KANSAS STATE COLLEGE BULLETIN

VOLUME XVII JUNE 15, 1933 NUMBER 4

COMPLETE CATALOGUE NUMBER

Seventieth Session, 1932-'33

ANNOUNCEMENTS FOR 1933-'34

STUDENT LISTS FOR 1932-'33

MANHATTAN, KANSAS

PUBLISHED BY THE KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

PRINTED BY KANSAS STATE PRINTING PLANT
W. C. AUSTIN, STATE PRINTER
TOPEKA 1933
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The Kansas State College Bulletin is published on the first and fifteenth of each month by the Kansas State College of Agriculture and Applied Science, Manhattan, Kan., to which requests for copies of the publication should be addressed. Entered as second-class matter November 6, 1916, at the post office at Manhattan, Kan., under the Act of August 24, 1912.

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OF AGRICULTURE AND APPLIED SCIENCE

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THE COLLEGE CALENDAR

SUMMER SCHOOL, 1933

June 5, Monday.—Registration of students for nine-week Summer School begins at 8 a. m.
June 5, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
June 5 to Aug. 5, Monday to Saturday.—Nine-week Summer School in session.
June 5 to 9, Monday to Friday.—4-H Club Round-up.
June 15, Thursday.—Preliminary reports on masters' theses are due.
July 4, Tuesday.—Independence Day, holiday.
July 10 to Aug. 5, Monday to Saturday.—Four-week Summer School in session.
July 15, Saturday.—Abstracts of masters' theses are due.
July 29, Saturday.—Masters' theses are due.
Aug. 4, Friday.—Commencement exercises at 8 p. m. for those receiving degrees at end of Summer School.
Aug. 5, Saturday.—Summer School closes.
Aug. 12, Saturday.—Reports of all Summer School grades due in registrar's office.

FIRST SEMESTER, 1933-'34

Sept. 8, Friday.—All members of the instructional force on duty.
Sept. 9, Saturday.—Meeting of assigners with committee on schedule at 2 p. m.
Sept. 9, Saturday.—Meeting of assigners with deans at 3 p. m.
Sept. 11, Monday.—Admission and registration of students begin at 7:45 a. m.
Sept. 11, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
Sept. 13, Wednesday.—Registration of students closes at 9:30 a. m.
Sept. 13, Wednesday.—Opening convocation, 11 a. m. to 12 m.
Sept. 13, Wednesday.—*All classes meet according to schedule, beginning at 1 p. m.
Sept. 15, Friday.—†All freshman students meet at 11 a. m.
Sept. 19, Tuesday.—†All freshman students meet at 11 a. m.
Sept. 20, Wednesday.—†Adaptation tests for freshmen, 9 to 12 a. m.
Sept. 22, Friday.—Annual student-faculty informal reception, 8 p. m.
Oct. 7, Saturday.—Examinations to remove conditions.
Oct. 14, Saturday.—Scholarship deficiency reports to students and deans are due.
Nov. 11, Saturday.—Midsemester scholarship deficiency reports to students and deans are due.
Nov. 15, Wednesday.—Preliminary reports on masters' theses are due.
Nov. 29, Wednesday.—Thanksgiving vacation begins at noon.
Dec. 2, Saturday.—Thanksgiving vacation closes at 6 p. m.
Dec. 15, Friday.—Programs of study due from candidates for the masters' degree in 1934.
Dec. 21, Thursday.—Winter vacation begins at 6 p. m.
Jan. 4, 1934, Thursday.—Winter vacation closes at 6 p. m.
Jan. 5, Friday.—Abstracts of masters' theses are due.
Jan. 19, Friday.—Masters' theses are due.
Jan. 19 to 27, Friday to Saturday.—Examinations at close of semester.
Jan. 27, Saturday.—First semester closes at 11 a. m.
Jan. 27, Saturday.—Semester scholarship deficiency reports to students and deans are due not later than 6 p. m.

SECOND SEMESTER, 1933-'34.

Jan. 29, Monday.—Meeting of assigners with committee on schedule at 2 p. m.
Jan. 29, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
Jan. 30, Tuesday.—Admission and registration of students begin at 7:45 a. m.
Jan. 31, Wednesday.—Registration closes at 5 p. m.
Feb. 1, Thursday.—*All classes meet according to schedule, beginning at 8 a. m.
Feb. 6 to 9, Tuesday to Friday.—Farm and Home Week.
Feb. 10, Saturday.—Reports of all grades for first semester due in registrar's office.
Feb. 16, Friday.—Founders' Day. The College was located at Manhattan on Feb. 16, 1863.
Feb. 22, Thursday.—Washington's Birthday, holiday.
Feb. 24, Saturday.—Examinations to remove conditions.
Mar. 3, Saturday.—Scholarship deficiency reports to students and deans are due.
Mar. 15, Thursday.—Preliminary reports on masters' theses are due.
Mar. 29, Thursday.—Easter vacation begins at 6 p. m.
Mar. 31, Saturday.—Midsemester scholarship deficiency reports to students and deans are due.
April 2, Monday.—Easter vacation closes at 6 p. m.
April 19, Thursday.—Announcement of elections of seniors to Phi Kappa Phi.

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* 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 7, Monday.—Abstracts of masters' theses are due.
May 15 to 22, Tuesday to Tuesday.—Examinations for seniors.
May 22 to 29, Tuesday to Tuesday.—Examinations at close of semester.
May 23, Wednesday.—Masters' theses are due.
May 27, Sunday.—Baccalaureate services, beginning at 8 p. m.
May 30, Wednesday.—Memorial Day, holiday.
May 30, Wednesday.—Alumni Day. Business meeting at 2 p. m., banquet at 6 p. m.
May 31, Thursday.—Seventy-first Annual Commencement at 10 a. m.
May 31, Thursday.—Semester scholarship deficiency reports to students and deans are due not later than noon.
June 14, Thursday.—Reports of all grades for second semester due in registrar's office.

SUMMER SCHOOL, 1934

June 4, Monday.—Registration of students for nine-week Summer School begins at 8 a. m.
June 4, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
June 4 to Aug. 4, Monday to Saturday.—Nine-week Summer School in session.
June 4 to 8, Monday to Friday.—4-H Club Round-up.
June 15, Friday.—Preliminary reports on masters' theses are due.
July 4, Wednesday.—Independence Day, holiday.
July 9 to Aug. 4, Monday to Saturday.—Four-week Summer School in session.
July 14, Saturday.—Abstracts of masters' theses are due.
July 28, Saturday.—Masters' theses are due.
Aug. 3, Friday.—Commencement exercises at 8 p. m. for those receiving degrees at end of Summer School.
Aug. 4, Saturday.—Summer School closes.
Aug. 11, Saturday.—Reports of all grades for Summer School due in registrar's office.

FIRST SEMESTER, 1934-'35

Sept. 10, Monday.—Admission and registration of students begin at 7:45 a. m.
Sept. 10, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.
Sept. 12, 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 1933-'34 arranged according to the initial letters of their last names:

FIRST SEMESTER

MONDAY, SEPTEMBER 11, 1933

Hours.	*Initial letters.*
7:45 to 9:30	G, J, O, W, Y
9:45 to 11:15	D, F, Q, R
12:30 to 2:00	A, C, L
2:15 to 3:45	B, T, V

TUESDAY, SEPTEMBER 12, 1933

8:00 to 9:30	E, M, N, U, X
9:45 to 11:15	H, I, K, Z
12:30 to 2:00	P, S
2:15 to 3:45	All special students and any students who failed to report during the period provided for their group.

WEDNESDAY, SEPTEMBER 13, 1933

8:00 to 9:30	Last period during which any student may be assigned without payment of late assignment fee of $5.

SECOND SEMESTER

TUESDAY, JANUARY 30, 1934

7:45 to 9:30	P, S
9:45 to 11:15	B, T, V
12:30 to 2:00	E, M, N, U, X
2:15 to 3:45	D, F, Q, R

WEDNESDAY, JANUARY 31, 1934

8:00 to 9:30	H, I, K, Z
9:45 to 11:15	G, J, O, W, Y
12:30 to 1:45	A, C, L
2:00 to 5:00	Special students, and any other student not yet assigned. Late assignment fee of $5 in effect after this period.

The State Board of Regents

Name and address	*Term expires*
C. M. Harger, *Chairman*, Abilene	June 30, 1934
Oscar Stauffer, Arkansas City	June 30, 1933
Ralph T. O'Neil, Topeka	June 30, 1935
C. C. Wilson, Meade	June 30, 1933
Leslie Wallace, Larned	June 30, 1935
Drew McLaughlin, Paola	June 30, 1934
Fred M. Harris, Ottawa	June 30, 1934
Dudley Doolittle, Strong City	June 30, 1936
B. P. Waggener, Atchison	June 30, 1936

C. Benjamin Franklin, *Business Manager*
Lee R. Hettick, *Assistant Business Manager*

Administrative Officers of the College

President	F. D. Farrell
Vice President	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 General Science	R. W. Babcock
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
Dean of the Division of Graduate Study	J. E. Ackert
Dean of Women	Mary P. Van Zile
Dean of the Summer School	E. L. Holton
Registrar	Jessie McD. Machir
Librarian	Arthur B. Smith
Superintendent of Maintenance	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

JULIUS TERRASS WILLARD, M. S., Sc. D., Vice President of the College (1883, 1918); Dean of Division of General Science (1909-1930); Professor of Chemistry (1901-1918).
B. S., K. S. C., 1883; M. S., ibid., 1886; Sc. D., ibid., 1908.
A 46B; 1014 Houston.

BENJAMIN LUCE REMICK, Ph. M., Professor and Head of Department of Mathematics (1900).
Ph. B., Cornell College, 1889; Ph. M., ibid., 1892. S 54; 613 Houston.

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 56; 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 75A; 1212 Thurston.

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 69; 325 N. 14th.

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, 1904; B. S., K. S. C., 1929. A 42; 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.

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* 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)
Ag—Waters Hall (Agriculture)
Bks—Barracks
C—Denison Hall (Chemistry, Physics)
CH—College Hospital
D—Chemistry Annex No. 2
E—Engineering Hall
F—Fairchild Hall
G—Education Hall
H—Dickens Hall
I—Illustrations Hall
K—Kedzie Hall (Printing)
L—Calvin Hall (Home Economics)
Li—Library
M—Auditorium
MA—Music Annex
N—Nichols Gymnasium
P—Stock Judging Pavilion
PP—Heat, Power and Service Building
R—Farm Machinery Hall
S—Engineering Shops
T—Thompson Hall (Cafeteria)
V—Veterinary Hall
VH—Veterinary Hospital
VZ—Van Zile Hall (Girls' Dormitory)
W—Chemistry Annex No. 1
X—Nurses' Quarters

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 27; 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.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: 502 Osage.

LELAND DAVID BUSHNELL, Ph.D., Professor and Head of Department of Bacteriology (1908, 1912); Bacteriologist, Agricultural Experiment Station (1908, 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. E. 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.C., 1895; M.S., ibid., 1905. F 51; 1725 Poyntz.

ROBERT KIRKLAND NABOURS, Ph.D., Professor and Head of Department of Zoology (1910, 1913); Zoölogist, Agricultural Experiment Station (1910, 1913); Curator of Natural History Museum (1910).
Ed.B., University of Chicago, 1905; Ph.D., ibid., 1911. F 29; 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 30; 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.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; 1721 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.C., 1908; M.E., ibid., 1916. S 62; 1722 Laramie.

HARRY JOHN CHARLES UMBERGER,[1] B.S., Dean of Division of College Extension (1911, 1919); Director of College Extension (1911, 1919).
B.S., K.S.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.C., 1915; Ph.D., University of Chicago, 1918. C 28; 1711 Fairchild.

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

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. C., 1906; D. V. M., ibid., 1910; B. S. in Agr., ibid., 1918.
E. 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. C., 1922.
E. Ag 206B; 825 Houston.

JAMES EDWARD ACKERT, Ph.D., Dean of the Division of Graduate Study (1931); Professor of Zoölogy (1913, 1918); Parasitologist, Agricultural Experiment Station (1913).
A. B., University of Illinois, 1909; A. M., ibid., 1911; Ph. D., ibid., 1918.
F 26; 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. W. Ag 128; 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 54; 1727 Fairview.

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 108; 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 31; 800 Poyntz.

LEO EDWARD MELCHERS, M.S., Professor and Head of Department of Botany and Plant Pathology (1913, 1919); Plant Pathologist, Agricultural Experiment Station (1913).
B. S., Ohio State University, 1912; M. S., ibid., 1913. H 58; 325 N. 17th.

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 27; 211 N. 18th.

CYRUS VANCE WILLIAMS, Ph.D., Professor of Vocational Education (1920).
B. Ed., (Peru) Nebraska State Teachers College, 1909; A. M., University of Nebraska, 1910; B. S. in Agr., ibid., 1919; Ph. D., ibid., 1925. G 28; 1735 Fairview.

WILLIAM HIDDLESON ANDREWS, Ph.D., LL.D., Professor of Education (1906, 1920).
A. B., University of Chicago, 1900; M. S., K. S. C., 1919; Ph. D., University of Chicago, 1923; LL. D., College of Emporia, 1921. G 27; 1704 Fairview.

CHARLES OSCAR SWANSON, M. Agr., Ph.D., Professor and Head of Department of Milling Industry (1906, 1923).
A. B., Carleton College, 1899; M. Agr., University of Minnesota, 1905; Ph. D., Cornell University, 1922. Ag 110; 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 57; 325 N. 17th.

JOSIAH SIMSON HUGHES, Ph.D., Professor of Chemistry (1910, 1920).
B. S., Ohio Wesleyan University, 1908; M. S., ibid., 1909; A. M., Ohio State University, 1910; Ph. D., ibid., 1917. C 37; 333 N. 15th.

ROBERT WARREN CONOVER, A.M., Professor of English (1915, 1920).
A. B., Wesleyan University, 1911; A. M., ibid., 1914. K 53; 210 S. 17th.

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 60; 1118 Bertrand.

GEORGE ELLSWORTH RABURN, M.S., Professor of Physics (1910, 1920).
A. B., University of Michigan, 1907; M. S., ibid., 1913. C 29A; College Heights.

ROBERT JOHN BARNETT, M.S., Professor of Horticulture (1920); Head of Department of Horticulture (1920, 1930); Horticulturist, Agricultural Experiment Station (1920, 1930).
B. S., K. S. C., 1895; M. S., ibid., 1911. H 29; 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 39; 1821 Poyntz.

FLOYD WAYNE BELL, B.S.A., Professor of Animal Husbandry, in Charge of Advanced Judging (1918, 1921).
B. S., Cornell University, 1911. E. 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. C., 1913; Ph. D., University of Wisconsin, 1923.
W. Ag 330A; 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. E. Ag 304A; 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; 1622 Leavenworth.

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 GAINEY, 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, S. M., Professor and Head of Department of Electrical Engineering (1916, 1927).

B. S. in E. E., University of Michigan, 1913; S. M., Massachusetts Institute of Technology, 1930. E 120; 1218 Kearney.

CLINTON ELLICOTT PEARCE, S. B., Professor and Head of Department of Machine Design (1917, 1922).

S. B., Massachusetts Institute of Technology, 1913. E 210; 316 Denison.

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. 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. C., 1925. W. Ag 225; 4 College Heights Road.

MARTHA S. PITTMAN, Ph. D., Professor and Head of Department of Food Economics and Nutrition (1919, 1922).

B. S., K. S. C., 1906; B. S., Columbia University, 1916; A. M., ibid., 1918; Ph. D., University of Chicago, 1930. L 39; 1909 Poyntz.

GEORGE ALBERT GEMMELL, Ph. D., 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. C., 1920; M. S., ibid., 1922; Ph. D., University of Missouri, 1930. A 5; 411 N. 16th.

WILLIAM TIMOTHY STRATTON, Ph. D., Professor of Mathematics (1910, 1923).

A. B., Indiana University, 1906; A. M., ibid., 1913; Ph. D., University of Washington, 1931. S 53; 511 N. Sunset.

ROY MONROE GREEN, M. S., Professor of Agricultural Economics (1920, 1923).

B. S. in Agr., University of Missouri, 1914; M. S., K. S. C., 1922. W. Ag 330B; 1855 Anderson.

MARGARET M. JUSTIN, Ph. D., Dean of Division of Home Economics (1923).

B. S. in H. E., K. S. C., 1909; B. S. in Educ., Teachers College, Columbia University, 1915; Ph. D., Yale University, 1923. L 29; 531 N. Manhattan.

AMY KELLY,[1] B. S., Professor, State Home Demonstration Leader, Division of College Extension (1923).

B. S., South Dakota State College, 1908. A 63A; 1110 Kearney.

HEMAN LAURITZ IBSEN, Ph. D., Professor of Genetics (1919, 1924).

B. S., University of Wisconsin, 1912; M. S., ibid., 1913; Ph. D., ibid., 1916. E. Ag 58; 326 N. 16th.

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 64; 1723 Fairview.

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

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 305; 1918 Leavenworth.

WALTER GILLING WARD, M.S. Arch., Professor in Charge of Rural Engineering, Division of College Extension (1920, 1925).

B. S. in Arch., K. S. C., 1912; Architect, ibid., 1922; M. S., Iowa State College, 1931. E 131; 519 N. Manhattan.

CHARLES ELKINS ROGERS, M.S., Professor and Head of Department of Industrial Journalism and Printing (1919, 1926).

A. B., University of Oklahoma, 1914; M. S., K. S. C., 1926; A. M., Stanford University, 1932. K 30; 1740 Fairview.

EDGAR TALBERT KEITH, B.S., Professor of Industrial Journalism and Printing (1912, 1925).

B. S., K. S. C., 1912. K 26A; 1714 Fairview.

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 52; 1635 Fairchild.

CHARLES WALTON MATTHEWS, A. M., Professor of English (1920, 1925).

B. S., Kansas State Teachers College, Pittsburg, 1918; A. M., University of Chicago, 1923. K 55; 1718 Fairview.

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 39; 1429 Laramie.

JULES HENRY ROBERT, B.S., Professor of Applied Mechanics and Hydraulics (1916, 1925).

B. S., University of Illinois, 1914. E 113; 1729 Fairchild.

HARRY WINFIELD CAVE, M.S., Professor of Dairy Husbandry (1918, 1926).

B. S. A., Iowa State College, 1914; M. S., K. S. C., 1916. W. Ag 128; 1638 Osage.

LOUIS COLEMAN WILLIAMS, B.S., Professor of Horticulture, Division of College Extension (1915, 1926).

B. S., K. S. C., 1912; B. S., ibid., 1922. A 34; 520 N. 11th.

ROGER CLETUS SMITH, Ph.D., Professor of Entomology (1920, 1926).

A. B., Miami University, 1911; A. M., Ohio State University, 1915; Ph. D., Cornell University, 1917. F 54; 1729 Laramie.

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,[2] B.S., Professor of Pasture Management (1926).

B. S., Utah Agricultural College, 1910. E. Ag 216; 200 N. 16th.

LOUIS HENRY LIMPER, Ph.D., Professor of Modern Languages (1914, 1926).

A. B., Baldwin Wallace College, 1907; A. M., University of Wisconsin, 1914; Ph. D., State University of Iowa, 1931. A 71; 1324 Laramie.

HELEN WHEELER FORD, Ph.D., Professor and Head of Department of Child Welfare and Euthenics (1926, 1928).

B. S., Rhode Island State College, 1914; Ph. D., Yale University, 1925. L 62; 1115 Bertrand.

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.

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2. Absent on leave, October 15, 1932, to May 31, 1933.

FLOYD PATTISON, M.S., Professor of Mechanical Engineering, Home Study Service, Division of College Extension (1919, 1927).
B. S., K. S. C., 1912; M. S., Massachusetts Institute of Technology, 1929.
A 5; 805 Kearney.

BEATTY HOPE FLEENOR, Ph.D., Professor of Education, Home Study Service, Division of College Extension (1923, 1927).
B. S., K. S. C., 1919; M. S., ibid., 1923; Ph. D., University of Missouri, 1931.
A 5; 1635 Osage.

MAYNARD HENRY COE,[1] B.S., Professor, State Club Leader, Division of College Extension (1922, 1927).
B. S., University of Minnesota, 1917. A 35B; 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 32; 1123 Thurston.

ADA RICE, M.S., Professor of English (1899, 1927).
B. S., K. S. C., 1895; M. S., ibid., 1912. A 61; 917 Osage.

MANFORD W. FURR, C.E., Professor of Civil Engineering (1917, 1927).
B. S., Purdue University, 1913; C. E., ibid., 1925; M. S., K. S. 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 62; 1720 Fairview.

HERBERT HENLEY HAYMAKER, Ph.D., Professor of Plant Pathology (1917, 1927).
B. S., K. S. 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 3A; 333 N. 18th.

ALBERT JOHN MACK, M.E., Professor of Mechanical Engineering (1917, 1928).
B. S., K. S. C., 1912; M. E., ibid., 1921. E 109; 1619 Osage.

GABE ALFRED SELLERS, M.S., Professor of Metallurgy and Metallography (1919, 1928).
B. S., K. S. C., 1917; M. S., ibid., 1929. S 30C; 927 Moro.

WILLARD HUNGATE MARTIN, M.S., Professor of Dairy Husbandry (1925, 1928).
B. S., Purdue University, 1918; M. S., Pennsylvania State College, 1922.
W. Ag 128C; 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. 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, 1923. E Ag 207; 1814 Laramie.

FREDERICK CHARLES FENTON, M.S., Professor and Head of Department of Agricultural Engineering (1928).
B. S., Iowa State College, 1914; M. S., ibid., 1930. E 214; 322 N. 17th.

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 76A; 1515 Humboldt.

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

JESSE LAMAR BRENNEMAN, E.E., Professor of Electrical Engineering (1920, 1928).

B. S., University of Chicago, 1908; E. E., University of Wisconsin, 1913. E 120; 820 Laramie.

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 52; 1617 Leavenworth.

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

A. B., Indiana University, 1914; A. M., ibid., 1917; Ph. D., Columbia University, 1923. W. Ag 229; 1616 Osage.

LUCILE OSBORN RUST, M.S., Professor of Home Economics Education (1924, 1929).

B. S., Kansas State Teachers College, Pittsburg, 1921; M. S., K. S. C., 1925. G 28; Tatarrax Apts.

RALPH LANGLEY PARKER, Ph.D., Professor of Apiculture and Entomology (1925, 1930); 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.

