Professor MOSSMAN*
 Assistant Professor HOLROYD
 Instructor ELDRIDGE
 Instructor PORTER
 Instructor BATTIG
 Instructor EVANS

In an institution that stands as an exponent of the industrial type of education, mathematics should occupy an important place. Training in this exact science is valuable not only for its own sake but also on account of its manifold applications. On this basis the courses in mathematics are offered primarily with the following ends in view: (1) The attainment of mental power and accuracy in the interest both of general culture and special application; (2) the acquirement of facts and processes that will provide the student with an indispensable tool for further scientific and technical study.

As several of the curricula of the College are formulated on the assumption that a half-year of solid geometry will have been taken in high school, classes in this subject are provided for students who are deficient in this respect. College credit on electives is allowed for this work.

The equipment owned by this department is valued at \$810.

COURSES IN MATHEMATICS

FOR UNDERGRADUATE CREDIT

101. PLANE TRIGONOMETRY. 3(3-0); I, II, and SS. Prerequisites: Plane geometry and one and one-half years of high-school algebra. Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, Mr. Porter, Miss Eldridge, Mr. Battig, and Mr. Evans.

Functions of acute right triangles, goniometry, oblique triangles, practical problems.

102. SOLID GEOMETRY. 2(2-0); I, II, and SS. Prerequisites: Plane geometry and one year of high-school algebra. Mr. Lewis, Mr. Janes, Miss Holroyd, Mr. Porter, Miss Eldridge, and Mr. Evans.

Principal theorems, numerical exercises, and mensurational problems

104. COLLEGE ALGEBRA. 3(3-0); I, II, and SS. Duplicates latter part of Math. 107. Prerequisites: Plane geometry and one and one-half years of high-school algebra. Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, Mr. Porter, Miss Eldridge, Mr. Battig, and Mr. Evans.

Elementary topics, functions and their graphs, and quadratic equations rapidly reviewed; complex numbers, theory of equations, permutations and combinations, partial fractions, logarithms, and determinants.

107. COLLEGE ALGEBRA A. 5(5-0); I, II, and SS. Includes Math. 105. Prerequisite: Plane geometry and one year of high-school algebra. Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, Mr. Porter, Miss Eldridge, Mr. Battig, and Mr. Evans.

Brief review of elementary subjects; a thorough treatment of quadratics, ratio, proportion, progressions, and the binomial theorem for positive exponents; the chief content of course 104.

110. PLANE ANALYTICAL GEOMETRY. 4(4-0); I, II, and SS. Prerequisites: Plane Trigonometry and College Algebra. Mr. White, Mr. Stratton, Miss Hyde, Mr. Lyons, Mr. Lewis, Mr. Janes, Miss Mossman, and Mr. Battig.

Coördinate systems, projections, loci, straight line conics, parametric and empirical equations, with a discussion of the general equation of the second degree.

* Absent on leave, year 1929-'30.

119. CALCULUS. 3(3-0); I. Not open to students who have credit in Math. 205. Prerequisite: Plane Analytical Geometry. Mr. Remick, Mr. Stratton, and Mr. Lyons.

Brief treatment of the fundamental principles of both branches of calculus; practice with the standard formulas of differentiation and their application to geometry and mechanics; integration of the usual elementary forms; the idea of the definite integral and a few of the more important applications.

122. SPECIAL METHODS IN THE TEACHING OF MATHEMATICS. 3(3-0); II. Miss Hyde.

Best methods of teaching arithmetic, algebra, and geometry; the reports of prominent mathematical organizations, especially those of the international commission; comparison of the curricula of different schools; an examination of books and articles of the teaching of mathematics; emphasis on pedagogical questions, with some reference to the historical development of elementary mathematics.

123. SPECIAL METHODS IN ARITHMETIC. 2(2-0); SS. Miss Holroyd.

Best methods of presenting the various topics; use of standardized and practice tests; supplementary work; best method of adapting the state test to the minds of the pupils, etc.

126. ELEMENTS OF STATISTICS. 3(3-0); I. Not open to students having credit in Educ. 223. Mr. White.

The parts of algebra most needed as a basis for statistical work; development of the elementary principles used in analysis of statistical data.

129. SURVEY COURSE IN MATHEMATICS. 3(3-0); II. Prerequisites: Trigonometry and College Algebra. Mr. Stratton.

A general culture course designed to give an insight into the nature and function of mathematics beyond the elementary field. Essential ideas of analytical geometry and calculus with applications.

150. MATHEMATICS OF INVESTMENT. 3(3-0); I and II. Prerequisite: Accounting II (Econ. 134). Mr. Stewart, from Department of Economics and Sociology.

Problems relating to interest, annuities, sinking funds, amortization and valuation of bonds, depreciation, building and loan, and life insurance.

FOR GRADUATE AND UNDERGRADUATE CREDIT

The following courses are available on request by a sufficient number of students. Numbers 201, 203, 205, 206, 210, 213, and 216 are offered each year.

201. DIFFERENTIAL EQUATIONS. 3(3-0); I. Prerequisite: Calculus II. Mr. Remick.

The various standard types of differential equations, with the usual applications.

203. THEORY OF STATISTICS. 3(3-0); II. Prerequisite: Elements of Statistics, or equivalent. Mr. White.

The theory of probability applied to statistical problems; statistical curves, correlation theory, curve fitting, and problems of random sampling; actual practice with data from biology, agronomy, physics, etc.

204. METHOD OF LEAST SQUARES AND THEORY OF MEASUREMENT. 2(2-0); II. Prerequisite: Calculus II. Mr. Remick and Mr. White.

The law of errors based on the theory of probability and the probability curve; adjustment of observations by the method of least squares, development of precision measures; distribution of errors; and Gauss's method of substitution in the solution of normal equation.

205. CALCULUS I. 5(5-0); I, II, and SS. Open for only two hours credit to students who have credit in Math. 119. Prerequisite: Plane Analytical Geometry. Mr. Remick, Mr. White, Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, and Mr. Janes.

The usual topics of differential calculus, with integration of standard forms, definite integrals, rational fractions, and integration by parts.

206. CALCULUS II. 3(-0); I. Prerequisite: Calculus I. Mr. Remick, Mr. White, Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, and Mr. Janes.

Problems involving areas, lengths, surfaces, and volumes treated by processes of single integration; idea of successive and partial integration applied to areas, moments, centers of gravity, surfaces, volumes, etc.; types of differential equations most frequently met subsequently by the student of engineering.

206A. CALCULUS IIA. 4(4-0); I and II. Prerequisite: Calculus I. Mr. Remick, Mr. White, Miss Hyde, Mr. Lewis, Mr. Lyons, and Mr. Janes.

Similar to course 206 with the addition of a brief statement of some of the more common types of differential equations likely to be met in engineering applications.

207. SOLID ANALYTICAL GEOMETRY. 3(3-0); II. Prerequisites: Courses 110 and 206. Mr. White.

Coördinates of points in space and their transformation involving discussion of lines and planes; standard types of quadratic surfaces, their classification and principal properties.

210. ADVANCED CALCULUS I. 3(3-0); I. Prerequisite: Calculus II. Mr. White and Mr. Lyons.

Special topics in integral calculus, including various methods of integrating elementary forms, definite integrals with attention to gamma and beta functions, and applications to lengths and areas.

213. ADVANCED CALCULUS II. 3(3-0); II. Prerequisite: Course 210. Mr. White and Mr. Lyons.

Continuation of course 210, including further application to geometry and mechanics, a treatment of line, surface, and space integrals, and a discussion of elliptic integrals.

216. THEORY OF EQUATIONS. 3(3-0); I. Prerequisite: Calculus II. Mr. Remick.

The elements of the classical theory including the general cubic and quartic equation and the complete solution of numerical equations; discussion of symmetric functions, resultants, and discriminants.

FOR GRADUATE CREDIT

The following courses are available by appointment:

301. THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. 3(3-0); II. Prerequisites: Advanced Calculus II and Differential Equations. Mr. Remick.

An introductory course with the usual line of topics.

306. THEORETICAL MECHANICS. 3(3-0); I. Prerequisite: Calculus II. Mr. Stratton.

Mechanics in its relation to mathematical analysis.

311. PROJECTIVE GEOMETRY. 3(3-0); II. Prerequisite: Course 110. Mr. White.

The fundamental forms, projective relations, point rows, and pencils of the second order, poles and polars, properties of conics and involution.

316. ADVANCED DIFFERENTIAL EQUATIONS. 3(3-0); I. Prerequisite: Course 201. Mr. Remick.

Treatment of special topics, such as the equations of Legendre, Bessel, and Ricatti, with applications.

321. LIE THEORY OF DIFFERENTIAL EQUATIONS. 3(3-0); II. Prerequisite: Course 201. Mr. Remick.

Lie's theory of one-parameter groups, with special reference to its application to the solution of the various types of differential equations.

326. CALCULUS OF VARIATIONS. 3(3-0); I. Prerequisite: Course 201. Mr. Remick.

Some of the standard problems of maxima and minima wherein a definite integral affords the fundamental form of expression.

331. MATHEMATICAL RESEARCH. Credit and hours of work arranged in consultation with the head of the department; I and II. Required of all candidates for the master's degree whose major work is in the Department of Mathematics.

* Military Science and Tactics

Professor PETTY, Colonel Inf., U. S. A.
 Associate Professor HUMPHREYS,* Maj. C. A. C., U. S. A.
 Associate Professor BOWEN, Capt. Inf., U. S. A.
 Assistant Professor STEWART,† Capt. C. A. C., U. S. A.
 Assistant Professor YOUNG, Capt. C. A. C., U. S. A.
 Assistant Professor VAN TUYL, Capt. V. C., U. S. A.
 Assistant Professor ROSE, Capt. Inf., U. S. A.
 Assistant Professor MADISON, First Lieut. C. A. C., U. S. A.
 Assistant Professor MYRAH,‡ First Lieut. C. A. C., U. S. A.
 Assistant Professor MARSHALL, First Lieut. Inf., U. S. A.
 Military Property Custodian CLAEREN, Major D. E. O.
 Instructor COFFEE, First Sergeant C. A. C., U. S. A.
 Instructor CONNOLLY, Staff Sergeant Cav., U. S. A.
 Instructor PUGH, Sergeant Inf., U. S. A.
 Instructor WILSON, Sergeant C. A. C., U. S. A.

Since this College is one of the beneficiaries of the act of congress of 1862, military tactics is required in the College curricula. All male students, not physically disqualified, are required to take military training three hours a week for two years. Students entering with 25 hours of advanced credit are excused from one year of military training; those entering with 59 hours of advanced credit are excused from all military requirements.

Requests for excuse from military science, or for postponement of the work, are acted upon by the president of the College. Such requests are presented through the student's dean, and the president obtains the advice of the professor of military science and tactics, who thoroughly investigates each case on its merits and makes his recommendation to the president. Requests based on physical condition must be accompanied by a recommendation made by the College physician. Students excused from military science for any reason are assigned to an equivalent amount of some other College work instead. Students permitted to postpone military science are not thereby excused, but must take it up later.

Students enrolling in military courses who were members of junior units, R. O. T. C., at military academies or high schools, or those receiving military training while enrolled in government-aided schools (section 55c, national defense act, and section 1225, Revised Statutes) may apply for advanced credit examinations on the basis of one semester for each year of training at a high school or government-aided school; provided there is stationed at these schools a regular officer of the United States Army; and provided further, that no credit will be given beyond the basic course, which comprises the first four semesters of the College curricula. (freshman and sophomore years). (See "Advanced Credits.")

The act of congress of June 3, 1916, known as the national defense act, provides for the establishment in civil institutions of a Reserve Officers' Training Corps (R. O. T. C.).

The object of this provision is stated as follows:

"The primary object of establishing units of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, students at civil institutions for reserve officers. The system of instruction, herein prescribed, presents to these students a standard measure of that military training

* From November 21, 1929.

† On sick leave after November 29, 1929.

‡ From January 24, 1930.

which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

"Units of the senior division may be organized at civil institutions which require four years of collegiate study for a degree, including state universities and those state institutions that are required to provide instruction in military tactics under the provisions of the act of congress approved July 2, 1862, donating lands for the establishment of colleges where the leading object shall be practical instruction in agriculture and the mechanic arts, including military tactics.

"Units of the junior division may be organized at any other public or private educational institution."

An infantry unit, a coast artillery unit, and a veterinary unit of the Reserve Officers' Training Corps have been established in this College.

Members of the R. O. T. C. will receive the benefits mentioned below:

1. SENIOR DIVISION, BASIC COURSE (freshmen, sophomores). Each student of these classes will be furnished with complete uniform, and equipment for his use during the course. The articles remain the property of the United States and must be accounted for and turned in by each student at the close of each college year or upon withdrawal from the R. O. T. C. Shoes are not furnished. Each student will provide himself with a pair of high tan shoes (not laced boots), before entering College, as they will be required immediately upon his admission.

A laboratory fee of 35 cents per semester is charged all students assigned to military training.

Corporals are selected from sophomores and specially qualified freshmen.

2. SENIOR DIVISION, ADVANCED COURSE. (Students who have completed the two years' Basic Course.) The student who continues in the R. O. T. C. after completing the Basic Course will receive the following benefits:

He will receive a special uniform allowance.

He will receive commutation of subsistence at the rate of 30 cents per day, provided he executes an agreement to complete the Advanced Course, or to continue in the course during the remainder of his time in College, and to take the course in camp training during such period as prescribed by the Secretary of War. The camps referred to involve no expense on the part of the student. In addition, a complete summer uniform will be issued and he will be paid at the rate of 70 cents per day for not to exceed six weeks, and five cents per mile to and from camp to cover travel expenses.

After graduation he will be eligible for appointment by the President of the United States as a reserve officer of the army, and if so appointed he may, under certain conditions, be appointed and commissioned a second lieutenant in the regular army with pay at the rate of \$125 per month, with the usual allowances. (Ration allowance is \$18 and allowance for quarters, \$40 per month.)

In order to elect the Advanced Course, R. O. T. C., a student must have the recommendation of the president of the College, his dean, and the professor of military science and tactics.

The corps of cadets at present is organized as one regiment. A military band is also provided for, the members of which must be thoroughly trained in military tactics. Assignments to the military band are made upon recommendation of the bandmaster, who has charge of the technical instruction.

Officers and higher noncommissioned officers are selected from the students taking the Advanced Course, R. O. T. C., according to class standing. This selection is made from among those cadets who have been most studious and soldierlike in the performance of their duties, and the most exemplary in their general deportment.

Students who are regularly enrolled in the Advanced Course of the Senior Division normally receive three semester credits of elective work toward graduation for each semester of military training taken beyond the Basic Course.

This department possesses equipment valued at \$3,175. In addition, the department is the custodian of federal government equipment valued at \$300,000.

COURSES IN MILITARY SCIENCE AND TACTICS

FOR UNDERGRADUATE CREDIT

Senior Division R. O. T. C.

BASIC COURSE, INFANTRY

101A. INFANTRY I. 1(0-3); I. Capt. Bowen, Capt. Rose and Lieut. Marshall.

(a) *Practical.* Physical Drills, infantry drills (close and extended order).

(b) *Theoretical.* Military courtesy and discipline, national defense policy, infantry drills.

102A. INFANTRY II. 1(0-3); II. Prerequisite, Course 101. Capt. Bowen, Capt. Rose and Lieut. Marshall.

(a) *Practical.* Infantry drills (close and extended order), rifle marksmanship.

(b) *Theoretical.* Rifle marksmanship, military courtesy and customs, military hygiene and first aid, scouting and patrolling.

103A. INFANTRY III. 1(0-3); I. Prerequisite: Course 102. Lieut. Marshall.

(a) *Practical.* Acting as instructors of freshmen in infantry drills.

(b) *Theoretical.* Infantry drills (close and extended order), combat principles (squad), ceremonies.

104A. INFANTRY IV. 1(0-3); II. Prerequisite: Course 103. Lieut. Marshall.

(a) *Practical.* Automatic rifle firing, musketry problems, scouting and patrolling. Acting as instructors of freshmen in infantry drills.

(b) *Theoretical.* Automatic rifle, scouting and patrolling, musketry.

ADVANCED COURSE, INFANTRY.

109. INFANTRY V. 3(2-3); I. Prerequisite: Infantry IV. Captain Rose.

(a) *Practical.* Instructors of freshmen and sophomores in all basic course subjects, map reading and sketching.

(b) *Theoretical.* Infantry drill. Machine gun, map reading and sketching.

110. INFANTRY VI. 3(2-3); II. Prerequisite: Infantry V. Captain Rose.

(a) *Practical.* Firing of 37-mm. and trench mortar, combat principles of the rifle section and platoon, instructors in all basic course subjects.

(b) *Theoretical.* 37-mm. gun and trench mortar, combat principles of the rifle platoon and section.

111. INFANTRY VII. 3(2-3); I. Prerequisite: Infantry VI. Captain Bowen.

(a) *Practical.* Instructors in all basic course subjects and first year advanced course subjects, infantry drills and ceremonies.

(b) *Theoretical.* Review of infantry drill, company administration, military law and reserve corps regulations.

112. INFANTRY VIII. 3(2-3); II. Prerequisite: Infantry VII. Captain Bowen.

(a) *Practical.* Instructors in all infantry subjects, field engineering, combat principles of the rifle, machine gun and howitzer companies.

(b) *Theoretical.* Military history and policy, field engineering, combat principles of the rifle, machine gun and howitzer companies.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year, and is held normally at Fort Leavenworth, Kan.

BASIC COURSE, COAST ARTILLERY

(For students of the Division of Engineering only.)

113A. ARTILLERY I. 1(0-3); I. Maj. Humphreys, Capt. Stewart and Lieut. Madison.

(a) *Practical*. Physical drill, infantry drill.

(b) *Theoretical*. Close-order infantry drill, to include the company, military courtesy and customs of the service. Discipline, national defense act, military hygiene and first aid, rifle marksmanship.

114A. ARTILLERY II. 1(0-3); II. Prerequisite: Artillery I or Infantry I. Maj. Humphreys, Capt. Stewart and Lieut. Madison.

(a) *Practical*. Close-order infantry drill, parades, rifle marksmanship, and preliminary artillery instruction.

(b) *Theoretical*. Ammunition, cordage, telephones and coast artillery instruction covering duties of the second-class gunner.

115A. ARTILLERY III. 1(0-3); I. Prerequisite: Artillery II. Capt. Young.

(a) *Practical*. Close-order infantry drill and ceremonies; harbor defense, mobile, and antiaircraft artillery.

(b) *Theoretical*. Fire control instruments, range finding and range section duties for harbor defense, mobile, and antiaircraft artillery.

116A. ARTILLERY IV. 1(0-3); II. Prerequisite: Artillery III. Capt. Young.

(a) *Practical*. Section (a) of course 115 continued.

(b) *Theoretical*. Continuation of section (b), course 115 to include the duties of the second class gunner; aiming and laying of guns; target characteristics.

ADVANCED COURSE, COAST ARTILLERY

(For students of the Division of Engineering only.)

117. ARTILLERY V. 3(2-3); I. Prerequisite: Artillery IV and Plane Trigonometry. Capt. Stewart.

(a) *Practical*. Duties as cadet officers and noncommissioned officers in connection with course 113 to 116, artillery materiel, sketching.

(b) *Theoretical*. Topography, position finding, gunnery for heavy artillery.

118. ARTILLERY VI. 3(2-3); II. Prerequisites: Artillery V and Plane Trigonometry. Capt. Stewart.

(a) *Practical*. Section (a) of course 117 continued.

(b) *Theoretical*. Gunnery for heavy and antiaircraft artillery.

119. ARTILLERY VII. 3(2-3); I. Prerequisite: Artillery VI. Maj. Humphreys.

(a) *Practical*. Duties as cadet officers and noncommissioned officers, artillery materiel, motor transportation, command and leadership, orientation.

(b) *Theoretical*. Military law, motor transportation, orientation.

120. ARTILLERY VIII. 3(2-3); II. Prerequisite: Artillery VII. Maj. Humphreys.

(a) *Practical*. Section (a) of course 119; gunnery.

(b) *Theoretical*. Tactical employment of artillery, field engineering, administration and supply, artillery materiel, military history and policy.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year and is held normally at Camp Knox, Ky.

BASIC COURSES, VETERINARY CORPS

(For students in the Division of Veterinary Medicine only.)

121A. MILITARY SCIENCE (VET.) I. 1(0-3); I. Capt. Van Tuyl.

(a) *Practical*. Same as course 101 (Infantry I).

(b) *Theoretical*. Organization and policies of the U. S. Army, military art.

122A. MILITARY SCIENCE (VET.) II. 1(0-3); II. Prerequisite: Course 121.
Capt. Van Tuyl.

(a) *Practical*. Same as course 102 (Infantry II).

(b) *Theoretical*. Organization and administration, sanitation, logistics, first aid.

123A. MILITARY SCIENCE (VET.) III. 1(0-3); I. Prerequisite: Course 122.
Capt. Van Tuyl.

(a) *Practical*. Same as section (a) of course 102; duties of privates and noncommissioned officers of the veterinary corps demonstrated.

(b) *Theoretical*. Tactics, logistics.

124A. MILITARY SCIENCE (VET.) IV. 1(0-3); II. Prerequisite: Course 123.
Capt. Van Tuyl.

(a) *Practical*. Same as courses 102 (Infantry) and 123.

(b) *Theoretical*. Organization and administration, sanitation, military art, logistics, first aid.

ADVANCED COURSES, VETERINARY CORPS

(For students in the Division of Veterinary Medicine only.)

129A. MILITARY SCIENCE (VET.) V. 1(1-10); I. Prerequisite: Course 124.
Capt. Van Tuyl.

(a) *Practical*. Duties of junior officers demonstrated.

(b) *Theoretical*. Organization and administration, sanitation, and animal management.

130A. MILITARY SCIENCE (VET.) VI. 1(1-0); II. Prerequisite: Course 129.
Capt. Van Tuyl.

(a) *Practical*. Continuation of section (a), course 129.

(b) *Theoretical*. Sanitation, including inspection of meat and food products.

131A. MILITARY SCIENCE (VET.) VII. (1-0); I. Prerequisite: Course 130.
Capt. Van Tuyl.

(a) *Practical*. Continuation of section (a), course 129.

(b) *Theoretical*. Hospitals, hospitalization, and sanitation.

132A. MILITARY SCIENCE (VET.) VIII. 1(1-0); II. Prerequisite: Course 131.
Capt. Van Tuyl.

(a) *Practical*. Continuation of (a), section 129.

(b) *Theoretical*. Communicable diseases, foreign inspection, organization and administration (continued), résumé of entire course.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year, and is held normally at Fort Snelling, Minn.

Modern Languages

Professor CORTELYOU
Professor LIMPER
Associate Professor CRITTENDEN.

Assistant Professor PETTIS
Instructor BURNS

The study of modern foreign languages serves a number of purposes. It gives the student general training and culture; it throws helpful side lights upon English, his mother tongue; and it gives him important aid in scientific research. It is desired that the instruction in modern languages here given be as practical as possible, without, however, failing to encourage an appreciation of modern foreign literature. The plan of instruction in general is a combination of the grammatical and conversational methods, each of which has its own special advantages.

A number of literary and scientific periodicals published in French, Spanish, and German are received by the College Library, and afford the student excellent opportunity to amplify his reading knowledge of these languages.

Students who have had French, Spanish, or German in high school are required, as a rule, to take more advanced courses as their elective or required work in that language. Those who have had one year of a foreign language in high school should be assigned to the second course here; those who have had two years in high school should consult the head of the department regarding assignment to advanced work here.

The department equipment is valued at \$637.

COURSES IN GERMAN

FOR UNDERGRADUATE CREDIT

101, 102. GERMAN I AND II. 3(3-0) each; I and II respectively. Prerequisite: For II, I or equivalent. Dr. Cortelyou and Mr. Limper.

Introductory courses; grammar completed.

111. GERMAN READINGS. 3(3-0); I. Prerequisite: German II or equivalent. Dr. Cortelyou and Mr. Limper.

Readings of fairly easy, idiomatic selections from modern authors; grammatical drill; German conversation based on the text read.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. GERMAN SHORT STORIES. 3(3-0); II, when requested by a sufficient number. Dr. Cortelyou and Mr. Limper.

Interesting short stories by modern authors.

206. GERMAN COMEDIES. 3(3-0); II. Prerequisite: German Readings. Dr. Cortelyou and Mr. Limper.

Recent one-act comedies of literary merit and of a realistic, lively, and cleanly humorous nature; conversation and composition based on the text.

226. GERMAN CLASSICS. 3(3-0); I, when requested by a sufficient number. Dr. Cortelyou.

An introduction to the German classics.

231. GERMAN PROSE. 3(3-0); I, when requested by a sufficient number. Prerequisite: Course 201 or 206. Dr. Cortelyou.

Designed to give facility in rapid translation of fairly easy prose; prepared translations and sight translations.

237. SCIENTIFIC GERMAN. 4(4-0); I. Prerequisite: German II. Dr. Cortelyou.

An introduction to the vast field of scientific publications appearing in German; miscellaneous scientific articles, especially those dealing with chemistry and physics.

COURSES IN FRENCH

FOR UNDERGRADUATE CREDIT

151, 152. FRENCH I AND II. 3(3-0) each; I, II, and SS, each. Prerequisites: For II, I or one year of high-school French. Mr. Limper and Miss Pettis.

The fundamentals of French grammar; reading and conversation.

161. FRENCH READINGS. 3(3-0); I and SS. Prerequisite: French II or equivalent. Mr. Limper and Miss Pettis.

Primarily a reading course; grammar reviewed; conversation.

FOR GRADUATE AND UNDERGRADUATE CREDIT

251. FRENCH SHORT STORIES. 3(3-0); I and II. Prerequisite: French Readings or two years of high-school French. Mr. Limper and Miss Pettis.

Modern short stories by such writers as Daudet, Maupassant, and Zola.

256. THE FRENCH DRAMA. 3(3-0); II. Prerequisite: 12 hours of college French or equivalent. Mr. Limper.

Some outstanding plays of Molière, Corneille, Beaumarchais, Labiche et Martin, and Hervieu; their place in French drama.

261. FRENCH COMPOSITION AND CONVERSATION. 3(3-0); II, when requested

by a sufficient number. Prerequisite: 12 hours college French, or equivalent. Mr. Limper.

Class period devoted to practice in speaking French, written themes required as preparation for each recitation.

270. TEACHERS' COURSE IN FRENCH. 3(3-0); when requested by a sufficient number. For prerequisites, consult instructor. Mr. Limper.

Anatomical basis for production of sounds peculiar to French; methods of presenting grammar; thorough grammar review; careful examination of the French reading texts used in Kansas; methods of conducting a *cercle français*, and material to be used in it.

COURSES IN SPANISH

FOR UNDERGRADUATE CREDIT

176, 177. SPANISH I AND II. 3(3-0) each; I, II, and SS, each. Prerequisite: For II, I or one year of high-school Spanish. Miss Crittenden and Miss Burns.

The fundamentals of Spanish grammar, stress on training to understand spoken Spanish.

180. SPANISH READINGS. 3(3-0); I, II, and SS. Prerequisite: Spanish II, or equivalent. Miss Crittenden and Miss Burns.

Readings from such representative Spanish authors as Alarcón, Padre Isla, and Martinez Sierra.

195A. SPANISH CONVERSATION. 3(3-0); I. Prerequisite: Spanish Readings or equivalent. Miss Crittenden and Miss Burns.

Purpose, to develop an ability to speak Spanish and to understand the spoken language.

FOR GRADUATE AND UNDERGRADUATE CREDIT

272. SPANISH SHORT STORIES. 3(3-0); I and II, by appointment. Prerequisite: Spanish Readings. Miss Crittenden and Miss Burns.

Stories from the most eminent of modern Spanish authors, such as Béquier, Trueba, Alarcón, Valdés, and Ibañez.

275. THE SPANISH NOVEL. 3(3-0); I. Prerequisite: Course 272 or equivalent. Miss Crittenden and Miss Burns.

A panoramic view of the Spanish novel in the several periods of Spanish literary production.

280. THE SPANISH DRAMA. 3(3-0); II. Prerequisite: Course 272 or equivalent. Miss Crittenden and Miss Burns.

A general view of the drama produced in Spain's best literary periods.

Music

Professor LINDQUIST
Associate Professor SMITH
Assistant Professor HARTMAN
Assistant Professor PAINTER
Assistant Professor SAYRE
Assistant Professor JEFFERSON
Assistant Professor DOWNEY
Assistant Professor MARTIN

Instructor FARRAR
Instructor GROSSMANN
Instructor STRATTON*
Instructor PELTON
Instructor TALMADGE
Instructor GOERWITZ
Instructor HIAVATY
Instructor JESSON

To be a vital factor in the life of every student is the aim of the Department of Music. It strives to create and foster a love for and an appreciation of the best in music, and to give to students that broader culture and more complete education which is gained through academic, professional and vocational training combined with musical and artistic study. Believing that this can be accomplished to a much greater degree by having a teaching staff of

* Absent on leave, year 1929-'30.

musicians who are not only capable instructors but also artistic performers, courses are offered which will prepare the student not only for the teaching profession, but for an artistic career as well. Students enrolled in the department participate in the musical contributions to the public programs of the College and such participation is a part of their training and study. The Department of Music is provided with equipment valued at \$22,091.

METHODS OF INSTRUCTION

Instruction in vocal and instrumental music is given in private lessons. No two students have the same mental, physical or artistic capacity, and their individual capabilities can be neither properly nor fully developed without painstaking personal attention. The best results are dependent on a close adaptation to the individual needs of the pupils, and this, of course, cannot be gained in classes, as is the case in the individual lessons. The effectiveness of the methods used is demonstrated by the interest and progress of the pupils.

All theoretical work is taught in classes. These and some other classes in the Department of Music are free to any student in the institution.

CREDITS

Students taking work in the Department of Music to a sufficient extent are allowed credits on their electives in the Divisions of General Science, Home Economics, and Agriculture, while substitutes in Music, with the approval of the dean, may be made in the Division of Engineering, as follows: For Voice or some instrument, two hours each semester; for History and Appreciation of Music, three hours each semester; for Harmony, two hours each semester; for Counterpoint, two hours each semester; for Musical Form and Analysis, two hours each semester; for Orchestra or Band, one hour each semester; for Public-school Music methods, two hours each semester. Any student having a full assignment may, upon recommendation of the director of music together with the approval of the student's dean, take music without credit.

Students coming from other schools to enter our courses in music may be sufficiently advanced as players or singers to enter the second or third year of the regular music curricula but prohibited therefrom owing to their lack of knowledge of theory. If such students enter the first year of the theoretical course, their progress as players and singers is not retarded, but it would be much to their advantage to make special theoretical preparation in the hope of qualifying for more advanced standing.

PRELIMINARY MUSICAL TRAINING

Preliminary training in music is undertaken by two classes of students. The first class consists of College students not able to meet the College entrance requirements for freshman standing in the four-year music curricula. The second consists of grade-school and high-school students whose parents desire to secure for their children the kind of "conservatory" instruction that the Department of Music is in a position to offer.

Special training is given in rhythm, ear training, sight reading, scale building, melody writing, and appreciation. This work aims to develop in the student a natural means of expression through music and to furnish the right foundation for a musical education.

Applicants for freshman standing in the four-year music curricula must pass an examination over certain requirements, which are as follows:

Piano: A considerable degree of proficiency in the fundamentals of piano technic and in the playing of the easier classics.

Public-school band and orchestra: A practicable degree of proficiency in the fundamentals of piano technic.

Public-school music: A practicable degree of proficiency in the fundamentals of piano technic and sight reading, and the ability to sing in time and in tune.

Violin: A considerable degree of proficiency in the fundamentals of violin technic and in the playing of the easier classics.

Voice: A voice of superior quality, ability to sing in time and in tune, and a practical knowledge of musical notation.

A list of examination material may be had by writing the director of the Department of Music.

THEORETICAL COURSES IN MUSIC

The aim of theoretical courses is to give the student an intelligent conception of music through the study of its historical development and scientific construction.

FOR UNDERGRADUATE CREDIT

101, 102. HARMONY I AND II. 2(2-0) each; I, II, and SS. Prerequisite: Music Fundamentals or equivalent. Mr. Sayre and Mr. Jesson.

I: A study of the major and minor scales, intervals, construction and progression of the primary triads and their inversions; the dominant seventh and its progressions and inversions, harmonizing melodies and basses.

II: Subordinate triads and their sevenths in progressions and inversions; the beginnings of modulation; writing of original exercises.

103, 104. HARMONY III AND IV. 2(2-0) each; I and II, respectively, and SS. Prerequisite: Harmony II. Mr. Jesson.

I: Modulation completed; altered and mixed chords; embellishments.

II: Works of the masters; writing of original exercises and small compositions.

105, 106, 107, 108. EAR TRAINING AND SIGHT SINGING I, II, III AND IV. 2(2-0) each, but no credit outside the music curricula; I, II, I and II, respectively. Prerequisite: Music Fundamentals or equivalent. Miss Hartman.

The reading and hearing of intervals, chords, and rhythmical forms.

108A. COUNTERPOINT. 2(2-0); I, II, and SS. Prerequisite: Harmony IV. Miss Jefferson.

A study of melody writing, the association of melodies in simple counterpoint, leading to the writing of original two- and three-part inventions.

109. MUSICAL FORM AND ANALYSIS. 2(2-0); I, II, and SS. Prerequisites: Harmony IV and Counterpoint. Mr. Jesson.

The various forms used in composition; the music of Bach, Haydn, Beethoven, Schumann, Chopin and others.

110. SURVEY OF PUBLIC-SCHOOL MUSIC. 2(2-0); II. Miss Hartman.

A general résumé of the work in public-school music methods and materials, designed to give the student such data as will enable him to understand the relationship of his specialized work to the public-school music system.

112, 113. HISTORY AND APPRECIATION OF MUSIC I AND II. 3(3-0) each; I and II, respectively. Mr. Downey.

Aim of this course: To give definite knowledge of each of the musical periods, the style of music peculiar to each, and musical contact with the great personalities in music.

114. HISTORY AND APPRECIATION OF MUSIC. 3(3-0); SS.

A condensation of courses 112 and 113.

117. CONDUCTING I. 1(1-0); I, II, and SS. Mr. Downey.

Practical training in essentials of good conducting, including the correct method of indicating all forms of rhythm, the seating arrangements of bands, orchestras and choruses, and a practical illustration of the use of this information in the various ensemble organizations of the College.

118. VOCAL COMPOSITION. 2(1-0), six hours of preparation; II. Prerequisites: Harmony I to IV. Mr. Downey.

Comprehensive study of rhythm and tone color in poetry; writing of original musical settings for the different poetic forms; composition of vocal solos, duets, trios, and quartets, both with and without piano accompaniment.

119. INSTRUMENTAL COMPOSITION. 2(1-0), six hours of preparation; II. Prerequisites: Harmony I to IV, and Counterpoint. Mr. Downey.

Advanced study in composition; writing of music for all instruments, both in solo and ensemble.

120, 121. PUBLIC-SCHOOL MUSIC I AND II. 2(2-0); I and II, respectively, and SS. Prerequisite: Understanding of musical notation and the piano keyboard. Miss Hartman.

Given for the training of teachers of music in the public schools. These courses cover work for primary and intermediate grades and meet requirements of the state of Kansas for such training.

122 to 127. PUBLIC-SCHOOL MUSIC III to VIII. 2(2-0) each; I, II, I, II, I and II, respectively. Miss Hartman.

Courses 120 and 121 continued. III covers work in the grammar grades; IV consists of a comparison of methods for elementary grades; V and VI consist of methods and practice teaching material suitable for junior high school, and VII and VIII, for senior high school.

Students in the above courses are expected to do one semester of practice teaching of music in the grade schools of Manhattan under the supervision of Miss Hartman, and to observe such additional music work in the high schools as may be possible.

128. CONDUCTING II. 1(1-0); I, II, and SS. Prerequisites: Harmony I to IV, and Conducting I. Mr. Downey.

A continuation of Conducting I, course 117.

130. INSTRUMENTATION. 2(2-0); I and SS. Prerequisite: Harmony II. Mr. Downey and Mr. Martin.

All band and orchestra instruments studied with relation to their character, range, and function; simple and familiar compositions scored for string trio, quartet, and quintet, and for wind quartet and sextet.

133. ORCHESTRATION. 2(2-0); II and SS. Prerequisites: Harmony I to IV, and Counterpoint. Mr. Downey, Mr. Martin.

Writing of music for orchestra and band studied; analytic and synthetic study of music scores.

135. PRACTICE CONDUCTING. 1(½-2); II. Prerequisite: Conducting II. Mr. Downey.

A special ensemble group is trained by the student in some work he has prepared in the course in orchestration. This problem is then presented in public.

140. NORMAL PIANO METHODS. 2(2-0); I. Miss Smith.

Discussion of principles and processes involved in various phases of piano study as a means of music education; study of teaching material for the piano; observation of lessons given in the preliminary piano classes.

142A, 142B. ORCHESTRAL INSTRUMENTS I AND II. 1(½-6) each; I and II, respectively, and SS. Mr. Downey, Mr. Martin, and assistants.

A course designed to acquaint the student with the methods of tone production and fingering of the most important instruments in the orchestra. Each instrument is studied for a period of from four to six weeks.

145. METHODS OF TEACHING MUSIC. 1(-); I. Mr. Lindquist, Miss Smith, Mr. Downey, and Mr. Martin.

Methods of teaching fundamental technic, selection of teaching materials, and the outlining of courses of study. Designed for public-school music students majoring in some instrument and preparing to teach it in high school; taught in separate divisions for voice, violin, piano, etc.

PRACTICAL COURSES IN MUSIC*

137A to 137H. INSTRUMENT I TO VIII. 3(1-9) each for courses I to V, 2(1-6) each for VI and VII, and 1($\frac{1}{2}$ -6) for VIII; I courses I, III, V, and VII) and II (courses II, IV, VI, and VIII), and SS. Mr. Downey, Mr. Martin, and assistants.

These courses are offered exclusively to students taking the curriculum in public-school band and orchestra, and these general designations cover assignments to any of the band or orchestral instruments, one of which is chosen by the student as his major instrument and studied through the four years.

155. MUSIC FUNDAMENTALS. 1(2-0); I, II, and SS. Mr. Sayre.

Class singing, study of note values, rhythm, scales, intervals, key signatures, etc.; and the application of this knowledge to the singing of part songs.

160A to 160H. VOICE I TO VIII. 4(1-12) each; I (courses A, C, E, G) and II (B, D, F, H) and SS. For the Curriculum in Voice. Prerequisite: An entrance examination to determine quality of voice, ability to sing in time and in tune, and extent of knowledge of musical notation. Prospective students should write the head of the Department of Music for a list of material required. Mr. Lindquist, Mr. Sayre, Miss Grossmann, Mr. Farrar, and Miss Talmadge.

Since production of tone in singing is governed by certain fundamental, explainable laws of phonetics and breath control, teaching the intelligent use of these laws is the constant objective of these courses. Coaching is given in the singing of French, Italian, and German songs; but the greater part of the work is in English, and pure enunciation of the mother tongue is constantly stressed. This series of courses is intended for students having special talent, and its purpose is to give sound technical training in the use of the vocal mechanism, and to develop capable teachers and good performers.

162A to 162H. VOICE A-I TO A-VIII. 2(1-6) each for courses I, III, V, VI, VII and VIII; and 1($\frac{1}{2}$ -6) each for courses II and IV; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the Curriculum in Public-school Music. Prerequisite: An entrance examination to determine ability to sing in time and in tune. Courses V to VIII are optional under Voice or Instrument. Mr. Lindquist, Mr. Sayre, Miss Grossmann, Mr. Farrar and Miss Talmadge.

Instruction similar to that given in courses 160A to 160H.

164A to 164H. VOICE B-I TO B-VIII. 2(1-6) each; I (courses A, C, E, G) and II (courses B, D, F, H) and SS. For the Curriculum in Piano, and elective in other curricula. No prerequisites. Mr. Lindquist, Mr. Sayre, Miss Grossmann, Mr. Farrar, and Miss Talmadge.

Instruction similar to that given in courses 160A to 160H.

165A to 165H. VIOLIN I TO VIII. 4(1-12) for courses A to D; 6(1-24) for courses E to H; I (courses A, C, E, G) and II (courses B, D, F, H) and SS. For the Curriculum in Violin. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of violin technic, and in the playing of the easier classics. Prospective students should write the head of the Department of Music for a list of material required. Mr. Martin.

Reserved for students showing an especial talent for the violin and entering college technically equipped to begin study of the standard works of violin literature; no special method advocated; a graceful and natural style insisted upon; outline of study so planned that an equibalanced technic and sound musicianship are developed.

166A to 166H. VIOLIN A-I TO A-VIII. 2(1-6) each. I, II, and SS. For students who take Violin as an elective. No prerequisites. Mr. Martin and assistants.

* In cases in which a course in music which requires two private lessons a week is desired by a student who can take only one lesson per week, the course shall be designated in the correct form followed by the notation, "a," or, if one-half of the course has already been taken the notation shall be "b." A student may be assigned to the second half of one course and the first half of another by this procedure. The requirements of a series of courses may thus be satisfied semester hour by semester hour.

Instruction begins with the fundamentals of violin technic and extends over the more difficult literature written for this instrument.

169A to 169H. VIOLIN ENSEMBLE I TO VIII. 1(0-3) each; I (courses A, C, E, G) and II (courses B, D, F, H). Elective for students of superior talent. Prerequisites: Four semesters of violin, viola, or violincello, or the equivalent. Mr. Downey.

A practical course in the playing of string duets, trios, and quartets.

170 to 170H. PIANO I TO VIII. 4(1-12) each; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the Curriculum in Piano. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of piano technic and in the playing of the easier classics. Prospective students should write the head of the Department of Music for a list of material required. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson and Miss Hlavaty.

Intended for students having special talent. Its purpose is to give a sound technical foundation; to cultivate a thinking musicianship; to acquaint students with a generous amount of the best music literature; to develop capable teachers and good performers, and thus to furnish the foundation upon which the superstructure of the artist may be built. Instruction outlined for each year is a conservative estimate of what a student of average talent is expected to accomplish. Every two weeks a one-hour auxiliary playing class is held, which all students majoring in piano are required to attend, and which is also open to all piano students recommended for admission by their teachers. Opportunity is given for frequent playing, study of music terminology, discussion of how to study, and acquiring a knowledge of the development of piano literature.

171A to 171H. PIANO A-I TO A-VIII. 1($\frac{1}{2}$ -6) each for courses I and III; 2(1-6) each for courses II, IV, V, VI, VII, and VIII; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the Curriculum in Public-school Music. Courses V to VIII are optional under Voice or Instrument. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of piano technic and sight reading. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson, and Miss Hlavaty.

Attention given to sight reading and accompaniment for public-school music students and to developing a medium grade of pianistic performance.

173A to 173H. PIANO B-I TO B-VIII. 2((1-6) each; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the curricula in Voice and Violin, and for students who take piano as an elective. No prerequisites. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson, and Miss Hlavaty.

Instruction follows same plan as for courses 171A to 171H.

175A to 175D. PIANO C-I TO C-IV. No credit (1-6). Designed for students who cannot meet entrance requirements for courses 170A, 171A and 177A. May require one semester or longer, according to ability and previous training of student.

176A to 176H. PIANO ENSEMBLE I TO VIII. R (1-0); I (courses A, C, E, G) and II (courses B, D, F, H). Miss Painter.

During the first two years this work is in classes of four, for practice in sight reading and ensemble playing, the chief material used being orchestral music arranged for eight hands. During the last two years the work is done partly in classes of four, but develops into two-piano work and training for accompaniment and ensemble with various groups of orchestral instruments.

177A to 177D. PIANO D-I TO D-IV. 1($\frac{1}{2}$ -6) each for courses I and III; 2(1-6) each for courses II and IV; I (courses A and C) and II (courses B and D), and SS. For the curriculum in public-school band and orchestra. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of piano technic. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson, and Miss Hlavaty.

Instruction follows same plan as for courses 171A to 171H.

178A to 178H. VIOLONCELLO A-I TO A-VIII. 2(1-6) each. For students who take Violoncello as an elective. No prerequisites. Mr. Downey.

Instruction begins with the fundamentals of violoncello technic and extends over the more difficult literature written for this instrument.

179A to 179H. DOUBLE-BASS I TO VIII. 2(1-6) each. For students who take Double-bass as an elective. No prerequisites. Mr. Downey.

Instruction begins with the fundamentals of double-bass technic and extends over the more difficult literature written for this instrument.

180A to 180H. ENSEMBLE I TO VIII. I (courses A, C, E, G) and II (courses B, D, F, H). Required or optional without credit in semester hours in the curriculum in piano and in the curriculum in violin. In the curriculum in public-school band and orchestra, ensemble work is required or optional without credit in the freshman and sophomore years, but in the junior and senior years gives one hour of credit per semester. Mr. Lindquist, Mr. Downey, and Mr. Martin.

Required ensemble work may be taken in Chorus (courses 190A to 190H), Orchestra (193A to 193H), or Band (196A to 196H).

182A to 182H. WIND INSTRUMENTS I TO VIII. 2(1-6) each. For students who take Wind Instruments as elective. No prerequisites. Mr. Downey, Mr. Martin, and assistants.

Opportunity for study of any wind instrument. Instruction begins with elementary scale and technical study and extends over the more difficult literature written for wind instruments.

184A to 184F. RECITAL I TO VI. No credit for courses A, B, C, and E; 2 credits each for courses D and F; I (courses A, C, and E) and II (courses B, D, and F).

An entire solo recital in courses IV and VI.

185A, 185B. REPERTOIRE I AND II. 1(1-0) each; I and II, respectively. Mr. Lindquist.

An exhaustive study of vocal literature of all periods; songs prepared out of class and presented in class for criticism. Classes limited to eight members.

188. PRACTICE TEACHING OF MUSIC. 2(-); I and II. Miss Smith.

Practice teaching in private classes for students in the curriculum in piano.

188A. PRACTICE TEACHING OF MUSIC, A. 1(-); I and II. Mr. Lindquist, Mr. Downey and Mr. Martin.

Practice teaching in private classes for students in the curricula in public school band and orchestra, public-school music, violin and voice.

MUSICAL ORGANIZATIONS

The existence of an organization of individuals is justified by the service such a body renders. The musical organizations at this College are second to none in the colleges of America. Students are here given a rare opportunity to study the great musical compositions that have been written for various ensemble combinations, and to render very good service to the College and community as well as to themselves in the presentation of public programs.

190A to 190H. CHORUS I TO VIII. Weekly rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Prerequisite: Ability to read musical notation and to sing in tune. Written approval of the head of the department of music must be obtained. Mr. Lindquist.

The College Chorus presents two or more standard cantatas or oratorios each year.

THE MEN'S GLEE CLUB. The Men's Glee Club is composed of about forty of the best men's voices in the College. Membership is open to the best voices that try out from the whole College. This organization is available for a limited number of concert engagements throughout the state. Mr. Lindquist.

THE WOMEN'S GLEE CLUB. This is an organization of the young women of the College. The voices are selected in the same manner as are those of the Men's Glee Club. Mr. Sayre.

The combined glee clubs present one standard opera each year.

192A to 192H. CHORAL ENSEMBLE I TO VIII. Required without credit in the curriculum in voice; as elective in nonmusic curricula gives one hour of credit per semester. Weekly rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Prerequisites: A voice of good quality, a knowledge of musical notation, ability to sing in time and in tune, and an entrance examination. Mr. Lindquist and Mr. Sayre.

Membership in both the College Chorus and the Men's Glee Club or the College Chorus and the Women's Glee Club.

193A to 193H. ORCHESTRA I TO VIII. Required or optional without credit in semester hours in curricula in music; as elective in other curricula gives one hour of credit per semester. Weekly rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Mr. Downey.

The College Orchestra is a definite organization in which discipline prevails and permanent membership with regular attendance is insisted upon. This body maintains a correct and well-balanced instrumentation, containing all the instruments of the modern symphony orchestra. The work is highly educational, and offers in the preparation of concerts and performances with the College Chorus the actual experience and routine necessary for efficient orchestra playing. Membership is open to all in the College who are capable of playing acceptably.

196A to 196H. BAND I TO VIII. Required or optional without credit in semester hours in curricula in music; as elective in other curricula gives one hour of credit per semester. Regular rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Mr. Downey and Mr. Martin.

The College Band plays for all military functions and major athletic events. In addition to this, several concert appearances on the campus are made during the early fall and in the spring. The band plays the musical settings for the annual May Fete.

FEEES IN MUSIC

COURSE	GRADUATION OF TEACHERS.							
	1	2	3	4	5	6	7	8
Two lessons each week for a semester:								
Piano .....	...	\$40	\$38	\$36	\$34	\$34*	\$28*	\$26†
Voice	\$46	40	38	36	34*	...	28*	26†
Violin .....	...	40	...	...	34*	32	28*	26†
Other orchestral instruments .....	...	40	...	...	34*	...	28*	26†
One lesson each week for a semester:								
Piano .....	...	\$22	\$21	\$20	\$19	\$19*	\$16*	\$15†
Voice	\$25	22	21	20	19*	...	16*	15†
Violin .....	...	22	...	...	19*	18	16*	15†
Other orchestral instruments .....	...	22	...	...	19*	...	16*	15†
Piano ensemble—\$5 a semester.								
Orchestral Instruments I and II—\$5 a semester.								

* Fees for children.

† Student assistants' fees.

Physical Education and Athletics

Professor AHEARN
 Professor McMILLIN
 Associate Professor WASHBURN
 Associate Professor SAUM
 Assistant Professor CORSAUT
 Assistant Professor ROOT

Assistant Professor PATTERSON
 Instructor GEYER
 Instructor MOLL
 Assistant MYERS
 Assistant HAYLETT
 Assistant MORROW

The purpose of the Department of Physical Education and Athletics is to assist the students of the College to live to the best advantage, and so to aid them in the formation of hygienic habits that during their college course they may make a profitable physical preparation for life.

All young men and all young women of the College are entitled to the privileges of the gymnasium, which is large and well equipped with all sorts of apparatus for physical training, with lockers, plunge baths, shower baths, and other accommodations. The gymnasium equipment is valued at \$10,966.

In courses requiring a change of clothing, lockers may be obtained by making a locker deposit of \$3. Upon return of lock, key and towels a refund of \$1 is made in each case. Only one locker fee is required of a student in any one semester.

Equipment is furnished to acceptable candidates for varsity and freshman athletic teams. It is checked out to individual candidates and they are held responsible for it. It must be returned when called for by the property clerk. Failure to return or replace equipment when called for subjects the offender to a fine or to other disciplinary action.

Physical education is required of all freshmen and sophomores unless excused for disability on recommendation of the College physician. Students entering with 15, 25, 44 or 59 hours of advanced credit are excused from one, two, three or four semesters, respectively, of physical education, no substitution being required.

The work of the department is based largely upon a physical examination given each student when he enters upon the work of the department. All students, whether taking work in the department or not, are entitled to receive a physical examination and advice as to their physical condition.

A diagnosis is made of the vital organs to ascertain their functional condition, and a complete inspection of the whole body is made to detect any weakness or deformity that may exist. Based upon the information thus obtained, advice is given and work assigned to students in accordance with their physical needs, tastes, and capabilities. All candidates for athletic teams are expected to pass a thorough physical examination.

Members of men's varsity and freshman athletic team squads may substitute such athletic work for the regular class work and will receive full semester credit for the work, provided they report regularly and for the full season of such sport.

COURSES IN PHYSICAL EDUCATION

FOR UNDERGRADUATE CREDIT—MEN.

103, 104, 105, 106. PHYSICAL EDUCATION M. R.(0-2) each semester of freshman and sophomore years. Mr. Washburn, Mr. Corsaut, Mr. Root, and Mr. Moll.

Personal hygiene and social problems; marching, calisthenics, apparatus and games, selected with the object of obtaining the best hygienic, educational and recreative results for the student.

The following activities may be elected by students in place of the gymnasium work: (a) Swimming: Beginning, advanced, and Red Cross life-saving. (Beginning swimming is a prerequisite for advanced swimming and for Red Cross life-saving. Students must pass a preliminary test before entering the Red Cross life-saving class unless they have passed the tests given in the advanced swimming class.) (b) Boxing, (c) Wrestling, and (d) Corrective Gymnastics. Deposit, \$3 each semester.

109. APPARATUS. 1(0-3); I. Prerequisite: Gymnastics I and II. Mr. Moll. Carefully selected and graded exercises on the various pieces of apparatus, fundamental apparatus stunts, mat exercises and tumbling. Deposit, \$3.

113A. FIRST AID AND MASSAGE. 3(3-0); I and SS. Prerequisite: Human Anatomy. Mr. Moll.

Different forms of injuries and their temporary protection, including dressing, bandaging, transportation of the injured, etc., aid in case of accident, preparation of solutions, bandages, splints, etc., the methods of massage.

115A, 117A. GYMNASICS I AND II. 2(1-3) and 2(0-6), respectively; I and II, respectively, and SS. Mr. Washburn and Mr. Moll.

I: Theory and practice of marching and calisthenics; principles of the gymnastic lesson; nomenclature and arrangement of exercises; light apparatus; games. Deposit, \$3.

II: Continuation of course 115A, with the addition of gymnastic dancing, the composition and teaching of model lessons, fundamental exercises on the apparatus and mat work. Deposit, \$3.

119. PERSONAL HYGIENE. 2(2-0); II and SS. Mr. Washburn.

This course deals with health from the standpoint of the individual; care of the body, its organs, and vital processes.

121, 122. SWIMMING M-I AND M-II. 1(0-3) each; I and II, respectively, and SS. Swimming I is a prerequisite for Swimming II. Mr. Patterson and Mr. Moll.

I: Instruction and practice of breast, back and crawl strokes, of diving, treading water, and floating, land exercises and methods of breathing. Deposit, \$3.

II: Continuation of Swimming M-I. Advanced swimming and diving, water games and stunts, Red Cross life-saving methods. Methods of teaching and conduct of swimming meets and programs are discussed. Deposit, \$3.

123. PHYSIOLOGY OF EXERCISE. 2(2-0); II. Prerequisites: Human Anatomy and Physiology. Mr. Washburn.

The effect of exercise on the tissues, systems, and organs of the body.

124A. PHYSICAL DIAGNOSIS AND PRESCRIPTION. 3(3-0); I. Prerequisites: Gymnastics I and II, and Kinesiology. Mr. Washburn.

Students are taught to diagnose faulty conditions and, in cases that can be remedied by exercise, to give directions and write prescriptions of exercise.

126A, 127. FOOTBALL I AND II. 2(1-3) each; I and SS. Mr. McMillin.

I: Study of the rules, theory, and the practice of fundamentals, equipment, care and treatment of injuries, and the use of mechanical devices. Deposit, \$2.

II: Various positions on a football team, generalship and field tactics, and systems of offensive and defensive football. Deposit, \$3.

128. WRESTLING. 1(0-3); II. Mr. Patterson.

Rules, and the method of attack and defense in catch-as-catch-can wrestling; theories of wrestling, and wrestling psychology. Deposit, \$3.

130A. BASKET BALL. 2(1-3); I and SS. Mr. Corsaut.

The rules, technic of basket shooting, foul throwing, catching and passing, dribbling, reverse turn, different styles of play, offense, defense, team work, selection of players, training and equipment. Deposit, \$3.

132. BOXING. 1(0-3); I. Mr. Patterson.

Instruction in various modes of attack and defense; discussion of training, wrestling and boxing tournaments, and related topics. Deposit, \$3.

135A. BASEBALL. 2(1-3); II and SS. Mr. Corsaut.

Theory and technic, each position being studied separately; rules, schedules, equipment, strategy, signals, team organization, plays, and players. Deposit, \$3.

136A, 136B. PRACTICE TEACHING IN PHYSICAL EDUCATION I AND II. 2(0-6) each; I and II, respectively. Prerequisite: Junior standing. Mr. Washburn.

Under immediate supervision of the teachers and coaches, students assist

in the physical education classes, athletic squads, intramural teams, and officiate in intramural games. The theory of teaching and officiating is also discussed. Deposit, \$3 for each course.

136C, 136D. PRACTICE TEACHING IN PHYSICAL EDUCATION III AND IV. 2(0-6) each; I and II, respectively. Mr. Washburn.

Continuation of courses 136A and 136B. Deposit, \$3 for each course.

140A. TRACK AND FIELD SPORTS. 2(1-3); II and SS. Mr. Haylett.

Rules and theory of track and field events; organization, conduct, officiating of meets, construction of all track equipment, training, dieting, equipment, and selection of material. Fundamentals of track and field sports. Deposit, \$3.

141B. KINESIOLOGY M. 3(3-0); II. Prerequisite: Human Anatomy. Mr. Washburn.

The mechanics of movements; elemental body movements analyzed, and principles involved applied to teaching of physical education.

142. PUBLIC-SCHOOL PROGRAM IN PHYSICAL EDUCATION. 2(2-0); II. Prerequisite: Senior standing. Mr. Washburn.

The objectives of physical education; the educational, health and recreative significance, content of the school program, types of activity to be emphasized in grades, high school and college.

145A. PLAYGROUND MANAGEMENT AND GAMES M. 2(2-0); II. Mr. Washburn.

Management and activities of the playground; equipment of playgrounds, arrangement of apparatus and places for games, track work, wading pools, etc.; municipal and industrial recreation centers, mass athletics.

146B. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION M. 2(2-0); I. Prerequisite: Junior standing. Mr. Washburn.

Organization and administration of the physical education department in various types of institutions; intercollegiate, interscholastic and intramural athletics.

FOR UNDERGRADUATE CREDIT—WOMEN

151A, 152A, 153, 154. PHYSICAL EDUCATION W. R(0-3) each; I of freshman year to II of sophomore year. Miss Saum, Miss Patterson, Miss Geyer, Miss Morrow.

Interpretative dancing, swimming and corrective gymnastics offered throughout the year: Hockey, volley ball, tennis, basket ball, archery, baseball, track and field sports given in season. Deposit, \$3 each semester.

Recreational swimming hour. There is an open hour in the pool, on Tuesdays and Thursdays at 4 o'clock. No instruction is given. This hour is open to those who have registered in the College and paid the necessary fees. Charge \$1 each semester.

157A. GENERAL TECHNIC I. 2(1-3); I. Miss Saum, Miss Morrow.

Theory and practice of tennis and interpretative dancing. Deposit, \$3.

157B. GENERAL TECHNIC II. 2(1-3); II. Miss Geyer.

Theory and practice of gymnastics and soccer. Deposit, \$3.

157C. GENERAL TECHNIC III. 2(1-3); I. Prerequisite: 157B. Miss Saum, Miss Geyer.

Theory and practice of swimming and gymnastics and light apparatus. Deposit, \$3.

157D. GENERAL TECHNIC IV. 2(1-3); II. Miss Geyer.

Theory and practice of moderate sports, *i. e.*, bowling, canoeing, field ball, speed ball, golf, handball, horseshoes, indoor baseball and deck tennis, and field and track. Deposit, \$3.

157E. GENERAL TECHNIC V. 2(1-3); I. Miss Saum, Miss Geyer.

Methods of teaching hockey and volley ball. Deposit, \$3.

157F. GENERAL TECHNIC VI. 2(1-3); II. Miss Patterson.

Methods of teaching basket ball and baseball. Deposit, \$3.

157G. GENERAL TECHNIC VII. 2(1-3); I. Prerequisites: Courses 157A, B and C. Miss Geyer.

Practice teaching in gymnastics and interpretative dancing. Deposit, \$3.

157H. GENERAL TECHNIC VIII. 2(1-3); II. Prerequisites: Courses 157B, C and D. Miss Saum, Miss Patterson and Miss Geyer.

Methods of teaching swimming, archery and Danish gymnastics. Deposit, \$3.

158. FIRST AID. 1(1-0); II and SS. Miss Geyer.

The prevention of accidents, and the treatment of injuries in an emergency.

160. FOLK DANCING I. 1(0-3); I. Prerequisites: Courses 151A to 154. Miss Patterson.

Singing games for gymnasium, classroom and playground; selected and graded list of simple folk dances. Material adapted for use in elementary schools. Deposit, \$3.

161. FOLK DANCING II. 1(0-3); II. Prerequisite: Course 160. Miss Morrow.

A selected list of folk dances and clog dances for use in junior and senior high schools. Deposit, \$3.

163. THEORY AND TECHNIC OF DANCING. 1(1-0); I. Prerequisites: Folk Dancing II and at least one semester of advanced dancing. Miss Morrow.

Place of dancing in education, value of dancing as an art and as a means of expression; dancing correlated with music, literature, painting, and sculpture.

168. METHODS OF TEACHING GYMNASTICS. 1(1-0); II. Prerequisites: courses 157A to 157C. Miss Geyer.

Selection, classification, arrangement, and progression of gymnastic exercises; practice teaching within the class.

170. PHYSICAL DIAGNOSIS W. 3(3-0); I. Prerequisites: Anatomy, Kinesiology and Physiology. Miss Patterson.

Causes and symptoms of common diseases, deformities, and other abnormal conditions; methods of giving physical examinations.

172. THERAPEUTICS AND MASSAGE. 2(1-3); II. Prerequisites: Anatomy, Kinesiology, and Physical Diagnosis. Miss Patterson.

Postural defects studied and exercises given for correction of each; general and local massage practiced for cases which can be treated by the Department of Physical Education. Deposit, \$3.

176. ORGANIZATION AND ADMINISTRATION OF PHYSICAL EDUCATION W. 2(2-0); II. Prerequisites: Courses 157A to 157H, 182A, 186 and 188. Miss Saum.

Administrative policies of physical education departments: the staff, activities, basic principles. Construction, equipment and care of plant.

178. FOLK DANCING. 1(0-3); SS. Miss Morrow.

Lectures on origin and values of folk dancing, principles of teaching folk dances, use of folk dances in festivals; practical work consisting of graded folk dances and some practice teaching; a notebook required. Deposit, \$3.

182A. PLAY GROUND MANAGEMENT AND GAMES W. 2(1-3); I, and SS. Prerequisites: Courses 151A and 152A. Miss Morrow.

Organization and administration of playground activities and equipment; history of the playground movement and the various theories of play. Types of games suitable for different age periods, methods of coaching and managing group contests. Deposit, \$3.

183. PHYSICAL EDUCATION FOR ELEMENTARY SCHOOLS. 1(0-3); SS. Miss Patterson.

Principles of selection, methods of teaching and organization of work in elementary schools; practice of the activities used, and some practice teaching. Deposit, \$3.

185. TENNIS AND CLOGGING. No credit. 0(0-3); SS. Miss Patterson.

Practice in the correct form in playing tennis and simple clog dances. This course may be substituted for one semester of the physical education requirement. Deposit, \$3.

186. SUPERVISED TEACHING OF PHYSICAL EDUCATION. 3(-); I. Prerequisite: Senior standing. Miss Saum and Miss Patterson.

Supervised teaching carried on in the physical education classes of the Manhattan grade and high schools.

187A. TECHNIC OF BASKET BALL, BASEBALL, AND VOLLEY BALL. 1(0-3); SS.

Rules, duties of officials, organization of squads and teams, equipment. Methods of coaching and conducting of tournaments. Deposit, \$3.

188. TEACHING AND ADAPTATION OF PHYSICAL EDUCATION. 3(3-0); I. Prerequisites: Courses 161, 157A to 157F, 168 and 182A. Miss Saum.

Problems of physical education and general principles of leadership; adaptation of material to meet needs of various groups and to meet aims and ideals of physical education.

189. KINESIOLOGY W. 3(3-0); I. Prerequisite: Human Anatomy (Zoöl. 123). Miss Geyer.

The mechanics of movement; elemental body movements analyzed and principles involved applied to the teaching of physical education.

190. ELEMENTARY AND INTERMEDIATE SWIMMING W. No credit. 0(0-3); SS.

Beginning class for those who do not know how to swim, 4th hour daily. Intermediate class for those who can swim sidestroke length of pool, 7th hour daily. Charge, \$1. This course may be substituted for one semester of the physical education requirement.

FOR UNDERGRADUATE CREDIT—MEN AND WOMEN

192. HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION. 3(3-0); II. Prerequisite: Sophomore standing. Miss Saum.

A survey of the field of physical education from ancient to modern times; aims and ideals of physical education and its relation to general education.

196. SCHOOL HYGIENE. 3(3-0); I. Prerequisites: Personal Hygiene, Human Anatomy, and Physiology. Mr. Washburn.

Hygiene of the building and of the teacher; principles, content, and methods of health education.

Physics

Professor HAMILTON
 Professor RABURN
 Professor FLOYD
 Associate Professor BRACKETT
 Associate Professor LYON

Assistant Professor HARTEL
 Assistant Professor CHAPIN
 Assistant Professor MAXWELL
 Assistant Professor AVERY
 Assistant Professor FEROE

Recognizing the need of a thorough knowledge of the fundamental laws and principles involved in all physical changes, provision has been made, in the courses which follow, for both a theoretical and a practical treatment of the subject. Instruction is based upon the facts given in selected textbooks, and these topics are enlarged upon by lectures and illustrated by experimental demonstrations. The purpose is to give a training in exact reasoning, and a knowledge of principles that will be factors in the solution of problems in all branches of science as well as in everyday life.

The laboratory work which accompanies the courses in physics gives a student abundant opportunity to test the principal laws of the science; and, since he is expected to arrange and operate the apparatus, the work should enable him to acquire skill in manipulation, precision of judgment, and care in the use of delicate instruments. The laboratories are well arranged for the work, and the equipment provided is of a nature adapted to meet the requirement of accurate work in all courses. The manual in use in most of the courses

is one prepared by the department to meet the exact conditions and equipment of the laboratory.

The equipment owned by this department has a value of \$31,420.

COURSES IN PHYSICS

FOR UNDERGRADUATE CREDIT

101. HOUSEHOLD PHYSICS. 4(3-3); I and II. Includes parts of Physics 135, 140, 145, and 150. Mr. Hamilton, Mr. Floyd, and Miss Avery.

Lectures and demonstrations, in which the laws relating to principles involved in appliances of the household are explained and illustrated. Deposit, \$3.

120. PHOTOGRAPHY. 2(1-3); I and II. Mr. Hamilton.

Chemical and physical principles involved in photography; practice in making good negatives and prints. Deposit, \$3.

130. WIRELESS TELEPHONY. 2(1-3); I. Mr. Lyon.

The most efficient types of receiving and transmission sets, fundamental principles of electric waves, the most important factors in the erection of a good plant.

Laboratory.—Various radio circuits assembled by the student from standard parts and tried out for their transmitting and receiving properties. Charge, \$3.

133A. METEOROLOGY. 3(3-0); II. Mr. Hamilton and Mr. Raburn.

Weather phenomena and the underlying principles of weather forecasting; factors that fix the climate of Kansas and of the United States; applications of weather to agriculture and the teaching of general science and physiology.

134. AGRICULTURAL PHYSICS. 3(3-0); I. Mr. Brackett.

Fundamental principles of physics as related to agriculture. (For students in agriculture who enter without high-school physics.)

135, 140. GENERAL PHYSICS I AND II. 4(3-3); I and II, respectively. Not open for full credit to students who have credit in Physics 101, nor to students who have credit in Physics 145 and 150. Prerequisite: Plane Trigonometry. Mr. Floyd, Mr. Brackett, Mr. Hartel, Mr. Lyon, and Mr. Chapin.

I: A thorough treatment of the general principles involved in mechanics, sound and heat.

II: Theory of electricity and light with special emphasis on those parts that have an immediate bearing on the work of other sciences, such as electrolysis, thermal effects, relation of electrical and mechanical energy.

Laboratory.—Exercises based on laws and principles discussed in the classroom and giving a practical illustration of the facts learned. Charge, \$3 for each course.

145, 150. ENGINEERING PHYSICS I AND II. 5(4-3) each; I and II each. Prerequisites: For I, Plane Trigonometry; for II, I. Not open for full credit for students who have credit in Physics 101, 135, and 140. Mr. Hamilton, Mr. Raburn, Mr. Brackett, Mr. Lyon, Mr. Maxwell, and Mr. Feroe.

I: A course in mechanics, sound, and heat; intended to give a thorough working knowledge of fundamental units and laws involved in force, work, power, and energy.

II: Units employed and fundamental laws of electricity; methods of producing a current, its uses, and the system by which electrical energy is measured; the principal phenomena of light and the laws that may have direct bearing upon light as a standard and method of measurement.

Laboratory.—I: Use of apparatus to test the laws of inertia, moments of force, moments of torsion, elasticity and rigidity, and other laws and principles involved in mechanics and heat. Charge, \$3.

II: Measurements of electrical resistances, study of primary cells and transformation from mechanical into electrical energy; laws of reflection and refraction of light, measurements of wave length by means of the spectrometer, use of the interferometer, and photometry. Charge, \$3.

155. DESCRIPTIVE ASTRONOMY. 3(3-0); I. Mr. Hartel.
An introductory course in astronomy largely descriptive in character.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. LABORATORY TECHNIC. 2(0-6); I. Mr. Floyd and Mr. Brackett.

Saw filing and tool grinding; glass blowing, cutting, grinding, polishing, and cementing; metal filing, drilling, soldering, and brazing; and making a set of punches, reamers, and cold chisels. In certain cases, special problems may be undertaken at a cost covering the raw materials. Deposit, \$3.

213. ACOUSTICS. 1(1-0); I. Prerequisite: Engineering Physics II. Mr. Floyd and Mr. Brackett.

Acoustic properties of building; architectural defects which give rise to poor acoustics; special methods to avoid such troubles in construction of buildings or to correct them in constructed buildings.

220. MOLECULAR PHYSICS AND HEAT. 3(2-3); I. Prerequisite: One year of college physics. Mr. Floyd and Mr. Raburn.

Molecular physics presented and utilized as a basis of an explanation of such phenomena as depend on the interaction of molecules and such as are fundamental in the presentation of the molecular theory of heat.

222. HARMONICS. 2(2-0); II. Prerequisite: One year of music. Mr. Hamilton and Mr. Floyd.

Lectures, library work, and demonstrations dealing with pitch, loudness, quality and dissonance, scales and chords.

224. SPECIAL METHODS IN THE TEACHING OF PHYSICS. 3(2-3); II. Prerequisites: Educational Psychology and College Physics. For credit toward state teacher's certificate, must be taken in senior year. Mr. Floyd and Mr. Brackett.

An analysis of the present status of physics and of physics instruction in our high schools based on a critical study of the state text as well as other modern texts that may be used for reference.

Laboratory.—Formation and adaptation of courses suitable for high school.

230. SPECTROSCOPY. 3(1-6); I. Prerequisites: College Physics and College Chemistry. Mr. Raburn and Mr. Floyd.

Theory and use of the spectroscope and spectrometer as instruments for identifying elements or their compounds, when rendered incandescent, by means of their characteristic spectra or definite wave lengths.

Laboratory.—Calibration of prisms and gratings for ready use in chemical laboratories; ample training in measuring wave lengths and in identifying the spectra of many substances.

231. OPTICS. 3(2-3); II. Prerequisite: One year of college physics. Mr. Hamilton and Mr. Floyd.

An advanced course in light, dealing with reflection, refraction, interference, diffraction, and polarization.

233. RADIOACTIVITY AND THE ELECTRON THEORY. 3(3-0); II. Prerequisites: College Physics and College Chemistry. Mr. Hamilton and Mr. Raburn.

Nature of the electron and its behavior in electric and magnetic fields; temperature effects and behavior of the electron in cathode tubes using a hot cathode; historical development of methods for determining mass and velocity of electrons; nature and effects of the various rays.

235. STORAGE BATTERIES. 2(1-3); II. Prerequisites: Physics and Chemistry. Mr. Hamilton, Mr. Floyd, and Mr. Maxwell.

History and development of the storage cell, lead and other types of cells; characteristics and behavior of cells on charge and discharge, care and operation of storage batteries, and renewal of sulphated cells.

Laboratory.—Testing of batteries for efficiency, rebuilding of broken down cells, rejuvenation of sulphate cells.