WALTER LEROY LATSHAW, M.S., Professor of Chemistry (1914, 1930).

B. S., Pennsylvania State College, 1912; M. S., K. S. C., 1922. C 3; 927 Fremont.

RODNEY WHITTEMORE BABCOCK, Ph.D., Dean of the Division of General Science (1930).

A. B., University of Missouri, 1912; A. M., University of Wisconsin, 1915; Ph. D., ibid., 1924. A 47; 1928 Leavenworth.

HARRISON BOYD SUMMERS, Ph.D., Professor of Public Speaking (1923, 1930).

A. B., Fairmount College Wichita University, 1917; A. M., University of Oklahoma, 1921; Ph. D., University of Missouri, 1931. G 55; 1525 Humboldt.

ALLAN PARK DAVIDSON, M.S., Professor of Vocational Education (1919, 1930).

B. S., K. S. C., 1914; M. S., ibid., 1925. G 29; 1600 Humboldt.

ARTHUR D. WEBER, M.S., Professor of Animal Husbandry (1931).

B. S., K. S. C., 1922; M. S, ibid., 1926. E. Ag 13; 357 N. 14th.

JOHN STEPHEN SULLIVAN, Lieut. Col. Inf., U. S. A., Professor and Head of Department of Military Science and Tactics (1931).

Graduate, U. S. Military Academy, 1907; Graduate, Infantry School, Advanced Course, 1929; Graduate, Command and General Staff School, 1931. N 27; 909 Humboldt.

HILMER HENRY LAUDE, M.S., Professor of Farm Crops (1920, 1931).

B. S., K. S. C., 1911; M. S., Texas A. and M. College, 1918. E. Ag 208; 321 Denison.

EDGAR LEMUEL TAGUE, Ph.D., Professor of Chemistry (1914, 1931); 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.

GEORGE EDWIN JOHNSON, Ph.D., Professor of Zoölogy (1924, 1931); Mammalogist, Agricultural Experiment Station (1924).

B. S., Dakota Wesleyan University, 1913; M. S., University of Chicago, 1916; Ph. D., Harvard University, 1923. F 5; 1614 Humboldt.

LEON REED QUINLAN, M.L.A., Professor of Horticulture, in Charge of Landscape Gardening (1927, 1931).

B. S., Colorado Agricultural College, 1920; M. L. A., Harvard University, 1925. H 8; 813 Vattier.

LOUIS PIERCE WASHBURN, M.P.E., Professor of Physical Education for Men (1926, 1931).

B. S., Carleton College, 1907; B. P. E., Springfield Y. M. C. A. College, 1911; M. P. E., ibid., 1926. N 35; 1809 Poyntz.

HELEN G. SAUM, B.S., Professor of Physical Education for Women (1928, 1931).

Diploma, Battle Creek School for Physical Education, 1919; B. S. in Ed., Ohio State University, 1927. N 1; 1131 Fremont.

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, M.S., Associate Professor of Clothing and Textiles (1902, 1918).

B. S., K. S. C., 1901; M. S., University of Wisconsin, 1931. L 55; 518 N. 16th.

CARL G. ELLING, B.S., Associate Professor of Animal Husbandry, Division of College Extension (1918, 1921).

B. S., K. S. C., 1904. A 34; R. R. 1.

ALONZO FRANKLIN TURNER,[1] B.S., Associate Professor, Field Agent, Division of College Extension (1917, 1920).

B. S., K. S. C., 1905. A 60; 810 Moro.

JAMES WALTER ZAHNLEY, M.S., Associate Professor of Farm Crops (1915, 1921).

B. S., K. S. C., 1909; M. S., ibid., 1926. E. Ag 308; R. R. 8.

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. C., 1924. V 2; R. R. 8.

WILLIAM MAX MCLEOD, D.V.M., Associate Professor of Anatomy (1919, 1921).

D. V. M., Iowa State College, 1917. V 33; 1114 Bertrand.

WILLIAM RAYMOND BRACKETT, A.B., Associate Professor of Physics (1919, 1923).

A. B., University of Colorado, 1905. C 33; 1824 Humboldt.

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. E. Ag 111; 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. C., 1922. E. Ag 202; 1615 Leavenworth.

IRA NICHOLS CHAPMAN,[1] M.S., Associate Professor of Agricultural Economics, Division of College Extension (1916, 1925).

B. S., K. S. C., 1916; M. S., ibid., 1926. W. Ag 327; 1210 Thurston.

FLOYD ALONZO SMUTZ, B.S., Associate Professor of Engineering Drawing and Descriptive Geometry (1918, 1925).

B. S. in Arch., K. S. C., 1914. E 207; 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. C., 1927. E 14; 1200 Kearney.

MORRIS EVANS, M.S., Associate Professor of Agricultural Economics (1920, 1926).

B. S. in Agr., K. S. C., 1920; M. S., ibid., 1925. W. Ag 328; 1601 Poyntz.

HELEN ELIZABETH ELCOCK, 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.

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

EMMA HYDE, A. M., Associate Professor of Mathematics (1920, 1926).
A. B., University of Kansas, 1912; A. M., University of Chicago, 1916.
S 56; 320 N. 15th.

CLARENCE FLAVIUS LEWIS, M. S., Associate Professor of Mathematics (1920, 1926).
A. B., University of Denver, 1913; M. S., K. S. C., 1925. S 53; 1615 Humboldt.

ANNA MARIE STURMER, A. M., Associate Professor of English (1920, 1926).
A. B., University of Nebraska, 1917; A. M., ibid., 1920. A 57; 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. C., 1900; Ph. B., University of Chicago, 1907; Ph. M., ibid., 1908.
F 61 and A 47A; 1621 Fairchild.

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 37; 501 Sunset.

WALDO HIRAM LYONS, A. M., Associate Professor of Mathematics (1924, 1926).
A. B., University of Denver, 1912; A. M., ibid., 1916.
W. Ag 130; 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 Teachers College, 1914; A. M., Indiana University, 1918; Ph. D., University of Iowa, 1924. F 59; 823 Bluemont.

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 60; 825 Bluemont.

LUTHER EARL WILLOUGHBY, B. S., Associate Professor of Farm Crops, Division of College Extension (1917, 1927).
B. S., K. S. C., 1912; B. S. in Agr., ibid., 1916. Ag 250; 918 Thurston.

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. C., 1916; M. S., ibid., 1927. A 5; 714 Moro.

JAMES WALTON LINN, B. S., Associate Professor of Dairy Husbandry, Division of College Extension (1923, 1927).
B. S., K. S. C., 1915. W. Ag 125; R. R. 1.

HUGH DURHAM, A. M., Assistant Dean, Division of Agriculture (1915, 1927); Assistant to 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. E. Ag 105; 730 Osage.

LEON VINCENT WHITE, C. E., M. S., Associate Professor of Civil Engineering (1918, 1927).
B. S., K. S. C., 1903; C. E., ibid., 1918; M. S., ibid., 1927. E 122; 1832 Anderson.

ERNEST BAKER KEITH, Ph. D., Associate Professor of Chemistry (1918, 1927).
B. S,, K. S. 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. C., 1927. E 121; 804 Fremont.

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; 1643 Fairview.

CLIFF ERRETT AUBEL, M.S., Associate Professor of Animal Husbandry (1919, 1928).

B. S., Pennsylvania State College, 1915; M. S., K. S. C., 1917. E. Ag 24; 323 N. 15th.

CHARLES HOWARD KITSELMAN, V.M.D., M.S., Associate Professor of Pathology (1919, 1928).

V. M. D., University of Pennsylvania, 1913; M. S., K. S. C., 1927. V 55A; 1417 Pierre.

FRANK JACOBS CHEEK, JR.,[3] C.E., Associate Professor of Structural Design (1923, 1928).

A. B., Center College, 1914; C. E., Rensselaer Polytechnic Institute, 1919. E 223; 1109 Thurston.

ERIC ROSS LYON, M.S., Associate Professor of Physics (1921, 1928).

A. B., Phillips University, 1911; M. S., ibid., 1923. C 56; 1026 Bertrand.

MARGARET AHLBORN, M.S., Associate Professor of Food Economics and Nutrition (1923, 1928); Assistant Dean of Division of Home Economics (1923, 1929).

A. B., University of Kansas, 1906; M. S., K. S. 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 61; 727 Sunset.

LOUISE HELEN EVERHARDY, A.M., Associate Professor of Art (1919, 1929).

Graduate, New York School of Fine and Applied Art, 1916; B. S., Columbia University, 1925; A. M., ibid., 1926. A 55A; 1104 Vattier.

BOYD BERTRAND BRAINARD, S.M., Associate Professor of Mechanical Engineering (1923, 1929).

B. S. in M. E., University of Colorado, 1922; S. M., Massachusetts Institute of Technology, 1931. E 109; 1209 Vattier.

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

A. B., University of Nebraska, 1918; A. M., ibid., 1926. A 71; 1031 Fremont.

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

A. B., University of Nebraska, 1917; A. M., Columbia University, 1918; Ph. D., University of Minnesota, 1929. G 30; 1615 Fairchild.

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

B. S., K. S. C., 1924; M. S., ibid., 1927; Ph. D., University of Missouri, 1929. A 51A; 1902 Anderson.

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

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

REGINALD HENRY PAINTER, Ph.D., Associate Professor of Entomology (1926, 1930).

A. B., University of Texas, 1922; A. M., ibid., 1924; Ph. D., Ohio State University, 1926. F 81; 903 Thurston.

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3. Absent on leave, year 1932-'33.

HAROLD HOWE, M. S., Associate Professor of Agricultural Economics (1925, 1930).
B. S., K. S. C., 1922; M. S., University of Maryland, 1923.
W. Ag 325A; 1206 Thurston.

HENRY MILES HEBERER, A. B., Associate Professor of Public Speaking (1925, 1930).
A. B., University of Illinois, 1922. G 55; 1641 Laramie.

JAMES PHILLIP CALLAHAN, A. M., Associate Professor of English (1924, 1930).
B. S., Kansas State Teachers College, Hays, 1919; A. M., University of Kansas, 1926.
K 56; 908 Leavenworth.

DOROTHY BARFOOT, A. M., Associate Professor of Art (1930).
A. B., State University of Iowa, 1922; A. M., Columbia University, 1928.
A 68A; 1704 Fairview.

KINGSLEY WALTON GIVEN, A. M., Associate Professor of Public Speaking (1930).
A. B., Park College, 1926; A. M., State University of Iowa, 1928.
G 55; 501 Houston.

WILLIAM ARTHUR SWIFT, Captain, U. S. A., Associate Professor of Military Science and Tactics (1930).
N 26; 210 N. 8th.

FRANKLIN JESSE ZINK, B. S., Associate Professor of Agricultural Engineering (1930).
B. S., in A. E., Iowa State College, 1924. E 216; 332 N. 15th.

FRANCIS EUGENE CHARLES, M. S., Associate Professor of Industrial Journalism (June 1, 1931).
B. S., K. S. C., 1924; M. S., ibid., 1929. K 28B; 1819 Leavenworth.

WILLIAM FRANCIS PICKETT, M. S., Associate Professor of Horticulture (1917, July 1, 1931).
B. S., K. S. C., 1917; M. S., ibid., 1923. H 33; 1622 Osage.

WALTER BUSWELL BALCH, M. S., Associate Professor of Horticulture (1921, July 1, 1931); Greenhouse Foreman (1921).
B. S., Cornell University, 1919; M. S., K. S. C., 1925. H 34; 1734 Fairchild.

JOHN WALLACE LUMB, D. V. M., M. S., Associate Professor of Veterinary Medicine, Division of College Extension (1924, 1931).
D. V. M., K. S. C., 1910; M. S., ibid., 1930. V 32; 1631 Leavenworth.

HAROLD MARTIN SCOTT, M. S., Associate Professor of Poultry Husbandry (1928, 1931).
B. S., Oregon Agricultural College, 1924; M. S., K. S. C., 1927.
W. Ag 252; 830 Bertrand.

KATHERINE JANE HESS, M. S., Associate Professor of Clothing and Textiles (1925, 1931).
B. S., K. S. C., 1900; M. S., ibid., 1926. L 53; 601 Fremont.

WILLIAM HUGH RIDDELL, M. S., Associate Professor of Dairy Husbandry (1929, 1931).
B. S. A., University of British Columbia, 1922; M. S., University of Minnesota, 1924.
W. Ag 125; 514 N. Manhattan.

WILLIAM ALEXANDER VAN WINKLE, Ph. D., Associate Professor of Chemistry (1922, 1931).
B. S., University of Michigan, 1911; M. S., University of Illinois, 1917; Ph. D., ibid., 1920. D 29; 1110 Thurston.

RANDOLPH FORNEY GINGRICH, M. S., Associate Professor of Engineering Drawing and Descriptive Geometry (1923, 1931).
B. S. in C. E., University of Nebraska, 1923; M. S., K. S. C., 1929.
S 51; 1731 Humboldt.

JOHN FREDERICK HELM, JR., B.D., Associate Professor of Free-hand Drawing and Painting (1924, 1931).
B. D., Syracuse University, 1924. E 305; 1508 Humboldt.

ALPHA CORINNE LATZKE, M.S., Associate Professor of Clothing and Textiles (1929, 1931); Head of Department of Clothing and Textiles (1929; Sept. 1, 1932).
B. S., K. S. C., 1919; M. S., ibid., 1928. L 55; 1527 Humboldt.

DOROTHY TRIPLETT, Ph.D., Associate Professor of Child Welfare and Euthenics (1930, 1931).
B. S., Kansas State Teachers College, Emporia, 1924; A. M., University of Iowa, 1927; Ph. D., ibid., 1930. L 63; 1409 Laramie.

HARRY EDWARD VAN TUYL, D.V.M., Major V. C., U. S. A., Associate Professor of Military Science and Tactics (1929, 1931).
D. V. M., K. S. C., 1917; Honor Graduate, U. S. A. Veterinary School, 1923.
V 27; 807 Osage.

ERNEST KNIGHT CHAPIN, M.S., Associate Professor of Physics (1923; Sept. 1, 1932).
A. B., University of Michigan, 1918; M. S., ibid., 1923. C 53; 1860 Anderson.

HAROLD NATHAN BARHAM, Ph.D., Associate Professor of Chemistry (1929; Sept. 1, 1932).
A. B., Bethany College, 1921; M. S., Ohio State University, 1922; Ph. D., University of Kansas, 1928. C 56; 830 Bluemont.

ASSISTANT PROFESSORS

ALFRED LESTER CLAPP, B.S., Assistant Professor of Agronomy, in Charge of Co-operative Experiments (1920; Aug. 1, 1931).
B. S., K. S. C., 1914. E. Ag 201; 1109 Kearney.

DANIEL EMMETT LYNCH, Assistant Professor of Forging (1914, 1920); Foreman of Blacksmith Shop (1914).
S 41; 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. R. 1.

ELIZABETH HAMILTON DAVIS, B.L.S., Reference Librarian (1920).
A. B., MacMurray College for Women, 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. C., 1924. C 53; 1802 Anderson.

CHARLES DEFOREST DAVIS, M.S., Assistant Professor of Farm Crops (1921).
B. S., K. S. C., 1921; M. S., ibid., 1926. E. Ag 305A; 1013 Laramie.

DAVID LESLIE MACKINTOSH,[5] M.S., Assistant Professor of Animal Husbandry (1921, 1922).
B. S., University of Minnesota, 1920; M. S., K. S. C., 1926. E. Ag 9; 1425 Humboldt.

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 9; 1131 Kearney.

CHARLES WILLIAM CORSAUT, Assistant Professor of Physical Education (1923).
Graduate, Y. M. C. A. College, 1917. N 36; 1601 Humboldt.

IRA KAULL LANDON, B.S. in Agr., Assistant Professor of Soils (1923).
B. S. in Agr., K. S. C., 1921. Ag 201; 3156 Belmont, Parsons, Kan.

5. Absent on leave, November 1, 1932, to June 30, 1933.

FRANK OTTO BLECHA, M.S., Assistant Professor of Agricultural Extension; District Agricultural Agent, Division of College Extension (1919, 1923).
B. S., K. S. 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 56; 1616 Osage.

EDGAR MCCALL AMOS, B.S., Assistant Professor of Industrial Journalism and Printing (1920, 1924).
B. S., K. S. C., 1902. K 29; 1015 Leavenworth.

CLARICE MARIE PAINTER, Assistant Professor of Piano (1924).
Diploma in Piano, Hardin College, 1919; Diploma, New England Conservatory of Music, 1922. M 51; 1429 Laramie.

FRANK PLETCHER ROOT, M.S., Assistant Professor of Physical Education and Athletics (1924).
B. S., K. S. C., 1914; M. S., ibid., 1924. N 34; 314 Kearney.

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 2A; 1616 Humboldt.

HARRY WORKMAN AIMAN, A.B., Assistant Professor of Woodwork (1918, 1925).
A. B., Oskaloosa College, 1921. S 27A; 1200 Bertrand.

HAZLEY THOMAS GROODY, M.D., Assistant Physician, Department of Student Health (1925).
B. S., Valparaiso University, 1909; M. D., Chicago College of Medicine and Surgery, 1913. A 59; 514 N. Juliette.

EDWIN DONALD SAYRE, M.B., A.M., Assistant Professor of Voice (1925).
A. B., DePauw University, 1923; M. B., School of Music, ibid., 1925; A. M., Columbia University, 1931. MA 12; 318 S. 17th.

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. C., 1926.
W. 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.
W. Ag 328; 108 N. 17th.

MARY FIDELIA TAYLOR, A.M., Assistant Professor of Household Economics (1919, 1928).
B. S., K. S. C., 1919, 1931; A. M., Teachers College, Columbia University, 1926.
T 54; 1611 Laramie.

WILLIAM CHARLES JANES, A.M., Assistant Professor of Mathematics (1922, 1926).
B. S., Northwestern University, 1919; A. M., University of Nebraska, 1922.
S 52; 1115 Thurston.

THIRZA ADALINE MOSSMAN, A.M., Assistant Professor of Mathematics (1922, 1926).
A. B., University of Nebraska, 1916; A. M., University of Chicago, 1922.
W. Ag 225; 1601 Fairchild.

ORVILLE DON HUNT, M.S., Assistant Professor of Electrical Engineering (1923, 1926).
B. S. in E. E., Washington State College, 1923; M. S., K. S. C., 1930.
E 127; 1822 Poyntz.

LOUIS MARK JORGENSON, M.S., Assistant Professor of Electrical Engineering (1925, 1926).
B. S., K. S. C., 1907; M. S., ibid., 1930. E 127; 730 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, Assistant State Club Leader, Division of College Extension (1921, 1927).

B. S., Oregon Agricultural College, 1918. A 35A; 1116 Bluemont.

GEORGIANA SMURTHWAITE, M.S., Assistant Professor and District Home Demonstration Agent Leader, Division of College Extension (1924, 1927).

B. S., Utah Agricultural College; M. S., K. S. C., 1931. A 63B; 1531 Leavenworth.

JEPTHA JERRY MOXLEY, B.S., Assistant Professor of Animal Husbandry, Division of College Extension (1925, 1927).

B. S. in Agr., K. S. C., 1922. A 34; 1030 Thurston.

STELLA MAUDE HARRISS, M.S., Assistant Professor of Chemistry (1917, 1927).

Graduate, (Peru) Nebraska State Normal School, 1908; B. S., K. S. 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 54; 1601 Fairchild.

ESTHER BRUNER, M.S., Assistant Professor of Clothing and Textiles (1920, 1927).

B. S., K. S. C., 1920; M. S., ibid., 1921. L 65; 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; 1429 Laramie.

HARRIET SHIPLEY PARKER, A.M., Assistant Professor of English (1924, 1927).

A. B., University of Kansas, 1909; A. M., Washington University, 1912. A 52; 1440 Laramie.

ALICE CLAYPOOL JEFFERSON, B.M., Assistant Professor of Piano (1925, 1927).

Graduate, American Conservatory of Music, 1921; B. M., ibid., 1929. MA 8; 1601 Fairchild.

MYRTLE ANNICE GUNSELMAN,[3] A.M., Assistant Professor of Household Economics (1926, 1927).

B. S., K. S. C., 1919; A. M., University of Chicago, 1926. L 53; 830 Bertrand.

CARL ALFRED BRANDLY, M.S., Assistant Professor of Bacteriology (1927).

D. V. M., K. S. C., 1923; M. S., ibid., 1930. V 53; 1026 Kearney.

MILDRED CAMP, B.L.S., Head Circulation Department, College Library (1927).

A. B., Eureka College, 1912; B. L. S., University of Illinois, 1924. Li; 1626 Laramie.

ELDEN EMANUEL LEASURE, D.V.M., Assistant Professor of Pathology (1926, 1928).

D. V. M., K. S. C., 1923; M. S., ibid., 1930. V 57A; 1531 Leavenworth.

EDWARD RAYMOND FRANK, D.V.M., M.S., Assistant Professor of Surgery and Medicine (1926, 1928).

B. S., K. S. C., 1918; D. V. M., ibid., 1924; M. S., ibid., 1929. VH 53; 1837 Anderson.

HOMER JAY HENNEY, M.S.,[10] Assistant Professor of Agricultural Economics (1927, 1928).

B. S., K. S. C., 1921; M. S., ibid., 1928. W. Ag 330B; 1723 Leavenworth.

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3. Absent on leave, year 1932-'33.

10. Absent on leave, January 16 to June 15, 1933.

MARTINE A. SEATON, B.S., Assistant Professor of Poultry Husbandry, Division of College Extension (1928).
B. S. in Agr., University of Missouri, 1924. W. Ag 350; 500 Humboldt.

HENRY EVERT WICHERS, M.S., Assistant Professor of Rural Architecture (1924, 1928).
B. S. in Arch., K. S. C., 1924; M. S., ibid., 1925; Architect, ibid., 1930.
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; M. S., Iowa State College, 1930. 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; 1122 Vattier.

GEORGE WILLARD MAXWELL, A.M., Assistant Professor of Physics (1927, 1928).
A. M., University of Michigan, 1920. C 57; 1106 Bertrand.

DOROTHY BRADFORD PETTIS, A.M., Assistant Professor of Modern Languages (1927, 1928).
A. B., University of Nebraska, 1919; A. M., ibid., 1924. A 70; 1031 Fremont.

MADALYN AVERY, M.S., Assistant Professor of Physics (1928).
B. S., K. S. C., 1924; M. S., ibid., 1932. C 31; 1429 Laramie.

LYLE WAYNE DOWNEY, B.M., M.S., Assistant Professor of Music (1928); Director of College Band, and Instructor in Band Instruments (1928, 1929).
A. B., James Milliken University, 1923; B. M., American Conservatory, 1928; M. S., K. S. C., 1932. M 31; 200 N. 16th.

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 26; 315 N. 14th.

JOHN HARVEY MADISON,[12] First Lieut. C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (1928).
Graduate, U. S. Military Academy, 1918; Graduate of Basic Course, Coast Artillery School, 1920; Graduate of Battery Officers Course, ibid., 1927. N 26; 614 N. 11th.

DONALD ALDEN WILBUR, A.M., Assistant Professor of Entomology (1928).
B. S., Oregon State College, 1925; A. M., Ohio State University, 1927.
F 83; 1100 Kearney.

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 38; 1116 Bluemont.

LEVELLE WOOD, M.S., Assistant Professor of Institutional Economics (1928).
B. S., Oregon State College, 1921; M. S., Columbia University, 1928. Van Zile Hall.

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.

CLARENCE ROY JACCARD,[1] B.S., Assistant Professor of Agricultural Extension (1922, 1928).
B. S., K. S. C., 1926. A 60; 335 N. 15th.

HENRY LEWIS LOBENSTEIN, B.S., Assistant Professor of Horticulture, Division of College Extension (1928, 1929).
B. S., K. S. C., 1926. A 34; 1127 Kearney.

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1. In coöperation with the U. S. Department of Agriculture.
12. Resigned December 15, 1932.

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

A. B., Colgate University, 1909; Ph. M., University of Chicago, 1910; B. D., ibid., 1911; Ph. D., ibid., 1914. A 43; 419 Denison.

CARRELL HENRY WHITNAH, Ph. D., Assistant Professor of Chemistry and Associate Food Analyst (1929).

A. B., University of Nebraska, 1913; M. S., University of Chicago, 1917; Ph. D., University of Nebraska, 1925. C 15; 1931 Leavenworth.

HARRY RAY BRYSON, M. S., Assistant Professor of Entomology (1924, 1929).

B. S., K. S. C., 1917; M. S., ibid., 1924. F 54; 1821 Leavenworth.

CHARLES ALDEN LOGAN, B. S., Assistant Professor of Agricultural Engineering (1929).

B. S., K. S. C., 1925. E 216; 615 N. 9th.

FRANCIS LEONARD TIMMONS, M. S., Assistant Professor of Coöperative Experiments, Department of Agronomy (1928, 1929).

B. S., K. S. C., 1928; M. S., K. S. C., 1932. E. Ag 202; 925 Thurston.

INA EMMA HOLROYD, A. M., Assistant Professor of Mathematics (1900, 1929).

B. S., K. S. C., 1915; B. S., Kansas State Teachers College, Emporia, 1916; A. M., Columbia University, 1929. W. Ag 225; 1001 Moro.

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

B. S., K. S. C., 1917; M. S., Columbia University, 1924. L 58; 1519 Fairchild.

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

A. B., Ohio State University, 1920; M. S., ibid., 1922; Ph. D., ibid., 1928. C 9; 819 Kearney.

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

Graduate in Violin, William A. Bunzen; Graduate in Orchestra, Sander Harmati; Graduate in Musical Composition, R. Cuscaden. MA 7; 1413 Laramie.

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

B. S., University of Washington, 1922; M. S. in Phys. Ed., ibid., 1929. N 1; 1212 Fremont.

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

B. S., Iowa State College, 1916; Graduate, Battery Officers' Course, Coast Artillery School, 1920. N 26; 1011 Houston.

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

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

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

D. V. M., K. S. C., 1926. V 2; 515 N. 14th.

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

Graduate, U. S. Military Academy, 1918; Graduate, Artillery School, 1920; Graduate, Coast Artillery Battery Officers' Course, 1927. N 26; 1031 Thurston.

MURVILLE JENNINGS HARBAUGH, A. M., Assistant Professor of Zoölogy (1929, 1930).

A. B., University of Montana, 1926; A. M., ibid., 1930. F 37; 904 Bertrand.

JOHN VERN HEPLER,[1] B. S., Assistant Professor of Agricultural Extension, District Agricultural Agent, Division of College Extension (1921, 1930).

B. S., K. S. C., 1915. A 60; 825 Bluemont.

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

WILBUR JOHN CAULFIELD, M.S., Assistant Professor of Dairy Husbandry (1927, 1930).
B. S., University of Minnesota, 1924; M. S., Pennsylvania State College, 1926. W. Ag 147; 1011 Moro.

GEORGE MONTGOMERY, M.S., Assistant Professor of Agricultural Economics (1925, 1930).
B. S., K. S. C., 1925; M. S., ibid., 1927. W. Ag 330B; 1116 Bluemont.

LINUS BURR SMITH, M. Arch., Assistant Professor of Architecture (1926, 1930).
B. S., K. S. C., 1926; M. Arch., Harvard University, 1931. E 223; 1211 Thurston.

CHARLES WILLIAM STRATTON, B.M., Assistant Professor of Piano (1927, 1930).
B. M., K. S. C., 1926. MA 13; 511 N. Sunset.

RUFUS FRANCIS COX, M.S., Assistant Professor of Animal Husbandry (1930).
B. S., Oklahoma A. and M. College, 1923; M. S., Iowa State College, 1925. E. Ag 8A; 1006 Bertrand.

LEO EVERETT HUDIBURG, M.S., Assistant Professor of Physics (1930).
B. S., Kansas State Teachers College, Pittsburg, 1923; M. S., K. S. C., 1930. C 34; 1624 Osage.

IRA EDGAR RYDER, Captain Inf., U. S. A., Assistant Professor of Military Science and Tactics (1930).
A. B., St. John's College, 1913. N 26; 1622 Leavenworth.

REEFA GLENN TORDOFF, A.B., Assistant Professor of Piano (1930).
A. B., University of Minnesota, 1924. M 55; 1611 Laramie.

VANCE MATHER RUCKER, B.S., Assistant Professor of Agricultural Economics, Division of College Extension (1928, 1930).
B. S., K. S. C., 1928. W. Ag 363; 1010 Osage.

DWIGHT M. SEATH, M.S., Assistant Professor of Dairy Husbandry, Division of College Extension (1930).
B. S., Iowa State College, 1926; M. S., K. S. C., 1930. W. Ag 130; 1613 Humboldt.

WILLIAM SCOTT SPEER, B.S., Assistant Professor of Agricultural Economics, Division of College Extension (1926, 1931).
B. S., K. S. C., 1925. F. B. Office; Kingman, Kan.

LAWRENCE FENER HALL, M.S., Assistant Professor of Vocational Education (1929, 1931).
B. S., K. S. C., 1923; M. S., ibid., 1927. G 28; 1126 Thurston.

HAROLD EDWIN MYERS, M.S., Assistant Professor of Soils (1929, 1931).
B. S., K. S. C., 1928; M. S., University of Illinois, 1929. E. Ag 207; 1116 Bluemont.

GEORGE ALBERT FILINGER, Ph.D., Assistant Professor of Pomology (1931); Assistant Pomologist, Agricultural Experiment Station (1931).
B. S., K. S. C., 1924; M. S., ibid., 1925; Ph. D., Ohio State University, 1931. H 35; 1731 Leavenworth.

EUGENE ARTHUR CLEAVENGER, B.S., Assistant Professor of Farm Crops, Division of College Extension (1927, 1931).
B. S., K. S. C., 1925. A 34; 1017 Thurston.

VIDA AGNES HARRIS, A.M., Assistant Professor of Art (1927, 1931).
B. S., K. S. C., 1914; A. M., University of Chicago, 1927. A 55A; 624 Bluemont.

ARNOLD ROOSEVELT JONES, B.S., Assistant Professor of Accounting (1928, 1931).
B. S., University of Kansas, 1927; C. P. A., State of Kansas, 1931. A 74; 521 Osage.

MARION HERFORT PELTON, B.M., Assistant Professor of Piano (1928, 1931).
B. M., University of Wisconsin, 1927; B. S., K. S. C., 1932. MA 5; 1447 Anderson.

CHARLES RAY THOMPSON, A.M., Assistant Professor of Economics and Sociology (1929, 1931).
A. B., University of Kansas, 1927; A. M., ibid., 1928. A 51A; 811 Laramie.

MARION QUINLAN, A.M., Assistant Professor of Child Welfare and Euthenics, Department of Education (1931).
B. S., Teachers College, Columbia University, 1923; A. M., ibid., 1930. L 24; 531 N. Manhattan.

RICHARD ROSLYN JESSON, M.B., Assistant Professor of Piano (1929, 1931).
M. B., Oberlin College, 1929. M 54; 1324 Laramie.

JOHN HERBERT COOLIDGE,[6] M.S., Assistant Professor of Agricultural Economics, Division of College Extension (1931).
B. S., K. S. C., 1925; M. S., ibid., 1932. Courthouse; 108 N. 17th.

CLARENCE EDWARD CREWS, M.S., Assistant Professor of Agronomy (1928; Feb. 1, 1932).
B. S., K. S. C., 1928; M. S., ibid., 1930. 605 N. Cedar, Kingman, Kan.

THOMAS RUSSELL REITZ, B.S., Assistant Professor of Horticulture (1931; Feb. 1, 1932).
B. S., K. S. C., 1927. 1415 N. 3d, Atchison, Kan.

HELEN PANSY HOSTETTER, M.S., Assistant Professor of Industrial Journalism and Printing (Feb. 1, 1932).
A. B., University of Nebraska, 1917; M. S., Northwestern University, 1926. K 28; 1212 Fremont.

WILLIAM HAROLD METZGER, Ph.D., Assistant Professor of Soils (April 1, 1932).
B. S., Purdue University, 1922; M. S., K. S. C., 1927; Ph. D., Ohio State University, 1931. E. Ag 216; 1230 Vattier.

CHARLES ARTHUR PYLE,[1] D.V.M., Assistant Professor of Veterinary Medicine (April 1, 1932).
B. S., K. S. C., 1904; D. V. M., ibid, 1907. Sedan, Kan.

MARJORIE GRAHAM EBERHART, M.D., Assistant Physician, Department of Student Health (April 8, 1932).
B. S., Southern Methodist University, 1926; M. D., University of Oklahoma, 1930. A 58; 1429 Laramie.

BENJAMIN LEVI SMITS, Ph.D., Assistant Professor of Chemistry (1926; July 1, 1932).
B. S., Michigan State College, 1924; M. S., ibid., 1925; Ph. D., ibid., 1926. W 29; 1131 Kearney.

CONIE CAROLINE FOOTE, A.M., Assistant Professor and Specialist in Foods and Nutrition, Division of College Extension (1924; July 1, 1932).
B. S., K. S. C., 1921; A. M., Columbia University, 1931. A 62A; 1429 Laramie.

RUSSELL IRA THACKREY, M.S., Assistant Professor of Industrial Journalism (1928; July 1, 1932).
B. S., K. S. C., 1927; M. S., ibid., 1932. K 30A; 1021 Kearney.

HUBERT WHATLEY MARLOW, Ph.D., Assistant Professor of Chemistry (1925; Sept. 1, 1932).
B. S., North Texas Teachers College, 1925; M. S., University of Chicago, 1928; Ph. D., ibid., 1931. W 29A; 358 N. 15th.

MARIA MORRIS, M.S., Assistant Professor of Art (1925; Sept. 1, 1932).
B. S., K. S. C., 1911; Graduate, New York School of Fine and Applied Art, 1924; M. S., K. S. C., 1927. A 68A; 816 N. Juliette.

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1. In coöperation with the U. S. Department of Agriculture.
6. Absent on leave, July 1 to Dec. 31, 1932.

HILDA ROSE GROSSMANN,[3] B.M., Assistant Professor of Voice (1927; Sept. 1, 1932).

B. M., Chicago Musical College, 1925; B. S. in Music Ed., K. S. C., 1932. MA 14; 1601 Fairchild.

VERNON DANIEL FOLTZ, M.S., Assistant Professor of Bacteriology (1927; Sept. 1, 1932).

B. S., K. S. C., 1927; M. S., ibid., 1929. V 52; 1531 Leavenworth.

ROBERT DODDS DAUGHERTY, M.S., Assistant Professor of Mathematics (1930; Sept. 1, 1932).

Ph. B., Iowa Wesleyan College, 1910; M. S., State University of Iowa, 1930. S 52; 615 Humboldt.

CAMILLE LEON LEFEBVRE, Ph.D., Assistant Professor of Botany and Plant Pathology (Sept. 1, 1932).

B. S., University of Minnesota, 1929; A. M., Harvard University, 1931; Ph. D., ibid., 1932. H 54; 1116 Bluemont.

WILLIAM FRED REHM, Capt. Inf., U. S. A., Assistant Professor of Military Science and Tactics (Sept. 1, 1932).

Graduate, Concordia College, Ft. Wayne, Ind., 1915; Graduate, Company Officers Course, Ft. Benning, 1924; Graduate, Advanced Course, Ft. Benning, 1932. N 26; 210 S. 10th.

INSTRUCTORS

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

S 45; 1814 Anderson.

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

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

WILLMIMA PEARL MARTIN, R.N., Instructor in Home Health and Sanitation, Division of College Extension (1919).

Graduate, Christ's Hospital, Topeka. A 62A; 1109 Kearney.

ROY ELMER WILSON, Sergt. C. A. C., U. S. A., Instructor in Military Science and Tactics (1921).

N 26; 517 S. Manhattan.

NELLIE ABERLE, M.S., Instructor in English (1921).

B. S., K. S. C., 1912; M. S., ibid., 1914. A 37; 1442 Fairchild.

ELLEN MARGARET BATCHELOR, B.S., Instructor and District Home Demonstration Agent Leader, Division of College Extension (1917, 1921).

B. S., K. S. C., 1911. A 63D; 1212 Fremont.

JESSIE GULICK, Acting 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; 724 Kearney.

MAUD ELIZABETH DEELEY, A.M., Instructor in Home Furnishings, Division of College Extension (1923, 1925).

B. S., K. S. C., 1923; A. M., Columbia University, 1932. A 62; 1429 Laramie.

FRANCIS DALE PUGH,[9] Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1925-Jan. 31, 1933).

N 26; 1637 Anderson.

ARTHUR CLINTON ANDREWS, M.S., Instructor in Chemistry (1926).

B. S., University of Wisconsin, 1924; M. S., K. S. C., 1929. D 30; 1718 Fairview.

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3. Absent on leave, year 1932-'33.
9. Resigned.

MAY MILES, B.S., Instructor and Assistant State Home Demonstration Agent Leader, Division of College Extension (1926, 1928).
B. S., University of Illinois, 1926. A 36; 1616 Osage.

RUTH EMMA TUCKER, M.S., Instructor in Food Economics and Nutrition (1925, 1926).
A. B., University of Illinois, 1923; M. S., ibid., 1925. L 68; 350 N. 15th.

ROY CLINTON LANGFORD, M.S., Instructor in Psychology (1925, 1926).
B. S., K. S. C., 1925; M. S., ibid., 1926. G 32C; 426 N. 17th.

MAYNARD LEE MCDOWELL,[3] A.M., Instructor in Chemistry (1926).
A. B., Central College, 1924; A. M., University of Missouri, 1926.
W 29A; 520 Thurston.

JOHN CARL OLSEN, M.S., Instructor in Machine Drawing and Design (1927).
B. S., Colorado Agricultural College, 1925; M. S., K. S. C., 1931.
E 209; 501 Moro.

ROYCE OWEN PENCE, M.S., Instructor in Milling Industry (1927).
B. S. in F. M. E., K. S. C., 1924; M. S., ibid., 1930. E. Ag 111; 917 Kearney.

LILLIAN JULIETTE SWENSON, A.B., Assistant Reference Librarian (1927).
A. B., Colorado College, 1924; B. S., Simmons College, 1927. Li 51; 1212 Fremont.

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 32; 1000 Moro.

GEORGE FRANCIS BRANIGAN, B.S., Instructor in Engineering Drawing and Descriptive Geometry (1927).
B. S. in C. E., University of Nebraska, 1927. S 51; 1130 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; 1531 Leavenworth.

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.

EARL LE ROY SITZ, M.S., Instructor in Electrical Engineering (1927, 1928).
B. S. in E. E., Iowa State College, 1927; M. S., K. S. C., 1932. E 24; 1122 Bluemont.

GLADYS ELLEN VAIL, M.S., Instructor in Food Economics and Nutrition (1927).
A. B., Southwestern College, 1924; M. S., University of Chicago, 1927.
L 68; 1429 Laramie.

MARGUERITE VELMA HARPER, B.S., Instructor in Household Management, Division of College Extension (1928).
B. S., K. S. C., 1928. A 62; 1429 Laramie.

MARGARET ALICE NEWCOMB, M.S., Instructor in Botany and Plant Pathology (1925, 1928).
B. S., K. S. C., 1925; M. S., ibid., 1927. H 32; 730 Vattier.

GRATIA MARIE BURNS, A.M., Instructor in Modern Languages (1928).
B. S., University of Minnesota, 1926; A. M., ibid., 1928. A 70; 1832 Anderson.

MARTHA REBECCA CULLIPHER, B.S. in L.S., Assistant Loan Librarian (1928).
A. B., Indiana University, 1926; B. S. in L. S., University of Illinois, 1928.
Li 51; 312 N. 15th.

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3. Absent on leave, year 1932-'33.

CHARLES GEORGE DOBROVOLNY, A.B., Technician and Instructor in Zoölogy (1929).
A. B. University of Montana, 1928. F 30; 818 Bertrand.

LEONE BOWER KELL, M.S., Instructor in Child Welfare and Euthenics (1927, 1929).
B. S., K. S. C., 1923; M. S., ibid., 1928. L 33A; 727 Leavenworth.

MARY MYERS ELLIOTT, A.B., Instructor in Public Speaking (1929).
A. B., University of Kansas, 1926. G 55; 1522 Houston.

ARTHUR LEONARD GOODRICH, JR., M.S., Instructor in Zoölogy (1929).
B. S., College of Idaho, 1928; M. S., University of Idaho, 1929.
F 78; 1120 Thurston.

LESTER HENRY KOENITZER, M.S., Instructor in Applied Mechanics (1929).
B. S., Iowa State College, 1926; M. S., ibid., 1929; C. E., ibid., 1930.
E 17; 1737 Laramie.

REED FRANKLIN MORSE, B.S., Instructor in Civil Engineering (1929).
A. B., Cornell College, 1921; B. S., Iowa State College, 1923. E 220; 1425 Humboldt.

GERALD PICKETT, M.S., Instructor in Applied Mechanics (1929).
B. S., Oklahoma A. and M. College, 1927; M. S., K. S. C., 1931.
E 113; 1421 Poyntz.

JOSEPH THOMAS WARE,[3] B.S., Instructor in Architecture (1929).
B. S., Georgia School of Technology, 1929. E 223; 1116 Bluemont.

GEORGE NATHAN REED, M.S., Instructor in Chemistry (1929).
B. S., Oklahoma A. and M. College, 1922; M. S., University of Oklahoma, 1924.
D 29; 1212 Fremont.

CONRAD STEPHEN MOLL, B.P.E., Instructor in Physical Education for Men (1929).
B. P. E., Y. M. C. A. College, 1925. N 31A; College Heights.

ARTHUR ORAN FLINNER, B.S., Instructor in Mechanical Engineering (1929).
B. S. in M. E., K. S. C., 1929. E 109; 914 Moro.

FRED FOSTER GREELEY, Instructor in Machine Shop and Welding (1923, 1930); Assistant in Shop Practice (1923, 1929).
S 30; 931 Fremont.

STERLING MCCOLLUM, Instructor in Shop Practice (1930).
S 34; 905 Pierre.

LAURA FALKENRICH BAXTER, M.S., Instructor in Home Economics Education (1927, 1930).
B. S., K. S. C., 1915; M. S., ibid., 1930. G 28; 610 Vattier.

ERWIN JOHN BENNE, M.S., Instructor in Chemistry (1930).
B. S., K. S. C., 1928; M. S., ibid., 1931. W 30; 902 Ratone.

WILLIAM EVERETT GIBSON, B.S., Instructor in Applied Mechanics (1930).
B. S., K. S. C., 1927. E 17; 219 N. 6th.

MYRA EDNA SCOTT, A.M., Instructor in English (1928, 1930).
B. S., K. S. C., 1921; A. M., Stanford University, 1928. A 33; 924 Moro.

JOHN HENRY SHENK, M.S., Instructor in Chemistry (1929, 1930).
B. S., K. S. C., 1929; M. S., ibid., 1931. W 30; 1210 Vattier.

ANNA TESSIE AGAN, M.S., Instructor in Household Economics (1930).
B. S., University of Nebraska, 1927; M. S., K. S. C., 1930. L 64; 1201 Bertrand.

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3. Absent on leave, year 1932-'33.

IVAR ABRAHAMSON, B.S., Instructor in Shop Practice (1930).
B. S., University of Arizona, 1929. S 32; 628 Fremont.

HARVEY HULICK ALLEN, Staff Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1930).
N 26; 1019 Moro.

NINA MYRTLE BROWNING, M.S., Instructor in Food Economics and Nutrition (1930).
B. S., K. S. C., 1923; M. S., ibid., 1927. L 28; 908 Laramie.

FRANK BYRNE, B.S., Instructor in Geology (1930).
B. S., University of Chicago, 1927. F 1A; 1116 Bluemont.

WILLIAM EUGENE CONNELL, M.S., Instructor in Animal Husbandry (1930).
B. S., Oklahoma A. and M. College, 1928; M. S., K. S. C., 1929.
E. Ag 6A; 1024 Laramie.

EVA MYRTLE MCMILLAN, M.S., Instructor in Food Economics and Nutrition (1930).
Ph. B., University of Chicago, 1918; M. S., ibid., 1929. L 43; 522 N. 14th.

EDGAR LEE BARGER, B.S., Instructor in Agricultural Engineering (1930).
B. S., K. S. C., 1929. E 216; 1614 Humboldt.

FRANCES DEANE SHEWMAKER, B.S., Instructor in Foods and Nutrition, Division of College Extension (1930).
B. S., K. S. C., 1930. A 62A; 1322 Laramie.

RALPH FREDERICK NIELSEN, Ph.D., Instructor in Chemistry (1930).
B. S., University of Nebraska, 1924; M. S., University of California, 1925; Ph. D., University of Nebraska, 1927. D 29; 415 N. Juliette.