237. TEACHERS' COURSE IN ADVANCED ELECTRICITY. 2 credits; SS. Prerequisite: Physics. Mr. Lyon.

Laboratory exercises following or intermixed with lectures; experiments and demonstrations, use of models, properties of alternating current circuits, rectifiers, transformers, transmitting and receiving radio circuits, radio sets suitable for use in high school; construction of these appliances by members of the class under direction of the instructor.

245. RADIO MEASUREMENTS. 2(1-3); I and II. Prerequisite: College Physics, and an elementary course in radio or equivalent. Mr. Lyon.

Standard radio measurements, such as determination of tube characteristics, calculation and design of inductances and capacities, properties and designs of antennas, tuning of transmitting sets, wave lengths and calibration of receiving sets, etc. The student may arrange to carry on an investigation of some special problem of radio.

250. MODERN PHYSICS. 3(2-3); I. Prerequisites: College Physics (1 yr.) and Chemistry (1 yr.). Mr. Brackett and Mr. Lyon.

Theories involved in recent advances in physics reviewed critically from the historical standpoint and the evidence for and against them discussed; each member of the class assigned to read several texts and articles on modern physics and to report and discuss his findings before the class.

252. ADVANCED MECHANICS LABORATORY. 1(0-3) or 2(0-6); I. Prerequisite: One year of college physics. Mr. Hamilton and Mr. Hartel.

A second course in mechanics experiments selected according to the needs and interests of each student from topics such as: Surface tension, viscosity, simple harmonic motion, torsion, pendulum, flexure, moment of inertia, rigidity, etc.

254. ADVANCED HEAT LABORATORY. 1(0-3) or 2(0-6); II. Prerequisite: One year of college physics. Mr. Floyd and Mr. Chapin.

A second course in heat experiments selected according to the needs and interests of each student from topics such as: Differential thermometers, vaporization, ratio of specific heats, vapor density and humidity, thermal conductivity, the mechanical equivalent, isotherms, etc.

256. ADVANCED ELECTRICAL LABORATORY. 1(0-3) or 2(0-6); I. Prerequisite: One year of college physics. Mr. Brackett and Mr. Lyon.

A second course in electrical experiments selected according to the needs and interests of each student from topics such as: The magnetometer, hysteresis, types and characteristics of galvanometers, effect of temperature on cells, thermoelectricity, ratio of e/m , quadrant electrometers, potentiometer, power factor, rectifiers, vacuum tubes, etc.

258. ADVANCED LIGHT LABORATORY. 1(0-3) or 2(0-6); II. Prerequisite: One year of college physics. Mr. Raburn and Mr. Maxwell.

A second course in light experiments selected according to the needs and interests of each student from topics such as: Laws of lenses, laws of mirrors, the sextant, interferometer, polarimeter, gratings, total reflection, Brownian movements, Zeeman effect, photometry, calorimetry, etc.

260. EXPERIMENTAL PROBLEMS IN PHYSICS. 1(0-3) or 2(0-6); I, II, and SS, by appointment. Prerequisite: College Physics or equivalent. Mr. Hamilton and Mr. Brackett.

Selected problems involving physical phenomena or work preliminary to such investigations. This may count as part of the major requirement for the master's thesis provided the problem selected has the approval of the head of the department in which the major work is taken.

263. MATHEMATICAL PROBLEMS IN PHYSICS. 2(2-0). Prerequisites: Physics 135 and 140, or 145 and 150. Mr. Raburn and Mr. Lyon.

Solution of practical mathematical problems based on fundamental principles of physics.

264. BIOPHYSICS. 3(2-3); II. Prerequisites: One year each of college physics or household physics, organic chemistry, and zoölogy or botany, or their equivalents. Mr. Floyd.

Some of the more important physical manifestations as related to living

matter from the point of view of the organism as a whole and from that of the cell. For students of biology, nutrition, and medicine; lectures, library readings, and quiz; seminar reports on the literature.

FOR GRADUATE CREDIT

301. RESEARCH IN PHYSICS. 1 to 10 credits; I, II, and SS. Prerequisite: College Physics.

Problems in original investigations; new and important fields investigated.

Public Speaking

Professor HILL
 Professor SHINN*
 Associate Professor SUMMERS*
 Assistant Professor HEBERER

Instructor ELLIOTT
 Instructor FAUNCE
 Instructor MASE

It is the constant effort of the Department of Public Speaking to relate the training in public speaking to the work of all other departments of the College and to harmonize it with the spirit of the College. With this object in view, students are trained in the presentation and discussion of the valuable ideas acquired in their various fields of study. The method pursued in this training is that of actual practice on the platform before an audience.

The department seeks to place itself at the service of those various organizations of the College which desire or need its assistance, and at the service of the communities of the state. In addition to its regular courses, it aims to make itself available as far as possible for individual rehearsals. It trains the orators of the College, coaches and directs college plays, and prepares inter-collegiate debating teams. Students are urged to ally themselves with the organizations representing those various activities.

The equipment of this department has a value of \$510.

COURSES IN PUBLIC SPEAKING

FOR UNDERGRADUATE CREDIT

101. ORAL INTERPRETATION. 2(2-0); I and II. Dr. Hill and Dr. Shinn.

Purpose, to enable the student to attain some proficiency in the art of oral interpretation; training to develop a natural style; points of theory and routine drill necessary for the development and use of the voice and for proper platform deportment.

102. DRAMATIC READING. 2(2-0); I and II. Prerequisite: Course 101, or by arrangement with head of department. Dr. Hill, Dr. Shinn, and Mrs. Elliott.

A continuation of course 101, involving more advanced study of the principles of oral interpretation and their application to platform reading.

106, 108. EXTEMPORE SPEECH I AND II. 2(2-0) each; I and II each. Prerequisite: For II, I. Dr. Hill, Dr. Shinn, Mr. Summers, Mr. Heberer, Mr. Mase, Mr. Faunce, and Mrs. Elliott.

I: Preparation and delivery of short addresses based on prepared outlines.

II: Course 106 continued, with special attention to specific application of the principles of that course to particular occasions.

115. LECTURE RECITAL. 2 credits; I and II. Prerequisites: Courses 101 and 102, or by special arrangement with the head of the department. Dr. Hill.

Preparation and delivery by the student of one extended lecture recital, lecture, or preparation and delivery of short recitals; a study of types.

121, 122. ARGUMENTATION AND DEBATE I AND II. 2(2-0) each; II, and by appointment, respectively. Prerequisite: For I, course 106; for II, course 121; or, for both, by arrangement by head of the department. Mr. Summers.

* Absent on leave, year 1929-'30.

I: Fundamentals of argumentation as applied in debate, with special work on the making of debate outlines, collection and organization of material, structure and style of the debate speech, and methods of refutation; opportunity given to participate in a number of classroom debates for criticism.

II: The more technical phases of contest debating, with special attention to the outstanding problems of debate coaching, debate strategy and generalship, persuasion as used in debate, methods of increasing rebuttal effectiveness, and management of debates; participation in classroom debates; opportunity to gain experience in debate coaching or judging.

126. PARLIAMENTARY PROCEDURE. 1(1-0); I. Mr. Summers and Mr. Mase.

How to organize and conduct meetings and take part in deliberative assemblies, with stress on three phases: How to conduct a meeting as chairman; how to take part from the floor; and how to organize and work in committee.

130, 135. DRAMATIC PRODUCTION I AND II. 2(2-0) each; I, II, and SS each. Prerequisite for II: I or consent of the instructor. Mr. Heberer.

I: The elementary principles of acting, diction, and make-up.

II: The theory and technique of stage craft with particular reference to producing plays in high schools; practical experience in scene design, lighting, and direction. Several one-act plays are presented during the semester in the workshop theater.

150, 152. DEVELOPMENT OF THE THEATER I AND II. 2(2-0) each; I and II, respectively. Mr. Heberer.

I: The theater from its beginning down to the end of the nineteenth century; types of plays, theaters, acting and production, and their relations to the time.

II: The modern theater, its problems, plays, actors, artists, and producers—a study of the American theater principally, and a survey of the contemporary stage.

FOR GRADUATE AND UNDERGRADUATE CREDIT

251. PAGEANTRY. 3(3-0); I and II. Prerequisites: English Literature and Extempore Speech I. Mrs. Elliott.

History of community drama and pageantry; finding and arranging materials; organization of pageant groups; methods of financing; the adaptation of costuming, dancing, music, and setting to pageant production. Students during the course write a complete pageant manuscript, and produce a pageant in reality or in miniature under laboratory conditions.

Zoology

Professor NABOURS*
 Professor ACKERT
 Professor HARMAN
 Associate Professor JOHNSON
 Assistant Professor JEWELL
 Assistant Professor WIMMER
 Instructor DOBROVOLNY
 Instructor GOODRICH

Instructor HARBAUGH
 Assistant LARSON
 Graduate Assistant CAMPBELL
 Graduate Assistant HARPER
 Graduate Assistant WOODWARD
 Graduate Research Asst. CAUTHEN
 Graduate Research Asst. GRAHAM
 Graduate Research Asst. WADE

The courses have been planned to give a fundamental knowledge of the structures, functions, and relations of animals; information concerning the manner in which animals respond to the conditions of the environment; an appreciation of their human values; and a consideration of the problem of heredity and evolution.

General Zoölogy (course 105) constitutes a general survey, and forms an introduction to all lines in agriculture, general science, and home economics. Embryology B (219A), Physiology (130), Cytology (214), Neurology (250), Advanced Embryology (220), Parasitology (208), Human Parasitology (218), Evolution and Heredity (217), Heredity and Eugenics (216), Advanced Hu-

* Absent on leave, year 1929-'30.

man Physiology (235), and Historical Geology (Geol. 203) are preliminary to advanced work in animal breeding, animal husbandry, dairy husbandry, veterinary medicine, home economics, and nursing. Selections may be made among these courses and Embryology (219), Comparative Anatomy of Vertebrates (245), Ornithology (230A), Field Zoölogy (205), Animal Ecology (211), Zoölogical Problems (203), Research in Zoölogy (301), and the Seminars (225, 227), by those who expect to do advanced work in zoölogy or entomology, or become teachers of biology.

The classrooms and laboratories are equipped with charts, models, microscopes, microtomes, paraffin baths and other apparatus both for elementary and advanced work, and a good natural history museum is available. A specially trained technician is in charge of equipment and available in matters connected with zoölogical technic. The equipment belonging to the department is valued at \$31,570.

COURSES IN ZOÖLOGY

FOR UNDERGRADUATE CREDIT

105. GENERAL ZOÖLOGY. 5(3-6); I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Jewell, Mr. Goodrich, and Mr. Harbaugh.

Structures, functions, relations and evolution of types of both invertebrates and vertebrates in the class, laboratory and in nature. Charge, \$3.

109. ZOÖLOGY AND EMBRYOLOGY (VET.). 5(3-6); I. Dr. Johnson.

A study of the principles and types of animal life, and of the development of vertebrate embryos. Charge, \$3.

123A. HUMAN ANATOMY. 5(3-6); I. Prerequisite: General Zoölogy or equivalent. Dr. Wimmer.

Special attention to the human skeleton and organs; study of dissectible models, skeletons, charts, and living models. Charge, \$3.

130. PHYSIOLOGY. 4(3-3); I, II, and SS. Prerequisites: Zoöl. 105 and General Chemistry or equivalent. Dr. Wimmer.

Functions of the organs and systems of the human body. Charge, \$3.

135. EMBRYOLOGY A. 3(2-3); I and SS. Prerequisites: Zoöl. 105 or equivalent. Dr. Harman.

Development of the germ cells, fertilization, origin of the germ layers, initiation and growth of systems of organs, establishment of fetal relations, and nutrition and growth of mammals. The chick and pig are used principally as laboratory materials. Charge, \$3.

137. SPECIAL METHODS IN TEACHING ZOÖLOGY. 3(3-0); I, II, and SS. For selected assistants in zoölogy. Prerequisites: Psychology and ten hours in zoölogy. Dr. Harman, Dr. Jewell, and Dr. Wimmer.

The functions of courses in general zoölogy, embryology and physiology, and their places in curricula; reviews of the subjects with special reference to their presentation in high school and junior college; care of live animals and the use of the local field; utilization of charts, models, specimens, apparatus and general technic in the teaching of the subjects.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. ZOÖLOGICAL PROBLEMS. 1 or 2 credits; I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Jewell, Dr. Wimmer, and Mr. Harbaugh.

Individual problems in heredity, parasitology, physiology, cytology, embryology, and ecology assigned by the instructors in charge.

205. FIELD ZOÖLOGY. 3(1-6); I. Prerequisite: Zoöl. 105. Dr. Jewell.

A general survey of the animal kingdom with collection, preservation, and identification of local forms; notes on their life histories, distribution, and relationships. Charge, \$3.

206. ZOÖLOGICAL TECHNIC. 1(0-3) or 2(0-6); II. Prerequisite: General Zoölogy, or equivalent. Dr. Nabours and Mr. Dobrovolny.

Methods of killing, fixing, imbedding, using microtome, staining, dehydrating, and other processes in preparation of microscopical slides, principles of photomicrography, museum mounting and labeling, and introduction to taxidermy. Charge, \$3.

208. PARASITOLOGY. 3(2-3); I. Prerequisite: Zoöl. 105, or 109. Dr. Ackert.

A study of the biology, pathology, and prophylaxis of the principal external and internal parasites of the domestic animals. Charge, \$2.

211. ANIMAL ECOLOGY. 3(2-3) or 2(2-0); II. Prerequisite: Zoöl 105, or equivalent. Dr. Jewell.

Relation of animals to the complete environment, with special attention to the dynamic factors of the environment and their effect on the present status and future changes of the animal community. Charge, \$2.

214. CYTOLOGY. 4(2-6); I. Prerequisite: Zoöl. 105, or equivalent. Dr. Harman.

Methods of preparing material for cytological study, development of the germ cells and theories of structures and functions of the different parts of the cell. Charge, \$3.

216. HEREDITY AND EUGENICS. 2(2-0); I. Prerequisite: Zoöl. 105, or equivalent. Dr. Nabours and Mr. Harbaugh.

Human inheritance and the interactions of nurture and heredity.

217. EVOLUTION AND HEREDITY. 3(2-3) or 4(2-6); II. Prerequisites: Zoöl. 105 and Genetics (An. Husb. 221), or equivalent. Dr. Nabours and Mr. Harbaugh.

Development of the idea of evolution; evidence and principal theories of the causes of evolution; problems of variation, heredity, and experimental evolution.

218. HUMAN PARASITOLOGY. 3(3-0); II. Prerequisite: Zoöl. 105, or equivalent. Dr. Ackert.

Biological, pathological and prophylactic phases of the principal parasitic maladies of man.

219A. EMBRYOLOGY B. 4(3-3); I, II, and SS. Prerequisite: Zoöl. 105, or equivalent. Dr. Harman.

The physiology of reproduction, developmental anatomy and physiology of mammals, with special reference to man. Charge, \$3.

220. ADVANCED EMBRYOLOGY. 4(2-6); I. Prerequisites: Zoöl. 105 and 201 or 109, or equivalent. Dr. Harman.

Further study of the main facts of embryology, with special reference to their bearings upon biological theories, and a comparative study of the physiology of reproduction in mammals, including man. Charge, \$3.

225. ZOÖLOGY AND ENTOMOLOGY SEMINAR. 1 credit; I and II. Prerequisite: Zoöl. 105, or equivalent.

Presentation of original investigations, reviews of papers appearing in current journals, summaries of recent advances in various fields, and discussion of various aspects of the fundamental problems of modern biology.

227. GENETICS SEMINAR. 1 credit; the year. Prerequisite: Zoöl. 105, or equivalent. Dr. Nabours, Dr. Warren, Dr. Parker, and Dr. Ibsen.

Study and criticism of genetic experiments in plants and animals, biological and mathematical methods employed, validity of conclusions drawn.

230A. ORNITHOLOGY. 3(2-3); II and SS. Prerequisite: Zoöl. 105. Mr. Goodrich.

Study of birds with reference to classification, habits, habitats, adaptations, migrations, and economic importance. Charge, \$2.

235. ADVANCED HUMAN PHYSIOLOGY. 4(3-3); I. Prerequisites: Zoöl. 105 and Organic Chemistry. Dr. Wimmer.

The fundamental principles and theories of the functions of muscles, nerve, circulation, digestion, respiration, secretion and excretion. Charge, \$3.

240. TAXONOMY OF PARASITES. 2(1-3); I. Prerequisite: Zoöl. 105 or 109. Dr. Ackert.

Structure of animal parasites; relation of certain animal groups; principles of classification; identification of parasites of man and of domestic animals.

245. COMPARATIVE ANATOMY OF VERTEBRATES. 3(1-6); II. Prerequisite: Zoöl. 105, or equivalent. Dr. Johnson.

A comparative consideration of the skeletal, muscular, nervous, digestive, respiratory, circulatory, and urogenital systems and the sensory organs of vertebrates. Charge, \$3.

250. COMPARATIVE AND HUMAN NEUROLOGY. 3(2-3); I. Prerequisite: Zoöl. 105. Dr. Johnson.

Structure, functions and evolution of the nervous system. Charge, \$2.

FOR GRADUATE CREDIT

301. RESEARCH IN ZOÖLOGY. 1 to 8 credits; I, II, and SS. Prerequisite: Zoöl. 105. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Jewell, Dr. Wimmer, and Mr. Harbaugh.

Individual research problems are assigned in the fields of heredity and experimental evolution, parasitology, cytology, embryology, ecology, physiology, neurology, and endocrinology.

The Division of Home Economics

MARGARET M. JUSTIN, *Dean*

Modern research in the sciences and present-day development of the industries, arts, and professions have brought a recognition of the value of technical training as a part of the preparation for life's work. An educational plan which combines industrial, technical, and scientific subjects with the older general studies results to the students in the power to express, in everyday activities, the knowledge acquired in the classroom. It increases the capacity for productive work and develops the desire to realize in practical form the theories and principles studied. The aim of a collegiate course in home economics is not merely to increase the student's stock of information, but to stimulate interest in continued study or research, to train in accuracy in detail, to teach discrimination with regard to criteria by which to interpret results of work, and to cultivate an attitude of economic and social responsibility.

The course as outlined below is arranged to meet the needs of the following groups of students: Those who wish to teach, those who wish to enter graduate courses leading to technical or professional work, and those who wish to apply their knowledge to various problems of home life or in fields of industry and social service in which an understanding of home-economics subjects is essential to intelligent action. While emphasis is laid on the material and practical side of life, the training does not stop here. The young women are constantly reminded that life is not drudgery; that technical knowledge and scientific skill even fail to include the full meaning of education in its highest sense. They are taught that any training that fails to develop harmoniously body, mind, and spirit is inadequate and incomplete. They are brought face to face with ideals as well as with actualities, and are made to see that, while skillful labor gives dignity to life, grace, refinement, and self-poise are the highest requisites for true service.

That training given is as varied as it is broad. It includes a knowledge of the laws of health; and understanding of the sanitary requirements of the home; the study of values, both absolute and relative, of the various articles used in the home; the wise expenditure of money, time, and energy; the scientific principles underlying the selection and preparation of food; the right care of children; and the ability to secure efficient service from others. Instruction is methodical and thorough, and is suited to the circumstances of the students. Experience shows that such training teaches contentment, industry, order, and cleanliness, and fosters a woman's independence and feeling of responsibility.

The work in home economics includes:

A four-year curriculum, leading to the degree of Bachelor of Science.

A four-year curriculum leading to the degree of Bachelor of Science with special training in art.

A five-year curriculum leading to the degree of Bachelor of Science and a diploma in nursing.

Graduate work leading to the degree of Master of Science, majoring in home economics.

CURRICULA IN HOME ECONOMICS

The training in the four-year curriculum is both general and specific. Since scientific training is fundamental in the intelligent and successful administration of the home, strong courses in the sciences are given as a foundation for the special training in home economics. To the end that well-rounded culture may be attained, courses in English, history, economics, sociology, and psychology receive due prominence. The time of the student is about equally

divided among the purely technical subjects, the fundamental sciences, and studies of general interest. The courses in the related subjects are given in the different departments of the College, while the technical courses are given in the Division of Home Economics. In the junior and senior years opportunity is given for choice of electives, which makes it possible for students to specialize in some chosen line. To this end electives are to be chosen in groups combined logically in courses approved by the faculty or by the student's dean. This choice of electives will be made during the second semester of the sophomore year.

THE CURRICULUM IN HOME ECONOMICS

The four-year curriculum is recommended for all who desire to teach home economics, or to enter professional fields in which home economics may be applied.

CERTIFICATION FOR TEACHING HOME ECONOMICS

The student who in addition to securing the Bachelor of Science degree is desirous of qualifying for the three-year Kansas state teacher's certificate, renewable for life and valid in any high school or other public school in the state, should elect certain courses in the Department of Education and other technical courses which are deemed essential for vocational home economics and desirable for all teaching of home economics. These courses are as follows:

EDUCATIONAL SUBJECTS	TECHNICAL SUBJECTS
Educ. Ad. A or B, Educ. 105 or 106...3(3-0)	Child Care & Training I., Child
Educ. Psychology, Educ. 109.....3(3-0)	Welf. 201.....3(1-6)
Vocational Educ. A, Educ. 125.....3(3-0)	House Furnishings, Art 108.....2(1-3)
Special Methods in Teaching of Home	Practice Course in Household Man-
Economics, Educ. 132 .....3(3-0)	agement, Hshld. Econ. 116.....3(-)
Supervised Teaching in Home Economics,	Clothing III, Clo. and Text. 126.....3(1-6)
Educ. 160 .....3(3-0)	

THE CURRICULUM IN HOME ECONOMICS AND ART

The four-year curriculum offering special training in art is designed to meet the need of students especially interested in this field. The courses give background for professional work in the art field, for teaching of art and for the general culture afforded by art study.

THE CURRICULUM IN HOME ECONOMICS AND NURSING

The five-year curriculum, offered in affiliation with the Charlotte Swift Hospital of Manhattan, enables the student wishing to take the Bachelor of Science degree and the full professional training in nursing to complete this work in five years. The first two years are spent at the College. The third and fourth years are spent at the Nursing School of the hospital, where both theoretical and practical training in nursing is given. During the fifth year required courses for the Bachelor of Science degree are completed at the College and electives are chosen which will prepare the student for the field of nursing in which she is most interested.

The demand for trained women to fill administrative and teaching positions in schools of nursing and to enter the various branches of public-health nursing is greater than the supply and offers a growing and attractive field of work for the college graduate.

Before entering upon this curriculum the student must report to the superintendent of the Hospital for a physical examination, and she must have her plan of study approved by the dean of the Division of Home Economics.

Further information concerning the work at the hospital may be obtained from the director of the Training School for Nurses of the Charlotte Swift Hospital, Manhattan.

The College does not assume the responsibility of insuring employment to graduates, but the latter rarely experience difficulty in obtaining remunerative positions.

Curriculum in Home Economics

FRESHMAN

FIRST SEMESTER

College Rhetoric I,* Engl. 101.....	3(3-0)
Chemistry I, Chem. 101.....	5(3-6)
Elementary Design, Art 101.....	3(1-6)
Foods I, Food & Nut. 101A.....	3(1½-4½)
Hygiene, Child Welf. 101.....	2(2-0)or
Psychology A, Educ. 101.....	3(3-0)
Clothing I, Clo. & Text. 101.....	2(1-3)
Seminar, Gen. H. E. 101.....	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)

Total 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Chemistry II, Chem. 102.....	5(3-6)
Costume Design I, Art 130.....	2(0-6)
Psychology A, Educ. 101.....	3(3-0)
Clothing I, Clo. & Text. 101.....	2(1-3)or
Foods I, Food & Nut. 101A.....	3(1½-4½)
Hygiene, Child Welf. 101.....	2(2-0)
Current History, Hist. 126.....	1(1-0)
Phys. Education W, Phys. Ed. 152A..	R(0-3)

Total 16

SOPHOMORE

FIRST SEMESTER

Organic Chem. (HE), Chem. 121.....	5(3-6)
English Literature, Engl. 172.....	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
Clothing II, Clo. & Text. 111.....	3(1-6)or
Household Physics,† Physics 101.....	4(3-3)
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total 16 or 17

SECOND SEMESTER

Foods II, Food & Nut. 106.....	5(3-6)
American Literature, Engl. 175.....	3(3-0)
Embryology B, Zoöl. 219A.....	4(3-3)or
Physiology, Zoöl. 130	4(3-3)
Clothing II, Clo. & Text. 111.....	3(1-6)or
Household Physics, Physics 101.....	4(3-3)
Phys. Education W, Phys. Ed. 154...	R(0-3)

Total 15 or 16

JUNIOR

FIRST SEMESTER

German I & II, ‡§ Mod. Lang. 101 and 102	6(6-0)or
French I & II, Mod. Lang. 151 & 152,	6(6-0)
Human. Nut., Food & Nut. 112.....	3(3-0)
Economics, Econ. 101	3(3-0)
Art Elements, Art 118.....	1(1-0)
Elective	3(-)

Total 16

SECOND SEMESTER

German Readings,§ Mod. Lang. 111	3(3-0)or
French Readings, Mod. Lang. 161....	3(3-0)
Hshld. Mngt., Hshld. Econ. 107.....	3(2-3)
Textiles, Clo. & Text. 116.....	3(2-3)
Hshld. Microb., Bact. 121A.....	3(1-6)
Elective	4(-)

Total 16

SENIOR

FIRST SEMESTER

American History I,§ Hist. 201.....	3(3-0)
Dietetics, Food & Nut. 201.....	5(3-6)
Elective	8(-)

Total 16

SECOND SEMESTER

Amer. Govt.,§ Hist. 151, 152 or 153..	3(3-0)
Family Health, Child Welf. 211.....	3(3-0)
Seminar, Gen. H. E. 151.....	R(1-0)
Elective	10(-)

Total 16

Total requirement for degree of Bachelor of Science in Home Economics, 128 hours.

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parentheses indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory each week.

† General Physics may be substituted if a student plans to pursue research later.

‡ Students in the Division of Home Economics enrolling in modern language take a minimum of nine hours of French or German unless they have had previously one or more years high-school work in the language in question. In case French or German has been taken previously in high school only six semesters in advanced courses of that language are required. Students who under these circumstances take less than nine semester credits in modern language are required to take additional elective hours, so that their total requirement is the same as for other students.

§ An option of equivalent hours in the fields of mathematics, chemistry, physics or zoology may be taken instead of the course marked, with the advice and approval of the dean.

Curriculum in Home Economics with Special Training in Art

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
Elementary Design, Art 101.....	3(1-6)
Hygiene, Child Welfare 101.....	2(2-0)
Foods I, Food & Nut. 101A.....	3(1½-4½)
Seminar, Gen. H. E. 101.....	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)

Total 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Intermediate Design, Art 102.....	3(1-6)
Clothing I, Clo. & Text. 101.....	2(1-3)
Costume Design I, Art 130.....	2(0-6)
Current History, Hist. 126.....	1(1-0)
Phys. Education W, Phys. Ed. 152A..	R(0-3)

Total 16

SOPHOMORE

FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
Psychology A, Educ. 101.....	3(3-0)
General Zoölogy,* Zoöl. 105.....	5(3-6)
Art Elements, Art 118.....	1(1-0)
Sketching, Art 120.....	2(0-6)
Extem. Speech I, Pub. Spk. 106.....	2(2-0)
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total 16

SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Foods II, Food & Nut. 106.....	5(3-6)
Ancient Civilization, Hist. 101.....	3(3-0)
Advanced Design, Art 105.....	2(0-6)
Clothing II, Clo. & Text. 111.....	3(1-6)
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total 16

JUNIOR

FIRST SEMESTER

German I and II, Mod. Lang. 101 and 102	6(6-0)or
French I and II, Mod. Lang. 151 and 152	6(6-0)
Human Nut., Food & Nut. 112....	3(3-0)or
Applied Nut., Food & Nut. 121.....	2(2-0)
Costume Design II, Art 134.....	2(0-6)
Elective	5 or 6(-)

Total 16

SECOND SEMESTER

German Readings, Mod. Lang 111..	3(3-0)or
French Readings, Mod. Lang. 161...	3(3-0)
Hist. & App. of Music, Music 114....	3(3-0)
Costume Design III, Art 138.....	2(0-6)
Medieval Europe, Hist. 102.....	3(3-0)
Elective	5(-)

Total 16

SENIOR

FIRST SEMESTER

Prin. of Art and their Application I, Art 124	3(3-0)
Child Care and Training I, Child Welf. 201	3(1-6)
Elective	10(-)

Total 16

SECOND SEMESTER

American History I, Hist. 201.....	3(3-0)
Int. Dec. and Furn., Art 114.....	3(1-6)
Principles of Art and their Application II, Art 126	3(3-0)
Hist. of Cost., Clo. and Text. 265....	1(1-0)
Seminar, Gen. H. E. 151.....	R(1-0)
Elective	6(-)

Total 16

Number of semester hours required for graduation, 128.

Curriculum in Home Economics and Nursing

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
German I & II, Mod. Lang. 101 and 102	6(6-0)
Foods I, Food & Nut. 101A.....	3(1½-4½)
Seminar, Gen. H. E. 101.....	R(1-0)
Phys. Education W, Phys. Ed. 151A,	R(0-3)

Total 17

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Gen. Zoölogy, Zoöl. 105.....	5(3-6)
Psychology A, Educ. 101.....	3(3-0)
Phys. Education W, Phys. Ed. 152A..	R(0-3)

Total 16

* General Botany I and II may be taken as an option for General Zoölogy and the necessary adjustment made in providing the required number of hours each semester and in lessening the electives one hour if the option is desired.

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Foods II, Food & Nut. 106.....5(3-6)	Gen. Microbiology, Bact. 101.....3(1-6)
Physiol. Chem., Chem. 231.....5(3-6)	Amer. Govt., § Hist. 151, 152 or 153...3(3-0)
Embryology B, Zoöl. 219A.....4(3-3) or	American Literature, Engl. 175.....3(3-0)
Physiology, Zoöl. 130.....4(3-3)	Current History, Hist. 126.....1(1-0)
English Literature, Engl. 172.....3(3-0)	Elective .....6(-)
Phys. Education W, Phys. Ed. 153..R(0-3)	
Total .....17	Total 16

JUNIOR

(Replaced by two years at Charlotte Swift Hospital)

Theoretical and practical work during the time includes:

FIRST YEAR	SECOND YEAR
History and Ethics of Nursing	Surgery and Surgical Nursing and Bandaging
Hospital Economics	Obstetrics and Gynecology
Nursing Methods	Pediatrics
Medical Nursing	Diseases of Eye, Ear, Nose and Throat
Communicable Diseases	Nervous and Mental Diseases
Special Therapeutics and Massage	Materia Medica
	Problems in Nursing
Equivalent to 32 college hours	

SENIOR

FIRST SEMESTER	SECOND SEMESTER
(Specialized work in affiliated hospitals)	American Hist. I, § Hist. 201.....3(3-0)
Equivalent to 16 college hours	Dietetics, Food & Nut. 201.....5(3-6)
	Seminar, Gen. H. E. 151.....R(1-0)
	Elective .....6(-)
	Total 14

Total requirement for degree of Bachelor of Science in Home Economics and Nursing, 128 hours.

Groups of Electives for Students in the Division of Home Economics

The groups given below are selected with a view to training students for the vocations in which home economics may be directly applied.

A sufficient number of hours may be chosen from any group to fill the elective requirement, or a smaller number of hours may be taken from a group and, for the remaining elective hours, advanced courses of related subject matter may be chosen.

Music may be added to any group, in a minimum of six semester hours.

Child Care and Training

FIRST SEMESTER	SECOND SEMESTER
Sociology, Econ. 151 .....3(3-0)	History of the Home, Hist. 225.....3(3-0)
Social Problems, Econ. 257.....2(2-0)	Psychology of Childhood and Adolescence, Educ. 208 .....3(3-0)
The Mod. Family, Child Welf. 216...2(2-0)	Child Care and Training II, Child Welf. 206 .....3(3-0)
Fld. Work in Nut., Food & Nut. 215..3(2-3)	Pos. Child Health, Child Welf. 111..2(2-0)
Heredity & Eugenics, Zoöl. 216.....2(2-0)	Problems in Child Welfare, Child Welf. 221 1 to 5
Child Care and Training I, Child Welf. 201 .....3(1-6)	
Seminar in Child Welfare and Euthenics, Child Welf. 226 1 or 2	

§ An option of equivalent hours in the field of mathematics, chemistry, physics or zoology may be taken instead of the course marked, with the advice and approval of the dean.

Costuming

FIRST SEMESTER

Hist. of Costume, Clo. & Text. 265...	1(1-0)
Clothing III, Clo. & Text. 126.....	3(1-6)
Clothing IV, Clo. & Text. 270.....	3(1-6)
Clothing Economics, Clo. & Text. 237,	3(3-0)
Hygiene of Clothing, Clo. & Text. 251,	3(3-0)
Sociology, Econ. 151.....	3(3-0)
Costume Design II, Art 134.....	2(0-6)
Intermediate Design, Art 102.....	3(1-6)

SECOND SEMESTER

Prin. of Adv., Ind. Jour. 179.....	3(3-0)
Prin. of Art and their Application I, Art 124	3(3-0)
Labor in Clo. & Text. Industries, Clo. & Text. 260.....	1(1-0)
Medieval Europe, Hist. 102.....	3(3-0)
Prob. in Clo. & Text., Clo. & Text. 256,	1 to 3
Modern Europe I, Hist. 115.....	3(3-0)

Dietetics

FIRST SEMESTER

Inst. Econ. I, Inst. Econ. 201.....	3(1-6)
Physiological Chem., Chem. 231.....	5(3-6)
Fld. Work in Nut., Food & Nut. 215..	3(2-3)
Food Econ. & Nut. Seminar I, Food & Nut. 251.....	2(2-0)
Child Care and Training I, Child Welf. 201	3(1-6)

SECOND SEMESTER

Inst. Econ. II, Inst. Econ. 205.....	3(3-0)
Dietetics for Abnormal Conditions, Food & Nut. 205	2(1-3)
Meats (HE), An. Husb. 176.....	1(0-3)
Inst. Marketing, Inst. Econ. 215.....	2(2-0)
Meth. of Invest. in Foods & Nut., Food & Nut. 265.....	2(1-3)
The Nut. of Dev., Food & Nut. 210..	2(2-0)

Food and Nutrition

FIRST SEMESTER

Physical Chemistry I, Chem. 206.....	5(3-6)
Microchemical Meth. of Anal., Chem. 245	1(0-3)
Adv. Human Physiology, Zoöl. 235...	4(3-3)
Hygienic Bacteriology, Bact. 206.....	4(2-6)
Problems in Food Econ. & Nut. I, Food & Nut. 248.....	2 to 5
Food Econ. & Nut. Seminar I, Food & Nut. 251	2(2-0)
Fld. Work in Nut., Food & Nut. 215..	3(2-3)
Bact. Problems, Bact. 226.....	1 to 4
College Algebra, Math. 104.....	3(3-0)
Plane Trigonometry, Math. 101.....	3(3-0)

SECOND SEMESTER

Physiological Chem., Chem. 231.....	5(3-6)
Biochem. Prep., Chem. 234.....	5(0-15)
Quantitative Anal., Chem. 241.....	5(1-12)
Food Analysis, Chem. 257.....	3(0-9)
Histology I, Path. 101.....	3(1-6)
Food Econ. & Nut. Seminar II, Food & Nut. 252.....	2(2-0)
Meth. of Invest. in Foods & Nut., Food & Nut. 265.....	2(1-3)
Human Parasitology, Zoöl. 218.....	3(3-0)
Stat. Meth. Applied to Education, Educ. 223	3(3-0)
Nut. of Dev., Food & Nut. 210.....	2(2-0)

Home Making

FIRST SEMESTER

Child Care & Training I, Child Welf. 201	3(1-6)
The Mod. Family, Child Welf. 216..	2(2-0)
Sociology, Econ. 151.....	3(3-0)
Community Organization, Econ. 267..	3(3-0)
Prob. in Foods I, Food & Nut. 243..	1 to 3
Practice Course in Hshld. Mngt., Hshld. Econ. 116	3(-)
World Classics I, Engl. 280.....	3(3-0)
The Nut. of Dev., Food & Nut. 210..	2(2-0)

SECOND SEMESTER

Child Care & Training II, Child Welf. 206	3(3-0)
Principles of Art and their Appli- cation I, Art 124.....	3(3-0)
Econ. of Hshld., Hshld. Econ. 265..	2(2-0)
Clothing III, Clo. & Text. 126.....	3(1-6)
Meats (HE), An. Husb. 176.....	1(0-3)
Hist. of Eng. Lit., Engl. 181.....	3(3-0)
Psychology of Childhood & Ado- lescence, Educ. 208	3(3-0)

Institutional Economics

FIRST SEMESTER

Inst. Econ. I, Inst. Econ. 201.....	3(1-6)
Com. Correspondence, Engl. 122.....	3(3-0)
Prob. in Inst. Adm., Inst. Econ. 210,	1 to 5
Inst. Econ. II, Inst. Econ. 205.....	3(3-0)
Prob. in Fds., Foods & Nut. 243, 244..	1 to 3
Fld. Work in Nut., Food & Nut. 215..	3(2-3)

SECOND SEMESTER

Meats (HE), An. Husb. 176.....	1(0-3)
Inst. Marketing, Inst. Econ. 215.....	2(2-0)
Inst. Accounting, Econ. 132.....	3(3-0)
Tea Room Mngt., Inst. Econ. 225...	3(0-9)
Physiological Chem., Chem. 231.....	5(3-6)
Meat Studies (HE), An. Husb. 182..	1(1-0)

Journalism

FIRST SEMESTER

Elem. Journalism, Ind. Jour. 151.....	2(2-0)
Journalism for Women, Ind. Jour. 172,	2(2-0)
Indust. Writing, Ind. Jour. 161.....	2(2-0)
Advanced Reporting, Ind. Jour. 163..	3(3-0)

SECOND SEMESTER

Copy Reading, Ind. Jour. 254.....	2(0-6)
Indust. Feature Writ., Ind. Jour. 167,	2(2-0)
Contemporary Thought, Ind. Jour. 255	3(3-0)

Additional selections to be chosen in the subject-matter fields.

Lecturing and Demonstrating

FIRST SEMESTER

Oral English, Engl. 128.....	3(3-0)
Oral Interp., Pub. Spk. 106.....	2(2-0)
Oral Interp., Pub. Spk. 101.....	2(2-0)
Sociology, Econ. 151.....	3(3-0)
Technical Writing, Engl. 207.....	2(2-0)
Prac. in Food Dem., Food & Nut. 117,	1(0-3)
Meats (HE), An. Husb. 176.....	1(0-3)
Ind. Feat. Writing, Ind. Jour. 167....	2(2-0)

SECOND SEMESTER

Dramatic Read., Pub. Spk. 102.....	2(2-0)
Extem. Speech II, Pub. Spk. 108.....	2(2-0)
Applied Psychology, Educ. 170.....	3(3-0)
Rural Sociology, Econ. 156.....	3(3-0)
Com. Organization, Econ. 267.....	3(3-0)
Ind. Writing, Ind. Jour. 161.....	2(2-0)
Methods for Ext. Workers in Foods,	
Food & Nut. 260.....	2(-)

Social Welfare Work

FIRST SEMESTER

Child Care and Training I, Child Welf.	
201	3(1-6)
The Mod. Family, Child Welf. 216....	2(2-0)
Econ. of the Hshld, Hshld. Econ. 265,	2(2-0)
Sociology, Econ. 151	3(3-0)
Latin America, Hist. 207.....	2(2-0)
Community Org. Econ. 267.....	3(3-0)
Fld. Work in Nut., Food & Nut. 215,	3(2-3)

SECOND SEMESTER

Child Care and Training II, Child	
Welf. 206	3(3-0)
Labor Problems, Econ. 233.....	2(2-0)
Rural Sociology, Econ. 156.....	3(3-0)
Social Problems, Econ. 257.....	2(2-0)
Modern Europe II, Hist. 223.....	3(3-0)
Immi. & Int. Rela., Hist. 228.....	2(2-0)
Prob. in Child Welfare, Child Welf.	
221	1 to 5

Textiles

FIRST SEMESTER

College Algebra, Math. 104.....	3(3-0)
General Physics I, Physics 135.....	4(3-3)
General Physics II, Physics 140.....	4(3-3)
Plane Trigonometry, Math. 101.....	3(3-0)
Hygiene of Clothing, Clo. & Text. 251,	3(3-0)
Clothing Economics, Clo. & Text. 237,	3(3-0)
Experimental Textiles, Clo. & Text. 312...	3*

SECOND SEMESTER

Physical Chemistry I, Chem. 206....	5(3-6)
Qualitative Analysis, Chem. 224.....	2(0-6)
Prob. in Clothing and Textiles,	
Clo. & Text. 256.....	1-3*
Adv. Human Physiology, Zoöl. 235....	4(3-3)
Statistical Methods Applied to Edu-	
cation, Educ. 223	3(3-0)
Bact. Problems, Bact. 226.....	1 to 4
Advanced Textiles, Clo. & Text. 246..	3(1-6)

Art

Professor HOLMAN
Associate Professor ARNOLD
Associate Professor EVERHARDY

Instructor MORRIS
Instructor HARRIS
Instructor SMITH

There is an increasing realization of the need for a usable knowledge of art. The curriculum in art is designed to develop the general culture afforded by art study, to train teachers of art, and to provide a background for professional work.

This department owns equipment valued at \$8,987.

COURSES IN ART

FOR UNDERGRADUATE CREDIT

101. ELEMENTARY DESIGN. 3(1-6); I, II, and SS.† Miss Holman, Miss Arnold, Miss Everhardy, Miss Morris, Miss Harris, and Miss Smith.

A fundamental course in the study of color and form and the application of their principles to daily living. Charge, 50 cents; deposit, 25 cents.

102. INTERMEDIATE DESIGN. 3(1-6); I AND II. Prerequisite: Course 101. Miss Arnold, Miss Everhardy, and Miss Harris.

A continuation of course 101 with special emphasis on color possibilities in different processes. Charge, 50 cents; deposit, 25 cents.

* By appointment.

† The number before the parenthesis indicates the number of semester hours of credit; the first numeral within the parenthesis indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory required each week. I, II, and SS indicate that the course is given the first semester, second semester, and summer session respectively.

105. **ADVANCED DESIGN.** 2(0-6); II. Prerequisite: Course 102. Miss Arnold, Miss Everhardy, and Miss Harris.

A continuation of course 102, with emphasis on art structure. Charge, 50 cents; deposit 25 cents.

108. **HOUSE FURNISHINGS.** 2(1-3); I AND II. Prerequisite: Course 101. Miss Holman, Miss Harris, and Miss Morris.

The decorative phase of design studied in the solving of problems which occur in the furnishings of the house. Planned specifically for the students meeting requirements for vocational home economics teaching. Charge, 50 cents; deposit, 25 cents.

110. **PUBLIC-SCHOOL ART.** 2(1-3); SS. Prerequisite: Course 101. Miss Holman, Miss Arnold, Miss Everhardy, and Miss Harris.

Methods and problems in art as aids for the public school teacher. Charge, 50 cents; deposit, 25 cents.

114. **INTERIOR DECORATION.** 3(1-6); II. Prerequisite: Course 102. Miss Holman, Miss Everhardy, Miss Morris, and Miss Harris.

Study of the house and its furnishings as a design. Charge, 50 cents; deposit, 25 cents.

118. **ART ELEMENTS.** 1(1-0); I AND II. Prerequisite: Course 101. Miss Holman and Miss Morris.

A course to stimulate an interest in art and to foster the appreciation of beauty in our surroundings.

120. **SKETCHING.** 2(0-6); II. Prerequisite: Course 101. Miss Arnold and Miss Harris.

Representative sketching, decorative illustrating, and creative designing in which a variety of mediums and technique is employed. Charge, 50 cents; deposit, 25 cents.

124. **PRINCIPLES OF ART AND THEIR APPLICATION I.** 3(3-0); II. Prerequisite: Course 101. Miss Holman and Miss Arnold.

A study of color and form as found in the world's art.

126. **PRINCIPLES OF ART AND THEIR APPLICATION II.** 3(3-0); I. Prerequisite: Course 124. Miss Holman and Miss Arnold.

A continuation of course 124.

130. **COSTUME DESIGN I.** 2(0-6). Prerequisite: Course 101. Miss Holman, Miss Arnold, Miss Everhardy, Miss Morris, Miss Harris, and Miss Smith.

Modern dress as a design, consideration of individual requirements; brief survey of historic costume; this course a design basis for garment selection and construction. Charge, 50 cents; deposit, 25 cents.

134. **COSTUME DESIGN II.** 2(0-6). Prerequisite: Course 130. Miss Arnold, Miss Morris, and Miss Harris.

Review of line, form, and proportion in modern costume and in the human figure as the structure upon which costume is built; special problems in historic dress design; the Hambidge Theory of Dynamic Symmetry. Charge, 50 cents; deposit, 25 cents.

138. **COSTUME DESIGN III.** 2(0-6). Prerequisite: Course 134. Miss Arnold, Miss Morris, and Miss Harris.

A continuation of course 134, particularly in relation to historic costume. Charge, 50 cents; deposit, 25 cents.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201, 202. **PROBLEMS IN ELEMENTARY AND INTERMEDIATE DESIGN.** 1 to 3 credits each; SS. Prerequisites: For Course 201, Course 134; for Course 202, course 201. Miss Arnold and Miss Everhardy.

Course 201: Special phases of decorative design considered with reference to the student's experience and development of projects through research and invention. Charge, 50 cents; deposit, 25 cents.

Course 202: The aim, to develop appreciation for art in everyday surroundings and as far as time permits to develop skill in expression; problems adapted to the needs of the student. Charge, 50 cents; deposit, 25 cents.

206. PROBLEMS IN TEACHING ART. 3(1-6); SS. Prerequisites: Elementary Design and Special Methods in Teaching of Home Economics, or its equivalent. Miss Holman, Miss Arnold, and Miss Everhardy.

For the high school teacher who is correlating art with home economics subjects, particularly for the teacher of art subjects connected with vocational training; training given through lectures and class discussions of methods, consideration of suitable laboratory equipment, use of illustrative material, and preparation of courses of study. Charge, 50 cents; deposit, 25 cents.

211. PROBLEMS IN COSTUME DESIGN. 2(0-6); I. Prerequisites: 9 credits in Design; consult instructors. Miss Arnold and Miss Morris.

Problems to develop taste in selection and use of historic material for dress, plays, and pageants. The aim is to increase appreciation and improve technique. Notes and sketches are required. Charge, 50 cents; deposit, 25 cents.

FOR GRADUATE CREDIT

301. ART RESEARCH. 2 to 10 credits, by appointment. For prerequisites, consult head of department.

A problem in art selected from some of the following fields: (a) Historic research; (b) organization of curriculum; (c) methods of teaching; and (d) theoretical aspects of art education.

Child Welfare and Euthenics

Professor FORD
Instructor SHARP
Instructor KELL

Assistant NOBLE
Assistant LANGFORD
Graduate Assistant EDWARDS

Home economics must always be chiefly concerned with the individuals in the homes, and the various phases of home economics gain in importance only as they contribute something of value to the lives of individuals. If homes are to prepare their members to help in the progress of society and to receive the highest satisfactions from life, they must insure three things.

They must first of all insure a childhood safeguarded by the wise application of the latest principles of science. The environment must be such as to foster the fullest development of desirable qualities and to suppress the development of undesirable qualities. In the second place, through right family relationships and family living based on sound principles and high ideals, the home must insure such help and sense of security to the individual as can come in no other way. In the third place, the home must lay a sure foundation for both the physical and mental health of its members. We realize now that health is much more than the absence of disease. It is positive, buoyant health that homes must strive to give individuals to-day.

To help educate in right living, from the standpoint both of individual and family well-being, and to further whatever is of benefit to children are the aims of the courses offered in this department.

This department has equipment valued at \$2,608.

FOR UNDERGRADUATE CREDIT

101. HYGIENE. 2(2-0); I and II. No prerequisite; must be taken parallel with Foods I by home economics students. Dr. Sharp.

Personal hygiene as a means of maintaining and improving health.

111. POSITIVE CHILD HEALTH. 2(2-0); I and II. For prerequisites, consult instructor. Dr. Sharp.

Public-health aspects of school hygiene, the object of health development in educational systems, organization and administration of health work in

public schools, and the teaching of hygiene by practical demonstration and the project method.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. CHILD CARE AND TRAINING I. 3(1-6); I and II. Prerequisites: Embryology or Physiology, psychology, and Human Nutrition. Dr. Ford.

Development, care, and training of the infant and preschool child.

Laboratory.—Directed observations and assisting in the nursery school. Charge, \$1.

206. CHILD CARE AND TRAINING II. 3(3-0); II. For prerequisites, consult the instructor. Dr. Ford.

The development, care, and training of older children; community problems in child welfare.

211. FAMILY HEALTH. 3(3-0); I and II. Prerequisites: Embryology or Physiology, and Household Microbiology. Dr. Sharp.

Health of individuals in the family; the importance of preventive medicine; the household as a factor in health conservation; the interrelation of home and community health; simple nursing procedures.

216. THE MODERN FAMILY. 2(2-0); I and II. Prerequisite: Senior or graduate standing. Consult instructor. Dr. Ford.

Functions of the family and the various problems which confront it to-day.

221. PROBLEMS IN CHILD WELFARE AND EUTHENICS. 1 to 5 credits; I and II. Prerequisite: Child Care and Training I. Consult instructor. Dr. Ford.

Individual investigation of a special problem in some phase of child welfare; conferences, and reports at appointed hours.

226. SEMINAR IN CHILD WELFARE AND EUTHENICS. 1 or 2 credits; I and II. Prerequisite: Child Care and Training I. Dr. Ford.

Discussions and reports dealing with important publications and activities in the field of child welfare and euthenics.

FOR GRADUATE CREDIT

301. RESEARCH IN CHILD WELFARE AND EUTHENICS. 1 to 10 credits; I and II. Prerequisites: Consult instructor. Dr. Ford.

Opportunity for original research in the field of child welfare and euthenics which may form the basis of work for a master's thesis.

Clothing and Textiles

Professor BAKER
Associate Professor COWLES
Assistant Professor BRUNER
Assistant Professor HESS

Assistant Professor QUINLAN
Graduate Assistant ANDERSON
Graduate Research Assistant SOUTHARD

Clothing is an important factor in both the physiological and psychological well-being of the individual and of the family. The wise selection of the clothing requires a high degree of skill in the application of hygienic, economic, and æsthetic principles. The preservation and care of clothing are based upon a practical knowledge of chemistry, entomology, and bacteriology. In the construction of garments, art, applied art, and technic are presented in their proper relations in order to train students in fundamental principles and enable them to utilize these principles in their everyday practices. In this department advanced courses are offered for students who wish to prepare for vocational, professional, and business positions such as college teachers, research workers, textile chemists, clothing consultants, purchasing agents for institutions, department stores, and millinery establishments, and extension workers as well as other professions.

The equipment belonging to this department is valued at \$7,609.

COURSES IN CLOTHING AND TEXTILES

FOR UNDERGRADUATE CREDIT

101. CLOTHING I. 2(1-3); I and II. Prerequisite or parallel: Elementary Design. Miss Baker, Miss Cowles, and Mrs. Hess.

The factors that influence the individual in the selection and purchase of clothing; knowledge of clothing fabrics, the testing of sewing ability, learning buying procedures, the use of the clothing budget, and self-analysis as a basis for clothing choices. Charge, \$1; deposit, 25 cents.

111. CLOTHING II. 3(1-6); I and II. Prerequisites: Clothing I and Costume Design I. Miss Quinlan and Miss Cowles.

This course offers an opportunity for the girl to design and construct dresses that express individuality through the correct use of line and color. Charge, \$1; deposit, 25 cents.

116. TEXTILES. 3(2-3); I and II. Prerequisites: Organic Chemistry and Clothing I. Mrs. Hess and Miss Bruner.

The social and economic development of the textile industry, from the "industrial revolution" to the present time; the combination of art, science, and mechanics that makes it possible to develop a clear and sound judgment in the selection of textile fabrics for household and personal use and to become familiar with best methods of determining quality.

Laboratory.—Chemical, physical, microscopic tests on textile fibers, yarns, and fabrics. Charge, \$2; deposit, 25 cents.

126. CLOTHING III. 3(1-6); I and II. Prerequisites: Courses 101, 111, 116, and Costume Design I. Open to juniors and seniors.

Aesthetic and modish adaptation of materials to the individual; self-expression through dress; emphasis on problems of the high school teacher and designs for clothing based on natural objects.

Laboratory.—Self-fitting and problems in silk fabrics, renovation and practice in demonstration work. Charge, \$1.50; deposit, 25 cents.

130. CLOTHING AND LINENS FOR THE HOUSEHOLD. 3(1-6); I and II. Prerequisite or parallel: Elementary Design or approval of instructor. Miss Cowles.

The selection, purchase, and construction of children's clothing and the linens (sheets, curtains, table linens, etc.) needed in the ordinary home. Planned for students desiring a general clothing course; may be used as an elective for home economics majors. Charge \$1; deposit, 25 cents.

FOR GRADUATE AND UNDERGRADUATE CREDIT

237. CLOTHING ECONOMICS. 3(3-0); I. Prerequisites: Economics, Textiles, Clothing I and II. Miss Baker.

A study of the organization of the textile industries and markets, of wages and standards of efficiency in workmanship, of standardization of fabrics, and legislation concerning textiles. Topics are assigned for reading and investigation in addition to classroom work.

246. ADVANCED TEXTILES. 3(1-6); I. Prerequisites: Textiles, and Clothing I and II. Mrs. Hess, and Miss Bruner.

Special work in the analysis of fabrics, study of scientific equipment used in colleges and commercial plants as well as assigned problems in textiles, dyeing, and deterioration in fabrics and fibers.

Laboratory.—Charge, \$3; deposit, 25 cents.

251. HYGIENE OF CLOTHING. 3(3-0); II. Prerequisites: Textiles, Embryology or Physiology, Microbiology, and Clothing I and II. Miss Baker.

A study of the body as it may be affected by clothing, and a summary of the factors in textile fibers and fabrics that affect the health of the body. Students are assigned special problems for investigation based on clothing in relation to health and its effect upon anatomical form, muscular development, and physiological functions.

256. PROBLEMS IN CLOTHING AND TEXTILES. 1 to 3 credits; I and II. By appointment. For prerequisites consult Miss Baker.

An assigned problem in some phase of clothing or textiles. Charge, to be arranged with the instructor.

260. LABOR IN THE CLOTHING AND TEXTILE INDUSTRIES. 1(1-0); II. For prerequisites consult instructors. Miss Cowles and Miss Quinlan.

Ancient and modern methods of textile production; problems arising from the conditions of labor, especially as affecting the mental, moral, and physical health of the workers, methods used in bettering these conditions, in addition to a local survey of labor related to textiles.

265. HISTORY OF COSTUME. 1(1-0); I. Prerequisites: Costume Design I and II, Textiles, or approval of instructor. Miss Quinlan.

Ancient and modern costumes with their various phases of development; comparison of classes and the relative cost of living in the various ages.

270. CLOTHING IV. 3(1-6); II. For prerequisites, consult Miss Baker and Miss Quinlan.

Sociological, historical, and philosophical aspects of costume; the relation of dress to civilization, architecture, religion, occupation, amusement, and the like; a summary of clothing and textile subject matter and its place in the high-school and college curricula.

Laboratory.—Fundamentals in tailoring and essentials in millinery. Charge, \$2; deposit, 25 cents.

FOR GRADUATE CREDIT

301. RESEARCH IN CLOTHING AND TEXTILES. 2 to 10 credits; by appointment, I and II. For prerequisites consult instructors. Miss Baker, Mrs. Hess, and Miss Bruner.

A research problem considering the hygienic or economic aspects of textiles or an investigation of clothing as it is related to art, psychology or bacteriology may be chosen as the problem, depending on the courses elected. Charge, to be arranged with the instructor.

312. EXPERIMENTAL TEXTILES. 3 credits; by appointment. Prerequisites: Advanced Textiles. Mrs. Hess and Miss Bruner.

The work covered in this course consists primarily of experimental work on and with textiles. Written reports of all work done will be required before a student will receive credit for the course. Charge, \$5; deposit, 25 cents.

Food Economics and Nutrition

Professor PITTMAN*
 Professor KRAMER
 Professor CHANEY
 Associate Professor AHLBORN
 Instructor TUCKER

Instructor VAIL
 Assistant BOEHM
 Technician POTTER
 Graduate Assistant EHRHARDT
 Research Graduate Assistant AGAN

Food is an important factor in the health of the individual and the family. Selection of wholesome and economical food requires the application of chemistry, physiology, sanitary science, and economics. Preparation and preservation of food involve processes dependent upon physics, chemistry, and bacteriology. In the modern science of nutrition and dietetics, the student learns the chemical and physiological principles involved in the nutrition of the body and applies these to planning of food for the individual and the group.

Advanced courses in this department provide training for teachers of foods, dietitians, demonstrators, extension workers and similar professions.

The equipment belonging to this department is valued at \$22,527.

* Absent on leave, year 1929-'30.

COURSES IN FOOD ECONOMICS AND NUTRITION

FOR UNDERGRADUATE CREDIT

101A. FOODS I. 3(1½-4½); I and II. No prerequisite; must be accompanied by Hygiene (Child Welfare 101). Miss Vail, Miss Boehm, and Miss Ehrhardt.

Study of elementary nutrition and etiquette; practice in the various methods of preparing and serving meals. Charge, \$4; deposit, 25 cents.

106. FOODS II. 5(3-6); I and II. Prerequisites: Organic Chemistry, and Foods I or equivalent. Miss Pittman, Miss Tucker and Miss Vail.

Classification, composition, occurrence, and general properties of foods; food values in relation to cost; legal and sanitary aspects of food products handled in commerce; place of various foods in diet.

Laboratory.—Foods are tested to show chemical composition and reactions. Food preparation is from the experimental standpoint. Recipes are compiled and food products are scored. Charge, \$4.25; deposit, 25 cents.

112. HUMAN NUTRITION. 3(3-0); I and II. Prerequisites: Organic Chemistry, Embryology or Physiology, and Foods II.* Dr. Kramer.

The chemistry of food and nutrition, with emphasis upon the food nutrients, digestion, and metabolism.

117. PRACTICE IN FOOD DEMONSTRATIONS. 1(0-3); II. Prerequisite: Foods II. Miss Pittman and others.

Instruction in the technic of food demonstrations; each student allowed opportunity for practice in various types of demonstrations. Charge, \$3; deposit, 25 cents.

121. APPLIED NUTRITION. 2(2-0); I and II. Prerequisite: Organic Chemistry or permission of instructor. Miss Pittman and Miss Ahlborn.

Practical nutrition for the college student, including food requirements, food selection, and food habits. A course designed for men and women students not majoring in home economics.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. DIETETICS. 5(3-6); I and II. Prerequisites: Foods II and Human Nutrition. Dr. Chaney, Miss Ahlborn, and Miss Tucker.

Food requirements in health throughout infancy, childhood, adolescence, adult life, and old age; typical dietaries for each period of life; milk formulæ; the problem of satisfying the diverse requirements in families and other groups.

Laboratory.—Studies of weight, measures, and cost of some of the common food materials; calculations and quantitative preparation of standard portions and combinations of foods; practice in marketing and serving; and other practical applications of classroom theories. (For graduate students, an assigned problem instead of marketing and serving.) Charge, \$6; deposit, 25 cents.

205. DIETETICS FOR ABNORMAL CONDITIONS. 2(1-3); II. Prerequisite: Dietetics. Dr. Kramer.

Varying dietetic requirements in different pathological conditions, such as diabetes, nephritis, gout, gastric ulcer, etc. (For students who expect to qualify as professional dietitians.)

Laboratory.—Demonstrations of special foods used in such conditions, and computation of dietaries. Charge, \$3; deposit, 25 cents.

210. THE NUTRITION OF DEVELOPMENT. 2(2-0); II. Prerequisites: Human Nutrition and Dietetics. Dr. Chaney.

Food requirements in pregnancy, fetal life and lactation. Infant feeding, food for the preschool child, the school child, and the adolescent.

* Students from other divisions desiring to elect Human Nutrition may substitute an equivalent number of hours in other sciences for Embryology or Physiology, and Foods II.

215. FIELD WORK IN NUTRITION. 3(2-3); I and II. Prerequisites: Human Nutrition, and Dietetics. Dr. Chaney and _____.

Survey work along nutritional lines and corrective work with malnourished individuals, either separately or in groups. Charge to be arranged with instructor.

243, 244. PROBLEMS IN FOODS I AND II. 1 to 3 credits each; I and II, respectively. Prerequisites: Foods II, and Human Nutrition. Miss Pittman, Miss Tucker, and Miss Vail.

I: Problems in food assigned for individual study. Charge to be arranged with instructor.

II: A continuation of I, or may be elected independently. Charge to be arranged with instructor.

248, 249. PROBLEMS IN FOOD ECONOMICS AND NUTRITION I AND II. 2 to 5 credits each; (conferences, laboratory work, and reports); I and II, respectively. Prerequisite: Senior or graduate standing. Miss Pittman, Dr. Kramer, and Dr. Chaney.

I: Problems in the nutritive value of foods; feeding experiments; dietary studies, or practice in the methods commonly used in the simpler experiments in nutrition, are assigned for individual study. Charge depends on problem chosen.

II: Continuation of course 248 or may be elected independently. Charge depends on problem chosen.

251, 252. FOOD ECONOMICS AND NUTRITION SEMINAR I AND II. 1 or 2(2-0) each; I and II respectively. Prerequisite: Human Nutrition. Dr. Kramer.

I: Assigned reading and discussion of topics in the fields of food economics and nutrition, with special attention to recent literature bearing on problems in dietetics in both normal and pathological conditions, on growth, and on normal and subnormal nutrition in infancy and childhood.

II: Continuation of I or may be elected independently.

260. METHODS FOR EXTENSION WORKERS IN FOODS. 2 credits; II. Prerequisite: Dietetics. Miss Pittman.

Origin and development of the extension field in home economics; food problems of the extension worker and methods suggested for handling them; federal, state, and county organizations considered. Some field work required.

265. METHODS OF INVESTIGATION IN FOODS AND NUTRITION. 2(1-3); I and II, by appointment. Prerequisite: Dietetics. Dr. Kramer and Dr. Chaney.

Current methods in investigation of foods and of problems in nutrition.

Laboratory.—Laboratory procedures in simple food analyses, digestion and metabolism experiments, and animal feeding technic. Charge, \$3; deposit, 25 cents.

FOR GRADUATE CREDIT

305. RESEARCH IN FOOD ECONOMICS AND NUTRITION. 1 to 10 credits; I and II. For prerequisites, consult instructors. Miss Pittman, Dr. Kramer, and Dr. Chaney.

Individual research problems, which may form the basis for the thesis submitted for the master's degree. Charge to be arranged with instructor.

306. ANIMAL NUTRITION SEMINAR. 1 credit for the year. Prerequisite: Consult instructor. Miss Pittman, Dr. Kramer, and Dr. Chaney.

Experiments in nutrition, methods employed, and validity of conclusions drawn.

General Home Economics

Dean JUSTIN
Assistant Dean AHLBORN

Professor RUST*
Graduate Assistant NOWLIN

COURSES IN GENERAL HOME ECONOMICS

FOR UNDERGRADUATE CREDIT

101. HOME ECONOMICS FRESHMAN SEMINAR. R(1-0); I. Dean Justin, Assistant Dean Ahlborn, department heads of the division, and Professor C. V. Williams.*

The purpose of the seminar is: (1) The orientation of the student to her college environment. (2) The development of the ability to study. (3) Guidance in choice of one of the several fields of home economics for her profession.

151. HOME ECONOMICS SENIOR SEMINAR. R(1-0); II. Dean Justin.

The opportunities and responsibilities of the home economist are presented, and means for professional growth and personal advancement of the trained woman are stressed.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. PROBLEMS IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 5 credits; I and II. Prerequisite: Senior or graduate standing. Dean Justin and Mrs. Rust.*

This course permits opportunity for study of problems of organization and administration in this field.

There are investigations that touch the various fields of home economics which are primarily approached from the standpoint of organization and presentation of home economics, taking subject matter from the departments and correlating it into a general program. Such investigations may be carried on in conjunction with the Department of Education or with the Department of Home Economics in Extension.

FOR GRADUATE CREDIT

301. RESEARCH IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 10 credits; I and II. Prerequisite: Graduate standing. Dean Justin and Mrs. Rust.*

Individual research problems in phases of organization and administration for home economics. May be chosen as the basis for thesis for the master's degree. The nature of the problem will depend upon the student's major interest.

Household Economics

Dean JUSTIN
Assistant Professor GUNSELMAN
Assistant Professor TAYLOR

Graduate Assistant HEYWOOD
Graduate Research Assistant SMITH

The successful administration of the home depends upon the wise expenditure of time, money and effort, the maintenance of healthful and comfortable home conditions, and an appreciation of the importance of the home and its relation to the community. Through the courses in this department, training is given in household equipment, problems of household administration, and standards of living.

Those preparing to become directors of residence units, specialists in household management, teachers, or research workers in this field find suitable courses in this department.

The department owns equipment valued at \$3,041.

* Of the Department of Education.

FOR UNDERGRADUATE CREDIT

107. HOUSEHOLD MANAGEMENT. 3(2-3); I and II. Prerequisites: Foods II, and Clothing II. Miss Gungelman and Miss Taylor.

Organization and simplification of housework; choosing the home and its furnishings; time schedules; the income and its expenditures; advancement of the family; and the place of the family in the community.

Laboratory.—Planning the spending of the income. Time and efficiency studies; care of metals and restoration of wood surfaces; planning and equipping a kitchen. Charge, \$1.

116. PRACTICE COURSE IN HOUSEHOLD MANAGEMENT. 3 credits; I and II. Prerequisites: Household Physics, Household Management, and Human Nutrition. Miss Gungelman.

Opportunity is given in the practice house for the practical application of principles of science and art to the home. The aim is to develop good judgment in planning expenditures of time, money and effort, and in evaluating the factors that determine standards of living.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. HOUSEHOLD EQUIPMENT. 3(1-6); I and II. Prerequisites: Physics 101 and Hshld. Ec. 107. Miss Taylor.

Studies and tests of household equipment from the physical standpoint. Charge, \$2.50.

243. PROBLEMS IN HOUSEHOLD ECONOMICS. 1 to 5 credits; I and II. Prerequisite: Household Management. Consult instructor. Dr. Justin, Miss Gungelman, and Miss Taylor.

Special problems for individual investigation in standards of living and family expenditures; housing, household equipment, organization and methods of housework; use of time freed from housework, or social aspects of the household and of the family.

265. ECONOMICS OF THE HOUSEHOLD. 2(2-0); II. Prerequisites: Foods II and Economics. Miss Gungelman.

Problems of income, housing, standards of living, budgets, and accounts.

FOR GRADUATE CREDIT

301. RESEARCH IN HOUSEHOLD ECONOMICS. 1 to 10 credits; I. Prerequisites: Consult instructors. Dr. Justin, and Miss Gungelman.

An individual research problem in the field of household administration. This may form part or all of the basis for a master's thesis.

Institutional Economics

Professor WEST
Assistant Professor WOOD
Assistant HARRIS

Graduate Assistant TRUMP
Graduate Assistant HOOVER
Graduate Assistant DEAL

The successful administration of the institution involves the wise expenditure of time, energy, and money, in order that the requirements of food and shelter may be satisfactorily furnished to large groups. Courses in this department provide training for cafeteria, tea-room, lunch-room managers, dietitians, and directors of residence halls. The equipment of this department is valued at \$13,229.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. INSTITUTIONAL ECONOMICS I. 3(1-6); I and II. Prerequisite: Foods II; prerequisite or parallel: Human Nutrition. Miss Wood and graduate assistant.

Food problems of institutions, including preparation and serving of food, arrangement of menus and cost of service.

Laboratory.—Carried on in College cafeteria and Girls' Residence Hall, where food is prepared in large quantities for serving. Charge, \$2.50.

205. INSTITUTIONAL ECONOMICS II. 3(3-0); I and II. Prerequisite: Institutional Economics I. Graduate students may parallel Institutional Economics I and II. Miss Wood.

A study of institutions, their organization and management problems. Includes floor plans, equipment, qualifications and duties of the manager, personnel work, and office management.

210. PROBLEMS IN INSTITUTIONAL ADMINISTRATION. 1 to 5 credits; I and II. Prerequisite: Institutional Economics I; prerequisite or parallel: Institutional Economics II. Consult instructor. Mrs. West.

Individual investigation of problems in the field of institutional economics. Conferences are held and reports made at appointed hours.

215. INSTITUTIONAL MARKETING. 2(2-0); I. Prerequisite: Foods II. Mrs. West.

Study of producing areas, storage, local and general marketing of fresh, canned, and dehydrated vegetables; meats; and fresh, canned, and dried fruits.

218. SCHOOL LUNCH-ROOM MANAGEMENT. 2(2-0); II and SS. Prerequisite: Human Nutrition. Mrs. West.

The principles involved in equipment, organization, administration, purchasing, and menu-making of the school lunch.

225. TEA-ROOM MANAGEMENT. 3(0-9); I and II. Prerequisites: Institutional Economics I. Prerequisites or parallel: Institutional Economics II and Institutional Marketing. Miss Wood and graduate assistant.

Practical experience in the planning, preparation and serving of food to the public. Afternoon tea, dinner, and catering for small parties is included. The College Tea Room serves as a laboratory for this course. Charge, \$2.50.

FOR GRADUATE CREDIT

301. RESEARCH IN INSTITUTIONAL ECONOMICS. 2 to 10 credits; I and II. For prerequisites, consult instructor. Mrs. West.

Home Economics in the Summer School

In addition to instruction in various branches of home economics available to teachers during the regular College year, the College offers numerous courses in this subject in the Summer School. These courses apply directly on the curriculum in home economics, or on graduate credit.

A special circular giving in detail the courses offered in the Summer School may be had by applying to the vice president of the College.

The Division of Veterinary Medicine

RALPH R. DYKSTRA, *Dean*

The College has one of the best-equipped schools of veterinary medicine in the West. It is rated in class "A" by the United States Department of Agriculture, which rating places it among the best in the United States and Canada. In addition to giving the student the best possible technical training in veterinary medicine, the course is designed to give the broad culture necessary for men who are to take their places in public affairs. Professional men, such as veterinarians, are placed in a more or less public relation to the communities they serve. They must have a broad groundwork in culture and ethical training, which will win them the confidence and respect of their communities. Success is measured in something more than dollars and cents, and the man whose view of life is no broader than his profession adds but little to the world and its happiness. The training given by the College in veterinary science seeks to emphasize the value of the man as a man, as much as his value as a specialist.

The Division of Veterinary Medicine gives most of the technical work in the curriculum in veterinary medicine, a general description of which is given below. The division is housed in the Veterinary buildings, which were erected at a cost of over \$175,000, and are thoroughly equipped throughout. Veterinary Hall contains modern classrooms, and its laboratories possess the necessary appliances for illustrating the several subjects required. The mode of instruction is more specifically detailed in succeeding sections.

The policy adhered to in the instruction in all the departments is that the science of veterinary medicine is the foundation, and the art merely supplementary. A thorough drill is given in the foundation studies, and later in the curriculum practical application of these is made in actual field work. This result is a thoroughly scientific veterinary education.

In the arrangement of the schedule of the veterinary curriculum it is implied that the courses should be followed in regular sequence, as each year's work depends upon the work done the previous year. Certain courses, however, may be selected as electives if a student has the necessary prerequisites. These courses are mentioned in the list of electives.