JESSE MCKINLEY SCHALL, A.M., Instructor in English, Home Study Service, Division of College Extension (1930, 1931).
A. B., Southeast Missouri State Teachers College, 1927; A. M., University of Missouri, 1930. A 2; 1735 Laramie.

LORA VALENTINE HILYARD, B.S., Instructor in Junior Extension, Assistant State Club Leader, Division of College Extension (1930).
B. S., K. S. C., 1930. A 35A; 1429 Laramie.

MABEL RACHEL SMITH, B.S., Instructor in Junior Extension, Assistant State Club Leader, Division of College Extension (1929, 1931).
B. S., K. S. C., 1926. A 35A; 1821 Poyntz.

WILLIAM EDWIN JENNINGS, D.V.M., Instructor in Surgery and Medicine (1931).
D. V. M., Cornell University, 1931. VH 53; Vet. Hospital.

WARD HILLMAN HAYLETT, A.B., Instructor in Physical Education for Men (1928, 1931).
A. B., Doane College, 1926. N 33; 1414 Humboldt.

WENDELL EVERETT BEALS, M.B.A., Instructor in Accounting (1931).
B. S., University of Kentucky, 1930; M. B. A., Northwestern University, 1931.
A 74; 927 Moro.

ROBERT IVAN LOCKARD,[7] M.S., Instructor in Architecture (1931).
B. S., K. S. C., 1930; M. S., ibid., 1932. E 223; 1326 Fremont.

DELOS CLIFTON TAYLOR, B.S., Instructor in Applied Mechanics (1931).
B. S. in C. E., K. S. C., 1925. E 14; 515 N. 12th.

7. Temporary appointment.

FLOYD BYRON WOLBERG, B. S. A., Instructor in Dairy Husbandry (1930, 1931).
B. S. A., University of Wisconsin, 1928. W. Ag 125; 1212 Fremont.

LEROY CLAY PASLAY, B. S., Instructor in Electrical Engineering (1931).
B. S., K. S. C., 1930. E 30; 512 N. Denison.

PAULINE ANN PINCKNEY,[7] A. M., Instructor in Art (1931).
A. B., University of Texas, 1918; A. M., Columbia University, 1928.
A 68B; 1031 Fremont.

HAZEL ALMA LYNESS, M. S., Instructor in Home Economics Education (1930; July 1, 1932); Itinerant Teacher of Adult Home-making Education (1930).
B. S., K. S. C., 1922; M. S., ibid., 1932.

FRANK MILTON ADAIR,[7] M. S., Instructor in Applied Mechanics (1931; Sept. 1, 1932).
B. S., K. S. C., 1930; M. S., ibid., 1932. E 223; 1201 Moro.

EVELYN FLORENCE DUTTON, A. M., Instructor in Art (Sept. 1, 1932).
B. S., University of New Hampshire, 1922; A. M., Columbia University, 1932.
A 68B; 924 Moro.

GENE M. MAURITS,[7] B. M., Instructor in Voice (Sept. 1, 1932).
B. M. (Voice), American Conservatory, 1930; Certificate in Piano, ibid., 1930.
MA; 1601 Fairchild.

HARVEY O. WILLIAMS, Staff Sergt., U. S. A., Instructor in Military Science and Tactics (Sept. 1, 1932).
N 26; 1447 Anderson.

JENNIE WILLIAMS,[7] R. N., Instructor in Child Welfare and Euthenics (Sept. 1, 1932).
B. S., K. S. C., 1910; R. N., University of Michigan Hospital, 1924.
L 63; 1821 Poyntz.

JOHN M. SEAY, Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (Feb. 1, 1933).
N 26; ———.

ASSISTANTS

ALANSON LOLA HALLSTED,[1] B. S., Assistant in Dry Farming, Fort Hays Branch Agricultural Experiment Station (1910).
B. S., K. S. C., 1903. Hays, Kan.

NELLIE MAY, Postmistress (1911).
A 44; R. F. D. 2.

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).
A 77; 628 Fremont.

MARY KIMBALL, B. S., First Assistant to the Registrar (1918).
B. S., K. S. C., 1907. A 29; 1311 Fremont.

MYRTLE EVELYN ZENER, Secretary to the Vice President (1918).
A 46; 1104 Vattier.

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1. In coöperation with the U. S. Department of Agriculture.
7. Temporary appointment.

CHESTER WILLIS OAKES,[13] Miller, Department of Milling Industry (1918).
E. Ag 152A; 1326 Houston.

LOUISE SCHWENSEN, Secretary to the Dean, Division of Engineering (1915, 1918).
E 115; 1800 Leavenworth.

ALICE MAUDE MELTON, B.S., Assistant to the Dean, Division of General Science (1900, 1919).
B. S., K. S. C., 1898. A 47; 804 Moro.

EDWARD L. CLAEREN, Major, E. O. R. L., U. S. A., 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. C., 1905; R. N., Illinois Training School for Nurses, 1909.
A 64; 1720 Poyntz.

ARTHUR FRITHIOF SWANSON, B.S., Assistant in Cereal Investigations, Fort Hays Branch Agricultural Experiment Station (1919).
B. S., K. S. C., 1919. Hays, Kan.

DELFA MARY HAZELTINE, Assistant to the Dean, Division of College Extension (1920).
Graduate, Lawrence Business College. A 33; 1131 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 3A; 318 N. 16th.

CLARA MAGDALENE SIEM, Financial Secretary, Division of College Extension (1920, 1924).
A 33; 1425 Humboldt.

WILLIAM HENRY IRWIN, Assistant in Shop Practice (1923).
S 27A; R. R. 2.

HAZEL ELIZABETH TAYLOR PFUETZE, Secretary, Department of Education (1925).
G 27; 1724 Fairchild.

JEANNE MACBRIDE, Housekeeper in College Hospital, Department of Student Health (1925).
College Hospital.

FRANK LEWIS MYERS, B.M., Assistant to the Director of Physical Education (1926).
B. M., K. S. C., 1925. N 35; 1715 Poyntz.

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 and Radio Program Director, Division of College Extension (1927).
B. S., University of Wisconsin, 1925; M. S., ibid., 1926. A 4; 825 Bertrand.

JANE WILSON BARNES, M.S., Secretary to the Dean, Division of Home Economics (1928).
B. S., K. S. C., 1912; M. S., ibid., 1932. L 29; 808 N. 12th.

13. Resigned Feb. 14, 1933.

CHARLOTTE CROUCH LAMPRECHT, Assistant to the Dean, Division of Home Economics (1928).
Diploma, Kansas State Teachers College, Emporia, 1903. L 54; 815 Osage.

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

EFFIE LOVISA HASTINGS, Second Assistant to the Registrar (1927, 1928).
A 29; 122 S. Manhattan.

BELLE CLARKE HOWARD, R. N., Nurse in College Hospital (1928, 1930).
R. N., Charlotte Swift Hospital, 1913. College Hospital.

GEORGE HEMROD RAILSBACK, B. S., Laboratory Assistant in Applied Mechanics (1929).
B. S., K. S. C., 1914. E 12; 615 Kearney.

ANNA NEAL MULLER, B. S., Class Reserves Assistant in Library (1929).
B. S., K. S. C., 1921. Li 1; 1637 Anderson.

IVA BELLE WELCH, M. S., Assistant in Institutional Economics (1930).
A. B., Baker University, 1921; M. S., K. S. C., 1931. T 28; 1704 Fairview.

HENRY WILBERT LOY, JR., B. S., Assistant Chemist, Agricultural Experiment Station (1930).
B. S., K. S. C., 1930. C 3A; 1429 Laramie.

ROBIN DALE COMPTON, Radio Operator, Division of College Extension (1930).
N 83; 1031 Fremont.

RUTH BERYL MCCAMMON, M. S., Technician, Department of Food Economics and Nutrition (1930).
B. S., K. S. C., 1930; M. S., ibid., 1932. L 13; 1027 Kearney.

ROBERT FREDERICK CHILDS, B. S., Assistant Chemist (1931).
B. S., K. S. C., 1929. C 3; 1614 Houston.

THELMA FERN MCCLURE,[7] M. S., Assistant in Child Welfare and Euthenics (1931).
B. S., K. S. C., 1930; M. S., ibid., 1932. L 32B; 1429 Laramie.

KATHLEEN KNITTLE, B. S., Assistant to the Dean of Women (1931).
B. S., K. S. C., 1923. A 42; 726 Leavenworth.

LORRAINE MAYTUM, B. S., Assistant in Physical Education for Women (1931).
B. S., University of Wisconsin, 1926. N 1; 1300 Fremont.

FLORENCE MARGARET STEBBINS, M. S., Assistant in Genetics, Department of Zoölogy (1931).
B. S., K. S. C., 1923; M. S., ibid., 1928. Insectary; 312 N. 15th.

DRYDEN MARIE QUIST,[7] M. S., Assistant in Education and Institutional Economics (1931; Sept. 1, 1932).
B. S., Iowa State College, 1924; M. S., K. S. C., 1932. T 51B; 1210 Thurston.

HILDRED RENETTA SCHWEITER, B. S., Laboratory Technician, Department of Student Health (1931; Sept. 1, 1932).
B. S., K. S. C., 1931. A 64; 312 N. 15th.

LYMAN JACOB BRATZLER,[7] M. S., Assistant in Animal Husbandry (Sept. 1, 1932)
B. S. A., University of Illinois, 1930; M. S., K. S. C., 1932. E. Ag 9; 1116 Bluemont.

7. Temporary appointment.

FLORENCE PYLE DAY, M.S., Assistant in Household Economics (Sept. 1, 1932).
B. S., University of Nebraska, 1921; M. S., K. S. C., 1932.
L 64; 800 N. Manhattan.

NORA STEENBOCK, R.N., Nurse, Department of Student Health (Sept. 1, 1932).
R. N., Christ Hospital Training School, 1930. College Hospital.

EDITH ZERILLA WHITE, R.N., Nurse, Department of Student Health (Sept. 1, 1932).
R. N., Christ Hospital Training School, 1918. College Hospital.

JAY RUSSELL BENTLEY,[7] B.S., Assistant in Agronomy (Oct. 15, 1932-May 21, 1933).
B. S., K. S. C., 1932. E. Ag 206; 1331 Poyntz.

SUPERINTENDENTS

LOUIS C. AICHER, B.S., Superintendent, Fort Hays Branch Agricultural Experiment Station (1921).
B. S. in Agr., K. S. 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. C., 1883; M. S., ibid., 1886. E 26B; 1414 Fairchild.

GEORGE RICHARD PAULING, Superintendent of Maintenance, in Charge of Buildings 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. C., 1924. Tribune, Kan.

EMBERT HARVEY COLES, B.S., Superintendent, Colby Branch Agricultural Experiment Station (1922, 1929).
B. S., K. S. C., 1922. Colby, Kan.

FRANK JOSEPH FEIGHT, Superintendent of Poultry Farm (1930).
Poultry Farm; R. R. 8.

AGRICULTURAL AGENTS[1]

HERBERT LYNNE HILDWEIN, B.S., Riley County Agricultural Agent, Division of College Extension (1917, 1930).
B. S., K. S. C., 1914. Manhattan, Kan.

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

HERMAN FREDERICK TAGGE, B.S., Jackson County Agricultural Agent, Division of College Extension (1920, 1923).
B. S., K. S. C., 1914. Holton, Kan.

JOHN ALBERT HENDRICKS, B.S.A., Anderson County Agricultural Agent, Division of College Extension (1920, 1924).
B. S. A., Iowa State College, 1913. Garnett, Kan.

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1. In coöperation with the U. S. Department of Agriculture.
7. Temporary appointment.

ERNEST LEE MCINTOSH, B.S., Osage County Agricultural Agent, Division of College Extension (1920, 1923).
B. S., K. S. C., 1920. Lyndon, Kan.

HARRY CHARLES BAIRD, B.S., Lane County Agricultural Agent, Division of College Extension (1920, 1929).
B. S., K. S. C., 1914. Dighton, Kan.

CARL LEWIS HOWARD, B.S., Lyon County Agricultural Agent, Division of College Extension (1920, 1926).
B. S., K. S. C., 1920. Emporia, Kan.

ROY ELMER GWIN, B.S., Crawford County Agricultural Agent, Division of College Extension (1921, 1930).
B. S., K. S. C., 1914. Girard, Kan.

PAUL BERNARD GWIN, B.S., Geary County Agricultural Agent, Division of College Extension (1921, 1925).
B. S., K. S. C., 1916. Junction City, Kan.

CHARLES HAROLD STINSON,[9] B.S., Pawnee County Agricultural Agent, Division of College Extension (1921, 1928-Jan. 31, 1933).
B. S., K. S. C., 1921. Larned, Kan.

WILLIAM HERBERT ROBINSON, B.S., Shawnee County Agricultural Agent, Division of College Extension (1923, 1926).
B. S., K. S. C., 1916. Topeka, Kan.

CLARENCE EUGENE AGNEW, B.S., Wilson County Agricultural Agent, Division of College Extension (1923, 1924).
B. S., K. S. C., 1923. Fredonia, Kan.

LOUIS MEYERS KNIGHT, B.S., Sumner County Agricultural Agent, Division of College Extension (1923, 1926).
B. S., K. S. C., 1923. Wellington, Kan.

CHARLES ENOCH LYNESS, B.S., Doniphan County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. C., 1912. Troy, Kan.

RAY LEIGHTON GRAVES, B.S., Saline County Agricultural Agent, Division of College Extension (1923, 1930).
B. S., K. S. C., 1912. Salina, Kan.

GEORGE W. SIDWELL, A.B., Edwards County Agricultural Agent, Division of College Extension (1913, 1928).
A. B., Fairmount College, 1915. Kinsley, Kan.

MOTT LUTHER ROBINSON, B.S., McPherson County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. C., 1923. McPherson, Kan.

JUNIUS WARREN FARMER, B.S., Greenwood County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. C., 1923. Eureka, Kan.

WILLIAM O'CONNELL, B.S., Marshall County Agricultural Agent, Division of College Extension (1924).
B. S., K. S. C., 1916. Marysville, Kan.

RALPH REUBEN MCFADDEN, B.S., Harvey County Agricultural Agent, Division of College Extension (1922, 1928).
B. S., K. S. C., 1921. Newton, Kan.

9. Resigned.

LEONARD NEFF, B. S. A., Washington County Agricultural Agent, Division of College Extension (1925, 1930).
B. S. A., Purdue University, 1922. Washington, 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. 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. C., 1925. Mound City, Kan.

GEORGE SMITH ATWOOD, B. S., Hodgeman County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. C., 1924. Jetmore, Kan.

JOHN HENRY SHIRKEY, B. S., Meade County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. C., 1926. Meade, Kan.

FRED JAMES SYKES, B. S., Norton County Agricultural Agent, Division of College Extension (1926, 1930).
B. S., K. S. C., 1926. Norton, Kan.

JOHN DELMONT MONTAGUE, B. S., Sedgwick County Agricultural Agent, Division of College Extension (1926, 1930).
B. S., K. S. C., 1920. Wichita, Kan.

ARTHUR WILLIAM KNOTT, B. S., Montgomery County Agricultural Agent, Division of College Extension (1927).
B. S., University of Wisconsin, 1917. Independence, Kan.

RALPH PAUL RAMSEY, B. S., Jewell County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. C., 1916. Mankato, Kan.

RAYMOND LUTHER STOVER, M. S., Brown County Agricultural Agent, Division of College Extension (1927, 1930).
B. S., K. S. C., 1924; M. S., Oregon Agricultural College, 1927. Hiawatha, Kan.

CHARLES ARCHER JONES, A. M., Johnson County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. C., 1924; A. M., University of Maryland, 1927. Olathe, Kan.

JOHN HAROLD JOHNSON, B. S., Sedgwick County Club Agent, Division of College Extension (1927).
B. S., K. S. C., 1927. Wichita, Kan.

THEODORE FRANKLIN YOST, B. S., Bourbon County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. C., 1920. Fort Scott, Kan.

ROBERT THOMAS PATTERSON, B. S., Cherokee County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. C., 1924. Columbus, Kan.

HERMAN ALBERT BISKIE, 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. C., 1928. Ashland, Kan.

LEONARD BEATH HARDEN, B.S., Labette County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. C., 1926. Altamont, Kan.

RAGNAR NATHANIEL LINDBURG,[9] B.S., Butler County Club Agent, Division of College Extension (1929-Dec. 31, 1932).
B. S., K. S. C., 1928. El Dorado, Kan.

OTIS BENTON GLOVER, B.S., Jefferson County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1915. Oskaloosa, Kan.

ROBERT SAMUEL TRUMBULL, A.M., Ford County Agricultural Agent, Division of College Extension (1929).
B. S., Nebraska Wesleyan University, 1907; A. M., University of Nebraska, 1908. Dodge City, Kan.

MILBURNE CLINTON AXELTON, B.S., Woodson County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1928. Yates Center, Kan.

EARL HICKS TEAGARDEN, B.S., Stafford County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1920. St. John, Kan.

BERNIE WILLIAM WRIGHT, B.S., Russell County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1924. Russell, Kan.

OGDEN WORLEY GREENE, B.S., Dickinson County Agricultural Agent, Division of College Extension (Feb. 1, 1932).
B. S., K. S. C., 1929. Abilene, Kan.

PRESTON ORIN HALE, B.S., Leavenworth County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1916. Leavenworth, Kan.

GEORGE WINFRED HINDS, B.S., Reno County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1920. Hutchinson, Kan.

SHERMAN STANLEY HOAR, B.S., Barton County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1928. Great Bend, Kan.

ELMER OSCAR GRAPER, B.S., Smith County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1913. Smith Center, Kan.

HARVEY J. STEWART, B.S., Cheyenne County Agricultural Agent, Division of College Extension (1929).
B. S., K. S. C., 1928. St. Francis, Kan.

9. Resigned.

DAVID MARION HOWARD,[9] B.S., Sherman County Agricultural Agent, Division of College Extension (1930-Jan. 6, 1933).
B. S., K. S. C., 1920. Goodland, Kan.

DALE ALVORD SCHEEL,[8] B.S., Cloud County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1929. Concordia, Kan.

DANIEL MATTHEW BRAUM, B.S., Allen County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1924. Iola, Kan.

LAWRENCE EDWARD CRAWFORD, B.S., Finney County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1928. Garden City, Kan.

HAROLD LEWIS MURPHEY, B.S., Greeley County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1928. Tribune, Kan.

LAWRENCE LARUE COMPTON, B.S., Butler County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1930. El Dorado, Kan.

RALPH WALDO MCBURNEY, B.S., Mitchell County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1927. Beloit, Kan.

GLENN CHARLES ISAAC, B.S., Miami County Agricultural Agent, Division of College Extension (1930).
B. S., F. S. C., 1930. Paola, Kan.

JOHN EDWARD TAYLOR, B.S., Grant County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1930. Ulysses, Kan.

RAYMOND WILLIAM O'HARA, B.S., Lincoln County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1930. Lincoln, Kan.

DONALD WALTER INGLE, B.S., Gray County Agricultural Agent, Division of College Extension (1930).
B. S., University of Missouri, 1929. Cimarron, Kan.

FRANK ALEXANDER HAGANS, B.S., Marion County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1925. Marion, Kan.

DONALD NOEL TAYLOR,[9] B.S., Clay County Agricultural Agent, Division of College Extension (1930-Nov. 24, 1933).
B. S., K. S. C., 1928. Clay Center, Kan.

PAUL EVANS, B.S., Ottawa County Agricultural Agent, Division of College Extension (1930).
B. S., K. S. C., 1923. Minneapolis, Kan.

JAMES NOEL LOWE, B.S., Harper County Agricultural Agent, Division of College Extension (1930).
B. S., Oklahoma A. and M. College, 1924. Anthony, Kan.

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8. Absent on leave, August 24 to October 14, 1932.
9. Resigned.

JOEL ALLEN TERRELL, B.S., Douglas County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1930. Lawrence, Kan.

CLAIR EBER DUNBAR, B.S., Sheridan County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1931. Hoxie, Kan.

TERRELL WEAVER KIRTON, B.S., Kingman County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1929. Kingman, Kan.

ROBERT LOUIS RAWLINS, B.S., Nemaha County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1929. Seneca, Kan.

RICHARD WILLIAM STUMBO, B.S., Rawlins County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1931. Atwood, Kan.

MERRILL MEDSGAR TAYLOR, B.S., Rice County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1930. Lyons, Kan.

FRANK ZITNIK, B.S., Ness County Agricultural Agent, Division of College Extension (1931).
B. S., K. S. C., 1931. Ness City, Kan.

LELAND MILTON SLOAN, B.S., Coffey County Agricultural Agent, Division of College Extension (Jan. 1, 1932).
B. S., K. S. C., 1932. Burlington, Kan.

JOHN MILES BUOY, B.S., Thomas County Agricultural Agent, Division of College Extension (Jan. 20, 1932).
B. S., Iowa State College, 1917. Colby, Kan.

KIMBALL LINCOLN BACKUS, B.S., Wyandotte County Agricultural Agent, Division of College Extension (Feb. 1, 1932).
B. S., K. S. C., 1931. Kansas City, Kan.

HAROLD BYRON HARPER, B.S., Pratt County Agricultural Agent, Division of College Extension (Feb. 3, 1932).
B. S., K. S. C., 1932. Pratt, Kan.

EBUR SAMUEL SCHULTZ, B.S., Chase County Agricultural Agent, Division of College Extension (March 1, 1932).
B. S., K. S. C., 1932. Cottonwood Falls, Kan.

LESTER ALBERT SUTHERLAND, B.S., Comanche County Agricultural Agent, Division of College Extension (March 10, 1932).
B. S., Montana State College, 1929. Coldwater, Kan.

RALPH OSCAR LEWIS, Ellsworth County Agricultural Agent, Division of College Extension (April 17, 1932).
B. S., K. S. C., 1929. Ellsworth, Kan.

JESTER BAILEY TAYLOR, B.S., Clay County Agricultural Agent, Division of Extension (Jan. 4, 1933).
B. S., Oklahoma A. and M. College, 1925. Clay Center, Kan.

LAWRENCE DALE MORGAN, Sherman County Agricultural Agent, Division of College Extension (Feb. 1, 1933).

HOME DEMONSTRATION AGENTS[1]

LAURA WINTER, Sedgwick County Home Demonstration Agent, Division of College Extension (1925).
Wichita, Kan.