THE CURRICULUM IN VETERINARY MEDICINE

Veterinary medicine has made remarkable advances within recent years, and is taking its place alongside human medicine as a science. In truth, medical science and veterinary science are but specialized branches of the same science, and must be developed together. The modern veterinarian takes his place in the community as a professional man of education and culture. With the general improvement of the live stock on the farms, and with the advance of live stock in value, there is constant increase in the demand for skilled physicians to care for them.

The veterinarian, while primarily trained to conserve the health of farm animals, has yet larger service to render in preventing disease common to both man and beast from being communicated from domestic animals to man. Moreover he must see that the animals slaughtered for meat are healthy and that the products are handled under such conditions as to render them suitable for human food. The public is now demanding that milk and other food products be free from contamination and that they be incapable of transmitting dangerous diseases, like tuberculosis, typhoid fever, scarlet fever, and diphtheria. There is ample work for all of the thoroughly competent veterinarians that the colleges of the country will train.

The curriculum in veterinary medicine at the Agricultural College was established to give the young men of this state an opportunity to pursue these studies in an agricultural environment, where the facilities offered by other branches of the College would be at their command. While the instruction in this curriculum is largely technical, enough subjects of a general character are included to give a sound education and a broad outlook. Better to fit the veterinarian to deal wisely with the live-stock problems which he has to meet, he is required to take the work in live-stock feeding, breeding and judging, and in milk inspection, zoölogy, and embryology, in addition to his purely professional work.

The diploma from this school is recognized by the United States Department of Agriculture, by the United States Civil Service Commissions, by the American Veterinary Medical Association, and by the various examining boards of the several states and territories of America where it has been presented.

THE CURRICULUM IN ANIMAL HUSBANDRY AND VETERINARY MEDICINE

The combined curriculum in animal husbandry and veterinary medicine has been outlined so that students may receive the degree of Bachelor of Science at the end of four years, and the degree of Doctor of Veterinary Medicine at the end of two years more, thus securing both degrees in six years.

This curriculum is prepared especially for students who intend to become managers of live-stock farms or to enter special lines of veterinary practice.

THE CURRICULUM IN GENERAL SCIENCE AND VETERINARY MEDICINE

The combined curriculum in general science and veterinary medicine has been so arranged that students may receive the degree of Bachelor of Science at the end of four years, and the degree of Doctor of Veterinary Medicine at the end of two years more, thus securing both degrees in six years. The curriculum is intended especially for students who intend to pursue teaching or research work in agricultural experiment stations.

Curriculum in Veterinary Medicine

FRESHMAN

FIRST SEMESTER	SECOND SEMESTER
Anatomy I, Anat. 104.....*4(3-3)	Anatomy II, Anat. 109.....7(3-12)
Histology I, Path. 101.....3(1-6)	Histology II, Path. 106.....3(1-6)
Zoöl. and Emb. (Vet.), Zoöl. 109.....5(3-6)	Chemistry (Vet.), Chem. 105.....5(3-6)
College Rhetoric I, Engl. 101.....3(3-0)	Mil. Sci. (Vet.) II, Mil. Tr. 122A....1(0-3)
Mil. Sci. (Vet.) I, Mil. Tr. 121A....1(0-3)	Phys. Education M, Phys. Ed. 104...R(0-2)
Phys. Education M, Phys. Ed. 103...R(0-2)	
Total 16	Total 16

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER
Anatomy III, Anat. 112.....4(1-9)	Anatomy IV, Anat. 116.....3(1-6)
Comp. Physiology I, Anat. 221.....5(4-3)	Comp. Physiology II, Anat. 226.....3(2-3)
Medical Botany, Bot. 126.....2(1-3)	Path. Bact. I, Bact. 111.....4(2-6)
El. Org. Chemistry, Chem. 123.....3(2-3)	Pathology I, Path. 202.....3(2-3)
Live-stock Judging, An. Husb. 120...3(2-4)	Prin. of Feeding, An. Husb. 152....3(3-0)
Mil. Sci. (Vet.) III, Mil. Tr. 123A...1(0-3)	Dairy Judging, Dairy Husb. 104....1(0-3)
Phys. Education M, Phys. Ed. 105...R(0-2)	Mil. Sci. (Vet.) IV, Mil. Tr. 124A...1(0-3)
	Phys. Education M, Phys. Ed. 106...R(0-3)
Total 18	Total 18

* The number before the parenthesis indicates the number of semester hours of credit; the first number within the parentheses indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory work each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory each week.

JUNIOR

FIRST SEMESTER		SECOND SEMESTER	
Surgery I, Surg. and Med. 101.....	3(3-0)	Surgery II, Surg. and Med. 106.....	3(3-0)
Diagnosis, Surg. and Med. 170.....	2(2-0)	Dis. of Lg. Ani. I, Surg. & Med. 174, 4(4-0)	
Materia Medica, Surg. and Med. 157, 4(4-0)		Farm Poul. Pro., Poul. Husb. 101, 2(1-2, 1)	
Pharmacy, Surg. and Med. 166.....	1(0-3)	Therapeutics, Surg. and Med. 163....	3(3-0)
Pathology II, Path. 207.....	3(2-3)	Pathology III, Path. 212.....	5(4-3)
Patho. Bact. II, Bact. 116.....	4(2-6)	Clinics II, Surg. and Med. 140.....	1(0-10)
Clinics I, Surg. and Med. 137.....	1(0-6)		
Total	18	Total	18

SENIOR

FIRST SEMESTER		SECOND SEMESTER	
Surgery III, Surg. and Med. 111.....	3(3-0)	Surgery IV, Surg. and Med. 116.....	3(3-0)
Dis. of Lg. Ani. II, Surg. & Med. 177, 5(5-0)		Inf. Dis. of Large Animals, Surg. and Med. 181	5(5-0)
Jurisprudence, Anat. 161.....	1(1-0)	Dis. of Small Ani., Surg. & Med. 186, 2(2-0)	
Pathology IV, Path. 214.....	3(2-3)	Poultry Diseases, Bact. 217.....	2(2-0)
Meat Inspection, Path. 216.....	2(2-0)	Op. Surgery, Surg. and Med. 121.....	1(0-3)
Parasitology, Zoöl. 208.....	3(2-3)	Obstetrics, Surg. and Med. 131.....	3(3-0)
Clinics III, Surg. and Med. 143.....	1(0-12)	Dairy Insp. II, Dairy Husb. 118.....	1(0-3)
		Clinics IV, Surg. and Med. 146.....	1(0-12)
Total	18	Total	18

Number of semester hours required for graduation, 140.

EXTRA-CURRICULAR ELECTIVES

FIRST SEMESTER	SECOND SEMESTER		
Vaccine Manu. I, Path. 227.....	2(1-3)	Special Histology, Path. 252.....	3(1-6)
		Vaccine Manu. II, Path. 230.....	2(1-3)

FIRST OR SECOND SEMESTER

Pathological Technic and Diagnosis I, Path. 220.....	2(0-6)
Pathological Technic and Diagnosis II, Path. 221.....	4(0-12)
Research in Pathology, Path. 302.....	1 to 10(-)
Special Anatomy, Anat. 202.....	2 to 4(-)
Applied Anatomy, Anat. 206.....	1(0-3)
Problems in Physiology, Anat. 215.....	3 to 5(-)

Curriculum in Animal Husbandry and Veterinary Medicine¹

FRESHMAN

Freshman year of the Curriculum in Agriculture

SOPHOMORE

FIRST SEMESTER	SECOND SEMESTER		
General Zoölogy, Zoöl. 105.....	5(3-6)	Path. Bact. I, Bact. 111.....	4(2-6)
Anatomy I, Anat. 104.....	4(3-3)	Anatomy II, Anat. 109	7(3-12)
Soils, Agron. 130.....	4(3-3)	College Rhetoric II, Engl. 104.....	3(3-0)
Elements of Horticulture, Hort. 107, 3(2-3)		Infantry IV, Mil. Tr. 104A.....	1(0-3)
Infantry III, Mil. Tr. 103A.....	1(0-3)	Phys. Education M, Phys. Ed. 106..R(0-3)	
Phys. Education M, Phys. Ed. 105..R(0-2)		Agric. Seminar, Gen. Agric. 103.....	R
Agric. Seminar, Gen. Agric. 103.....	R		
Total	17	Total	17

1. This curriculum is so arranged that students may receive the degree of Bachelor of Science (in agriculture) at the end of four years, and the degree of Doctor of Veterinary Medicine at the end of two more years.

JUNIOR

FIRST SEMESTER		SECOND SEMESTER	
Embryology A, Zoöl. 135.....	3(2-3)	Prin. of Feeding, An. Husb. 152.....	3(3-0)
Anatomy III, Anat. 112.....	4(1-9)	Anatomy IV, Anat. 116.....	3(1-6)
Histology I, Path. 101.....	3(1-6)	Histology II, Path. 106.....	3(1-6)
Genetics, An. Husb. 221.....	3(3-0)	El. Journalism, Ind. Jour. 151.....	2(2-0)
Electives ²	4(-)	Jour. Pract. I, Ind. Jour. 154.....	2(0-6)
		Farm Crops, Agron. 101.....	4(2-6)
Agric. Seminar, Gen. Agric. 103.....	R	Agric. Seminar, Gen. Agric. 103.....	R
Total	17	Total	17

SENIOR

FIRST SEMESTER		SECOND SEMESTER	
Gen. Entomology, Ent. 203.....	3(2-3)	Agric. Rela., Gen. Agric. 105B.....	R(1-0)
Agric. Economics, Ag. Ec. 101.....	3(3-0)	Farm Org., Ag. Ec. 106.....	3(2-3)
Comp. Physiology I, Anat. 221.....	5(4-3)	Comp. Physiology II, Anat. 226.....	3(2-3)
		Pathology I, Path. 202.....	3(2-3)
Electives ²	5(-)	Electives ²	7(-)
Agric. Seminar, Gen. Agric. 103.....	R	Agric. Seminar, Gen. Agric. 103.....	R
Total	16	Total	16

FIFTH YEAR

Junior year of the Curriculum in Veterinary Medicine.

SIXTH YEAR

Senior year of the Curriculum in Veterinary Medicine.
Number of semester hours required for graduation, 202.

Six-year Curriculum in General Science and Veterinary Medicine

FRESHMAN

FIRST SEMESTER		SECOND SEMESTER	
Anatomy I, Anat. 104.....	4(3-3)	Anatomy II, Anat. 109.....	7(3-12)
College Rhetoric I, Engl. 101.....	3(3-0)	College Rhetoric II, Engl. 104.....	3(3-0)
Chemistry I, Chem. 101.....	5(3-6)	Chemistry II, Chem. 102.....	5(3-6)
College Algebra,* Math. 104.....	3(3-0)		
Mil. Sci. (Vet.) I, Mil. Tr. 121A....	1(0-3)	Mil. Sci. (Vet.) II, Mil. Tr. 122A....	1(0-3)
Phys. Education M, Phys. Ed. 103..	R(0-2)	Phys. Education M, Phys. Ed. 104..	R(0-2)
Total	16 or 18	Total	16

SOPHOMORE

FIRST SEMESTER		SECOND SEMESTER	
Histology I, Path. 101.....	3(1-6)	Histology II, Path. 106.....	3(1-6)
German I or French I, Mod. Lang.		German II or French II, Mod. Lang.	
101 or 151	3(3-0)	102 or 152	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)	Plane Trigonometry, Math. 101.....	3(3-0)
Library Methods, Lib. Econ. 101....	1(1-0)	Prin. of Feeding, An. Husb. 152.....	3(3-0)
Organic Chemistry I, Chem. 218....	4(2-6)	Organic Chemistry II, Chem. 219....	4(2-6)
Mil. Sci. (Vet.) III, Mil. Tr. 123A....	1(0-3)	Mil. Sci. (Vet.) IV, Mil. Tr. 124A....	1(0-3)
Phys. Education M, Phys. Ed. 105..	R(0-2)	Phys. Education M, Phys. Ed. 106..	R(0-2)
Total	17	Total	17

2. All electives must be officially approved before assignment by both the head of the Department of Animal Husbandry and the dean of the Division of Agriculture.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, making a total of 17½ credits for the semester.

JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Anatomy III, Anat. 112.....4(1-9)	Anatomy IV, Anat. 116.....3(1-6)
General Botany I, Bot. 101.....3(1-4, 2)	General Botany II, Bot. 105.....3(1-4, 2)
General Physics I, Physics 135.....4(3-3)	General Physics II, Physics 140.....4(3-3)
Live-stock Judging, An. Husb. 120...3(2-4)	Pathogenic Bact. I, Bact. 111.....4(2-6)
Modern Europe II, Hist. 223.....3(3-0)	Amer. Ind. Hist., Hist. 105.....3(3-0)
	Dairy Judging, Dairy Husb. 104.....1(0-3)
Total	Total
17	18

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Comp. Physiology I, Anat. 221.....5(4-3)	Comp. Physiology II, Anat. 226.....3(2-3)
Patho. Bact. II, Bact. 116.....4(2-6)	Dairy Bacteriology, Bact. 211.....3(1-6)
Parasitology, Zoöl. 208 .....3(2-3)	Embryology A, Zoöl. 135.....3(2-3)
El. of Statistics, Math. 126.....3(3-0)	Dairy Insp. II, Dairy Husb. 118.....1(0-3)
Advanced German or French, Mod.	American Government, Hist. 151.....3(3-0)
Lang. ....4(4-0) or 3(3-0)	Pathology I, Path. 202.....3(2-3)
Total	Total
19 or 18	16

Summary for the first four years.—Physical education, required; military science, 4 hours; sciences, 54 hours; veterinary subjects, 35 hours; other prescribed subjects, 42 to 45 hours. Total 135 to 138 semester hours.

FIFTH YEAR

The same as the junior year in the curriculum in veterinary medicine, except that four semester hours of elective replace Pathogenic Bacteriology II, which has been taken in the junior year.

SIXTH YEAR

The same as the senior year in the curriculum in veterinary medicine, except that four hours of elective replace Parasitology, 3 hours, and Dairy Inspection II, 1 hour, these having been taken in the senior year.

Summary.—Physical education, required; military science, 4 hours; sciences, 56 hours; veterinary subjects, 99 hours; other prescribed subjects, 47 to 50 hours, elective, 7 hours. Total, 213-216 semester hours.

Anatomy and Physiology

Professor BURT
Associate Professor McLEOD

This branch of veterinary medicine extends over the freshman and sophomore years for veterinary students, and one semester is required in the curriculum in agriculture.

The classroom instruction consists of lectures, quizzes and recitations and special dissection of the part under discussion, also a study of dissected specimens, various models, and the Azoux model of the horse. Mounted skeletons and limbs, and loose bones are abundant in the museum. The horse is taken as a type and the other domestic animals are compared with the horse. As often as necessary parts of other animals are dissected to show the differences.

The courses in anatomy require several lecture rooms, which contain models, skeletons, and bones of all kinds, and a thoroughly sanitary dissecting room equipped with all the latest materials necessary to give a course in anatomy second to none on the continent.

The equipment for instruction in physiology is ample to give the student a thoroughly comprehensive course of laboratory study.

The department owns equipment valued at \$9,407.

COURSES IN ANATOMY

FOR UNDERGRADUATE CREDIT

103. ANATOMY I. 3(2-3); I.* Dr. McLeod.

A detailed study of the bones of the horse, and a comparative study of the bones of other domestic animals, and of man. Deposit, \$3.

108. ANATOMY II. 8(4-12); II. Prerequisite: Anatomy I. Drs. Burt and McLeod.

Myology, arthology, and splanchnology, or a study of muscles, joints, and viscera. Deposit, \$5.

112, 116. ANATOMY III AND IV. 4(1-9) and 3(1-6) respectively; I and II respectively. Prerequisites: For III, Anatomy II; for IV, III. Dr. Burt.

Distribution, location, and relation of the blood vessels and nerves; all parts not previously dissected; two-thirds of the subject covered in Anatomy III, one-third in Anatomy IV; in Anatomy IV also a comparative study of the principal structural differences of the various domestic animals, not studied concurrently with the previous courses. Deposit, \$5 for each course.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. SPECIAL ANATOMY. 2 to 4 credits; II. Prerequisite: Any course in Anatomy and Physiology (102, 107, 111, 116, or 131), or equivalent. Dr. Burt.

Study of any part of the horse, as the digestive system, the genital system, etc., or of similar parts of the ox, sheep, pig, etc., or of poultry anatomy; this course being adaptable to the requirements of the line of work in which the student is specializing.

206. APPLIED ANATOMY. 1(0-3); I. Prerequisite: Anatomy IV. Dr. Burt.

Dissection of certain areas embraced in performing the various surgical operations, and study of all the structures in each area and their relation to one another as they would present themselves during an operation.

COURSES IN ANATOMY AND PHYSIOLOGY

FOR UNDERGRADUATE CREDIT

131. ANATOMY AND PHYSIOLOGY. 3(2-3); I. Drs. Burt and McLeod.

Physiology of the domestic animals with special emphasis on digestion, absorption, metabolism and excretion; sufficient anatomy to give a thorough understanding of the correlation between the two subjects and of the physiologic relations existing among the various organs of the body. Charge, \$1.

COURSES IN JURISPRUDENCE

FOR UNDERGRADUATE CREDIT

161. JURISPRUDENCE. 1(1-0); I. Dr. Burt.

The veterinarian's legal responsibilities; national and state live-stock laws; quarantine regulations, etc.

COURSES IN PHYSIOLOGY

FOR GRADUATE AND UNDERGRADUATE CREDIT

215. PROBLEMS IN PHYSIOLOGY. 3 to 5 credits; I and II. Prerequisites: Any course in Anatomy and Physiology (131, 221, or 226), or their equivalent. Drs. Burt and McLeod.

*The number before the parenthesis indicates the number of semester hours of credit; the first numeral within the parenthesis indicates the number of hours of recitation each week; the second shows the number of hours to be spent in laboratory each week; and the third, where there is one, indicates the number of hours of outside work in connection with the laboratory required each week. I, II, and SS indicate that the course is given the first semester, second semester, and summer session respectively.

Individual investigational problems in the physiology of digestion, reproduction, endocrin glands, etc.

221. COMPARATIVE PHYSIOLOGY I. 5(4-3); I. Prerequisites: For veterinary students, Anatomy I and II and Organic Chemistry (Vet.); for others, an approved course in organic chemistry. Drs. Burt and McLeod.

Physiology of domestic animals and man, beginning with the study of the blood, heart, blood vessels, and continuing with the ductless glands and internal secretions, respirations, digestion, and absorption.

Laboratory.—A practical application of the knowledge derived in the classroom. Laboratory directions furnished the student. Deposit, \$3.

226. COMPARATIVE PHYSIOLOGY II. 3(2-3); II. Prerequisites: Same as for course 221. Drs. Burt and McLeod.

The urine and urinary system, nutrition, animal heat, muscular and nervous systems, locomotion, generation and development, growth and decay. Deposit, \$3.

FOR GRADUATE CREDIT

301. ANIMAL NUTRITION SEMINAR. 1(1-0); I and II. For prerequisite, consult Dr. Burt.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of validity of conclusions drawn.

Pathology

Professor LIENHARDT
Associate Professor SCOTT
Associate Professor KITSELMAN

Assistant Professor LEASURE
Assistant Professor FARLEY

The Department of Pathology presents courses in histology, pathology and meat inspection. The instruction is presented by lectures or recitations, laboratory periods, and demonstrations which are carried out by the use of the projectoscope and by autopsies.

The laboratory is fully equipped and entirely up to date. The equipment consists of microtomes, paraffin ovens, microphotographic and projection apparatus, centrifuge, shaking machines, sterilizers, etc. Each student is furnished a drawer, microscope, prepared slides for study, and all other essentials needed for study in the laboratory courses.

The department is also in possession of a fairly complete pathological museum, which contains specimens of organs and tissues that show lesions typical of the various infections, and some noninfectious diseases. These specimens are used in the study of pathology, and together with the specimens sent in from over the state and fresh material from the immediate vicinity, they furnish ample material for the course in pathology.

The department library contains text and reference books on pathology and allied subjects, also the current files of the important technical periodicals relating to pathology. These books are at the constant disposal of the student for reference.

The course in meat inspection together with the allied subjects required for a degree in veterinary medicine make the student eligible to take the civil-service examination for meat inspection. In this course visits are made to packing plants in Topeka and Kansas City.

The equipment owned by the department is valued at \$13,994.

COURSES IN HISTOLOGY

FOR UNDERGRADUATE CREDIT

101. HISTOLOGY I. 3(1-6); I. Dr. Leasure.

Care and manipulation of the microscope; microscopical examination of the various tissues previously sectioned and mounted; blood-forming organs,

the digestive tract, etc., studied with a microscope and drawn by the student; preparations are teased and many sections in paraffin and celloidin. Deposit, \$3.

106. HISTOLOGY II. 3(1-6); II. Prerequisite: Histology I. Dr. Leasure.

Study of the stomachs of the dog, the horse and the ox; the intestines, the liver, pancreas, respiratory tract, the urinary organs, genital organs, the skin and appendages, suprarenal gland, the brain, the eye and the ear; these tissues studied with the microscope, and drawn by the student. Text: Same as course 102. Deposit, \$3.

FOR GRADUATE AND UNDERGRADUATE CREDIT

252. SPECIAL HISTOLOGY. 3(1-6); I. Prerequisite: Anat. 131 or its equivalent. Dr. Leasure.

A course dealing with special organs, as those concerned with digestion, respiration, etc., tissues fixed, dehydrated, imbedded, sectioned, stained, mounted and studied. Charge, \$3.

COURSES IN PATHOLOGY

FOR GRADUATE AND UNDERGRADUATE CREDIT

202, 207. PATHOLOGY I AND II. 3(2-3) each; II and I respectively. Prerequisites: For I, History II, and Chem. 107; for II, Path. 107 and 202, Anatomy 226, and Bact. 111, I. Drs. Lienhardt and Leasure.

General pathology, treating of the history of pathology, predisposition, immunity, congenital and inherited disease, cause of disease, course and termination of disease. Deposit, \$3 for each course.

212. PATHOLOGY III. 5(4-3); II. Prerequisites: Path. 207, Anat. 116, and Bact. 116. Drs. Lienhardt and Leasure.

Special pathology and pathological technic; collecting, fixing, hardening, embedding in celloidin and paraffin sections of fresh, frozen and embedded tissues; and study of the method of preserving gross specimens. Deposit, \$3.

214. PATHOLOGY IV. 3(2-3); I. Prerequisite: Path. 212. Drs. Lienhardt and Leasure.

Pathology of the infectious diseases and laboratory diagnosis. Deposit, \$2.50.

216. MEAT INSPECTION. 2(2-0); I. Prerequisite: Path. 212. Dr. Kitselman.

Kinds and classes of stock, traffic and transportation of animals, inspection before and after slaughter, disposition of the condemned from economic, hygienic, and sanitary standpoints, and study of different preparations and methods of preservation, adulterations, sanitary laws and regulations, and other points bearing on the question of healthful meat production.

220, 221. PATHOLOGICAL TECHNIC AND DIAGNOSIS I AND II. 2(0-6) and 4(0-12) respectively; I and II each. Prerequisites: I, Path. 207; II, Path. 212 and 220. Drs. Lienhardt and Leasure.

Practice in post-mortem and laboratory diagnosis. Deposit, \$3 for each course.

227, 230. VACCINE MANUFACTURE I AND II. 2(1-3) each; I and II each. Prerequisite: Bact. 116. Dr. Scott.

I: Theory and practice of immunization as applied to blackleg and hog cholera.

Laboratory.—Isolation and identification of the blackleg organism and of related anaerobes, and practical production of blackleg biological products and anti-hog-cholera serum and virus. Deposit, \$3.

II: Preparation and standardization of various veterinary biological products, such as tuberculin, bacterial vaccines, and bacterins.

Laboratory.—Production of some of the products mentioned and special work on blackleg biological products and anti-hog-cholera serum and virus. Deposit, \$3.

FOR GRADUATE CREDIT

302. RESEARCH IN PATHOLOGY. 1 to 10 credits; I and II. Prerequisites: Pathology 214 and 221, Bact. 116 and Chem. 235, or their equivalent. Drs. Lienhardt and Scott.

Individual research problems in pathology of the nervous system, eye, and ear; investigational work on disease caused by a filterable virus. This work may form the basis for a master's thesis. Deposit, \$3.

310. ANIMAL NUTRITION SEMINAR. 1(1-0); I and II. For prerequisite, consult Dr. Lienhardt.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of validity of conclusions drawn.

Surgery and Medicine

Professor DYKSTRA
Professor FRICK

Assistant Professor FRANK
Instructor MOTT

For instruction in surgery and clinics the equipment is excellent. The veterinary hospital, recently completed at a cost of more than \$100,000, is equipped with every modern appliance for surgical operations and diagnosis of animal diseases. The hospital has capacity for more than fifty horses or cattle, and in addition, it can accommodate fifty small animals, such as sheep, swine, cats, dogs, etc. In addition to the foregoing, members of the clinical staff, accompanied by students, make trips into the surrounding country to give veterinary attention to ailing patients. In this way the students come in contact every year with the diseases of animals and their treatment. The work is always under the guidance of proficient practitioners.

For the study of materia medica and pharmacy there is a general pharmacy laboratory containing all the drugs used in the practice of veterinary medicine and a practicing pharmacy where medicines are compounded for the everyday practice connected with the College.

This department owns equipment to the value of \$6,297.

COURSES IN SURGERY

FOR UNDERGRADUATE CREDIT

101, 106. SURGERY I AND II. 3(3-0) each; I and II respectively. Dr. Dykstra.

I: Methods of restraint; asepsis and antisepsis; anæsthesia, both local and general, inoculation, bandaging, controlling hemorrhage; division of tissues and uniting of wounds; injections of medicines into the subcutaneous tissues, blood streams, trachea, spinal canal; thorough study of animal dentistry.

II: Surgical diseases of the head, neck, thorax, abdomen, stomach and bowels, urinary organs and organs of generation.

111, 116. SURGERY III AND IV. 3(3-0) each; I and II respectively. Dr. Dykstra.

I: Causes, symptoms, and treatment of lameness; fractures and their reduction; diseases of joints, tendons and sheaths, muscles and fascia; surgical diseases of the foot; horseshoeing.

II: Special operations, such as neurectomies, autoplasties, desmotomies, actual cauterization; tenotomies, myotomies, enterotomy and enteroanastomosis, and surgery of the eye.

121. OPERATIVE SURGERY. 1(0-3): II. Drs. Dykstra, Frank and Mott.

More than 100 operations are performed on old horses which have been placed on the operating table and anæsthetized. The student is required to observe a careful technic, such as antisepsis, and, in fact, performs the operation as thoroughly and completely as possible. Charge, \$5.

COURSES IN OBSTETRICS

FOR UNDERGRADUATE CREDIT

131. OBSTETRICS. 3(3-0); II. Prerequisites: Anatomy IV and Zoölogy and Embryology (Vet.); or Anatomy and Physiology, and Embryology. Dr. Frank.

Physiology of pregnancy, principles of breeding, anatomy of the generative organs, care and hygiene of the pregnant animals, sterility, diseases incidental to pregnancy, diseases of new-born animals, care of new-born animals, abnormal presentation during parturition, surgery of obstetrics, etc.

COURSES IN CLINICS

FOR UNDERGRADUATE CREDIT

137, 140. CLINICS I AND II. 1(0-6) and 1(0-10) respectively; I and II respectively. Drs. Dykstra, Frick, Frank, and Mott.

A free clinic is conducted, at which all species of domesticated animals are presented for treatment. In clinics I and II junior students assist in these treatments, become proficient, by practical experience, in the restraint of animals, in bandaging, etc., and have charge of compounding prescriptions, preparation of antiseptics and other medicinal agents. Deposit, \$5 for each course.

143, 146. CLINICS III AND IV. 1(0-12) each; I and II respectively. Prerequisite: Junior or senior veterinary assignment. Drs. Dykstra, Frick, Frank, and Mott.

Diagnosis and treatment of hospital patients, including the keeping of clinic sheets, the administering of all medicines, changing of dressings on surgical wounds, etc.; assisting clinicians in out-clinic work. Deposit, \$5 for each course.

COURSES IN MATERIA MEDICA

FOR UNDERGRADUATE CREDIT

157. MATERIA MEDICA. 4(4-0); I. Dr. Frank.

Modes of action of drugs in general, their method and rapidity of absorption and elimination, physiological and chemical incompatibilities, etc.; origin, physical properties, active constituents, and official preparation of medicinal agents.

163. THERAPEUTICS. 3(3-0); II. Prerequisite: Materia Medica. Dr. Frank.

Physiological and therapeutic action of the various drugs both on the healthy and on the diseased animals; symptoms and treatment of poisons frequently encountered in veterinary practice; the proper dose of the crude drug and its preparation for horses, cows, dogs, cats, and swine.

166. PHARMACY. 1(0-3); I. Drs. Frank and Mott.

Meanings of the various pharmaceutical terms; various systems of weights and measures; prescription writing; principles of filtration, percolation, hot-water and sand baths, etc.; preparation of at least one of each of the following: An infusion, a decoction, a tincture, a wine, a syrup, a fluid extract, a liniment, an emulsion, a liquor, an aqua, a spirit, an ointment, an electuary, and a cataplasm; a thorough course in the compounding of prescriptions. Deposit, \$3.

COURSES IN MEDICINE**FOR UNDERGRADUATE CREDIT**

170. **DIAGNOSIS.** 2(2-0); I. Prerequisites: Anat. and Physiol. 116 and 226. Drs. Frick and Mott.

Different diagnostic methods employed for the detection of diseases, including auscultation, percussion, palpation, and inspection; normal and abnormal abdominal and thoracic sounds, including diagnostic inoculations, as an aid to the detection of disease.

174, 177. **DISEASES OF LARGE ANIMALS I AND II.** 4(4-0) and 5(5-0) respectively; II and I respectively. Prerequisite: Diagnosis. Dr. Frick.

I: Noninfectious diseases of the digestive, circulatory, and respiratory organs of the larger animals.

II: Noninfectious diseases of the urinary organs, diseases of metabolism, of the nervous system, of the organs of locomotion, of the skin, and of the eye.

181. **INFECTIOUS DISEASES OF LARGE ANIMALS.** 5(5-0); II. Dr. Frick.

The distinctly infectious and contagious diseases of the larger domestic animals.

186. **DISEASES OF SMALL ANIMALS.** 2(2-0); II. Prerequisite: Diagnosis. Dr. Frick.

Infectious and noninfectious canine and feline diseases; breeds of dogs, cats, and fur-bearing animals, erection of kennels, the breeding and care of puppies, care and feeding of dogs in general, and the hygienic measures pertaining thereto.

190. **FARM ANIMALS IN HEALTH AND IN DISEASE.** 3(2-3); II and SS. Prerequisite: Anatomy and Physiology. Dr. Mott.

First-aid treatment of diseases of domestic animals; special emphasis on cause and prevention of disease in farm animals; domestic animals studied in relation to their surroundings.

FOR GRADUATE CREDIT

301. **RESEARCH IN SURGERY.** 1 to 10 credits; I and II. Prerequisites: Surgery I to IV, Anatomy I to IV, and Therapeutics. Dr. Dykstra.

The purpose of this course is to attempt to solve many of the surgical problems confronting the average veterinary practitioner. Offered especially for graduates in veterinary medicine.

The Division of College Extension

HARRY UMBERGER, *Dean and Director*

The people of Kansas believe in using their educational institutions to their full capacity, not only for the students privileged to come to them but also for the state at large. They know that the number who complete a College course in agriculture, engineering, or home economics is small in comparison with the great majority of the people who cannot go to college, and it is their wish that this majority also be served. The Agricultural College is in full sympathy with this desire and is ambitious not only to give its resident students the best possible training for leadership in life's work but to be of direct service to every community in the state.

As far back as 1864 conventions of the farmers of Manhattan and vicinity were held at the College. The first well-organized farmers' institute conducted under the auspices of the Faculty was held at Manhattan, November 14, 1868, and this was followed by a similar gathering at Wabaunsee, November 20 and 21 of the same year. In 1868 the Board of Regents adopted a resolution recommending "that a system of lecturing on agricultural subjects at this College and the populous settlements of the several counties of the state should be conducted, so that the benefits of farming according to correct agricultural principles may be disseminated throughout the state."

A few meetings were held each year for the next several years, increasing in number from 1879, but no definite appropriation for extension work was made until 1899, when \$2,000 per year was appropriated for this purpose by the state legislature. The annual appropriation remained at this figure until 1905, when the legislature appropriated \$4,000 for the work, to which the College added \$800. Up to this time no regular staff for extension work was employed, and all extension activities were conducted by a committee. In October of that year, however, a superintendent to organize the institute work was selected by the Board of Regents, and in July, 1906, the Department of Farmers' Institutes was formally organized.

The interest in extension work throughout the state then developed rapidly. Beginning with 1907, appropriations by the Kansas legislature for extension work in the state have been as follows:

<i>For biennium.</i>	<i>Amount.</i>	<i>For biennium.</i>	<i>Amount.</i>
1907-'09.....	\$10,500	1919-'21.....	\$138,277
1909-'11.....	52,500	1921-'23.....	174,289
1911-'13.....	75,000	1923-'25.....	165,000
1913-'15.....	95,000	1925-'27.....	165,000
1915-'17.....	41,262	1927-'29.....	203,683
1917-'19.....	89,762	1929-'31.....	203,683

This rapid development of extension work was made possible not only because the people of the state wished to have such work done, but because much new light has been thrown on the essentials in agriculture by the effective experimental work done by the Experiment Stations and by the United States Department of Agriculture.

In 1914 the federal government felt that the useful and practical information on subjects connected with agriculture and home economics developed by the experiment stations, by the Department of Agriculture, and by the experience of the best farmers and home makers should be made more readily available to everyone; and in order that this information might be more fully and effectively diffused among the people of the several states and its practical application encouraged, the congress of the United States, in 1914, passed the Smith-Lever bill, which provides for "coöperative agricultural extension work between the agricultural colleges in the several states receiving

the benefits of an act of congress approved July 2, 1862, and of acts supplementary thereto, and the United States Department of Agriculture." To further this act the congress provided for an annual appropriation of \$480,000, of which \$10,000 is paid each year to each state which assents to the provisions of the act. This initial appropriation was increased each year for seven years, such increase being allotted annually to each state in the proportion which the rural population of such state bore to the total rural population of all the states, providing a sum equal to such increase had been appropriated for that year by the legislature of such state, or had otherwise been provided from within the state, for the maintenance of the coöperative agricultural extension work.

Under this act the coöperation of the agricultural colleges and the United States Department of Agriculture has been assured, extension work has become a national as well as state project, and its effectiveness has been greatly increased.

The governor of the state and the Kansas legislature of 1915 accepted the provision of the Smith-Lever act immediately, and \$10,000, therefore, was secured from the federal government for extension work for the year ending June 30, 1915, and for each succeeding year thereafter. The additional sums coming from the federal funds under this act to the state for the years ending June 30, 1916 and 1917, respectively, were \$14,555 and \$26,685; for the years 1918 and 1919, \$38,815 and \$50,944, respectively; for the years 1920 and 1921, \$63,074 and \$75,203, respectively; for the years 1922 and 1923, \$80,641 and \$90,842, respectively; and for each of the years 1924 to 1929, inclusive, \$91,842. These sums were duplicated by an equal appropriation by the legislature of Kansas for the years named with the exception of 1924, 1925, 1926 and 1927, for each of which the legislature appropriated \$82,500, and for each of the years 1928, 1929, and 1930, \$101,841. In addition, from the appropriation made to the Agricultural College for all its work, \$31,000 was set aside for extension work for the year ending June 30, 1923. During the war congress made an emergency appropriation to extension work, in order that special attention might be given to maximum production of food, conservation and economic utilization of farm products. This appropriation terminated June 30, 1919. There was such great demand for continuation of much of the work started under this appropriation, with a view to carrying it on a more constructive and permanent basis, that congress appropriated funds for this purpose, effective July 1, 1919. This is known as the supplementary federal Smith-Lever appropriation. In addition to the federal appropriations named, the seventieth congress enacted the Capper-Ketcham bill. The appropriation resulting from this act is supplemental to those heretofore named in furtherance of extension work. Through this legislation there is appropriated to the state of Kansas \$20,000 for the year 1928-'29, and \$31,165 for the year 1929-'30. The total sum for extension work under the Smith-Lever act and from state funds for the year ending June 30, 1930, was as follows: From the federal government through the Smith-Lever act, \$101,841; from the federal government through the supplementary Smith-Lever appropriations, \$35,281; from the general state appropriations made to the College, \$29,000; from the state legislature by direct appropriation for Smith-Lever work, \$101,841; from federal government through the Capper-Ketcham appropriation, \$31,165; from county appropriations duplicating the supplementary Smith-Lever appropriation, \$35,281, and \$11,165 duplicating the Capper-Ketcham appropriation; total for the year, \$345,574.

County funds are appropriated for the support of the county farm bureaus through a special act of the legislature enabling the county commissioners to levy a direct tax for this purpose. (Session Laws of Kansas for 1915, p. 204, ch. 166, sections 1, 2 and 3; Session Laws of Kansas for 1919, p. 217, ch. 157, sections 1, 2 and 3.)

The rapid growth of extension work has demanded efficient administrative machinery. In the judgment of the president of the College and the Board of Regents it became necessary to create, in December, 1912, a Division of College Extension coördinate with the other divisions of the College. This at first was subdivided into four distinct sections or departments, but the increase in work and personnel of the division made necessary a reorgan-

ization into eight departments, namely: institutes and extension schools, county-agent work, boys' and girls' club work, home economics, home demonstration-agent work, rural engineering, rural service, and home-study service, each with its own head and staff. The department of rural service was discontinued June 30, 1922. The heads of the departments are responsible to the director, who is dean of the Division of College Extension. Through this organization it is possible to administer the extension work effectively and economically, to reach directly more than 500,000 people in the state each year, and to conduct some activity in every county.

Publications covering practical subjects in the field of agriculture, home economics and rural engineering are issued from time to time by the Division of College Extension as bulletins, circulars and leaflets. The authors of these publications are the extension specialists or the specialists of the departments in the other divisions of the College. The regular publications of the Agricultural Experiment Station are also used extensively in the extension work. A series of publications in coöperation with the United States Department of Agriculture is receiving special attention. Extension publications are mailed regularly to a list, composed of members of farm and home institutes, homemakers' clubs, extension schools, and farm bureaus; *i. e.*, to members of organizations coöperating closely with the Agricultural College. Any citizen of the state, however, on request, may secure copies of individual publications.

While the extension work is directed by the Division of College Extension for administrative efficiency, its scope would be limited were it not for the close coöperation of the other divisions and departments of the College, which not only help in supplying lectures for agricultural meetings and extension schools, material for publication, assistance in demonstration work and helpful counsel, but also are responsible for all subject matter taught by the extension specialists.

Beginning in February, 1924, the radio has been used as a means of extending information from the College to those living in distant parts of the state. This service has consisted in the giving of instruction in many subjects both by means of regular courses of lectures in specialized fields and by general discussions of subjects having timely interest to the people of the state.

Institutes and Extension Schools

AGRICULTURAL EXTENSION SPECIALISTS

L. C. WILLIAMS, in Charge

L. C. WILLIAMS, Horticulture
 H. L. LOBENSTEIN, Horticulture
 C. G. ELLING, Animal Husbandry
 J. J. MOXLEY, Animal Husbandry
 J. W. LUMB, Veterinary Medicine
 E. G. KELLY, Entomology
 G. T. KLEIN, Poultry Husbandry
 M. A. SEATON, Poultry Husbandry
 ———, Rodent Control

JAS. W. LINN, Dairy Husbandry
 J. C. NISBET, Dairy Husbandry
 E. B. WELLS, Soils
 A. L. CLAPP, Crops
 L. E. WILLOUGHBY, Crops
 GEO. MONTGOMERY, Marketing
 I. N. CHAPMAN, Farm Management
 E. H. LEKER, Plant Pathology

The Department of Institutes and Extension Schools has direct supervision over farm and home institute organizations, extension schools in agriculture and home economics, and the work of the agricultural extension specialists. The department has charge of the program and arrangement for Farm and Home Week, annual state-wide farmers' meetings, and the scheduling of judges for county and local fairs.

Each farm and home institute of the state is an association or farmers' club with regular officers, constitution and by-laws. Some organizations hold six or more monthly meetings, and practically all of them have no fewer than three, for no institute organization can obtain state aid unless, in addition to the annual meeting, at which some representatives of the College must be present, it also holds at least three local meetings. The College plans to send two specialists to the annual meeting, one in agriculture and one in home

economics, to present certain well-defined lessons and to give the results of demonstration work for the county or locality. The specialists and their subjects are chosen because of a known need or interest of a particular community or a plan to start or encourage certain definite lines of work.

EXTENSION SCHOOLS

Owing to the nature of the farm and home institutes, the demand for instruction can be met only in part, and for that reason extension schools or short courses in agriculture and home economics have been organized in communities which desire more complete courses in these subjects than can be given at the institutes.

The College now conducts extension schools in agriculture and home economics of from one to five days' duration, sending to each school two or more instructors. Well-planned, comprehensive courses are given at these schools in the various lines of agriculture and home economics, so that some of the essentials of these subjects may be learned. The local committees are required to organize the classes and pay the local expenses for each school. The Agricultural College supplies the teachers and pays their traveling expenses from funds appropriated for this purpose.

In addition to these general schools, special schools in animal diseases, dairying, poultry, orcharding, road making, crop production, animal husbandry, tractors and farm machinery, and building construction are held in communities desiring them and willing to defray the local expenses.

Extension schools are popular where the communities are brought to understand the work given. Almost every community that has had one school has petitioned for another. Each community is now required to submit the names of at least thirty men and twenty women who agree to attend as many sessions as possible, unless the schools are held as a regular part of the definite project work being carried on in each county, in which case the specialist in charge outlines the necessary requirements.

EXTENSION SCHEDULES

The specialists of this department work in extension schools and institutes during the winter months only, and a portion of this time is devoted to co-operative demonstration work in agriculture and home economics. During the spring, summer, and fall they conduct special campaigns, such as silo building, poultry culling, wheat improvement, grasshopper control, cow testing, better sires, hog-cholera control, and co-operative demonstration work. The latter phase of the work of the extension specialists is being especially met by the organization of co-operative demonstration work in each branch of agriculture in a certain number of counties each year. In much of the co-operative work each specialist has from 10 to 100 or more co-operators in each county. These men and women work under the direction of the specialist and the county agent. They keep records of the work and call demonstration meetings at their farms on each trip of the specialist. The number of visits which the specialist makes to each point varies from two, in the case of the specialist in soils, to six, in the case of the specialists in horticulture and entomology. The aim in all of this co-operative demonstration work is to show as well as to explain. This line of work is especially appreciated, and the representatives of the department have been able to meet only a fraction of the demands for it.

The extension specialist takes to the farm and farm home the newest research work of the Agricultural Experiment Station and the United States Department of Agriculture in a practical, effective and usable form. He is also of material assistance to the Agricultural Experiment Station of the College and to the United States Department of Agriculture in reporting the progress and success of demonstration work in the field. He seldom makes a trip without coming in contact with new agricultural problems or old ones requiring the attention of the research workers of the Agricultural Experiment

Station. By working in the closest coöperation with the subject-matter department of the College, the specialists become the carriers of information, not only from the Agricultural Experiment Station to the farmers, but from the farmers to the research workers of the Experiment Station. The extension specialist is, therefore, a medium through which both the Agricultural Experiment Station and the farmers can function to their mutual advantage.

To reach all of the people of the state, the work of the specialist becomes largely a matter of teaching and training leaders, such as the county agents, the home demonstration agents, the boys' and girls' club agents, and project leaders. If they are successful in teaching these leaders how to carry forward their various projects they are most efficient in carrying their message to all the farmers in the state. The specialists, therefore, are becoming more and more each year teachers of leaders instead of public speakers at general farmers' meetings as they were in times past.

Through these various leaders a definite check is kept regarding cost of production, need of follow-up work, and the progress made in the demonstration work undertaken. Haphazard, hit-and-miss extension work, therefore, has no place in our program under the present system.

The calls for extension specialists in all lines of work are so many that it is impossible to meet more than two-thirds of the calls for assistance from county agricultural agents and from farmers' organizations. The number of specialists is being increased rapidly, yet the work is growing still more rapidly, thus indicating a healthy condition.

FARM-MANAGEMENT DEMONSTRATIONS

Farm-management demonstrations are conducted by a farm-management specialist in coöperation with the county agents. In these demonstrations such records are taken as are essential to the determination of the net profits of the individual farms. These records are classified according to different types of farming, the profits of each type are determined, and individual farm records are compared with the average of all the farm records taken. The results of the study are made known to each farmer interested, in order that he may use the suggestions received in any need or reorganization of his own business. For those who desire it, farm account books are opened and instruction is briefly given in keeping simple records. The work was begun in September, 1914. The demand for this work was greatly increased by the enactment of the income tax law, the resulting need of business records by which the income might be determined, and by the demand for accurate cost-of-production figures by price-fixing commissions.

COUNTY AND LOCAL FAIRS

The animal husbandry and crop specialists devote from one to two months in judging the live stock and agricultural products at county and local fairs. This furnishes an excellent opportunity for lectures and demonstration work. Large numbers of people are reached through the fair judging work. In many cases people become interested in the work of the specialists who have not been interested or reached through farmers' meetings and demonstrations. Each specialist endeavors to make his judging work as practical and instructive as possible.

FARM AND HOME WEEK

The purpose of Farm and Home Week is to interest the farmers of the state in better methods of production and of farm management that will increase farm profits, to demonstrate to farm women methods of household management that will add to the comfort and enjoyment of farm life, and to encourage farm folks in social organization that will enrich the social life of the rural community.

All meetings, lectures, and demonstrations during Farm and Home Week are free of charge, and the expense of the trip to Manhattan, with reduced railroad rates, should not prevent any farmer from attending. The investment in knowledge and enthusiasm will make bigger profits on the farm.

During this week the Agricultural Experiment Station, the Extension Service, the United States Department of Agriculture, agricultural specialists and leading farmers bring to those in attendance the latest results in investigative work in all lines of agriculture, home economics, and mechanical engineering.

Problems concerning crops and soils, dairying, beef cattle, horses, hogs, sheep, poultry, horticulture, community service, beekeeping, and diseases of animals are discussed by some of the leading agricultural authorities in America. In addition to these lectures and demonstrations there are many other interesting features, such as the display of the live stock of the College, the barns, machinery, buildings, library, museum, dairy, experimental plots, orchards, and gardens.

County Agent Work

H. UMBERGER, Dean and Director
 F. O. BLECHA, District Agent
 C. R. JACCARD, District Agent
 J. V. HEPLER, District Agent
 A. F. TURNER, Field Agent

J. A. HENDRIKS, Anderson
 JOE M. GOODWIN, Atchison.
 WM. G. AMSTEIN, Atchison
 (Assistant County Agent)
 SHERMAN S. HOAR, Barton
 T. F. YOST, Bourbon
 W. H. ATZENWEILER, Brown
 CHAS. E. CASSEL, Butler
 E. A. STEPHENSON, JR., Chase
 R. T. PATTERSON, Cherokee
 HARVEY J. STEWART, Cheyenne
 LYLE MAYFIELD, Clark
 RAY L. GRAVES, Clay
 E. A. CLEAVINGER, Coffey
 FRED J. SYKES, Comanche
 E. H. AICHER, Cowley
 ROY E. GWIN, Crawford
 A. E. JONES, Dickinson
 CHAS. E. LYNESSE, Doniphan
 A. I. GILKISON, Douglas
 GEO. W. SIDWELL, Edwards
 NEIL L. RUCKER, Ellsworth
 ROBT. S. TRUMBULL, Ford
 H. A. BISKIE, Franklin
 PAUL B. GWIN, Geary
 J. H. COOLIDGE, Gray
 J. W. FARMER, Greenwood
 VANCE M. RUCKER, Harper
 R. R. MCFADDEN, Harvey
 GEO. S. ATWOOD, Hodgeman
 H. F. TAGGE, Jackson
 OTIS B. GLOVER, Jefferson
 RALPH P. RAMSEY, Jewell
 C. A. JONES, Johnson
 W. S. SPEER, Kingman
 L. B. HARDEN, Labette
 HARRY C. BAIRD, Lane

PRESTON O. HALE, Leavenworth
 R. L. STOVER, Lincoln
 W. J. DALY, Linn
 CARL L. HOWARD, Lyon
 M. L. ROBINSON, McPherson
 J. D. MONTAGUE, Marion
 W. O'CONNELL, Marshall
 JOHN H. SHIRKEY, Meade
 J. T. WHETZEL, Miami
 A. W. KNOTT, Montgomery
 D. Z. MCCORMICK, Morris
 G. M. REED, Nemaha
 LESTER SHEPARD, Neosho
 LESLIE M. WOLFE, Ness
 E. L. MCINTOSH, Osage
 ROBT. E. CURTIS, Ottawa
 CHAS. H. STINSON, Pawnee
 O. W. GREENE, Pratt
 J. W. ROUSSIN, Rawlins
 GEO. W. HINDS, Reno
 W. H. VON TREBA, Rice
 S. D. CAPPER, Riley
 B. W. WRIGHT, Russell
 D. E. HULL, Saline
 H. L. HILDWEIN, Sedgwick
 W. H. ROBINSON, Shawnee
 I. K. TOMPKINS, Sheridan
 E. O. GRAPER, Smith
 E. H. TEAGARDEN, Stafford
 L. M. KNIGHT, Sumner
 L. F. NEFF, Washington
 W. C. FARNER, Washington
 (Assistant County Agent)
 C. E. AGNEW, Wilson
 M. C. AXELTON, Woodson
 DUKE D. BROWN, Wyandotte

County-agent work in this state is provided for by the federal Smith-Lever act and the state farm-bureau law. The federal Smith-Lever act provides an appropriation which increased each year until 1922 when it reached its maximum and which is distributed among the states according to their rural population. In addition to the regular Smith-Lever appropriations, Kansas receives additional funds from the so-called supplementary Smith-Lever appropriation. This appropriation was made available immediately following the war period in order that permanent work which had been established during the war period need not be discontinued due to the inability of the regular Smith-Lever appropriations to finance it. Before the federal funds are available they must be duplicated within the state.

The state legislature appropriates at each session an amount approximately equal to that available to this state from the federal Smith-Lever appropriation.

In addition to this, the state farm-bureau law, effective June 17, 1919, provides that when one-fourth, or as many as 250, of the *bona fide* farmers of a county shall form a farm-bureau organization, adopt a constitution and by-laws and elect officers, and when an equipment fund of at least \$800 has been provided and deposited in a local bank, the county commissioners shall appropriate at least \$1,200 per year (which sum may be raised by a special tax levy), and the Agricultural College shall appropriate at least \$1,200, so long as funds are available from the state or federal funds above mentioned, for the purpose of hiring a county agent or agents and paying their expenses.

Previous to 1914 county agents were financed by membership dues, private subscription and a small state appropriation. At that time a membership of at least 100, each paying dues of \$5, was required. In 1914, congress passed the Smith-Lever act and in 1915 the Kansas legislature passed the farm-bureau law, which has since been the basis of the extension of this work. During the war period, July 1, 1917, to June 30, 1919, supplemental agricultural appropriations were made by congress for more rapid extension of county-agent work.

August 1, 1912, the first county agent in Kansas was employed by the Leavenworth county farm bureau. The number has increased gradually, until at the present time, October 1, 1929, there are seventy-two active farm bureaus in Kansas, as follows:

Allen	Doniphan	Lane	Pratt
Anderson	Douglas	Leavenworth	Rawlins
Atchison	Edwards	Lincoln	Reno
Barton	Finney	Linn	Rice
Bourbon	Ford	Lyon	Riley
Brown	Franklin	McPherson	Russell
Butler	Geary	Marion	Saline
Chase	Gray	Marshall	Sedgwick
Cherokee	Greenwood	Meade	Shawnee
Cheyenne	Harper	Miami	Sheridan
Clark	Harvey	Montgomery	Sherman
Clay	Hodgeman	Morris	Smith
Cloud	Jackson	Nemaha	Stafford
Coffey	Jefferson	Neosho	Sumner
Comanche	Jewell	Ness	Washington
Cowley	Johnson	Osage	Wilson
Crawford	Kingman	Ottawa	Woodson
Dickinson	Labette	Pawnee	Wyandotte

The county agents are active in conducting demonstrations in the best methods of production and marketing, in assisting farmers with suggestions and plans relative to farm management and the farm business, and in organizing rural activities. Field demonstrations are conducted for the purpose of introducing crops and testing relative value of varieties already grown, and methods of cultivation and harvesting. Proper methods of the feeding, care and management of live stock, and controlling insects and live stock and plant diseases are among the most popular demonstrations. Surveys of the farm business are made in order to study the conditions prevailing in typical areas, and possible improvements in farm-management methods that should be instituted. Improved methods of marketing and community welfare, in which better social relations are fostered, are important features of this work. The county agent interests himself in practically every farm activity, especially where there is need of improvement.

A course suggesting special lines of training for those desiring to enter extension work will be found elsewhere in this catalogue.

Home Economics

Miss AMY KELLY, State Home Demonstration Leader, in Charge

Miss LORETTA McELMURRY, Clothing
 Miss MAUDE DEELY, Millinery
 Miss W. PEARL MARTIN, Home Health
 and Sanitation
 Miss MARGUERITE HARPER, Household
 Management

Miss CONIE FOOTE, Foods and Nutrition
 Miss GEORGIANA H. SMURTHWAITE, Foods
 and Nutrition
 Miss ALPHA LATZKE, Clothing

There are approximately eight hundred women who annually receive instruction in home economics at the Kansas State Agricultural College, and there are several thousand throughout the state who have had the advantages of resident instruction either in this or some other institution. While this is true, the number is small when compared to the great majority of women and girls in the state to whom the work has not been available. To give as much assistance as possible to this vast majority of women is the aim of the Department of Home Economics Extension, and with this in view seven specialists were regularly employed part time during the last year.

The Extension work in home economics is carried on by means of definitely organized programs of work carried on throughout the year through the agency of the County Farm Bureaus, the instruction being given by the specialists and Home Demonstration Agents to local leaders who in turn pass it on to the women in their respective communities.

Home Demonstration Agent Work

Miss AMY KELLY, State Home Demonstration Leader
 Miss ELLEN M. BATCHELOR, Assistant State Leader
 Miss MAY MILES, Assistant State Leader
 Miss ALPHA LATZKE, Assistant State Leader

Mrs. EDITH O. ROSEVEAR, Allen County
 Miss GRACE HERR, Bourbon County
 Miss NORA E. BARE, Butler County
 Miss FLORENCE FUNK, Cherokee County
 Miss MARGARET KOENIG, Clay County
 Miss MABEL SMITH, Crawford County
 Miss MARY ELSIE BORDER, Dickinson
 County
 Miss ELIZABETH RANDLE, Douglas County
 Miss ELLA M. MEYER, Ford County
 Miss EULA M. NEAL, Franklin County
 Miss ETHEL WATSON, Greenwood County
 Miss ALBERTA WENKHEMER, Harper
 County
 Miss LUCRETIA SCHOLER, Harvey County
 Miss CHARLOTTE BIESTER, Johnson County
 Miss ALBERTA P. SHERROD, Kingman County

Miss CHRISTIE C. HEPLER, Labette County
 Miss IVA HOLLADAY, Leavenworth County
 Miss GERTRUDE ALLEN, Lyon County
 Miss GRACE M. REEDER, Miami County
 Miss VERNETTA FAIRBAIRN, Montgomery
 County
 Miss RACHEL MARKWELL, Morris County
 Miss SARA JANE PATTON, Neosho County
 Mrs. MARY D. ZIEGLER, Pratt County
 Miss ESTHER MAE HUYCK, Rawlins County
 Mrs. C. M. CARLSON, Reno County
 Miss JESSIE CAMPBELL, Rice County
 Mrs. LINNEA C. DENNETT, Riley County
 Mrs. LAURA I. WINTER, Sedgwick County
 Miss LOIS HOLDERBAUM, Shawnee County
 Miss RUTH PECK, Wyandotte County

Home demonstration work was made possible in August, 1917, through the passage by congress of the emergency bill. This bill provided funds for the employment of county home demonstration agents. These agents were called emergency home demonstration agents. Before the end of the year there were twenty-five of these agents in the state. The emergency fund was discontinued June 30, 1919.

In the early days the work of the emergency home demonstration agents was instituted under the auspices of city or county organizations, but after following this plan for a short time it was found that it would be advantageous to defer the placing of home demonstration agents until the counties were properly organized for this specific purpose.

Since August, 1918, farm-bureau counties which have requested home demonstration agents have been organized on the basis of an ideal farm bureau; that is, the women have been taken into the farm bureau as regular members, having all the rights and privileges, and have become part of the working

organization. In such counties the work of the home demonstration agents is taken up as part of the regular extension program, which includes the development of farm activities, home activities, and community activities. There are thirty counties organized with an extension program which includes the work of the home demonstration agent.

The program of work for the home demonstration agent is based on the needs of the communities in the county and is evolved through the community and committee meetings. To-day each county has a county program of work based on the needs of the communities in the county, and this is a part of the state program. The home demonstration agent, in coöperation with the Agricultural College and United States Department of Agriculture, works to carry out the community, county and state program.

Since July 1, 1921, the counties desiring a home demonstration agent are required to meet the following conditions:

1. Supply an office equipped for work, and adequate stenographic help.
2. Secure a total county appropriation of not less than \$2,400 to the county farm bureau for the salary and expenses of the county agricultural agent and the home demonstration agent.

There are certain conditions which must be met before project work in home economics is scheduled in those counties having county agricultural agents but not having home demonstration agents. These requirements are as follows:

1. In each of those counties east of the west line of Sedgwick county and the east line of Rice county, there must be at least one hundred paid-up women members of the farm bureau. This membership must be organized into not less than ten farm bureau units which have for their specific purpose the adoption of home economics projects to be conducted in the county.

2. In each of those counties west of the west line of Sedgwick county and the east line of Rice county, there must be at least seventy paid-up members of the farm bureau. This membership must be organized into not less than seven farm bureau units which have for their specific purpose the adoption of home economics projects to be conducted in the county.

3. The membership dues required shall not be less than \$1 per annum for each member and may be such amount above this as may be decided by the membership of the farm bureau at an annual meeting. Such action pertaining to women's dues must be made a part of a regular constitutional provision by the farm bureau and must be approved by the director of extension as required by law.

Boys' and Girls' 4-H Club Work

M. H. COE, State Club Leader
EDNA BENDER, Assistant State Club Leader
A. J. SCHOTH, Assistant State Club Leader
J. HAROLD JOHNSON, County Club Agent, Sedgwick County
R. N. LINDBURG, County Club Agent, Butler County
J. B. TAYLOR, County Club Agent, Douglas County
R. L. REMSBERG, County Club Agent, Kingman County
T. R. WARREN, County Club Agent, Bourbon County

Boys' and girls' 4-H club work is one of the very important phases of Agricultural College extension service. Clubs are organized and conducted in cooperation with farm bureaus, farmers' institutes, business men's organizations, and other interested groups or individuals. Through these clubs the College is able to reach and serve a large class of young people which it could neither reach nor serve in any other way. A large number of boys and girls receive an incentive for higher training in agriculture and home economics and gain their first acquaintance with the College through 4-H club work. Boys and girls receive frequent visits from the county extension agents and written material is prepared by the College specialists, and sent out by the state club leader, giving the members definite information regarding farm and home practices recommended by the College.

The project which each club member selects is a fundamental characteristic of 4-H club work. This project is a substantial piece of work designed to show some better practices on the farm or in the home. The club member keeps a careful record of results, follows instructions that are given to him, and explains the work to others. At the end of the year he makes a final report upon the entire year's project and all points related to the same. Fifteen projects are offered to 4-H club members in Kansas as follows: beef, swine, sheep, dairy, poultry, colt, sorghum, corn, garden, potato, clothing, food preparation, baking, canning, food preservation, supper and room improvement. New projects are being added as fast as interest warrants the same.

In interesting boys and girls in 4-H club work, projects are selected which meet, to some extent, at least, the farm and home problems within a community. For example, in communities badly infested with round worms in hogs, the boys are urged to joint a 4-H club, select the sow and litter project, and raise worm-free litters. This serves as a demonstration to the community in the importance of better swine management and the club member thus feels that he is doing a worthwhile and needed piece of work and that his efforts are of importance.

Four-H club work is available to all boys and girls between the ages of 10 and 20 years, inclusive. The members are organized into clubs varying in size from five or less to fifty or more. In rare instances some clubs reach a membership of over a hundred, though perhaps the average size of the clubs is somewhere between ten and twenty members. These clubs elect their own officers, which consist of a president, vice president, secretary-treasurer, and club reporter, together with any other officers they may desire. Each club has at least one adult leader. In clubs that are especially large it is possible that each project represented may have a leader. The clubs meet from time to time, conduct their meetings along parliamentary lines, have a program in which the project of their respective lines of work is presented and discussed, give demonstrations, sing songs, play games, practice yells, and carry on like matters of interest to young people.

All of the boys and girls of one community interested in club work are organized into one club organization, even though they may vary in the selection of their projects; thus a community club may contain a certain number of members enrolled in baby-beef work, others in swine work, and the girls may be enrolled in poultry, clothing, or other lines of home-economics work. It is preferable that the members of a club unite on the selection of a few projects rather than to have too wide a variation of projects within a club; however, all of the fifteen projects previously mentioned are available for either boys or girls, there being no line drawn between boys' and girls' work.

The very essence of club work is its voluntary nature. Certain minimum requirements are specified which include age of club members, the keeping of records, the conducting of a project, and the attendance at club meetings. Aside from these requirements the work is purely voluntary, and no systematic course of instruction is attempted. Each member is given suggestions as to best methods of handling his project, but whether or not he adopts these methods is left to his own volition. Ownership is an essential characteristic of club work which centers around living things like growing of plants or animals, or concerned with the active processes of home making, or other matters relating directly to the daily life of the farm and the farm home. As previously indicated, the study of books is incidental and supplemental to the actual work of the project. Club work is learning by doing.

Leadership is another very essential characteristic of 4-H club work. This is of two types; the first being the adult leaders who supervise the club activities and the projects selected by the members. These leaders are usually experienced men or women or older club members who are trained by the extension agents and who know how the thing ought to be done and can tell the members something of the reason why. The other type of leadership, which is assuming greater importance as time goes on, is that which is developed in club members as a result of their club experience. This is one of the splendid

products of club work. Boys and girls who several years ago were members of 4-H clubs are now taking their place as young men and young women who are known as leaders for the best things in agriculture and in the home, and in life in general.

Not only is it essential that 4-H club members learn to do by doing, but they are expected to pass on this knowledge and information to others. Therefore, many club members are trained to put on demonstrations and explain their work to the public. They are expected to exhibit at least some of their products which they have grown or made at the local, county, and state fairs. Those who have attended these fairs in Kansas during the last few years will recall that club members have made remarkable exhibits, not only as regards quantity, but quality as well.

The records which the club members have kept throughout the year in regard to time spent, materials used, and costs, form a part of these exhibits. Any prizes which are awarded come as a result of the record which has been kept as well as the excellence of the product itself. Members are trained how to judge quality of such exhibits, and at the time of fairs judging contests are held to determine who has become the best judge. In a similar way demonstration team contests are held to determine what club members have become most proficient in telling others of the things they have learned. Thus, it can be seen that 4-H club work is an educational process, dealing not so much with books as with the things out of which books are made.

Interspersed with all of these essentials of club work are the so-called club activities, which include club tours, club contests, field meetings, festivals, annual club round-up at Manhattan, 4-H club camps during the summer, and similar club functions, which lend color to the work for the young people and bring them in contact with their leaders and the leaders of other clubs. These activities put them in rivalry and contests not only among themselves but with the members from the rest of their county and from the entire state. This "rubbing of elbows" brings them a wholesome contact which helps to develop and broaden their ideals and ambitions. All of these various contacts with men and problems and the affairs of life serve to awaken youth and stimulate the desire to do and accomplish. Thus, by means of these splendid plans and activities and through the recognition of worthwhile and lasting achievements which 4-H club boys and girls are making in the common and ordinary business of the farm and the home, real progressive, sane agricultural leadership is being developed which may be translated in terms of a progressive, intelligent, and happy citizenship for the future.

Rural Engineering

WALTER G. WARD,† Extension Architect, in Charge
JOHN S. GLASS, Extension Agricultural Engineer
HOWARD C. MATSON,|| Architect

Kansas farms present numerous problems in engineering. The construction and maintenance of 160,000 sets of farm buildings, valued at more than \$350,000,000, offers a big field for the development of more efficient, more durable, more attractive, and better arranged improvements. Standardized plans are furnished each year for hundreds of farm buildings throughout the state. One-day builders' schools held out in the counties furnish information direct to those interested in the planning and construction of farm buildings.

Modern conveniences in the farm home require an understanding of engineering principles for satisfactory operation and maintenance. Water supply systems, sewage disposal, lighting, and heating bring numerous questions to the Department of Rural Engineering.

More than 50,000 tractors and 35,000 combines comprise a part of the more

† Absent on leave, year 1929-'30.
|| Temporary appointment.

than \$225,000,000 worth of mechanical equipment on Kansas farms. The selection, adjustment, operation, and repair of this equipment is an important factor in the agriculture of Kansas. Through two-day and three-day extension schools conducted out in the counties, information is disseminated on gas engines and tractors and the adjustment and repair of farm machinery.

Assistance is rendered the farmers of Kansas with their problems in land drainage, irrigation, and the control of soil erosion. This work is handled by establishing demonstrations on suitable farms to illustrate the recommended practice to the farmers of that community. The control of soil erosion by means of terracing is just beginning to be recognized as an important problem and is applicable in all sections of the state: We now have approximately 3,000 acres terraced.

In addition to the information furnished through meetings held out in the counties, several thousand mail inquiries, of an engineering nature, are answered each year by the engineers of this department. The work in the counties is conducted principally in coöperation with the county farm bureaus.

Home-Study Service

CORRESPONDENCE STUDY

GEORGE GEMMELL,‡ Head of Department
 P. L. DePUY, Animal Husbandry
 B. H. FLEENOR, Education
 FLOYD PATTISON, Industrial Subjects
 GLENN RUCKER,|| Industrial Subjects

ADA BILLINGS, History and Government
 MARCIA HALL, English
 EARL LITWILLER, Horticulture
 ETHEL MARSHALL, Home Economics

NOTE.—The faculty members employed in the Home-study Service devote their entire time to the work of teaching by correspondence. They keep in close touch with the various departments of the College, and all credit courses which are offered by correspondence must first meet the requirements of the regular College departments handling the courses in residence.

THE PURPOSE OF THE HOME-STUDY SERVICE

There are many people in Kansas and elsewhere who for many reasons cannot attend classes on the college campus, or are past the time when this would be advisable, but who can use the facilities of the college to great advantage. The Home-study Service is a part of the Extension Division of the Kansas State Agricultural College, designed to make the state its campus—to enable the College to come to those who cannot come to it.

Once it was thought that educational problems could be solved only in the classroom, where subject matter was chosen from a textbook. To-day it is realized that the home, the farm, and the shop are calling continually for the solution of problems upon which the future of the people of the state depends. A barren soil, an unprofitable herd, an insanitary home, and kitchen wastes are but petty examples of the innumerable difficulties to be overcome. Years of experience and observation have enabled many to solve their problems with some degree of success, but the lack of scientific knowledge is responsible for many individuals experimenting extravagantly and often uselessly. A combination of experience and training in scientific methods is best.

One way of meeting these situations is through correspondence courses. They are no longer an experiment but are a demonstrated success. With them odd hours of spare time may be made to count. The gross time required to complete correspondence courses is practically the same as would be necessary for the same courses in school. Correspondence courses may be started at any time. They wait when one is busy. They are instantly ready when one has time. In fact, they are "made to order" for the busy person.

‡ Absent on leave, year 1929-'30.

|| Temporary appointment.

FOR WHOM INTENDED

Though credit courses offered by the Home-study Service are still limited, the number is steadily growing, and it is the purpose of the department to add courses whenever a demand for them becomes evident. The following groups in particular should profit by the courses offered:

1. Those who have completed a common school course but who for any reason are unable to attend high school.
2. High school graduates temporarily or permanently unable to attend college.
3. Students who for any reason have fallen behind in their work and wish to use their spare time catching up.
4. Students whose attendance at high school or college has been interrupted.
5. The strong, aggressive student who does not wish to halt his progress for vacation and other interruptions.
6. High school and grade classes in practical courses that need supplementing and enrichment.
7. Teachers who wish further professional or other training or who need help in planning and conducting their work.
8. Professional and business men who wish to keep growing along some line of interest, industrial or avocational.
9. Clubs and other organizations that wish to make systematic studies.
10. Men and women who wish effective help in meeting the demands of their vocations for technical and scientific knowledge and training.

HOW THE WORK IS CONDUCTED

In correspondence courses, the assignment usually takes the form of assigned readings, studies, and investigations, together with a list of questions and directions for a written report. To save postage and trouble in mailing numerous lessons, the correspondence lesson is usually much longer than the common lesson in resident class work. When necessary, the lessons may be accompanied by a lecture prepared by the instructor containing helpful outlines and explanations, additional subject matter, and such special directions as seem desirable. The lessons are modified from time to time as suggested by experience and as new information becomes available.

As soon as an enrollment card and fee are received at the Department of Home-study Service, the first assignments are immediately sent out. As reports are received additional assignments are mailed. This plan keeps work always at hand for the student and at the same time makes it possible for the instructor to keep in close touch with the student's progress and to offer from time to time such suggestions as seem desirable to guide the student in his work. As a rule, the student should make careful study of the corrections, comments, and suggestions upon receiving a returned paper before going further with succeeding lessons.

The progress made by the student depends entirely upon his ability, preparedness, and application. As a general suggestion, it might be stated that an hour a day spent in systematic study should enable the average student to complete an assignment a week. Students may work more rapidly if their opportunities permit. Lessons will be received as rapidly as is consistent with good work, providing not more than eight assignments are sent in one week. Under no circumstances will hastily prepared manuscripts showing superficial knowledge be accepted.

The questions accompanying each assignment are intended to help the student to a better understanding of the subject. After careful study of the assignment, the student should write his manuscript, answering the questions carefully and concisely. This manuscript should be mailed at once to the Department of Home-study Service, where all lesson papers are read carefully, criticized, marked, and returned to the student with such comments, suggestions, advice, and additional references as may be deemed necessary. This plan is continued throughout the course, and each student should feel

free to ask questions, relate his personal experience, and in every way possible get into close contact with his instructors. No effort is spared by the department to bring about the nearest possible approach to personal acquaintanceship between each instructor and his students.

EXAMINATION

At the close of each course, before a grade is issued, a final examination is necessary. This final examination may be taken in the office of the Department of Home-study Service at the College, or other arrangements may be made by the student to take it locally under the city or county superintendent of schools or the principal of the local high school. In the latter case, the examination questions and instructions for conducting the examination are mailed from the department to the examiner, and the student's paper is sent in by him.

FEEES

The enrollment fee for credit courses is \$12.50 a year. This rate applies to all residents of Kansas. (The fee required of nonresidents of the state is \$17.50 a year.) Those who may be only temporarily employed outside of the state may enroll for the regular \$12.50 fee provided they still claim their citizenship in Kansas. Enrollment cannot be transferred from one student to another.

If a student's work is interrupted by protracted illness or other good reason, he may by special arrangements secure an extension of his enrollment period without payment of further dues. All such cases must be handled individually.

Each student is expected to pay the postage on lessons, manuscripts, and communications sent in to the department. This office will furnish postage for the return of all such papers to the student.

This enrollment entitles the student to as much work as can be satisfactorily completed in one year, not to exceed eight semester hours of college work or three semester credits of high school work, unless work is of a very high character, in which event special arrangements may be made for a limited amount of additional work.

REGULATIONS

1. Enrollments for correspondence-study work will be received at any time during the year, and students may continue their work uninterruptedly throughout the entire year.

2. Correspondence students will be expected to complete any course for which they are enrolled within twelve months from date of enrollment.

3. Not more than two courses are advised by correspondence at any one time. It is recommended that a student carry but one subject at a time, particularly where only part of the time is given to the work.

4. Each subject listed under the various departments constitutes what is known as a correspondence "course."

5. Students enrolling for correspondence courses must meet the prerequisites the same as if undertaking the work in residence.

6. A student may not be enrolled for correspondence work while in attendance at any institution of learning without special permission from the dean or proper authorities in the institution of which he is a student.

7. No correspondence student shall be permitted to complete a three-hour course in less than three weeks; a two-hour course in less than two weeks; a one-hour course in less than one week.

8. A student enrolled for resident work in College, who enrolls in a subject by correspondence, shall be required to take an examination after each eighth lesson before proceeding with the course; *i. e.*, after the eighth, the sixteenth, and the twenty-fourth lessons, respectively.

9. Where there is evidence of any correspondence student copying any part of the lessons from the papers of another student who has previously taken the course, such student is to be automatically and permanently dropped from the course and a failing grade is to be sent to the registrar's office with notation of cause.

HIGH-SCHOOL COURSES

(College Entrance Credit Work)

In offering the following work for high-school credit, there is no intention of competing with high schools of the state. It is not the purpose of those who have planned the work to present a full four-year high-school course. Students who have opportunity to attend local high school should by all means take advantage of the opportunity, for in such attendance they will have the benefits to be derived from association with fellow students as well as many other advantages which will be helpful to immature students of high school age.

These courses are offered as an aid to those who may by necessity be temporarily out of high school, who may not find the work which they desire offered locally, or who wish to carry work for high-school credit during vacation periods. It is not to be expected that a student can progress as rapidly by correspondence-study methods as he can by devoting his full time to his work when attending high school. Any student who completes a half year of high school work in a year by correspondence may feel that he has done exceedingly well.

The high-school courses will be especially advantageous to prospective college students who have entrance deficiencies and to public school teachers who may not have had the opportunity to do this type of work. No effort has been spared to make the work as nearly as possible parallel with the courses offered by the accredited high schools of the state. The same textbooks have been used wherever feasible, and the credits issued by this department are recognized by the colleges and State Board of Education.

List of High-school Courses

<i>Course No.</i>	AGRICULTURE	<i>Number of assignments</i>	<i>Unit H. S. credit</i>
PCA 1.	Elementary Agriculture I.....	20	1/2
PCA 2.	Elementary Agriculture II.....	20	1/2
DRAWING			
PCD 3.	Shop Mechanical Drawing I.....	20	1/2
PCD 4.	Shop Mechanical Drawing II.....	20	1/2
ENGLISH			
PCE 1C.	Grammar and Composition (first year).....	20	1/2
PCE 2L.	Literature (first year).....	20	1/2
PCE 3C.	Composition (second year).....	20	1/2
PCE 4L.	Literature (second year).....	20	1/2
PCE 5C.	Composition (third year).....	20	1/2
PCE 6L.	Literature (third year).....	20	1/2
HISTORY AND CIVICS			
PCH 1.	Ancient History I.....	20	1/2
PCH 2.	Ancient History II.....	20	1/2
PCH 3.	Modern History I.....	20	1/2
PCH 4.	Modern History II.....	20	1/2
PCH 5.	American History I.....	20	1/2
PCH 6.	American History II.....	20	1/2
PCH 7.	Community Civics.....	20	1/2
PCH 8A.	Civics.....	20	1/2
PCH 8.	Constitution of United States.....	20	1/2
PCH 9.	World History I.....	20	1/2
PCH 10.	World History II.....	20	1/2
MATHEMATICS			
PCM 1.	Algebra I.....	20	1/2
PCM 2.	Algebra II.....	20	1/2
PCM 3.	Algebra III.....	20	1/2
PCM 4.	Plane Geometry I.....	20	1/2
PCM 5.	Plane Geometry II.....	20	1/2
PCM 6.	Solid Geometry.....	20	1/2
PCM 7.	Bookkeeping.....	20	1/2

Course No.	SCIENCE	Number of assignments	Unit H. S. credit
PCS 1.	Physical Geography	20	1/2
PCS 2.	Botany	20	1/2
PCS 4.	Physiology	20	1/2
PCS 5.	General Science	20	1/2
PCC 1.	Commercial Geography	20	1/2
PCC 2.	Elementary Economics	20	1/2

College Credit Courses

DIVISION OF AGRICULTURE

Course No.	AGRONOMY	Semester credits	Assignments
CA 3.	Farm Crops	3	24
ANIMAL HUSBANDRY			
CL 2.	History of Breeds.....	2	16
HORTICULTURE			
CH 1.	Elements of Horticulture	2	16
CH 2.	Vegetable Gardening	2	16
CH 3.	Floriculture	2	16
CH 5.	Landscape Gardening	1	8
CH 6.	Small Fruits	2	16
POULTRY HUSBANDRY			
CPP 1.	Farm Poultry Production.....	1	8

DIVISION OF ENGINEERING

MACHINE DESIGN			
CE 2.	Engineering Drawing	2	16
CE 6.	Machine Drawing I	2	16
CE 4.	Mechanism	3	24
CE 11.	Descriptive Geometry	2	20
CIVIL ENGINEERING			
CE 1.	Highway Engineering I	2	16
SHOP PRACTICE			
CE 7.	Metallurgy	2	16
AGRICULTURAL ENGINEERING			
CE 3.	Gas Engines and Tractors.....	2	16
MECHANICAL ENGINEERING			
CE 9.	Steam Turbines	3	24
CE 10.	Essentials of Steam and Gas Power Engineering.....	2	16

DIVISION OF HOME ECONOMICS

CLOTHING AND TEXTILES			
CHE 1.	Textiles	2	16
HOUSEHOLD ECONOMICS			
CHE 3.	Sanitation and Public Health.....	3	24

DIVISION OF GENERAL SCIENCE

ECONOMICS AND SOCIOLOGY			
CEc 1.	Economics	3	24
CS 2.	Rural Sociology	3	24
CS 3.	Sociology	3	24
CS 4.	Community Leadership	2	16
EDUCATION (PROFESSIONAL)			
CP 2.	Educational Psychology	3	24
CP 3.	Educational Sociology	3	24
CP 4.	History of Education	3	24
CP 5.	School of Management.....	3	24
CP 6G.	Methods of Teaching in Elementary Graded Schools and Rural Schools	3	24
CP 6H.	Methods of Teaching in the High School.....	3	24
CP 7.	Educational Administration	3	24
CP 8.	Psychology	3	24

<i>Course No.</i>	<i>Semester credits</i>	<i>Assign- ments</i>
CP 9. School Discipline	2	16
CP 12. Home Economics Education	3	24
CP 13. Vocational Guidance	2	16
CP 14. Vocational Education	3	24
ENGLISH		
CCE 1. College Rhetoric I.....	3	24
CCE 2. College Rhetoric II.....	3	24
CCE 3. Commercial Correspondence	3	24
CCE 4. The Short Story	3	24
CCE 6. English Literature I	3	24
CCE 7. American Literature	3	24
JOURNALISM		
CCJ 1. Agricultural Journalism	3	24
GEOLOGY		
CG 1. Geology	3	24
HISTORY AND CIVICS		
CHC 1. Community Civics	2	16
CHC 2. Modern Europe I	3	24
CHC 4. English History	3	24
CHC 5. Medieval History	3	24
MATHEMATICS		
CM 7. Plane Trigonometry	3	25
CM 8. College Algebra	3	25

The Agricultural Experiment Station

The Kansas Agricultural Experiment Station was organized under the provisions of an act of congress, approved March 2, 1887, which is commonly known as the "Hatch act," and is officially designated as—

"An act to establish agricultural experiment stations in connection with the colleges established in the several states under the provisions of an act approved July 2, 1862, and the acts supplementary thereto."

The wide scope and far-reaching purposes of this act are best comprehended by an extract from the body of the measure itself, in which the objects of its enactment are stated as being—

"To aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and practice of agricultural science."

The law specifies in detail—

"That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses for forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

On the day after the Hatch act had received the signature of the President, the legislature of Kansas, being then in session, passed a resolution, dated March 3, 1887, accepting the conditions of the measure, and vesting the responsibility of carrying out its provisions in the Board of Regents of the Kansas State Agricultural College.

Until 1908 the expenses of the Agricultural Experiment Station were provided for entirely by the federal government. The original creative act (the Hatch act) carried an annual congressional appropriation of \$15,000. No further addition to this amount was made until the passage of the Adams act, which was approved by the President March 16, 1906. This measure provided, "for the more complete endowment and maintenance of agricultural experiment stations," a sum beginning with \$5,000, and increasing each year by \$2,000 over the preceding year for five years, since which time the annual appropriation has been \$15,000—

"To be applied to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States, having due regard to the varying conditions and needs of the respective states or territories."

It is further provided that—

"No portion of said moneys exceeding five percentum of each annual appropriation shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings, or to the purchase or rental of land."

The Adams act, providing as it does for original investigations, supplied the greatest need for the Agricultural Experiment Station—means of providing men and equipment for advanced research. Only such experiments may be entered upon under the provisions of this act as have first been passed upon and approved by the Office of Experiment Stations of the United States Department of Agriculture.

Further support for the Agricultural Experiment Station was provided by

the federal government by the passage of the Purnell act, which was approved by the President February 24, 1925. This measure authorized an appropriation of \$20,000 for the fiscal year beginning July 1, 1925, with increasing annual allotments of \$10,000 until a total of \$60,000 will be reached for the fiscal year beginning July 1, 1929. The law specifies that—

“The funds appropriated pursuant to this act shall be applied only to paying the necessary expenses of conducting investigations or making experiments bearing directly on the production, manufacture, preparation, use, distribution, and marketing of agricultural products and including such scientific researches as have for their purpose the establishment and maintenance of a permanent and efficient agricultural industry, and such economic and sociological investigations as have for their purpose the development and improvement of the rural home and rural life, and for printing and disseminating the results of said researches.”

The Purnell act, while specific in its statement of the purposes for which the appropriation may be used, is broad in scope and provides specifically for scientific research in agricultural economics, home economics and rural sociology, in addition to providing more liberal support for the older established work of the Agricultural Experiment Station.

More than one hundred projects, covering practically all phases of agriculture investigation, are being studied by the members of the Agricultural Experiment Station staff.

The farms, live stock, laboratories, and general equipment of the College are all directly available for the use of the Agricultural Experiment Station.

The results of the work of the Station are published in the form of bulletins, circulars, and scientific papers. These bulletins are of two classes—those which record the results of research work of a purely scientific character and those which present technical information in a simplified form, suitable for the general reader. The circulars are popular presentations of data which call for immediate application, as well as timely and useful information not necessarily new or original. The scientific papers are usually published as reprints or addresses given before scientific bodies. These reprints contain original information or report definite step in the progress of investigations under way.

All bulletins and other publications from the Agricultural Experiment Station are sent without charge to citizens of the state. Any person in the state who so desires may have his name placed on the permanent mailing list of the station.

Letters of inquiry and general correspondence should be addressed: “Agricultural Experiment Station, Manhattan, Kan.” Special inquiries should be directed, so far as possible, to the heads of departments having in charge the matters concerning which information is desired.

CONTROL WORK OF THE STATION

In addition to the work of agricultural investigation, the state has enlarged the activities of the station along various lines of state executive or control work.

One of the important lines of control work is that of the State Entomological Commission. (Laws of 1907, ch. 386; 1909, ch. 27.) This commission, created in 1907, was established—

“To suppress and eradicate San José scale and other dangerous insect pests and plant diseases throughout the state of Kansas.”

The professors of entomology at the Agricultural College and at the University of Kansas are by law designated as two of the five members of the above commission. Acting under the title of state entomologists, they divide between them the territory of the state, for the purpose of inspection.

They are empowered—

“To enter upon any public premises . . . or upon any land of any firm, corporation or private individual within the state of Kansas, for the purpose of inspection, destroying, treating, or experiment upon the insects or diseases aforesaid.”

They may treat or cause to be treated “any and all suspicious trees, vines, shrubs, plants, and grains,” or, under certain conditions, may destroy them.

They must annually inspect all nursery stock, and no nursery stock is to be admitted within the state without such inspection.

By legislative act (Laws of 1909, ch. 49), a "division of forestry" at the Agricultural College is also provided for in the following terms:

"For the promotion of forestry in Kansas there shall be established at the Kansas State Agricultural College, under the direction of the Board of Regents, a division of forestry. The Board of Regents of the Kansas State Agricultural College shall appoint a state forester, who shall have general supervision of all experimental and demonstration work in forestry conducted by the Agricultural Experiment Station. He shall promote practical forestry in every possible way, compile and disseminate information relative to forestry, and publish the results of such work through bulletins, press notices, and in such other ways as may be most practicable to reach the public, and by lecturing before farmers' institutes, associations, and other organizations interested in forestry."

It will thus be seen that the state of Kansas is making increasing use of the scientific staff of the Agricultural Experiment Station in matters of state importance requiring the application of technical knowledge.

Branch Agricultural Experiment Stations

FORT HAYS BRANCH STATION

The land occupied by this Station is a part of what was originally the Fort Hays military reservation. Being no longer required for military purposes, it was turned over to the Department of the Interior, October 22, 1899, for disposal under the act of congress of July 5, 1884. Through the influence of Senator, later Regent, W. A. Harris, and of Congressman Reeder, a bill was passed in the fifty-sixth congress setting aside this reservation "for the purpose of establishing an experimental station of the Kansas Agricultural College and a western branch of the Kansas State Normal School thereon and a public park." This bill was approved by the President on March 28, 1900. By act of the state legislature, approved on February 7, 1901, the act of congress donating this land and imposing the burden of the support of these institutions was accepted. The same session of the legislature passed an act providing for the organization of a branch experiment station and appropriating a small fund for preliminary work. In the division of this land, the College received 3,560 acres.

The land at the Fort Hays Branch Station consists mainly of high, rolling prairie, with a limited area of rich alluvium bordering on a creek, and is situated on the edge of the semiarid plains region. It is well suited for experimental and demonstration work in dry farming, in irrigation, and in crop, forestry, and orchard tests, under conditions of limited rainfall and high evaporation.

The work of this Station may be divided into two divisions: (A) experimental projects, (B) general farm and live-stock work. The experimental projects are as follows: Dry-farming investigations, forage-crop investigations, cereal-crop investigations, forest, nursery and park demonstration and investigations, farm dairying, and experiments in the feeding and breeding of live stock. All this work is confined to the study of the problems peculiar to the western half of the state, and relates especially to crop production under limited rainfall, to the development of varieties better adapted to the climatic conditions there prevailing and to studies of the systems of animal husbandry and dairy husbandry suited to this region. The facilities of this Station are being used for the growing of large quantities of pure seed of the strains and varieties which have proved in actual test to be most productive in the western part of the state.

GARDEN CITY BRANCH STATION

In 1906 the county commissioners of Finney county purchased, for purposes of agricultural experimentation, a tract of land amounting to 320 acres, situated four and one-half miles from Garden City, on the unirrigated upland.

The land has been leased for a term of ninety-nine years to the Kansas Agricultural Experiment Station as an "experimental and demonstration farm," for the purpose of determining the methods of culture, crop varieties, and crop rotation best suited to the southwestern portion of the state, under dry-land farming conditions. A pumping plant irrigating from eighty to one hundred acres has been installed for the purpose of investigating the expense of pumping and the cost of equipment necessary for plants of this type, which are common in the shallow-water districts between Garden City and Scott City and along the Arkansas valley. The Agricultural Experiment Station's investigations in irrigation agriculture are centered at this branch station.

COLBY BRANCH STATION

The legislature of 1913 provided for the establishment of a branch experiment and demonstration station near Colby, in northwestern Kansas, "for the purpose of advancing and developing the agricultural, horticultural, and

irrigation interests of this state and western Kansas." This Station was located upon a tract of three hundred and fourteen acres of land bordering upon the town site of Colby. This land was purchased by the county and deeded to the state for the purposes named above. Operations were begun in March, 1914. Cropping experiments are being conducted under dry-land conditions and under irrigation. Water is being lifted one hundred and fifty feet for irrigating a garden, fruit trees, and a few desirable crops, such as alfalfa, that could not be grown successfully in western Kansas with the natural rainfall. The primary purpose of the Colby Station is to determine the best methods of developing the agriculture of northwestern Kansas and to make it a still more desirable place to live.

TRIBUNE BRANCH STATION

At the Tribune Station experimental and demonstration work is conducted for the benefit of the surrounding territory. Special attention is paid to the problems of producing, storing, and utilizing crops for winter feeding of cattle which in summer graze the extensive range areas of the extreme western part of the state.

The Engineering Experiment Station

The Engineering Experiment Station was established for the purpose of carrying on tests and research work of engineering and manufacturing value to the state of Kansas, and of collecting, preparing and presenting technical information in a form readily available for the use of the various industries within the state. It is the intention to make all the work of the Experiment Station of direct importance to Kansas.

All of the equipment of the various engineering and scientific laboratories, the shops, and the College power plant are available for the work, while the personnel of the Station consists of members of the teaching staff from the various departments of the Division of Engineering and from other scientific departments whose work is directly related to the work of this division, and others employed especially for the work of the station.

Among the investigations now being carried on are: Quality of concrete used in Kansas highway construction; air resistance of motor vehicles; farm sewage disposal systems; radio-activity of gas-well borings; Lewis factors for nonstandard gear teeth; durability tests of belt lacings or fastenings; tests of oil and gas burners for house-heating boilers; study of automobile headlights; road material resources of Kansas; *pisé de terre* construction; a small furnace for melting brass and aluminum; durability of concrete; short-time strength tests for concrete sands; study of tension and compression tests of cement and mortars; relation of electricity to processing and handling of grain and forage; study of electric fireless cookers; the Kansas farm home; deterioration of concrete in silos; harvesting and storage of grain crops; volume changes in sand concrete; economic study of rural-line electrification; refrigeration in the home; harvesting and baling hay; modernizing the home; hydrogenation of Kansas coals; farm lighting plants; farm refrigeration; properties of early strength cements; and the elastic properties of concrete.

The testing laboratories of this Station have been designated by law* as the testing laboratories for the State Highway Commission and the state highway engineer, and as such have charge of the testing of all road materials for use in federal-aid road construction in this state.

The results of the investigations are published as bulletins and circulars of the Engineering Experiment Station, which are sent free to any citizen of the state upon request. Twenty such bulletins have been published and are now available. Besides issuing these bulletins, the Station answers yearly many hundreds of requests for information upon matters coming within its field.

Requests for bulletins and general correspondence should be addressed to Engineering Experiment Station, Manhattan, Kan. Requests for information in specific matters should be addressed, so far as it is possible, to the heads of departments in whose fields the particular matters lie.

* Sec. 5, ch. 64, Laws of 1917.

Bureau of Research in Home Economics

The Bureau of Research in Home Economics conducts investigations in the scientific, economic and social problems of the home. The purpose of this research is to discover new facts and new methods of the application of scientific knowledge bearing upon the welfare of the members of the family and the conditions under which they live.

The fields of research included in the bureau are: Child welfare, clothing and textiles, food economics, household administration, institutional economics, human nutrition, dietetics, and public health.

The laboratories of the Division of Home Economics include equipment suitable for work on certain of the problems. Opportunities for surveys and investigations of conditions in the state are found through the coöperation of various educational and social agencies.

The results of all investigations are published from time to time and are available on request to all citizens of the state.

The personnel of the bureau staff includes members of the teaching faculty in home economics. Several of the departments in other divisions of the College advise or collaborate with officers of the bureau on problems of related interest.

Among the investigations in progress are the following:

*Utilization by children of calcium and phosphorus from canned, dried, fresh, and other forms of milk.

*Factors influencing the growth of children.

*Vitamin content of foods relating to human nutrition:

a. Fruits.

b. Vegetables.

c. Cereals.

Human utilization of the carbohydrates of parsnips.

A study of the coefficient of protection of clothing fabrics.

*The screening action of fabrics against sunlight.

A study of costs of sickness to farm families.

The development of motor abilities of preschool children.

The effect of certain factors of nursery school environment upon the modification and development of definite personality traits.

The effect of cod-liver oil on the erythrocyte count and the gastric activity of anemic college girls.

Age factor in the resumption of growth by stunted children.

Factors affecting seasonal variation of the growth of children.

* Those starred are being supported in part by funds from the Agricultural Experiment Station.

Special Courses

Short Courses in Agriculture

Farmers' Short Course

Kansas State Agricultural College offers in agriculture primarily a four-year curriculum, which gives the student fundamental training in the sciences relating to agriculture and their application to the production of crops and live stock, and to farming in general. Such a curriculum not only equips a man to become a successful farmer, but makes of him a better citizen, and a leader in the broader duties of life.

Many men who have chosen farming as their vocation, and who are alive to some of the advantages offered by this institution to the farmers of the state, are denied the opportunity of pursuing the College curriculum in agriculture, or even as much as one year's work in that curriculum. For such men the Agricultural College provides the Farmers' Short Course.

The course requires two years for completion, an eight-week term being given each year. For 1931 the session will begin Monday, January 5, and close Saturday February 28. Besides the required subjects each student may take one or two elective subjects each year.

SUBJECTS IN FARMERS' SHORT COURSE

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

FIRST YEAR

REQUIRED

Soils and Fertilizers	4(4-0)
Live-stock Production I	5(3-4)
Dairying I	5(3-4)
Grain Crops	4(3-2)
Special Lectures	1(2-0)

ELECTIVE

Poultry Husbandry	3(3-0)
Live-stock Sanitation	3(3-0)
Farm Management	4(3-2)
Farm Marketing	3(3-0)
Farm Accounting	3(2-2)
Dairying II	5(3-4)
Gas Engines and Tractors	5(2-6)
Blacksmithing	2(0-4)
Carpentry	2(0-4)
Automobiles	5(2-6)

SECOND YEAR

REQUIRED

Forage Crops	4(3-2)
Live-stock Production II	5(3-4)
Farm Buildings and Equipment	4(4-0)
Farm Horticulture	3(3-2)
Special Lectures	1(2-0)

Any of the subjects listed in the elective work of the first year may also be taken as electives during the second year.

For each hour of recitation per week usually at least one hour of outside preparation is required. Laboratory or field work requires little or no outside preparation. Each credit (standard for measuring the quantity of work done) represents not less than two hours' work per week for the entire eight weeks of

the term. A regular, full-time assignment consists of not less than twenty credits, and students are usually not encouraged to take more than twenty-four credits.

CERTIFICATE. A certificate will be granted to each student completing satisfactorily the thirty-six credit hours of work required and not less than four credit hours of electives.

REQUIREMENTS FOR ADMISSION. This course is intended primarily for mature individuals. High-school work in the state is becoming so general and available to all communities that the demand for short-course work for boys of high-school age is being greatly reduced. Young farmers, not in school, are especially urged to consider the advantages of the Farmers' Short Course. Students over seventeen years of age are admitted without examination.

EXPENSES. There is no charge for tuition, but each student is required to pay, on enrollment, an incidental fee of \$5, also student-health fee of \$1.50. This latter fee entitles him to free medical attendance by the College physician. In several of the laboratories, laboratory deposits or charges varying from 50 cents to \$1 must be made to cover cost of materials used. In "Gas Engines and Tractors" and "Automobiles" the laboratory charges must necessarily be higher, being \$3 and \$2.50, respectively.

SELF-SUPPORT. The subjects of this course are primarily practical. They bring the student into actual contact with farm conditions and products. Besides the classroom work, many hours each week are spent in the stock-judging pavilion, laboratory, shop and barn. This leaves the student but little time for outside labor, and students are therefore advised to come provided with as nearly all the necessary funds for the course as possible.

BRIEF DESCRIPTION OF THE WORK

SOILS AND FERTILIZERS. (Agron. 3.) Various soil types common in Kansas are studied, especially with reference to their economical management for the production of profitable crops and the maintenance of fertility.

LIVE-STOCK PRODUCTION I. (An. Husb. 6.) A study of the principles and practices of feeding and management of live stock. The laboratory time is devoted to judging market live stock.

DAIRYING I. (Dairy Husb. 1.) Farm dairying, including the composition and properties of milk, the feeding of the dairy cow, the selecting and breeding of the dairy herd, and dairy sanitation. The laboratory provides practical work with the Babcock tester, in the use of the farm separator, and in butter making. Deposit, \$1.

GRAIN CROPS. (Agron. 1.) A practical study of grain-crop production. Laboratory exercises are given for the identification of different kinds of threshed grain and the determination of damage and market classes and grades. Charge, 50 cents.

SPECIAL LECTURES. One credit is given each year for attending these lectures. Among the speakers provided are members of the College Faculty, including the president of the College, and some outside, well-known agricultural leaders.

FORAGE CROPS. (Agron. 2.) A study of the distribution and production of important forage crops, especially for Kansas conditions. Practical exercises in identification are given in the laboratory. Charge, 50 cents.

LIVE-STOCK PRODUCTION II. (An. Husb. 8.) A study of the principles and practices in breeding, history of the development of the different breeds, and the pedigrees of noted individuals. Some time is given to the matter of fitting live stock for show and sale. The laboratory work consists of judging breeding live stock and butchering and handling meats.

FARM BUILDINGS AND EQUIPMENT. (Ag. Engr. 2.) A study of the funda-

mental principles of farm building arrangement and construction, including barns, houses, hog houses, poultry houses, machine sheds, silos, cribs, and granaries. Particular attention is given to farm equipment, such as tillage, seeding, and harvesting machinery, both horse-drawn and power. Some time is devoted to concrete construction, farm water systems, sanitation, heating, lighting, and ventilation.

FARM HORTICULTURE. (Hort. 1.) A study of the possibilities of the art of horticulture in creating better living conditions and better homes. Planning of the farmstead; the planting of ornamentals, wind-breaks, and forrest trees; and the care of garden, small fruits, and the home orchard. Incidentally an attempt is made to suggest the possibilities of commercial horticulture in localities adapted to special crops.

POULTRY HUSBANDRY. (Poult. Husb. 1.) The practical phases of poultry management, including feeding, breeding, housing, incubation, and brooding.

LIVE-STOCK SANITATION. (Vet. Med. 1.) A study of diseases that are communicable from animal to animal or from animal to man. The causes, symptoms and methods that are employed to prevent and to combat the spread of diseases, and the drugs that are commonly used as disinfectants, for washes, dips, etc., are given full consideration. The uses of serums, vaccines, etc., for the prevention of diseases is considered. Methods of disposal of sick and dead animals as well as the means employed to clean and to disinfect the premises so as to prevent a recurrence of diseases are considered.

FARM MANAGEMENT. (Ag. Ec. 1.) In this class the work in the various agricultural subjects is correlated and placed on a practical workable basis. The principles of farm accounting, distribution of capital, laying out of fields, planning rotations, etc., are given first consideration. Charge, 50 cents.

FARM MARKETING. (Ag. Ec. 2.) A study of marketing functions and services and means of improving the methods of marketing farm products. Considerable attention is given to coöperation as a means of improving the marketing of farm products.

FARM ACCOUNTING. (Ag. Ec. 3.) Records which the farmer should keep, methods of keeping these records, and ways of utilizing the information given by the records. Laboratory exercises deal with inventory, crop, live stock, labor, and other accounts, using figures obtained from Kansas farms. The practice work shows methods of keeping accounts and analyzing their results. Accounting forms and supplies for laboratory use are furnished the student. Charge, 50 cents.

DAIRYING II. (Dairy Husb. 3.) Keeping records and accounts of dairy-farm business; building up the dairy herd; dairy buildings and equipment; silos and silage; the dairy business and soil fertility; cow-testing associations; coöperative ownership of dairy sires; and detailed plans for the management of the dairy farm. Laboratory work consists of judging dairy cattle from the standpoint of economical production and breed type.

GAS ENGINES AND TRACTORS. (Ag. Engr. 3.) A practical study of the principles and applications of the stationary gas engine and the tractor for farm use. Class work includes a study of tractor construction, operation, and repair, and of carburetion, ignition, lubrication, and cooling systems. A study is made of the repair jobs the tractor operator should be able to do himself. Charge, \$3.

BLACKSMITHING. A series of graded exercises or problems in blacksmithing closely related to farm work is given. Charge, \$1.50.

CARPENTRY. The work begins with a few preliminary problems especially adapted to teaching the proper use of woodworking tools. This is followed by actual experience in the various phases of building construction. Charge, 75 cents.

AUTOMOBILES. This subject consists of lectures, discussions, and laboratory

practice in the operation and care of automobiles from the standpoint of the owner. Instruction and practice are provided in adjusting bearings and ignition points, timing valves and spark, grinding valves, cleaning carbon, etc. Charge, \$2.50.

Dairy Manufacturing Short Courses

Four dairy manufacturing short courses, each lasting two weeks, will be offered January 5 to February 28, 1931. The first course (January 5 to 17, inclusive) will be a general one devoted principally to the testing of milk, cream, and other dairy products. The course for the second two weeks (January 19 to 31, inclusive) will be devoted to a study of market milk and cheese making. The third period (February 2 to 14, inclusive) will consist of intensive study and practice in butter making. The fourth and last two-week course (February 16 to 28, inclusive) will be one in ice-cream making.

The work is so arranged that students can take one or more of the four courses, the full eight weeks of work making an intensive and practical commercial creamery short course. While, as a rule, it will be recommended that students take the entire course, the plan makes it possible for students in certain cases to take just the work that interests them most.

ADMISSION. Any one not less than 17 years of age may enroll in any of these courses.

EXPENSES. An incidental fee of \$5, a student-health fee of \$1.50, and a laboratory fee of \$2 will be charged all students enrolling for the eight weeks of work. For students enrolling for less than the entire course, an incidental fee of \$3 will be charged and an additional laboratory fee of \$2 for each two-week course taken.

CERTIFICATES. Students who complete the entire eight weeks of required work as here outlined, and who show satisfactory evidence that they have had six months successful creamery experience will be granted certificates.

OUTLINES OF THE COURSES

General Course in Milk and Cream Testing

JANUARY 5 TO 17, 1931

LECTURES

Scope of Dairy Industry
 Testing Milk
 Milk Secretion, Composition, and Properties
 Factors Affecting Composition
 Sampling Milk and Cream
 Cream Testing
 Cream Separation and Farm Separators
 Standardization of Milk and Cream
 Testing Milk for Solids—the Lactometer and Its Uses.
 Bacteriology of Milk
 Counting Bacteria in Milk
 Keeping Milk and Butter-fat Records
 The Butter Industry
 Application of Babcock Test to Other Products
 Acidity and Its Relation to Dairy Products
 Kansas Dairy Laws
 Clean Milk Production
 Dairy Breeds
 The Ice-cream Industry
 Food Value of Milk and Its Products
 The Market Milk Industry
 Cheese and Condensed-milk Industry
 Examinations

LABORATORY WORK

Milk Testing—the Babcock Test
 Testing Milk of Different Breeds
 Testing Skim Milk, Buttermilk, and Whey
 Testing Frozen, Sour and Churned Milk
 Testing Cream
 Study of Farm Separators
 Standardization of Milk and Cream
 Testing Milk for Solids and Adulterations
 Separation of Milk
 Plating Milk for Bacterial Counts
 Farm Butter Making and Creamery Butter-making Demonstration
 Testing Butter and Cheese for Fat
 Testing Powdered Milk, Ice Cream, and Condensed Milk for Fat
 Dairy Arithmetic
 Testing Milk and Cream for Acidity
 Dairy Farm and Plant Inspection
 Demonstration in Freezing Ice Cream
 Demonstration in Market Milk Handling
 Demonstration in Cheese Making and Milk Condensing

A Course in Market Milk and Cheese Making

JANUARY 19 TO 31, 1931

LECTURES

History and Development of Market Milk Industry
 Milk as a Food
 Grades of Milk
 Bacteriology as Applied to Market Milk
 How to Produce Low-count Milk
 Pasteurization of Milk
 Cream Line Studies
 Cultured Buttermilk
 Chocolate Milk
 Cottage Cheese and Soft Cheese
 Milk Plant Equipment
 Cheddar Cheese
 Milk Ordinances
 Condensed Milk and Milk Powders
 Milk By-products
 Types of Milk Plants
 Milk Distribution
 Adulteration in Milk
 Cost of Milk Production
 Examinations

LABORATORY WORK

Standardization of Milk and Cream
 Receiving, Clarification, Pasteurization
 Bottling Milk
 Determination of Food Value by Fat and Solids Test
 Determination of Cleanliness and Keeping Quality by Acid and Sediment Test
 Plating Milk for Bacteria
 Methylene Blue Test
 Cream Line Studies
 Making Starters and Cultured Buttermilk
 Making Chocolate Syrup and Chocolate Milk
 Making Cottage Cheese
 Making Cheddar Cheese
 Detection of Adulterations
 Designing Milk Ordinances
 Making Condensed Milk

A Two-week Course in Butter Making

FEBRUARY 2 TO 14, 1931

LECTURES

History of the Butter Industry
 Neutralization of Cream
 Pasteurization of Cream
 Churning Cream
 Composition of Butter
 Overrun in Butter
 Cream Procurement
 Cream Grading
 Starter Making
 Cream Ripening
 Cream Station Operation
 Market Grades of Butter
 Butter Defects
 Cream Separation
 Bacteria and Their Relation to Butter Making
 Yeast and Mold in Butter
 Sweet-cream Butter
 Factory Losses
 Food Value of Butter
 Marketing Butter
 Examinations

LABORATORY WORK

Pasteurization of Cream
 Analysis of Butter
 Cream Grading and Testing
 Preparation of Starters
 Printing Butter
 Churning
 Cream Station Inspection
 Judging Butter
 Yeast, Mold, and Bacteria Counts
 Receiving, Weighing, and Sampling Cream
 Condensing Buttermilk
 Flash Pasteurization
 Sweet-cream Butter

A Two-week Course in Ice-cream Making

FEBRUARY 16 TO 28, 1931

LECTURES

History and Development
 Composition and Properties of Milk
 Testing Milk and Cream
 Testing Ice-cream Mix
 Standardization of Milk and Cream
 Acid Test
 Ingredients Used in Ice Cream
 Composition of Ice Cream
 Calculation of the Mix and Standardization
 Processing the Mix
 Freezing the Mix
 Bacteria and Their Relation to Ice Cream
 Ices and Sherbets
 Fruit and Fancy Ice Cream
 Refrigeration
 Storage of Ice Cream
 Gelatin and Egg in Ice Cream
 Flavoring Materials
 Food Value of Ice Cream
 Defects of Ice Cream
 Examinations

LABORATORY WORK

Standardization of Milk and Cream
 Preparation of Simple Mix
 Testing Mix for Fat
 Freezing Simple Mix
 Preparation and Freezing of Mixes with Varying Per cent of Fat
 Preparation and Freezing of Mixes with Varying Per cent of Serum Solids
 Preparation and Freezing of Mixes with Varying Per cent of Sugar
 Preparation and Freezing of Mixes with Varying Per cent of Gelatin and Egg Yolk
 Use of Improvers
 Preparation and Freezing of Ices and Sherbets
 Mojonnier Testing
 Preparation of Mixes in Vacuum Pan
 Bricks and Fancy Molds
 Preparation of Mixes from Butter and Powder
 Judging Ice Cream
 Study of Refrigeration Machinery

One- and Two-Year Courses in Trades Related to Engineering

The purpose of these courses is to give practical working knowledge of the trades, and in addition to give training in shop arithmetic, shop drawing, and other subjects which are essential to its successful application. Each of the courses is intensely practical. A certificate is granted to each student satisfactorily completing the prescribed work. These courses begin and end on the same dates as the regular College work as given in the College calendar on page 7.

For each hour of recitation per week at least one hour of outside preparation is required. Laboratory work requires little or no outside preparation. Each semester credit (standard for measuring the quantity of work done) represents not less than two hours' work per week for the entire semester. For Summer School each credit represents not less than four hours' work per week.

In general, students are required to take the subjects in the order outlined; however, if the conditions warrant, the order may be changed by the head of the department.

Substitutions will be allowed in certain cases where the conditions seem to justify them.

REQUIREMENTS FOR ADMISSION. Students entering either of the trade courses should be at least eighteen years old and should have completed the eighth grade in common-school education, or its equivalent.

Two-year Trade Course for Machinists

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

FIRST YEAR

FIRST SEMESTER

Shop Calculations I, Shop 1.....3(3-0)
 Shop Drawing I, Shop 3.....2(0-4)
 Sold. and Babbit., Shop 20.....2(0-4)
 Blacksmithing I, Shop 21.....2(0-4)
 Oxy. and Elect. Welding, Shop 24....2(0-4)
 Foundry I, Shop 40.....2(0-4)
 Machine Shop I, Shop 10.....6(0-12)

SECOND SEMESTER

Shop Calculations II, Shop 2.....3(3-0)
 Shop Drawing II, Shop 4.....2(0-4)
 Machine Shop II, Shop 11.....16(0-32)

SUMMER SCHOOL

Machine Shop III, Shop 12.....10(0-40)

SECOND YEAR

FIRST SEMESTER

Shop Drawing III, Shop 5.....2(0-4)
 Machine Shop IV, Shop 13.....18(0-36)

SECOND SEMESTER

Shop Management, Shop 7.....3(3-0)
 Jig and Fixt. Design, Shop 6.....2(0-4)
 Machine Shop V, Shop 14.....15(0-30)

SUMMER SCHOOL

Machine Shop VI, Shop 15.....10(0-40)

One-year Trade Course for Automechanics

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

FIRST SEMESTER

Shop Calculations I, Shop 1.....	3(3-0)
Shop Drawing I, Shop 3.....	2(0-4)
Sold. and Babbit., Shop 20.....	2(0-4)
Blacksmithing I, Shop 21.....	2(0-4)
Oxy. and Elect. Welding, Shop 24....	2(0-4)
Foundry I, Shop 40.....	2(0-4)
Machine Shop I, Shop 10.....	6(0-12)

SECOND SEMESTER

Shop Calculations II, Shop 2.....	3(3-0)
Shop Drawing II, Shop 4.....	2(0-4)
Shop Management, Shop 7.....	3(3-0)
Automechanics I, Shop 30.....	13(0-26)

SUMMER SCHOOL

Automechanics II, Shop 31.....	10(0-40)
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BRIEF DESCRIPTION OF COURSES

Shop Practice Department

1. **SHOP CALCULATIONS I.** 3(3-0). Mr. Sink.
Practice and use of the principles of arithmetic in the solution of shop problems, including information on various matters to which shop mathematics is applied.
2. **SHOP CALCULATIONS II.** 3(3-0). Prerequisite: Shop I. Mr. Sink.
Continuation of Shop Calculations I, including problems and applications.
3. **SHOP DRAWING I.** 2(0-4). Mr. Sink.
Free-hand lettering, use of drawing board, T-square, and drawing instruments; the construction of geometrical figures, making orthographic projections and sections of simple objects.
4. **SHOP DRAWING II.** 2(0-4). Prerequisite: Shop 3. Mr. Sink.
Continuation of Shop Drawing I. Practice in the construction of orthographic and isometric projections, and sheet-metal drafting.
5. **SHOP DRAWING III.** 2(0-4). Prerequisite: Shop 4. Mr. Sink.
Working drawing from plates, free-hand sketches of machine parts and working drawings from these sketches.
6. **JIG AND FIXTURE DESIGN.** 2(0-4). Prerequisite: Shop 5. Mr. Sink.
Design of jigs and fixtures for machining interchangeable machine parts, empirical methods used to acquaint the student with the use of standard hand-books.
7. **SHOP MANAGEMENT.** 3(3-0). Mr. Sink.
Problems of the shop foreman or owner, study of the selection, installation, and arrangement of equipment.
- 10, 11, 12, 13, 14, 15. **MACHINE SHOP I, II, III, IV, V, AND VI.** 6(0-12), 16(0-32), 10(0-20), 18(0-36), 15(0-30), and 10(0-20), respectively. Mr. Jones.
Exercises to bring into use the various machines and practical work in the building of wood lathes; in making repairs on machinery, babbiting and fitting of bearings; aligning shafting and pulleys; lacing and fitting belts. More advanced work includes instruction on milling machines, universal grinders, and screw machines. Special work is given in tool making when the skill necessary for this class of work is acquired. Charge, \$1.50 per credit.
20. **SOLDERING AND BABBITING.** 2(0-4). Mr. Sink.
Instruction and practice in forming and soldering the common metals; the use of the different fluxes; proper pouring and fitting of babbit bearings. Charge, \$1.50 per credit.
21. **BLACKSMITHING I.** 2(0-4). Mr. Lynch.
Practice in forging operations; exercise in drawing, upsetting, welding, bend-

ing; instruction in the use and care of the fire and tools, drills, hammers, and other tools used in the trade. Charge, \$1.50 per credit.

24. OXYACETYLENE AND ELECTRIC WELDING. 2(0-4). Mr. Lynch.

Instruction and practice in making different types of welds. Charge, \$7 for 2 credits.

30, 31. AUTOMECHANICS I AND II. 13(0-26), 10(0-20), respectively. Mr. Sink.

A study of the mechanism, adjustments, materials of automotive construction; carburetion; cooling systems, and lubrication. The most important fundamental principles of electricity and magnetism are included in electrical work. Advanced work includes systematic trouble shooting. During the latter part of the course the students are allowed, when conditions warrant, to specialize in the work they expect to follow. Charge, \$1.50 per credit.

40. FOUNDRY I. 2(0-4). Mr. Grant.

Bench, floor, and machine molding, using a great variety of patterns; use of different kinds of sands and facings; open sand work, sweep moulding, core making, and all important foundry operations. Repairing and operating of cupola and brass furnace, and practical work, such as found in a commercial foundry.

Selection of equipment and general foundry layout are considered. Charge, \$0.75 per credit.

Degrees and Certificates Conferred

In the Year 1929

SPRING COMMENCEMENT, May 29

DEGREES CONFERRED

GRADUATE COURSES

MASTER OF SCIENCE

Arthur Clinton Andrews, B. S., University of Wisconsin, 1924, Manhattan
Earl Blackburn Belscamper, A. B., College of Emporia, 1925, Electra, Tex.
Arthur Wallace Benson, B. S., Kansas State Agricultural College, 1928, Clay Center
Gladys Matilda Boehm, A. B., Drury College, 1925, Springfield, Mo.
Almond Derrill Bull, B. S., Oklahoma Agricultural and Mechanical College, 1925, Crawford, Okla.
Lila Marguerite Canavan, A. B., University of Kansas, 1919, Lawrence
Ida Alfreda Carlson, B. S., Kansas State Agricultural College, 1913; M. S. (in English),
ibid., 1927, Manhattan
Percy Walter Cockerill, B. S., Kansas State Agricultural College, 1915, Manhattan
*Leonard Paul Elliott, B. S., Kansas State Agricultural College, 1923, Manhattan
Vernon Daniel Foltz, B. S., Kansas State Agricultural College, 1927, Belle Plaine
Edward Raymond Frank, B. S., Kansas State Agricultural College, 1918; D. V. M.,
ibid., 1924, Manhattan
Henry Nelson Gilbert, A. B., Friends University, 1925, Wichita
Isabelle Gillum, B. S., University of Texas, 1927, Elgin, Tex.
Randolph Forney Gingrich, B. S., University of Nebraska, 1923, Manhattan
David Goodsell Hall, B. S., Ohio State University, 1926, Tiptecanoe City, Ohio
Charles Wilber Howard, B. S., Kansas State Agricultural College, 1922, Holcomb
Ralph Alexander Irwin, B. S., Kansas State Agricultural College, 1928, Manhattan
John Wesley Jarrott, B. S., Kansas State Teachers College, Emporia, 1924, Hutchinson
Carroll Mendenhall Leonard, B. S., Kansas State Agricultural College, 1924; M. E.,
ibid., 1928, Manhattan
Lucille McCall, A. B., Southwestern College, 1926, Winfield
Arthur Einaš Mortensen, B. S., South Dakota State College, 1926, Bruce, S. D.
Ali Nouman, Graduate, Halkali Agricultural College, Turkey, 1914, Angora, Turkey
Edward Schneberger, B. S., Kansas State Agricultural College, 1928, Cuba
Emmett Allen Smith, B. S., Kansas State Teachers College, Hays, 1925, Manhattan
Francis Lorin Smith, B. S. A., University of Arizona, 1927, Snow Flake, Ariz.
Mildred Bertha Thurow, B. S., Kansas State Agricultural College, 1927, Macksville
Howard Dale Tyner, B. S., Illinois Wesleyan University, 1925, Manhattan
George B. Wagner, B. S., Kansas State Agricultural College, 1928, Manhattan
Herkle Lester Wampler, A. B., McPherson College, 1925, McPherson
Rachel Wright Working, B. S., Kansas State Agricultural College, 1928, Manhattan

PROFESSIONAL DEGREES IN ENGINEERING

AGRICULTURAL ENGINEER

Rudolph Henry Driftmier, B. S., Iowa State College, 1920; M. S., Kansas State Agricultural College, 1926, Manhattan

CIVIL ENGINEER

Ira David Sankey Kelly, B. S., Kansas State Agricultural College, 1924, Thebes, Ill.
Francis Joseph Nettleton, B. S., Kansas State Agricultural College, 1925, Winfield

MECHANICAL ENGINEER

Claude Leonard Wilson, B. S., Kansas State Agricultural College, 1925, Prairie View, Tex.

* In absentia.

UNDERGRADUATE CURRICULA

Division of Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

Henry Chaffee Abell, Riley	Ralph Oscar Lewis, Parsons
Forrest Bennett Alspach, Wilsey	Philip Bard McMullen, Stella, Neb.
Scott Roe Bellamy, Meade	Donald James Martin, Fellsburg
James Lyle Blackledge, Manhattan	Albert William Miller, Manhattan
Hobart Pattison Blasdel, Sylvia	Merle Glen Mundhenke, Lewis
Floyd Albert Blauer, Stockton	Theophilus Edward Nafziger, Cimarron
Omar Lewis Buzard, Kansas City, Mo.	Howard Milton Nester, Scranton
Francis Edward Carpenter, Wakefield	William Harold Polhamus, Parker
George J. Casper, Jr., Alida	Robert Louis Rawlins, Holton
Everett Garth Champagne, Oketo	Ray Lewis Remsberg, La Harpe
Carl Sutter Channon, Ottawa	John Wesley Roussin, Brewster
Edward Crawford, Stafford	Charles Elmer Russell, Stafford
Norman Curtis, Toronto	Marion Lynn Russell, Garden City
Marion Kerr Fergus, Garnett	Paul Griffith Sayre, Manhattan
Theodore Russell Freeman, West Plains, Mo.	Robert Theodore Schafer, Jewell
Ogden Worley Greene, Paradise	John Frederick Smerchek, Cleburne
William Ellsworth Gregory, Walnut	James Harold Sutton, Ensign
Theodore Fowler Guthrie, Jr., Saffordville	Ivan Keith Tompkins, Byers
Fred Lincoln Huff, Chapman	James Frederick True, Jr., Perry
Samuel Greenberry Kelly, Manhattan	Azel Oscar Turner, Lawrence
Albert Best King, Centralia	Lyle Alexander Will, Denison
Terrell Weaver Kirton, Amber, Okla.	Temple Fay Winburn, De Kalb, Mo.
Leonard William Koehler, Kansas City, Mo.	Leslie Melvin Wolfe, Johnson
Waldo Haymond Lee, Keats	Ralph Rogler Wood, Cottonwood Falls

BACHELOR OF SCIENCE IN AGRICULTURAL ADMINISTRATION

Silas Solomon Bergsma, Lucas	Harold David Garver, Manhattan
Thomas Glen Betts, Detroit	William Wade Gosney, Goddard
Roy Elmer Bonar, Washington	Francis William ImMasche, Saffordville
*Edgar Dowden Cannon, Manhattan	John Paul Lortscher, Fairview
Tudor John Charles, Jr., Republic	Joseph Ardrey Watson, Sedan
Charles Raymond Curtis, St. John	

Division of Engineering

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Edgar Lee Barger, Topeka	Chester Merle Roehrman, White City
Raymond Rodney Drake, Nekoma	Walter Elsworth Selby, Manhattan
Frank Leroy Fear, Jr., Clay Center	Harold Earl Stover, Colwich
Clifford Nelson Hinkle, Lenora	Raymond Jennison Tillotson, Shields
John Arwin Hoop, Fowler	Hugh Erwin White, Kingsdown

BACHELOR OF SCIENCE IN ARCHITECTURE

*Harman Edward Guisinger, Kansas City, Mo.	*Harry Adolph Koenig, Chanute
Harvey Rockburn Harwood, Farmington, N. M.	Stanley Eaton Morse, Manhattan

BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING

Paul A. Cooley, Neodesha	Ernest Burton Woodward, Medicine Lodge
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BACHELOR OF SCIENCE IN LANDSCAPE ARCHITECTURE

Emmet Leonard Hill, Jennings	Ned Woodman, Manhattan
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BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Robert Frederick Childs, Hugoton	Joe Hyer, Coffeyville
*Joseph Homer Garrison, Lincolnville	Lester Melvin Mishler, Sabetha
Walter Rudolph Helm, Chanute	Galen Emil Schwandt, Manhattan

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Francisco Albano Asis, Piddig, P. I.	Orvel Leonard Gathers, Miltonvale
Thomas Ralph Barner, Belle Plaine	Virgil Himes Harwood, Manhattan
*Clint Eugene Critchfield, Kansas City, Mo.	George Allan Johnson, Manhattan
Loyal Hendrickson Davies, Manhattan	Emil E. Larson, Agenda
Homer Thomas Deal, Hoisington	Victor Palenske, Alma
Arthur Elmer Dring, Pawnee Rock	Kenneth Edward Rector, Scott City
Martin Keller Eby, Wellington	Earl Leroy Sloan, Boise City, Okla.
Ralph Wilson Frank, Manhattan	Harold Germain Wood, Topeka
Perry Lester Gardner, Louisburg	

* In absentia.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Earl Bowater Ankenman, Dellvale	Glenn Koger, Herington
*Noel Grant Artman, Denison	Donald Cutler Lee, Harper
Laurence Edwin Baty, Manhattan	Harold Carl Lindberg, Courtland
Alfred Merle Breneman, Parsons	Ralph LaRue Miller, Norton
Thomas Richard Brennan, Bonner Springs	Vern Denton Mills, Manhattan
Arthur Westnidge Broady, Plains	Charles Belgrove Olds, Delphos
Leonard Hathaway Brubaker, Manhattan	Merton Elias Paddleford, Randolph
Donald Cameron, El Dorado	Craig Evan Pickett, Glen Elder
Paul Southworth Colby, Denver, Colo.	Elwood Effenger Reber, Wetmore
Earl Jewell Cover, Ozawkie	Benjamin Luce Remick, Jr., Manhattan
Verl Harvey Dobbins, Pratt	Carl Clark Rice, Manhattan
Emerson George Downie, Hutchinson	Owen Gayle Rogers, Bronson
Norton Taylor Dunlap, Berryton	Galen Emil Schwandt, Manhattan
*Philip Joseph Edwards, Athol	Harold Alfred Senior, Independence
Edward V. Ellifrit, Kansas City	Joe Joshua Shenk, Manhattan
*Francis Glenn Fry, Waldo	Edward John Skradski, Kansas City
Chester Alexander Garrison, Pittsburg	Claude Wilber Sloan, Dalhart, Tex.
Malaeska Milton Ginter, Manhattan	*Arthur William Vance, Garden City
Cecil Edgar Hammett, Manhattan	Arthur R. Weckel, Piqua
Gareel Kelly Hays, Manhattan	Rex Edward Wheeler, Manhattan
Arthur Henry Hemker, Great Bend	Rexford Everett White, Jewell
Wesley McKinley Herren, Manhattan	Francis Eugene Wiebrecht, Strong City
David Paul Hutchison, Council Bluffs, Iowa	

BACHELOR OF SCIENCE IN FLOUR MILL ENGINEERING

Robert Earl McCormick, Oatville

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Loyle William Bishop, Kansas City, Mo.	Jay Clayton Marshall, Manhattan
*Martin Arthur Edwards, Chautauqua	Walter Seamons Mayden, Manhattan
Arthur Oran Flinger, Wichita	Fred Roy Mouck, Grove, Okla.
Laurence Charles Hill, Emporia	Lois Thomas Richards, Parsons
*Harold Clarence Huffman, Pittsburg	Charles Fredrick Sardou, Topeka
James Dan McGregor, Columbus	

Division of General Science

BACHELOR OF SCIENCE

Malcolm Llewellyn Alsop, Wakefield	Dorothy Alice Kendall, Manhattan
Verne Russell Alspach, Wilsey	Margaret Knight, Medicine Lodge
Inez Pearl Anderson, Richland	Walter Fred Kuiken, Glen Elder
Joseph McDaniel Anderson, Salina	*Virgil Hudson Leonard, Richland
Alta Elizabeth Barger, Manhattan	Una Minnette Le Vitt, Wilson
Mary Elizabeth Blakslee, Manhattan	Joseph Kenneth Limes, La Harpe
Frederick Bruce Bosley, Manhattan	Curtis Joseph Lund, Lasita
Kenneth Arthur Boyd, Irving	Reness Irene Lundry, Arlington
Carolyn Marie Brandesky, Severy	Agnes Jeanne Lyon, Manhattan
Beatrice Brown, Manhattan	Wayne McCaslin, Osborne
Nancy Genevieve Carney, Manhattan	Paul Joseph McCroskey, Netawaka
Helen Van Zandt Cortelyou, Manhattan	Walter Gordon McMoran, Coldwater
Bruce Oliver Dallam, Faucett, Mo.	Harold Parker Mannen, Lincoln
Rebecca Lillian Dubbs, Ransom	Silas Milbern Miller, McPherson
Irene Elliott, Topeka	Wilhelmina Louise Moehlman, Manhattan
Virgil Monroe Fairchild, Wichita	Reginald Moore, Robinson
William Boswell Floyd, Manhattan	Thelma Jane Moore, Humboldt
Ernest Rixey Foltz, Belle Plaine	Helen Augusta Mundell, Nickerson
Eldred LaMonte Gann, Burden	Anna Mae Nettrouer, Manhattan
Roderic Grubb, Kanopolis	Elsie Sonya Nuss, Hoisington
Iola Marguerite Gunselman, Holton	Mabel Grace Paulson, Whitewater
Ben Henry Hageman, White Cloud	Clara Margaret Paustian, Manhattan
Ruth Meryle Harlow, Lucas	Lillian Susanna Paustian, Manhattan
Helen Leone Hawley, Manhattan	Marjorie Prickett, Wamego
Irene Burnema Heer, Manhattan	*Frank Hoyt Purcell, Jr., Kansas City, Mo.
Helen Charlotte Heise, Topeka	Hazel Romer, Holly, Colo.
Earl William Henderson, Beloit	*Marshall Berry Ross, Manhattan
Arle William Higgins, Manhattan	Letha Mildred Schoeni, Athol
Willetta Jane Hill, Belleville	*Emma Schreiner, Ramona
Stanley John Holmberg, Stillwater, Minn.	Myrna Frances Smith, Manhattan
William Milton Holt, Augusta	Ida Elizabeth Snyder, Effingham
Mary Florence Hoop, Fowler	Donald Alvin Springer, Manhattan
John Lester Hooper, Robinson	Elma Mae Stoops, Bellaire
Elizabeth Raley Hullinger, Garden City	Carol Lusetta Stratton, Manhattan
Anna Alice Jacobs, McCune	Ruth Varney, Manhattan
Elston Leslie Johnson, Randolph	Theodore Roosevelt Varney, Manhattan
Tracy El Delle Johnson, Olsburg	Esther Weisser, Paxico
George Clair Jordan, Jewell	Lila Williams, Broughton

* In absentia.

BACHELOR OF SCIENCE IN INDUSTRIAL CHEMISTRY

Edwin Henry Kroeker, Hutchinson
William Robert Love, Bronson

John Henry Shenk, Manhattan
Donald Wade, Manhattan

BACHELOR OF SCIENCE IN INDUSTRIAL JOURNALISM

John Stothers Chandley, Kansas City
Kathryn Frances Coles, Galena
Charles Edward Converse, Manhattan
Charles Lafayette Dean, Manhattan
Meredith Ernestine Dwelly, Manhattan
Glen Robert Fockele, Le Roy
Gordon Sheffield Hohn, Marysville

Ralph Richard Lashbrook, Almena
Lenore McCormick, Cedarvale
Albert Houston Meroney, Garden City
Shirley Caroline Mollett, Manhattan
Wilmar Walton Sanders, Clay Center
Gladys Estelle Suiter, Macksville

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Lillian Colleen Alley, Manhattan
Alma E. Brown, Kansas City
Jennie Maurine Burson, Manhattan
Ruth Correll, Manhattan
Ruth Davies, Delphos
Hope Dawley, Manhattan

Ruth Isabel Frost, Blue Rapids
Zella Elizabeth Hartley, Manhattan
Mildred Huddleston, Fulton, Ky.
Marjorie Blanche Mirick, Halstead
Kirk Monroe Ward, Elmdale
Beatrice Wilhelmina Wood, Great Bend

*Albert Rowland Edwards, Fort Scott

BACHELOR OF SCIENCE IN RURAL COMMERCE

Ray Lee Althouse, Bartlesville, Okla.
Robert Anderson Barr, Manhattan
Verne W. Boyd, Irving
Charles Frank Chrisman, Hutchinson
Lyle Daily DeBusk, Macksville
Glenn Albert Durland, Irving
John Clayton Dwelly, Manhattan
Everett Emerson Fear, Bala
Clarence Joseph Goering, Moundridge
Virginia Deane Hawkins, Monte Vista, Colo.

Charles Harold Hughes, Manhattan
Blanche Lucille Myers, Americus
Raymond Soper Myers, Manhattan
Robert William Myers, Manhattan
Frank Nellis Parshall, Manhattan
Dwight Kimball Putnam, Salina
George Doster Stewart, Abilene
Scott Lester Turnbull, Allen
Christopher Simon Williams, Manhattan
*Hal Spring Wilson, Valencia
Edward Everett Wyman, Clifton

*Ralph Taft Howard, Mount Hope

BACHELOR OF MUSIC

Dorothy Lee Allen, Fayetteville, Ark.
Hazel Alberta McGuire, Manhattan
Jeanice Reel, Detroit

Lillias Maria Samuel, Manhattan
Gladys Alice Swartz, Atchison
Ruth Lillian Turner, Manhattan

Division of Home Economics

BACHELOR OF SCIENCE IN HOME ECONOMICS

Agnes Mertina Bane, Manhattan
Lottie Nevella Benedick, Manhattan
Bertha Jane Boyd, Manhattan
Miriam Elizabeth Brenner, Waterville
Helen Virginia Brewer, Peabody
Doris Isabelle Bryan, Greensburg
Daryl Durland Burson, Manhattan
Georgiana Bush, Little River
Vivian Hall Bushong, Clinton, Mo.
Bessie Mabel Cook, Bucklin
W. Garnet Crihfield, Geneseo
Mary Louise Crowder, Manhattan
Louise Johanna Cunningham, Manhattan
Grace Annetta Daugherty, Republic
Ina Williametta Davidson, Manhattan
Flora Marie Deal, Great Bend
Linnea Carlson Dennett, Lindsborg
Vianna Ruth Dizmang, Manhattan
Opal Dougherty, Manhattan
Lillys Molly Duvall, Arkansas City
Elizabeth Fairbank, Topeka
*Frances Webb Frey, Manhattan
Florence Mable Funk, Iola
*Olive Grace Haege, Manhattan
Viola Grace Hart, Topeka
Beulah Mae Henderson, Solomon
Grace Virginia Henley, Eureka
Iva Luella Holladay, Dodge City
Norma Lucile Hook, Topeka
Emma Lobelia Huxmann, Arnold
Dorothy Alice Johnson, Lyons
Mary Ellen Karns, Bucklin
Mary Louise Kinkead, Troy
Lorie Konantz, Olathe
Agatha Meta Leuthauser, Beemer, Neb.
Mabel Mae McClung, Manhattan
*Esther Beatrice McGuire, Manhattan

Thelma Faye Mall, Manhattan
Marceline Markle, Chase
Mary Edith May, Wichita
*Beryl Johnson Mohri, Olsburg
Mattie Louise Morehead, Norton
Eula Frances Morris, Yates Center
Pearl Frances Musgrave, Hillsdale
Mary Araminta Norman, Fowler
*Ethel Evelyn Oatman, Lawrence
Velma Luella Oliphant, Kinsley
Edythe La Verne Parrott, Manhattan
Carrie Alma Paulsen, Stafford
*Helen Elizabeth Paynter, Manhattan
Marguerite Leona Richards, Manhattan
Lucile Kathryn Rodgers, Abilene
Irene Josephine Rogler, Matfield Green
Pearl Elzora Rorabaugh, Lebanon
*Lois Russell, Manhattan
Florence Caroline Sederlin, Scandia
Ida Mabel Shrontz, Wilsey
Mildred Mabel Sinclair, Macksville
Florence Verlene Smith, Tarkio, Mo.
Kathryn Socolofsky, Tampa
*Anna Caroline Stewart, Manhattan
Jessie Sarah Stewart, Maplehill
Reva Mae Stump, Blue Rapids
Cora Esther Thomas, Narka
Helen Grace Trembley, Hutchinson
Grace Elsie Walrod, Bradshaw, Neb.
Hazel Maude Walter, Riley
Beatrice Shirley Warner, Goodland
Vera C. Warnock, Hutchinson
Nana Frances Whitman, Kansas City
Helen Willcuts, Burr Oak
Ruth Williams, Broughton
Helen Mildred Wilmore, Halstead

* In absentia.

Division of Veterinary Medicine

DOCTOR OF VETERINARY MEDICINE

- | | |
|---|--|
| *Carroll Ferdinand Alexander, Manhattan | Needham Branch Moore, Jr., Manhattan |
| Clair Lenna Butler, Glasco | Lawrence Orville Mott, Spencer, Neb. |
| Frank Howard Callahan, Abilene | Karl Willim Niemann, Manhattan |
| Clifford Vernon Conger, Ionia | Charles Robert Omer, Mankato |
| Daniel DeCamp, Manhattan | Harry Edward Schaulis, Wakefield |
| Finis Ewing Henderson, Manhattan | Francisco Rioja Taberner, Dolores, Abra, P. I. |
| Hugh Edward McClung, Haywards, Cal. | Martin Van Der Maaten, Orange City, Iowa |
| Ralph William Mohri, Manhattan | |

COMMISSIONS AWARDED

SECOND LIEUTENANT, OFFICERS' RESERVE CORPS

- | | |
|--|--------------------------------------|
| Forrest Bennett Alspach, Wilsey | Hugh Edward McClung |
| *Joseph Monroe Barger, Manhattan | Robert Earl McCormick, Oatville |
| James Lyle Blackledge, Manhattan | Jay Clayton Marshall, Manhattan |
| Thomas Richard Brennan, Bonner Springs | Charles Hubert Mehaffey, Farmington |
| Charles Frank Chrisman, Hutchinson | Silas Milbern Miller, McPherson |
| Charles Edward Converse, Manhattan | Ralph William Mohri, Manhattan |
| Daniel DeCamp, Manhattan | Needham Branch Moore, Manhattan |
| Emerson George Downie, Hutchinson | Lawrence Orville Mott, Spencer, Neb. |
| Arthur Elmer Dring, Pawnee Rock | Merlin Mundell, Nickerson |
| *Gabriel Ernest Drollinger, Wichita | Robert William Myers, Manhattan |
| Arthur Oran Flinner, Wichita | Charles Belgrove Olds, Delphos |
| Cecil Edgar Hammett, Manhattan | Charles Robert Omer, Mankato |
| *Eugene Francis Harmison, Great Bend | *Leonard Milton Pike, Goddard |
| Garcel Kelly Hays, Manhattan | Charles Edward Reeder, Troy |
| Arthur Henry Hemker, Great Bend | Arthur Vernon Roberts, Vernon |
| Arlie William Higgins, Manhattan | James William Schwanke, Alma |
| *Thomas Burl Hofmann, Silver Lake | Robert Philip Smith, Junction City |
| Stanley John Holmberg, Stillwater, Minn. | William Jay Sweet, Wichita |
| Charles Harold Hughes, Manhattan | Gerald Dean Van Pelt, Beloit |
| Samuel Greenberry Kelly, Manhattan | Rex Edward Wheeler, Manhattan |
| *Wayne Kimes, Dodge City | Temple F. Winburn, De Kalb, Mo. |
| Glenn Koger, Herington | Harold Germain Wood, Topeka |
| Donald Cutler Lee, Harper | |

CERTIFICATES AWARDED

CERTIFICATE IN FARMERS' SHORT COURSE

- | | |
|----------------------------------|------------------------------------|
| Lorin Y. Bradshaw, Langdon | Harold Nelson Kilbourn, Sterling |
| H. Bertram Garard, Olivet | Joseph Wendell McFarland, Sterling |
| Charles Thornton Grimm, Caldwell | Dwight B. Robb, Dodge City |
| Floyd D. Guyer, Bloomington | Dale W. Schweitzer, Osborne |
| Irving R. Guyer, Bloomington | Louis C. Schweitzer, Osborne |

DAIRY MANUFACTURING SHORT COURSE

- | | |
|-------------------------------------|----------------------------------|
| Walter Teddy Becker, Manhattan | Albert Eugene La Croix, Hiawatha |
| Noble Christenson, Tonganoxie | Otto Reynold Shultz, Lawrence |
| Glen Irvin Dunham, Eureka | James Milton Soper, Herington |
| Harold Knight Freeman, Manhattan | Dorwin Clair Wright, Manhattan |
| Charles Raymond Gillilan, Manhattan | |

* In absentia.

SUMMER SCHOOL COMMENCEMENT, July 31, 1929

DEGREES CONFERRED

MASTER OF SCIENCE

- Jean Greiner Alexander, A. B., Oklahoma City University, 1928, Oklahoma City, Okla.
- *Floyd Warnick Atkeson, B. S., University of Missouri, 1918, Moscow, Idaho
- Frances Mable Backstrom, B. S., Kansas State Agricultural College, 1928, Kansas City, Mo.
- Roy Bainer, B. S., Kansas State Agricultural College, 1926, Manhattan
- Jacob Biely, B. S. A., University of British Columbia, 1926, Vancouver, B. C.
- Cecil Thomas Blunn, B. S., University of California, 1928, Los Angeles, Cal.
- *Homer Cleo Bray, B. S., Oregon State Agricultural College, 1928, Salem, Ore.
- Margaret Angeline Brenner, B. S., Kansas State Agricultural College, 1926, Waterville
- Marian Elizabeth Brookover, B. S., Kansas State Agricultural College, 1922, Eureka
- Francis Eugene Charles, B. S., Kansas State Agricultural College, 1924, Manhattan
- Early Mast Chestnut, A. B., University of Kansas, 1921, Manhattan
- Helen Elizabeth Cobb, B. S., University of Wisconsin, 1924, Fort Scott
- Hubert Lee Collins, B. S., Kansas State Agricultural College, 1923, Denver, Colo.
- William Eugene Connell, B. S., Oklahoma Agricultural and Mechanical College, 1928, Rupert, Idaho
- Nellie May Cook, A. B., Hiram College, Ohio, 1913; B. S., Phillips University, 1923, Chapman
- Eula Mae Currie, B. S., Kansas State Agricultural College, 1928, Manhattan
- Alice Josephine Englund, B. S., Kansas State Agricultural College, 1926, Salina
- Howard Kay Gloyd, B. S., Ottawa University, 1924, Manhattan
- Clarence Owen Grandfield, B. S., Kansas State Agricultural College, 1917, Manhattan
- Harry Herbert Halbower, B. S., Kansas State Agricultural College, 1923, Kingman
- Florence Harris, B. S., Kansas State Agricultural College, 1925, Manhattan
- Martha Luella Hensley, B. S., University of Missouri, 1926, Jackson, Mo.
- Robert Townner Hill, B. S., South Dakota State College, 1928, Grand Meadow, Minn.
- Cecil Canum Holmes, B. S., Kansas State Agricultural College, 1923, Goff
- Ruth Louise Holton, B. S., University of Minnesota, 1926, Manhattan
- William Robert Horsefall, B. S. A., University of Arkansas, 1928, Monticello, Ark.
- *Vincent Charles Hubbard, A. B., University of Minnesota, 1927, Minneapolis, Minn.
- Herbert Lee Kammeyer, B. S., Kansas State Agricultural College, 1925, Wamego
- Dale Franklin King, B. S., Oregon State Agricultural College, 1928, Manhattan
- Fred Franklin Lampton, B. S., Kansas State Agricultural College, 1924, Cherokee
- Iva Larson, A. B., University of South Dakota, 1927, Alcester, S. D.
- Paul Merville Larson, B. S., Kansas State Agricultural College, 1927, Manhattan
- John Lowe, B. S., University of Missouri, 1923, Winfield
- *George Edward Marshall, B. S., Kansas State Agricultural College, 1928, Bonner Springs
- Edith Seavey Martin, B. S., Kansas State Agricultural College, 1928, Manhattan
- Leon Francis Montague, B. S., Kansas State Agricultural College, 1926, Solomon
- Mary Hope Morris, B. S., Kansas State Agricultural College, 1924, Manhattan
- Luther Owen Nolf, B. S., Kansas State Agricultural College, 1926, Manhattan
- Laurence Parker, B. S., Kansas State Teachers College, Pittsburg, 1926, Manhattan
- Louise Armdina Phelps, A. B., Washburn College, 1924, Beaver, Okla.
- Raymond Edwin Samuelson, B. S., Iowa State College, 1928, Ames, Iowa
- Gabe Alfred Sellers, B. S., Kansas State Agricultural College, 1917, Manhattan
- Beulah Fern Shockey, B. S., Kansas State Teachers College, Pittsburg, 1921, Iola
- Samuel Allen Summerland, A. B., Arkansas State Teachers College, 1922; A. M., Peabody College, 1926, Manhattan
- Eugene Albertice Waters, B. S., Kansas State Agricultural College, 1925, Wellsville
- Bertha Evelyn Wentworth, A. B., Friends University, 1903, Furley
- Jesse Frederick Westerdale, B. S., Kansas State Teachers College, Pittsburg, 1925, Topeka
- *Ruth Esther Williams, B. S., Kansas State Teachers College, Hays, 1926, Ransom
- Karl Marx Wilson, B. S., Kansas State Agricultural College, 1924, Concordia
- Wilbur William Wright, B. S., Kansas State Agricultural College, 1917, Hope

UNDERGRADUATE CURRICULA

Division of Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

James Byron Brooks, Garrison

Walter McConnell Crossen, Turner

BACHELOR OF SCIENCE IN AGRICULTURAL ADMINISTRATION

Albert Brown, Circleville

Hugh Kenneth Richwine, Holcomb

Richard Edward Hamler, Manhattan

James Arlie Stewart, Abilene

Carl Heinrich, Durham

* In absentia.