NORA ELIZABETH BARE, B.S., Butler County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. C., 1925. El Dorado, Kan.

LUCRETIA SCHOLER,[9] B.S., Harvey County Home Demonstration Agent, Division of College Extension (1927-Dec. 31, 1932).
B. S., K. S. C., 1920. Newton, Kan.

SARA JANE PATTON, Neosho County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. C., 1915. Erie, Kan.

MARY DUNLAP ZIEGLER, Shawnee County Home Demonstration Agent, Division of College Extension (1928, 1930).
B. S., K. S. C., 1916. Topeka, Kan.

CHRISTIE CYNTHIA HEPLER,[9] B.S., Douglas County Home Demonstration Agent, Division of College Extension (1928, 1931-Dec. 15, 1932).
B. S., K. S. C., 1926. Lawrence, Kan.

VERNETTA FAIRBAIRN, A.B., Montgomery County Home Demonstration Agent, Division of College Extension (1928).
A. B., University of Kansas, 1927. Independence, Kan.

RUTH JEANETTE PECK, B.S., Bourbon County Home Demonstration Agent, Division of College Extension (1928, 1930).
B. S., K. S. C., 1928. Fort Scott, Kan.

ETHEL FAYE WATSON, B.S., Greenwood County Home Demonstration Agent, Division of College Extension (1929).
B. S., K. S. C., 1926. Eureka, Kan.

GERTRUDE EDNA ALLEN, B.S., Lyon County Home Demonstration Agent, Division of College Extension (1929).
B. S., University of Minnesota, 1929. Emporia, Kan.

IVA LUELLA HOLLADAY, B.S., Leavenworth County Home Demonstration Agent, Division of College Extension (1929).
B. S., K. S. C., 1929. Leavenworth, Kan.

FLORENCE MABLE FUNK,[9] B.S., Cherokee County Home Demonstration Agent, Division of College Extension (1929-Jan. 31, 1933).
B. S., K. S. C., 1929. Columbus, Kan.

LINNEA CARLSON DENNETT,[9] B.S., Riley County Home Demonstration Agent, Division of College Extension (1929; Sept. 26, 1932).
B. S., K. S. C., 1929 Manhattan, Kan.

GRACE MERLE REEDER, A.B., Miami County Home Demonstration Agent, Division of College Extension (1929).
A. B., Baker University, 1920. Paola, Kan.

ALBERTA PAULINE SHERROD,[9] B.S., Kingman County Home Demonstration Agent, Division of College Extension (1929-Dec. 31, 1932).
B. S., Oklahoma A. and M. College, 1926. Kingman, Kan.

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1. In coöperation with the U. S. Department of Agriculture.
9. Resigned.

Mary Elsie Border, B. S., Johnson County Home Demonstration Agent, Division of College Extension (1929, 1931).
B. S., Ohio State University, 1926. Olathe, Kan.

Eula May Neal, B. S., Franklin County Home Demonstration Agent, Division of College Extension (1930).
B. S., State Teachers College, Kirksville, Mo., 1927. Ottawa, Kan.

Gladys Myers, B. S., Reno County Home Demonstration Agent, Division of College Extension (1930).
B. S., K. S. C., 1930. Hutchinson, Kan.

Olive Bland King,[9] B. S., Harper County Home Demonstration Agent, Division of College Extension (1930-Nov. 15, 1932).
B. S., K. S. C., 1930. Anthony, Kan.

Ruth Kathrina Huff, B. S., Pratt County Home Demonstration Agent, Division of College Extension (1931).
B. S., K. S. C., 1924. Pratt, Kan.

Margaret Elizabeth Crumbaker,[9] B. S., Smith County Home Demonstration Agent, Division of College Extension (1931-Dec. 31, 1932).
B. S., K. S. C., 1919. Smith Center, Kan.

Ethyl Adeline Danielson, B. S., Comanche County Home Demonstration Agent, Division of College Extension (1931).
B. S., K. S. C., 1925. Coldwater, Kan.

Mary Christine Wiggins, B. S., Labette County Home Demonstration Agent, Division of College Extension (1931).
B. S., K. S. C., 1929. Altamont, Kan.

Christiana Marie Shields, B. S., Crawford County Home Demonstration Agent, Division of College Extension (1931).
B. S., K. S. C., 1929. Girard, Kan.

Glyde Estella Anderson, B. S., Barton County Home Demonstration Agent, Division of College Extension (1931).
B. S., K. S. C., 1926. Great Bend, Kan.

Edith Alice Painter,[9] B. S., Dickinson County Home Demonstration Agent, Division of College Extension (1931-Nov. 30, 1932).
B. S., K. S. C., 1931. Abilene, Kan.

Nannie Clytie Ross, M. S., Rawlins County Home Demonstration Agent, Division of College Extension (Feb. 1, 1932).
B. S., K. S. C., 1916; M. S., ibid., 1924. Atwood, Kan.

Ruth Weisser,[9] B. S., Morris County Home Demonstration Agent, Division of College Extension (March 18, 1932-Dec. 31, 1932).
B. S., K. S. C., 1931. Council Grove, Kan.

Ella Mabel Meyer, B. S., Rice County Home Demonstration Agent, Division of College Extension (May 11, 1932).
B. S., K. S. C., 1907. Lyons, Kan.

Mamie May Searles, B. S., Ford County Home Demonstration Agent, Division of College Extension (June 22, 1932).
B. S., University of Kansas, 1926. Dodge City, Kan.

Minnie Belle Peebler, M. S., Allen County Home Demonstration Agent, Division of College Extension (July 20, 1932).
B. S., University of Oklahoma, 1924; M. S., University of Colorado, 1929. Iola, Kan.

9. Resigned.

HELEN VIRGINIA BREWER, M.S., Harper County Home Demonstration Agent, Division of College Extension (Nov. 16, 1932).
B. S., K. S. C., 1929; M. S., ibid., 1932. Anthony, Kan.

LEOLA MAUD GASTON, B.S., Wyandotte County Home Demonstration Agent, Division of College Extension (Jan. 2, 1933).
B. S., K. S. C., 1908. Kansas City, Kan.

EDITH ALICE PAINTER,[7] B.S., Smith County Home Demonstration Agent, Division of College Extension (Feb. 1, 1933-May 31, 1933).
B. S., K. S. C., 1931. Smith Center, Kan.

ALBERTA PAULINE SHERROD, B.S., Harvey County Home Demonstration Agent, Division of College Extension (Feb. 1, 1933).
B. S., Oklahoma A. and M. College, 1926. Newton, Kan.

GRADUATE ASSISTANTS

ABRAM ELDRED HOSTETTER, M.S., Graduate Assistant in Chemistry (1930).
B. S., McPherson College, 1925; M. S., K. S. C., 1932. D 30; 1700 Laramie.

CARL ALFRED DORF, M.S., Graduate Assistant in Chemistry (1931).
A. B., Bethany College, 1920; M. S., K. S. C., 1932. W 26; 915 N. Juliette.

FREDERICK GROETSEMA, A.B., Graduate Assistant in Zoölogy (1931).
A. B., Kalamazoo College, 1931. F 36; 1116 Bluemont.

HIRAM TEMPLE MCGEHEE, M.S., Graduate Assistant in Chemistry (1931).
B. S., K. S. C., 1931; M. S., ibid., 1932. W 29A; 1111 Colorado.

CURTIS WILLIAMS SABROSKY, A.B., Graduate Assistant in Zoölogy (1931).
A. B., Kalamazoo College, 1931. F 36; 1116 Bluemont.

CHESTER AARON WISMER, B.S., Graduate Assistant in Plant Pathology (1931).
B. S., K. S. C., 1931. H 56; 1126 Bluemont.

CHRIS RAY BRADLEY,[7] B.S., Graduate Assistant in Horticulture (1931; Sept. 1, 1932).
B. S., K. S. C., 1927. H 34; 1116 Bluemont.

MARION JOHN CALDWELL, B.S., Graduate Assistant in Chemistry (Sept. 1, 1932).
B. S., K. S. C., 1931. D; 615 N. 11th.

LILY LEE, A.B., Graduate Assistant in Food Economics and Nutrition (Sept. 1, 1932).
A. B., Lignan University, China, 1929. L 11; 800 N. Manhattan.

MAURINE THERESA LEWIS, B.S., Graduate Assistant in Child Welfare and Euthenics (Sept. 1, 1932).
B. S., K. S. C., 1932. L 32B; 1832 Anderson.

SINA FAYE FOWLER, B.S., Graduate Assistant in Institutional Economics (Sept. 26, 1932).
B. S., Northeast Missouri State Teachers College, 1927. T 52B; Van Zile Hall.

GRADUATE RESEARCH ASSISTANTS

ALICE KATHERINE BRILL, B.S., Graduate Research Assistant in Food Economics and Nutrition (Sept. 1, 1932).
B. S., K. S. C., 1932. S 11; 1006 Vattier.

LESLIE LEE EISENBRANDT, A.B., Graduate Research Assistant in Zoölogy (Sept. 1, 1932).
A. B., College of Emporia, 1932. F 36; 1116 Bluemont.

7. Temporary appointment.

HELEN FISHER, A.B., Graduate Research Assistant in Child Welfare and Euthenics (Sept. 1, 1932).
A. B., De Pauw University, 1932. L 32B; 1617 Leavenworth.

BEN GLADING, A.B., Graduate Research Assistant in Zoölogy (Sept. 1, 1932).
A. B., University of Michigan, 1932. F 36; 1116 Bluemont.

GOLDA PEARLE HAAS, A.B., Graduate Research Assistant in Clothing and Textiles (Sept. 1, 1932).
A. B., Southwestern College, 1930. L 51; 359 N. 14th.

INGE KALLESOE KJAR, B.S.A., Graduate Research Assistant in Animal Husbandry (Sept. 1, 1932).
B. S. A., Royal Agricultural College, Copenhagen, Denmark, 1932.
E. Ag 8; Van Zile Hall.

BERNICE LYDIA KUNERTH, B.S., Graduate Research Assistant in Food Economics and Nutrition (Sept. 1, 1932).
B. S., Iowa State College, 1932. L 11; 1601 Humboldt.

DALE LEORA NORRIS, B.S., Graduate Research Assistant in Household Economics (Sept. 1, 1932).
B. S. in E. E., K. S. C., 1932. T 53; 1006 Vattier.

FELLOWS

SAMUEL GREENBERG KELLY, M.S., Agent for Xanthium Research for the Commonwealth of Australia, Division of Economic Entomology (1929).
B. S., K. S. C., 1929; M. S., ibid., 1930. F 77; 1600 Houston.

JOHN EDMOND ANDERSON, B.S., Association of Operative Millers Fellow, Department of Milling Industry (Sept. 1, 1932).
B. S., K. S. C., 1932. E. Ag 150; 919 Leavenworth.

HERBERT JOSEPH LEACH,[7] B.S., Dairy and Ice Cream Machinery and Supplies Association Fellow, Department of Dairy Husbandry (Sept. 1, 1932).
B. S. A., University of Vermont, 1932. W. Ag 127; 1127 Vattier.

LEROY ALBERT WILHELM, B.S., Kansas Poultry and Egg Shippers Association Fellow, Department of Poultry Husbandry (Sept. 15, 1932).
B. S., K. S. C., 1932. W. Ag 252; Poultry Farm.

OTHER OFFICERS

JESSIE MCDOWELL MACHIR, Registrar (1913).
A 29; 1641 Fairchild.

KENNEY LEE FORD, M.S., Alumni Secretary (1928).
B. S., K. S. C., 1924; M. S., ibid., 1932. A 38A; 1516 Leavenworth.

DOROTHY JEAN MACLEOD, A.B., Secretary of the Young Women's Christian Association (1930).
A. B., Washington State College, 1927. A 36, 36A; 1429 Laramie.

FLOYD JOSEPH HANNA, College Photographer (1922, 1930).
I; 1612 Leavenworth.

STEPHEN ARNOLD GEAUQUE, Custodian (1918, 1926).
PP 35; 1014 Laramie.

LESTER HENRY DRAYER, Chief Engineer, Heat and Power Department (1916, 1927).
E 3; 531 Moro.

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7. Temporary appointment.

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, Martha Pittman, L. F. Payne, M. A. Durland.

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

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, William Lindquist, F. E. Charles.

CATALOGUE: J. V. Cortelyou, J. T. Willard, J. O. Faulkner.

COMMUNITY CHEST EXECUTIVE: F. L. Parrish, H. T. Hill, W. H. Andrews, Mary P. Van Zile, F. D. Farrell, A. A. Holtz, Dorothy MacLeod, Jessie McD. Machir.

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

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, William Lindquist, Mrs. J. E. Ackert.

PUBLIC EXERCISES: J. E. Kammeyer, H. W. Davis, E. L. Holton, W. H. Andrews, William Lindquist, A. C. Fay.

REINSTATEMENT: R. I. Throckmorton, Elizabeth Quinlan, W. M. McLeod, J. H. Robert, E. C. Miller.

RELATION WITH JUNIOR COLLEGES AND ARTS COLLEGES: George Gemmell, R. R. Dykstra, M. A. Durland, F. L. Parrish, Margaret Ahlborn, G. A. Filinger.

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, Grace E. Derby, Harold Howe, F. P. Root.

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, L. E. Conrad.

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

Agricultural Experiment Station

OFFICERS OF THE STATION

F. D. Farrell, President of the College

ADMINISTRATION—
L. E. Call, Director
F. C. Jorgensen, Business Manager
Hugh Durham, Assistant to Director

AGRICULTURAL ECONOMICS—
W. E. Grimes, Farm Organization, in Charge
R. M. Green, Marketing Grain
Morris Evans, Farm Organization
Harold Howe, Land Economics
J. A. Hodges, Farm Organization
Homer J. Henney, Marketing Live Stock
George Montgomery, Marketing Fruits and Vegetables

AGRICULTURAL ENGINEERING—
F. C. Fenton, in Charge
Frank J. Zink, Farm Power Machinery
C. A. Logan, Rural Electrification and Home Equipment
E. L. Barger, Farm Power Equipment

AGRONOMY—
R. I. Throckmorton, in Charge
J. H. Parker, Plant Breeding[1]
A. E. Aldous, Pasture Management (on sabbatical leave)
F. L. Duley, Soils
A. M. Brunson, Corn Breeding[1]
J. W. Zahnley, Crops
H. H. Laude, Crops
A. L. Clapp, Coöperative Experiments
F. L. Timmons, Coöperative Experiments
C. D. Davis, Crops
H. E. Myers, Soils
W. H. Metzger, Soils
I. K. Landon, Southeastern Kansas Experiment Fields
C. E. Crews, South Central Kansas Experiment Fields
Elizabeth Harling, Seed Analyst
F. G. Ackerman, Farm Foreman
Carl Bower, Corn Breeding[1]
C. O. Grandfield, Forage Crops[1]

ANIMAL HUSBANDRY—
C. W. McCampbell, in Charge
A. D. Weber, Cattle Investigations
C. E. Aubel, Swine Investigations
R. F. Cox, Sheep Investigations
D. L. Mackintosh, Horse Investigations (on sabbatical leave)
H. L. Ibsen, Animal Genetics
W. E. Connell, Live Stock
Inge K. Kjar, Graduate Research Assistant

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

BACTERIOLOGY—

L. D. Bushnell, in Charge
P. L. Gainey, Soil Bacteriology
A. C. Fay, Dairy Bacteriology (on sabbatical leave)
C. A. Brandly, Poultry Disease Investigations

BOTANY—

L. E. Melchers, in Charge[1]
E. C. Miller, Plant Physiology
O. H. Elmer, Plant Pathology
F. C. Gates, Taxonomy
C. L. Lefebvre, Plant Pathology
Hurley Fellows, Cereal Disease Investigations[1]
C. O. Johnston, Cereal Disease Investigations[1]
C. H. Ficke, Cereal Disease Investigations[1]
L. W. Boyle, Cereal Disease Investigations[1]

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, Feedingstuffs Analysis
J. F. Merrill, Fertilizer Analysis
A. T. Perkins, Soil Investigations
J. L. Hall, Physical Chemical Investigations
H. W. Loy, Assistant Chemist

DAIRY HUSBANDRY—

J. B. Fitch, in Charge
H. W. Cave, Dairy Production
W. H. Martin, Dairy Manufactures
F. B. Wolberg, Official Testing
W. H. Riddell, Dairy Production
W. J. Caulfield, Dairy Manufactures
H. J. Leach, Graduate Research Assistant

ENTOMOLOGY—

G. A. Dean, in Charge
Roger C. Smith, Staple Crop Insect Investigations
Ralph L. Parker, Apiculture, Fruit Insects
R. H. Painter, Staple Crop Insect Investigations
H. R. Bryson, Staple Crop Insect Investigations
Donald A. Wilbur, Staple Crop Insect Investigations
Samuel G. Kelly, Cocklebur Control Investigations[2]

HOME ECONOMICS—

Margaret M. Justin, in Charge
Martha M. Kramer, Food Economics and Nutrition
Esther Bruner, Clothing and Textiles
Katharine Hess, Clothing and Textiles
Mary F. Taylor, Home Management
Ruth McCammon, Technician
Alice Brill, Graduate Research Assistant
Bernice Kunerth, Graduate Research Assistant
Pearl Haas, Graduate Research Assistant.

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1. In coöperation with the U. S. Department of Agriculture.
2. In coöperation with the Division of Economic Entomology, Commonwealth of Australia.

HORTICULTURE—
R. J. Barnett, Pomologist, in Charge
L. R. Quinlan, Landscape Gardening
W. F. Pickett, Orchard Investigations
W. B. Balch, Floriculture and Vegetable Gardening
G. A. Filinger, Pomology
T. R. Reitz, Northeastern Kansas Experiment Fields
C. R. Bradley, Graduate Research Assistant

MILLING INDUSTRY—
C. O. Swanson, in Charge
Earl B. Working, Wheat and Flour Investigations
R. O. Pence, Milling Technology
C. W. Oakes, Milling
E. J. Anderson, Graduate Research Assistant

POULTRY HUSBANDRY—
L. F. Payne, in Charge
D. C. Warren, Genetics
H. M. Scott, Poultry Production
F. J. Feight, Superintendent of Poultry Farm
L. A. Wilhelm, Graduate Research Assistant

VETERINARY MEDICINE—
R. R. Dykstra, in Charge
H. F. Lienhardt, Pathology
J. P. Scott, Blackleg Investigations
C. H. Kitselman, Abortion Disease Investigations
Herman Farley, Shipping Fever Investigations
Charles A. Pyle, Anaplasmosis Investigations[1]

ZOOLOGY—
R. K. Nabours, in Charge
J. E. Ackert, Parasitology
G. E. Johnson, Injurious Mammals
Florence Stebbins, Genetics
Charles G. Dobrovolny, Technician
Ben Glading, Graduate Research Assistant
Leslie Eisenbrandt, Graduate Research Assistant

BRANCH EXPERIMENT STATIONS

FORT HAYS—
L. C. Aicher, Superintendent
E. W. Johnson, Forest Nurseryman
A. L. Hallsted, Dry-land Agriculture Investigations[1]
A. F. Swanson, Cereal Crop Investigations[1]
D. A. Savage, Forage Crop Investigations[1]
O. E. Hays, Soil Erosion Investigations[1]
R. R. Drake, Soil Erosion Investigations[1]

GARDEN CITY—
F. A. Wagner, Superintendent
R. L. Von Trebra, Dry-land Agriculture Investigations[1]

COLBY—
E. H. Coles, Superintendent[1]
J. B. Kuska, Dry-land Agriculture Investigations[1]

TRIBUNE—
T. B. Stinson, Superintendent

1. 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 Schwensen, Secretary
M. A. Durland, Bulletin Editor

AGRICULTURAL ENGINEERING—
F. C. Fenton, in Charge
F. J. Zink, Farm Machinery
C. A. Logan, Rural Electrification and Home Equipment
E. L. Barger, Farm Power

APPLIED MECHANICS—
C. H. Scholer, in Charge
E. R. Dawley, Materials of Construction
L. H. Koenitzer, Road Materials
W. E. Gibson, Road Materials
G. H. Railsback, Road Materials
D. C. Taylor, Road Materials

ARCHITECTURE—
Paul Weigel, in Charge
H. E. Wichers, Rural Architecture

CHEMICAL ENGINEERING—
H. H. King, in Charge
W. F. Brown, General Investigations
R. F. Childs, Road Materials

CIVIL ENGINEERING—
L. E. Conrad, in Charge

ELECTRICAL ENGINEERING—
R. G. Kloeffler, in Charge
J. L. Brenneman, General Investigations
R. M. Kerchner, Power Circuits
H. S. Bueche, Radio Investigations
L. C. Paslay, General Investigations

MACHINE DESIGN—
C. E. Pearce, in Charge
M. A. Durland, General Investigations

MECHANICAL ENGINEERING—
J. P. Calderwood, in Charge
A. J. Mack, General Investigations
B. B. Brainard, General Investigations
A. O. Flinner, General Investigations

PHYSICS—

J. O. Hamilton, in Charge
G. E. Raburn, General Investigations
G. W. Maxwell, General Investigations
E. K. Chapin, General Investigations

SHOP PRACTICE—

W. W. Carlson, in Charge
G. A. Sellers, General Investigations
E. C. Graham, Farm Shop Problems
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
Dorothy Triplett, Child Welfare
Jennie Williams, Public Health

CLOTHING AND TEXTILES—
Alpha Latzke, in Charge
Katherine Hess, Physics of Textiles
Esther Bruner, Chemistry of Textiles
Pearl Haas, Assistant

FOOD ECONOMICS AND NUTRITION—
Martha S. Pittman, in Charge
Martha Kramer, Nutrition
Ruth McCammon, Food and Nutrition
Alice Brill, Assistant
Bernice Kunerth, Assistant

HOUSEHOLD ECONOMICS—
Margaret M. Justin, in Charge
Myrtle Gunselman, Household Management
Mary Taylor, Equipment
Dale Norris, Assistant

INSTITUTIONAL ECONOMICS—
Bessie B. West, Institutional Economics
Le Velle Wood, Institutional Economics

The Kansas State College of Agriculture and Applied Science

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. By act of the legislature, effective March 9, 1931, the name was changed to Kansas State College of Agriculture and Applied Science.

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 1875. 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 by state highways Nos. 13 and 29, and U. S. highways 40, 40N, and 40S. It has taxi service between the railway stations and the College, and motor-bus service with cities to the east and 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 members of the student body respond by conducting themselves habitually in an orderly and law-abiding manner.