Division of Engineering

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Hilliard Lafayette Gamble, Halstead

BACHELOR OF SCIENCE IN ARCHITECTURE

*Harold Mahlon Souders, Eureka

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Harvey Stafford German, Little River
James Roe Heller, Detroit
James Eugene Irwin, Le Roy

Harry Kibler, Sedan
Walter Harold Murray, Manhattan
Lee Rudell St. John, Morland

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

*Melvin Cooper Coffman, Wakefield
Edwin Osborne Earl, Nickerson
Lester Charles Gates, Seward
Thomas Burl Hofmann, Silver Lake
Glade W. Hurst, Caldwell
Francis Earnest Johnson, Burlington

Floyd Sereign Naugle, Highland
William Anthony Nelson, Alta Vista
Gerald Dean Van Pelt, Beloit
*Forrest Barber Volkel, Lenora
Royden Keith Whitford, Hamlin

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Justin Joe Joy, Osborne
Charles Hubert Mehaffey, Farmington

Karl Polk Niederlander, Wichita

Division of General Science

BACHELOR OF SCIENCE

Helen Rose Anderson, Thayer
Lottie Sybell Andrews, Junction City
Sister Domitilla Arnoldy, Manhattan
Sister Nicholas Arnoldy, Manhattan
Cora Mae Geiger, Salina
Velna Genevieve Hallock, Ada
Verna Doris Holmstrom, Randolph
Helen Kimball, Manhattan
Vivian Iliene Kirkwood, Manhattan
Dorothy Beryl Kuhnle, Concordia

Mildred Hazel Lemert, Cedarvale
Alice Manley, Cheney
Mary Amanda Meyer, Mound City, Mo.
Maurice Charles Moggie, Manhattan
Merlin Mundell, Nickerson
Bernice Elizabeth Shoebrook, Horton
Katherine Bingman Snair, Manhattan
John Willard Truax, Peabody
Mary Pierce Van Zile, Manhattan
John Howard Worley, Randall

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Hellen Rachel Elling, Manhattan
*Lee Elmar Hammond, Osborne

Madison Bertrand Pearson, Manhattan

BACHELOR OF SCIENCE IN RURAL COMMERCE

*Joseph Monroe Barger, Manhattan
Theodore Allen Fleck, Wamego
Hazel Juanita Hotchkiss, Manhattan

Charles Ellis Luthey, Carbondale
Fred Irwin Nevius, Paola

BACHELOR OF MUSIC

Gladys Hattie Crumbaker, Manhattan
Florence Estelle Dudley, Clay Center

Bert Lewis Hostinsky, Manhattan
Carola Peshel Swanson, Manhattan

Division of Home Economics

BACHELOR OF SCIENCE IN HOME ECONOMICS

Johanna Helena Barre, Tampa
Erma Mildred Coleman, Mayetta
Marjorie May Collins, Manhattan
Frances Eloise Gibson, Muskogee, Okla.
Mary Gertrude Grider, Rolla
Eunice Grace Grierson, Medicine Lodge
Ruth Velma Hallett, Topeka
Gertrude Claire Hamilton, Wichita
Margaret Lorraine Hemphill, Chanute
Norma Louise Knoch, Lincoln
Josephine Elizabeth Koenig, Kansas City, Mo.

Agnes Vivian McKibben, Springfield, Mo.
Ferne Hilda Moore, Blue Rapids
Gladys Myers, Burns
*Martha Mary Sandeen, Stillwater, Minn.
Mabel Luella Sellens, Russell
Velma Elizabeth Vincent, Alden
Mary Frances Wagner, Manhattan
Violet Lovina Walker, Manhattan
Lulu Parken Wertman, Morrowville
Mary Christine Wiggins, Eureka

* In absentia.

HONORS

PHI KAPPI PHI

CANDIDATES FOR THE MASTER'S DEGREE, 1929

Arthur Clinton Andrews
Floyd Warnick Atkeson
Howard Kay Gloyd
Ralph Alexander Irwin
John Wesley Jarrott
Lawrence Parker
Lila Marguerite Canovan
Iva Larson

Early Mast Chestnut
Wilbur William Wright
Clarence Owen Grandfield
Jean Greiner Alexander
Leon Francis Montague
Ruth Esther Williams
Henry Nelson Gilbert
Herkle Lester Wampler

GRADUATES, CLASS OF 1929

Division of Agriculture

Hobart Pattison Blasdell
Albert William Miller
Leonard William Koehler
Samuel Greenberry Kelly

James Lyle Blackledge
Henry Chaffee Abell
Norman Curtis
Ralph Oscar Lewis

Division of Engineering

Earl Leroy Sloan
James Eugene Irwin
Emerson George Downie
Ralph La Rue Miller
Charles Belgrove Olds
Arthur Elmer Dring
Glenn Francis Fry
Arthur Oran Flinger

Harold Alfred Senior
Homer Thomas Deal
Robert Frederick Childs
Paul Southworth Colby
David Paul Hutchinson
Philip Joseph Edwards
Martin Keller Eby

Division of General Science

Carol Lusetta Stratton
Nancy Genevieve Carney
Helen Van Zandt Cortelyou
John Henry Shenk
Helen Charlotte Heise
Shirley Caroline Mollett
Letha Mildred Schoeni
Mabel Grace Paulson
Reness Irene Lundry
Esther Weisser

Donald Wade
Walter Gordon McMoran
Marjorie Prickett
Charles Harold Hughes
Vivian Iliene Kirkwood
Ben Henry Hageman
Gladys Estelle Suiter
Edward Everett Wyman
Robert William Myers
Mildred Huddleston

Division of Home Economics

Esther Beatrice McGuire
Mattie Louise Morehead
Linnea Carlson Dennett
Helen Virginia Brewer
Marguerite Leona Richards

Flora Marie Deal
Lucile Kathryn Rogers
Ina Willametta Davidson
Mary Arminta Norman
Thelma Faye Mall

Division of Veterinary Medicine

Karl Willim Niemann

Lawrence Orville Mott

SENIOR HONORS

(1929)

Division of Agriculture

Henry Chaffee Abell
Albert Brown
*Hobart Patterson
Norman Curtis

Sam Greenbury Kelly
*†Leonard William Koehler
†Albert William Miller

Division of Engineering

Robert Frederick Childs
*Paul Southworth Colby
†Homer Thomas Deal
Martin Keller Eby
*†Arthur Oran Flinger
*Francis Glenn Fry

Emmett Leonard Hill
James Eugene Irwin
Harold Alfred Senior
Joe Joshua Shenk
†Earl Leroy Sloan

Division of General Science

Frederick Bruce Bosley
*†Nancy Genevieve Carney
*†Helen Van Zandt Cortelyou
Eldred La Mont Gann
Cora Mae Geiger
*Helen Charlotte Heise
Vivian Iliene Kirkwood
†Reness Irene Lundry
Walter Gordon McMoran

Silas Milbern Miller
*Maurice Charles Moggie
Shirley Caroline Mollett
†Letha Mildred Schoeni
†John Henry Shenk
Elma Mae Stoops
*†Carol Lusetta Stratton
Mary Pierce Van Zile
Donald Wade

Division of Home Economics

Helen Virginia Brewer
†Flora Marie Deal
*†Linnea Carlson Dennett
Esther Beatrice McGuire
Thelma Faye Mall

*†Mattie Louise Morehead
Gladys Myers
Marguerite Leona Richards
Irene Josephine Rogler

Division of Veterinary Medicine

Laurence Orville Mott

*Karl Willim Niemann

* Awarded high honors.

† Also received sophomore honors.

SOPHOMORE HONORS**Division of Agriculture**

John Lincoln Wilson
George David Oberle

Fulton George Ackerman
Bruce Ross Taylor

Division of Engineering

Clyde Newman
Harold Everett Trekell
Kenneth Duree Grimes
Gayle Hosack
Lee Otis Stafford
Floyd Gerald Winters

Charles Elmore Funk
Otis Harold Walker
William Richard Chalmers
George Eugene Wise
Ernest Samuel Cook
Melvin Ernest Smith

Division of General Science

Josephine Lighter
Clarice Virginia Erickson
Selma Ellen Turner
Drusilla Madge Beadle
Vernal Charles Rowe
Edna Elizabeth Findley
Mildred Emily Purcell

Aline Wegert
Charles William Koester
Pauline Willa Samuel
Alice Tribble
Richard George Vogel
Helen Louise Sloan
Geraldine Joan Johnston

Division of Home Economics

Thelma Reed
Edna Irene Pieplow
Marian Genie Eads
Luella Cane Vanderpool

Grace Dorothy Brill
Mary Alice McCreight
Gertrude Louise Seyb

Division of Veterinary Medicine

Don Harvey Spangler

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KANSAS STATE AGRICULTURAL COLLEGE BULLETIN

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LISTS OF STUDENTS SIXTY-SEVENTH SESSION, 1929-'30



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Lists of Students

Students Pursuing Graduate Work

June 1, 1929, to May 29, 1930

GRADUATE STUDENTS

Henry Chaffee Abell; Riley
Harry Enoch Adell; Leonardville
Anna Tessie Agan; St. Edward, Neb.
Mildred Laura Ahlstrom; Reading
Glenn Allen Aikins; Valley Falls
Dorothy Marguerite Akin; Manhattan
William Purvis Albright; Greensboro, N. C.
Alfred Evan Aldous; Manhattan
Jean Greiner Alexander; Manhattan
Martin Adkisson Alexander; Manhattan
Ethlyn Marie Alsop; Junction City
Malcolm Llewellyn Alsop; Wakefield
Forrest B. Alspach; Wilsey
Hazel Lillian Anderson; Bronson
Ida Anderson; Norfolk, Neb.
Arthur Clinton Andrews; Manhattan
Ruth Evangel Angstead; White City
Ethel May Arnold; Manhattan
Floyd Warnick Atkeson; Moscow, Idaho
Madelyn Avery; Wakefield
Frances Mable Backstrom, Kansas City, Mo.
Roy Bainer; Manhattan
Lilian Baker; Manhattan
Clarence Orval Banta; Ottawa
Jane Wilson Barnes; Manhattan
Arthur Theodore Bartel; Bard, Cal.
Laura Falkenrich Baxter; Manhattan
Henry Monroe Beachel; Manhattan
Winifred Daisy Beeby; Hays
Erwin John Benne; Manhattan
Marjorie Marie Berger; Manhattan
Silas S. Bergsma; Lucas
Jacob Biely; British Columbia, Can.
Ada Grace Billings; Manhattan
Floyd Albert Blauer; Stockton
Cecil Thomas Blunn; Manhattan
Gladys Matilda Boehm; Springfield, Mo.
Frederick Bruce Bosley; New Creek, W. Va.
Boyd Bertrand Brainard; Manhattan
Carl Alfred Brandly; Manhattan
George Francis Branigan; Manhattan
Marian E. Branigan; Manhattan
Homer Cleo Bray; Manhattan
Parks Hillis Brittain; Manhattan
Frank Brokesh; Munden
Marian Elizabeth Brookover; Eureka
Harold J. Brooks; Ottumwa, Iowa
Frances L. Brown; Tucson, Ariz.
Vira Brown; Edmond
Esther Bruner; Manhattan
Thomas Walter Bruner; Jewell
Elgin R. Button; Meriden
James Phillip Callahan; Manhattan
Marion Isabell Campbell; Manhattan
Hugh Stanley Carroll; St. Marys
Sherman Harold Carter; Oneida
Elisha Joe Castillo; Independence
George E. Cauthen; Manhattan
Joanna Seiler Challans; Halstead
Virginia Chambers; Grandfield, Okla.
Ira Nichols Chapman; Manhattan
Francis Eugene Charles; Manhattan
Early Mast Chestnut; Manhattan
Alfred Lester Clapp; Manhattan
Helen Elizabeth Cobb; Manhattan
Maynard Henry Coe; Manhattan
John Robert Coleman; Wichita
Laurence LaRue Compton; Manhattan
William Eugene Connell; Rupert, Idaho
Emma Miller Cook; Milford
Nelle May Cook; Chapman
Robert Francis Coppel; Flagstaff, Ariz.
E. Jack Coulson; Manhattan
Margaret Coventry; Pittsburg
Fern Covert; Wichita
Ina Foote Cowles; Sibley
Francis Scott Coyle; Manhattan
Orville Robinson Cragun; Milford
Naomi Zimmerman Crawford; Manhattan
Clarence E. Crews; Manhattan
Blaine Crow; Silver Lake
Eula Mae Currie; Manhattan
Erma Evangeline Currin; Manhattan
Bruce Oilver Dallam; Faucett, Mo.
Earl Gilbert Darby; Manhattan
Sarah Emily Davies; Riley
Charles Deforest Davis; Manhattan
Loren LeRoy Davis; Manhattan
Raymond Howard Davis; Hays
Minor Day; Tamaqua, Pa.
Flora Marie Deal; Great Bend
Lawrence William Decker; Manhattan
Dorsie Laurence Deniston; Louisburg
Linnea Carlson Dennett; Manhattan
Percy Leroy DePuy; Manhattan
Fred V. Dial; Manhattan
Russell Reuben Dodderidge; Council Grove
Dorothea Ruth Dowd; Manhattan
Clara Kathryn Dugan; Manhattan
Joy William Dull; Manhattan
John Clayton Dwelly; Manhattan
W. Harvey Ebersole; Newton
Janet Cuthbert Edelblute; Topeka
Winifred M. Edwards; Athol
Helen Ehrhardt; Garnett
Harold Chester Elder; Smith Center
Leonard Paul Elliott; Manhattan
Mary Myers Elliott; Manhattan
Delbert Frederick Emery; Parsons
Opal Marion Endsley; Manhattan
Alice Josephine Englund; Salina
Morris Evans; Manhattan
Paul Lawrence Evans; Baldwin
Thomas Conway Faris; Lebanon
Vern Oren Farnsworth; North Topeka
Luther M. Feathers; Johnson City, Tenn.
Ethel B. Feese; Junction City
Ruth Mead Fertig; Manhattan
Alice R. Fitch; Manhattan
Beattie Hope Fleenor; Manhattan
Vernett Edward Fletcher; Alton
Arthur Oran Flinger; Manhattan
Kenney Lee Ford; Manhattan
Orval French; Geneseo

GRADUATE STUDENTS—Continued.

- Louis Edwin Fry; Manhattan
 Edith Fultz; Wichita
 Harold David Garver; Merriam
 Annabel Alexander Garvey; Topeka
 Bessie Geffert; Manhattan
 George Albert Gemmell; Manhattan
 Harvey S. German; Little River
 Willard Dyke Gilbert; Alden
 Adelaide Louise Glaser; Ozawkie
 John Snell Glass; Manhattan
 Archibald Alexander Glenn; Webster
 Beulah McNall Glenn; Webster
 Frederick Edward Goetz; Saskatoon, Sask., Can.
 Austin Gerald Goth; Red Cloud, Neb.
 Earle Ervin Graham; Magnolia, Ark.
 George Lauvin Graham; Manhattan
 Clarence Orrin Grandfield; Manhattan
 E. Rebecca Green; Cawker City
 Roy Monroe Green; Manhattan
 Ethel Mae Griggs; Palestine, Tex.
 Hilda R. Grossmann; Manhattan
 Welthalee Grover; Iola
 Myrtle Annice Gunselman; Manhattan
 Ferdinand Daniel Haberkorn; Hutchinson
 Earl Henry Hahn; Mallard, Iowa
 Harry Herbert Halbower; Kingman
 Marcia Biddison Hall; Manhattan
 Philip Walter Hansen; Columbus
 Bernice Lucille Harper; Vicksburg, Mich.
 Florence Harris; Manhattan
 Vida Agnes Harris; Manhattan
 William Pliny Harriss; Kansas City
 Maude Hart; Albuquerque, N. Mex.
 Everett F. Haukenberry; Manhattan
 Chester Havley; Frankfort
 Irene Burnema Heer; Manhattan
 Grace Mildred Henderson; Lincoln, Neb.
 Alice Evangeline Henley; Ness City
 Martha Louella Hensley; Jackson, Mo.
 Elizabeth Spears Hepler; Parsons
 F. Floyd Herr; Argonia
 Katharine Paddock Hess; Manhattan
 Stella May Heywood; Bennington
 Earl Martin Hiestand; White Cloud
 Frank Webster Hill; Rochester, N. Y.
 Leona Thurow Hill; Manhattan
 Robert Towner Hill, Grand Meadow, Minn.
 Julian Adair Hodges; Manhattan
 Ralph Edward Hodgson; Mazomanie, Wis.
 Mary Alice Holladay; Augusta
 Cecil Cannum Holmes; Goff
 William Milton Holt, Augusta
 Ruth Louise Holton; Manhattan
 Lucretia Maye Hoover; Sedgwick
 Otho J. Hopper; Chillicothe, Mo.
 Elsa Ottilia Horn; Manhattan
 William Robert Horsfall; Manhattan
 Sarah Genevieve Howe; Emporia
 Merle Raymond Hubbard; Kingman
 Leo Everett Hudiburg; Independence
 Verda Murphy Hudson; Manhattan
 Lelia Mary Hughes; Kansas City, Mo.
 Orville D. Hunt; Manhattan
 Esther Victoria Hyrup; Mentor
 Cecile Mae Jackson; Kress, Tex.
 Clarence Oliver Jacobson; Sedgwick
 William Charles Janes; Manhattan
 Lois Bennett Jarrott; Hutchinson
 Alice Claypool Jefferson; Manhattan
 Margaret Louise Jodon; Salina
 Julian Almon Johnson; Kiowa
 Victor H. Johnston; Winfield
 Edward C. Jones; Manhattan
 Ruth Cress Jones; Manhattan
 G. Clair Jordan; Jewell
 Louis Mark Jorgenson; Manhattan
 Herbert Lee Kammeyer; Wamego
 Samuel Greenberry Kelly; Manhattan
 Beulah Henderson Kenison; Solomon
 Harry Llewellyn Kent; State College, N. Mex.
 John Humphrey Kerr; Miltonvale
 Bruce Alvin Kindig; Medicine Lodge
 Dale Franklin King; Manhattan
 Eunice Leola Kingsley; Tolley, N. Dak.
 Vivian Iliene Kirkwood; Manhattan
 Lester Henry Koenitzer; Manhattan
 Aldene Scantlin Langford; Manhattan
 Roy Clinton Langford; Manhattan
 Harold Christian Larsen; Brookings, S. Dak.
 Iva Larson; Alcester, S. Dak.
 Paul Merville Larson; Manhattan
 Bessie Adaline Leach; Bird City
 Elden Emanuel Leasure; Manhattan
 Willis Lloyd Leshar; Manhattan
 Clarence F. Lewis; Manhattan
 Ralph Oscar Lewis; Parsons
 Ruby Mae Lewis; Concordia
 Joe Kenneth Limes; La Harpe
 Arthur William Lindquist; Lindsborg
 Gustave William Lindquist; Manhattan
 Aubrey Erskine Lippincott; Manhattan
 Earl Milo Litwiller; Manhattan
 Charles Alden Logan; Eskridge
 Alden H. Loomis; Manhattan
 John Lowe; Winfield
 John Wallace Lumb; Manhattan
 Georgie Seaman Lyman; Ulysses
 Jeanne Lyon; Manhattan
 Lucille McCall; Winfield
 Maude Nonamaker McColloch; Manhattan
 Grace Kerns McCoppin; Phillipsburg
 Robert Earl McCormick; Oatville
 Maynard L. McDowell; Manhattan
 Alice Edna McLean; Jewell
 David Leslie Mackintosh; Manhattan
 Stella Cook Maddy; Seibert, Colo.
 Hubert Whatley Marlow; Manhattan
 Ethel Justin Marshall; Manhattan
 George Edward Marshall; Bonner Springs
 Earl Harrison Martin; Pratt
 Ralph R. Martin; Topeka
 Edith Edna Seavey Martin; Manhattan
 Charlotte Viola Mathias; Manhattan
 Lora Gertrude Mendenhall; Manhattan
 Arthur Meyer; Manhattan
 Albert William Miller; Manhattan
 William Edward Moling; Cartersville, Mo.
 Leon Francis Montague; Solomon
 George Montgomery; Manhattan
 Helen Handel Moore; Altamont
 Una Morlan; Courtland
 Katherine Dyllys Morris; Manhattan
 Maria Morris; Manhattan
 Eula Frances Morris; Yates Center
 Mary Hope Morris; Manhattan
 Merle Dallas Morris; Paxico
 Reed F. Morse; Manhattan
 William P. Mortenson; Manhattan
 Thirza Adaline Mossman; Manhattan
 Lawrence Orville Mott; Spencer, Neb.
 James Herbert Moyer; Manhattan
 Anna Neal Muller; Topeka
 Flavius Albert Mundell; Nickerson
 Merlin Mundell; Nickerson
 Robert Russell Murphy; State College, Pa.
 Nancy Mary Mustoe; Norton
 Joyce Myers; Sylvia
 Eula May Neal; Walnut
 Alma Dale Newell; Durham
 Philip Myron Noble; Manhattan
 Ruth Kell Noble; Manhattan
 Onie L. Norton; Altamont
 Genevieve Alice Nowlin; Manhattan
 Harold Alfred Noyce; Keats
 Loren Manuel Nuzman; Manhattan

GRADUATE STUDENTS—*Concluded.*

- John C. Olsen; Manhattan
 Bessie Mae Orr; Summerfield
 Opal Frances Osborne; Partridge
 Alfred Robb Paden; Argonia
 Lita Mae Paine; Admire
 John Huntington Parker; Manhattan
 Laurence Parker; Manhattan
 Olodine Nina Parshall; Manhattan
 Dwight Patton; Harper
 Marian Herfort Pelton; Manhattan
 Royce Owen Pence; Manhattan
 Louise Arminda Phelps; Dwight
 Gerald Pickett; Manhattan
 Irene Olive Pierson; Stanton, Iowa
 Isa Ruth Plank; Lyons
 James Leroy Potter; Carthage, Mo.
 Myra Thelma Potter; Lawrence
 Marjorie Prickett; Wamego
 Galen Stephen Quantic; Riley
 Elizabeth Quinlan; Manhattan
 Addie Alice Radebaugh; Frankfort
 George Hemrod Railsback; Manhattan
 Mary Betz Reed, Manhattan
 Fred Thomas Rees; Mound City
 Ethelyn Pray Rees; Mound City
 Roger E. Regnier; Fairview
 Carl Clark Rice; Manhattan
 Alma Margaret Richhart; Nickerson
 Bella Catherine Robertson; Manhattan
 Ethel Ann Robinson; Emporia
 Frazier Rogers; Gainesville, Fla.
 Glenn L. Rucker; Ottawa
 Marguerite Dorothy Samco;
 Canning, S. Dak.
 William H. Sanders; Manhattan
 Harry Weber Schaper; Jewell City
 Ruth Schlotterbeck; Chickasha, Okla.
 Lester John Schmutz; Wakefield
 Ralph Schopp; Abilene
 Mary Frances Schuerer; Junction City
 Harold Martin Scott; Manhattan
 Myra Edna Scott; Manhattan
 Dwight M. Seath; Manhattan
 Minnie Seath; Manhattan
 Sophia Mae Shade; Hays
 George Oscar Sharp; Pittsburg
 Floyd Henry Sheel; Earlton
 John Henry Shenk; Manhattan
 Elsie Leah Shippy; Chapman
 Lina Maria Shippy; Chapman
 Beulah Fern Shockey; Iola
 Mabel Shrontz; Wilsey
 Sidney Simmons; Greensboro, N. C.
 Sister M. Domitilla Arnoldy; Manhattan
 Earl LeRoy Sitz; Manhattan
 Veda Rozella Skillin; Frankfort
 Clifford Lovejoy Smith; Corvallis, Ore.
 Florence Verlene Smith; Tarkio, Mo.
 Glenn Sanborn Smith; Manhattan
 Lolie Smith; Marlin, Tex.
 Maybelle Pritchard Smith; Dixon, Ill.
 Sam J. Smith; Florence
 Victoria Smith; St. Louis, Mo.
 Georgiana Hope Smurthwaite; Ogden, Utah
 Stanley Livingstone Soper; Manhattan
 Julia Lurena Southard; Southard, Mo.
 Alma Spencer; Yates Center
 Jessie Sarah Stewart; Maplehill
 William Timothy Stratton; Manhattan
 Mary L. Summers; Horton
 Coit Alfred Suneson; Missoula, Mont.
 Wilma Olive Sutton; Kingman
 Charlotte Huntington Swanson; Manhattan
 Elbert Cecil Tabor; Manhattan
 Mary Fidelia Taylor; Newton
 William Henry Teas; Kingman
 Russell Ira Thackrey; Manhattan
 Francis Leonard Timmons; Manhattan
 Ivan C. Townsden; Randall
 Ethel Florence Trump; Russell
 Mary Edna Tupper; Manhattan
 Howard Dale Tyner; Manhattan
 Gladys Ellen Vail; Plains
 Lois Castle Vance; Kiowa
 Leland Stanford Van Scoyoc; Manhattan
 Mary Pierce Van Zile; Manhattan
 Jerry Julian Vineyard; Junction City
 Nelson J. Wade; Saugatuck, Mich.
 Crystal Louise Wagner; Manhattan
 Walter Gilling Ward; Manhattan
 Eugene Albertice Waters; Eureka
 Jewell Kimball Watt; Coyville
 Ella H. Webb; Kansas City
 Iva Belle Welch; Pittsburg
 Thornton Walton Wells; Hays
 Bessie Brooks West; Manhattan
 Jesse Frederick Westerdale; Wakefield
 Forest Whan; Manhattan
 Florence Rilla Whipple; Manhattan
 K. Marie White; Oswego
 Mary Frances White; Manhattan
 Margaret Katherine Wieda; Hiawatha
 Donald Alden Wilbur; Manhattan
 Esther Margaret Wilkins; Meade
 Viola Jenet Williams; Kansas City, Mo.
 Harold Arthur Williamson; Manhattan
 Mary Lois Williamson; Independence, Mo.
 Hugh Willis; Williamsburg
 Luther Earle Willoughby; Manhattan
 Karl Marx Wilson; Concordia
 Temple F. Winburn; De Kalb, Mo.
 Verna B. Winchel; Salina
 Homer Carlton Wood; Reading
 LeVelle Wood; Manhattan
 Mary Woodward; Manhattan
 Wilbur William Wright; Hope
 Claude Newton Yable; Ford
 Joe Stanley Yoder; McPherson
 Marian Irene Young; Cedar Point
 Carol Oscar Youngstrom; Culver, Ore.
 Iscah Marion Zahm; Topeka

GRADUATE STUDENTS PURSUING WORK IN ABSENTIA

- Arthur Theodore Bartel; Bard, Cal.
 John Flower Bullard; Lafayette, Ind.
 Elisha Joseph Castillo; Independence
 Emma Miller Cook; Milford
 Orville Robinson Cragun; Milford
 Raymond H. Davis; Hays
 Dorsie Laurence Deniston; Louisburg
 Harold C. Elder; Smith Center
 Ethel B. Feese; Junction City
 Archibald Alexander Glenn; Webster
 Earle Ervin Graham; Magnolia, Ark.
 Elizabeth Spears Hepler; Parsons
 Lois Bennett Jarrott; Hutchinson
 Grace Kerns McCoppin; Phillipsburg
 Claire Arnot Martin; Abilene
 Alfred Robb Paden; Argonia
 Isa Ruth Plank; Lyons
 Lina Maria Shippy; Chapman
 Thornton Walton Wells; Hays
 Emily Wilson; La Harpe

SENIORS PURSUING GRADUATE WORK

Henry John Barre; Tampa
 Raymond Andrew Bell; Beverly
 Albert Ross Challans; Newton
 Robert James Copeland, Jr.;
 Canon City, Colo.
 Frances Rebekah Curtis; Kansas City
 Marjorie Hazel Curtis; Manhattan
 Bernice Louise Decker; Holton
 Irene Jeanette Decker; Robinson
 Rosamond Aleda Eddy; Havensville
 Edward Joseph Fisher; Leavenworth
 Rex Le Roy Fossnight; Ottawa
 Howard Johnson Jobe; Sedan
 William Howard Jobling; Caldwell
 Anne Helen Klassen; Inman

Joe Alphonsus Kuffler; Parsons
 Thelma Fern McClure; Hutchinson
 Charles Porter McKinnie; Glen Elder
 Richard Bruce Mather; Burdett
 Austin Morgan; Lebo
 Winifred Ann Nachtreib; Atchison
 Raymond William O'Hara; Blue Mound
 Bruce Robinson Prentice; Clay Center
 Louise Eleanor Reed; Holton
 Frederick Henry Schultis; Sylvan Grove
 Harry Edwin Skoog; Caldwell
 Floyd Howard Smith; Wichita
 Martha Agnes Smith; Durham
 George Ruben Vanderpool; Meade

SPECIAL STUDENTS PURSUING GRADUATE WORK

James Thomas Newton; Douglass

William Richards; Burrton

Undergraduate Students

The following lists include seniors, juniors, sophomores, freshmen and special students in College. For students in the Summer School and in special courses see lists following these.

Abbreviations here used denote curricula as follows: AA, agricultural administration; Ag, agriculture; AE, agricultural engineering; AH&V, animal husbandry and veterinary medicine; ApA, applied arts; Ar, architecture; ArE, architectural engineering; C, commerce; CE, civil engineering; ChE, chemical engineering; EE, electrical engineering; FME, flour-mill engineering; GS, general science; GS&VM, general science and veterinary medicine; HE, home economics; HE&N, home economics and nursing; IC, industrial chemistry; IJ, industrial journalism; LA, landscape architecture; LG, landscape gardening; M, music; ME, mechanical engineering; PE, physical education; PSM, public school music; PSB&O, public school band and orchestra; VM, veterinary medicine.

SENIORS

- Vivian Dial Abell (HE); Riley
 Hugh Richard Abernathy (CE); Manhattan
 Frank Milton Adair (ME); Frontenac
 Roland Edgar Adams (ArE); Manhattan
 Jay Adriance (IJ); Manhattan
 Raymond Hilton Alexander (VM);
 Manhattan
 George Mitchell Allen (CE); Manhattan
 Milton Francis Allison (IJ); Great Bend
 Kenneth Charles Anderson (ChE); Eskridge
 Lois Ida Anderson (HE); Byers
 Ross Harris Anderson (GS); Richland
 Virginia Anderson (HE); Lincoln
 Phil V. Andrew (Ar); Ottawa
 Anna Annan (PE); Beloit
 Marie Arbuthnot (HE); Bennington
 Mahala Arganbright (HE); Wamego
 Leslie Linnaeus Aspelin (ME); Dwight
 Garland Martin Atkins (C); Fort Scott
 Byron Edson Atwood (EE); La Cygne
 Harry Fisk Axtell (Ag); Dimmitt, Tex.
 Cleo Orland Baker (CE); Marysville
 Howard William Baker (Ar); Lyndon
 Mildred Marita Baker (HE); Gove
 Baha E. Bakri (Ag); Damascus, Syria
 Clarence DeWitt Barber (EE); Iola
 Mary Elvina Barkley (GS); Manhattan
 Claude Lawrence Barnett (Ar); Manhattan
 Fern Doris Barr (GS); Manhattan
 †Henry John Barre (AE); Tampa
 Etnah Beaty (ApA); Lakin
 Vernon Augustus Beck (ME); Topeka
 Sigrid Evangeline Beckstrom (HE); Wichita
 Lyle Holmes Beebe (VM); Manhattan
 George Edward Bell (ArE); Yates Center
 †Raymond Andrew Bell (PE); Beverly
 Bernice Eleanor Bender (IJ); Holton
 Gladys Meyer Benne (HE); Linn
 Kenneth Dean Benne (GS); Washington
 Helen Lee Bentley (HE); Manhattan
 John Thomas Bertotti (ME); Osage City
 Wesley Watson Bertz (VM); Manhattan
 Henry John Besler (EE); Manhattan
 John Alexander Bird (IJ); Hays
 Olive Elizabeth Bird (HE); Garden City
 Jesse Benjamin Boehner (IC); Downs
 William Robert Boggess (EE); Scandia
 Fletcher Gist Booth (C); Olathe
 Tony Borecky (GS); Holyrood
 Ruth Mary Boyles (HE); Manhattan
 John Frank Boznick (EE); Frontenac
 Howard Raley Bradley (AA); Kidder, Mo.
 Charles Lewis Brainard (Ar); Manhattan
 Elmer James Branham (EE); Altamont
 Robert Fenton Brannan (Ag); Meade
 William Jacob Braun (Ag); Council Grove
 Elmer Henry Bredehoft (EE); Fairmont,
 Okla.
 Gertrude Elizabeth Brookens (GS); West-
 moreland
 Edwin Lewis Brower (VM); Manhattan
 Orpha Brown (HE); Edmond
 Jasper Leland Brubaker (EE); Manhattan
 Hugh Herschel Bruner (C); Concordia
 Ralph Ernest Brunk (EE); Kansas City
 Lillian Josephine Brychta (HE); Blue Rapids
 Hazel Eirene Buck (HE); Derby
 Dorothy Helen Burnet (ApA); Manchester,
 Okla.
 Henry Alonzo Burt (AA); Manhattan
 Lester Burton (EE); North Topeka
 Norval Odell Butler (EE); Manhattan
 Beulah Louise Callis (GS); Chase
 Gladys Marie Griffin Calvert (IJ); Man-
 hattan
 Erma Belle Canning (HE); Manhattan
 Clifford Beamer Carlson (ME); Utica
 Dave Anthony Carlson (Ag); Manhattan
 Raymond Delasmith Caughron (GS); Man-
 hattan
 †Albert Ross Challans (GS); Newton
 William Chapman (Ag); Wichita
 Katherine Chappell (HE); Manhattan
 Beatrix Lorena Charlton (HE); Edwards-
 ville
 Rose Louise Child (IJ); Manhattan
 Paul Raymond Chilen (AA); Miltonvale
 Ruth Rosalie Claeren (IJ); Manhattan
 Joseph Eugene Clair (VM); Manhattan
 Curtis Forgy Clayton (CE); El Dorado
 Floyd Alfred Clayton (IC); El Dorado
 Laurence Victor Clem (GS); Chanute
 Arlie Lewis Coats (EE); Altoona
 Harry Pliny Coberly (AE); Hutchinson
 Max William Coble (ME); Sedgwick
 Owen Lovejoy Cochrane (PE); Manhattan
 Dave Miles Colby (VM); Manhattan
 Harley Edward Cole (ME); Manhattan
 Howard Allen Coleman (CE); Denison
 †John Robert Coleman (ChE-1; Grad.-2);
 Wichita
 Garlie Franklin Collins (ChE); Emporia

† Also pursuing graduate study.

SENIORS—Continued.

- *Kenneth W. Comfort (CE); Topeka
 †Laurene LaRue Compton (Ag-1; Grad.-2);
 Manhattan
 Frances Rebecca Conard (HE); Ottawa
 Paul Waldo Condry (IC); Beloit
 *Blaine Davies Coolbaugh (PSM); Stockton
 †Robert James Copeland, Jr. (ChE); Canon
 City, Colo.
 Herman Charles Cowdery (CE); Lyons
 Manford Lester Cox (Ag); Goodrich
 †Francis Scott Coyle (Ag-1; Grad.-2); Man-
 hattan
 Andy W. Crawford (VM); Manhattan
 Harold Samuel Crawford (LG); Bonner
 Springs
 Vera Lucille Crawford (IJ); Lincoln
 William Leslie Criswell (EE); Manhattan
 Earl Edward Crocker (C); Manhattan
 Genevieve Crowley (GS); Manhattan
 Chester Arthur Culham (ME); Junction
 City
 George Joseph Cunningham (Ag); Manhattan
 *Lemuel Joseph Cunningham (Ag); Manhat-
 tan
 †Frances Rebekah Curtis (HE); Kansas City
 John Jay Curtis (Ag); Toronto
 †Marjorie Hazel Curtis (HE) Manhattan
 Nellie Dorothy Darrah (HE); Marquette
 Bernice Veneta Davidson (HE); Manhattan
 Frank Marshall Davis (IJ); Manhattan
 Paul Davis (EE); McPherson
 Saloma Elizabeth Davis (C); Carthage, Mo.
 †Bernice Louise Decker (HE); Holton
 †Irene Jeanette Decker (HE); Robinson
 John William Decker (Ag); Holton
 Clara Farmer Denison (GS); Hazelton
 Walter Raymond Denman (EE); Sedan
 Robert Irving Denny (AE); Harper
 Russell Clay Derbyshire (GS); Omaha, Neb.
 Theodore Marion DeVries (VM); Manhat-
 tan
 Darcy Dayton Dial (FME); El Dorado
 *Donna Marie Dickinson (HE); Udall
 *Omeda Mae Dickison (HE); Nevada, Mo.
 Mary Lucile Dietz (HE); Cawker City
 Herbert A. Dimmitt (EE); Manhattan
 Robert Hugh Dodge (Ag); Manhattan
 Harry Stillman Dole (IJ); Alma
 Gabriel Ernest Drollinger (ME); Manhattan
 Donna Gayle Duckwall (Ar); Abilene
 *Etha Chloa Dungan (HE); Independence
 Clarence Mitchell Dunn (Ag); Oskaloosa
 Leda Anna Dunton (GS); Lebanon
 Neil Durham (AG); Randall
 †Rosamond Aleda Eddy (HE); Havensville
 Edna Frances Ehrlich (HE); Marion
 Kyle Engler (EE); Burrton
 Alfred Harlan Epperson (AA); Hutchinson
 Anna Marie Erickson (HE); Clyde
 Karl Wheeler Ernst (EE); Topeka
 Clifford Charles Eustace (Ag); Wakefield
 Thomas Marion Evans (PE); Gove
 Galen Lee Farnsworth (IC); Wichita
 Everett Ellsworth Fauchier (C); Osage City
 John Virgil Faulconer (CE); El Dorado
 Elwin E. Feather (GS); Minneapolis
 †Edward Joseph Fisher (ChE); Leavenworth
 Janice Irene Fisher (PSM); Beverly
 Josephine Louella Fisk (GS); Alta Vista
 Geraldine Genevieve Foley (GS); Oronoque
 †Rex Le Roy Fossnight (CE); Ottawa
 Mildred Mae Fox (HE); Wichita
 Harold Earl Frank (AA); Manhattan
 Maurice Benjamin Franklin (EE); Topeka
 Kathleen Grace Fraser (GS); Talmage
 Harry Orwin Frazier (GS); Idana
 Alva Henry Freeman (PE); Manhattan
 Ralph William Freeman (FME); Kirwin
 †Orval French (AE-1; Grad.-2); Geneseo
 Amelia Marie Frohn (HE); White City
 Raymond Glenn Frye (AA); Freeport
 Roy Jacob Furbeck (CE); Larned
 Kenneth Manning Gapen (AA); Manhattan
 Margaret D. Garrison (HE&N); Chanute
 Charlie Gurdon Gates (CE); Kingman
 Charles Richard Gerardy (ChE);
 Clay Center
 Walter Geurkink (VM); Manhattan
 Clarence Emmett Ghormley (AE);
 Hutchinson
 Henry Wilbur Gilbert (LG); Manhattan
 Thomas Henry Gile (Ag); Scandia
 Florence Ann Glenn (GS); Manhattan
 La Vone Goheen (GS); Oak Hill
 Myrtle Genevieve Gohlke (HE); Holton
 Ruth B. Gordon (HE); De Soto
 George Mather Grafel (C); Herndon
 Joseph Howard Greene (AA); Beverly
 Margaret Hamilton Greep (HE); Longford
 Roy Orval Greep (GS); Longford
 Rudolph Thechsel Greep (IC); Longford
 Cloyde Lowell Guinn (VM); El Dorado
 Eva Maude Guthrie (HE); Woodston
 Chester Walton Haas (C); Winfield
 Edwin Otto Habiger (AA); Bushton
 Minnie Rosie Hahn (HE); Inman
 Vernon Leslie Hahn (AA); Muncie
 Kenneth Morgan Hall (AA); Agra
 Catherine Marie Halstead (IJ); Manhattan
 Lewis Greeley Hamilton (VM);
 South Haven
 Lee Allen Hammond (ArE); Wichita
 (deceased)
 George Risley Hanson (AA); Syracuse
 Junieta LeeElla Harbes (HE); Manhattan
 Katharine Frances Harding (PSM);
 Manhattan
 William Fred Hardman (EE); Frankfort
 Eugene Francis Harmison (ME);
 Great Bend
 Florence Lavina Harold (HE); Dresden
 Faye Harris (ApA); Parsons
 Paul Washington Harris (GS);
 Havensville
 Theodore Garrard Harris (Ag); Manhattan
 Rodney DeWalt Harrison (C); Burden
 Laura Zurilda Hart (PSM); Overbrook
 Benjamin Franklin Hartman (ChE);
 Topeka
 Russell Lynn Hartman (CE); Hoisington
 Lillian Iola Havley (GS); Manhattan
 Orville Elton Hays (Ag); Manhattan
 Cecil Benjamin Headrick (ME);
 Manhattan
 Robert Bates Heckert (EE); Independence
 Fred Hederhorst (ME); Stockton
 Paul Raymond Heinbach (EE); Neodesha
 Helen Alberta Hemphill (IJ); Clay Center
 Esther Marie Herman (C); Abilene
 Byron William Herrington (IJ);
 Silver Lake
 Thomas Marion Heter (Ar); Sterling
 Theron W. Hicks (CE); Norton
 Lora Valentine Hilyard (ApA); Manhattan
 Charles Frank Hirsch (C); Ellinwood
 Eva Burndette Hixson (C); Wakeeney
 Harold Chester Hoffman (GS); Haddam
 Russel Walter Hofsess (CE); Partridge
 Virginia Schwager Hوجلund (HE);
 Manhattan
 Anita Mae Holland (HE); Harper
 Erwin Dean Hollingsworth (ArE); Salina
 Eugene Holmberg (ME); Kansas City
 Johnson Alcott Holmes (IJ); Manhattan

* Matriculated 1929-'30.

† Also pursuing graduate study.

SENIORS—Continued.

- Myrtle Evelyn Horne (HE); Alma Roy Mitchell Hoss (AA); Potwin William Harris Houston (Ag); Potwin Clarence Paul Howard (IJ); Mount Hope Ida Mae Howard (HE); Garnett Muriel Howard (GS); Oberlin Orlando Whiting Howe (AE); Stockdale Aileen Hull (ApA); Manhattan Florence Hazel Hull (HE); Downs Kathleen Virginia Hulpieu (HE); Dodge City James Ward Ingraham (EE); Manhattan Marie Insley (HE&N); Manhattan Glenn Charles Isaac (Ag); Baldwin Mary Jane Isbell (HE); Bennington Ralph William Jackson (VM); Manhattan Sherman Keith Jackson (CE); Holton Russell Everett James (ME); Wetmore Vernon Elmer Jefferies (EE); Kiowa George Jelinek (GS); Ellsworth Ernest Frank Jenista (GS); Caldwell Wilma Jennings (PE); Little River †Howard Johnson Jobe (CE); Sedan Mary Jeanette Jobling (PSM); Caldwell †William Howard Jobling (IC); Caldwell Alvin Adolph Johnson (AA); Kanana James Foley Johnson (GS); Manhattan Margaret Verneal Johnson (HE); Axtell Robert Franklyn Johnson (C); Salina Hazel Mae Johnston (PSM); Leonardville Sara Virginia Jolley (IJ); Manhattan Esther Margaret Jones (GS); Frankfort J. Harold Karr (EE); Troy Josephine Dell Keef (IJ); Glen Elder Pauline Kegereis (HE); Salina Elmer Willis Kelley (C); Kansas City Robert Warren Kellogg (ChE); Sedan Carol Sanford Kelly (GS); Manhattan Mary Janice Kelly (HE); Lindsborg Charles Harris Kenison (C); Solomon Annie Mary Kerr (HE); Manhattan John Harold Kershaw (EE); Garrison *Marjorie Russell Kimball (GS); Manhattan Solon Toothaker Kimball (IJ); Manhattan Wayne Kimes (EE); Dodge City Milford Jeter Kindig (AA); Olathe Willis Bertrand Kinnamon (C); Larned Loren Robert Kirkwood (EE); Manhattan †Anne Helen Klassen (GS); Inman Julius William Kloepper (ME); Monrovia Martin Simon Klotzbach (EE); Humboldt Frank Wendell Knopf (EE); Holton Henry H. Knouft (GS); Circleville George Herman Koelling (IC); Talmage Clemons Malcolm Kopf (EE); Beverly Grace Esma Kottwitz (HE); Peabody Louis Joseph Kovar (AE); Rossville †Joe Alphonsus Kuffler (CE); Parsons Kenneth James Latimer (ChE); Humboldt Ruth Laura Lattimore (HE); Westmoreland Verna Latzke (HE); Chapman Eleanor Laughead (HE); Dodge City Eugene Pepper Lawrence (PE); Manhattan †Bessie Adaline Leach (GS-1; Grad.-2); Bird City Oliver Glen Lear (Ag); Stafford Eugene Marshall Leary (Ag); Lawrence Thomas Joy Leaseure (VM); Solomon Greta Velma Leece (HE); Formoso Robert Lengquist (ME); Riverton Evelyn Mae Lindsey (HE); Winchester Clabern Oakley Little (ME); Manhattan Abe B. Litvien (CE); Kansas City Robert Ivan Lockard (Ar); Norton Genevieve Long (HE); Haviland Louise Loraine Lortscher (HE); Fairview Herbert Dale Lott (CE); Minneapolis Henry Wilbur Loy (ChE); Chanute Bernice Etha Loyd (GS); Hiawatha Verna Merne Loyd (HE); Hiawatha Reland Estella Lunbeck (IJ); Manhattan Lawrence Nile Lydick (EE); Winfield George Cardinal Lyon (PE); Manhattan Andrew Lafayette McBride (VM); Manhattan Ed Cleland McBurney (CE); Newton Ruth Beryl McCammon (GS-1; HE-2); Norton Caroline Louise McCarthy (HE); Kansas City Elinor Mary McCaul (HE); Elk City †Thelma Fern McClure (HE); Hutchinson Robert Herald McCollum (PE); El Dorado Roy H. McKibben (ME); Kansas City Margaret McKinney (IJ); Great Bend †Charles Porter McKinnie (Ag); Glen Elder Harold Isaac McKinsey (C); Manhattan Dan McLachlan, Jr. (IC); Pleasanton Howard Orville McManis (AE); South Haven Ray John McMillin (PE); Manhattan Cecil James Wilson McMullen (EE); Norton Daisy Ferne McMullen (ApA); Norton *Elbert Bonebrake Macy (GS); Woodston Merle Lyle Magaw (Ag); Ames Harold Gustav Mangelsdorf (EE); Atchison Preston Leonard Manley (C); Topeka Roy Merlin Mannen (Ag); Manhattan Marjorie Ellen Manshardt (IJ); Leonardville Charles Mantz (AA); Preston Willa Lois Mantz (HE); Coldwater Laura Mae Marcy (GS); Milford *Miriam Leona Marsh (HE); Chanute †Claire Arnot Martin (GS-1; Grad.-2); Abilene Paul Erastus Massey (EE); Yates Center Arnold Alcorn Mast (Ag); Abilene Clara Winfred Mather (HE); Centralia †Richard Bruce Mather (Ag); Burdett Corinne Fern Maxey (HE); Coats Mary Evangeline Maxwell (HE); Manhattan Mary Frances Maxwell (C); Manhattan Paul Arthur Mears (AA); Beloit Ralph Francis Melville (C); Muncie Glen Ervan Meredith (ArE); Junction City Thomas Nelson Meroney (Ag); Garden City John Kingsley Merritt (C); Haven Clara Grace Miller (HE); Manhattan Marion Edgar Miller (CE); Quenemo Paul Alvin Miller (EE); Parsons Robert Wilson Miller (ME); Haviland John Lensfred Minor (Ag); Syracuse (deceased) Warren Dale Moore (Ag); Copeland †Austin Morgan (CE); Lebo Charles Elias Morgan (GS); Hollis Arlee Murphey (HE); Scott City Thomas Jerome Muxlow (VM); Manhattan Channing George Myers (IC); Salina †Winifred Ann Nachtreib (HE); Atchison Loyle Mac Nash (PE); Long Island Marvin Francis Naylor (IC); Tonganoxie Borden Dean Neiman (EE); Manhattan William Melvin Newman (AA); Centralia Roscoe Townley Nichols, Jr. (C); Manhattan

* Matriculated 1929-'30.

† Also pursuing graduate study.

SENIORS—Continued.

- Gordon Curtis Nonken (EE); Manhattan
 Laurence Harold Norton (AA); Kalvesta
 Clarence Evan Nutter (Ag);
 Falls City, Neb.
 Lois Marie Oberhelman (HE); Barnes
 Ruth Malissa O'Donovan (ApA); Topeka
 †Raymond William O'Hara (Ag);
 Blue Mound
 Beatrice Oliphant (HE); Hutchinson
 Luella O'Neill (HE); Winchester
 Mildred Marie Osborn (PE); Clifton
 Arthur Owen (EE); Wichita
 Laurel Joseph Owsley (EE); Manhattan
 Leone Evelyn Pacey (GS); Manhattan
 William Hocksworth Painter (GS); Meade
 Frances Lenore Paisley (GS); Manhattan
 Leslie Ellison Paramore (EE); Delphos
 Helen Verna Parcels (HE); Hiawatha
 LeRoy Clay Paslay (EE); Manhattan
 Harry Albert Paulsen (AA); Stafford
 Ray Charles Paulson (EE); Whitewater
 Warren Caufield Perham (C); Iola
 Vernon Stanley Peterson (AE); Gypsum
 Ralph Frank Pettit (Ag); Manhattan
 Karl Hamilton Pfuetze (GS); Manhattan
 Frances Louise Pickens (HE); Lake City
 Leonard Milton Pike (Ag); Goddard
 Harold Henry Platt (Ag); Manhattan
 Clark Gardner Porter (GS); Manhattan
 Everett Francis Potter (ME); Manhattan
 Walter Preston Powers (AA); Netawaka
 James Wilson Pratt (C); Manhattan
 †Bruce Robinson Prentice (EE);
 Clay Center
 Doris Estelle Prentice (HE); Manhattan
 †Galen Stephen Quantic (AA-1; Grad.-2);
 Riley
 George LeRoy Quigley (EE); Halstead
 Francis James Raleigh (Ag); Clyde
 Ben Elkins Ramsey (CE); Dighton
 Elsie Emma Rand (HE); Wamego
 Elmer Wayne Randle (EE); Jefferson
 Margaret Elizabeth Rankin (IJ);
 Wakefield
 Mary Edith Rankin (HE); Kansas City
 Mildred Hester Rathbun (GS); Manhattan
 Esther Virginia Ratliff (HE); Manhattan
 Mary Bell Read (PE); Manhattan
 Lawrence Rector (C); Manhattan
 Oscar Earl Reece (AA); Hopewell
 Alzina LaVerne Reed (GS); Wakefield
 Anna Reed (GS); Kanopolis
 Grace Editha Reed (PE); Topeka
 †Louise Eleanor Reed (HE); Holton
 Charles Edward Reeder (ArE); Troy
 Louis Powers Reitz (Ag); Belle Plaine
 John Sword Rhodes (EE); Tampa
 Clement Dee Richardson (EE); Hugoton
 Earl Cranston Richardson (IJ); Coffeyville
 George Elliott Richardson (EE); Pittsburg
 Ruth Roberta Richardson (HE);
 Manhattan
 Herbert Cecil Reipe (CE); Dighton
 Ronald Carl Riepe (IJ); Kansas City
 Wanda Harriett Riley (GS); Chanute
 Mary Eileen Roberts (GS); Manhattan
 Thelma Gossard Roberts (GS); Manhattan
 *Pauline Roedel (HE); Iola
 Floyd Nolan Rogers (FME); Smith Center
 Ralph Rogers (ChE); Madison
 Randle Chester Rolfs (C); Lorraine
 William Alfred Romary (VM); Manhattan
 Mae Margaret Rooney (HE); Haddam
 Marjorie Evon Root (HE); Medicine Lodge
 Flora Helena Ross (HE); Amarillo, Tex.
 Frank Henry Roth (EE); Wichita
 Dorothy Harriet Rucker (HE); Burdett
 Neva Edwina Rush (HE); Severy
 Ray Russell (ME); Kansas City
 Robert Henry Russell (ME); Manhattan
 William Everett Russell (IJ); La Crosse
 Helen Marguerite Rust (PSM); Manhattan
 Alton Hoyt Ryon (EE); Manhattan
 Russell Scott Sage (EE); Maplehill
 Miner Ray Salmon (Ag); Manhattan
 Jack Sanders (EE); Independence
 Marjorie Maud Sanders (HE&N);
 Clay Center
 Robert Elmer Sanders (PE); Burlington
 Gladys Myrtle Schafer (IJ);
 Del Norte, Colo.
 Margaret James Schattenburg (IJ); Riley
 Raymond Schlotterbeck (PE); Manhattan
 Gladys Schmedemann (PSM); Manhattan
 Lorna Katherine Schmidler (IJ); Marysville
 Edward Henry Schneider (EE);
 Kansas City
 Ruby Thelma Scholz (HE); Manhattan
 Leah Schreiner (HE); Ramona
 Dorothy Schrupf (HE);
 Cottonwood Falls
 Charles Arthur Schubert (EE); Centralia
 †Frederick Henry Schultis (AA);
 Sylvan Grove
 William Joseph Schultis (GS);
 Sylvan Grove
 James William Schwanke (EE); Alma
 Sybella Adelaide Scott (PE); Manhattan
 Hazel Lindley Scott (HE); Rolla, Mo.
 Ralph Lester Scott (GS); Le Loup
 Frances Deane Shewmaker (HE); Chanute
 Gertrude Sheetz (PSB&O); Admire
 Frances Dow Sheldon (GS); Blue Rapids
 Allen Parker Shelly (ME); Atchison
 Ralph Shenk (GS); Silver Lake
 Juanita Lee Shuck (HE);
 Kansas City, Mo.
 Helen Marie Shuyler (IJ); Hutchinson
 Dale Harold Sieling (IC); Hays
 Travis William Siever (GS); Manhattan
 Kermit James Silverwood (IJ); Ellsworth
 †Harry Edwin Skoog (VM); Caldwell
 Henry Devore Smiley (VM); Manhattan
 Elmer Harold Smith (AE); Baldwin
 †Floyd Howard Smith (EE); Wichita
 Gerald George Smith (EE); Topeka
 James Everett Smith (Ag);
 Woodward, Okla.
 †Martha Agnes Smith (PE); Durham
 Ralph Ottis Smith (EE); Hutchinson
 *Ruth Irene Smith (ApA); Winfield
 Edward Paul Smoot (EE); Eureka
 Inez Eva Snyder (GS); Osborne
 Dale Edward Springer (AE); Garrison
 Marjorie Elizabeth Stafford (GS);
 Leonardville
 Herbert Norman Stapleton (AE); Jewell
 Arlo Lester Steele (EE); Manhattan
 Irwin Roy Stenzel (EE); Marion
 Helen Steuart (GS); Winchester
 Harland Stevens (Ag); Valencia
 Harold Calvin Stevens (AE); Blue Rapids
 Samuel Roger Stewart (Ag); Vermillion
 Ross Alonzo St. John (CE); Morland
 Maidene Bertha Stout (PE); Peobody
 Marguerite Marie Stullken (GS); Bazine
 Ida Jane Summers (GS); Manhattan
 William Joy Sweet (ArE); Wichita
 Charles Henderson Synnamon (ChE);
 Wichita
 John Edward Taylor (Ag); Topeka

* Matriculated 1929-'30.

† Also pursuing graduate study.

SENIORS—Concluded.

- Merrill Medsger Taylor (Ag); Perry
 Edgar Arnold Templeton (AA); El Dorado
 Joel Allen Terrell (Ag); Syracuse
 Zabel Herman Tessendorf (CE); Onaga
 Mary Cleo Teter (HE); El Dorado
 Emily Sheppard Thackrey (IJ); Manhattan
 Eugene Ware Theiss (VM); Hutchinson
 Howard Phil Thudin (EE); Mulvane
 Opal Florennia Thurow (IJ); Macksville
 Orville William Thurow (C); Moscow
 Ralph Victor Thurow (C); Macksville
 Charles Cheuvront Todd (AA); Auburn
 Frederick Walter Toomey (EE); Neodesha
 John Gordon Towner (CE); Dwight
 William Lowell Treaster (IJ); Beloit
 Nellie Florine Trechsel (GS); Idana
 Roy Henderson Trompeter (Ag); Horton
 Lorene Renata Uhlrig (GS); Belvue
 Lucille Adella Uhlrig (GS); Belvue
 Mildred Fern Ungeheuer (HE); Centerville
 †George Ruben Vanderpool (CE); Meade
 Virginia Van Hook (HE); Topeka
 Jeanette Verser (GS); Tulsa, Okla.
 Chris Viergever (GS); Willard
 Frances Marian Wagar (PE); Florence
 Dorothy Wagner (ApA); Topeka
 Mildred Ann Walker (GS); Manhattan
 Ruel Scott Walker (Ar); Galena
 Elsie Gertrude Wall (PSM); Cawker City
 Everett Robert Wallerstedt (Ar); Manhattan
 Henry Brown Walter (LG); Wichita
 Mary Virginia Washington (HE);
 Manhattan
 Edgerton Lynn Watson (Ag-1; VM-2);
 Manhattan
 Ellen Louise Watson (HE); Manhattan
 John Clarke Watson (IJ); Frankfort
 Vernon Reed Weathers (CE); Great Bend
 Maurice Franklin Weckel (EE); Garnett
 *Alice Weigel (HE); Victoria
 Frances Laverne Wentz (HE); Ames
 Stanley Archie White (EE); Lewis
 Kathryn Whitten (HE); Wakarusa
 Louis George Wieneke (ChE); Sabetha
 Jess Willard Wilhite (EE); Manhattan
 Kathryn Louise Wilson (PSB&O);
 Liberty, Mo.
 Leone Wilson (PE); Wichita
 Mary Helene Wilson (HE); Council Grove
 Richard Maxwell Wilson (Ag); Geneva
 Adrian Edward Winkler (Ag); Paxico
 Lula Josephine Winter (HE); Ashland
 Delbert Lester Yeakley (C); Hoisington
 Homer Yoder (PSB&O); Manhattan
 Clemens Harry Young (Ag); Manhattan

JUNIORS.

- Fulton G. Ackerman (Ag); Lincoln
 Alice Virginia Adams (HE); Leavenworth
 Edna Fay Allen (HE); Burlington
 William H. Allen (EE); Rock Creek
 Loren Norton Allison (EE); Falls City, Neb.
 James Westerfield Amis (C); Manhattan
 Henry Everett Anderson (C); Richland
 *Ralph Lester Anderson (GS); Dodge City
 Lydia Elizabeth Andres (GS); Alta Vista
 Edwin Lee Andrick (GS); Wheaton
 Theodore Alois Appl (EE); Great Bend
 Clifford Elroy Armstrong (EE); Pittsburg
 Roy Herbert Armstrong (GS); Leocompton
 William John Arndt (CE); Hutchinson
 Kimball Lincoln Backus (AA); Olathe
 *Clementine Vosse Bacon (GS); El Dorado
 Olive Baker (GS); West Helena, Ark.
 Donald C. Baldwin (Ar); Manhattan
 *William Bryce Bandy (EE); Parsons
 Dwight Hale Banks (EE); Wamego
 Ben William Barber (Ar); Alton
 Byron Barkley (EE); Little River
 Alex Barneck (EE); Salina.
 Lawrence Richard Barnhart (IJ);
 Independence
 Josephine Louise Barry (GS); Manhattan
 Kenneth Clinton Bauman (C); Salina
 Drussilla Madge Beadle (PSM); Effingham
 Ray Hadley Beals (PSB & O); Dodge City
 Ernest Wilson Bennett (EE); Great Bend
 Gladys Benson (HE); Clay Center
 Keith Bentz (EE); Peabody
 *Robert Allen Bickel (ChE);
 Kansas City, Mo.
 George Gorrell Biles (C); Chanute
 Howard T. Blanchard (Ar); Wichita
 Harold Deen Boles (CE); Madison
 Harold Clifford Boley (EE); Topeka
 James Patrick Bonfield (C); Elmo
 Georgena Bowman (GS); Garnett
 Richard Earl Bowman (GS); Pawnee Rock
 John Shaw Boyer (Ag); El Dorado
 Margaret Irene Boys (HE); Linwood
 Margaret Louise Bragg (HE); Dodge City
 *Oliver Karl Brandon (ME); Ash Valley
 Donald Parker Brenz (ME); Arkansas City
 Quentin Victor Brewer (IJ); Manhattan
 Anna Esther Briggs (GS); Hutchinson
 Gertrude Adeline Brill (HE); Westmoreland
 Grace Dorothy Brill (HE); Westmoreland
 Faith Winifred Briscoe (GS); Cambridge
 Louie Elizabeth Britt (GS); Manchester
 George Shelton Brookover (AA); Eureka
 Paul Edwin Brookover (ME); Scott City
 Chester Lee Brown (EE); Herington
 Esther Louise Brown (IJ); Manhattan
 Maxine Brown (PSM); Manhattan
 Ralph Irvin Brown (C); Hutchinson
 Lewis Jay Bryan (C); Manhattan
 Edwin George Brychta (GS); Blue Rapids
 Alpheus Darrel Buckmaster (PE);
 Manhattan
 Lowell Jacob Burghart (ME); Chanute
 Merl Leroy Burgin (EE); Coats
 John Wesley Burke (ArE); Glasco
 Vada Burson (PE); Manhattan
 Neva Le Verne Burt (HE); Greensburg
 Walter Ward Butler (Ar); Glasco
 Gerald Edwin Cain (EE); Pomona
 *Marion John Caldwell (ChE); El Dorado
 David Valentine Campbell (ArE); McPherson
 Richard Joseph Campbell (ME); Herington
 *Ferro Castellani (EE); Frontenac
 Marvin Oliver Castle (AA); Mayetta
 James Willard Caughron (C); Manhattan
 Marguerite Virginia Chaffin (HE); Caldwell
 William Richard Chalmers (CE); Burlingame
 Wilbur Chamberlin (EE); Newton
 Arnold Ervin Chase (GS-1; AA-2);
 Abilene
 *Melvin Fuller Chubb (Ag); Baxter Springs
 Elmer Field Clark (AE); Jewell
 Olive Josephine Clark (AA); Leavenworth
 Vernie Irene Clausen (HE); Alton
 Ruth Clency (GS); Manhattan
 William Welch Coffman (AA); Overbrook
 Clarence Ralph Collins (GS); Wellsville

* Matriculated 1929-'30.

† Also pursuing graduate study.

JUNIORS—Continued.

- Eugene Frederick Collins (CE); Wellsville
 Gilbert Underwood Combs (EE); Manhattan
 Lloyd Harold Compton (EE); Larned
 Frank Robert Condell (ME); El Dorado
 Carl Clarence Conger (Ag); Manhattan
 Mary Naomi Cook (IJ); Linn
 Wilber Abram Copenhafer (LG); Manhattan
 Harold Richard Corle (CE); Caney
 Kenneth Deorace Cornell (EE); Kansas City
 E. Kenneth Corporon (ME); Wichita
 John Trumbull Correll (IC); Manhattan
 Bernice Louise Cousins (GS); Manhattan
 Byron Irwin Cousins (EE); Manhattan
 Frances Marian Covey (GS); Miltonvale
 Marion Asa Cowles (EE); Sharon Springs
 Inez Mildred Crabb (HE); Colby
 Cecil Clyde Crane (CE); Severy
 Jay James Cress (EE); Manhattan
 Hilah Eileen Crocker (IJ); Manhattan
 George Richard Crossen (ME); Turner
 Clarence Benedict Cunningham (Ag);
 Manhattan
- *Donald Curtis (CE); Kansas City
 Eli Egbert Daman (C); Fort Riley
 Margaret Hodges Darden (GS); Manhattan
 Lillian Boyer Daugherty (PSM); Manhattan
 Dorothy Loreen Dexter (PSM); Manhattan
 Richard Kimball Dickens (IJ); Manhattan
 Florence Matilda Diehl (HE); Chapman
 *Nellie Ruth Dilsaver (HE); Kensington
 Paul Lawrence Dittmore (IJ); Manhattan
 Iva Fern Dix (HE); Manhattan
 Helen Laura Dodge (PE); Manhattan
 *W. Russell Downs (CE); Wellington
 Thomas Edward Doyle (PE); Manhattan
 Clair Eber Dunbar (Ag); Manhattan
 Martha Lois Dunlap (HE); Reece
 Izola Mildred Dutton (ApA); Manhattan
 *Edward James Dyer (ME); Leavenworth
 Miriam Genie Eads (HE); Cullison
 Dean Martin Earl (CE); Nickerson
 Lester Alfred Eastwood (Ag);
 Summerfield
 Nina Edelblute (GS); Keats
 Howard Carl Edinborough (LG); Tescott
 Frank Edward Edlin (IC); Herington
 Chester Oliver Ehrlich (IJ); Marion
 Marvin Neel Elder (ME); Manhattan
 Carl Emmert Elling (Ag); Manhattan
 Howard Andrew Elwell (EE); Hutchinson
 Ruth Mary Emrich (HE); Tyrone, Ark.
 Kermit Vernon Engle (Ag); Abilene
 Walter Newton Epler (ChE); Scott City
 *Ernestine Barbara Ernst (HE); Paolo
 Katrinia Eskeldson (HE); Ramona
 James Howard Evans (C); Barnard
 William G. Evans (CE); Barnard
 *Verna Mae Eveleigh (PE); Hoisington
 Arthur Edward Everett (CE); Hutchinson
 Wayne Ewing (AA); Beloit
 Sidney L. Falin (IJ); Cleburne
 Joseph Fickel (ME); Chanute
 Edna Elizabeth Findley (M); Manhattan
 Ladek Charles Fiser (PE); Mahaska
 Clella Lula Fisher (HE); Fellsburg
 *Howard Roland Fisher (AA); Hays
 William McAvoy Fitzgerald (ME);
 Goodland
 Max Charles Fleming (EE); Paola
 George M. Fletcher (Ag);
 Pawnee City, Neb.
 Elsie Louise Flinger (IJ); Wichita
 John Sebastian Florell (ArE); Manhattan
 Virginia Forrester (IJ); Manhattan
 Wallace Albin Forsberg (PE); Lindsborg
 *Irene Etta Fox (GS); Junction City
- Ray Leslie Fox (GS); Perth
 Alva Leo Frasher (EE);
 Kings Mill, Tex.
 Chester B. Freeman (Ar); Junction City
 Lloyd Everett Fritzinger (EE); Manhattan
 Howard Leroy Fry (AA); Hope
 Vernon Eugene Frye (AA); Quenemo
 Katherine Idell Fullinwider (HE);
 El Dorado
 Charles Elmore Funk (EE); Iola
 Edgar Daniel Furse (EE); Pleasanton
 Ruth Starkweather Garrison (HE);
 Chanute
 Helen Iola Gates (HE); Iola
 Orville Howard Gates (ME); Seward
 Marion Jennings Gaumer (CE); Oberlin
 Nathan Bartlett Geer (AE); Auburn
 Herschel R. Geiman (EE); Larned
 Miles Wiley George (LG); Wichita
 Ralph Friedley Germann (Ag); Fairview
 Eolia Eunice Gilson (HE); Manhattan
 Theodore Roosevelt Gingrich (CE);
 Garden City
 Charles Eugene Glasco (EE); Emporia
 *Ed Cephas Glover (EE); Coolidge
 Letha Goheen (GS); Oak Hill
 Trilla Bell Goheen (HE); Manhattan
 William Isaac Gorrell (ArE); Onaga
 Edward Lawrence Grafel (ME); Herndon
 George Alex Graham (C); Manhattan
 Ruth Elinor Graham (ApA); Manhattan
 Spencer William Graham (EE); Beattie
 Fred Foster Greeley (ME); Manhattan
 Freda Leila Greer (HE); Marion
 Winston King Grigg (C); Abilene
 Kenneth Duree Grimes (EE); Topeka
 Charles Leonard Gunn (ArE); Great Bend
 Arthur Carroll Hadley (Ar); Wichita
 Lela Mae Hahn (C); Manhattan
 Velma Irene Hahn (PSM); Idana
 Wilma Helene Hahn (GS); Clay Center
 Dale Ewart Halbert (Ag); Abilene
 Cloyce Marvin Hamilton (IJ); Solomon
 Alice Hawkins Hammett (PSM);
 Manhattan
 John Bonar Hanna (Ag); Clay Center
 May Harland (HE); Frankfort
 R. Clare Harner (IJ); Howard
 *Clarence Edmund Harness (CE); Liberal
 Ivan Harold Harris (CE); Manhattan
 *Glen Russell Harsh (ME-1; C-2);
 Oil Hill
 Frank Merle Hartman (ArE); Dodge City
 Vernon Eugene Harvey (CE); Selma
 *Orville I. Haury (AA); Halstead
 William Thomas Havens (EE);
 Manhattan
 Maxine Hawley (PE); Manhattan
 Mary Opal Hay (HE); Parker
 Ralph Carroll Hay (AE); Parker
 Violet Alvina Heer (HE); Manhattan
 Harold Keith Hefling (CE); Manhattan
 John James Heimerich (ArE); Clay Center
 *Robert Bruce Helming (VM); Waukon,
 Iowa
 Ruth Wilhelmina Helstrom (IJ);
 McPherson
 Harold Kingsley Herr (C); Hutchinson
 Frances Ada Hester (ApA); Medicine Lodge
 *Marcelline Murial Hill (GS); Plainville
 Opal Brown Hill (ApA); Manhattan
 Ruth Hill (HE); Guthrie, Okla.
 *Opal Lorene Hoad (HE); Kingsdown
 Harvey Edward Hoch (AA); Alta Vista
 Meryle Hammett Hodges (GS); Manhattan
 Clarence Athel Hollingsworth (Ag); Perry

* Matriculated 1929-'30.

JUNIORS—Continued.

- *Phillip Forrester Hoover (EE); Enid, Okla.
 Gayle R. Hosack (EE); Holton
 John Thomas Hoyne (EE); Salina
 Marie Hughes (C); Salina
 Edythe Grace Huitt (PSM); Talmage
 Raymond P. Hunsberger (CE);
 Mount Hope
 La Verne Elizabeth Huse (GS); Manhattan
 Alice Mary Irwin (PSM); Manhattan
 Percy Jennings Isaacson (PE); Walsburg
 William Bart Jackson (ME); Holton
 *Florence Elizabeth James (HE);
 New England, N. Dak.
 Genevieve Albertine Johnson (C);
 Manhattan
 Raymond Delbert Johnson (C) Washington
 Elmer David Johnston (VM); Pomona
 Geraldine Joan Johnston (PE); Manhattan
 Glenn Vivian Joines (CE); Manhattan
 Dale Vincent Jones (GS); Junction City
 Hugh Jones (Ar); Horton
 Elbert Elvin Karns (AE); Bucklin
 Le Roy Francis Kepley (CE); Chanute
 Wayne Otho Kester (VM); Manhattan
 Clifford Wayne Kewley (AE); Stockton
 Walter Elwood Keyser (EE); Maplehill
 *Martin Murvin Kiger (AA); Washington
 Lawrence Wilford Kilbourne (EE);
 Manhattan
 Paul A. Kindsvater (Ag); Hoisington
 Edna Alma King (HE); Manhattan
 Leslie R. King (CE); Manhattan
 Venice Marie King (GS); Olsburg
 Hester Ellen Kinkead (IJ); Troy
 Willis Francis Kipper (CE); Belleville
 Herbert H. Kirby (EE); Toronto
 Dorothy Elizabeth Klein (IC); Topeka
 Louis Dunham Kleiss (ChE); Coffeyville
 Millard Paul Knock (GS); Independence
 Fritz Gustave Knorr (PE); Manhattan
 *James Gerard Koch (ChE); St. Joseph, Mo.
 Clarence Walter Koerner (CE);
 Wellington
 Norma Evelyn Koons (HE);
 Sharon Springs
 Elsa Dorothy Krause (HE); Manhattan
 Menno Philip Krehbiel (EE); Moundridge
 Alden Glen Krider (Ar); Newton
 Lawrence Gilbert Kurtz (GS); Alton
 *Edgar Colberg Laird (CE); Wichita
 Alonzo Lambertson (Ag); Fairview
 Charles Herbert Lantz, Jr. (GS);
 Manhattan
 *Thelma Lois Large (PE); Protection
 Edna May Lawhead (GS); La Cygne
 Lesta Lolita Lawrence (M); Abilene
 Daniel Noel League (C); Wetmore
 Eugenia Leighton (HE); West Helena, Ark.
 *Mildred Woodcock Leker (HE); Manhattan
 Pauline Ruth Lengquist (HE); Manhattan
 He'en Adams Lentz (PSM); Everest
 Miles Corrington Leverett (ChE);
 Bartlesville, Okla.
 Lawrence Lewis (EE); Hays
 John Eugene Ley (EE); Sharon Springs
 *Helen Marie Lichty (HE); Sabetha
 Alice Charlotte Linn (HE); Clyde
 Jack Harris Linscott (EE); Manhattan
 Eugene Clifford Livingston (ME);
 Hutchinson
 Esther Emma Lobenstein (HE);
 Edwardsville
 George Wayne Long (IJ); Burlington
 Edith Marian Loomis (PSM); Osborne
 Charles Thomas Lorenz (C); Salina
 Forrest Coniver Love (VM); Manhattan
 Hugo Frederick Lucas (EE); Dodge City
 Harold Frederick Luffel (C); Fort Scott
 *Marjorie Nelson Lyles (PE); Saffordville
 William Jesse Lynn (Ag); Centralia
 William D. Lyon (Ag); Faulkner
 *Joan Berry Lytle (IJ); McPherson
 Arla Amelia McBurney (GS); Manhattan
 Alice Alene McCammon (IJ); Mankato
 *Edith Louise McCauley (ApA); Coldwater
 Agnes Helen McClaren (PSM); Galena
 Arthur Jesse McCleery (EE); Esbon
 Alice Louise McC'elland (IJ); Topeka
 *Sarah Katherine McC'intock (GS); Wichita
 Harriet Elizabeth McConnell (HE);
 Cherryvale
 *Raynard Edward McCormick (ME);
 Fort Scott
 *R. Stewart McCoy (AA); Cedarvale
 Mayme V. J. McCrann (GS); Manhattan
 Mary Elizabeth McCroskey (HE);
 Junction City
 Eugene Porter McCulley (EE); Beloit
 Marshall S. McCulloch (C); Shawnee
 Orpha Olive McDaniels (HE); Scottsville
 *Zu.a Gladys McDonald (HE); Grantville
 Hiram Temple McGehee (IC); Manhattan
 *Elizabeth Warren McGeorge (GS);
 Wellington
 Arthur Sidney McIntire (ME);
 Burlingame
 E. Pearle McKinney (PSM); Junction City
 Gladys Vera McKown (HE); Manhattan
 Conway McLeavy (C); Dwight
 Leona Irene Maas (PSM); Alma
 *Christine Louise Madison (HE);
 Columbia, Mo.
 Dorothy LaVern Magee (GS); Goddard
 Helen Lovine Magee (PE); Goddard
 Carl Jacob Majerus (VM); Falls City, Neb.
 Vera Pearle Marietta (HE); Cawker City
 *Minerva Emma Marlow (GS); Manhattan
 D. Madge Marteney (ApA); Hutchinson
 Howard Eugene Martin (Ar); Eskridge
 Jess Roland Mathias (CE); Manhattan
 *Marjorie Agnes Mauzy (C); Atchison
 Victor Harold Meseke (CE); Manhattan
 Alvin D. Meyer (ME); Haven
 Alfred Maxwell Meyers (CE); Merriam
 Harold Spencer Miller (ME); Kansas City
 Loyal J. Miller (AA); Lebanon
 Marion Francis Miller (ME); Norton
 *Merna Beatrice Miller (HE); Kansas City
 Ruth Christine Miller (C); Palco
 Ruth Marie Miller (ApA); Minneapolis
 Walter Ford Mitchell (C); Manhattan
 Walter Rankin Mitchell (EE); Salina
 Olney Merle Mohny (AE); Sawyer
 Cloris Rex Molineux (EE); Goff
 Vivian Monson (C); Lindsborg
 Frederick Thomas Moore (ArE); Manhattan
 *Jay Fred Morgan (AA); Ottawa
 Olive Elfa Morgan (GS); Manhattan
 *Thomas Daniel Morgan (CE);
 Kansas City, Mo.
 *Frances Morlan (PSM); Courtland
 Marjorie Eleanor Moulton (HE); St. George
 *William Gottlieb Munz (ChE); Hudson
 Clyde Allen Munell (AA); Hopewell
 Charles Wilbur Naylor (EE); Burr Oak
 Ruby Eva Nelson (PE); Jamestown
 James Neville (CE); Coffeyville
 Clyde Newman (EE); Holton
 William Granville Nicholson (Ag); Neal
 James Andrew Nielson (AE); Spearville
 Alex Nigro (C); Kansas City
 Leon Fred Nixon (EE); Manhattan

JUNIORS—Continued.

- Lawrence Bertram Noble (ME); Stockton
 *Julia Anna Noell (GS); Syracuse
 Orville Arthur Noell (EE); Hartford
 Dale Leora Norris (EE); Raymond
 Dorothy Elaine Norris (C); Raymond
 Earl Conley North (EE); Marlow, Okla.
 George David Oberle (Ag); Carbondale
 Dorothy Lydia Obrecht (HE); Topeka
 Ida Elizabeth Osborn (GS); Clifton
 Marvin George Ott (EE); Madison
 *Harold Owen (ChE); Douglass
 Robert Joseph Pafford (EE); Salina
 Edith Alice Painter (HE); Meade
 Clement C. Parrish (CE); Radium
 Gwendolyn Anne Paslay (ApA); Manhattan
 Lloyd Everett Patterson (EE); St. John
 Raymond Patterson (GS); Morrowville
 Nina Dorothea Paulsen (HE); Onaga
 Paul Eugene Pearson (C); Concordia
 *Albert Arnold Pease (AA); Fort Scott
 Laurence Adolph Peck (AA); Soldier
 Mary Aleta Peck (GS); Council Grove
 *Dorothy Weatherly Peery (GS); El Dorado
 Helen Jane Pembleton (GS); Ness City
 Alice Elizabeth Peppiatt (ApA); Ellsworth
 Lewis S. Perkins (Ag); Argonia
 Paul Chadwick Perry (ME); Manhattan
 *Eugene Forrest Peterson (EE); Yates Center
 Walden Richard Peterson (GS); Topeka
 Charles A. Pine (CE); Coffeyville
 *Mary Irene Piper (HE); Garden City
 Frank Leslie Platt (IJ); Davenport, Iowa
 Wilfred Emerson Platt (PE); Manhattan
 Lucena Margaret Plummer (IJ); Newton
 *Barbara Jean Pollock (GS); Topeka
 Dorine Helen Porter (HE); Stafford
 *Mildred Aileen Porter (HE); Mount Hope
 Opal Mae Porter (HE); Stafford
 Frances Edna Potter (PSM); Natoma
 Frederick Gerald Powell (EE); Frankfort
 Horace Pierce Powers (AA); Junction City
 Frank B. Prentup (PE); Fort Riley
 Nellie Lucile Pretz (HE); Irving
 Clayton John Price (VM); Osage City
 Delmas Eugene Price (C); Wakefield
 Willet Jesse Price (VM); Liberty
 Don Glenn Purcell (ArE); Wichita
 Mildred Emily Purcell (PE); Manhattan
 Dorothy Raburn (GS); Manhattan
 Helen Marie Randall (PSM); Ashland
 Effie Grace Rasher (PE); Solomon
 *James Chalmers Rayburn (CE); Newton
 Edris William Rector (C); Manhattan
 Willard Virgil Redding (Ag); Coffeyville
 Albert Leonard Reed (ArE); Cassaday
 James Kessi Reid (ME); Manhattan
 Earl Milton Regier (ChE); Moundridge
 Niles Franklin Resch (Ar);
 Independence, Mo.
 *S. John Rever (EE); Parsons
 Alice Lou Rhea (HE); Larned
 Claude Marion Rhoades (ArE); Newton
 Harold Duane Richardson (GS); Long Island
 Thelma Gladys Rickey (GS); Phillipsburg
 Clark A. Rife (CE); Anthony
 Clarence Adam Rinard (Ar); Salina
 Esther Joanne Rockey (IJ); Manhattan
 Steven Samuel Roehrman (GS); White City
 Mabel Elsa Roepke (HE); Manhattan
 Ovella Mary Fay Rogge (HE); Muscotah
 Fred Madison Root (Ar); Medicine Lodge
 Everett Laurence Ross (EE); Ashland
 Vernal Charles Rowe (C); Dighton
 Lloyd Findley Roy (CE); Wiley
 Iva Salinda Rust (HE); Junction City
 Mabel Verbina Ruthi (HE); Bloomington
 Robert Jacob Rychel (EE); Downs
 Milton Ernest Saffy (AA); Alma
 Pauline Samuel (PE); Manhattan
 Mart Benjamin Sanders (EE); Marion
 Harry Clinton Sawin (EE); Waterville
 *Flossie Evelyn Sawyer (HE); Kensington
 Matilda Amelia Saxton (PSM); Fort Scott
 Venita Grace Shade (PSM); Manhattan
 *Donald Frederick Schafer (C); Fort Scott
 Dorothy Pauline Schermerhorn (IJ); Wilson
 Alva Marion Schlehuder (Ag); Durham
 Maxine Sophia Schorer (IJ); Clyde
 Elmer Philip Schrag (AA); Moundridge
 Ebur Samuel Schultz (Ag); Miller
 *Hildred Schweiter (GS); Wichita
 James Foster Scott (IJ); Manhattan
 *Lucille Scribner (C); Hutchinson
 Fred Andrew Seaton (IJ); Manhattan
 Mildred Elaine Sederlin (GS); Scandia
 Roy Nelson Selby (AE); Manhattan
 Gertrude Louise Seyb (HE); Pretty Prairie
 Clyde Shade, Jr. (IJ); Ottawa
 *David Marion Shannon (C); Iola
 Karl Shaver (EE); Cedarvale
 *Laurena Bertha Sheetz (HE); Wichita
 Estella Bernice Shenkel (GS); Geneseo
 Nina Sherwood (GS); Talmo
 Joe Henry Shepek (EE); Wayne
 Leota Isabella Shields (ApA); Ramona
 George Raymond Shier (AE); Gypsum
 Harold Henry Shomber (EE); Ottawa
 Leo Charles Short (ME); Norton
 Curtis Daniel Sides (EE); Lamar, Mo.
 Dorothy Elizabeth Simpson (Ar);
 Colorado Springs, Colo.
 *Frances Harriet Simpson (IJ); McPherson
 Elvon Gilbert Skeen (PE); Eskridge
 Mina Mae Skillin (PE); Frankfort
 Helen Louise Sloan (IJ); Hutchinson
 Elbert Wendell Smith (C); Russell
 Francis Glenn Smith (C); Potwin
 *Harold Larkin Smith (ChE); Parsons
 *Helen Mildred Smith (IJ); Augusta
 Melvin Ernest Smith (EE); Concordia
 Roy Blanchett Smith (PE); Herington
 Dale Smith Snider (C); Abilene
 Maynard Harold Solt (IC); Manhattan
 Don Harvey Spangler (VM); Stanton, Neb.
 Bessie Loretta Sparks (HE); Kingman
 Raymond Guy Spence (C); Fairbury, Neb.
 Marie Elizabeth Sperling (GS); Manhattan
 Richard Kenneth Stahl (C); Kansas City
 Clifford A. Standley (EE); Lucas
 *Mable Anna Steiner (HE); Moundridge
 Harlan Bennett Stephenson (LG); Iola
 William Emil Steps (CE); Halstead
 Clarence Walter Stewart (CE); Coldwater
 Eva Almeda Stewart (GS); Manhattan
 Hugh Leonard Stewart (AA); Vermillion
 James Leslie St. John (Ag); Louisville
 Esra Ervin Stockebrand (AA);
 Yates Center
 Leah Angeline Stout (HE); Peabody
 Bennett Thorne Stryker (CE); Waterville
 Richard William Stumbo (Ag); Bayard
 Dale Suplee (VM); Council Grove
 Cleon Orel Tackwell (PE); Manhattan
 Philip Jesse Tatman (CE); Lucas
 Bruce Ross Taylor (Ag); Alma
 Harold Everett Taylor (IJ); Clay Center
 *John George Taylor (GS); Parsons
 Katherine Edna Taylor (HE); Chapman
 Lot Forman Taylor (AA); Ashland
 *Earl D. Tefertiller (ChE); Wichita

* Matriculated 1929-'30.

JUNIORS—Concluded.

- Howard Everett Tempero (GS); Broughton
 *Robert Eldon Teter (ME-1; GS-2); El Dorado
 *Vera Charlotte Thackrey (GS); Lyons
 Elmer Howard Thom (EE); Oakley
 Dale Alfred Thomas (IJ); Ellsworth
 Jay Humphrey Thomson (C); Emporia
 Clyde Francis Thudin (EE); Mulvane
 Margaret Lucille Titus (HE); Council Grove
 Esther Rozella Toburen (HE); Cleburne
 Glenn Edwin Toburen (M); Cleburne
 Wayne Tolley (EE); Delphos
 William Gilbert Towler (PE); Topeka
 Ruth Anna Tredway (GS); La Harpe
 Harold Everett Trezell (EE); Belle Plaine
 Alice Tribble (GS); Circleville
 Elliott Rodney Trull (VM); Padonia
 Selma Elin Turner (GS); Manhattan
 Clarence Correll Uhl (CE); Manhattan
 *Samuel George Unger (ChE); El Dorado
 Luella Cone Vanderpool (HE); Meade
 Helen Louise Van Pelt (PE); Beloit
 Olive Elsie Van Pelt (PSM); Beloit
 *Catherine Vaughn (HE); Garnett
 John Lee Vaupel (GS); Manhattan
 Richard George Vogel (C); Stuttgart
 Ralph Francis Vohs (PE); Osawatomic
 Ralph Richard Wagner (Ar); Emporia
 Juanita Kathryn Walker (GS); Valley Falls
 Otis Harold Walker (CE); Junction City
 Vera Isabelle Walker (IJ); Wakeeney
 Vesta Estelle Walker (IJ); Wakeeney
 Andrew Bernard Walsh (ME); Kansas City
 Chester Joseph Ward (Ag); Osawatomic
 John Robert Warner (EE); Whiting
 Rodney Otto Warner (EE); Manhattan
 Frederick Henry Warnken (GS); Hutchinson
- Aline Wegert (GS); Rice
 Margaret Wegert (GS); Rice
 Kenneth Albert Wehl (AE); Scottsville
 Mabel D. Weir (HE); Newton
 F. Henry Weirick (CE); Olathe
 Ruth Weisser (HE); Paxico
 Verne Elbridge Wesley (CE); Eureka
 Frank Loy Westerman (EE); Wamego
 Paul Charles Westerman (IJ); Wamego
 Bernice Elizabeth Weygandt (HE); Keats
 Kenneth Paul White (GS); Kingsdown
 Fay Allan Whiteside (Ar); Neodesha
 Max Wible (ArE); Caldwell
 Ruth Alice Widstrand (GS); Topeka
 Earl LaVerne Wier (Ag); Blue Mound
 Ada Caroline Wiese (GS); Manhattan
 Donald Wiggins (ArE); Lyons
 Gertrude H. Wilber (PE); Belleville
 Jesse Isiah Wilcoxon, Jr. (AE); Ford
 *Leroy Albert Wilhelm (Ag); Arkansas City
 Carl Williams (AA); Dodge City
 Anna Marian Wilson (HE); St. George
 Edward William Wilson (VM); St. George
 Jerome W. Wilson (GS); Ashland
 John Lincoln Wilson (Ag); Geneva
 Martha Alice Wilson (C); Blue Rapids
 Herbert L. Winston (EE); Stilwell
 Floyd Gerald Winters (AE); Oswego
 George Eugene Wise (EE); Wichita
 Chester Aaron Wismer (Ag); Pomona
 Beatrice Woodworth (HE); Corning
 Clair M. Worthy (CE); Wetmore
 Dorwin Clair Wright (Ag); Bronson
 Zint Elwin Wyant, Jr. (CE); Topeka
 Clifford Richard Yardley (EE); Hutchinson
 James J. Yeager (Ag); Bazaar
 Erville Elmo Young (ArE); Hutchinson
 *Josephine Young (PE); Junction City
 Flor B. Zapata (GS&V); Lawrence
 Grace Irene Zeller (HE); Manhattan
 Frank Zitnik (Ag); Scammon

SOPHOMORES

- Joseph Shirley Adams (Ag); Oak Mills
 Donald Adair Adell (CE); Manhattan
 Clarence Edward Ainsworth (CE); Elmo
 Vivian Forestine Albright (HE); Netawaka
 Merle Walter Allen (GS); Manhattan
 Ruth L. Allen (IJ); Parsons
 Sam Edward Alsop (Ag); Wakefield
 Clare Kenneth Alspach (C); Wilsey
 *Dallas Dale Alsup (Ag); Frontenac
 Alpha Harold Ames (Ar); Corbin
 *Frances Ida Amstutz (GS); Halstead
 Mabel Caroline Amthauer (HE); Dwight
 Harold Lee Anderson (IC); Manhattan
 John Edmond Anderson (IC); Belvue
 Lewis Keith Anderson (Ag); Cleburne
 Joye Ansdell (HE); Jamestown
 *John Lawrence Armstrong (ArE); Salina
 Omo Arthur Attwood (IC); Randolph
 William Henry Auchard (CE); Manhattan
 Elden LeRoy Auker (PE); Norcatour
 Herbert Willard Avery (VM); Wakefield
 Donald Keith Ayers (EE); Manhattan
 Walter Worth Babbit (Ag); Willis
 James Lister Baird (Ag); Wellsview
 *Dorothy Attal Baldwin (GS); Manhattan
 Dorothy Gertrude Barlow (HE); Manhattan
 Donald Wynne Barnett (Ag); Gallatin, Mo.
 Everett Chlelen Barnett (CE); Manhattan
 Bertha Gesine Barre (HE); Tampa
 Vernon C. Bates (ArE); Garden City
- Raymond William Bebermeyer (AA); Abilene
 La Verne Dwight Behnke (Ag); Bushton
 *Mildred Eleanor Beil (ApA); Bavaria
 John Gregory Bell (Ag); Atchison
 Lawrence Marion Bell (ME); Selden
 Lawrence Charles Benne (CE); Washington
 *Earl Benjamin Benner (Ag); Weston, Mo.
 Jay Russell Bentley (Ag); Ford
 Esto Ray Berkey (EE); Hutchinson
 Dalys Lewis Berry (VM); Wilsey
 Lynn Nathan Berry (CE); Manhattan
 William Henry Berry (CE); Attica
 Martha Pearl Betz (HE&N); Enterprise
 Winifred Bickel (IJ); Kansas City, Mo.
 John Milan Biddison (EE); Manhattan
 Mary Katherine Bird (Ar); Hays
 *Opal Eleanor Birt (HE); Beloit
 Dean Francis Bishop (ME); Kendall
 Elmer Carson Black (PE); Utica
 *John Alexander Black (CE); Galena
 Ensly Dee Blackburn (CE); Anthony
 Philip Carl Blackburn (IC); Herington
 Gordon Ingraham Blair (C); Junction City
 Robert Overall Blair (Ag); Coleman, Tex.
 *Maxine Rose Blankenship (HE); Downs
 Major Guy Bliss (CE); Minneapolis
 Nellie J. Bloom (HE); Liberal
 Benny Wayne Blosser (ME); Caldwell
 Loyd Edwin Boley (VM); Topeka
 *Grace Louise Booker (HE); Clay Center

* Matriculated 1929-'30.

SOPHOMORES—Continued.

- *George Wiley Bookless (ME); Nickerson
George Illingworth Boone (C); Manhattan
*Astrid Anna Borg (GS); Marysville
Vera Theresa Bowersox (Ar); Great Bend
*Mildred Whitehead Bowles (HE); Walnut
Neil Duane Bowman (Ar); Pawnee Rock
*Theodore Edmond Bowman (Ar);
Denver, Colo.
Albert Henry Boyer (EE); Welda
Fred Ewing Brady (EE); Topeka
Howard Albert Brand (Ar); McPherson
Walter E. Brandenburg (AA); Riley
Agustin Younse Breeden (GS); Manhattan
Clarence Eckhart Brehm (Ar); Wichita.
Justina Veronica Brening (ApA); Burns
*Noble Elmer Brewer (EE); Abilene
Alice Katherine Brill (GS); Westmoreland
Carol Mildred Briscoe (HE); Cambridge
Mary Esther Brittain (HE); Atchison
Ruthford E. Brodie (ME); Manhattan
Arthur Raymond Brodine (EE); Salina
Robert Vernon Brown (EE); Manhattan
Verdis U. Brown (ME); Larned
Barbara Brubaker (GS); Manhattan
Aileen Virginia Brunson (IJ); Dellvale
John Arthur Bryan (C); Leoti
Leslie Matthew Bryson (ChE); Abilene
Margaret Iola Buck (ApA); Derby
*Burnill Howard Buikstra (GS); Cawker City
Gladys Ruth Buikstra (HE); Manhattan
Vance L. Burch (C); Manhattan
Virgil Arthur Burfield (CE); Lyons
Harry Dale Burkholder (CE); Wamego
Leon Pennington Burris (C); Chanute
Scott Burton (EE); Burlingame
Elizabeth Doris Butrum (HE); Holton
Floyd William Caldwell (CE); Parsons
Harold Vanevery Carlson (ME); Utica
*Hugo Homer Carlson (CE); Lindsborg
Twila Marie Carmony (HE-1; GS-2);
Manhattan
Mary Latta Carney (C); Manhattan
John Clarence Carter (Ag); Bradford
Alfred Louis Casey (AE); Corning
*Mildred Castleman (HE); Junction City
Boyd Ralph Cathcart (Ag); Winchester
Margaret Brooks Chaney (GS); Manhattan
*Leland Randall Chapin (GS); Glasco
James Percy Chapman (IJ); Manhattan
Carl James Chappell (CE); Republic
John Bertram Cheshire (VM); Hopkins, Mo.
Edwin Roy Chesney (IJ); Wichita
Ida Margaret Chitwood (HE); Meriden
Leonard William Christal (Ag); Manhattan
Mary Kathryn Chronister (C); Topeka
Raymond William Cilek (C); Jennings
*Erick R. Claassen (ME); Newton
Virgil Howard Clark (VM); Montrose
*Marietta Cleland (PE); Whiting
Donald C. Close (EE); Belleville
Beth Cole (PSM); Norton
Maxine Alice Cole (C); Norton
Dema F. Coleman (HE); Manhattan
Lester Estel Collier (FME); Ardmore, Okla.
Ruby Leona Colony (IJ); Manhattan
Margaret Louise Colver (PSB & O);
Manhattan
Murray Devine Comer (EE); Muscotah
Helen Josephine Cook (HE); Monument
Morris Jackson Coolbaugh (CE); Natoma
Lloyd Marion Copenhaver (LG); Manhattan
Lucile Maude Correll (PSM); Manhattan
James Delos Corrigan (C); Holyrood
Mary Josephine Cortelyou (GS); Manhattan
Sammie Prentis Cory (EE); Dodge City
Lucile Marie Costello (HE); Carlton
Grant Fuller Cottler (VM); Andover
Ferrol Eugene Cowan (C); Nickerson
Walter Ellis Crabb (Ar); Lebanon
Mary Ellen Crabbe (IJ); Manhattan
Dale Everett Crangle (CE); Mankato
Marian Crocker (IJ); Manhattan
Henry Oliver Cronkite (PE); Belle Plaine
Alvin Warren Crooke (IJ); Great Bend
Richard Jerome Crowley (Ar); Manhattan
*Helen Jennings Culbertson (GS);
Kansas City, Mo.
Blanche Irene Curry (HE); Winchester
Faigh Ruth Daigh (ApA); Ashland
Sterle Ernest Dale (Ag); Protection
Ward Edward Dale (ME); Topeka
William Wesley Daniels (C); Ellsworth
Roy Emanuel Danielson (EE); Manhattan
*Georgia Maree David (HE);
Bartlesville, Okla.
George Hughes Davis (C); Manhattan
Hilma Ruth Davis (HE); Manhattan
*Louise Davis (HE); Nashville, Tenn.
Thomas John Dawe (AA); Abilene
*Aryles Howard Dawson (AE); Tulia, Tex.
Ben Harrison Dean (VM); Manhattan
Loua Marjorie Dean (GS); Manhattan
Phares Decker (AG); Holton
Ruth Ernestine DeWitt (HE);
Medicine Lodge
Robert C. Dial (CE); Manhattan
Marsden Hall Dice (Ar); Wichita
Tom David Dicken (Ag); Winfield
B. A. Dillard (PE); Manhattan
Charles Eugene Dimon (VM); Manhattan
Dale D. Dixon (CE); Norcatour
Dick Albert Dodge (AA); Manhattan
Iris Roberta Dodson (PSM); Silt, Colo.
Gerald Michael Donahue (EE); Ogden
Dorothea Helen Doty (HE); Cunningham
Gladys Hope Dowd (IJ); Bayneville
Dorothy Downie (PE); Grantville
Lynn Emerson Drake (C); Natoma
Truman Ben Drury (EE); Burden
Robert Watson Dudley (PE); Manhattan
Junia Louise Duffin (GS); Kingman
Ethel Louise Dunn (HE); Oskaloosa
James Phil Dunn (CE); Liberal
Helen Gertrude Durham (M); Manhattan
Keith Barber Dusenbury (Ag); Anthony
Orin Dutton (CE); Jamestown
Philip William Dutton (CE); Burlingame
Max Leon Eaton (ChE); Colby
Ethel Amelia Eberhart (Ar); Topeka
*Rudolph Eugene Eberle (CE); Emporia
Virginia Edelblute (PE); Manhattan
Mildred Rae Edlin (HE); Herington
Harold Edmondson (FME); Manhattan
Anna Marie Edwards (GS); Athol
Richard Laurence Edwards (ME); Meade
Milton Ehrlich (C); Marion
Oscar Sievert Ekdahl (Ar); Manhattan
*Margaret Virginia Elder (HE); Hutchinson
Glenn Leslie Ellithrope (AE); Russell
James Clinton Ellsworth (Ag); Cherryvale
*John W. Enns (EE); Newton
*Dorothy Edith Ericson (GS); Salina
Carl Hugh Errington (Ag); Ruleton
Grace Elizabeth Eustace (GS); Wakefield
Paul Eugene Fairbanks (PE); Topeka
Laura Virginia Fairman (IJ); Manhattan
Verona Anna Fark (GS); Greensburg
James Severy Farmer (EE); Pratt
Emma Lucile Farris (HE); Winchester
Harold Ralph Fatzer (AA); Fellsburg
Hubert Louis Fatzer (AA); Fellsburg
Forrest Malcolm Faulconer (IC);
Clay Center
Violet Sarah Featherston (ApA); Quenemo
Gerald Emerson Feldhausen (AE);
Frankfort
G. Jean Ferguson (HE); Manhattan

SOPHOMORES—Continued.

- Elsie Marie Fiechter (C); Robinson
 Elma Viola Filson (M); Scott City
 Eva Merle Filson (HE); Scott City
 Alice Louise Fincham (IJ); Pratt
 Lendall Kiple Firth (VM); Manhattan
 Ronald Walter Fleck (EE); Beloit
 Donald Murlin Flippo (AA); Abilene
 Wyona Myrtle Florence (IJ); Manhattan
 Robert Sheldon Florer (CE); Marion
 Oliver Elroy Flory (VM); Great Bend
 Max Frank Fockele (C); Ottawa
 *Lyle A. Foland (ME); Coffeyville
 Kale Max Fones (AE); Kansas City, Mo.
 *Marjorie Forbes (HE); Columbus
 Anthony Dominic Fornelli (CE); Cherokee
 Curtis H. Foss (EE-1; C-2); Manhattan
 Leta Orvillene Foster (HE); Penalosa
 Ferne Murray Frashier (PSM); Manhattan
 Frank Ryder Freeman (Ag); Kirwin
 *Sidney Maria Freeman (HE); Manhattan
 Keith Gerald Friel (C); Manhattan
 Edith Martha Fritz (HE); Manhattan
 Frank B. Fry (AA); Eureka
 Leonard Elvin Garrison (C); Manchester
 John Glynn Garver (AA); Abilene
 Elizabeth Gaston (IJ); Philadelphia, Pa.
 *Fern Emeline Gaston (C); Wakefield
 John Lester George (VM); Mulberry
 Bernard Kenneth Geraghty (EE); Selden
 Robert Clyde Getty (ChE); Winchester
 Leah Myrtle Gibbs (IJ); Spearville
 Clarence Byron Gibson (IC); Douglass
 *Harold Gibson (EE); Altoona
 George Adamson Gillespie (Ag); Welda
 *Kathryn Gillihan (IJ); Gallatin, Mo.
 He'en Glunt (ApA); Garrison
 William Phillip Glunt (GS); Garrison
 Harold Alvin Goff (Ag); Manhattan
 Esther Isabelle Gould (HE); Manhattan
 Grace Gould (GS); Beloit
 *Lois Alta Graham (HE); Peabody
 Gerald Goodale Green (C); Norton
 Marian Mildred Greene (ApA); Lincoln
 Bertie Lester Greer (GS); Manhattan
 Ada Irene Gregory (PE); Woodston
 Howard Henry Gregory (CE); Ellsworth
 George Robbins Grimes (EE); Jetmore
 *Lloyd William Grothusen (Ag); Ellsworth
 Orrin F. Grover (IC); Manhattan
 Dorothy Belle Gudgell (IJ); Edmond
 Lloyd Oscar Gugler (Ag); Woodbine
 *Frank Wilbanks Gurney (CE);
 Independence
 Hazen A. Gustafson (EE); Abilene
 Paul Anton Haas (EE); Kansas City
 Lester Theodore Hagadorn (CE);
 Manhattan
 Charles Tomas Hall (Ag); New Albany
 Lyman Monroe Hall (C);
 Downers Grove, Ill.
 Thomas Eliot Hall (Ag); Manhattan
 William Hall (ME); Lindsborg
 *Helen Margaret Halstead (GS); Manhattan
 Lewis G'emm Halverstadt (EE); Oxford
 Georgia Margaret Hamm (ApA); Humbolt
 Homer Joshua Hammond (EE); Osborne
 Frances Pearl Hampshire (HE); Manhattan
 *Virgiline Wilma Hanes (ApA); Augusta
 Carl Hansen (ME); Strong City
 Oscar Miles Hardtarfer (AA); Lawrence
 Harold Byron Harper (Ag); Manhattan
 Harold Percy Hartzell (VM); Manhattan
 *Ira Berton Haskett (EE); Parsons
 Russell Hastings (Ar); Atchison
 Louis Ernest Hay (EE); Clay Center
 Raymond William Hayes (VM);
 Manhattan
 David A. Hays (IJ); Manhattan
 Lowell Doan Hazlett (EE); Bloomington,
 Neb.
 Hal Thomas Heath (C); Enterprise
 Achille Charles Hebert (EE); Boley, Okla.
 Ivalee Beryl Hedge (HE); Manhattan
 Allen Richard Heidebrecht (EE); Buhler
 Alfred Helm (Ag); Chanute
 Willard Sandman Hemker (EE);
 Great Bend
 *Charles T. Herring (Ag); Tulia, Tex.
 Lynn Bandy Hicks (ME); Oil Hill
 Inez Mildred Hill (HE); Topeka
 Harry Wilson Hinckley (PSB&O); Barnard
 Walter Clarence Hinkle (AE); Lucerne
 *William Haden Hobbs (CE); Oil Hill
 Esther Elzena Hobson (PE); Kingman
 Melvern Eugene Hodgson (VM);
 Hutchinson
 *Robert Lee Hodshire (ME); Coffeyville
 Raymond Kenneth Hoefener (ArE);
 Leavenworth
 Willard Emmerson Hoffman (AA); Hope
 Loretta Alberta Hofman (HE); St. George
 Alfred Arnold Holmquist (CE); Manhattan
 Zaddock Wayne Hook (Ag); Manhattan
 Otis Horchem (C); Ransom
 Seward Ellis Horner (GS); Abilene
 Otis Fearing Hornish (EE); Bucklin
 Sydney Will Hornsby, Jr. (VM);
 Manhattan
 Floyd James Hoss (AA); Potwin
 Alvin Albert Hostetler (C); Hutchinson
 Helena Mae Hotchkiss (C); Concordia
 DeWitt Clinton Houck (AA); Americus
 Ruth Vivian Houghton (HE); Jamestown
 *James William Howard (IJ); Douglass
 Helen Phebe Howe (HE); Stockdale
 Genevieve Loban Hoyt (IJ); Manhattan
 Adolph Rudolph Hraba (FME);
 East St. Louis, Ill.
 Helen Mary Hughes (GS); Manhattan
 Edwin Louis Hulland (ME); Hollister, Mo.
 Fred Huntington (CE); Eureka
 Lloyd Wendling Hurlbut (AE);
 Sylvan Grove
 James Lawrence Hurley (CE); Aurora
 Velma Good Huston (HE); Manhattan
 Adelaide Hutter (C); Cherryvale
 Kermit Roosevelt Huyck (AA); Morrowville
 Harold Thomas Hyde (ChE-1; C-2);
 Wichita
 Kenneth Vernon Ingle (CE); Caldwell
 Luther Arthur Jacobson (Ag); Horton
 Pearl Elizabeth Jahnke (HE); Leonardville
 Leila Grace James (HE); Kansas City, Mo.
 Paul Leslie Jameson (Ag); Garrison
 *Amy Eva Jasperson (GS); Colby
 George Henry Jenkins (EE); Carthage, Mo.
 Elmer Roy Jenson (EE); Herington
 John Jay Jewett (CE); Halstead
 Earnest Mason Joerg (ArE); Randall
 Earl H. Johnson (AA); Norton
 Herbert Galloway Johnson (GS); Larned
 *James Tobin Johnson (C); Solomon
 *Joseph Claude Johnson (C); Russell
 Naomi Marie Johnson (HE); Oskaloosa
 Roland Justin Johnson (ME); Marysville
 Vern Waldo Johnson (ArE); Salina
 Winifred Laura Johnson (HE); Frankfort
 Zara Walter Johnson (C); Beeler
 John Hoffman Johtz (C); Abilene
 Anna Baker Jones (HE); Frankfort
 Elmo Elder Jones (CE); Manhattan
 *Frances Jane Jones (C); Kansas City

SOPHOMORES—Continued.

- Louise Emma Jones (GS); Manhattan
 Mildred Irwin Jones (C); Clay Center
 Robert Reynolds Jones (GS); Clifton
 Taylor L. Jones (Ag); Garden City
 Wayne Le Roy Jones (AE-1; AA-2);
 Talmage
 William Laurie Jones (VM); Manhattan
 John Willis Jordan (Ag); Claflin
 Paul Nick Jorgensen (EE); Stockton
 Mildred Bernice Julien (C); Wamego
 William J. Justice (ME); Olathe
 John Joseph Kackley (CE); Burrton
 Mildred Ruth Kadel (HE); Victor
 *Frank Kolm Keinoth (Ar); Emporia
 John Howard Kelly (C); Mayetta
 Lonnie Worth Kemper (EE); Wichita
 *Goldie Merle Kennedy (ApA); Macksville
 George Raymond Kent (AA); Wakefield
 Russell Anthony Kern (GS); Junction City
 Oliver Willard Kershaw (AA); Garrison
 Keith James Kimball (AA); Nickerson
 Pattie Margaret Kimball (GS); Manhattan
 Tom Russell Kimball (GS); Manhattan
 Fay Kimes (EE); Dodge City
 Claude Lewis King (Ag); Olsburg
 George Wilson King (ME); Manhattan
 Mildred Kingsburg (PE); Herington
 Howard Levasseur Kipfer (CE); Manhattan
 Arthur Elliott Kirby (EE); Chanute
 William Goodman Kirby (CE); Toronto
 Lawrence Dee Kirkman (C); Hays
 *Roy Charles Kirkpatrick (EE); Iola
 Norbert Julius Klinge (EE); Topeka
 Harold Kneeland (C); Council Grove
 *James Raymond Knox (CE); El Dorado
 Benjamin Christ Kohrs (AA); Dillon
 Otho Merton Koontz (C); Jetmore
 Al Joseph Koster (ME); Manhattan
 Edwin Kotapish (GS); Irving
 Fred Short Kruger (Ag); Holton
 Theodore Andrew Kurtenbach (VM);
 Lindsay, Neb.
 Dorothea Annette LaFollette (IJ);
 Manhattan
 *Malcolm Laman (GS); Manhattan
 *Julia Sirena Lamb (C); Blue Rapids
 Rachel Joy Lamprecht (IJ); Manhattan
 Florence Mary Landrum (GS); Effingham
 *Harold Melvin Lang (GS); Winfield
 *Benjamin Reight Lantz (LA); Salina
 Ernest Ira Largent (C); Oak Hill
 Frances Katheryn Marie Larson (HE);
 Smolan
 John Russell Latta (Ag); Holton
 Minnie Marie Laue (HE); Lyndon
 Philip Ott Lautz (EE); La Junta, Colo.
 Howard Kenneth Learned (IC); Plevna
 Freda Nixon Leasure (GS); Topeka
 Olin Zebediah Leasure (ME); Boicourt
 Carolyn Alice Leonard (HE); Coolidge
 Murray Leshner (Ar); Manhattan
 Velma Liles (HE); Kingsdown
 Elizabeth Maris Lloyd (GS); Leavenworth
 *Nina Mary Lodge (HE); Wellington
 Carlton Edward Logan (CE); Quenemo
 Edward Wallace Lohman (IJ); Clay Center
 John Roger Long (ChE); Abilene
 Evelyn E. Longren (GS); Leonardville
 Harley Lawrence Lowe (ME); Powhattan
 Gilbert Victor Ludeman (EE); Anthony
 Arthur Conrad Lundgren (EE); Osage City
 William Harold Lundry (ME); Arlington
 Sumner V. Lyons (GS); Lucas
 Warren Peer Lyttle (EE); Council Grove
 James Andrew McBride (CE); Seneca
 Mildred Katherine McBride (HE); Boyle
 John Everett McBurney (C); Manhattan
 Ted Roosevelt McCandless (Ag); St. John
 A. Lucile McClaskey (GS); Manhattan
 *George Max McClellan (CE); Glasco
 *Joseph Everett McClellan (AA); Topeka
 Vernita Rose McClelland (IJ); Topeka
 Harold LeRoy McClure (ChE); Kingman
 William Elroy McClurg (CE); Meriden
 Loretta Irene McCormick (IJ); Plainsville
 Zada Gayle McCutchen (PE); Kingman
 Wilbur McDaniel (GS); Michigan Valley
 Harold McElroy (CE); Randall
 *Don Thomas McKee (GS); Hiawatha
 Blanche Irene McMoran (ApA); Coldwater
 W. Loy McMullen (AA); Oberlin
 *Georgia Anne McNickle (C); Ashland
 Fred Elmo McVey (ME-1; AA-2);
 Oak Hill
 Murt Francis Makins (Ar); Abilene
 Arvid Irwin Mall (C); Manhattan
 Carroll Manda (C); Dodge City
 *Helen Charlotte Mangelsdorf (HE);
 Atchison
 Dorothy Ione Mannen (HE); Manhattan
 Merle Mark (HE); Abilene
 Benjamin Eber Markley (PSB&O);
 Bennington
 Margaret Mary Marks (PSM); Ogden
 *Francis Kirby Marston (C); Junction City
 Frank Stephen Martin (ChE); Manhattan
 James William Martin (EE); Sabetha
 Margaret Belle Martin (HE); Glasco
 *Mary Marie Martin (PE); Sterling
 Carl Jesus Martinez (EE); Manhattan
 Mildred Ruth Masden (PSM); Lenora
 Everett Raymond Mason (EE); Wakefield
 James Milton Mason (ME); Kansas City
 Margaret Maude Mathews (GS);
 Manhattan
 Murray Edgar Matter (EE); Jewell
 Edna Estella Maxwell (HE); Manhattan
 William Henry Weissinger (Ag); Abilene
 Mildred Elnora Mellinger (GS); Milford
 *Joseph William Menzie (GS); Manhattan
 Stanley Taylor Merrill (EE); Abilene
 *Lawrence Paul Miles (ME); Independence
 Vera Jane Miles (GS); Jewell
 Albert Royce Miller (EE); Centralia
 Arch Earl Miller (AA); Cottonwood Falls
 Edith Frances Miller (GS); Milford
 Grant Gould Miller (EE); Offerle
 Harry Carl Miller (GS); Manhattan
 Joyce W. Miller (Ag); Sycamore
 Verna Irene Miller (HE); Milford
 Zola Frances Miller (HE); Minneapolis
 Clark Carlyle Milligan (Ag); Boyle
 *Wilma Phebe Mills (GS); Frankfort
 John George Mogge (C); Goodland
 Luther Emanuel Monell (EE); Osage City
 *Freda Miriam Monfort (HE); Iola
 Charles Talmott Monteith (CE); Hoxie
 Leonard Howard Montgomery (Ag);
 Neodesha
 *Carol Elizabeth Moore (C); Ashland
 Hugh Isaac Moore (AA); Wakarusa
 Grace Selina Morehouse (GS); Irving
 Clark Leroy Morford (GS); Olsburg
 Alvin Morgan (Ag); Manhattan
 Lawrence Dale Morgan (Ag); Manhattan
 Marvin Bradford Morgan (AA);
 Manhattan
 *Marguerite Morris (HE); Paxico
 Eva Hope Morrison (HE); Manhattan
 Jared Barnette Morse (Ar); Manhattan
 Gladys Mortensen (PSM); Everest
 Clarence Henry Moyer (AE); Hiawatha
 Grace Irene Mundell (HE&N); Nickerson
 *Claire W. Munger (Ag); Hoisington
 Ralph Conrad Munson (Ag);
 Junction City

SOPHOMORES—Continued.

- Will Martin Myers (Ag); Bancroft
 Charles William Nauheim (Ag); Hoyt
 *Benjamin A. Neill (GS); Miltonvale
 Dorothy Belle Neill (ApA); Clay Center
 Jennie Joy Nelson (ApA); Manhattan
 Kenneth Elmer Netson (ArE);
 Manhattan
 Ralph Wesley New (EE); Norcatur
 Edwin Mahlon Newman (CE); La Crosse
 Mary Vivien Nickels (GS); Manhattan
 *Margaret Nolan (HE); Larned
 Harold Leroy Nonomaker (AA); Osborne
 *Harriette Juanita Norton (IJ); Kalvesta
 Evelyn Jean Nuzman (IJ); Manhattan
 Gretchen Ellen O'Conner (HE); St. John
 Lillie Clara Olson (HE); Manhattan
 Carl Gerhardt Ossmann (ArE); Concordia
 Dale Oswald (AE-1; AA-2); Little River
 Marion Corydon Oursler (C); Newton
 Roberta Lee Oursler (IJ); Circleville
 Harold Weekley Overbey (Ag); Winfield
 *Neil Welton Owen (CE); Fort Riley
 Carol Lee Owsley (GS); Manhattan
 Chester Anson Paige (VM); Aurora, Mo.
 Clifford Arthur Palmquist (EE);
 Concordia
 Ralph Berthard Parker (ChE);
 Broughton
 *Sybil Maurice Parks (PSM); Parsons
 Luella Gertrude Parrott (HE);
 Manhattan
 Glen Frank Patton (VM); Cawker City
 *Leonard William Patton (Ag); Newton
 Eugene J. Peltier (CE); Concordia
 Paul Clutter Perry (CE); Little River
 Robert Bruce Perry (IC); Manhattan
 Raymond Louis Peters (ME);
 Leavenworth
 Vera Linnea Peterson (ApA); Gypsum
 Elmer Petsch (ME); Waterville
 Thomas Marshall Petty (IJ); Manhattan
 Robert Emil Pfuetze (GS); Manhattan
 Kenneth Dale Phelps (ME); Pratt
 Marion Edgar Phillips (CE); Scott City
 Robert Phillips, Jr. (Ag); Joplin, Mo.
 Edna Irene Pieplow (HE); Hutchinson
 Lorenza Dow Pierce (AE); Scranton
 Lawrence Bryan Pilcher (PE); Glasco
 Wallace Henderson Piper (ArE);
 Fort Scott
 Dale Franklin Pocock (C); Atlanta
 Lucile Posey (PE); Larned
 Charles Edwin Powell (LG); Frankfort
 Cornelia Jane Prather (C);
 Excelsior Springs, Mo.
 Laurence Allen Pratt (C); Manhattan
 John Jesse Province (AE); Manhattan
 George Lee Pryor (C); Salina
 Esther Clarabel Quenzer (HE); Bazine
 Emerald Glenn Rader (CE); Severy
 Emma Evelyn Rathbone (GS); Manhattan
 Mary Josephine Ratliff (C); Manhattan
 Pearl Rayback (Ar); Goodland
 *Royce Sudendorf Rearwin (ME); Salina
 Donald Reber (EE); Manhattan
 Leonard Abbott Rees (Ag); Abilene
 Earl Hubert Regnier (AA); Spearville
 Holly Marks Reichart (C); Valley Falls
 *Wilma Elizabeth Reinhardt (HE); Bison
 Charlotte Louise Remick (PE); Manhattan
 Harlan Cromer Rhodes (C); Manhattan
 Laurence Walter Rice (CE); Parsons
 Garfield Richard (IJ); Topeka
 *James Munroe Richardson (AE);
 Port au Prince, Haiti
 Helen Sophie Richt (VM);
 South Omaha, Neb.
 *Jean Rickenbacker (IJ); Turlock, Cal.
- Carl Jay Riggs (EE); Clayton
 Eugene Ellis Rippey (Ar); Ellis
 Joseph Alexander Ritchie (Ag); McLouth
 Ivan Everett Roberson (C); Abilene
 June Roberts (AE); Ford
 *John Bissell Roberts (AA); Manhattan
 Ralph Edwin Roderick (CE); Manhattan
 Lyla Sophia Roepke (HE); Manhattan
 Roland Cribner Rogler (AA); Manhattan
 Ray Carl Rohrdanz (ChE); Bala
 Karl William Root (C); Topeka
 Theodore Joseph Rostocil (EE); Zurich
 Clyde Eugene Row (IC-1; AA-2); Larned
 Harold Thomas Rowland (AE);
 Clay Center
 Dorothy B. Rude (HE); Great Bend
 Anna Marie Rueschhoff (HE); Grinnell
 *Henry Ruff (ME); Newton
 Emily Olive Rumold (M); Herington
 John Howard Rust (VM); Manhattan
 *Roy Herman Saffle (ChE); Topeka
 Victor Henry Saffry (AA); Alma
 Ray Fred Sanders (PE); Manhattan
 Loretta Maye Sawin (HE); Waterville
 Mary Elizabeth Sayre (HE); Manhattan
 Norma Harriet Sayre (HE); Ingalls
 Karl Marion Scanlan (ME); Agra
 John Seaton Schafer (ME);
 Del Norte, Colo.
 Mary Ellen Schafer (HE); Manhattan
 John Will Scherzinger (C); Ransom
 Martha Louise Scheu (HE); Clay Center
 Dallas Glenn Schmidt (EE); Lorraine
 Fred F. Schmidt (VM); Junction City
 J. Clifford Schmidt (CE); Syracuse
 Leon Schmutz (ME); Chanute
 Robert Allen Schober (Ar); Manhattan
 *Dorothy May Schooler (HE);
 Kansas City, Mo.
 Forrest Leroy Schooley (C); Hutchinson
 Marlin Charles Schroder (GS); Olivet
 Eunice Alvina Schroeter (HE); Ellenwood
 Charles Henry Schruben (C); Stockton
 LaVelle Robert Schruben (EE); Dresden
 Nick John Schumacher (VM);
 Granville, Iowa
 Henry John Schwartz (CE); Hanover
 Marvin Rudolph Scranton (EE); Ulysses
 Emily Alberta Seaburg (PSM); Manhattan
 William Elden Seagraves (C); Topeka
 Walter Bell Sexton (EE); Garden City
 Floyd Henry Seyb (AA); Pretty Prairie
 Kenneth Leroy Shay (CE); Miltonvale
 *Lydia Marian Sellors (LA-1; LG-2);
 Fort Worth, Tex.
 Ralph William Sexton (EE); Neodesha
 Jerome Anthony Shaffer (GS); Simpson
 Leslie Maurice Shaw (ME); Bloomington
 Wyatt Ellett Shelor (AE); Dodge City
 *Ayleen Hartzell Shenk (GS); Manhattan
 Emma Frances Shepek (HE); Narka
 Charles Laurence Shepherd (C);
 Harveyville
 William Humphrey Shivel (EE); Galena
 Oliver Wendell Shoup (AA); Udall
 Virgil William Siebert (ME);
 Pretty Prairie
 Galvesta May Siever (PE); Manhattan
 Ruth Elizabeth Silkensen (PE);
 Dell Rapids, S. Dak.
 Loula Marie Simmons (HE); Manhattan
 Josephine Nell Skinner (HE);
 North Topeka
 Kelso Wilton Slaughter (ME-1; C-2);
 Manhattan
 Leland Milton Sloan (Ag); Leavenworth

SOPHOMORES—Continued.

- Frieda A. Sloop (HE); Lyndon
 *Myrtle Marie Smedley (GS); Greta
 Elizabeth Ann Smerchek (HE);
 Cleburne
 Joseph Daniel Smerchek (Ag); Garnett
 Libbie Ann Smerchek (HE); Garnett
 *Charles Robb Smith (Ar); McPherson
 Daphne Vivian Smith (HE); Manhattan
 Frank Lynn Smith (IC); Manhattan
 Gerald Francis Smith (C); Manhattan
 Hobart Muir Smith (GS); Bentonville, Ark.
 Mildred Marie Smith (HE); Manhattan
 Walter Bruce Smith (ME); Hoisington
 *Ralph Owen Snelling (Ag);
 West Point, Ind.
 Paul Francis Snyder (EE); Elkhart
 Edna Mae Socolofsky (C); Tampa
 Lela Vale Sourk (PSM); Goff
 John Henry Sours (EE); Manhattan
 Jane Sparr (PE); Ellsworth
 *James Grey Speer (ME); Olathe
 Genevieve Miller Stanley (EE); Manhattan
 Z. Roy Stanley (EE); Manhattan
 Lewis Alvin Stapp (EE); Norton
 *Quentin Jerome Stein (EE); Parsons
 Elden Russell Steinsass (EE); Concordia
 Laura Esabel Stepanek (C); Cuba
 Alvin Howard Stephenson (Ag); Clements
 Dorothy Claire Stevens (GS);
 Medicine Lodge
 Charles William Stewart (AE); Hunter
 *Wilbur Charles Stewart (ME); Harland
 Russell Stoker (CE); Morrowville
 *Geoffery Donald Stoltz (ME); El Dorado
 Mona Valeria Stoops (GS); Bellaire
 Fred Storz (VM); Kansas City
 *Eugene Bristol Stotts (EE); Manhattan
 Ruby Roberta Stover (GS); Kansas City
 Edith Elizabeth Streeter (GS); Wakefield
 Ione Strickland (GS); Manhattan
 Ida Sarah Studt (PSM); Glasco
 Harold Howard Stump (AA); Blue Rapids
 Harold Leroy Sturdevant (ME); Chanute
 Karl J. Svaty (CE); Ellsworth
 *Orva Lucille Swafford (HE); Cullison
 Santos Dumont Swancy (EE); Kansas City
 Price Kenneth Swartz (AA); Everest
 *Roland Harold Swenson (CE); Cimarron
 *Edward Henry Tabb (CE); Oil Hill
 Harry Joseph Tannehill (Ag); Broughton
 Elmer Alexander Taylor (AE); Solomon
 Mark Mowell Taylor (Ag); Harveyville
 Marvin Howard Taylor (EE); Downs
 Lewis Whitney Teall (IC-1; LG-2);
 Larned
 John D. Tedrow (C); Medicine Lodge
 Helen Theodora Teichgraeber (HE);
 Marquette
 George Baldrige Telford (C); Manhattan
 Floyd Leonard Tempero (CE); Broughton
 John Franklin Thackrey (IJ); Manhattan
 Howard Irwin Thaller (VM); Manhattan
 Ruth Thomas (M); Baxter Springs
 Chester Gordon Thompson (Ag); Randolph
 William Sims Thompson (EE); Topeka
 Willis Alexander Thomson (VM); McCune
 Edith Catherine Thummel (IC); Leaven-
 worth
 Lovell Thurow (AE-1; Ag-2); Macksville
 Mary Louise Thurow (M); Macksville
 Vernell Ellsworth Thurston (EE); Delphos
 John Herman Tietze (CE); Kansas City
 Alvin Paul Timmons (ME-1; AA-2);
 Geneseo
 Lee Toadvine (AA); Dighton
 Mayme Thelma Toburen (ApA); Cleburne
 Irene Lillice Todd (HE); Topeka
 Corabelle Tolin (GS); Havensville
 Helen Tolin (PE); Havensville
 William Norton Tomlinson (ChE);
 Heber Springs, Ark.
 Elta Marie Tompkins (HE); Byers
 T. Kyle Tomson (CE); Dover
 Gladys Clara Tonn (PSM); Haven
 Joseph Edward Torkelson (PE); Everest
 Ruth Sarah Tracewell (HE); Lincoln
 Allen Tucker (C); Ottawa
 Dell William Turner (EE); Holton
 Roland F. Turner (EE); Manhattan
 Ernest Julius Underwood (CE); Topeka
 *Howard A. Van Doren (ME); El Dorado
 Clea Maurine Van Meter (ApA); Ada
 Arthur Frederick Van Meveren (VM);
 Orange City, Iowa
 Fred Lewis Van Scoyoc (ME); Oak Hill
 *Christine Eloise Vaughan (HE); Scott City
 Beatrice Petrinella Vaught (HE); Plains
 Robert Vernon Vaupel (GS-1); Manhattan
 William Dale Vawter (ME); Liberty
 Oliver Rodger Vignery (C); Concordia
 Hadley Herman Voights (AA); Kansas City
 Georgie Frances Voshell (HE); Bucklin
 Lloyd Loomis Vrooman (ArE);
 Independence
 Leo Conrad Wacker (EE); Leavenworth
 Henry Castle Walbridge (AA); Russell
 *Dent McCalmont Walker (GS); Anthony
 Fred Henry Walker, Jr. (Ag); Salem, Mass.
 Helen Frances Walker (IJ); Manhattan
 Mary Catherine Walker (HE); Manhattan
 *Paul Benson Walker (Ar); Wichita
 Cecil Newton Walter (CE); Kingman
 Virgil Howard Walters (ME); Centralia
 *John Edward Wampler (AA); Garden City
 Doris Aileen Wapler (GS); Wakefield
 Charles Fayette Ward (GS); Pratt
 Louise Ware (HE); Fairbury, Neb.
 Larry Oneil Washington (ArE); Kensington
 Alva S. Watson (VM); Oakley
 *Ramona Ernestine Weddle (GS-1; ApA-2);
 Lindsborg
 Russell True Weirick (Ar); Olathe
 Haro'd Rowe Weller (PE); Olathe
 *Ethel Sue Wells (GS); Manhattan
 Eugene L. Wells (EE); Meriden
 Everett Homer Wells (ChE); Turon
 Ivan Lee Welty (CE); Hill City
 Dick Estes West (EE); Hartford
 Elsie Mae West (GS); Manhattan
 Sydney Francis Weybrew (EE); Wamego
 Harry Clifton White (ME); Kansas City
 *Marcia Jane White (C); Kansas City, Mo.
 Delta Nadine Whitmore (ApA); Manhattan
 Herbert Justice Whitney (ME); Utica
 Wayne Clark Whitney (Ag); St. George
 Max Allen Wickham (C); Manhattan
 Maxine Wickham (PE); Manhattan
 George Samuel Wiggins (PE); Lyons
 Leon Clifford Wilcoxon (ArE); Ford
 Ernest Sherman Wild (PE); Wiley
 George Frank Wiley (ME); Chanute
 *Otis Earl Wiley (EE); Manhattan
 Harold Roy Williams (CE); Valley Falls
 William Everett Williams (ME); Neodesha
 *Lois A. Williamson (HE); Manhattan
 *Clare Wilson (GS-1; HE-2); Onaga
 Robert Jerome Wilson (C); Manhattan
 Claude Chester Winchell (ME-1; C-2);
 Winfield
 Florence Thelma Wineinger (HE); Norwich
 *Estelle Winters (GS); Onaga
 Jo Marie Wise (PSM); Manhattan

SOPHOMORES—Concluded.

- Eleanor Womer (GS); Agra
 John Dewey Woodruff (CE); Dodge City
 Alfred Eugene Wooster (EE); Erie
 *Harry Bush Wooten (AE); Liberal
 William Worthington (CE); Turner
 Walter Irvin Wright (C); Larned
 Helen Katherine Wyant (PE); Topeka
 Fred George Wyatt (ArE); Kansas City
 *Harold Everett Yenser (CE); Saffordville
- Mary Irene Yoder (GS); Manhattan
 John Dean Youle (Ag); Winfield
 George William Young (C); Paola
 Laurence Walter Younkin (GS); Wakefield
 Della Evangeline Zeigler (HE); Abilene
 Iva May Zimmerman (GS); Simpson
 Bertha Annetta Zimmers (ApA); Hiawatha
 Catherine Eva Zink (HE); Lincoln
 Harold Anderson Zirkle (EE); Berryton

FRESHMEN

- Erwin Abmeyer (Ag); Grantville
 *Cirilo Lagmay Adam (Ag); Sison, P. I.
 *Lola Mae Adams (HE); Dodge City
 *Leonard Rusco Adler (EE); Goddard
 Max Bruce Ainsworth (Ag); St. John
 *Clifford Lankford Alcorn (EE); Ionia
 *Pearl Mareta Alexander (HE); Norcatur
 *Robert Joseph Alexander (ArE); Independence, Mo.
 *Gayle Derwood Allen (VM); Shelton, Neb.
 *Velma Dorothy Allen (HE); Liberty
 *Carl Dwight Allmon (ME); Kingsdown
 *Juliana Amos (M); Manhattan
 *Junior Donald Amos (CE); Latimer
 *Bernice William Anderson (VM); Springfield, Mo.
 *Clarence Hobert Anderson (AA); Richland
 *Edna Evelyn Anderson (IJ); Wichita
 *Leslie Elvira Anderson (C); Concordia
 *Marion Charles Anderson (GS); Moscow
 *Olin Alvin Anderson (VM); Reynolds, Neb.
 *Dodie Lee Andrews (HE); Kansas City
 *Homer Derrington Anshutz (EE); Healy
 *Lawrence Alfred Antenen (C); Bazine
 *Nelle Geraldine Arbutnot (ApA); Lake Alfred, Fla.
 *Everett Asjes, Jr. (LG); Kansas City, Mo.
 *Clarence William Ater (Ag); Fort Scott
 *Katherine Burt Avery (Ar); Ashland
 *Thomas Burt Avery (Ag); Coldwater
 *Lois Louise Avis (HE); Fostoria
 *Helen Evelyn Axelton (HE&N); Manhattan
 *Fred Ernest Ayers (Ag); Estancia, N. Mex.
 Guy William Ayers (ME); Pratt
 *James Richard Ayres (C); Greenleaf
 Mark J. Babb (C); Lebanon
 *Ruth Maxine Babbitt (HE); Miltonvale
 *Lewis Harold Bacon (Ag); Sylvan Grove
 *Margaret May Bacon (Ar); Wellington
 *Albert Kilian Bader (ArE); Junction City
 *Myron Albert Bailey (ME); Syracuse
 William A. Baird (Ag); Topeka
 *Kenneth Baker (EE); Harper
 *Merle Ivan Baker (PE); Winfield
 *Janette Ina Ballagh (HE); Oskaloosa
 *Lu Roy Ballard (CE); Alma
 *Dale Everett Barkalow (EE); Burden
 Loraine Metta Barrett (PE); Topeka
 *Albert Lee Barton (C); Filer, Idaho
 *Robert Laverne Barton (C); Filer, Idaho
 *Arthur Paul Baxter (PE); Little River
 *Don Francis Beach (ME); Chanute
 *Glen Gerald Beal (Ag); Eureka
 Leslie Richard Beard (ArE-1; C-2); McPherson
 *Carl Crawford Beeson (GS); Wamego
 *Kenneth Gordon Behrends (ME); Randall
 *Don Wilton Belisle (EE); Miltonvale
 *Frances Elaine Bell (HE); Marysville
 *Grace Anna Bell (M); Beverly
 *Hayden Ellwood Bemis (C); McPherson
 *Kenneth Urban Benjamin (EE); Deerfield
 Newton Lee Bennett (CE); Norton
- *Herman Theodore Beninga (GS); Bala
 *Martha Bruik Benninga (GS); Bala
 Kenneth Bentz (C); Peabody
 *Dale Berger (ME); Burlingame
 *Gale Berger (Ar); Burlingame
 *Robert Charles Berger (AA); Douglass
 *Robert Treat Berry (Ag); Atchison
 *J. Ralph Bert (LA); Abilene
 *Robert Charles Besler (ME); Manhattan
 *Joe Anthony Bieberly (IJ); Spearville
 *Margaret Doreen Bierman (HE); Kensington
 Wayne Gordon Billings (Ag); Jetmore
 *Dale Lafe Bivin (VM); Glasco
 *Loren Cleatus Blackburn (VM); Norman, Neb.
 *Blanche Louise Blair (GS); Manhattan
 *Fenton William Blake (PE); Glasco
 *Leslie Marion Blake (GS); Glasco
 *Hazle Florence Bland (HE); Garden City
 *Elmer Red Blasdel (CE); Belle Plaine
 *John Thomas Blasdel (ME-1; Ag-2); Sylvania
 *Douglass Arthur Bly (EE); Pierceville
 Edith Irene Bockenstette (C); Sabetha
 *Helen Ruth Bocoek (C); Wilsey
 *John William Bogart (C); Tescott
 *Raymond Arthur Boles (Ag); Liberal
 *Thomas Leonard Bond (VM); Cumberland, Iowa
 *Forrest Edmund Booth (Ag); Fairview
 *Perle Lewis Bottger (ChE); Belleville
 *Patricia Capsey Boulton (C); Manhattan
 Josephine Alberta Bouse (HE); Ottawa
 *Mildred Margaret Bower (HE); Norton
 *Fred Virgil Bowles (Ag); Walnut
 *Donald Houts Bowman (AgE); Manhattan
 *George William Boys (EE); Linwood
 *Alice Marguerite Bozarth (M); Lenora
 *Ferrell McClellan Bozarth (AgE); Lenora
 Forest Clifford Braden (C); Eureka
 *Marjorie Vera Bradley (PE); Manhattan
 *Doris Mae Bramwell (PSM); Concordia
 *Mabel Rebeca Brasche (HE); Volland
 *Fred William Braun (EE); Galena
 Merle Dutton Breeding (VM); Herkimer
 *William Raymond Brenner (C); Manhattan
 *Veva May Brewer (IJ); Wichita
 *Helen Bernadine Bright (PSM); Little River
 *Robert Clyde Briix (EE); White City
 *Joseph Emil Brinkman (EE); Americus
 *Carrol Wright Brooks (PE); Manhattan
 *Bartos Burton Brown (AA); Osborne
 *Cecil Gaylord Brown (ME); Herington
 *Charles Gabriel Brown (Ag); Osborne
 *Edna Brown (ApA); Fort Scott
 *Homer Ryland Brown (EE); El Dorado
 *Kenneth Sanford Brown (CE); Lewis
 *Maurice Emerson Brown (ME); Herington
 *Richard Carlton Brown (ArE); Hill City
 *Rita Brown (PE); Edmond
 *Robert William Brown (Ag); Fall River

* Matriculated 1929-'30.

FRESHMEN—Continued.

- *Russell Earnest Brown (Ag); Ashland
 *George Harold Brummer (C); Tipton
 *Allen Vincent Brunke (VM); Campbell, Neb.
 Ralph Young Buchanan (CE); Marquette
 *Lester Ramond Buell (GS); Nickerson
 *William Allen Buell (Ag); Topeka
 Marvin Almanza Burd (GS); Clyde
 *David Minford Burgess (C); Oswego
 *Alva Neill Burns (Ag); North Topeka
 Bun William Burnside (Ag); Garden City
 Edith Marian Burt (HE); Manhattan
 Vester Marion Butts (ME); Norton
 *Earle Conrad Byers (ME); Manhattan
 *Henry Rudolph Byers (CE); Hoxie
 *Franklin Alfred Cain (ME-1; PE-2);
 Chanute
 Olyn Danford Calhoun (ME); Manhattan
 Don Thomas Campbell (CE); Topeka
 *Marcine Dorothy Campbell (PE); Hollis
 *Dorothy Ruth Canham (PE);
 Kansas City, Mo.
 *Cyril Anthony Carberry (VM);
 Buffalo, N. Y.
 *Carrol Obert Carlgen (AgE); Scandia
 *Cecelia Barbara Carlson (HE); Manhattan
 *Lyle Carmichael (C); Manhattan
 *Jack Carr (ArE); Salina
 *Glen Allen Carriker (EE);
 Kansas City, Mo.
 *Nelda Marian Carson (IJ); Morganville
 *Albert Earl Carter (ME); Ulysses
 *Merrill Lavern Carter (ChE); Smith Center
 *Leroy William Carver (CE); Junction City
 *Fairy Kathryn Case (GS-1; HE-2);
 Glasco
 *Francis Willard Castillo (Ag); McCune
 *Gerald Arthur Caufield (GS); McLouth
 *Joseph Leo Cavanaugh (VM); Esbon
 Merle Vernon Chase (IC-1; VM-2);
 Manhattan
 *Charlotte Maude Chatterton (HE);
 Admire
 *Willard Martin Cheney (EE); Abilene
 Emerson Dwight Chilcott (AA); Manhattan
 Henry Chiles (Ag); Silver Lake
 *Lester Raymond Chilson (Ag); Oberlin
 *Loraine Chrisman (C); Hutchinson
 *Blanch Lucille Christensen (HE); Bushong
 *Eunice Sarah Christenson (HE); Olsburg
 *Donald Christy (AE); Scott City
 *Dorothy Mabel Christy (HE); Scott City
 *Mary Lou Clark (PE); Burr Oak
 Henry Louis Clarke (EE); Troy
 *Myron Grover Clausen (Ag); Alton
 *Harry Donald Clawson (VM); Hartford
 *Carl Andrew Cleek (ME); Olathe
 *Herbert William Clutter (Ag); Larned
 *Allene Cochrane (C); Manhattan
 *John Grover Coe (ME); Council Grove
 *Raymond Joseph Cohorst (Ag); Marysville
 Laurence Len Cole (PE); Cedar
 Robert Cole (EE); Wetmore
 *Lea Rae Collett (PSB&O); Manhattan
 *Elery Lowe Collins (Ag); Fontana
 *William Vaughn Combs (Ag); Linn
 *Ida Emma Comstock (C); Fort Scott
 *Grace Caroline Conger (PSM); Ionia
 *Wilmer I. Conger (VM); Ionia
 *Ralph Martin Conrad (IC); Manhattan
 *Paul Wesley Converse (GS); Pawnee Rock
 Ned Dennis Conrow (Ag); Manhattan
 *Dorothy Louise Conwell (PE); Potwin
 *Helen Beulah Cook (GS); Bucklin
 Herbert Derwood Cool (C); Manhattan
 *Henry Charles Cooley (CE); Stockton
 *John Robert Cooper (Ag); Humboldt, Neb.
 *Bessie Maybelle Copper (GS); McDonald
 *James Lamar Corbin (Ag); Washington
 *William Law Corkill (GS); Dover
 *Manly Everett Cornwell (Ag); Bushong
 *Earl Clark Coulter (Ag); Willis
 *David Perry Course (PE); Abilene
 *Gertrude Alice Cowdery (GS); Lyons
 *Verne Willard Cowell (GS); Fairbury, Neb.
 *Joel Frank Cox (Ag); Goodrich
 Donald K. Coy (EE); Deerfield
 *Glenn W. Crabb (ME); Colby
 *Robert Norman Craft (Ag); Latham
 *Ronald Kenneth Cram (PE); Bird City
 *Audrey Louvina Cramer (HE); Webber
 *Edward Richmond Crans (EE-1; C-2);
 Lenora
 *Dwight Edward Crawford (ME);
 Dodge City
 *Mary Elizabeth Crawford (HE); Madison
 Lowell Creighton (GS); Manhattan
 *Edward Everett Criner (C); Wamego
 Marian Carolyn Cross (IJ); Manhattan
 *Stanley Emil Cummings (C); Coldwater
 *Gerard Vincent Cunningham (C);
 Wellington
 *Isabel Clara Cunningham (IJ); Manhattan
 Burdell E. Curl (EE); Bartlett
 *Esther Ruth Curry (HE); St. Francis
 *Ray Curry (VM); Selma
 *Francis Elizabeth Curtis (GS); Frankfort
 *William Edward Curtis (C); Wichita
 James Riley Custer (LA); Manhattan
 Harold Amos Daily (Ag); Waverly
 Richard B. Dale (Ag); Stafford
 *James Chester Dalgard (CE); Manhattan
 *Lloyd Henry Dalton (C); Fort Scott
 *Sydney Glen Dalton (C); Dodge City
 *Earl Clifton Daniels (C); Westfall
 *Laurence Robert Daniels (CE-1; Ag-2);
 Haigler, Neb.
 *Earl Anstem Davidson (Ar-1; C-2);
 Cimarron
 *Floyd Ewing Davidson (Ag); Madison
 *Lysle A. Davidson (EE); Bucklin
 *Paul Hughes Davies (Ag); Delphos
 *Marvin David Davis (Ag); Rossville
 *William DeOzro Davis, Jr. (ChE);
 McPherson
 *Milbern Harry Davison (CE); Concordia
 *Myron Winterstein DeGeer (EE);
 Lake City
 *Vaughn Eugene DeGeer (AE); Lake City
 *Salvador Baldonado Della (Ag);
 Santa Maria, P. I.
 Orville Frederick Denton (Ag); Denton
 *Bertus Johannas Deters (GS); Cawker City
 *Leonard Idenire Devore (IC); Narka
 *Mary Helen Dick (GS); Little River
 *Hilma Nadine Dickinson (HE); Udall
 *Oliver Henry Dilsaver (EE); Kensington
 Louis James Dittmore (CE); Manhattan
 *Leo Bernard Dixon (EE); Severy
 *Louis Elmer Dobson (LA); Manhattan
 *LaVerne Hamilton Dodd (EE); Parker
 William Lovejoy Dole (CE); Alma
 *Alfred Loyd Dorman (ME); Lucas
 *Calvin Elmer Dornberger (Ag); Talmage
 Devere Delos Doty (AA); Cunningham
 *Sandy Doubleday (GS); Selden
 *Orva Harrison Douglas, Jr. (ME); Courtland
 *Abbie Kay Downey (ApA); Manhattan
 *Avis A. Downey (GS); Manhattan
 *Maurice Edgar Downing (AA); Deerfield
 *Melba Mae Doyle (HE); Eskridge
 Lowell Miles Drake (C); Natoma
 *Howard A. Drew (EE); Rolla

FRESHMEN—Continued.