AIMS AND PURPOSES

The Kansas State 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 particu-

larly valuable leader in some definite field of human activity. Its chief aim is the development of intelligent, effective leadership.

The second important aim of the Kansas State 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 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 155 acres, the College owns 1,428.7 acres of land at Manhattan valued at $415,093. 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 $2,663,460.

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 labratories, 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.

Engineering Hall. Erected, east wing, 1909; main portion, 1921. 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, 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, Shop Practice, and Mathematics. 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 1914; 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 building 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; cost, $6,500; dimensions, 34 x 34 feet; two stories. Originally a farm house, later used as dwelling by the president, 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, 1898; 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, 1927; 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.

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, class rooms 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, literary society halls, and the radio broadcasting studio. This building is constructed on the old armory-castle type and is modern in every respect.

NURSES' QUARTERS. 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, now as quarters for nurses connected with the Department of Student Health.

PRESIDENT'S RESIDENCE. Erected, 1923; cost, $31,000; three stories and basement; built from funds bequeathed by Mehitable Calef Coppenhagen Wilson in memory of her husband, Davies Wilson.

THOMPSON HALL. Erected, 1922; 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, 1927; cost, $175,000; dimension, 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 dimension 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, 1913; 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, 1910; cost, $10,000; 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, 1927; 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.

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.

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.

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, 1932, the Library contained 99,200 bound volumes, besides much unbound material. It receives currently about 1,250 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, 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 the 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 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 $11,299.

The student health service is maintained by the student-health 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 the 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 ask his high-school principal to send, in advance, a certificate showing his high-school credits.

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

English, 3 units; Algebra, 1 unit; Geometry, 1 unit; Science, 1 unit.

Agriculture (4 years)
Agricultural Administration (4 years)
Animal Husbandry and Veterinary Medicine (6 years)
Applied Music (4 years)
Home Economics (4 years)
Home Economics with special training in Art (4 years)
Home Economics with special training in Institutional Economics and Dietetics (4 years)
Home Economics with special training in Journalism (4 years)
Home Economics and Nursing (5 years)
Industrial Journalism (4 years)
Music Education (4 years)
Physical Education for Men (4 years)
Physical Education for Women (4 years)
Veterinary Medicine (5 years)

English, 3 units; Algebra, 1½ units; Geometry, 1 unit; Science, 1 unit.

Agriculture with special training in Landscape Gardening (4 years)
Commerce (4 years)
Commerce with special training in Accounting (4 years)
General Science (4 years)
General Science and Veterinary Medicine (6 years)
Pre-medical and Pre-pharmacal (2 years)

English, 3 units; Algebra, 1½ units; Geometry, 1½ units; Science, 1 unit.

Agricultural Engineering (4 years)
Architecture (4 years)
Architectural Engineering (4 years)
Chemical Engineering (4 years)
Civil Engineering (4 years)
Electrical Engineering (4 years)
Industrial Chemistry (4 years)
Landscape Architecture (4 years)
Mechanical Engineering (4 years)
Milling Industry (4 years)

The above curricula were formulated on the assumption that the high-school subjects named will be offered for admission. A graduate of an accredited high school who in accordance with a state law is admitted as a freshman without all of the high-school subjects that are prerequisite to carrying the curriculum chosen will be assigned, if necessary, to a five-hour course in College Algebra instead of the regular three-hour course, and to a two-hour course in Solid Geometry, and may be allowed College credit toward graduation for the extra hours. A student lacking the required unit of high-school science is held for four hours of college physical or biological science in addition to any science required by his college curriculum, but may be allowed elective credit toward graduation on such science.

A student without high-school credit in one unit of algebra and one unit of geometry is not permitted to register for an engineering curriculum, the curriculum in industrial chemistry or the curriculum in general science until those fixed entrance requirements are completed. Algebra, one unit, and geometry,

one unit, are offered each semester in study center classes provided by the Department of Home Study. A student without high school credit in one unit of algebra is required to enroll in the algebra class mentioned above, the first semester of attendance. A student with one unit of algebra but without one unit of geometry should enroll in the geometry class the first semester of attendance; such a student must complete this requirement in geometry by the close of the third semester of attendance. A student will not be advanced in classification until these required units are completed.

A person who is not a graduate of an accredited high school or academy will be admitted to the freshman class if he has 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	English, three or four units
	Journalism, one-half or one unit
	Public speaking, one-half or one unit
GROUP II ..... Foreign Languages	French, one, two, three or four units
	German, one, two, three, or four units
	Greek, one, two, three, or four units
	Latin, one, two, three, or four units
	Spanish, one, two, three, or four units
GROUP III ..... Mathematics	Elementary algebra, one or one and one-half units
	Plane geometry, one unit
	Advanced algebra, one-half unit
	Solid geometry, one-half unit
	Plane trigonometry, one-half unit
GROUP IV ..... Natural Sciences	*Botany, one-half or one unit
	*Chemistry, one unit
	*General biology, one-half or one unit
	*General science, one-half or one unit
	Physical geography, one-half or one unit
	*Physics, one unit
	*Physiology, one-half or one unit
	*Zoölogy, one-half or one unit
GROUP V ..... History and Social Sciences	American history, one unit
	Civics, one-half or one unit
	Constitution, one-half unit
	Economics, one-half or one unit
	English history, one unit
	Greek and Roman history, one unit
	Medieval and modern history, one unit
	Sociology, one-half unit
GROUP VI ..... Normal Training Subjects	Higher arithmetic, one-half unit
	Methods and management, one-half unit
	*Music, one unit
	Psychology, one-half unit
	Reviews
	Grammar, geography, and reading twelve weeks each, *or* Two of these, eighteen weeks each } 1 unit
GROUP VII ..... Industrial Subjects	*Agriculture, one-half, one, two, three, or four units
	*Domestic art, one-half, one, or two units
	*Domestic science, one-half, one, or two units
	*Drawing, one-half or one unit
	*Forging, one-half or one unit
	*Printing, one-half, one, or two units
	*Woodwork, one-half, one, or two units
GROUP VIII ..... Commercial Subjects	Bookkeeping, one-half or one unit
	Commercial geography, one-half unit
	Commercial law, one-half unit
	Salesmanship, one-half unit
	*Stenography and typewriting, one-half or one unit each

* 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.

ADVANCED CREDIT

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 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 certified transcripts of their work at other colleges at least two or three weeks in advance of entrance. Transcripts received later than one week prior to enrollment cannot be acted upon completely before the opening days of College.

Matriculated students may secure advanced credit in certain subjects of freshman rank 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 or summer session. Examinations, however, which affect the assignment of a semester or summer session will be given the first Saturday of that semester or summer session. 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 11, 1933, Monday, January 29, 1934, and Monday, June 4, 1934. 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 later than one week prior to enrollment cannot be acted upon before the opening days of College.

LATE ASSIGNMENT

A considerable amount of extra work and a great deal of confusion are 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. *There is no exception to this rule.*

A student is not admitted to the College later than ten days after the opening of a semester, except by special permission of his dean.

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, persons over twenty-one years of age who are unable to meet the regular entrance requirements. For admission as special students in Veterinary Medicine, applicants must have completed at least fifteen units of high school work. The age limit is not applied to special students in music.

Students who are able to meet the regular entrance requirements may also be permitted for sufficient reason to register as special students for work toward definite ends not provided for by the regular curricula. This classification does not, however, include students who merely fulfill curricular requirements irregularly in respect to weight or content of assignments, or who take approved courses in addition to those provided for in their curricula.

An applicant for admission as a special student must secure a permit from the dean of the division in which the major work is to be done, and this dean approves each assignment. Such a permit is good for one semester only but may be renewed in succeeding semesters.

Special students must present certificates of their preliminary training, and must give evidence of satisfactory preparation for the courses they wish to pursue. They are subject to all the general regulations and requirements of regular students, such as assignments to physical education and military training, payment of fees, regular attendance at classes, and maintenance of satisfactory scholastic standing.

KANSAS HIGH SCHOOLS AND ACADEMIES IN ACCREDITED RELATIONS WITH THE COLLEGE

(Candidates admitted without examination)

Abbyville
Abilene
Ada
Adams
Admire
Agenda
Agra
Alden
Alexander
Allen
Alma
Almena
Altamont
  Labette Co. Com.
Alta Vista
Alton
Altoona
Americus
Andale
Andover
Anthony
  Anthony H. S.
  Spring Twp. H. S.
Antrim
  St. John P. O.
Appanoose
  Pomona P. O.
Arcadia
Argonia
Arkansas City
Arlington
Arma
Arnold
Asherville
Ashland
Assaria
Atchison
  Atchison H. S.
  St. Benedict's College Academy
  Mt. St. Scholastica Academy
Athens
  Glen Elder P. O.
Athol
Atlanta
Attica
Atwood
  Rawlins Co. Com.
Auburn
Augusta
Aurora
Axtell
  Axtell H. S.
  St. Michael's H. S.
Baldwin
Bancroft
Barclay
Barnard
Barnes
Basehor
Bavaria
Baxter Springs
Bazine
Beattie
Beeler
Belle Plaine
Belleville
Belmont
Beloit
  Beloit H. S.
  St. John's H. S.
Belpre
Bendena
Benedict
Bennington
Bentley
Benton
Bern
Berryton
Bethel P. O.
  Washington R. H. S.
Beverly
Bird City
Bison
Blaine
Bloom
Blue Mound
Blue Rapids
Bluff City
Bogue
Bonner Springs
Brewster
Bronson
Brookville
Brownell
Brownville
  Brewster P. O.
Bucklin
Bucyrus
  Bucyrus H. S.
  Wea H. S.
Buffalo
Buhler
Bunkerhill
Burden
Burdett
Burdick
  Diamond Valley H. S.
Burlingame
Burlington
Burns
Burr Oak
Burrton
Bushong
Bushton
Byers
Caldwell
Cambridge
Caneiro
Caney
Canton
Carbondale
Cassoday
Castleton
Cawker City

Cedar
Cedar Point
Cedarvale
Centerview
Centralia
Chanute
Chapman
  Dickinson Co. Com.
Chase
Chautauqua
Cheney
Cherokee
  Crawford Co. Com.
Cherryvale
Chetopa
Cimarron
Circleville
Claflin
Clay Center
  Clay Co. Com.
Clayton
Clearwater
Cleburne
Clements
Clifton
Climax
Clyde
Coats
Cockerill
  Mulberry P. O.
Codell
Coffeyville
Colby
  Thomas Co. Com.
Coldwater
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
Damar
Deerfield
Delavan
Delia
Delphos
Denison
Dennis
Densmore
Denton
Derby
De Soto
Dexter
Dighton
  Lane Co. Com.
Dodge City
  Dodge City H. S.
  St. Mary 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
Flush
  St Joseph's H. S.
Fontana
  Oswego Twp.
Ford
Formoso
Fort Scott
Fostoria
Fowler
Frankfort
Fredonia
Frontenac
Fulton
Galena
Galesburg
Galva
Garden City
Garden Plain
Gardner
Garfield
Garnett
Garrison
Gaylord
Gem
Geneseo
Geneva
Geuda Springs
Girard
Glasco
Glendale
  Brookfield P. O.
Glen Elder
Goddard
Goessel
Goff
Goodland
  Sherman Co. Com.
Gorham
  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.
  St. Joseph's College
    Academy
Hazelton
Healy
Hepler
Herington
Herndon
  Herndon H. S.
  St. Mary's H. S.
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
Howard
Hoxie
  Sheridan Co. Com.
Hoyt
Hudson
Humboldt
Hunter
Huron
Hutchinson
  Hutchinson H. S.
  Bresee College Academy
  St. Theresa's Academy
Independence
Ingalls
Inman
Iola
Ionia
Irving
Isabel
Jamestown
Jarbalo
Jennings
Jetmore
  Hodgeman Co. Com.
Jewell City
Johnson

Junction City
  Junction City H. S.
  St. Xavier's H. S.
Kackley
Kanopolis
Kanorado
Kansas City
  Argentine H. S.
  Catholic H. S.
  Pembroke School
  Rosedale H. S.
  State School for Blind
  Sumner H. S.
  Western Univ. Academy
  Wyandotte H. S.
Keats
Kendall
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
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
Manning
Manter
Maplehill
Marion
Marquette
Marysville
Matfield Green
Mayetta
Meade
Medicine Lodge
Melvern
Menlo
Meriden
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
North Branch
  North Branch Academy
Norton
  Norton Co. Com.
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
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
Preston
Pretty Prairie
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
Rozel
Ruleton
Russell
Russell Springs
Sabetha
Saffordsville
  Toledo Twp. H. S.
St. Francis
  St. Francis Co. Com.
St. Francis H. S.
  St. Paul P. O.
St. George
St. John
  St. John H. S.
  Antrim R. H. S.
St. Mary
  St. Mary H. S.
  Immaculate Conception H. S.
St. Paul
  St. Paul H. S.
  St. Francis H. S.
Salina
Salina H. S.
  Sacred Heart H. S.
  St. John's Military School
  Marymount Academy
Satanta
Savonburg
Sawyer
Scandia
Schoenchen
Scott City
  Scott Co. Com.
Scottsville
Scranton
Seaman
  North Topeka P. O.
Sedan
Sedgwick
Selden
Seneca
  Seneca H. S.
  Sts. Peter and Paul H. S.
Severance
Severy
Shallow Water
Sharon
Sharon Springs
  Wallace Co. Com.
Shawnee Mission
  Merriam P. O.
Silver Lake
Simpson
Smith Center
Smolan
Soldier
Solomon
South Haven
Sparks
Spearville
Speed
Spivey
Spring Hill
Spring Twp.
  Anthony P. O.
Stafford
Stanley
Stark
Sterling
Stilwell
Stockdale
Stockton
Strawn
Strong City
Sublette
Summerfield
Sun City
Sylvan Grove
Sylvia
Syracuse
Talmage
Tampa
Tescott
Thayer
Tipton
Tonganoxie
Tonovay
  Utopia P. O.
Topeka
  Topeka H. S.
  Catholic H. S.
  Highland Park H. S.
  Kansas Vocational School
  Seaman R. H. S.
  Washburn H. S.
Toronto
Towanda
Tribune
  Greeley Co. Com.
Trousdale
Troy
Turner
Turon
Tyro
Udall
Ulysses
  Grant Co. R. H. S.
Uniontown
Utica
Valley Center
Valley Falls
Vermillion
Vernon
Vesper
Victoria
  St. Fidelis H. S.
Vilas
Vinland
Viola
Virgil
Wakeeney
  Trego Co. Com.
Wakefield
Waldo
Walker
  St. Ann's H. S.
Wallace
Walnut
Walton
Wamego
Washburn R. H. S.
  Topeka P. O.
Washington
Washington R. H. S.
  Bethel P. O.
Waterville
Wathena
Waverly
Wayside
Wea
  Bucyrus P. O.
Webber
Webster
Weir
Welda
Wellington
Wellsville
Weskan
West Mineral
Westmoreland
Westphalia
Wetmore
Wheaton
White City
White Cloud
White Water
Whiting
Wichita
  Wichita East H. S.
  Wichita North H. S.
  American Indian Institute
  Cathedral H. S.
  Mt. Carmel Academy
  St. John's Academy
Wilburton
Williamsburg
Willis
Wilmore
Wilsey
Wilson
Winchester
Windhorst
  Immaculate Heart of Mary
Windom
Winfield
  Winfield H. S.
  St. John's Academy
Winona
Woodbine
Woodruff
Woodston
Yates Center
Zenda
Zook
  Larned P. O.

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
College of Paola, Paola

Undergraduate Degrees

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, or both, is about 120 to 140 hours, or semester credits, according to the four-year 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. Resident work is interpreted to mean all regularly scheduled class or laboratory instruction given by the regular College faculty under the direct supervision of the College and within the bounds of its campus. Not less than twenty semester hours of undergraduate work are to be taken here while this residence requirement is being fulfilled. Not to exceed sixteen 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.

Seniors meeting the graduation requirement 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.

No student is considered a candidate for graduation in the spring who, at the beginning of the first semester, is deficient more than nine semester hours in addition to his regular assignment for the year. Candidates desiring to be graduated must make application to the registrar at least thirty days before the date when graduation is expected. The responsibility rests with a candidate to see that he has complied with all the requirements.

Candidates for graduation 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. Degrees are conferred only in the spring and in the summer. 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 Commerce (Commerce; Commerce and Accounting)
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Home Economics (Home Economics; Home Economics and Art; Home Economics and Institutional Economics and Dietetics; Home Economics and Journalism)

Bachelor of Science in Industrial Chemistry
Bachelor of Science in Industrial Journalism
Bachelor of Science in Landscape Architecture
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Milling Industry
Bachelor of Music
Bachelor of Science in Music Education
Bachelor of Science in Physical Education

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

The degree of Doctor of Veterinary Medicine is conferred upon those who complete the five-year curriculum in Veterinary Medicine.

Those pursuing the six-year curriculum in Animal Husbandry and Veterinary Medicine are awarded the degree Bachelor of Science in Agriculture upon completion of the first four years, and the degree Doctor of Veterinary Medicine upon completion of the last two years of the curriculum.

Upon those taking 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.

For a second bachelor's degree an additional year of not less than thirty semester credits is required. This work is in charge of the dean who administers the curriculum chosen.

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 the literary societies, the Department of Music, the Manhattan Theatre, the Intersociety Oratorical Board, and 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 $7.50 for residents of Kansas, or $15 for nonresidents, is charged all students in College curricula. Short-course students do not pay this fee and it is not paid by students in the summer school unless they are candidates for a degree at the end of the session. It is payable by special students.

Incidental Fee. An incidental fee of $18.75 a semester or $15 for the nine-week summer term is charged residents of Kansas; nonresidents pay $37 a semester or $25 for the nine-week 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 four-week summer term is $7.50.

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 physician 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, but not including the laboratory fees, which are announced in a succeeding paragraph, the following tabular statement is given:

FOR RESIDENTS OF KANSAS

	Old students	*New students*
Matriculation (paid only once)	None	$7.50
Incidental (one semester)	$18.75	18.75
Student-health (one semester)	3.00	3.00
Student-activity (one semester)	5.00	5.00
Totals	$26.75	$34.25

FOR NONRESIDENTS OF KANSAS

	Old students	*New students*
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

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. Charges are noted under the descriptions of the several courses; changes in charges are effective June 1. The following tabulation shows the laboratory charges for each semester of the freshman year in the several curricula. In a few instances these are approximate, since options exist in some curricula and charges are affected by the subjects chosen.

Curriculum	*First semester*	*Second semester*
Agricultural Administration	$18.50	$20.50
Agricultural Engineering	12.75	14.25
Agriculture	18.50	20.50
Agriculture with Landscape Gardening	18.00	18.00
Animal Husbandry and Veterinary Medicine (six year),	18.50	20.50
Applied Music (not including sheet music)	3.50	3.50
Architectural Engineering	12.00	13.50
Architecture	4.50	6.00
Chemical Engineering	13.50	13.50
Civil Engineering	12.75	12.75
Commerce	8.50*	8.50*
Commerce and Accounting	8.50*	8.50*
Electrical Engineering	18.25	12.75
General Science	17.25	17.25
General Science Pre-Medic and Pre-Pharmacal Adap.,	13.50	13.50
General Science and Veterinary Medicine (six year)	17.25	17.25
Home Economics	19.00	13.75
Home Economics and Art	19.00	13.75
Home Economics and Industrial Journalism	19.00	13.75
Home Economics and Inst. Economics and Dietetics	19.00	13.75
Home Economics and Nursing	18.25	13.00
Industrial Chemistry	15.00	13.50
Industrial Journalism	16.50*	8.00*
Landscape Architecture	9.00	10.50
Mechanical Engineering	14.25	14.25
Milling Industry	16.25	16.25
Music Education (not including sheet music)	3.50	8.50*
Physical Education for Men	13.50	11.00
Physical Education for Women	12.50	13.00
Veterinary Medicine	21.50	21.50

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	$23.05	$12.10
Agricultural Engineering	23.85	6.50
Agriculture	23.05	12.10
Agriculture with Landscape Gardening	24.30	9.60
Animal Husbandry and Veterinary Medicine (six year),	23.05	12.10
Applied Music (not including sheet music)	15.22*	.....
Architectural Engineering	23.85	5.00
Architecture	31.60	5.00
Chemical Engineering	23.05	5.75
Civil Engineering	23.25	11.60
Commerce	18.75*	7.10*
Commerce and Accounting	18.75*	7.10*
Electrical Engineering	22.35	7.50
General Science	23.20	4.25
General Science Pre-Medic and Pre-Pharmacal Adap.,	20.95*	4.25
General Science and Veterinary Medicine (six year)	23.20	4.25
Home Economics	16.80	6.10
Home Economics and Art	16.80	6.10
Home Economics and Inst. Economics and Dietetics	16.80	6.10
Home Economics and Journalism	16.80	6.10
Home Economics and Nursing	15.80	6.20
Industrial Chemistry	24.70	7.00
Industrial Journalism	20.30*	8.25*
Landscape Architecture	23.25	6.10
Mechanical Engineering	23.85	10.25
Milling Industry	19.40	8.60
Music Education (not including sheet music)	15.97	.....
Physical Education for Men	16.05	6.75
Physical Education for Women	13.30	5.50
Veterinary Medicine	24.60	.....

* Approximate figures.

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, 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 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 before the end of the first week of the semester or summer term may receive a refund of all the fees paid for that semester or summer term.

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

Refund is made on the unused portion of laboratory fees. All claims for refunds on laboratory deposits must be made within fifteen days of the close of the semester or summer school.

Refunds are given *only* on the presentation of the fee receipts for various fees paid. Refunds are authorized at the office of the registrar. *Fee receipts must be preserved* by the student. To be accepted, claims for fee refunds must be presented at the office of the registrar not later than the end of the semester or summer term for which the fees were paid.

A student dropping music before the end of a term or semester may receive a refund of fees paid proportional 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 semester are retained.

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 $6 a month and upward 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.

Van Zile Hall is available as a residence for about 125 young women.

BOARD. The cost of board depends largely upon individual requirements. In clubs and private boarding houses the cost is $3 a week and upward. 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.

Board and room may be obtained at a minimum cost of about $4 a week.

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 Kansas State 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 Anderson 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 last 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 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 the students are judged on the basis of their personal worth and efficiency.

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 College has created a loan fund, chiefly by means of payments by which the alumnus is relieved from further 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 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 $44,700, 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, up to and including October 10, 1932, the following named persons have completed payments for life membership: Margaret Ahlborn, Kenneth C. Anderson, Henry J. Barre, Clara Howard Bridenstine, Hale H. Brown, Orpha Brown, Eugene A. Cleavinger, Harold S. Crawford, Ethyl Danielson, Leone Wilson Davies, Omeda Mae Dickison, C. Leslie Erickson, George A. Filinger, Rudolph T. Greep, Faye Harris, Viola G. Hart, J. Roe Heller, Randall C. Hill, Lora V. Hilyard, Iva L. Holladay, Willis N. Kelly, Mary Kimball, Eunice Kingsley, Terrell W. Kirton, Fred F. Lampton, Charles A. Logan, Grace B. Long, Effie Carp Lynch, Herschel O. Morris, Helen Mundell, Virginia Hawkins Noble, Arthur F. Peine, Leonard M. Pike, Jeremiah T. Quinn, David G. Robertson, John H. and Mary Jo Cortelyou Rust, Flossie Sawyer, Grace Herr Schmidtlein, Charles H. Scholer, Harold M. Scott, Edmund R. Secrest, Mildred E. Sederlin, Julia King Smith, Maud Stitt, Albert D. Stoddard, Eldon Teter, Esther C. Thomas, Clarence C. Uhl, Susie Unruh, Harry E. Van Tuyl, E. LaVerne Wier, Christine Wiggins, Edna M. Wilkin, Ruth Williams, Luther E. Willoughby, Rochford G. Yapp, Homer Yoder, James W. and Mabel Howell Zahnley. This list brings the total of paid-up life members to 606.

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 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 and 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. J. O. Hamilton, chairman of the Waters Loan Fund Committee, Manhattan, Kan.

The 4-H Club Loan Fund. The Collegiate 4-H Club of the College has created a loan fund of approximately $1,500 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 Whoot," 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. C. Alumni Association in coöperation 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 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. 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 Alumnæ 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 American Association of University Women Loan Fund. The Manhattan branch of the American Association of University Women maintains a small loan fund which is available to a graduate woman student enrolled in any department of the College recognized by the Graduate Council. Applications for this loan should be made to the chairman of the Graduate Loan Fund Committee of the Manhattan branch of the American Association of University Women.

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 Waters Loan Fund Committee.

Masonic Loan Fund. The Knights Templar Commandery has established a loan fund that is available for junior and senior men and women who have given evidence of scholarship and worth. Applicants should seek recommendations from the commandery with whose members they may be acquainted.

Franklin Literary Society Loan Fund. The Franklin Literary Society has established a loan fund which is available to members of the society. It is administered by the Waters Loan Fund Committee.

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.

Dairy Judging. The Student Dairy Club 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 $100 to students in poultry-judging contests.

Grain Judging. The Klod and Kernel Klub holds an annual grain-judging contest. Cash prizes, trophies, merchandise and subscriptions to farm papers are given to the highest ranking students.

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.

Alpha Rho Chi, national social fraternity of architecture, awards a medal to the graduating senior of the Department of Architecture who has shown through his attitude and personality the greatest ability for leadership, service for his school and department, and real professional merit.

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.

Margaret Russel Scholarship Award. Phi Alpha Mu, the honor society for women taking work offered in the curriculum in general science, awards $50 each year to the junior young woman enrolled in the curriculum in general science who had the highest scholastic standing at the close of the second semester of the previous college year. To be eligible for this award the student must have done her sophomore work in the division of general science at the Kansas State College.

Omicron Nu Scholarship Award. 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.

Sigma Tau Scholarship Award. Sigma Tau, the honor society in the Division of Engineering, awards annually medals to the three sophomore engineering students making the highest scholastic records in their freshman year.

Short-story Writing. The Quill Club offers annually $10 to the student of Kansas State College writing the best short story in a contest held by this organization.

Journalism. The outstanding student in Agricultural Journalism each year is honored by having his name engraved upon one of the several small shields surrounding a larger shield which bears 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 College."

Oratory. The literary societies through the Inter-Society Council offer each year in the Inter-Society Oratorical Contest three substantial cash and medal prizes.

The College is a member of the Missouri Valley Oratorical Association and is represented in its annual contest in which valuable cash and medal awards are offered.

Other contest opportunities of an inter-collegiate character and carrying substantial awards are available from time to time.

Sociology. The Kappa Alpha Chapter of Chi Omega Sorority offers a prize of $25 to the woman student who holds the highest grade in sociology at the

end of the first semester each year, the standing of the student to be determined by the instructor.

ALPHA KAPPA PSI MEDALLION. Alpha Kappa Psi, professional commerce fraternity, awards annually a gold medallion to the junior pursuing a degree in commerce or commerce with special training in accounting, who possesses the highest three-year average in scholarship at the end of his junior year. The award is usually presented during the student's senior year.

VETERINARY MEDICINE. Within the Division of Veterinary Medicine awards are made as indicated below:

Harwood prizes in physiology—donated by Dr. N. D. Harwood, K. S. C., '18—consist of a first prize of $10 and a second prize of $5. Sophomore students are eligible.

Jensen-Salsbery prizes in therapeutics — donated by the Jensen-Salsbery Laboratories—consist of a first prize of $10 and a second prize of $5. Junior students are eligible.

Franklin prizes in pathology—donated by Dr. O. M. Franklin, K. S. C., '12—consist of a first prize of $10 and a second prize of $5. Senior students are eligible.

Schmoker prizes in general efficiency—donated by Dr. E. A. Schmoker, K. S. C., '17—consist of a first prize of $10 and a second prize of $5. Senior students are eligible.

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 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, veterinary medicine, or home economics.

Senator Arthur Capper of Topeka, Kansas, 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 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 LaVerne Noyes award to the Kansas State College annually six scholarships which cover the cost of matriculation fees, incidental fees, and laboratory charges only. These scholarships are available, with certain reservations, to deserving students who need this assistance and who served in the army or navy of the United States between April 6, 1917, and September 11, 1918, or descended by blood from some one who so served. 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 Kansas State College and give promise of ability to do research work. Work may be pursued in any department of Kansas State 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 first of March previous to the academic year in which the fellowship is desired.

GRADUATE ASSISTANTSHIPS

Graduate assistantships and graduate research assistantships have been established for some years by action of the Board of Regents, and are available in several departments of the College. See Division of 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.

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 Kansas Agricultural Student is issued monthly by the Division of Agriculture and the Division of College Extension.

The students of the College publish a semiweekly periodical, *The Kansas State Collegian,* in the interests of the students at large. *The Kansas State Engineer* is published by students in the Division of Engineering. *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 Student Governing Association.

MOTOR CAR PARKING REGULATIONS

Public Parks. Two public motor-car parks have been provided for general use by students, faculty members, employees, and visitors. One of these is northwest of Engineering Hall and the other is north of Waters Hall. No permits are required for the use of these parks but cars must be so parked as not to interfere with the free movement of other cars into and out of parking spaces.

Restricted Parks. To accommodate crippled students and others having special need for parking spaces, a few small motor-car parks have been provided and permits for the exclusive use of these parks are issued when necessary. Each stall is assigned to a certain car and may be used by that car only. Cars must be so parked as not to interfere with the free movement of other cars into and out of the stalls.

Parking on Driveways. No parking is permitted on the driveways except during public exercises. During such public exercises and for a short time before and after them, cars may be parked on the driveways provided they are so parked as not in interfere with either vehicular or pedestrian traffic.

In the interest of safety, the good appearance of the campus, and the general welfare of the college community, the coöperation of students and faculty in the observance of these regulations is requested. Furthermore, the handling of the parking problem will be greatly simplified if students and faculty

members who come to the campus in motor cars will make extensive use of the streets adjacent to the campus for parking purposes.

COLLEGE ASSEMBLY

The College Assembly is held one hour each week. The library, offices, classrooms, and laboratories are closed and the students and faculty 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 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 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 twice a day. Matter may be deposited for insured and 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.

APTITUDE TESTS FOR FRESHMEN

Aptitude tests of all freshmen have been conducted here since 1919. In recent years, examinations of this character have been given quite generally in educational institutions. The tests required in this college occupy only about three hours of each of two days. These tests are designed to ascertain what features of the student's mental endowment and attainments are strongest. The results are very helpful to deans and advisers in judging the intellectual progress of students, and in giving them counsel concerning occupational aptitudes. They are also of assistance in placing students or graduates in positions.

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 last period provided 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 reassignment, 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.

AUDITING CLASSES

Auditing a class consists in attending it regularly without other participation, and without credit. Only persons having written permits may audit classes. Permission to audit is issued to (*a*) any person who is enrolled for credit, by the dean in charge of his assignment; (*b*) an employee of the College not enrolled for credit, by the dean of the division in which the person is employed with approval of the head of the department in which the course is offered; (*c*) any other person, by the dean of the division in which the course is offered with the approval of the head of the department. Laboratory courses may not be audited.

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 are excluded until the beginning of the next summer session. Those dismissed at the end of the second semester are 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, unless exempted under the provision that a junior or senior student is given the privilege of optional attendance at class exercises if, during the last two semesters he attended this College, he made not fewer than thirty-two points each semester with an average record of not fewer than two points per credit hour each semester and no grades below passing.

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 5 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 to 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 that 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 conditional 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 designated by A, B, C, D, Con. 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, not later than 6 p.m. of the last day of the first semester, and not later than noon of the last day 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 provided 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 or student organizations 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. However, regardless of the time of withdrawal, if all the required work of a course has been completed, a final grade shall be reported.

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 depart-

ment or with the president of the College when severing their connection with the institution.

THE POINT SYSTEM

For each hour 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 hours. Above the freshman year classification is based on the same requirement in points as in hours.

Seniors meeting the graduation requirements in hours 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.

CLASSIFICATION OF STUDENTS

New students are classified by the Committee on Admission. To be classified as a freshman on entrance one must have been graduated from an accredited high school, or offer fifteen units of acceptable high-school work. One offering fourteen acceptable high-school units is classified as a conditioned freshman. A student is not advanced in classification until the required entrance units are completed. A student is classified as a sophomore, junior or senior when he attains credit in a number of hours and also of points nine less than the full number of hours required in one, two or three years, respectively, of the curriculum in which he is enrolled. Reclassification of students is made by the registrar each academic year previous to the opening of the first semester.

CREDITS FOR EXTRACURRICULAR WORK

Credit toward graduation may be obtained through satisfactory performance of the duties of certain activities not included in the requirements of any curriculum. These subjects and the limitations upon the semester hours of credit that may be so obtained are as follows:

Subject	*Per semester*	*Total*
Orchestra	½	4
Band	½	4
Choral Ensemble	½	4
Debate	2	4
Oratorical Contest	2	4
Kansas State Collegian journalism	1	4
Home Economics News journalism	1	4
Agricultural Student journalism	1	4
Kansas State Engineer journalism	1	4

To obtain credit on one of these subjects, the student must be regularly assigned to it in accordance with the general rules governing assignments, but may be assigned only 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 obtained in the above-named subjects may be counted as electives in the student's curriculum, or may be formally substituted for required subjects if the curriculum does not offer sufficient elective opportunity. Approval as electives or substitutions is obtained only through the regular procedures. A total of not more than eight semester credits may be allowed a student for these subjects, and not more than two of these may be obtained in any one semester.

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	10
Sophomores, 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 welcome in 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 committees 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 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. Anderson 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 Kernal 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.

EXTENSION SERVICE SOCIETIES

The Collegiate 4-H Club is an organization composed of college young men and young women who formerly were 4-H Club members. Its purpose is to maintain and increase the interest of its members in extension work and 4-H Club work, to develop more effective leadership in such work, to maintain and increase a loan fund for 4-H Club members in college, and in general to aid and promote the well-being of former 4-H Club members at Kansas State College. It participates actively in many campus activities and lends its aid to the various extension activities conducted on the campus or in connection with the College. The club publishes each year the yearbook of 4-H Club work in Kansas known as the "Who's Whoot." The organization aims to acquaint its members with the latest developments in the various fields in which they are interested and to bring added opportunities for professional and educational development. Outside speakers are frequently secured and the organization sends representatives to various national or interstate student conventions or meetings.

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

Organization.	*Division or department.*
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 Lambda Upsilon	Chemistry
Phi Mu Alpha	Music
Pi Kappa Delta	Debating
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 and student members. (See "Honor Societies," above.)

AMERICAN CHEMICAL SOCIETY.

This institution is headquarters for the Kansas State College section of the American Chemical Society. Its regular and special meetings constitute a valuable stimulus to interest and progress in chemistry. The section provides each year for one or more lectures by eminent chemists from out of town.

THE COLLEGE BAND

The College Band is a military organization, composed chiefly 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 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 Graduate Study

JAMES EDWARD ACKERT, *Dean*

Facilities for advanced degrees were offered at the Kansas State College of Agriculture and Applied Science as early as 1866. Opportunities for investigation and research were afforded originally in 1877, when the Master of Science degree first was authorized. Graduate study was administered by the general faculty up to 1903, when this work was placed in the hands of a faculty committee. After 1903 the graduate work grew steadily. In 1909 it was put under the supervision of the Council of Deans. The work was reorganized in 1919 and placed under the supervision of a Graduate Council, which had charge of all graduate work until November 1, 1931. On that date a Division of Graduate Study was formed and a dean of the division appointed. During the next year the College was authorized to offer work leading to the degree of Doctor of Philosophy, effective September 1, 1932.

The Graduate Council, which is continued, 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 by the president. The dean of the Division of Graduate Study is chairman of the council.

The graduate faculty consists of the president of the College, the deans of the academic divisions, the heads of departments offering graduate work and staff members recommended by the heads of departments and approved by the Graduate Council as qualified to give graduate instruction. Its chairman the president of the College is chairman of the graduate faculty, the dean of the Division of Graduate Study is vice-chairman and the secretary of the Graduate Council is secretary.

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 for advanced degrees and other matters which relate to the proper administration and development of graduate work in the College.

ADMISSION

Admission to graduate study is granted to graduates of institutions whose requirements for the bachelor's degree are substantially equivalent to those of the Kansas State College of Agriculture and Applied Science. Admission to graduate study, however, may not be construed to imply admission to candidacy for an advanced degree. Such candidacy is determined after the student has demonstrated by his work for a period of two months or longer (M. S.), or approximately two years (Ph. D.), that he has the ability to do major work of graduate caliber.

Application blanks for admission to graduate study may be secured from the dean of the Division of Graduate Study. Each applicant who is not a graduate of this College must submit with his application an official transcript of his college record.

REGISTRATION

Students applying for graduate work should present themselves to the dean of the Division of Graduate Study at Nichols Gymnasium during the regular registration days (see College calendar), and at other times at his office, room 26, Fairchild Hall.

Students who have been admitted to graduate study are required to register with the College registrar and be assigned by the dean of the Division of Graduate Study at the beginning of each semester.

ASSIGNMENTS

Not more than sixteen credits, including thesis, may be secured in a single semester, nor more than eight credits during the Nine-week Summer School, nor more than four credits during the Four-week Summer School. 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 hours 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.

DEGREES

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

Conferring of Degrees. Candidates for advanced degrees are required to be present in the academic costume and hood appropriate for the degree, unless arrangements have been made in advance for the conferring of the degree *in absentia*. Application for this privilege should be made to the dean of the Division of Graduate Study. Degrees are conferred only at the end of the second semester and of Summer School. Candidates for degrees, except professional degrees, at the end of the second semester are required to be present at the exercises of baccalaureate Sunday also, unless excused by the Council of Deans.

GENERAL REQUIREMENTS FOR THE DEGREES MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

Candidates for the degrees Master of Science and Doctor of Philosophy are 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

* Penalty if not completed on time. See section headed Grades, under General Information.

department. The nature and distribution of the majors and minors (program of study) are approved by the Graduate Council, upon the recommendation of the major instructor and the head of the department (M. S.), or of the supervisory committee (Ph. D.).

The approved program of study 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, the nature and amount of it to be determined by the instructor. No credit earned during the undergraduate course may be counted for graduate credit, unless the student is assigned to it by a representative of the Division of Graduate Study.

REQUIREMENTS FOR THE DEGREE MASTER OF SCIENCE

Work leading to the degree Master of Science is offered in the following departments:

Division of Agriculture
- Agricultural Economics
- Agronomy
- Animal Husbandry
- Dairy Husbandry
- Horticulture
- Milling Industry
- Poultry Husbandry

Division of Engineering
- Agricultural Engineering
- Applied Mechanics
- Architecture
- Civil Engineering
- Electrical Engineering
- Machine Design
- Mechanical Engineering
- Shop Practice and Industrial Arts

Division of General Science
- Bacteriology
- Botany and Plant Pathology
- Chemistry
- Economics and Sociology
- Education
- English
- Entomology
- Geology
- History and Government
- Industrial Journalism and Printing
- Mathematics
- Modern Languages
- Physics
- Public Speaking
- Zoölogy

Division of Home Economics
- Art
- Child Welfare and Euthenics
- Clothing and Textiles
- Food Economics and Nutrition
- Home Economics Education
- Household Economics
- Institutional Economics

Division of Veterinary Medicine
- Anatomy and Physiology
- Pathology
- Surgery and Medicine

Residence Requirements. Candidates for the degree 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.

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 major instructor and the head of the department. (See general requirements for the Master's and Doctor's degrees.)

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 the major and minor subjects and thesis by a committee consisting of the instructors with whom the major and minor work was taken, the head of the major department, the dean of the division in which the major work is offered, and a member of the Graduate Council as chairman.

REQUIREMENTS FOR THE DEGREE DOCTOR OF PHILOSOPHY

Departments Offering Major Work. Major work leading to the degree Doctor of Philosophy is offered in the following departments: Bacteriology, Chemistry, Entomology, and Milling Industry. Minor work for this degree may be chosen in the departments offering major work for the degree and in supporting fields in other departments offering graduate work.

Residence and Credit Requirements. As least three years (of nine months each) of graduate study beyond the Bachelor's degree, equivalent to 90 semester credits including a thesis, are required of candidates for the degree Doctor of Philosophy. At least one year of this time must be spent in residence at this college.

Language Requirements. Each candidate for the degree Doctor of Philosophy must demonstrate to the head of the department of Modern Languages, or to members of his staff designated by him, ability to read the literature of the major field in two modern foreign languages, to be designated by the supervisory committee. The language requirements shall be fulfilled before the preliminary examinations are taken.

Supervisory Committee. For each student who contemplates working for the degree Doctor of Philosophy, a supervisory committee is chosen by the dean of the Division of Graduate Study. This committee, consisting of five members representing the major and minor fields, aids the student in the preparation of the program of study, which must be approved by the Graduate Council, and has charge of all examinations except the language examinations.

Majors and Minors. Approximately two-thirds of the graduate work (program of study) shall be in a major field and the remainder devoted to one or two minors. In exceptional cases, all of the graduate work may be chosen in one field. The work in the major field may be taken wholly within a department or it may include closely related courses and problems in other departments or divisions of the College. The same principle applies to the minor or minors. (See general requirements for the degrees Master of Science and Doctor of Philosophy.)

Program of Study and Examinations. Students enrolling in graduate study leading to the degree Doctor of Philosophy work on a tentative program of study until approximately two-thirds of the program, including a substantial portion of the thesis, has been completed. Ordinarily at the close of the second year of graduate study and not later than the beginning of the year in which the student contemplates receiving the degree, the candidate must pass oral and written preliminary examinations over the entire field of study. When the student successfully passes the preliminary oral and written examinations and the language examinations, he is recommended by the supervisory committee to the Graduate Council for admission to candidacy for the degree Doctor of Philosophy. The program of study leading to the degree accompanies the recommendation.

On completion of the three years of graduate study as prescribed in the program of study and on submission of a thesis satisfactory to the supervisory committee, at least one month before commencement, the candidate is given the final examination.

Doctor's Thesis. Early in the graduate work a thesis subject is chosen in the major field and approved by the supervisory committee. The finished thesis must constitute a contribution to knowledge, either presenting conclusions from new material, or interpreting previous knowledge in a new light. Two complete typewritten copies of the thesis approved by the supervisory committee shall be submitted to the dean of the Division of Graduate Study at least one month before commencement. On the completion of all requirements for the degree, one copy shall be placed on the shelves of the College library and the other filed with the head of the department in which the major work is taken.

Before the degree is conferred the candidate shall guarantee the printing of the Doctor's thesis (wholly or in part as determined by the supervisory committee) within three years after the date of the conferring of the degree. This guarantee shall be either a statement from the editor of an appropriate technical serial or publishing company that the thesis has been accepted for publication or shall be in the form of a cash deposit of $100 or a bond acceptable to the Graduate Council. If the thesis is not published in acceptable form within three years, the deposit or the bond shall be forfeited unless an extension of time is granted by the Graduate Council for delayed publication after acceptance. When the thesis has been published 125 copies shall be consigned to the College library.

REQUIREMENTS FOR PROFESSIONAL DEGREES IN 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 was 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 was 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.

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 with the approval of the dean of the Division of Graduate Study.

GRADUATE ASSISTANTS

In order to encourage graduates of this College and of similar institutions to continue their studies and to pursue advanced work leading to advanced degrees, the College has established graduate assistantships in several departments. These assistantships, which may be graduate assistantships, or graduate research assistantships, demand approximately one-half 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 nine-week summer school.

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

Subject	*Number*
Bacteriology	1
Botany and Plant Pathology	1
Chemistry	4
Child Welfare	1
Dairy Husbandry	1
Food Economics and Nutrition	1
Horticulture	1
Institutional Economics	1
Zoölogy	2

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.

Subject	*Number*
Clothing and Textiles	1
Food Economics and Nutrition	2
Household Economics	1
Zoölogy	2

By satisfactorily completing eight credits of graduate work in the Nine-week Summer School, graduate assistants and graduate research assistants may meet the requirements for a master's degree within one calendar year.

Applications for all assistantships should be made annually by March for the following academic year. Students desiring such appointments may obtain application blanks from the dean of the Division of Graduate Study.

INDUSTRIAL FELLOWSHIPS

The following industrial fellowships are held at this college:

Dairy and Ice Cream Machinery and Supplies Association, Department of Dairy Husbandry.

Milling Industry Fellowship, Department of Milling Industry.

Steuben Chemical Company Fellowship, Department of Entomology.