- *James Drew (EE); Rolla
 *Wallace Reed Dudley (EE); Goodland
 *Harold Arthur Duffy (AE); Vermillion
 *Maurice Leland DuMars (IJ); Agra
 *George Wallace Duncan (Ar); Topeka
 *Laverne John Duncan (Ag); Bushong
 *Kenneth Wayne Dunnington (ME); Elmton
 *Grand Canapa Duquing (VM);
 Concepcion, P. I.
 *Florence Durham (HE); Randall
 *Glenn Wane Durrell (ME); Bartlesville, Okla.
 *Max Vernon Dyerly (C); Pratt
 *Richard Francis Eads (Ag); Cullison
 *Robert Morris Eakins (CE); Topeka
 *Louis Bion Earle (VM); Washington
 *Wilma Annabelle Eastman (HE & N);
 Whiting
 *Charles Kesler Ebert (ChE); Salina
 *Glenys Edna Ebright (HE); Lyons
 *John Lawrence Edie (ME-1; C-2); Merriam
 *Barbara Anne Ehrman (HE); Howard
 *Margaret Virginia Eiler (C); Oberlin
 *Lester Clayton Ekberg (Ag); Alma, Neb.
 *Kenneth Joseph Ekdahl (C); Manhattan
 *William Mervan Elliott (VM); Emporia
 *Gene Ellis (CE); Council Grove
 Harold Ward Ellis (Ag); Coldwater
 *Frances Elynn Ellsworth (IJ); Formoso
 Gerald Franklin Ely (EE); Spivey
 *Clyde Emmerson Emel (Ag); Winona
 *Laurence Ivan Engdahl (CE); Marquette
 *Darwin Russell Enochs (ArE); Randolph
 *James Russell Epperson (ME); Hutchinson
 *George Erdtmann (EE); Ellsworth
 *Andrew Brian Erhart (Ag); Timken
 *Reuben Carl Erwin (EE); Kansas City, Mo.
 *Edward Hilton Estes (ME); Topeka
 *Charles William Evans, Jr. (EE);
 Washington
 *Charles Vern Everett (ME); Longford
 William Exline, Jr. (C); Kipp
 *Robert Clifton Eychner (ChE); Jewell
 *Pearl Allene Fanning (IJ); Holton
 *John Allen Farnham (C); Abilene
 *Glen Orlin Farrar (ME); Burlingame
 Edith A. Fear (HE & N); Clay Center
 *Verla Lucile Feldhausen (HE); Frankfort
 *Glenn David Ferguson (EE); Gridley
 *John M. Ferguson (EE); Bazine
 *Burton Carl Filken (Ag); Wilsey
 *Elmer Fred Finke (VM); Buckner, Mo.
 *Mabel Rosalind Fisher (HE); Mahaska
 *Charles Emil Fisher (Ag); Cuba
 *Francis Eugene Fisher (C); Cedarvale
 *Leonice Marie Fisher (HE); Fort Scott
 *Vera Marie Fisher (HE); Fellsburg
 *Willa Genevieve Fiser (HE); Bennington
 *Hazel Dee Fix (HE); Bird City
 *Richard Winston Fleming (C); Manhattan
 *Fred Franklin Fletcher (AA); Bucklin
 *Frances Ann Focke (PSM); LeRoy
 *Thalia Follmer (GS); Buffalo
 *Gordon Edward Foltz (C); Belle Plaine
 *Maxine Elizabeth Fones (ApA);
 Kansas City, Mo.
 *Kenneth Edward Foote (VM); Chase
 *Hazel Vivian Forbes (PE); Eureka
 *Gerald James Ford (CE-1; C-2); Solomon
 *LaVare June Fossnight (C-1; HE-2);
 Ottawa
 Joseph Freman Foster (Ag); Topeka
 *Glenn Sylvester Fox (Ag); Rozel
 *Sidney Lorenz Franz (AgE-1; Ag-2); Soldier
 *Marian Frances Freedlun (Ar); Chanute
 *Marvin William Freeland (EE); Effingham
 *Geraldine Mabel Freeman (HE); Hamilton
 *Beulah May Frey (HE); Elmdale
 *William Robert Friend (ArE); Randall
 *Wilbur Clyde Frisbie (IC); Bonner Springs
 *Theodora Fritze (HE & N); Strong City
 *Dwight Dalbey Fulkerson (AE);
 Jerseyville, Ill.
 *Elcye Olive Gaddie (HE); Wellington
 *Frank Gaddie, Jr. (Ag); Bazaar
 Harold Henry Gaines (ArE); Peabody
 *Harry Winstrom Ganstrom (Ar); Hollis
 *Harry Bertram Garard (Ag); Olivet
 Eugene Louis Gardiner (Ag); Oxford
 George Donald Garner (C); Hiawatha
 *Robert Elmer Garvin (Ag); Ogden
 *Clarence Henry Gatch (C); Hope
 Ward A. Gibbs (C); Topeka
 *Wayne Virgil Gibbs (AA); Gem
 Walter Coleridge Gill (VM);
 St. Johns, B. W. I.
 *Margaret Flora Gillespie (HE); Harper
 *Harriet Cordilla Gilson (GS); Manhattan
 *Garold Elton Ginder (IC); Dodge City
 *John Kenneth Glasscock (CE); Moline
 *Charles Kenneth Glenn (AH&V);
 Sharon Springs
 *Nona Bernice Goff (GS); Bucklin
 William Rollie Gohn (ME); Protection
 *Jack Going (ME); Topeka
 *Emery Atwood Good (PSB&O); Manhattan
 *Parker Bryant Goodman (ArE);
 Independence, Mo.
 *Linn Alvin Gore (ME); Bushton
 *Elmer Ellsworth Gorman (VM);
 Creston, Neb.
 *Gladys Graham (GS); Emporia
 *James Delbert Gray (IJ); Randall
 *Dorothy Elizabeth Green (HE); Whiting
 *Ernest Warren Green (EE); Concordia
 *Gilbert Dale Green (C); Norton
 Rockwell N. Greene (Ag); Lincoln
 *Ruth Marjorie Greene (PE); Beverly
 *Howard Leslie Gregory (Ag); Lawrence
 *Arthur Louis Gribben (AE); Gypsum
 *Paul Wilson Griffith (Ag); Edmond
 Wava Eula Grigsby (HE); Attica
 *Arthur Groesbeck, Jr. (C); Manhattan
 *Richard Leo Groody (C); Washington
 *Rose Katherine Grossardt (PSM); Clafin
 *Ida Natalie Groves (HE); McPherson
 *William Upton Guerrant (C); Manhattan
 *Robert Henry Gump (VM); Abilene
 *Maurice Lee Gunn (ME); Great Bend
 *Frank Wilson Gwinn (ME);
 Falls City, Neb.
 *Mary Sue Haas (IJ); Arrington
 *William Thomas Hacker (Ag);
 Medford, Okla.
 *Dorothy Hadsell (IJ); Manhattan
 *Charles Adrian Hageman (Ag);
 White Cloud
 *William Hagstrom, Jr. (EE-1; C-2);
 Lindsborg
 *Milo Franklin Hahn (C); Clay Center
 *Alice Lucille Hakl (HE); Stanton, Neb.
 John Lowell Hakl (VM); Stanton, Neb.
 *Jack Fredrich Hall (C); Council Grove
 *Mabel Lillian Hall (GS); Kensington
 Thelma Lucille Hall (HE); Utopia
 *Bernard Eugene Hammond (EE); Salina
 *Leo Jeremiah Hammond (GS); Manhattan
 Marvin Harvey Hammond (C); Great Bend
 *Loren Allen Hammond (GS); Great Bend
 *John Hamon (Ag); Valley Falls
 John Edward Haney (C); Topeka
 *Oran Andrew Harger (EE); Oberlin
 *Hal Charles Harned (GS); Manhattan
 *Kermit Harris (EE); Peabody
 *Helen Hettie Harrision (HE); Burden
 *George Bertrand Harrop (C); Manhattan

FRESHMEN—Continued.

- Edward Lynn Hartley (AA); Manhattan
 *Frederick Baker Hartman (Ar); Horton
 *Zonald Clark Hartman (ChE); Lyons
 *John Craton Hartung (PSB&O); Parsons
 *Mary Elizabeth Harvey (C); Harveyville
 *Harry Larry Hasler (PE); El Dorado
 *Hoyt Vincent Hatfield (C); Belle Plaine
 *Ruth Esther Haughawont (PSM); Onaga
 *Irving Bennett Hawk (Ag); Effingham
 *George William Hawks (PE); Holton
 *Donald Quentin Haws (PE); McPherson
 *Eugene Harold Heck (VM); Carthage, Mo.
 *Harold Ray Heckendorn (EE); Cedar Point
 *Wilbur Gould Heer (ME); Manhattan
 *Hubert Raymond Hein (Ag); Washington
 *David Allen Henley (AA); Eureka
 *Earl Claud Henry (ME); Chanute
 *Samuel Wilson Hepworth (GS);
 Kansas City, Mo.
 *Lowell Vance Hermon (ArE); Dighton
 *Max Powell Hickman (Ag-1; FSC-2);
 Kirwin
 *Ruth Dorothy Hickok (HE); Ulysses
 *Charline Vee Hill (ApA); Horton
 *Joseph Glenn Hilyard (IJ); Severy
 *Keith Harry Hinchliff (Ar); Kensington
 *Thomas Clark Hinkle (Ag); Carbondale
 *Newton Lowell Hinkson (ME); Halstead
 *Lucy Alice Hodgson (GS); Little River
 *Mable Virginia Hodgson (HE); Little River
 *Robert Milton Hodgson (Ag); Little River
 *Rexford Daniel Hodler (AE); Beloit
 *Lawrence Chester Hoener (ME); Preston
 *Marlin Shafer Hoffman (GS); Wilsey
 *Grace Dawson Hofess (LA); Partridge
 *John Collins Hofess (CE-1; PE-2);
 Mexico, Mo.
 *Leor Virgil Hogg (EE); Manhattan
 *C. Raymond Hoglund (Ag); McPherson
 *Glen Arnold Hoglund (CE); Miller
 *Hilton De'as Hollebeck (Ag); Ingalls
 *Earl Finley Hollenshead (C); Neosho
 *Dorothy Louise Holm (HE); Dwight
 *Harvey Collins Holm (Ag); Dwight
 *Donald Max Holmes (EE); Augusta
 *Horace Alvin Holmes (IJ); Eureka
 *Mary Holton (HE); Manhattan
 *George Leslie Honstead (GS); Waterville
 *John William Hood (CE); Washington
 *Katherine Virginia Hooven (C);
 Westmoreland
 *Orville Wareham Hopkins (EE); Augusta
 *Ralph Horchem (C); Ransom
 *Carl Frederick Horn (ArE); Russell
 *LaVona Ruth Horner (HE); Fellsburg
 *VerLee Ona Hotz (C); Dodge City
 *Jack Wesley Householder (C); Clay Center
 *Mary Caroline Houser (IJ); Wooster, Ohio
 *Philip Clay Houston (AA); Elgin
 *Claude Henry Houtz (Ag); Abilene
 *Clair Louis Howard (CE); Clyde
 *Darrel Ervin Hubbard (C); Minneapolis
 *Gail Leonard Hubbell (Ag); Bellefont
 *Clarence Preston Hubbs (ME); Manhattan
 *William Ben Hudelson (EE); Attica
 *Claude Hudson (VM); Gothenburg, Neb.
 *Harlow Kenyon Hudson (VM); Manhattan
 *Raymond Hickman Hughes (GS);
 Manhattan
 *John Robert Hughey (CE); Junction City
 *Imogene Muriel Hugunin (C); Kirwin
 *Boyd Henry Hull (Ar); Concordia
 *Walter George Hume (Ar); Arkansas City
 *Harry McDowell Hunt (C);
 Chillicothe, Mo.
 James William Hunter (Ag); Irving
 *John Mark Hurd (VM); Pawnee, Neb.
 *Howard Kendal Hynes (EE); Arlington
 *Sue Washington Irons (HE);
 Winter Haven, Fla.
 *George Raleigh Irvine (AE); Stafford
 *Frank Arthur Irwin (Ar); Manhattan
 *Una Juanita Irwin (HE); Waterville
 *William Francis Irwin (ArE-1; VM-2);
 Wilsey
 *Conley Gordon Isenberg (VM); Manhattan
 *Louta Lucille Ives (HE-1; IJ-2);
 Mount Hope
 *Frances Marie Jack (PSM); Russell
 *Roberta Amelia Jack (PE-1; ApA-2);
 Russell
 Arlie Virgil Jackson (AE); Lenora
 *Warren Cowan Jackson (ME); Nickerson
 *Frank Jacobs (ME); Quenemo
 *Jack Edwards Jacobsen (EE); Attica
 *Verland Thomas Jahnke (GS); Woodbine
 *Harry Douglas James (EE); Rossville
 *Hazel Marie James (ApA); New England,
 N. Dak.
 Olive Catharine James (HE); Wetmore
 *Ralph Wilson James (EE); Rossville
 *Victor Harold Jefferies (ArE); Kiowa
 *Paul William Jenicek (AE); Holyrood
 *Isabel Betty Jenkins (HE); Holton
 *Mark Edwin Jennings (Ag); Eskridge
 *Rex Mortimer Jennings (C); Hoyt
 *Allan Francis Johnson (EE); Manhattan
 *Arvid Theodore Johnson (Ag); Miami, Fla.
 *Charles Edward Johnson (Ag-1; PE-2);
 Belpre
 *Irving Mauritz Johnson (EE); Smolan
 Jay Bernard Johnson (C); Olsburg
 *Kathryn J. Johnson (GS); Abilene
 *Leora Caroline Johnson (HE); Brookville
 *Myrtle Heiena Johnson (GS); Concordia
 *Raymond Arthur Johnson (Ag);
 Yates Center
 Wendell Wilbur Johnson (C); Axtell
 *Jack Arnold Johnston (C); Junction City
 *William Asa Joines (IJ); Clyde
 Walter Newman Jolley (CE); Manhattan
 *Harold D. Jones (GS); Augusta
 *Lawrence Delmer Jones (GS); Manhattan
 *Lenore Elizabeth Jones (PE); Chanute
 *Walter James Jones (ME); El Dorado
 *He'en Shell Joseph (HE); Kirwin
 Richard Hulett Jurden (VM); Manhattan
 *Isabelle Ruth Kaine (ApA); Wamego
 *Earle Laurance Karr (C); Troy
 *Charles Manuel Kastner (VM); Manhattan
 *D'Vere Kay (EE-1; PSB&O-2); Morland
 *Mary Elizabeth Keegan (HE-1; GS-2);
 Great Bend
 *Sylvester Harwood Keller (AE); Newton
 James Vincent Kelley (Ag); Chapman
 *Louis Arthur Kelly (Ag); Manhattan
 *Elna Ralph Kennedy (VM); Chase
 *Charles Harry Kent (AE); Wakefield
 *Earle Lewis Kent (EE); Carthage, Mo.
 *Wilbur Warren Kent (ME); Beloit
 *Dorothy Jane Kern (HE); Leavenworth
 *John Elwood Kerr (Ag); Craft
 *Joel Platt Kesler (EE); Overbrook
 *Howard Luther Kester (VM);
 Cottonwood Falls
 Yum Sur Kim (Ag); Shanghai, China
 Jay Grant Kimball (IJ); Manhattan
 *Inez Vera King (PE); Junction City
 *Thomas Clair King (GS); Oakley
 *Carl Lawrence Kirk (C); Newton
 William Harold Kirkpatrick (GS); Webber
 *Lucia Mabel Kirkwood (HE); Leavenworth
 *Maurice Raymond Kirkwood (Ag); Natoma

FRESHMEN—Continued.

- *Frank Edward Kiser (CE); El Dorado
 *Robert Hayman Kissick (ME); Kansas City
 *Darwin Bruce Kissinger (CE); Beloit
 *William George Klein (ChE); Halstead
 *Jay B. Kline (ChE); Dodge City
 *Edwin Knapp (EE); Winona
 *Clovis Lee Roy Knecht (GS); Leona
 *Everett Carl Kniestadt (Ag); Home
 *Zora Lee Knox (HE); Emporia
 *James Douglass Kohler (CE); Herington
 *Velma May Koontz (C); Jetmore
 *Ada Leah Kraus (GS); Marysville
 *Adin Elmer Krause (ME); Hutchinson
 *Edith Emma Krause (GS); Marysville
 *Lilly Anna Krause (GS); Marysville
 *Louise Frances Krauss (HE-1; IJ-2);
 Topeka
 Waldo Ottive Kretzmeier (Ar); Manhattan
 *Harold LeRoy Kugler (Ag); Abilene
 Vaughn Lacey (PE); Sharon Springs
 *Wilbur Eugene Laird (CE); Wichita
 *Russell Laman (GS); Rice
 *Kenneth George Lancaster (ME);
 Junction City
 *Robert Francis Lang (PE); Denver, Colo.
 *Roger Andrew Lang (GS-1; Ag-2);
 Denver, Colo.
 *Gladys Carrie Langdon (GS); Lebanon
 *Merriam Marvin Langmade (IJ); Oberlin
 *Melvin Earl Lantz (EE); Madison
 Ralph Vernon Larkin (Ag); Admire
 *Loyle Leland Lathrop (EE); Burlington
 *Raymond Price Latimer (Ag); Topeka
 *Harry Edward Latting (EE); Gypsum
 *Irvin Dale Lawman (EE); Severy
 *Beulah Mae Leach (HE); Bird City
 *Bernard Roy Leak (AA); Colby
 Lawrence Cecil Learned (Ag); Plevna
 *Raymond Dale Lee (EE); Pratt
 *Irvin Arthur Lehman (ME); Halstead
 *Lorraine Lucille Lemon (HE); Douglass
 *Norvelle Nielson Lemon (EE-1; IJ-2);
 Douglass
 *Berney Hallonquist Leshner (CE);
 Dodge City
 *N. Clyde Lewis (PE); Topeka
 Charles M. Light (Ag); Liberal
 Eugene Michael Lill (CE); Mount Hope
 *Theodore Russell Lilyhorn (GS);
 Bertrand, Neb.
 *Russell Allen Lindley (Ag); Hill City
 *William Hautecoyne Lindley (VM);
 Vicksburg, Miss.
 *Frank J. Linenberger (EE); Victoria
 *Dorothy Edna Linge (HE); Topeka
 *Claude Earl Livengood (AE); Kinsley
 *Urban Monroe Lodge (ChE); Wellington
 *Lillian Marie Lohmeyer (PSM); Bern
 *Clark Henderson Long (ME); Haddam
 Willard Shull Longabach (CE); Wakarusa
 Cled Dempsey Loper (ME); Dewey, Okla.
 *Hazen Clyde Love (Ag); Wilsey
 *Charles Herbert Lovitt (Ag); Centralia
 *Gerald Lowell (IC); Hollis
 *Otto Walter Ludloff (VM);
 Honolulu, T. H.
 *Henry Norbert Luebeck (EE); Marysville
 *Rhodoric William Lumb (GS); Wakefield
 *Virgil Ferderand Lundberg (EE); Falun
 Ruth Devouta Lutz (HE); Manhattan
 *Margaret Anna Lynch (HE); Hutchinson
 *Alvena McArm (HE); Okemah, Okla.
 *James Milton McBeth (Ar); Abilene
 Lester LoVerne McBride (VM); Manhattan
 Francis Dean McCammon (Ag); Oronoque
 *Ruth McChesney (PSM); Luray
 *John Roscoe McClintock (CE);
 Hamilton
 *Clifford Edward McClure (AE-1; Ag-2);
 Republic
 *Thyra Corrine McClure (ApA); Manhattan
 *John Pierce McClurg (GS); Meriden
 *Nellie Edith McConnell (ApA); Dodge City
 *Wayne John McConnell (GS); Auburn
 *Hal H. McCord, Jr. (ArE); Manhattan
 *Richard B. McCord (LA); Manhattan
 *Ralph Erving McCormick (EE);
 Arkansas City
 *Margaret Elizabeth McCoy (GS); Meriden
 *Hiram M. McCullough (IC); Mulberry
 *Frank Clemens McCurdy, Jr. (GS);
 Leavenworth
 *Ivan Earnest McDougal (EE); Chardon
 Willard Lawrence McFillen (EE); Athol
 *Edna Fern McGill (HE-1; GS-2); Moscow
 *Allen William McGinness (Ag); Lincoln
 *Velmer Wayne McGinnis (VM); Ords, Neb.
 *Mary Rosetta McKean (HE); Scott City
 *Velma Dorthy McKee (ApA); Spearville
 *Emily Mae McKenzie (PE); Plainville
 *Robert Tulloss McLean (AA-1; VM-2);
 Ottawa
 *George Miles McLendon (Ag); Monrovia
 Marvin Albert McMinimy (AA); Ashland
 *Ruth McNally (ApA); Olathe
 *Everett John McNay (Ag); Clay Center
 *Quentin Dalbert McNergney (C); Seneca
 *May Louise McNiff (ApA); Manhattan
 *Robert Fred McNitt (Ag); Washington
 Louise Madsen (M); Natoma
 *Tyson Harvey Mailen (ChE);
 Cottonwood Falls
 *Alice Marie Maixner (GS); Wilson
 *Dorothy Lorraine Maltby (PE); Canton
 *Clarence Lingard Mann (CE); Dodge City
 *Grace Sadie Mann (GS); White City
 *James Leonard Mann (AE); Quinter
 Robert Franklin Mannen (C); Manhattan
 *Ralph Ernest Marken (Ag); Topeka
 Merrill Manning Marshall (C); Manhattan
 *Wayne Stalnaker Marteney (C); Hutchinson
 *Arthur Ray Martin (ChE); Sabetha
 Robert George Martin (EE); Leavenworth
 *Wilber John Martin (IJ); Broughton
 *Lorraine Virginia Martinson (PE-1;
 HE-2); North Topeka
 Roy Marion Martz (CE); Liberal
 *Lawrence Norbert Marx (CE-1; GS-2);
 Manhattan
 *Earl Henry Massengill (AE); Caldwell
 *Harold Ross Matheny (ME-1; IJ-2);
 Douglass
 Irl McClellan Mayden (GS); Manhattan
 *Floyd James Mayer (CE); Wetmore
 *Hester Leonell Mazy (HE); Bryan, Tex.
 *Hazel Marie Mead (HE); Manhattan
 Challis Walter Meagher (IJ);
 Wamego (deceased)
 *Ruth Marie Mears (HE); Simpson
 *Kenneth Gerald Medley (EE); Hill City
 Ben L. Meibergen (CE); Downs
 *Gordon Clarence Raymond Melgren
 (EE-1; GS-2); Olsburg
 *John Alden Meredith (CE); Auburn
 *William Jerrold Meredith (C); Hill City
 *Anton C. Mermis (EE-1; C-2); Gorham
 *Victor Therom Merryfield (IC); Minneapolis
 Jess F. Merryman (CE); Topeka
 *Josephine Elizabeth Merryman (ApA);
 Topeka
 *Donald Kenneth Meyer (CE); Topeka

FRESHMEN—Continued.

- *Wiley Wilbert Meyer (Ar-1; Ag-2); Bazine
 *John Wesley Meyers (C); Merriam
 *Lloyd William Michael (PE); Lawrence
 *Julius Carl Michaelis (GS); Paxico
 *Murray Samuel Mikesell (VM); Republic
 *Arvena Mildred Miller (PSM); Manhattan
 *John Ivan Miller (Ag); Prescott
 *Kenneth Byron Milliken (CE); Tecumseh
 James Martin Mills, Jr. (CE); Kansas City
 Frank Missimer, Jr. (C); Russell
 *Irene Catherine Missimer (GS); Manhattan
 *Catherine Beatrice Mitchell (C); Concordia
 *Ralph Ermen Mitchell (Ar); Manhattan
 Loyal Ray Mock (ME); Osborne
 Fred William Moehlman (C); Manhattan
 *Mary Ida Molby (HE); Greenleaf
 *Orville Bertrand Moody (Ag); Ogden
 *Gilbert Carlyle Moore (Ag); Louisburg
 Raymond Benjamin Moorman (GS);
 Manhattan
 *Margaret Naida More (GS); Glen Elder
 *Neal Francis Morehouse (IC-1; CE-2);
 Manhattan
 *Virgil Imdire Morey (GS); Narka
 *Etna Faye Morgan (GS); Hugoton
 *Lee Thomas Morgan (Ag); Hugoton
 *Mildred Elaine Morgan (PE); Smith Center
 *Wade Lawrence Morgan (Ag); Phillipsburg
 *Alfred Less Morris, Jr. (Ag); New Albany
 *Earl Frederick Morrison (PE); Colby
 *Dorothea Mable Morse (HE); Wichita
 *Ethel Clarine Morton (HE); Coldwater
 *Amos William Mosher (AE); Lucas
 *Richard Edward Moss (Ag); Coats
 *Buard Loree Motes (ME); Scottsville
 *Marvin Rodney Motes (AE); Scottsville
 Florence Erma Mott (HE);
 Webster Grove, Mo.
 *George Frederick Mueller (Ag); Hanover
 *Karl Muenzenmayer (AA); Woodbine
 *Howard Mulenburg (C); Palco
 *William Clarence Muirhead (VM);
 Bradshaw, Neb.
 *Kenneth Calvin Mulliken (Ag); Topeka
 *Esther Laura Mundell (M); Nickerson
 *Bessie Glea Munson (GS); King City, Mo.
 Gaylord Russell Munson (Ag);
 Junction City
 *Fred Immanuel Munz (EE); Hudson
 *Vera Lois Murphy (ApA); Detroit
 *Clarence Bredette Murray (C); Nickerson
 *Henry Lower Muth (GS); Washington
 *Ella Augusta Naylor (ApA); Cimarron
 *Robert Bennett Neihart (CE); Lyndon
 *Frances Maude Neill (GS); Clay Center
 *Joseph P. Neill (Ag); Miltonvale
 Harold Milton Nellams (ME); Potwin
 *Isabelle Elizabeth Nelson (PSM); Delphos
 *Lucille Velma Nelson (PE); Jamestown
 *Raymond Maurice Nelson (EE); Troy
 *Roy Addison Nesbit (Ag); Ottawa
 Hampton Nett (Ag); Edwardsville
 *Charles Schomp Nevius (ME); Paola
 *Harold Redmond New (AE); Lenexa
 *Merta Louise Newcombe (ApA);
 Hutchinson
 *Rollin Allen Newcombe (Ag); Manhattan
 *Clifford Franklin Newell (CE); Abilene
 *John Walter Newton (CE); Winfield
 Bonnidelle Nicholson (HE); Olathe
 *Joseph Fedelis Nieberding (VM);
 Marysville
 *Arthur Benjamin Niemoller (EE);
 Wakefield
 *Walter William Niemoller (Ag); Wakefield
 *Lucy Ermine Nixon (HE); Manhattan
 *Galen Wiley Nolder (EE); Dodge City
 *Raymond Norman (EE); Halls Summit
 Sidney Bertrand North (Ar-1; C-2);
 Marlow, Okla.
 *Stephen Duane Northup (EE-1; C-2);
 Quinter
 *Don Leroy Nutter (IJ); Republic
 *Axel Reynold Nydell (EE); Cleburne
 Wilber Enoch Oberg (IJ); Manhattan
 *Kathryn Mary Offerle (HE); Dodge City
 *Chester Francis Ogan (VM); Madison
 *Orin Relis Olinger (GS-1; AE-2); Hugoton
 *Wayne Edward Olson (EE); Junction City
 *Frieda Marie Oltjen (HE); Leona
 *Ruby Isabelle Orebaugh (HE); Dodge City
 *Ruth Ellen Orebaugh (HE); Dodge City
 *John Allen Owen (EE); Oil Hill
 *Joenetta Orelna Owens (HE); Manhattan
 *Mina Opal Paddack (ApA); Lakin
 *Carmy Gross Page (Ag); Norton
 *Grant Wingerd Page (Ag); Detroit
 *Arlie Edward Paige (EE); Manhattan
 *Lucille Ruth Palmquist (C); Concordia
 *Leona Pauline Parken (ApA); Dwight
 *Lois Lilly Parker (GS); Broughton
 Robert Scott Parker (LG); Manhattan
 *Virginia Anne Parker (ApA); El Paso, Tex.
 Luman Gilbert Parrott (Ar);
 Kansas City, Mo.
 Harry Clinton Parshall (Ag); Manhattan
 *Horace Allan Paskl (C); Toronto
 *Lormor Allen Pearman (ArE); Holton
 *LeRoy Matthew Peak (CE); Pratt
 Paul Frederick Peak (RC); Manhattan
 *Marion Wesley Pearce (Ag); Miltonvale
 *Dorothy Pease (ApA); Manhattan
 *Eugene Way Peck (VM); Falls City, Neb.
 *Frederick Adams Peery (ArE); Manhattan
 *Fern Doris Pendleton (PE); Rossville
 *Francis Joseph Perrier (ME); Olpe
 *Erma Juanita Perry (HE); Greenleaf
 *Hester Marie Perry (GS); Manhattan
 *Jack Curtis Perry (EE); Manhattan
 *Raymond Charles Peterson (AE); Wilsey
 *Virginia Janette Peterson (GS);
 Manhattan
 *Robert Pattison Peyton (Ag); Topeka
 *Maria Elizabeth Pfuetze (HE&N);
 Manhattan
 *Ward Robert Philip (Ag); Hays
 *Charles Deets Pickett (VM);
 Kansas City, Mo.
 *LeeRoy Albert Pierce (VM); Manhattan
 *Margaret Kathryn Pierson (HE);
 Wakeeney
 *Benjamin David Pile (EE); Pomona
 *Charles LeDell Pincomb (ME);
 Overland Park
 *Mila Margaret Pishney (HE); Cleburne
 *Mildred Mary Pishny (HE); Waterville
 *Alvin George Ploger (Ag); Kinsley
 *Hazel Irene Poague (GS); Westmoreland
 Theodore Nicholas Polcyn (C); Gorham
 *Nancy Elizabeth Poole (GS);
 Kansas City, Mo.
 *William Alonzo Poole (Ar); Oil Hill
 *Dorothy Nadine Porter (PE); Lyons
 *William Sanford Powers (EE-1; GS-2);
 Gove
 *Walter Grizzell Praeger (EE); Claffin
 *Homer Lee Prather (Ag); Elmdale
 *Charles Joseph Prchal (VM); Omaha, Neb.
 *Hickman Price, Jr. (Ag); Kress, Tex.
 *Marie Vivian Priddy (ApA); Cullison
 *Charles Stanley Prince (EE); Manhattan

FRESHMEN—Continued.

- *Amos Leo Prouty (Ar); Newton
 *Kenneth Webb Putney (CE); Topeka
 *Marjorie McDonald Pyle (IJ); Manhattan
 *Byron White Quinby (Ag); Sun City
 *Eva Elizabeth Raase (GS); Belvue
 *Everett Scott Rairdon (IC); Havensville
 *Edith LaVerne Ramey (HE); Manhattan
 *Marjorie Elizabeth Ramey (HE);
 Manhattan
 *Eldred Adelbert Randall (Ag); Ashland
 *John Milton Raven (AA); Morrowville
 *Glenn Joseph Rawlin (ME); Gypsum
 Clarence Maynard Record (EE);
 Humboldt
 *Gladys Louise Reddington (ApA);
 Blue Rapids
 *Ernest Harold Reed (GS); Norton
 *Eunia Reed (Ar); Kanopolis
 *Everett Eugene Reed (ArE); Smith Center
 *Myrton Reeves (EE); Beeler
 *Arthur Abraham Regier (EE); Elbing
 Donald William Rehberg (EE); Niles
 *Albert Cones Reicherter (PE); Silver Lake
 *Jake Louis Reineccius (VM); Creston, Neb.
 *John Henry Reinecke (IJ); Great Bend
 *Ross William Reinhardt (VM); Home
 *Clarence Reiswig (EE); Hutchinson
 *Frank Henry Remlinger (EE); Strong City
 *Clarence Augustic Reynolds (VM); Wilder
 *John Lyman Rhea (Ag); Louisburg
 *George Phillip Rhoades (ME); Ashland
 Mildred Joyce Rhodes (GS); Tampa
 *Wayne G. Richards (EE); Manhattan
 *William Andrew Richmond (C); Stockton
 Burrell R. Rightmire (IC); Manhattan
 *Marian Riordan (C); Solomon
 *William Robert Roberts (EE); Manhattan
 *Harry Brookhart Robeson (EE); Galena
 *Philip Dean Rockwood (GS); Parker
 Frank Alonso Rody (IC-1; Ag-2); Leoti
 *Raymond Rollin Roepke (IC); Manhattan
 *Harold Roeske (CE); Bison
 *Charles Harold Rogers (CE); Blue Mound
 *Clyde Henry Rogers (Ag); Willard
 *Melvin Palmer Rogers (Ag); Glasco
 *Donald Winter Rohrbaugh (Ag); Ingalls
 *John Newby Romine (ME);
 Kansas City, Mo.
 *Robert Talbot Romine, Jr. (Ag);
 Kansas City, Mo.
 *Hazel May Roney (HE); Hutchinson
 *Thomas Chester Roney (ME-1; C-2);
 Webb City, Mo.
 *Elizabeth Roniger (HE); Elmdale
 *Maxine Garr Roper (IJ); Manhattan
 *Dorothy Rosencrans (GS); Manhattan
 *Don Carson Ross (GS); Manhattan
 *Frances Naomi Ross (PE); Armarillo, Tex.
 *Edward Charley Rostocil (Ag); Zurich
 *Myra May Roth (HE); Ness City
 *William Hugh Roth (EE); Ness City
 *Esther May Row (C); Larned
 *Merritt Roscoe Royer (CE); Newton
 Louis Elmer Rufener (AE); Strong City
 *Edna Maria Runcinman (PSM); Culver
 *Aileen Rundle (HE); Clay Center.
 *Dorothy Pearl Ruscoe (HE); Wakefield
 *Loyal Luther Rush (VM); Erie
 *Louise Rust (IJ); Manhattan
 *Olin Sandlin (Ag); Hill City
 *Frank Santo (EE); Manhattan
 *Edward Robert Satunas (PE); Manhattan
 *Flossie Arlene Sauvain (PE); Broughton
 Mary Lois Saxton (HE); Fort Scott
 *Joan Gladys Schafer (IJ); Vermillion
 John Nicholas Schiltz (GS); Wakefield
 *Lova May Schlatter (HE); McPherson
 *Mary Alice Schnacke (IJ); La Crosse
 Ethel Lucille Schoen (GS); Cawker City
 *Grace Leona Scholz (HE); Manhattan
 Jonah Schreiner (CE); Ramona
 *Ronald Raymond Schroeder (EE); Beverly
 *Luke Michael Schruben (C-1; AA-2);
 Dresden
 *Maurice Elmer Schruben (PSB & O);
 Dresden
 *Elbert Konrad Schuler (ArE-1; GS-2);
 Valley Falls
 *Lloyd Schulz (VM); Norton
 *Ephraim Orion Schwab (AE); Greeley
 *Louis Carl Schwanke (EE); Alma
 *Robert William Schwindler (Ar);
 Manhattan
 *Leon Lee Schwandt (CE); Bison
 Elizabeth Scott (GS); Manhattan
 Harold J. Scott (C); Altoona
 *Herbert Franklin Seibert (VM);
 Nelson, Neb.
 *Olmer John Selfridge (Ar-1; C-2); St. John
 *Ben Alfred Sellers (ME); Lyons
 *Gardner Charles Sellers (EE); Downs
 *William Arthur Sells (EE); Eflingham
 *Frederic Raymond Senti (FME);
 Cawker City
 *Ralph Franklin Shaner (VM); Topeka
 *Glenn Virgle Shank (C); Bazine
 *LeNora Marie Shara (C); Narka
 *Leona Edythe Shara (HE); Narka
 *James Leroy Sharp (EE-1; C-2); Newton
 *Doria Maxine Shaver (PE); Cedarvale
 *Marvin Ruderer Shaw (FME); Holton
 *Stanley Byrne Shaw (ME); Galesburg
 *Mildred Fay Shawver (ApA); Kincaid
 *Samuel LeRoy Sheetz, Jr. (C); Manhattan
 *Genevieve Marie Shellhaas (GS);
 Junction City
 *Josephine Clara Shellhaas (GS);
 Junction City
 *Nina Mae Sherman (HE); Grinnell
 *Margaret Elizabeth Shewell (HE);
 Neosho Falls
 *Wayne David Shier (Ag); Gypsum
 *Elwyn Space Shonyo (IC); Bushton
 *Lloyd Russell Shoup (ME); Udall
 Francisco Antonio Sierra de Soto (GS);
 Atchison
 *Dessie Caroline Sigg (C); Chapman
 Earl Lee Sims (PE); Republic
 *Gerald Alvin Simpson (Ag); Milton
 *George Walter Skinner (ME); Baxter Springs
 *Jane Isabell Skinner (PE); Stockton
 *Theodore Skinner (C); Manhattan
 *William Edgar Skinner (ChE); Belleville
 *Sadie Sylvia Sklar (Ar); Manhattan
 *Andrew Skradski (ME); Kansas City
 *Joseph Charles Slechta (IC);
 East St. Louis, Ill.
 *Glenn Wilkins Sloan (CE); Selden
 *Quintine Joseph Smart (EE); Collyer
 *Lisle Leroy Smelser (CE); Manhattan
 *Helen Elsie Smerchek (HE); Garnett
 *Esther Smiley (ApA); Manhattan
 *Hubert Leslie Smith (VM); Marshall, Mo.
 *Maurine E. Smith (HE-1; C-2); Hutchinson
 *Pansy Smith (HE); Moran
 *Russell Smith (IC); Manhattan
 *Vera Genevieve Smith (PSM); Manhattan
 *William Richard Smith (Ag); Manhattan
 *William Berchard Snodgras (VM);
 Manhattan
 *Orville Lewis Snyder (EE); Salina
 *Charles Raymond Socolofsky (PE); Tampa
 *Theodore Sommers (Ag-1; C-2); Leoti
 *Margaret Grace Souders (GS); Co'by
 *Elroy Clarence Sowers (EE); Leoti

FRESHMEN—Continued.

- *Donald James Spangler (Ag); Lone Elm
 *Reuben Albert Sparks (GS-1; Ag-2);
 Carneiro
 *Howard Scott Spear (EE); Leoti
 *Kenneth Ross Speed (Ar); Holton
 *Robert William Spiker (ChE-1; C-2);
 Manhattan
 *Raymond Robert Spilman (Ar-1; IJ-2);
 Manhattan
 Homer Ackerly Staadt (CE); Garnett
 *Earl Louis Stadel (VM); Manhattan
 John Loren Stafford (C); Leonardville
 *Helen Maxine Stanley (ApA); Concordia
 *George Alfred Stansbury (ME-1;
 PSB&O-2); Ulysses
 *Lois Lillian Starbuck (HE); Goodland
 Charles Guy Steele, Jr. (AA); Barnes
 *Harry William Steele (Ag); Arcadia
 *Virginia Maurine Steele (HE); Manhattan
 *Ernest Martin Steelsmith (ME-1; C-2);
 Detroit
 *Earl Raymond Stegman (ME); Plains
 *Harvey Albert Steiger (GS); Menlo
 *James Byron Stephenson (CE); Sedan
 *Marjorie Marks Stevenson (IJ); Oberlin
 Sylvia E'dana Stewart (PE); Eskridge
 *Velton A. Stewart (Ag); Manhattan
 *W. Russell Stewart (EE); Lowemont
 *Marion R. Stiles (IC); Jewell
 *Lois D. Stingley (PE); Manhattan
 *Rowena Pearl Stiles (HE); Kansas City
 *Ruth Vernetta Stiles (IJ); Kansas City
 *Homer John Stockwell (EE); Meriden
 *Charles Watson Stull (EE); Osborne
 *Dale Kent Stultz (CE); Woodston
 Beulah Mae Stumbo (HE); Bayard
 *Francis E. Sturgeon (C); Dodge City
 *Edward Stephen Sullivan (Ag); Mercier
 Carl Clinton Surig (EE); Altoona
 *Donald Charles Sutherland (Ar); Herington
 *Geneva Mae Sutter (HE); Effingham
 *Dorothy Eleanor Sutton (IJ); Kingman
 *John Anderson Sutton (C); El Dorado
 *Helen Louise Swan (HE); Topeka
 *Helen Elizabeth Swartz (HE); Everest
 J. Lawrence Stoddard (EE); Manhattan
 Edward Leroy Stoneking (Ag); Baldwin
 *Elden G. Stoskopf (ME); Baxter Springs
 *Cora Irene Stout (HE); Russe'l
 *Harold LeRoy Stowe (CE-1; AA-2);
 Little River
 *Ruth Evangeline Strickland (Ar);
 Manhattan
 *Juanita Lucille Strong (IJ); Topeka
 *Helmar C'inton Stuart (GS); Sterling
 Maryon Henry Swartz (ArE); Manhattan
 *Carl Marion Swinney (EE); Chanute
 Charles Henry Talbot (EE); Manhattan
 *Hughel K. Tatum (ME); Larned
 *Preston Taylor (Ag); Admire
 *Helen Marie Tedman (HE); Mount Hope
 *George Emil Teichgraeber (FME-1;
 AA-2); Marquette
 *Woodrow Teichgraeber (Ag); Osage City
 *Claude Sheich Temp'in (ME); Salina
 *Alta Nellie Thierier (M); Manhattan
 *Viola Martha Thomas (HE); Protection
 *Alfred Martin Thompson (PSB&O);
 Wamego
 *Arnold Charles Thompson (GS);
 Washington
 *Chester Irwin Thompson (Ag); Linn
 Dale Elliott Thompson (CE); Green
 *Florence M. Thompson (HE); Manhattan
 *Fred Witt Thompson (Ag); McLouth
 *James Vern Thompson (GS); Goodland
 *Marian Thompson (HE); Manhattan
 *Maurice Hoch Thompson (GS); Dodge City
 Orville Freeman Thompson (C); Alma
 *Penn Thompson (AA); Williamstown
 *Thomas Marion Thompson (VM); Mulberry
 *Verna Fern Thompson (HE&N);
 Manhattan
 Arthur Chase Thomson (Ag); McCune
 *Esther Wilhellmina Thornwall (HE);
 Topeka
 *Hill Cook Thurman (Ag); Plattsburg, Mo.
 *Joseph Francis Tighe (EE); Junction City
 *Bessie Smith Timmons (HE); Manhattan
 *Rexford Victor Tipton (EE); Glen Elder
 *Charles Kirshner Titus (Ag); Manhattan
 *Blanche Louise Tomson (HE); Dover
 Bessie Louise Torgeson (GS); White City
 *Harold Arthur Totten (EE); Clifton
 *Ernest Alva Trummel (GS); Wilmore
 *Richard Duncan Turk (VM);
 Ash Grove, Mo.
 *Charles Frederick Turner, Jr. (C); Hartford
 *Besse Irene Tyree (IJ); Wayne
 *Donald Ernest Underwood (IJ); Agra
 *Floyd Allen Underwood (Ag); De Kalb, Mo.
 Virgil Arvid Unruh (AA); Pawnee Rock
 *John Sumner Van Aken (GS); Lyons
 *Ralph Arthur Van Camp (IJ);
 Council Grove
 *Lyle Raymond Van Doren (ME);
 Manhattan
 *Charles Winifred Van Vranken (ArE); Pratt
 *Francis Arthur Vaughn (CE); Hartford
 *Marven Eugene Vautravers (Ag); Centralia
 *Albert Vesecky (EE); Kansas City
 *Stephen Vesecky (Ag); Kansas City
 *Raymond Ralph Vogelmann (EE); Potwin
 *Ruth Leanore Voshell (PE); Bucklin
 *Raymond Beaty Wagner (Ag); Richmond
 Betty Jane Wagstaff (HE-1; PE-2);
 Topeka
 *Wilbur Wahl (Ag); Wheaton
 *Leslie Elmer Wakeman (EE-1; Ag-2);
 Dodge City
 *Kendall Allison Walker (PE); Glen Elder
 *Sam Cyril Walker (GS); Junction City
 *Arden Lyal Wallace (C); Hill City
 *Wilfred Nuffer Wallace (ME); Augusta
 *Freda Pauline Walters (PE); Edmond
 *Paul Frank Warner (ChE); Whiting
 *Loren Everett Washburn (Ag); Spivey
 *Anne Elizabeth Washington (IJ);
 Manhattan
 George Washington (Ag); Manhattan
 Fred Charles Weingarh (IC); Leavenworth
 *Cleo Belle Welch (ApA); Paxico
 *James Wesley Wells (IC-1; ChE-2);
 Winona
 *Max Welton Wells (GS); Asherville
 *Carl Edward Wendell (VM); Mulberry
 *Henry William Wendt (EE); Howard, Neb.
 *Fern Uldeen Wentz (ApA); Ames
 *Frank Fowler West (ME); Arkansas City
 *Harry Eugene West (EE); Soldier
 *Margaret Jo Westemeier (C); Colby
 Kermit Louis Westrup (C); Woodbine
 *Neil Joseph Weybrew (PE); Wamego
 *Helen Frances Weygandt (HE); Keats
 *Mabel Edith Wharton (Ar); Powhattan
 *Elbert Eden Wheatley (CE); Gypsum
 *Dorothy Grace White (GS); Burlington
 *Jack White (IC); Kanopolis
 *Robert G. White (AE); Norborne, Mo.
 *Vee White (GS); Manhattan
 *William Morris Whitehead (Ar); Abiense
 *Leonard Eugene Whitlock (PE); El Dorado

FRESHMEN—Concluded.

- *James A. Whitten (Ag); Wakarusa
 *Margaret Wichers (GS); Downs
 *Howard Wildman (Ag); Manhattan
 *Lloyd Elbert Wildman (AA); Manhattan
 *Georgiabelle Wilkerson (HE); Campus
 *Velma Ruth Wilkerson (IJ); Smith Center
 *Philip Sidney Wilkins (GS); Miltonvale
 *Philip Williams (VM); Dodge City
 *Delphin Amherst Wilson (C); Axtell
 Earl Roland Wilson (Ar); Milford
 *Lewis Alfred Wilson (CE); Valley Center
 *Merwin Hales Wilson (Ag); Mulvane
 *Richard Byron Wilson (ME); Herington
 *Rollo Davis Wilson (VM); Jewell
 *Walter Edwin Wilson (Ag);
 Blackfoot, Idaho.
 *Walter George Wilson (Ag); Lincoln
 *Florence Lillian Wiltse (GS);
 River Forest, Ill.
 *Charles Asher Wimer (EE); South Haven
 *Lois Emily Windiate (HE); Nickerson
 *Carl William Wing (ME); Benedict
 *George Walter Winterscheidt (ME); Horton
 George O. Wise (Ar); Newton
 *Harley Alvin Witt (CE); Partridge
 *John Wright Witts (ME); Topeka
 *Cecil Eugene Wittum (Ag); Caldwell
 George Gordon Wolf (Ag); Marion
 *Jim Alfred Wolfe (GS); Manhattan
 *Agnes Anna Wolkenstorfer (HE); Herndon
 *Heloise Wood (C); Clay Center
 Thomas Austin Wood (EE); Louisburg
 *Joe Edgar Woodford (ME); Salina
 *Clifford Jay Woodley (ME); Tecumseh
 *Edward Francis Woods (IJ); Kansas City
 *Sheldon Edgar Woods (IC); Delphos
 *Rex Valentine Woodward (EE);
 Medicine Lodge
 *Charles Lee Woodyard (PE); Waterville
 *James Clayton Woodyard (PE); Waterville
 *John Preston Woolcott (FME);
 Harrisburg, Ill.
 Kenneth D. Worley (IJ); Randall
 *Amos Alexander Wright (ME); Concordia
 *Eleanor Emily Wright (GS); Concordia
 *Estel Lee Wright (Ag); Blue Mound
 *Harold Brockway Wright (ChE); Herington
 *Merle Elbert Wright (EE); Kiowa
 *Gertrude Wuester (PSM); Beattie
 *Donald Wilson Wyatt (IJ); Stockton
 *Joseph Casewell Wyatt (ME-1; PSB&O-2);
 Carthage, Mo.
 *Wendell Wadsworth Wyatt (ChE); Stockton
 *Harold Robert Yonts (Ag); Holcomb
 *Leonard Marion Young (ChE); Sabetha
 *Verlester Evelyn Young (ApA); Haddam
 *Wayne Winkelman Young (C); Alexander
 *Gerald Alden Younie (ChE); Natoma
 *Everett Fairbanks Yoxall (AE); Woodston
 Robert Allen Zebold, Jr. (AA);
 Pine Bluff, Ark.
 Walter William Zecker (ME); Alma
 Leslie George Zies (ChE); Pratt
 *Paul Willard Zimmer (AA); Dodge City
 *Mark Joseph Zoeller (C); Manhattan
 *Fred Zohner (EE); Penokee
 *John Francis Zumbado (ME); Junction City

SPECIAL STUDENTS

- *William Joseph Angeur (GS); Muscatine,
 Iowa
 *Andre Audant (Ag); Port au Prince, Haiti
 *Grace Iva Barger (GS); Garfield.
 *Dennie Carree Barnett (CE); Goodland
 *Nadim A. Barudi (Ag); Damascus, Syria
 *Gaston Bert (GS); Milford
 Louise Bowlus (GS); Russell
 Norma Lou Brien (GS); Born
 Ray James Bryan (GS); Woodbine
 *Velma Lorence Capper (GS); Manhattan
 Thelma Bernice Carver (GS); Chanute
 Miriam Clammer (GS); Manhattan
 Edwin Lorenz Coleman (GS); Vermillion
 *Catherine Conroy (GS); Manhattan
 *Wilma Elizabeth Copper (HE); Stockton
 Ralph Howard Crouch (GS); Herington
 Harvey Ellis Davidson (EE); Emporia
 *Mary Duncan Dimmitt (HE); Iola
 *Edith Marie Dobson (GS); Manhattan
 Helendeen Harris Dodderidge (GS);
 Manhattan
 *John Joseph Donnelly (ME); Manhattan
 Adin Montgomery Downer (GS); Syracuse
 Emily Eleanor Downing (GS); Oklahoma
 City, Okla.
 *Maebell Irene Dunbar (GS); Manhattan
 *William Louellyn Edwards (GS); Concordia
 *Henrietta Lois Erdman (GS); Park Falls,
 Wis.
 Virginia Fielding (HE); Manhattan
 *Edward Cumberland Fisher, Jr. (GS);
 St. Louis, Mo.
 Mattie Leona Goodin (GS); Clay Center
 *Christine Buckley Goodrich (GS);
 Manhattan
 *Esther Virginia Green (HE); Whiting
 David George Griffiths (GS); Manhattan
 *Pearle Haas (HE); Winfield
 Hazel Hanna (GS); Riley
 *S. Louise Huey (GS); Ogden
 William Huey (GS); Ogden
 Electa Jewell Hull (GS); Manhattan
 *Harold Oscar Johnson (GS); Kanona
 William Lee Johnson (GS); Alma
 William Richard Kendall (GS); Manhattan
 *Theodore Monroe Knittle (EE); Salina
 *Carol Christianson Kruwell (GS); Man-
 hattan
 *Maurine Theresa Lewis (GS); Manhattan
 *Carolyn Mather (GS); Burdett
 Earle Merritt (GS); Fletcher, Okla.
 Wilbur S. Nay (GS); Manhattan
 †James Thomas Newton (Ag); Douglass
 Daniel Vernon Norris (GS); Manhattan
 *Amelia Regnild Olsen (HE); Manhattan
 *Opal Olson (HE-1; GS-2); Manhattan
 *Henry Benjamin Peery (GS); Manhattan
 *Casimir Pomarzynski (Ar); Buffalo, N. Y.
 Claire Price (GS); Fredonia
 Clarence Osborn Price (GS); Manhattan
 *Ruth Bertha Raase (HE); Belvue
 †William Richards (Ag); Burrton
 *Retha Avis Roach (GS); Utica
 Harriet Robertson (GS); Manhattan
 Grayce Constance Rogers (GS); Stockton
 Eva Mae Smalley (GS); Kansas City
 Norman Courtland Smith (GS); Manhattan
 Vera May Strong (HE); Wichita
 James William Taylor (GS); Manhattan
 Edith Watson Templeton (HE); Wichita
 Ruth E. Tibbetts (GS); Leoti
 *Clay H. Tolle (CE); Manhattan
 *Ila Hall Wells (HE); Manhattan
 Claude Allen White (Ag); Manhattan
 Lillian Mary Wilber (GS); Belleville
 Wallace Robert Womer (GS); Manhattan

* Matriculated 1929-'30.

† Also pursuing graduate study.

Students in Special Courses

The abbreviations following the names of students have the following significations: DMSC, dairy manufacturing short course; FSC, farmers' short course; AMTC, auto mechanics' trade course; MTC, machinists' trade course.

William Agin (FSC); Gypsum
 Earle David Allen (DMSC); Manhattan
 John A. Beck (FSC); Ness City
 Amos Harold Beyer (FSC); Gridley
 Roy B. Bozarth (FSC); Lenora
 Ray Aurthur Buchanan (FSC); Richland
 Vira May Crawford (DMSC); Manhattan
 Jack Hubert Dannecker (DMSC); Bucklin
 A. Adolf Duerksen (DMSC); Hillsboro
 Adolph Fehrenbach (FSC); Ness City
 Henry William Fluder (FSC); Lenexa
 Eldon Donald Furney (FSC); Alta Vista
 Clifford Thomas Gordon (AMSC);
 Manhattan
 Ermon Dennis Haag (MTC); Larned
 John Henry Haag (DMSC); Holton
 Lawrence Habiger (FSC); Bushton
 Waldemar Lewis Hanke (FSC); Waterville
 Louis Benton Hanson (FSC); Jamestown
 George Thomas Hawley (AMTC); Garrison
 Hugh Miller Hay (DMSC); Belmont, Ohio
 Richard H. Herra (FSC); Linn
 Frank Newton Holliday (FSC); Soldier
 Victor Hopeman (FSC); Independence
 Gerald Ray Horton (FSC); Madison
 Elmer Marion Irvin (AMSC); Lewis
 Carl John Henry Jasper (FSC); Fairview
 Harold Peyton Jeffers (FSC); Highland
 Glenn Dean Johnson (MTC); Larned
 William Henry Juzi (FSC); Florence
 Orren Leslie Karr (FSC); Americus
 Jesse LeRoy Kump (DMSC); Scott City
 Donald Henry Laflin (FSC); Broughton
 George Edward Larson (FSC); Chanute
 Everett Charles Lowry (FSC); Logan
 Gerhard H. F. Lutjemeier (FSC); Barnes
 Robert Glen McAninch (AMTC); Garrison
 Julius Ceasar McCann (AMTC); Manhattan
 Irene McGann (DMSC); Manhattan
 Delmar Luke Miley (FSC); Hoxie
 Frederick William Millenbruch (FSC);
 Herkimer
 William Y. Nauerth (FSC); Keats
 Ralph Loren Newson (AMSC); Lewis
 Myron T. Osenbaugh (FSC); Clay Center
 Emil Herman Ott (FSC); Madison
 Emil Fredrick Peeks (FSC); Marysville
 Artie I. Peffley (FSC); Manhattan
 Emil William Ploog (FSC); Lorraine
 George Michael Reddy (DMSC);
 Manhattan
 Clyde C. Reed (FSC); Kanopolis
 Albert Lawrence Reichle (FSC); Riley
 Vernon Evan Ritz (FSC); Cawker City
 Gerald Leroy Rose (FSC); Agra
 Walter Raymond Rothe (FSC); Ness City
 Homer Glace Rundle (FSC); Clay Center
 Lawrence John Sack (FSC); Hays
 Ernest Charles Schlagel (FSC); Lenexa
 Will Henry Schneider (FSC); Gridley
 Rowland Whedon Schultz (FSC); Lisle, Mo.
 Arndt M. Schumann (FSC); Netawaka
 Bruce Phillip Scott (FSC); Manhattan
 Harry Eldon Scott (FSC); Le Loup
 William Bernard Shaffer (FSC); Dighton
 Glen Siegle (FSC); Manhattan
 James Milton Soper (DMSC); Manhattan
 Leland Russell Stewart (MTC); Fort Riley
 Gerard Aloysias Still (FSC); Atchison
 David Frank Stouffer (FSC); Glen Elder
 Ernest P. Suderman (FSC); Hillsboro
 Julius Clarence Torkelson (FSC); Everest
 Severt Albert Torkelson (FSC); Atchison
 Lyle Clifford Trapp (FSC); Waldo
 George Vander Giesen (FSC); Cawker City
 Neil Cornelious Van Hosen (FSC); Elkhart
 Raymond Vogelmann (FSC); Potwin
 Carl Walker (DMSC); Garden City
 Cyril Joseph Wassenberg (FSC); Seneca
 Harold Carl Wehrman (FSC); White Cloud
 Clifford E. Whitney (DMSC); Manhattan
 George Wierenga (FSC); Cawker City
 Hugh Scott Wilson (FSC); Council Grove
 Paul A. Wood (DMSC); Clay Center

Summer School Students

First Session

Genitha Berneice Adams; Frankfort
 Cirilo Lagmay Adam; Sison, Pang, P. I.
 Irene Theresa Adams; Frankfort
 Donald Adair Adell; Manhattan
 Harry Enoch Adell; Leonardville
 Mildred Laura Ahlstrom; Reading
 Dorothy Marguerite Akin; Manhattan
 Jean Greiner Alexander; Manhattan
 Glen Allen; North Topeka
 Hazel Evelyn Allen; Louisville
 Agnes Mae Allender; Junction City
 Ethlyn Marie Alsop; Junction City
 Malcolm Llewellyn Alsop; Wakefield
 Carl Boyd Anderson; Richland
 Ethel Leonard Anderson; Rossville
 Hazel Lillian Anderson; Bronson
 Helen Rose Anderson; Thayer
 Kenneth Charles Anderson; Eskridge
 Ross Harris Anderson; Richland
 Lottie Sybell Andrews; Junction City
 Ruth Evangel Angstead; White City
 Mary R. Anthony; Wayne
 Frederick R. Arnold; Enid, Okla.
 Floyd Warnick Atkeson; Moscow, Ida.
 Esther Elizabeth Avery; Riley
 Ruth Hilda Avery; Riley
 Lucile Helen Babcock; Phillipsburg
 Ruth Irene Babcock; Harper
 Frances Mable Backstrom; Kansas City, Mo.
 Kimball Lincoln Backus; Olathe
 Roy Bainer; Manhattan
 Lillian Baker; Manhattan
 Lucille Marguerite Bangs; Madison
 Clarence Orval Banta; Ottawa
 Lillian Evelyn Banta; Ottawa
 Joseph Monroe Barger; Manhattan
 Ellen Isabel Barker; Beloit
 Dorothy Gertrude Barlow; Manhattan
 Claude Lawrence Barnett; Manhattan
 Lawrence Richard Barnhart; Independence
 Johanna Helena Barre; Tampa
 Arthur Theodore Bartel; Bard, Cal.
 Laura Falkenrich Baxter; Manhattan
 Frances A. Beal; Clearwater
 Lillian Louise Bedor; Hollis
 Winifred Daisy Beeby; Hays
 Lillie Emma Beerhalter; Junction City
 John Gregory Bell; Atchison
 Bernice Eleanor Bender; Holton
 Erwin John Benne; Manhattan
 Gladys Ethel Meyer Benne; Manhattan
 Kenneth Dean Benne; Washington
 Helen Lee Bentley; Manhattan
 Marjorie Marie Berger; Manhattan
 Myrtle Pauling Berger; Onaga
 Silas S. Bergsma; Lucas
 William Henry Berry; Manhattan
 Mildred Adeline Bettles; Barnes
 Thomas Glen Betts; Detroit
 Jacob Biely; Vancouver, Canada
 Ethel Marie Billups; Arrington
 John Alexander Bird; Hays
 Doris Marie Bland; Lucas
 Olive Elizabeth Bland; Garden City
 Floyd Albert Blauer; Stockton
 Pearl Cline Blauer; Stockton
 Dorothy Ann Blomgren; Randolph
 Cecil Thomas Blunn; Manhattan
 Mildred Freda Bohnenblust; Leonardville
 Helen Elizabeth Boler; Dover
 Frederick Bruce Bosley; Manhattan
 Belle Bowen; Arnold
 Gladys Pearl Bowman; Wamego
 Jessie Mildred Bowman; Wamego
 Fred Ewing Brady; Topeka
 Carl Alfred Brandly; Manhattan
 Homer Cleo Bray; Manhattan
 Elmer Henry Bredehoft; Manhattan
 Evelyn Lanore Brenn; St. John
 Alice Katherine Brill; Westmoreland
 Gertrude Adaline Brill; Westmoreland
 Grace Dorothy Brill; Westmoreland
 Eva Edna Brittain; Manhattan
 Helen Sproul Brittain; Manhattan
 Parks Hillis Brittain; Manhattan
 Stanley Hyde Brockway; Topeka
 Frank Brokesh; Munden
 Gertrude Elizabeth Brookens; Westmoreland
 Mirian Elizabeth Brookover; Eureka
 James Byron Brooks; Garrison
 Albert Brown; Manhattan
 Esther Louise Brown; Manhattan
 Frances L. Brown; Tucson, Ariz.
 Orpha Brown; Edmond
 Vira Brown; Edmond
 Alice Elizabeth Browne; Vermillion
 Barbara Brubaker; Manhattan
 Edna Ida Bruenger; Broughton
 Frances Brumm; Junction City
 Thomas Walter Bruner; Jewell
 Lela Jane Bryan; Kansas City
 Ray James Bryan; Woodbine
 Hazel Eirene Buck; Derby
 Roberta Claire Burgert; Hiawatha
 Thomas J. Burke; Wheaton
 Neva LeVerne Burt; Greensburg
 Norval Odell Butler; Manhattan
 Hazel Caldwell; Clay Center
 James Phillip Callahan; Manhattan
 Albert B. Cameron; Smith Center
 Edna Dolores Campbell; Hanover
 Marcine Dorotha Campbell; Hollis
 Marion Isabell Campbell; Lyons
 Erma Belle Canning; Manhattan
 Bessie Gladys Carey; Belleville
 Zelma N. Carey; Protection
 Abbie Mae Carpenter; Clay Center
 Ina Carolyn Carpenter; Sabetha
 Sybil Ione Carpenter; Sabetha
 Sherman Harold Carter; Oneida
 Thelma O'Dell Carter; Oneida
 Mildred J. Casey; Dorrance
 Elisha Joe Castillo; Independence
 Mildred Castleman; Junction City
 B. Helen Caughron; Manhattan
 James Willard Caughron; Manhattan
 George E. Cauthen; Manhattan
 Virginia Chambers; Grandfield, Okla.
 Edna Neetta Chapin; Westphalia
 Ira Nichols Chapman; Manhattan
 Frances Eugene Charles; Manhattan
 Merle Vernon Chase; Manhattan
 Nettie Evelyn Chavey; Clyde
 Early Mast Chestnut; Manhattan
 Rose Louise Child; Manhattan
 Thelma Elizabeth Child; Manhattan
 Leonard William Christal; Manhattan
 Mary Kathryn Chronister; Topeka
 Julia Madge Clayton; Wilsey
 Opal Jane Clayton; Wilsey
 Lawrence Victor Clem; Chanute
 Ruth Clency; Manhattan
 James Wendell Coate; Miltonvale
 Helen Elizabeth Cobb; Manhattan
 Maynard Henry Coe; Manhattan

SUMMER SCHOOL—Continued.

Melvin Cooper Coffman; Wakefield
 Harley Edward Cole; Manhattan
 Robert Cole; Wetmore
 Erma Mildred Coleman; Mayetta
 Margaret L. Colver; Manhattan
 Frances Rebecca Conard; Ottawa
 Quinton Dieter Conklin; Abilene
 William Eugene Connell; Rupert, Idaho
 Marguerite Josephine Conroy; Manhattan
 Bertha Lina Cook; Eflingham
 Emma Miller Cook, Milford
 Nelle May Cook; Chapman
 Walter Vernon Cormack; Rossville
 E. Jack Coulson; Manhattan
 Fern Covert; Wichita
 Inez Mildred Crabb; Colby
 Mary Ellen Crabbe; Manhattan
 Orville Robinson Cragun; Milford
 Golda Mildred Crawford; Manhattan
 Clarence E. Crews; Manhattan
 Grace Marie Crick; Ashton
 Earl Edward Crocker; Manhattan
 Walter McConnell Crossen; Turner
 Genevieve Crowley; Manhattan
 Leonard E. Croy; Norcatur
 Naomi R. Croy; Norcatur
 Gladys Crumbaker; Manhattan
 Ethel Beatrice Culbreath; Douglass
 Eula Mae Currie; Manhattan
 Marjorie Hazel Curtis; Manhattan
 Geraldeane Cutler; Manhattan
 Edmond Ray Dailey; Garden City
 Dorothy Dean Dale; Coldwater
 Ward Edmond Dale; Topeka
 Bruce Oliver Dallam; Faucett, Mo.
 Edith Josephine Dam; Marysville
 Grace Emily Darby; Wakefield
 Nellie Dorothy Darrah; McPherson
 Grace Louise Dart; Washington
 Katherine Elizabeth Davies; Manhattan
 Mary Anne Davies; Riley
 D'Gracia Jane Davis; Lawrence
 Hilma Ruth Davis; Manhattan
 Howard Preston Davis; Manhattan
 Marion Bradford Davis; Manhattan
 Raymond H. Davis; Hays
 Irene Jeanette Decker; Robinson
 Clara Farmer Denison; Hazelton
 Dorsie Lawrence Deniston; Louisburg
 Walter Raymond Denman; Sedan
 Edgar Denny; McLouth
 Richard Kimball Dickens; Manhattan
 Donna Marie Dickinson; Udall
 Hilma Nadene Dickinson; Udall
 Mary Beatrice Dickson; Washington
 Marguerite Dickson; Washington
 Leona Sedonia Diederich; Greenleaf
 James Roy Dinwiddie; Easton
 Mary Louise Dittmore; Manhattan
 Paul Lawrence Dittmore; Manhattan
 Edith Marie Dobson; Manhattan
 Helendeen Harris Dodderidge; Manhattan
 Russell Reuben Dodderidge; Council Grove
 Harry Stillman Dole; Manhattan
 Mary Monica Dougherty; Lillis
 Myrtle Dougherty; Manhattan
 Dorothea Ruth Dowd; Manhattan
 Fern Louisa Downs; Oak Hill
 Thomas Edward Doyle; Manhattan
 Bertha Lumena Dreier; Berryton
 Gabriel Ernest Drollinger; Manhattan
 Florence Estelle Dudley; Clay Center
 Clara Kathryn Dugan; Manhattan
 Mary Irene Dunn; Clay Center
 Helen Gertrude Durham; Manhattan
 Izola Mildred Dutton; Manhattan
 Edwin Osborne Earl; Manhattan
 W. Harvey Ebersole; Newton
 Janet Cuthbert Edelblute; Topeka
 Frank Edward Edlin; Manhattan
 Helen Ehrhardt; Westphalia
 Edna Frances Ehrlich; Marion
 Harold Chester Elder; Mankato
 Lois Wanda Elder; Marysville
 Hellen Rachel Elling; Manhattan
 Opal Marion Endsley; Manhattan
 Mildred V. English; Lincoln
 Alice Josephine Englund; Salina
 Alfred Harlan Epperson; Manhattan
 Anna Marie Erickson; Clyde
 Iris Clara Ericson; Bridgeport
 Mildred Berniece Esslinger; Bala
 Ruth Elizabeth Esslinger; Bala
 Everett Noel Evans; Wilsey
 Paul Eugene Fairbank; Topeka
 Sidney Lanier Falin; Cleburne
 Everett Ellsworth Fauchier; Osage City
 Elwin E. Feather; Minneapolis
 Ethel B. Feese; Junction City
 G. Jean Ferguson; Manhattan
 Lendall Kiple Firth; Manhattan
 Edward Joseph Fisher; Leavenworth
 Theodore Allen Fleck; Wamego
 Beattie Hope Fleenor; Manhattan
 John Sebastian Florell; Manhattan
 Kenney Lee Ford; Manhattan
 Cora Helen Forney; Minneapolis
 LeVern Velma Forsyth; Wakefield
 Harold Earl Frank; Manhattan
 Kathleen Grace Fraser; Talmage
 Enos Allen Fritz; Riley
 Raymond Glenn Frye; Manhattan
 Edith Fultz; Wichita
 Edgar Daniel Furse; Pleasanton
 Hilliard Lafayette Gamble; Halstead
 Ruth Dible Gamble; Rexford
 Marguerite Jane Gardner; Clifton
 Alice Louise Garvin; Ogden
 Fern Emeline Gaston; Wakefield
 Lester Charles Gates; Seward
 Martin Henry Gates; Kansas City
 Bessie Geffert; Manhattan
 Cora Mae Geiger; Salina
 Harvey Stafford German; Little River
 Glen Erwin Ghorrmley; Monomi, Neb.
 Frances Eloise Gibson; Muskogee, Okla.
 Marie Mary Gibson; Palco
 T. Henry Gile; Scandia
 Adelaide Louise Glaser; Ozawkie
 John Snell Glass; Manhattan
 Archibald Alexander Glenn; Webster
 William Henry Glover; Crescent, Okla.
 Myrtle Genevieve Gohlke; Holton
 Margaret Rose Goodyear; Wichita
 Ruth Beatrice Gordon; De Soto
 Austin Beatrice Gordon; De Soto
 Austin Gerald Goth; Manhattan
 Esther Gould; Manhattan
 Earle Ervin Graham; Magnolia, Ark.
 George Lauvin Graham; Manhattan
 Ruth Elinor Graham; Manhattan
 Spencer William Graham; Beattie
 Clarence Orrin Grandfield; Manhattan
 Erma Sarah Gravenstein; Riley
 E. Rebecca Green; Cawker City
 Roy Monroe Green; Manhattan
 Mary Gertrude Grider; Rolla
 Eunice Grace Grierson; Manhattan
 David G. Griffiths; Manhattan
 Winston King Grigg; Abilene
 L'anton Grover; Salina
 Myrtle Annice Gunselman; Manhattan
 Grace Mary Gustafson; Marysville
 Ruth Violet Gustin; Manhattan
 Eva Maude Guthrie; Woodston
 Ferdinand Daniel Haberkorn; Hutchinson
 Arthur Carroll Hadley; Wichita

SUMMER SCHOOL—Continued.

- Bernice Mildred Hageman; Leonardville
 Gladys Iona Hahn; Clay Center
 Wilma Helene Hahn; Clay Center
 Verna Lucille Hahn; Clay Center
 Harry Herbert Halbower; Kingman
 Marcia Hall; Manhattan
 Ve'na Genevieve Hallock; Manhattan
 Helen Margaret Halstead; Manhattan
 Doris Independence Hamilton; Glen Elder
 Richard Edward Hamier; Manhattan
 Gladys Viona Hanson; Leonardville
 Katherine Frances Harding; Manhattan
 Oscar Miles Hardtarfer; Lawrence
 May Harland; Frankfort
 Maude Harland; Frankfort
 Florence Harris; Manhattan
 Vida Agnes Harris; Manhattan
 William Pliny Harriss; Kansas City
 Maude Hart; Albuquerque, N. Mex.
 Frank M. Hartman; Manhattan
 Lillian E. Haugstead; Lyndon
 Irene J. Hauk; Holton
 Everett F. Haukenberry; Manhattan
 Stella Havel; Cuba
 Chester Havley; Frankfort
 Lillian Iola Havley; Manhattan
 Martha Jane Hay; Sterling
 Alunda Mae Hayes; Onaga
 Frederick Hedstrom; Manhattan
 Hazel Ruth Heikes; Wakefield
 Carl Heinrich; Durham
 James Roe Heller; Detroit
 Margaret Lorraine Hemphill; Chanute
 Alice Evangeline Henley; Ness City
 Naomi Ruth Henry; Clay Center
 Martha Louella Hensley; Jackson, Mo.
 Elizabeth Spears Hepler; Columbus
 Katharine Paddock Hess; Manhattan
 Lucille Hesselbarth; Abilene
 Fern Vivian Hickey; Dover
 Lynn Bandy Hicks; Oil Hill
 Earl Martin Hiestand; White Cloud
 Edna Elizabeth Higgins; Solomon
 Charline Vee Hill; Horton
 Frank Webster Hill; Rochester, N. Y.
 Robert Townner Hill; Grand Meadow, Minn.
 Lora Valentine Hilyard; Manhattan
 Harry Wilson Hinckley; Barnard
 Winnie Blanche Hinman; Esbon
 Thomas Burl Hofmann; Silver Lake
 Mary Alice Holladay; Augusta
 Cecil Cannum Holmes; Goff
 Johnson Alcott Holmes; Manhattan
 Vera M. Holmstrom; Randolph
 Verna Doris Holmstrom; Randolph
 Joseph Frank Holsinger; Kansas City
 William Milton Holt; Augusta
 Ruth Louise Holton; Manhattan
 Elsa Ottilia Horn; Manhattan
 Myrtle Evelyn Horne; Alma
 William Robert Horsfall; Manhattan
 Harper Delmar Horton; Plevna
 Bert Lewis Hostinsky; Manhattan
 Hazel Juanita Hotchkiss; Manhattan
 Sarah Genevieve Howe; Emporia
 Mildred Howe; Beloit
 George Edward Hrdy; Waconda Springs
 Nellie May Hubbard; Cedarvale
 Lela Ethel Huber; Leonardville
 Verda Murphy Hudson; Manhattan
 Twila Loreen Huggins; Manhattan
 Lelia Mary Hughes; Kansas City, Mo.
 Marie Hughes; Salina
 Aileen Hull; Manhattan
 Glade W. Hurst; Caldwell
 Adelaide Hutter; Cherryvale
 Esther Victoria Hyrup; Mentor
 Helen Eileen Ingalls; Talmage
 Edna Victoria Isaacson; Randolph
 Percy Jennings Isaacson; Walsburg
 Mary Jane Isbell; Bennington
 Cecile Mae Jackson; Kress, Tex.
 Hazel Elevet Jackson; Clifton
 Ralph William Jackson; Manhattan
 Lucile Jaedicke; Hanover
 Lois Bennett Jarrott; Hutchinson
 George Henry Jenkins; Manhattan
 Pauline Gertrude Jermark; Delphos
 Mary Jeanette Jobling; Caldwell
 Lillian Iris Johaneck; Esbon
 Ethel Evangeline Johnson; Cleburne
 Francis Eugene Johnson; Manhattan
 Genevieve Alberteen Johnson; Manhattan
 George Roll Johnson; Council Grove
 Ruth Maude Johnson; Beloit
 Hazel M. Johnston; Leonardville
 Sara Virginia Jolley; Manhattan
 Elmo E. Jones; Manhattan
 Esther Margaret Jones; Frankfort
 Margaret F. Jones; Abilene
 Mildred Irwin Jones; Clay Center
 Louis Mark Jorgenson; Manhattan
 Justin Joe Joy; Osborne
 Ralph M. Karns; Ada
 Pauline Kegereis; Salina
 Harry Llewellyn Kent; State College,
 N. Mex.
 Harry Kibler; Sedan
 Helen Kimball; Manhattan
 John Kimball; Smith Center (deceased)
 Pattie Margaret Kimball; Manhattan
 Bruce Alvin Kindig; Medicine Lodge
 Dale Franklin King; Manhattan
 Marion Gibbonney Kirkpatrick; Manhattan
 Melvin Clair Kirkwood; Natoma
 Vivian Iliene Kirkwood; Manhattan
 Dorothy Elizabeth Klein; Topeka
 Norma Louise Knock; Lincoln
 James Raymond Knox; El Dorado
 George Herman Koelling; Talmage
 Josephine Elizabeth Koenig; Kansas City,
 Mo.
 Elsie LaVerne Kramer; Hiawatha
 Carrie Gertrude Krueger; Bison
 Dorothy Beryl Kuhhle; Concordia
 Malcolm Laman; Rice
 Russell Laman; Rice
 Rachel Joy Lamprecht; Manhattan
 Charles Herbert Lantz, Jr.; Manhattan
 Melvin Earl Lantz; Madison
 Fern Aileen Larabee; Haddam
 Eveline Juliet Larson; Leonardville
 Frances Katheryn Marie Larson; Smolan
 Iva Larson; Manhattan
 Merville Larson; Manhattan
 Helen E. Lauck; Maplehill
 Bessie Adeline Leach; Bird City
 Daniel Noel League; Wetmore
 Elden Emanuel Leasure; Manhattan
 Edwin E. Lee; Michigan Valley
 Greta Velma Leece; Formoso
 Lucy Mae Leiszler; Clifton
 Mildred Hazel Lemert; Cedarvale
 Florence Marie Leonard; Manhattan
 M. Marie Leshner; Dodge City
 Willis Lloyd Leshner; Manhattan
 Bessie Helen Lewis; Wakefield
 Clarence F. Lewis; Manhattan
 Ruby Mae Lewis; Concordia
 Joe Kenneth Limes; La Harpe
 Norman M. Lindbloom; Cleburne
 Per Gustave William Lindquist; Manhattan
 Alice Charlotte Linn; Clyde
 Aubrey Erskine Lippincott; Manhattan
 Eugene Clifford Livingston; Hutchinson
 Twila Ellen Lloyd; Oak Hill
 Maude Maxine Lober; Keats

SUMMER SCHOOL—Continued.

Robert Ivan Lockard; Norton
 Evelyn E. Longren; Leonardville
 Elizabeth A. Lorimer; Kansas City, Mo.
 L. Loraine Lortscher; Fairview
 Virginia Louise Lovitt; Great Bend
 Ruth Mildred Lowrey; Selden
 Gladys May Loy; Wakeeney
 Ruby Lillian Loy; Barnard
 Verna Mern Loyd; Hiawatha
 Otto Walter Ludoff; Honolulu, T. H.
 Elmer Lull; Haddam
 John Wallace Lumb; Manhattan
 Lucile Alice Lund; Manhattan
 Charles Ellis Luthey; Carbondale
 Ruth Devouta Lutz; Manhattan
 Lawrence Niles Lydick; Winfield
 Georgie Seaman Lyman; Ulysses
 George Cardinal Lyon; Manhattan
 Agnes Jeanne Lyon; Manhattan
 Florence Minette McCall; Salina
 Lucille McCall; Winfield
 Geraldine Alberta McCammon; Wellington
 Hazel Juanita McCammon; Wellington
 Hildred Naomi McCammon; Wellington
 Caroline Louise McCarthy; Kansas City
 Wayne McCaslin; Osborne
 Elinor Mary McCaul; Elk City
 Arthur Jesse McCleery; Esbon
 Anna Evelyn McClung; Attica
 Helen Edith McClung; Attica
 Thelma Fern McClure; Hutchinson
 Grace Kerns McCoppin; Phillipsburg
 Robert Earl McCormick; Oatville
 Mary Alice McCreight; Soldier
 Ethel McDonald; Manhattan
 Ada Marie McKeever; Holton
 Agnes Vivian McKibben; Manhattan
 E. Pearle McKinney; Junction City
 M. Roselyn McKinney; Junction City
 Mary Martha McMichael; Council Grove
 Daisy Ferne McMullen; Norton
 Alvin Arthur Maddy; Utica
 Stella Cook Maddy; Seibert, Colo.
 Dorothy Andrews Madison; Manhattan
 Helen Lorine Magee; Goddard
 Hazel Mahon; Silver Lake
 Alice Manley; Cheney
 Selma Marie Maronde; Gorham
 Daniel Claire Marshall; Manhattan
 Ethel Justin Marshall; Manhattan
 George Edward Marshall; Bonner Springs
 Arthur Ray Martin; Sabetha
 Claire Arnot Martin; Abilene
 Dorothy A. Martin; Manhattan
 Edith Edna Seavey Martin; Manhattan
 Flossie Pearl Martin; Topeka
 Helen Crittendon Martin; Abilene
 Ralph R. Martin; Topeka
 Charlotte Viola Mathias; Manhattan
 Esther Carol Mathies; Alma
 James Asel Matson; Miltonvale
 Mary Evangeline Maxwell; Manhattan
 Charles Hubert Mehaffey; Farmington
 Glen Ervan Meredith; Junction City
 Alfreda Meyer; Frankfort
 Mary Amanda Meyer; Mound City, Mo.
 Alfred Maxwell Meyers; Merriam
 Albert William Miller; Manhattan
 Breta Stena Miller; Blue Rapids
 Clara Grace Miller; Manhattan
 Govan Mills, Jr.; Lake City
 Esther Edna Mitchell; Rosedale
 Walter Rankin Mitchell; Salina
 Maurice Charles Moggie; Manhattan
 Aldie Ann Moline; Randolph
 William Edward Moling; Cartersville, Mo.
 Luther Emanuel Monell; Osage City
 Leon Francis Montague; Solomon
 George Montgomery; Manhattan
 Leonard Howard Montgomery; Neodesha
 Ferne Hilda Moore; Blue Rapids
 Helen Handel Moore; Altamont
 Raymond Benjamin Moorman; Manhattan
 Alta M. Morehouse; Manchester
 Alice Prince Moreland; Manhattan
 J. Wade Morey; Narka
 Virgil Iadmire Morey; Narka
 Alice Lucille Morgan; Concordia
 Charles Elias Morgan; Concordia
 Una Morlan; Courtland
 Eula Frances Morris; Yates Center
 Irene Morris; Paxico
 Marguerite Morris; Paxico
 Maria Morris; Manhattan
 Mary Hope Morris; Manhattan
 Merle Dallas Morris; Paxico
 Paul R. Morris; Paxico
 Eva Hope Morrison; Manhattan
 Thirza Adaline Mossman; Manhattan
 Edna Caroline Mueller; Washington
 Anna Neal Muller; Topeka
 Flavius Albert Mundell; Nickerson
 Merlin Mundell; Nickerson
 Stella Constance Munger; Manhattan
 Ferne Aileen Murray; Manhattan
 Walter Harold Murray; Manhattan
 Nancy Mary Mustoe; Norton
 Gladys Myers; Burns
 Joyce Myers; Sylvia
 Floyd Sereign Naugle; Highland
 Irene Josephine Nelson; Bridgeport
 William Anthony Nelson; Alta Vista
 Louis Bert Neuman; Norton
 Fred Irwin Nevius; Paola
 Alma Dale Newell; Durham
 Leonor Nichols; Manhattan
 Bonnidell Nicholson; Olathe
 Karl Polk Niederlander; Manhattan
 Freda Marie Nixon; Topeka
 Philip Myron Noble; Manhattan
 Ethel Myrtle Noland; Keats
 Delmo Alice Nowels; Glasco
 Harold Alfred Noyce; Keats
 Gladys Mae Nulik; Caldwell
 Evelyn Jean Nuzman; Manhattan
 Loren Manuel Nuzman; Manhattan
 Geraldine O'Daniel; Westmoreland
 Vera Maye Odell; Republic
 Loren William Olmstead; Great Bend
 Lillie Clara Olson; Manhattan
 Luella O'Neill; Winchester
 Bessie Mae Orr; Summerfield
 Opal F. Osborne; Partridge
 Robert Leroy Owens; Chapman
 Alfred Robb Paden; Argonia
 Lita Mae Paine; Admire
 Leslie Ellison Paramore; Delphos
 John Huntington Parker; Manhattan
 Laurence Parker; Manhattan
 Marguerite Parker; Lebanon
 Muriel Rebecca Parrack; Mahaska
 Jennie M. Parry; Riley
 Olodine Nina Parshall; Manhattan
 Dorothy Paula Pease; Manhattan
 Royce Owen Pence; Manhattan
 Alice Elevera Peterson; Assaria
 Irving Everett Peterson; Haddam
 Virginia Janette Peterson; Manhattan
 Eunice Ruby Phelps; Blue Rapids
 Louise Arminda Phelps; Dwight
 Geneva Pauline Phillips; Chapman
 Hazel Mae Pickard; Haddam
 Irene Olive Pierson; Stanton, Iowa
 Isa Ruth Plank; Lyons
 Adolph Gustav Pommerenke; Clay Center
 Myra Thelma Potter; Lawrence

SUMMER SCHOOL—Continued.

- H. Pierce Powers; Junction City
 George Lee Pryor; Salina
 Mildred Emily Purcell; Manhattan
 George Morris Purcell; Manhattan
 Elizabeth Quinlan; Manhattan
 Addie Alice Radebaugh; Frankfort
 Grace Radebaugh; Frankfort
 George Hemrod Railsback; Manhattan
 Edith LaVerne Ramey; Manhattan
 Marjorie Elizabeth Ramey; Manhattan
 Marie Inez Ramsey; St. Francis
 Elsie Emna Rand; Wamego
 Lillie Lavone Randle; Idana
 Mary Edith Rankin; Kansas City
 Emma Evelyn Rathbone; Manhattan
 Mary Josephine Ratliff; Manhattan
 Lyle Cheadle Read; Clay Center
 Lawrence V. Rector; Manhattan
 Alzina LaVerne Reed; Wakefield
 A. Louise Reed; Manhattan
 Mary Betz Reed; Manhattan
 Ruth Ellen Reed; Belleville
 Charles Edward Reeder; Troy
 Ethelyn Pray Rees; Mound City
 Charlotte Louise Remick; Manhattan
 Anna Hilkea Remmers; Riley
 Jennie Fee Richards; Keats
 Nell G. Richards; Keats
 William Richards; Burrton
 Eva Beatrice Richardson; Endicott
 Gracia Fern Richardson; Endicott
 Alma Margaret Richhart; Nirkerson
 Hugh Kenneth Richwine; Holcomb
 Tillie Helen Rife; Anthony
 Mary Eilleen Roberts; Manhattan
 Lucille Roberts; Republic
 Sarah Helen Roberts; Manhattan
 Bella Catherine Robertson; Manhattan
 Chester Merle Roehman; White City
 Mabel Elsa Roepke; Manhattan
 Floyd Nolan Rogers; Smith Center
 Frazier Rogers; Gainesville, Fla.
 Emily May Rogler; Manhattan
 Mary Magdalene Rolfe; Fairview
 Laree L. Rolph; Delphos
 Clara Irene Rosenow; Clay Center
 Edna Ross; Clay Center
 Frank Henry Roth; Wichita
 Dorothy Dee Roy; Wilsey
 Glenn L. Rucker; Ottawa
 Fern Rundle; Clay Center
 Ray Russell; Kansas City
 William Everett Russell; La Crosse
 Helen Marguerite Rust; Manhattan
 John Howard Rust; Manhattan
 Henry Benton Ryon; Manhattan
 Pauline Elizabeth Sadler; Randall
 Russell Scott Sage; Maplehill
 Fyrn Salley; Manhattan
 Fontella Emma Salmon; Wayne
 Marguerite Dorothy Samco; Canning, S. Dak.
 Jack Sanders; Independence
 Robert E. Sanders; Burlington
 Eugene Caldwell Saunders; Roswell, N. Mex.
 Mabel Lucille Schardein; Nickerson
 Margaret James Schattenburg; Riley
 Ruth Schlotterbeck; Chickasha, Okla.
 Gladys Schmedeman; Manhattan
 Lorna Katherine Schmidler; Marysville
 Edward Henry Schneider; Kansas City
 Mary Frances Schuerer; Junction City
 Ruby Thelma Scholz; Frankfort
 Marie Frances Schoneweis; Clay Center
 Eunice Alvina Schroeter; Ellinwood
 Leona Gwendolyn Schuester; Cowgill, Mo.
 James William Schwanke; Alma
 Agnes Mabel Scott; Westmoreland
 Harriet Newell Scott; Kirwin
 Marjorie Marie Scott; Altoona
 Myra Edna Scott; Manhattan
 Emily Rose Sedivy; Irving
 Aurelia A. Seeberger; Hanover
 Alma Elizabeth Seematter; Marysville
 Lela Mae Segrist; Manhattan
 Mirriam Etna Selden; Clyde
 Mabel Luella Sellens; Russell
 Sopha Mae Shade; Hays
 Maxine M. Shaffer; Beloit
 Leona Edythe Shara; Narka
 Vivian Bernice Shaw; Louisville
 Alene Frances Shay; Miltonvale
 Cecelia Matilda Shea; Clifton
 James Frederick Shea; Manhattan
 Floyd Henry Sheel; Earlton
 Gertrude Sheetz; Admire
 Vivian A. Shields; Hoxie
 Elsie Leah Shippy; Chapman
 Lina Maria Shippy; Chapman
 Daisy May Shivers; Manchester
 Beulah Fern Shockey; Iola
 Bernice Elizabeth Shoebrook; Horton
 Leo Charles Short; Norton
 Mabel Shrontz; Wilsey
 Verma Alice Siddens; Westmoreland
 Kermit James Silverwood; Ellsworth
 Lonnie Joseph Simmons; Manhattan
 Dorothy Lois Simpson; Leonardville
 Hazel Belle Simpson; Bala
 Mildred Virginia Simpson; Dunavant
 Sister Lorena Heidrick; Manhattan
 Sister M. Domitilla Arnoldy; Manhattan
 Sister Nicholas Arnoldy; Manhattan
 Sister M. Francis Costello; Manhattan
 Sister M. Roselita Hall; Concordia
 Lois A. Sitterley; Hanhattan
 Sadie Sylvia Sklar; Manhattan
 Harry Edwin Skoog; Caldwell
 Helen Louise Sloan; Hutchinson
 Daphyne Vivian Smith; Manhattan
 Ella Lavonne Smith; Agenda
 Florence Verlene Smith; Tarkio; Mo.
 Frank Lynn Smith; Longford
 Hobart Muir Smith; Bentonville, Ark.
 Sam J. Smith; Florence
 Edward Paul Smoot; Eureka
 Katherine Bingman Snair; Manhattan
 Ruth Margaret Solomon; Kansas City, Mo.
 Stevie Stiles Solt; Manhattan
 Stanley Livingstone Soper; Manhattan
 Julia Lurena Southard; Manhattan
 Alma Spencer; Yates Center
 Virgie Spreer; Clay Center
 Elda Etta Stafford; Republic
 Thelma Winona Stafford; Republic
 Ruth Elizabeth Stener; Courtland
 Irwin R. Stenzel; Marion
 Ruth Sterling; Morganville
 Eva Almeda Stewart; Manhattan
 James Arlie Stewart; Abilene
 La Von Stewart; Wamego
 Mary Emma Stewart; Auburn
 Lee Rudell St. John; Morland
 Catherine Oloyn Stone; Manhattan
 Mona Valeria Stoops; Bellaire
 Leah Angeline Stout; Manhattan
 Maidene Stout; Manhattan
 Ruby Roberta Stover; Kansas City
 William Timothy Stratton; Manhattan
 Ione Strickland; Manhattan
 Rozella Stutz; Manhattan
 Mary L. Summers; Horton
 Coit Alfred Suneson; Missoula, Mont.
 Wilma Olive Sutton; Kingman
 Gertrude Bernice Swagerty; Clay Center
 Carola Agnes Swanson; Manhattan
 Charlotte Huntington Swanson; Manhattan
 Elizabeth Dorothy Swart; Riley
 William Jay Sweet; Wichita

SUMMER SCHOOL—*Concluded.*

Charles Henderson Synnamon; Wichita	Ellen Louise Watson; Manhattan
Cleon Orel Tackwell; Manhattan	John Clarke Watson; Frankfort
Laura Ethel Taggart; Salina	Jewell Kimball Watt; Coyville
Velma Arthema Talbot; Marysville	Alta Bernice Watters; Marysville
Philip Jesse Tatman; Lucas	Ella H. Webb; Kansas City
James W. Taylor; Manhattan	Ray Edward Weide; Leona
Lot Forman Taylor; Ashland	Harold Rowe Weller; Olathe
Mark Mowell Taylor; Harveyville	Ethel Sue Wells; Winona
Mary Fidelia Taylor; Newton	Olive O. Wells; Belleville
Sylvia Ernestine Teasley; Glaseo	Thornton Walton Wells; Hays
Donald M. Telford; Manhattan	Lulu Parten Wertman; Morrowville
Juanita La Vern Telford; Manhattan	Jesse Frederick Westerdale; Wakefield
Mary Cleo Teter; El Dorado	Opal Augusta Westhausen; Belleville
Rebecca Louise Thacher; Waterville	Bernice Elizabeth Weygandt; Manhattan
Emily Sheppard Thackrey; Manhattan	Florence Rilla Whipple; Manhattan
Russell Ira Thackrey; Manhattan	Julia Alberta White; Clay Center
Howard I. Thaller; Manhattan	K. Marie White; Oswego
Beulah Helen Thomas; Ottawa	Mary Frances White; Manhattan
Grace Anna Toburen; Barnes	Royden Keith Whitford; Hamlin
Mateel Finch Todd; Manhattan	Delta Nadine Whitmore; Manhattan
Evelyn Lucille Torrence; Independence	Kathryn Whitten; Wakarusa
Ivan C. Townsden; Randall	Margaret Katherine Wieda; Hiawatha
Nellie Trechsel; Idana	Louis George Weineke; Sabetha
Ruth Anna Tredway; La Harpe	Mary Christine Wiggins; Eureka
Opal Pearl Tucker; Alton	Esther Margaret Wilkins; Meade
Mary Edna Tupper; Manhattan	Jean Frances Willis; Washington
Faye Marjorie Turner; Manhattan	Emily Wilson; La Harpe
Clarence Correll Uhl; Manhattan	Karl Marx Wilson; Concordia
Mildred Fern Ungeheuer; Centerville	Leone Wilson; Wichita
Gladys Ellen Vail; Manhattan	Charles Asher Wimer; South Haven
Lois Castle Vance; Kiowa	Ruth Maybelle Wimer; South Haven
Ruth Van Orsdol; Rossville	Verna B. Winchel; Salina
Gerald Dean Van Pelt; Beloit	Jo Marie Wise; Manhattan
Grace Emily Van Scoyoc; Mont Ida	Irma Mildred Wolf; Lawton, Okla
Leland Stanford Van Scoyoc; Manhattan	Ruth Wolfe; Admire
Mary Pierce Van Zile; Manhattan	Hilma Leona Wolgast; Alta Vista
Lillian Elizabeth Vennum; Columbus	Wallace Robert Womer; Manhattan
Ruth Kathleen Vennum; Columbus	Catherine Louise Wood; Wakefield
Velma Elizabeth Vincent; Alden	Etha King Wood; Reading
Jerry Julian Vineyard; Junction City	Mildred L. Wood; Maryville, Mo.
Crystal Louise Wagner; Manhattan	Gracelee Woolverton; Abilene
Dorothy Wagner; Topeka	John Howard Worley; Randall
Mary Frances Wagner; Manhattan	Clair M. Worthy; Wetmore
Mildred Margaret Wagner; Ames	Estel Lee Wright; Blue Mound
Helen Frances Walker; Manhattan	Wilbur William Wright; Hope
Violet Lovina Walker; Manhattan	Clifford Richard Yardley; Hutchinson
Elsie Gertrude Wall; Cawker City	Evelyn Ruth Yarrow; Wakefield
Margaret Lois Walters; Riley	Mary Irene Yoder; Manhattan
Walter Gilling Ward; Manhattan	Carol Oscar Youngstrom; Culver, Ore.
Louise Ware; Manhattan	Isciah Marion Zahm; Topeka
Mary Virginia Washington; Manhattan	Bertha Annetta Zimmers; Hiawatha
Eugene Albertice Waters; Eureka	

Second Session

Elgin R. Button; Meriden	Earl Harrison Martin; Pratt
Blaine Crow; Silver Lake	Onie L. Norton; Altamont
John Clayton Dwelly; Manhattan	Dwight Patton; Harper
Thomas Conway Faris; Lebanon	Fred Thomas Rees; Mound City
Vern Oren Farnsworth; North Topeka	Roger E. Regnier; Fairview
Vernett Edward Fletcher; Alton	Harry Weber Schaper; Jewell City
Harold David Garver; Merriam	Lester John Schmutz; Wakefield
Willard Dyke Gilbert; Alden	Sidney Simmons; Greensboro, N. C.
Beulah McNall Glenn; Webster	William Henry Teas; Kingman
Philip Walter Hansen; Columbus	Forest Whan; Manhattan
F. Floyd Herr; Argonia	Viola Jenet Williams; Kansas City, Mo.
Julian Almon Johnson; Kiowa	Hugh Willis; Williamsburg
Herbert Lee Kammeyer; Wamego	Homer Carlton Wood; Reading
John Humphrey Kerr; Miltonvale	Claude Newton Yable; Ford
John Lowe; Winfield	

August Period

Maynard Henry Coe; Manhattan	Glenn Rucker; Ottawa
George Albert Gemmell; Manhattan	William Timothy Stratton; Manhattan
Royce Owen Pence; Manhattan	

Home Study Service Students

(Instruction by Correspondence)

For the year January 1, 1929, to January 1, 1930, those who took credit courses numbered 853 and those who enrolled in vocational courses numbered 23.

In the following list, those taking college credit courses are indicated by (c), those taking high-school courses by (p) and those taking vocational courses by (v).

Where enrollments are from Kansas the name of the state is omitted. It is given in all other cases.

Vivian D. Abell (c); Riley
 Lora W. Aborn (c); River Forest, Ill.
 June Adair (p); Wathena
 Alice V. Adams (c); Leavenworth
 Leo V. Adkins (p); Glasco
 Gladys Ahlericks (p); Winfield
 Helen Elizabeth Allison (p); Florence
 Ethel L. Alston (c); Raleigh, N. C.
 Le Roy Alt (c); Mankato
 Ruth C. Anderson (c); Manhattan
 Mrs. Birdie Anderson (v); Clay Center
 Frances A. J. Anderson (c); Winnetka, Ill.
 Elna Andrick (c); Wheaton
 L. Keith Anderson (c); Cleburne
 Jessie Yahn Andrews (c); Manhattan
 Joye Ansdell (c); Jamestown
 Paul W. Archer (c); Hutchinson
 Ruth C. Archer (c); Hutchinson
 Mrs. Mahala Arganbright (c); Wamego
 Bessie Marie Argo (p); Oketo
 Sister M. Nicholas Arnoldy (c); Manhattan
 Sister M. Domitiella Arnoldy (c); Manhattan
 Edward L. Askren, Jr. (c); Manhattan
 Estella Ault (p); Wamego
 Herbert W. Avery (c); Wakefield
 Donald K. Ayres (c); Manhattan
 Frank H. Backstrom (c); Kansas City, Mo.
 Mildred Bailey (p); Agra
 J. L. Baird (c); Wellsville
 Lorán Dale Balderson (p); Wamego
 Don C. Baldwin (c); Manhattan
 L. R. Ballard (p); Manhattan
 Frances Bane (p); Webster
 Dora Gladys Banks (p); Wamego
 John V. Baptist (p); Uniontown
 Irene Barber (c); Miltonvale
 Alex J. Barneck (c); Salina
 Ruth Barnes (c); Paxico
 Wilma M. Barr (p); Manhattan
 Ruth Barrett (c); Wichita
 William Barth (p); Wathena
 L. G. Bartholomew (c); Wichita
 Earl T. Basore (p); Valley Center
 Sue E. Bates (c); Manhattan
 Mrs. Wm. Bauer (v); Clay Center
 Cecil Baum (p); Belpre
 Kenneth Bauman (c); Salina
 Pauline Beck (c); Republic
 Neva J. Beckey (c); Bavaria
 Sigrid Beckstrom (c); Marquette
 Clara Benne (p); Washington
 Martin Benston (p); Leona
 Thelma Berg (c); Chicago, Ill.
 Margaret M. Bergman (p); Independence
 H. J. Besler (c); Manhattan
 Mildred Adeline Bettles (c); Greenleaf
 T. G. Betts (c); Detroit
 John Bird (c); Manhattan
 Caroline Bivins (c); Chicago, Ill.
 Doris Bland (c); Lucas
 Nellie Bloom (c); Liberal
 Mrs. Irma McKinnell Boardman (c);
 Thoreau, N. Mex.
 Mrs. Louise G. Boatman (c); Norton
 George Bolley (p); Washington
 Margaret Boore (v); Manhattan
 Patricia Boulton (p); Manhattan
 Mildred Boyd (p); Norton
 Beulah B. Boyd (p); Waterville
 H. R. Bradley (p); Manhattan
 C. Clifford Brady (c); Epworth, Iowa
 Katherine Brannan (c); Texarkana, Ark.
 Justina Brenning (c); Burns
 Lilly Brenner (c); Clay Center
 Leonard K. Brewster (p); Independence
 Gertrude Brill (c); Westmoreland
 Faith Briscoe (c); Cambridge
 Vernon L. Britton (c); Wellington
 Frances E. Broadbeck (c); Washington
 Velma Brockway (p); Simpson
 Mildred Bronstine (p); Lewistown, Mo.
 Gertrude Brookens (c); Westmoreland
 Mrs. K. B. Brooks (c); Junction City
 Dorothy M. Brophy (p); Vliets
 Lura A. Brown (c); Cassoday
 Claude H. Brown (c); Winfield
 Flossie Brown (p); Winfield
 Ralph M. Brown (c); Kansas City
 T. B. Brown (v); Ulysses
 Orpha Brown (c); Edmond
 Earl Robert Brown (v); Plains
 Alice E. Browne (c); Corning
 V. C. Brubaker (c); Abilene
 Maurine Bryan (c); Delia
 Lily Mae Buchanan (c); Ottawa
 Thos. Buchman (p); Paola
 Wilma Mae Bucknell (c); Olathe
 Leon P. Burris (c); Chanute
 Jeanne Burt (p); Manhattan
 Georgiana Bush (c); Little River
 Norvall Butler (c); Manhattan
 Floyd W. Caldwell (c); Parsons
 Jessie Campbell (v); Lyons
 Wm. Frank Campbell (p); Independence
 Velva Campbell (p); Norton
 Margaret Canham (c); Kansas City, Mo.
 Edward Canisius (v); Sheboygan, Wis.
 E. D. Cannon (c); Manhattan
 Gladys Carder (c); Langdon
 Thadene Carey (c); Valley Center
 William Carlson (p); Smolan
 Helen C. Carlson (c); Cleburne
 Mildred Casey (c); Dorrance
 Tulloch Casey (p); Corning
 Wm. R. Chalmers (c); Topeka
 Lucille Chastain (c); Manhattan
 Gladys Chegwidden (c); Clafin
 Milton Cherry (c); Chicago, Ill.
 Leota Chester (p); Glade
 Marian Childers (c); Wamego
 Harley Chilson (c); Oberlin
 Mildred Christenson (c); Concordia

HOME STUDY STUDENTS—Continued.

- Elverine Clapp (p); Washington
 Helena Clapp (p); Washington
 Elmer Field Clark (c); Jewell
 Velma Clark (p); Savannah, Mo.
 Vernie Clausen (c); Alton
 Floyd A. Clayton (c); El Dorado
 C. F. Clayton (c); El Dorado
 Ina L. Clements (p); Havensville
 Elizabeth O. Clency (c); Manhattan
 Mildred A. Cleveland (c); Chicago, Ill.
 Chas. E. Cole, (c); Cicero, Ill.
 Lillian M. Colfer (c); Chicago, Ill.
 Frances Conard (c); Ottawa
 Catherine Conroy (p); Manhattan
 Lucy E. Caster (c); Manhattan
 Wilma Copper (c); Manhattan
 Donald Russell Corey (c); Jackson, Miss.
 Sister M. Frances Costello (c); Manhattan
 Lucile Costello (c); Carlton
 George O. Covert (p); Hiawatha
 Frances M. Covey (c); Miltonvale
 Donald W. Cowan (c); Valley Falls
 Herman C. Cowdery (c); Lyons
 Josephine A. Cox (c); Chicago
 Lucile Cox (p); Havensville
 W. H. Cox (c); Elk City
 Norman C. Craig (p); Hiawatha
 F. M. Crawford (p); Manhattan
 Vera Crawford (c); Lincoln
 Jimmie Cress (p); Cedar Point
 Earl E. Crocker (c); Manhattan
 Genevieve Crowley (c); Manhattan
 Mrs. Naomi R. Croy (c); Norcatur
 Ethel Culbreath (c); Douglass
 Guy W. Cummings (c); Nettleton, Mo.
 Phyllis C. Cunningham, (c);
 Michigan City, Ind.
 Roy Cupp (c); Washington
 Cora Dell Curry (c); Winchester
 Mildred W. Cyr (p); Miltonvale
 Maude Daniels (c); Randolph
 Bill Daniels (c); Westfall
 Agnes Daugherty (p); Manning
 Rowland A. Davenport (c); Ottawa
 Saloma Davis (c); Carthage, Mo.
 Frances E. Davis (p); Americus
 Paul Davis (c); Manhattan
 Glenn M. Deeter (c); Norcatur
 Dewian L. Delp (p); Norton
 Clara F. Denison (c); Attica
 Bessie Elaine Dennis (p); Macksville
 Donna Dickinson (c); Douglass
 Guy E. Dickinson (c); Sabetha
 Hilma M. Dickinson (c); Winfield
 Benetta Diehl (c); Polo, Ill.
 Earl I. Dixon (p); Forgan, Okla.
 Elizabeth R. Dixon (c); Buffalo, Okla.
 Thelma A. Dodd (p); Linn
 William H. Dodderidge (p); Manhattan
 R. R. Dodderidge (c); Council Grove
 Mrs. Karl E. Donnell (c); Hutchinson
 Esther B. Dosser (p); Jetnore
 Joseph A. Doubrava (c); Lorraine
 Maggie Doyle (c); Douglass
 Etha C. Dungan (c); Independence
 Rachel Dunham (c); Broughton
 John E. Dunkin (c); Wellington
 Martha DuMars (c); Topeka
 Jean Lois Durland (c); Irving
 Mrs. Mabel L. Eade (c); Duluth, Minn.
 Albert R. Edwards (c); Manhattan
 Charles Eichman (p); Williamsburg
 Mary Eisendrath (c); Hubbard Woods, Ill.
 Lino Elefante (p); Fort Riley
 Harold Ellington (p); Monticello, Mo.
 G. F. Ely (c); Spivey
 Mildred Emery (c); Hutchinson
 P. A. Engle (p); Abilene
 John English (p); Topeka
 Arthur A. Erickson (c); Kansas City
 Clarice Erickson (c); Aurora, Ill.
 Alexander L. Erickson (c); Chicago, Ill.
 Geo. F. Ernsbarger (c); Randolph
 Ernestine B. Ernest (c); Paola
 Ruth E. Esslinger (c); Bala
 Grace E. Eustace (c); Wakefield
 Thomas M. Evans (c); Gove
 Cleora Ewalt (c); Dodge City
 Margaret Fairman (p); Manhattan
 Sidney L. Falin (c); Cleburne
 Wilma Falen (c); Oak Hill
 G. L. Farnsworth (c); Wichita
 C. Archer Farrell (c); Berwyn, Ill.
 Vera Farrell (c); Clay Center
 Cecil Farrington (p); Phillipsburg
 J. V. Faulconer (c); El Dorado
 David M. Feese (c); Bozeman, Mont.
 Mrs. Mildred H. Ferguson (c); Fairfield, Ill.
 Mabel M. Ferris (c); Chicago, Ill.
 Joe Fickel (c); Chanute
 Beryl E. Field (c); Ogden
 Alta Fields (c); Manhattan
 Floyd Finley (p); Waterville
 Wm. I. Finley (v); Lyons
 Clella L. Fisher (c); Fellsburg
 Theodore A. Fleck (c); Manhattan
 R. W. Fleck (c); Beloit
 Hattie Flesher (c); Carthage, Mo.
 Lucy Fletcher (c); Salina
 R. S. Florer (c); Marion
 Eva Ford (c); Manhattan
 Kathryn Foreman (c); Council Grove
 Wallace Forsberg (c); Lindsborg
 J. M. Foster (v); Clifton
 Joseph F. Foster (c); Kansas City, Mo.
 Zelda Frame (p); Norton
 Artie R. Frank (p); Grainfield
 Maurice B. Franklin (c); Manhattan
 F. J. Franks (p); Rock
 Alva H. Freeman (c); Manhattan
 Ray French (p); Hiawatha
 Elta Frey (c); Sylvan Grove
 Matilda Fricke (c); Morrill
 John D. Friesen (p); Buhler
 J. R. Frizzell (c); Hutchinson
 Dollie Mae Frost (c); Emporia
 Ruth Frost (c); Blue Rapids
 Evangeline Fullerton (p); Medicine Lodge
 Margaret Fulton (p); Marysville
 Lowell Funk (c); Seneca
 Lowell Funk (c); Manhattan
 Edgar D. Furse (c); Fort Scott
 Ruth Gamber (c); Manhattan
 Ruth Dible Gamble (c); Halstead
 Kenneth Gapen (c); Manhattan
 Victor Garner (p); St. John
 William Garner (p); St. John
 Alice Garvin (c); Ogden
 L. C. Gates (c); Manhattan
 Warren G. Gates (p); Broughton
 Minnie Dee Gay (p); Paragould, Ark.
 Helen M. Gelakoski (c); Chicago, Ill.
 Florence L. Getz (c); Chicago, Ill.
 Ward Gibbs (c); Topeka
 Glen Gibson (p); Independence
 Virginia Gibson (c); Potwin
 Glen Gilbert (c); Manhattan
 Walter C. Gill (c); St. John's Barbados,
 British West Indies.
 Mrs. H. E. Gillette (v); Ottawa
 Clarence Lee Gish (c); Abilene
 Ruth Gladfelter (c); Whitewater
 Louise C. Glick (c); Garden City
 Elizabeth Goggin (p); Junction City
 Elizabeth Gordon (p); Independence
 Ruth Gordon (c); De Soto
 W. W. Gosney (c); Goddard
 Gwendolyn Gosney (c); Goddard

HOME STUDY STUDENTS—Continued.

- Geo. M. Grafel (c); Herndon
 Gladys Graham (c); Manhattan
 Erma Gravenstein (c); Riley
 Richard H. Graves (p); Darlow
 Margaret Greep (c); Longford
 Freda L. Greer (c); Marion
 Howard Gregory (c); Manhattan
 Donald Green (p); Independence
 Gilbert Green (p); Norton
 Andrew P. Grimes (c); Greenwood, Mo.
 La Verene Grover (p); Menlo
 Hilda Grossmann (c); Manhattan
 Beatryce Grundy (p); Webster
 Elaine Gustafson (c); McPherson
 Grace M. Gustafson (c); Manhattan
 Miranda Gustafson (c); Chicago, Ill.
 Paul Habiger (p); Bushton
 August Haegelin (c); Atchison
 Minnie Hahn (c); Inman
 Albert Hahn (c); Halstead
 Vera Hahn (c); Clay Center
 Gladys Hahn (c); Clay Center
 Sister M. Roselita Hall (c); Concordia
 Florence Hall (c); Elkhart
 Lucille L. Hamill (c); Grenola
 Gertrude Hamilton (c); Wichita
 Francis H. Hammett (p); Marysville
 Maxine E. Hale (p); Formoso
 Harry Hancks (p); Wamego
 Zelma Hancock (p); Randolph
 Mrs. Ray E. Hanna (v); Clay Center
 Gladys Hanson (c); Leonardville
 Maude Harland (c); Frankfort
 Ruth Harlow (c); Lucas
 Florence Harold (c); Dresden
 Faye Harris (c); Parsons
 Harold Harris (p); Grinnell
 Rodney Harrison (c); Burden
 Mary C. Harrison (c); Tahlequah, Okla.
 Alta Hart (c); Webster
 Laura Hart (c); Overbrook
 L. R. Hartman (c); Hoisington
 John Hartung (p); Manhattan
 Mercedes B. Hawkins (c); Tulsa, Okla.
 Ola Hay (p); Norwich
 Lucile Hayman (p); Formoso
 Francis Hayward (p); Menominee, Mich.
 Harold Heckendorn (p); Cedar Point
 Robert B. Hedrick (c); Wichita
 Violet A. Heer (c); Manhattan
 Walter Heide (p); Harlan
 Edward Heikes (p); Riley
 Lawrence Heinz (p); Bushton
 Mrs. A. B. Hemphill (v); Broughton
 Georgia Hemphill (c); Clay Center
 Mrs. W. O. Henderson (v); Lane
 Wayne Henderson (p); Oxford
 Marguerite Henry (p); Coffeyville
 Elizabeth Herold (p); Ellinwood
 Lucille Hesselbarth (c); Abilene
 Della E. Heibert (p); Hillsboro
 Edna Higgins (c); Solomon
 Frank W. Hill (c); Manhattan
 Everett A. Hinz (c); Abilene
 Eva Hixson (c); Wakeeney
 Thurman Hobson (p); Sugar City, Colo.
 Lawrence F. Hoffinger (c); Kansas City
 Mary P. Hoffman (c); Chicago, Ill.
 Glen Høglund (p); Miller
 Harold Holmes (c); Riley
 Horace A. Holmer (c); Eureka
 Joe Holsinger (c); Manhattan
 Julian Holuba (p); St. George
 James M. Hoover (p); Greenleaf
 Fred C. Horan (c); Oak Grove, Mo.
 Seward E. Horner (c); Abilene
 Virgin Horrell (c); Vinland
 De Witt Houck (c); Americus
 Harold Hovde (c); Fort Atkinson, Wis.
 Dorothy Howard (c); Garnett
 Ida Howard (c); Garnett
 Muriel Howard (c); Oberlin
 Junior Howard (p); Oberlin
 John T. Hoyne (c); Manhattan
 Adolph Hraba (c); East St. Louis, Ill.
 Harold Hoffman (p); Chapman
 Elmo Wm. Huffman (c); Cunningham
 Louise Huey (c); Ogden
 Aileen Hull (c); Manhattan
 Walter K. Hull (v); Ottawa
 Sibyl Maude Humbert (c); Danville
 Anita Humbert (c); Danville
 George M. Hunholz (c); Wamego
 H. M. Hunter (c); Topeka
 Elsie D. Irwin (c); Wakefield
 Ima Isom (c); Lebanon
 R. W. Jackson (p); Manhattan
 Frank Jacobson (p); Manhattan
 George Jelinek (c); Ellsworth
 Mark Jenkins (p); Paola
 Geo. H. Jenkins (c); Carthage, Mo.
 La Motte J. Jenkins (c); Quindaro
 Dolf Jennings (c); Lyndon
 Wilma Jennings (c); Little River
 Rena Jewell (p); Kanopolis
 Florence Johnson (p); Caldwell
 Geneva Johannes (c); Willis
 Viola Johnson (p); St. Francis
 Mrs. Laura Johnson (v); Ottawa
 Robert F. Johnson (c); Salina
 Ruth Johnston (c); Berwyn Ill.
 Mrs. Edna Johnson (p); Beeler
 Wm. Z. Johnson (c); Beeler
 Dwight Deihl Johnson (c); Topeka
 Glenn Joines (c); Manhattan
 Lee G. Jolley (c); Bastrop, Tex.
 Lillie Jones (c); Ramona
 Dorothy May Jones (p); Belleville
 Henry Jones (p); Enterprise
 Margaret Jones (c); Abilene
 Raymond Judd (p); Wellington
 John Junkins (c); Detroit, Mich.
 Elva Keefover (p); Waterville
 Pauline Kegeris (c); Manhattan
 Frances Kehler (c); Solomon
 Willis Kelley (c); Kansas City
 R. W. Kellogg (c); Manhattan
 Evelyn Kelly (c); Wellington
 C. H. Kenison (c); New Cambria
 Alice E. Kennedy (p); Fort Leavenworth
 Virginia F. Kennedy (p); Fort Leavenworth
 Sadie M. Kerr (c); Croft
 Y. S. Kim (p); Manhattan
 Ned Kimball (p); Manhattan
 John Kimball (c); Manhattan
 Nellie Kimbrell (p); Norton
 Dorothy K. Kimman (c); Chicago, Ill.
 Clara Bess King (c); Delphos
 Frances A. Kinghorn (c); Morrowville
 Mildred Kingsbury (c); Smith Center
 Vela Kinman (p); Coffeyville
 Eunice Kinner (c); White City
 Mrs. W. S. Kinsey (v); Overland Park
 Aaron Kipp (c); Ellsworth
 W. F. Kipper (c); Manhattan
 Arthur Kirby (c); Chanute
 Herbert H. Kirby (c); Manhattan
 Wm. G. Kirby (c); Manhattan
 Bernice Kirby (p); Independence
 Hazel Kitch (c); Bethel College, Newton
 Marius Kjar (p); Bartlett, Ill.
 Marie Kline (p); Wathena
 Martin Klotzback (c); Humboldt
 Frances Knerr (c); Manhattan
 Edna Knode (c); Wichita
 Laura A. Knop (p); Ellinwood
 Viola Koenig (c); Manhattan
 Clarence C. Koerner (c); Amarillo, Tex.
 Margaret F. Kohl (c); Furley
 Alice R. Kunze (c); Green

HOME STUDY STUDENTS—Continued.

- Blair Kope (p); Winfield
 Iva M. Kopp (c); Hiawatha
 Grace Kottwitz (c); Peabody
 Martha Krehbeil (p); Moundridge
 Lawrence G. Kurtz (c); Alton
 Dorothea La Follette (c); Utica
 Amy Lamb (c); Blue Rapids
 Julia S. Lamb (c); Blue Rapids
 Beth Elaine Lambertson (p); Florence
 Frank La Plant (c); Minneapolis
 Ruth Larimer (v); Topeka
 Eveline Larson (c); Leonardville
 K. J. Latimer (c); Coffeyville
 Joseph W. Laughlin (c); Syracuse
 E. P. Lawrence (c); Eads, Colo.
 Roy Legg (p); Scott City
 Dorothy E. Lehman (c); Bern
 Mrs. Mildred W. Keler (c); Manhattan
 Ora Francis Leonard (c); El Dorado
 Christine Leseberg (p); Phillipsburg
 C. A. Lindenmyer (c); Russell
 Con Linwall (c); Lindsborg
 Cornelia List (c); Chicago, Ill.
 Edward Litchen (p); Leavenworth
 Robert E. Little (c); Fowler
 E. C. Livingston (c); Manhattan
 Sophroni Lockhart (p); Beloit
 Adolph Lonborg (c); Topeka
 Clara Long (c); Idana
 Angelina M. Lotesto (c); Chicago, Ill.
 H. Dale Lott (c); Minneapolis
 Eleanor Loughridge (c); Lyndon
 Charlotte Loughridge (c); Lyndon
 Leonard M. Lovejoy (c); Almena
 Franklin Lundstrom (c); Chicago, Ill.
 Mrs. Corrinne W. Lutz (c); Logan
 Charles N. Lyman (p); St. Joseph, Mo.
 Wm. D. Lyon (c); Faulkner
 Avis Mack (c); Clay Center
 Elbert B. Macy (c); Manhattan
 Dorothy Madison (c); Manhattan
 Helen L. Magee (c); Goddard
 Melvin L. Marsh (p); Independence
 Lewis P. Marshall (p); Wakefield
 Raymond A. Marston (p); Chapman
 Catherine Martin (p); Bala
 Teresa Martin (p); Bala
 Wilbur Martin (c); Broughton
 Chloe Marland (p); Scott City
 Mildred Masden (c); Lenora
 Merton Mathews (p); Manhattan
 Eva M. Mathes (p); Wichita
 J. R. Mathias (c); Manhattan
 James A. Matson (c); Miltonvale
 Truman Mauck (c); White Water
 Gertrude May (c); Manhattan
 W. S. Mayden (c); Manhattan
 Albert L. McCauley (c); Leoti
 Ruth McCammon (c); Oronoque
 Milton M. McClintock (p); Denton, Tex.
 Percy McClain (p); Gaylord
 Mrs. Laura E. McClure (c); Topeka
 Ronald McClain (p); Harlan
 Charles McClenory (p); Valley Falls
 Mabel McCormick (p); Manhattan
 Robert H. McCollum (c); Manhattan
 Raymond E. McCormick (c); Fort Scott
 Joe McCormick (p); Webster
 Rachel McCoy (c); Wamego
 Harriet McConnell (c); Cherryvale
 Ronald McCrear (c) Chicago, Ill.
 Dora F. McCreary (c); Hiawatha
 Earldine McCune (p); Stafford
 Eugene P. McCulley (c); Beloit
 Donald McCallister (c); Amarillo, Tex.
 Geneva McDaniels (c); Scottsville
 Mrs. Z. H. McDonall (v); Wichita
 Cole McFarland (p); Fort Leavenworth
 Clifford L. McGinnis (c); Valley Falls
 A. Sidney McIntire (c); Burlingame
 E. Pearle McKinney (c); Junction City
 Frances McKenna (c); Ottawa
 Niva McManis (c); South Haven
 Robert McLean (p); Manhattan
 Gail McLaughlin (p); Alta Vista
 Don T. McClelland (c); Maplehill
 Ruth McManis (c); Manhattan
 J. H. McNary, Jr. (p); Manhattan
 May McNiff (p); Manhattan
 Mildred Meisenheimer (p); Hiawatha
 Mrs. Ruth Mellenbruch (v); Anthony
 Ralph F. Melville (c); Muncie
 John K. Merritt (c); Manhattan
 Mary Meyer (c); Mound City, Mo.
 Alfreda Meyer (c); Lillis
 Alfred Meyers (c); Merriam
 M. B. Miller (c); Manhattan
 H. S. Miller (c); Kansas City
 Alma Miller (c); Howard
 Breta S. Miller (c); Blue Rapids
 M. E. Miller (c); Quenemo
 Govan Mills, Jr. (c); Manhattan
 W. R. Mitchell (c); Manhattan
 Elvaida Moffit (p); Meriden
 Birdie Montgomery (c); Newton
 Warren D. More (c); Copeland
 Reginald Moore (c); Robinson
 Alta Morehouse (c); Abilene
 Alvin Morgan (c); Lebo
 Olive Morgan (c); Hugoton
 Albert Morgan (p); Phillipsburg
 Frances Morlan (c); Salina
 Phalvie I. Mortenson (c); Chicago, Ill.
 Anna Neal Muller (c); Topeka
 Arlee Murphey (c); Manhattan
 Louise L. Murphy (c); Chicago, Ill.
 Margarette Murray (p); Langdon
 Ansel Myers (c); Lyons
 Channing Myers (c); Salina
 Mary Nash (c); Lawrence
 Mr. John N. Nash (p); Green
 Maxine Naylor (p); Manhattan
 Martha Nazareus (p); Dighton
 Hubert S. Neas (c); Wichita
 Leonard G. Nehring (c); Harveyville
 Mrs. Merrit Nelson (v); Augusta
 W. A. Nelson (c); Manhattan
 Ella Nelson (p); Manhattan
 Lucile Newell (c); Wakefield
 Alma Dale Newell (c); Durham
 W. M. Newman (c); Centralia
 Alex Nigro (c); Manhattan
 Rosemary Nilsoon (p); Winfield
 Ethel Noland (c); Keats
 K. L. Noland (c); Cedarvale
 Dale Norris (c); Raymond
 Dorothy Norris (c); Manhattan
 Nora Norris (c); Lawrence
 Earl C. North (c); Manhattan
 L. C. Northcutt (p); Copeland
 W. E. Oberg (c); Manhattan
 Lois Oberhelman (c); Barnes
 Herbert O'Brien (p); Phillipsburg
 Chester O'Brien (c); Sabetha
 Geraldine O'Daniel (c); Westmoreland
 Beatrice Oliphant (c); Hutchinson
 Pauline Olmstead (c); Concordia
 Allan Olsmith (p); Fort Leavenworth
 Luella O'Neill (c); Winchester
 Mildred Osborn (c); Clifton
 Aileen Ostlind (c); McPherson
 Dale Oswalt (c); Little River
 Joenetta O. Owens (p); Manhattan
 Mrs. Elizabeth M. Painter (c); Manhattan
 Clarence Parker (c); Arkansas City
 Marian Parker (p); Long Island
 Clemont C. Parrish (c); Great Bend
 Dorothy E. Peak (c); Lindsborg

HOME STUDY STUDENTS—Continued.

- Lormor A. Pearman (c); Holton
 Aleta Peck (c); Council Grove
 Harold D. Peck (p); Independence
 Garland Pennington (p); Wichita
 Raymond L. Peters (c); Leavenworth
 Leona Peterson (c); Enterprise
 A. Blanche Peterson (c); Winfield
 Louise Peterson (c); Randolph
 Royal Peterson (c); Cleburne
 Tom Petty (c); Manhattan
 Marion E. Phillips (c); Wichita
 Maryellen Phillips (p); White Cloud
 Gladys Pickett (p); Manhattan
 W. M. Pishmey (c); Leonardville
 Velma Pitman (p); Grigston
 Russell Pitney (p); Wamego
 Wilfred Platt (c); Manhattan
 Mrs. Norman V. Plummer (v); Horton
 Margaret Polifka (p); Wilson
 Orville Pool (p); Wetmore
 Gladys Popham (c); Minneapolis
 Ora F. Porter (p); Beloit
 E. F. Potter (c); Manhattan
 Frances E. Potter (c); Natoma
 Nellie L. Pretz (c); Irving
 Hazel S. Price (c); Liberty
 Delmas Price (c); Wakefield
 John Province (c); Manhattan
 Mrs. E. L. Publes (c); Pine Bluff, Ark.
 Betty Purcell (p); Manhattan
 Mrs. Maude B. Purdum (c); Glen Ellyn, Ill.
 Ernest Quick (c); Bellefont
 George E. Rainsberger (c); Chillicothe, Ill.
 Francis J. Raleigh (c); Clyde
 Ben E. Ramsey (c); Dighton
 Ralph P. Ramsey (c); Mankato
 Mabel Rand (p); Wamego
 Harold Randolph (p); Valeda
 Elmer W. Randle (c); Jefferson
 Mary Rankin (c); Manhattan
 Winetta Rauhut (p); Coats
 Georgette Rebeil (c); Chicago, Ill.
 Wayne Rector (p); Scott City
 Willard V. Redding (c); Manhattan
 Mrs. Jaunita J. Redus (c); Lexington, Mo.
 Alzina Reed (c); Manhattan
 Muriel G. Reed (c); Oak Hill
 A. Louise Reed (c); Manhattan
 Jeanice M. Reel (c); Detroit
 Theodore James Regier (p); Elbing
 Alma Regier (p); Whitewater
 Maria Reimer (c); Canton
 Eleanor Resler (c); Clay Center
 Marguerite L. Richards (c); San Leandro, Cal.
 Elizabeth Richards (c); Waldo
 Earl C. Richardson (c); Coffeyville
 J. A. Richardson (c); Douglass
 Margaret Richardson (p); Glade
 Kate Richardson (c); Manhattan
 Paul Ricketts (p); Wallace
 R. C. Riepe (c); Kansas City
 Carl J. Riggs (c); Clayton
 Wanda Riley (c); Chanute
 Tracy M. Roberds (c); Caney
 Lucille Roberts (c); Republic
 L. Clements Robbins (c); Chicago, Ill.
 Elsie Belle Rogge (c); Hyde Park, Chicago, Ill.
 Randle Rolfs (c); Lorraine
 Edith Rolland (p); Clayton
 Adolphus Roncaglio (c); Chicago, Ill.
 Mae Rooney (c); Haddam
 Karl W. Root (c); Topeka
 Ruth Rosenstiel (c); Goddard
 E. L. Ross (c); Manhattan
 Don C. Ross (p); Manhattan
 Marshall B. Ross (c); Manhattan
 Edward J. Ruisinger (c); Manhattan
 Anna Rundus (p); Belleville
 Mabel Ruthi (c); Bloomington
 Victor H. Saffry (c); Alma
 Orville Saffry (p); Alma
 Martha M. Sandeen (c); Stilwater, Minn.
 Mary Lois Saxton (c); Manhattan
 Gladys Schafer (c); Manhattan
 Louise Scheu (c); Clay Center
 Francis Schiller (c); Abilene
 Raymond Schlotterbeck (c); Manhattan
 Carrie Mae Schmidt (p); Oketo
 Gladys Schmedemann (c); Manhattan
 Ann Schonholtz (c); Arlington
 Ethel Schoen (c); Cawker City
 Lewis M. Schrader, Jr. (p); Kinsley
 William J. Schultis (c); Sylvan Grove
 Eber Schultz (c); Miller
 Virginia M. Schwager (c); Adrian, Mich.
 Galen E. Schwandt (c); Manhattan
 Wilber Schweizerhof (p); Smolan
 Agnes M. Scott (c); Westmoreland
 James F. Scott (c); Manhattan
 Clyde Scott (c); Sedan
 Eleanor R. Scott (p); Independence
 Olivette Scritchfield (c); St. George
 Emily Seaburg (c); Manhattan
 Mila Sedivy (c); Blue Rapids
 Mabel Sellens (c); Russell
 Virginia Shafer (p); Manhattan
 V. V. Shaffer (c); Salina
 C. L. Shepherd (c); Harveyville
 Roger T. Shepherd (c); Harveyville
 Bearl Shepherd (p); Bala
 Mrs. Alice Sherman (v); Kinsley
 H. K. Shideler (c); Anthony
 Frances Shields (c); Garden City
 George R. Shier (c); Gypsum
 Avis P. Shobe (p); Independence
 Ethel Shobe (p); Independence
 Will F. Shorman (c); Morganville
 Marie Shouse (c); Kipp
 Curt Siemens (c); Newton
 Elva Sigler (p); Norwich
 Helen Simmons (c); Chicago, Ill.
 Harold Simpson (p); Clyde
 Wilma Simpson (c); Clyde
 Clude Sloan (c); Dalhart, Tex.
 John F. Smerchek (c); Cleburne
 Sam J. Smith (c); Fairfield, Ill.
 E. P. Smoot (c); Eureka
 Harry Smoot, Jr. (p); Leavenworth
 Carl D. Smith (c); Mayetta
 Mildred Smith (c); Belleville
 Blanche Smith (p); Norton
 Henrietta D. Smith (c); Minneapolis, Minn.
 Inez Snyder (c); Osborne
 Pearl Snyder (c); Osborne
 C. H. Somers (c); Clay Center
 Margaret Sorensen (c); Kansas City
 Raymond Spence (c); Fairbury, Neb.
 Margaret Spencer (p); Manhattan
 Margaret Spencer (c); Ottawa
 Mary Springer (p); Jetmore
 Vivian Squires (c); Topeka
 Homer Staadt (c); Garnett
 Hirt N. Stapleton (c); Jewell
 Mrs. Amy B. Steele (c); Bird City
 Mrs. Erwin Stateler (c); Alta Vista
 Lillian Steinmeyer (c); Manhattan
 Ruth E. Stener (c); Courtland
 Mabel Stener (c); Courtland
 Kenneth R. Sterett (c); Leavenworth
 Ruth Sterling (c); Morganville
 Anne Stever (c); Eureka
 J. A. Stewart (c); Manhattan
 C. W. Stewart (c); Coldwater
 Elma K. Stewart (c); Aurora, Ill.
 Mrs. Edith L. Stewart (c); Rosedale
 Ross A. St. John (c); Wellington

HOME STUDY STUDENTS—*Concluded.*

- Kenneth Steinfeld (p); Alida
 Esther J. Stoddard (p); Wakefield
 Lorene Stone (p); Norwich
 Leonard P. Straub (p); Valeda
 Dora May Streater (c); Denton
 Paul Streeter (p); Manhattan
 Velma M. Streeter (c); Chicago, Ill.
 Edith E. Streeter (c); Wakefield
 Laura J. Strode (p); Garden City
 Vera Strong (c); Manhattan
 B. T. Stryker (c); Waterville
 Marguerite M. Stullken (c); Bazine
 Beulah Stumbo (c); Manhattan
 Aimee C. Stumpf (c); Chicago, Ill.
 Sofronio O. Suguitan (c); Liberty, Mo.
 Mrs. H. B. Summers (c); Manhattan
 Ida J. Summers (c); Manhattan
 Zara O. Sumner (c); Chicago, Ill.
 Martin Sundgren (c); Wilmore
 Karl J. Svaty (c); Ellsworth
 A. R. Swanson (c); Fort Riley
 Mrs. F. A. Swanson (c); Wakefield
 Gladys Swartz (c); Atchison
 Mary Isabell Talley (c); Council Grove
 Garry Taylor (p); Arlington
 Chester Teas (p); Manhattan
 Douglas Tedrow (c); Medicine Lodge
 Edith Tempero (c); Clay Center
 Floyd L. Tempero (c); Broughton
 Wilma Jane Tennant (p); Manhattan
 Alberta Thoes (c); Topeka
 Ernest R. Thomas (c); Kansas City
 Opal Thomas (p); Medicine Lodge
 Raymond Thomas (p); Valeda
 Doris Lillian Thompson (c); Belleville
 La Vina Thorkelson (c); Chicago, Ill.
 Charles A. Thresher (c); Jetmore
 Anka Tiarks (p); Valeda
 Ruth E. Tibbetts (c); Manhattan
 Joseph Tighe (p); Junction City
 Carmelita Tipton (c); Atchison
 Ellen E. Tinney (p); Norton
 Ernest Toland (c); St. John
 Ruth Torrance (c); Norwich
 Ione Torance (c); Norwich
 Wm. Towler (c); Topeka
 Ruth Tracewell (c); Lincoln
 Marie Trantham (p); Rover, Mo.
 Lowell Treaster (c); Beloit
 Harold W. Turner (c); Argonia
 Andrew Unger (p); Herndon
 Mildred Ungeheuer (c); Manhattan
 John J. Valek (p); Cuba
 Gerald D. Van Pelt (c); Manhattan
 Elva B. Vincent (c); Chicago, Ill.
 Clair Vincent (p); Phillipsburg
 Edward Vleck (p); Wilson
 Margaret Von Senden (p); Fort Leavenworth
 B. J. Vroom (c); Chicago, Ill.
 Frances Wagar (c); Florence
 Henry C. Walbridge (c); Manhattan
 Raymond R. Walton (c); Chicago, Ill.
 Lewis Wallace (p); Norwich
 Catherine Walker (p); Manhattan
 F. V. Waller (c); Faucett, Mo.
 Beth Walter (c); Manhattan
 Chas. M. Ward (c); Manhattan
 Charles F. Ward (c); Pratt
 Walter G. Ward (c); Manhattan
 George W. Ward (p); Glasco
 Chester J. Ward (c); Lindsay, Cal.
 Winifred W. Warner (c); Rockford, Ohio
 D. S. Waters (c); Leavenworth
 Elizabeth Watson (p); Garden City
 Lynn Watson (c); Manhattan
 Glenn E. Webster (c); Manhattan
 Thiele Weeks (p); Macksville
 Sylvia Weethee (c); Clay Center
 Aline Wegert (c); Rice
 Margaret Wegert (c); Rice
 Don Weik (p); Manhattan
 Doris B. Welch (p); Macksville
 Ethel Sue Wells (c); Winona
 Ruth J. Weyer (p); Webster
 Lucy F. White (c); Wyoming, Ill.
 Fred White (p); Manhattan
 Mildred White (c); Chicago, Ill.
 Lois Whitmer (p); Wilson
 Vida Whitney (p); Rossville
 Ruth Widstrand (c); Topeka
 Freda M. Wiegant (c); Wathena
 George Wiggins (c); Lyons
 Jesse Wilcoxon (c); Ford
 Mary Louise Williams (c); Wann, Okla.
 B. B. Williams (c); Lone Oak, Tex.
 Rolland Wilkens (c); Manhattan
 Peggy Edna Wilkinson (p); Independence
 Edward M. Wilkinson (p); Independence
 Adrian A. Wilson (p); Wetmore
 Mrs. Katherine Hutto Wilson (c); Turner
 Earl R. Wilson (c); Milford
 Almeda Wineinger (c); Wichita
 Lena Fern Wing (c); Modoc
 Jonathan Wingfield, Jr. (p); Council Grove
 Myrna Winter (p); Manhattan
 Matilda Winters (p); Webster
 Thelma Wood (c); Searcy, Ark.
 Mrs. Etha Wood (c); Reading
 Mildred L. Wood (c); Maryville, Mo.
 Ardyus Woods (p); Lebanon
 Matthew Woods (c); Tuskegee Institute, Ala.
 Blanche Woodward (c); Frankfort
 Beatrice Woodworth (c); Corning
 Gladys P. Wooley (c); Osborne
 Mabel L. Wray (c); Hunter
 Virginia Wright (p); Monticello, Mo.
 Helen Wurm (p); Ellinwood
 Zint E. Wyant (c); Topeka
 Fremont Wylie (c); Salinas, Cal.
 Mrs. Fred Yarrow (v); Clay Center
 Mrs. Mary Yohe (p); Zurich
 Clara Helen Young (c); Winchester
 Mrs. Mabelle Zahnley (c); Manhattan
 George Zavesky (c); Manhattan
 Elva Zigler (c); Hunter

Students by States and Counties

Arizona	2	Michigan	2	Oklahoma	24
Arkansas	7	Minnesota	1	Oregon	2
California	2	Mississippi	1	Pennsylvania	3
Colorado	9	Missouri	75	South Dakota	4
Florida	4	Montana	1	Tennessee	1
Idaho	5	Nebraska	40	Texas	14
Illinois	7	North Carolina	2	Utah	1
Indiana	2	North Dakota	3	West Virginia	1
Iowa	9	New Mexico	4	Wisconsin	2
Kansas	3,740	New York	3		
Massachusetts	1	Ohio	3	Total	3,975

FOREIGN COUNTRIES

British West Indies.....	1	Haiti	2	Syria	2
Canada	2	Hawaii	1		
China	1	Philippine Islands	3	Total	12
				Grand total.....	3,987

KANSAS COUNTIES

Allen	23	Greenwood	34	Ottawa	28
Anderson	16	Hamilton	10	Pawnee	24
Atchison	28	Harper	19	Phillips	20
Barber	19	Harvey	38	Pottawatomie	83
Barton	34	Haskell	1	Pratt	26
Bourbon	16	Hodgeman	4	Rawlins	5
Brown	40	Jackson	50	Reno	71
Butler	61	Jefferson	36	Republic	44
Chase	18	Jewell	42	Rice	41
Chautauqua	12	Johnson	25	Riley	852
Cherokee	18	Kearny	5	Rooks	29
Cheyenne	6	Kingman	18	Rush	9
Clark	13	Kiowa	4	Russell	22
Clay	103	Labette	24	Saline	54
Cloud	80	Lane	7	Scott	11
Coffey	13	Leavenworth	20	Sedgwick	58
Comanche	15	Lincoln	28	Seward	7
Cowley	29	Linn	20	Shawnee	123
Crawford	19	Logan	7	Sheridan	13
Decatur	19	Lyon	36	Sherman	8
Dickinson	110	McPherson	35	Smith	29
Doniphan	15	Marion	37	Stafford	22
Douglas	13	Marshall	84	Stevens	7
Edwards	13	Meade	10	Sumner	45
Elk	3	Miami	11	Thomas	11
Ellis	16	Mitchell	40	Trego	6
Ellsworth	24	Montgomery	30	Wabaunsee	43
Finney	17	Morris	48	Wallace	5
Ford	57	Morton	5	Washington	65
Franklin	25	Nemaha	35	Wichita	7
Geary	53	Neosho	32	Wilson	18
Gove	8	Ness	25	Woodson	12
Graham	12	Norton	39	Wyandotte	52
Grant	5	Osage	34		
Gray	6	Osborne	38	Total	3,740

College Enrollment, 1929-1930

THE DIVISION.	Men.	Women.	Total.
The Division of Agriculture	583	3	586
Graduate students.....	53		53
Seniors.....	80		80
Juniors.....	64		64
Sophomores.....	111	1	112
Freshmen.....	199		199
Special students.....	5		5
Short-course students.....	71	2	73
The Division of Veterinary Medicine	124	1	125
Graduate students.....	3		3
Seniors.....	20		20
Juniors.....	12		12
Sophomores.....	27	1	28
Freshmen.....	62		62
Special students.....			
The Division of General Science	629	553	1,182
Graduate students.....	67	49	116
Seniors.....	91	84	175
Juniors.....	94	116	210
Sophomores.....	126	128	254
Freshmen.....	230	148	378
Special students.....	21	28	49
The Division of Home Economics		565	565
Graduate students.....		58	58
Seniors.....		117	117
Juniors.....		91	91
Sophomores.....		129	129
Freshmen.....		160	160
Special students.....		10	10
The Division of Engineering	1,071	19	1,090
Graduate students.....	37	3	40
Seniors.....	163	1	164
Juniors.....	206	2	208
Sophomores.....	273	5	278
Freshmen.....	377	8	385
Special students.....	6		6
Trade-course students.....	9		9
The Summer School (1929)	337	565	902
Totals.....	2,744	1,706	4,450
Counted twice.....	259	204	463
Net totals.....	2,485	1,502	3,987
Students Pursuing Graduate Work	252	197	449
Graduate students in regular session.....	128	92	220
Graduate students in summer session (excluding duplicates).....	92	87	179
Graduate students in absentia.....	12	8	20
Senior students pursuing graduate work.....	18	10	28
Special students pursuing graduate work.....	2		2
Totals.....	252	197	449
Counted twice.....	10	7	17
Net totals.....	242	190	432

Record of Enrollment and Degrees Conferred, 1863-1930

Table with 17 columns: Year, Summer school, Housekps' sht. course, Dairy Mg. sht. course, Dairy short course, Farmers' short course, Apprentice, Special, Preparatory, Subfreshman, Vocational school, Freshman, Sophomore, Junior, Senior, Graduate, Counted twice, Net total, Graduated, Advanced degrees.

* None of the figures above this in this column include graduate students in summer session, nor undergraduate students pursuing graduate work.

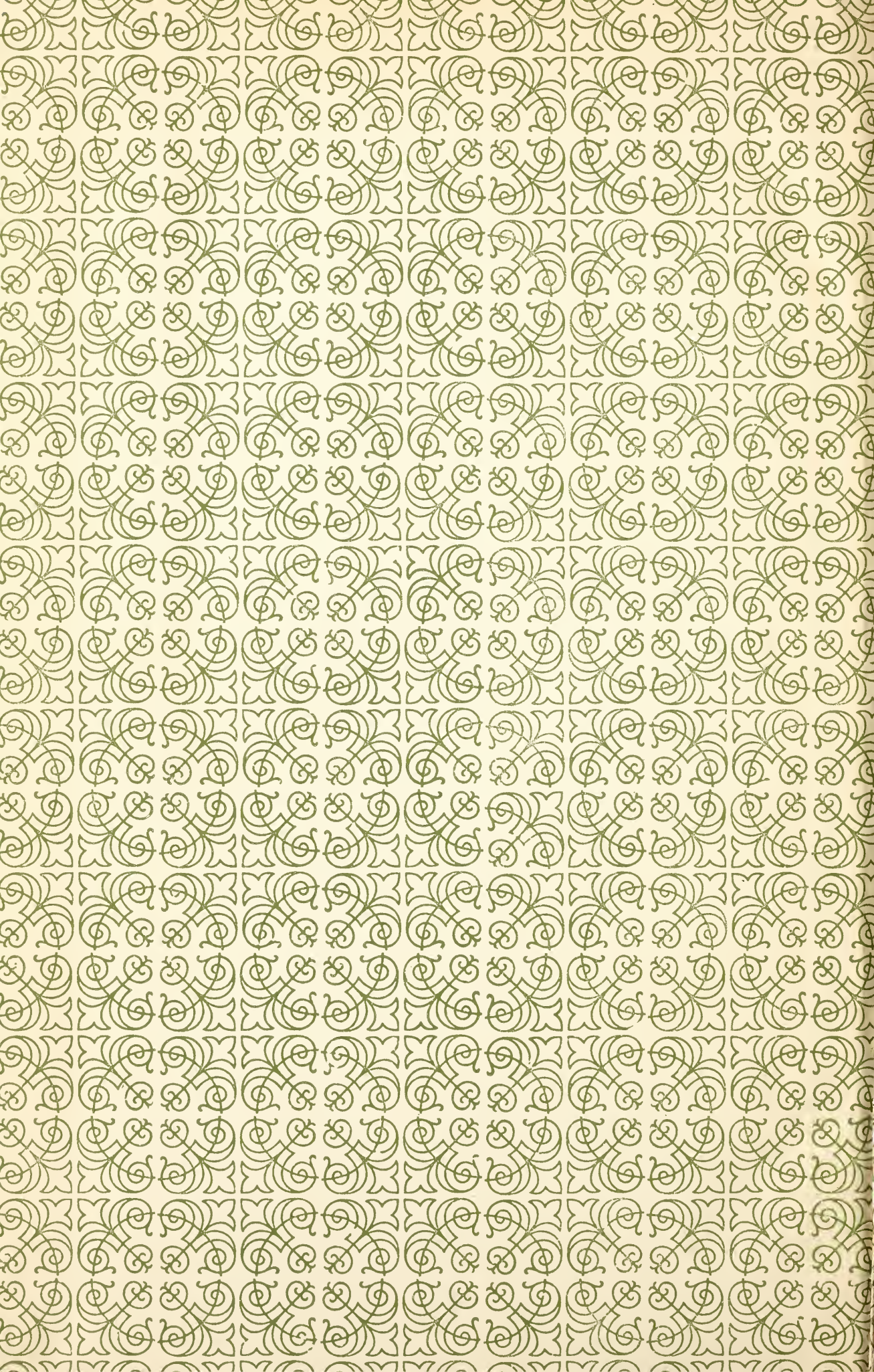












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