GRADUATE LOAN

The Manhattan Branch of the American Association of University Women maintains a loan fund which is available to a graduate woman student enrolled in any department of the Kansas State College of Agriculture and Applied Science, recognized by the Graduate Council. Application for this loan shall be made to the chairman of the Graduate Loan Fund Committee of the Manhattan Branch of the American Association of University Women.

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 dean of the Division of Graduate Study 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 bulletin concerning the work offered in the summer session may be obtained by addressing the Vice President, Kansas State College, Manhattan, Kan.

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.

FEES AND EXPENSES

TUITION. There is no charge for tuition.

MATRICULATION FEE. A matriculation fee of $7.50 for residents of Kansas, or $15 for nonresidents, is charged all graduate students from other institutions. This fee is not charged a Summer School student, unless he is a candidate for a degree at the end of the session.

INCIDENTAL FEE. An incidental fee of $18.75 a semester or $15 for the nine-week summer term is charged residents of Kansas; nonresidents pay $37 a semester or $25 for the nine-week summer term. The incidental fee for the four-week summer term is $7.50. 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 and do not receive the benefits of the student-health service.

STUDENT-ACTIVITY FEE. Graduate students are not assessed the student-activity fee, 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. These are stated with the descriptions of the courses.

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. Students receiving an advanced degree 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 $6 to $7 a month upward 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 from $4 a week upward. 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, Dean of the Division of Graduate Study, Kansas State College, Manhattan, Kan.

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 products 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 College of Agriculture and Applied Science furnishes a means of acquiring systematic training in agriculture which fits young men adequately for the farm 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 the 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 agricultural training at this College are of a high order. The College owns 1,428.7 acres of land, which is used for investigation, instruction, and demonstration in the various courses in agriculture and allied branches. The campus, which comprises 155 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 milling industry.

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

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

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 is not 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 opportunities 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 how 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 to 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:

	Semester credits	
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 school 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:

	Semester credits	
Prescribed in agriculture	25	
Elective 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:

	Semester credits	
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 are as follows: Psychology, Principles of Secondary Education, Educational Psychology, Vocational Education, Methods of Teaching Agriculture, and Practice Teaching.

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:

	Semester credits	
Minor electives		15
Principles of Secondary Education	3	
Educational Psychology	3	
Methods of Teaching Agriculture	3	
Supervised Observation and Teaching in Agriculture	3	
Vocational Education	3	
General electives		17
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 MILLING INDUSTRY

The milling of wheat and other cereals is one of the major industries in this country and calls for men of the best training. While the milling of grains is probably the oldest of the mechanic arts, it is one of the last to find a place in the educational system. Only two colleges in the United States have curricula especially planned for students particularly interested in the milling industry.

The curriculum in milling industry is planned to meet the needs of students in three major fields of the industry: (1) Milling administration, (2) milling technology, and (3) milling chemistry. The first is related to the merchandising of the raw materials and manufactured products; the second to the management and operation of the mechanical equipment; the third to the testing and control of the products.

The curriculum requires 128 semester hours for graduation. The basic work calls for 65 hours, allowing 63 hours for electives. These electives are divided into majors and minors, the major electives for each of the three fields being hereafter listed. Considerable leeway is allowed in the selection of minors so as to better adapt the curriculum to the individual needs of the students.

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 practicability 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

1. Four meetings each semester.

* The number before the parenthesis indicates the number of 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.

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, Agric. Ec. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Anat. and Physiol., Anat. 131	3(2-3)*or*		
Plant Physiology 1,[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 Poult. Pro., Poult. 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

JUNIOR

First Semester		Second Semester	
Genetics, An. Husb. 221	3(3-0)	Gen. Econ. Entomology, Ent. 203	3(2-3)
Plant Pathology 1, Bot. 205	3(1-4, 2)	Agric. Microbiology, Bact. 106	3(1-6)
Farm Organization, Agric. Ec. 106	3(2-3)	Agric. Journalism, Ind. Jour. 160	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	
		Agric. Relationships, Gen. Agric. 105	R(1-0)
Electives	16	Electives	16
Agric. Seminar,[1] Gen. Agric. 103	R	Agric. Seminar,[1] Gen. Agric. 103	R
Total	16	Total	16

Number of hours required for graduation, 128.§

Electives

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

Semester credits

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; *e. g.,* 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.

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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.

§ Seniors must meet the graduation requirement in points as well as in hours. See section headed: The Point System.

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 Departments 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, 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

SOPHOMORE

First Semester		Second Semester	
Psychology A, Educ. 181	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)
		Farm Poult. Pro., Poult. Husb. 101	2(1-2, 1)
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,* Gen. Agric. 103	R	Agric, Seminar,* Gen. Agric. 103	R
Total	16	Total	16

JUNIOR

First Semester		Second Semester	
Agric. Journalism, Ind. Jour. 160	3(2-3)		
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Electives	13	Electives	16
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Agric. Seminar,* Gen. Agric. 103	R	Agric. Relationships, Gen. Agric. 105	R(1-0)
		Agric. Seminar,* Gen. Agric. 103	R
Electives	16	Electives	16
Total	16	Total	16

Number of hours required for graduation, 128.

* Four meetings each semester.

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 field 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.

Curriculum in Milling Industry

FRESHMAN

First Semester		Second Semester	
Prin. of Mill. I, Mill. Ind. 104	2(1-3)	Prin. of Mill. II, Mill. Ind. 106	1(0-3)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
College Algebra, Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chem., Chem. 122	5(3-6)
Freshmen Lects., Gen. Agric. 102	1(2-0)	Engr. Drawing, Mach. Des. 101	2(0-6)
Library Methods, Lib. Ec. 101	1(1-0)	Current History, Hist. 126	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)
Milling Seminar[1]	R	Milling Seminar[1]	R
Agric. Seminar,[2] Gen. Agric. 103	R	Agric. Seminar,[2] Gen. Agric. 103	R
Total	16	Total	16

SOPHOMORE

First Semester		Second Semester	
Milling Practice I, Mill. Ind. 109	3(1-6)	Milling Practice II, Mill. Ind. 111	3(1-6)
Gen. Physics I, Phys. 135	4(3-3)	Gen. Physics II, Phys. 140	4(3-3)
Gen. Botany I, Bot. 101	3(1-4, 2)	Gen. Botany II, Bot. 105	3(1-4, 2)
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)
Milling Seminar[1]	R	Milling Seminar[1]	R
Agric. Seminar,[2] Gen. Agric. 103	R	Agric. Seminar,[2] Gen. Agric. 103	R
Elective[3]	5	Elective[3]	5
Total	16	Total	16

JUNIOR

First Semester		Second Semester	
Milling Entomology, Ent. 116	1(1-0)	Mill. Qual. of Wheat, Mill. Ind. 212	3(3-0)
Farm Crops Lab., Agron. 101	2(0-6)	Grain Grad. and Judg., Agron. 108	2(0-6)
Agric. Economics, Agric. Ec. 101	3(3-0)		
Milling Seminar[1]	R	Milling Seminar[1]	R
Agric. Seminar,[2] Gen. Agric. 103	R	Agric. Seminar,[2] Gen. Agric. 103	R
Elective[3]	10	Elective[3]	11
Total	16	Total	16

1. Two meetings each month.
2. Four meetings each month.

SENIOR

First Semester		Second Semester	
Milling Seminar[1]	R	Milling Seminar[1]	R
Agric. Seminar,[2] Gen. Agric. 103	R	Agric. Seminar,[2] Gen. Agric. 103	R
		Agric. Relationships, Gen. Agric. 105	R
Elective[3]	16	Elective[3]	16
Total	16	Total	16

Number of hours required for graduation: 128—basic courses, 65 hours, elective courses, 63 hours.

Electives for Students in Milling Administration

MAJOR ELECTIVES.

Psychol. A, Educ. 181	3(3-0)	Grain Marketing, Agric. Ec. 203	3(3-0)
Extempore Speech I, Pub. Spk. 106	2(2-0)	Money and Banking, Econ. 116	3(3-0)
Extempore Speech II, Pub. Spk. 108	2(2-0)	Business Law I, Hist. 163	3(3-0)
Com'l. Correspondence, Engl. 122	3(3-0)	Business Law II, Hist. 164	3(3-0)
Writ. & Oral Salesmanship, Engl. 123	3(3-0)	Prin. of Advertising, Ind. Jour. 179	3(3-0)
Accounting I, Econ. 133	3(2-3)	Business Finance, Econ. 217	3(3-0)
Accounting II, Econ. 134	3(2-3)		
Mktg. of Farm Prod., Agric. Ec. 202	3(3-0)	Total	40

Minor Electives: A total of 23 hours of minor electives complete the work of the curriculum.

Electives for Students in Milling Technology

MAJOR ELECTIVES.

Plane Anal. Geometry, Math. 110	4(4-0)	Mill. Tech. II, Mill. Ind. 202	2(0-6)
Calculus I, Math. 205	5(5-0)	Str. of Mat. E, Ap. Mech. 216	3(3-0)
Calculus II, Math. 206	3(3-0)	Flour Mill Const., Mill Ind. 203	3(0-9)
Applied Mechanics, Ap. Mech. 202	4(4-0)	Stm. & Gas Engr. C, Mech. Engr. 120, 125	3(2-3)
Des. Geom., Mach. Des. 106	2(0-6)	Elec. Engr. C, Elect. Engr. 102, 106	3(2-3)
Mechanism, Mach. Des. 121	3(3-0)	Engr. Woodwork, Shop 101	1(0-3)
Mach. Drawing I, Mach. Des. 111	2(0-6)		
Mill Tech. I, Mill. Ind. 201	2(0-6)	Total	40

Minor Electives: A total of 23 hours of minor electives complete the work of the curriculum.

Electives for Students in Milling Chemistry

MAJOR ELECTIVES.

Chemistry II, Chem. 102	5(3-6)	Physical Chemistry I, Chem. 206	5(3-6)
Plane Anal. Geometry, Math. 110	4(4-0)	Chemistry of Proteins, Chem. 236A	3(2-3)
Calculus I, Math. 205	5(5-0)	Experimental Baking, Mill. Ind. 206	3(1-6)
Physiological Chemistry, Chem. 231	5(3-6)	Colloidal Chemistry, Chem. 213	2(2-0)
Quan. Analysis A, Chem. 250	3(1-6)	Adv. Wheat & Flour Test., Mill. Ind. 210	2(0-6)
Quan. Analysis B, Chem. 251	3(1-6)	Microchem. Meth. Anal., Chem. 245	1(0-3)
Prin. Animal Nutr., Chem. 230	3(3-0)		
Wheat & Flr. Test., Mill. Ind. 205	3(0-9)	Total	47

Minor Electives: A total of 16 hours of minor electives complete the work of the curriculum.

1. Two meetings each month.
2. Four meetings each semester.
3. Major electives may be in milling administration, milling technology, or milling chemistry. These groups of electives are listed below. Minor electives are flexible and are intended to give leeway to adapt the curriculum to individual needs. Minor electives must be officially approved before assignment by the dean of the Division of Agriculture and the head of the Department of Milling Industry.

Curriculum in Agriculture with Special Training in Landscape Gardening

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)
Engr. Draw., Mach. Des. 101	2(0-6)	Extempore Speech I, Pub. Spk. 106	2(2-0)
Library Methods, Lib. Ec. 101	1(1-0)	Domestic Arch., Arch. 124	2(2-0)
Freshman Lect., Gen. Agric. 102	1(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) *or*	Phys. Education M, Phys. Ed. 104	R(0-2) *or*
Phys. Education W, Phys. Ed. 151	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total (men)	16	Total (men)	16
Total (women)	15	Total (women)	15

SOPHOMORE

First Semester		Second Semester	
Object Draw. I, Arch. 111	2(0-6)	Object Draw. II, Arch. 114	2(0-6)
Agric. Economics, Agric. Ec. 101	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
Silviculture, Hort. 119	3(2-3)	General Zoölogy, Zoöl. 105	5(3-6)
Soils, Agron. 130	4(3-3)	El. of Horticulture, Hort. 107	3(2-3)
Landscape Gardening I, Hort. 125	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
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)
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total (men)	16	Total (men)	17
Total (women)	15	Total (women)	16

JUNIOR

First Semester		Second Semester	
Plant Materials I, Hort. 224	3(2-3)	General Econ. Entomology, Ent. 203	3(2-3)
Plant Pathology I, Bot. 205	3(1-4, 2)	Agric. Journalism, Ind. Jour. 160	3(2-3)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying III, Civ. Engr. 151, 155	3(2-3)
Theory of Lands. Design, Hort. 243	2(2-0)	Plant Materials II, Hort. 226	3(2-3)
Greenhouse Con. & Man., Hort. 128	3(3-0)	Plant Ecology, Bot. 228	2(2-0)
Taxo. Bot. of Fl. Plants, Bot. 225	3(1-4, 2)	Horticultural Problems, Hort. 244	2(-)
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Landscape Gardening II, Hort. 238	3(1-6)	Agric. Relationships, Gen. Agric. 105	R(1-0)
Plant Physiology I, Bot. 208	3(3-0)	Landscape Gardening III, Hort. 246	3(1-6)
Spraying, Hort. 207	3(2-3)	Water Color I, Arch. 118	2(0-6)
Pencil Rend. & Sketch., Arch. 116	2(0-6)	Civic Art, Hort. 223	3(1-6)
Landscape Constr., Hort. 227	3(2-3)	Horticultural Problems, Hort. 244	4(-)
Electives[1]	2	Electives[1]	4
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total	16	Total	16

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

* 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.

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 agricultural 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

Industrial Writing	2(2-0)	Principles of Advertising	4(4-0)
Editorial Practice	2(2-0)	Copy Reading	2(0-6)
Industrial Feature Writing	2(2-0)	History and Ethics of Journalism	3(3-0)
The Rural Press	2(2-0)	Journalism Surveys	2(0-6)

Agricultural Economics

Professor Grimes
Professor Green
Associate Professor Evans
Associate Professor Howe
Assistant Professor Hodges
Assistant Professor Henney
Assistant Professor Montgomery

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 $3,961.†

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. Montgomery.

Economic principles as they relate to agriculture.

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

The economic factors affecting the organization and operation of the farm

* The number before the parenthesis indicates the number of 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, 1932.

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

business, and their effect on profits. Results from actual farms are studied in the laboratory. Charge, $1.

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. Henney, and Mr. Montgomery.

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. 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. Prerequisite: Ag. Ec. 101. Dr. Grimes, Mr. Green, Mr. Evans, Mr. Howe, Mr. Hodges, Mr. Henney, and Mr. Montgomery.

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.

251. Marketing of Dairy Products. 3(3-0); I. Prerequisite: Ag. Ec. 202. Mr. Montgomery.

Principles underlying the marketing of dairy products, factors affecting prices, and the function of dairy marketing organizations.

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. Evans, Mr. Hodges, Mr. Howe, Mr. Henney, and Mr. Montgomery.

FOR GRADUATE CREDIT

301. Research in Agricultural Economics. 1 to 5 credits; I, II, and SS. Prerequisites: Consult instructors. Dr. Grimes, Mr. Green, Mr. Evans, Mr. Hodges, Mr. Howe, Mr. Henney, and Mr. Montgomery.

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.

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 Parker
Professor Aldous*
Professor Duley
Professor Laude
Associate Professor Zahnley
Assistant Professor Davis
Assistant Professor Clapp
Assistant Professor Timmons
Assistant Professor Myers
Assistant Professor Metzger
Assistant Bentley
Seed Analyst Harling

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 $29,585.

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* Absent on leave, year 1932-'33.

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, field beans and grain sorghums. 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. Laude.
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.

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 and Mr. Bentley.
Distribution, forage value, and grazing management of tame and native pasture plants; principal poisonous plants, their distribution and methods to use in eliminating losses; and the importance of tame and native pastures.

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(1-0); I and II. 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. Prerequisites: Agron. 101 and 130. Dr. Parker, Mr. Aldous, Mr. Laude, and Mr. Zahnley.
Special problems chosen or assigned; written report 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. Laude.
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.

213. Special Crops. 2(2-0); II. Prerequisite: Agron. 101. Offered in 1931-'32, and alternate years thereafter. 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. Research in Crops. 1 to 10 credits; I, II, and SS. Prerequisites depend upon the problem selected. Dr. Parker, Mr. Aldous, Mr. Laude, and Mr. Zahnley.
Special problems chosen or assigned, resulting data being available for master's thesis. Deposit, $5.

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, Mr. Myers, and Dr. Metzger.
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.

234. Development and Classification of Soils. 2(2-0); II. Prerequisite: Agron. 130. Dr. Metzger.
A study of the influence of soil-forming agencies on soil characteristics and their relationship to soil classification.

236. Soil Problems. 1(0-3) to 4(0-12); I, II, and SS. Prerequisites depend on problem assigned. Mr. Throckmorton, Dr. Duley, Mr. Myers, and Dr. Metzger.
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. Mr. Myers.

Chemical laws, plant physiology, and ecological factors applied to soil problems in relation to crop production.

FOR GRADUATE CREDIT

331. Research in Soils. 1 to 10 credits; I, II, and SS. Prerequisites: Agron. 130 and Chem. 250. Mr. Throckmorton, Dr. Duley, Mr. Myers and Dr. Metzger.

Special soil problems, which may extend throughout the year and furnish data for a master's thesis. Charge, $5.

Animal Husbandry

Professor McCampbell
Professor Weber
Professor Bell
Professor Ibsen
Associate Professor Aubel
Assistant Professor Mackintosh
Assistant Professor Cox
Instructor Connell
Assistant Bratzler

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 $22,170. This includes live stock having a value of $15,250.

COURSES IN ANIMAL HUSBANDRY

FOR UNDERGRADUATE CREDIT

125. Elements of Animal Husbandry. 3(2-4); I and II. Mr. Bell, Mr. Aubel, Mr. Cox, Mr. Connell, and Mr. Taylor.

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. Prerequisite: An. Husb. 143. 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. Cox.

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.

156. Beef-cattle Production. 2(2-0); II. Prerequisite: An. Husb. 152 or 172. Mr. Weber.

Economical methods of producing beef cattle.

159. Swine Production. 2(2-0); II. Prerequisite: An. Husb. 152 or 172. Mr. Aubel.

Economical methods of producing swine.

162. Sheep Production. 2(2-0); I. Prerequisite: An. Husb. 152 or 172. Mr. Cox.

Economical methods of producing sheep.

165. Horse Production. 2(2-0); I. Prerequisite: An. Husb. 152 or 172. Mr. Mackintosh.

Economical methods of producing horses.

167. Meats. 2(1-3); II. Prerequisites: An. Husb. 125 and 152 or 172. Mr. Mackintosh.

Killing and dressing, cutting, curing, judging, and selecting meats. Charge $1.

171. Live-stock Production. 3(3-0); I. Prerequisite: An. Husb. 152 or 172. Open only to juniors and seniors not majoring in animal husbandry. Mr. Cox.

Practical insight into the production of beef cattle, horses, swine, and sheep.

172. Feeding Live Stock. 3(3-0); II and SS. Prerequisite: Chem. 122 or its equivalent. Open only to students not enrolled in the Curriculum in Agriculture. Mr. Bell.

A practical study of the processes of digestion and assimilation, the feed requirements of different animals, the relative feeding value of different feeds, and methods of calculating rations.

176. Meats HE. 1(0-3); I and II. For juniors and seniors in home economics. Prerequisite: Food and Nutr. 106. Mr. Mackintosh.

The selection, cutting and curing of meats; particular attention to grading of carcasses and uses of the various cuts of meats. At least one field trip required. Charge, $1.

184. Breed Studies. 2(2-0); I. Prerequisite: An. Husb. 125. 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.

186. Animal Husbandry Practicums. 2(0-6); II. Mr. Weber, Mr. Aubel, Mr. Mackintosh, and Mr. Cox.

A course designed to give students information relative to, and experience in, the manual phases of live-stock management.

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.

224. ANIMAL BREEDING. 2(2-0); 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(1-0); I and II. Prerequisites: Consult instructors. Dr. Nabours, Dr. Ibsen, Dr. Parker, Dr. Warren, and Dr. Brunson.
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. 185. 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. Weber.
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(1-0); II. Open only to seniors and graduate students majoring in animal husbandry. Prerequisite: An. Husb. 152. Mr. Weber.

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. Prerequisites: An. Husb. 185 and 223; senior or graduate standing. Dr. McCampbell.
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. LIVE-STOCK AND MEAT INDUSTRY. 3(3-0); II. Prerequisites: An. Husb. 125 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.

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, coöperating with Mr. Zahnley, Mr. Scott, Mr. Cave, and Mr. Davidson.

A seminar course in problems involved in training agriculture 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 and other members of the department.

Special problems in beef-cattle production, swine production, sheep production, horse production, pure-bred live-stock production, and genetics.

305. Animal Nutrition Seminar. 1(1-0); I and II. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Lienhardt, 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. Cox.

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
Associate Professor Riddell
Assistant Professor Caulfield
Instructor Wolberg

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 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 national contests the Kansas team has averaged better than third place.

This department owns equipment valued at $36,187. This figure includes live stock to the value of $16,515.

COURSES IN DAIRY HUSBANDRY

FOR UNDERGRADUATE CREDIT

101. Elements of Dairying. 3(2-3); I and II. Mr. Cave, Mr. Martin, Mr. Riddell, Mr. Caulfield, and Mr. Wolberg.

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; the use of the lactometer; and butter making on the farm.

Laboratory.—A brief study of the methods used in the selection of dairy cattle, the production and manufacture of dairy products, and the common tests used in connection with dairy products. Charge, $2.50.

104. Dairy Cattle Judging. 1(0-3); I and II. Mr. Wolberg and Mr. Riddell.

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.

119. Dairy Inspection II. 2(1-3); II. Mr. Caulfield, and Mr. Riddell.

The composition and properties of milk; principles and practices of clean milk production on the farm; study of suitable state and city ordinances governing the handling and sale of milk and dairy products.

Laboratory.—The testing of milk and dairy products; quality tests; preparation and testing of chemical disinfectants; the inspection and scoring of dairy farms and milk plants. Charge, $3.

120. Advanced Dairy Cattle 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. Offered in 1933-'34, and alternate years thereafter. 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. Offered in 1932-'33, and alternate years thereafter. 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. Offered in 1933-'34, and alternate years thereafter. 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.

140. Dairy Products Judging. 1(0-3); I. Prerequisite: Dairy Husb. 101. Mr. Martin.
Inspection of dairy products for quality; score card grading of ice cream, butter, cheese, and market milk; practice judging in preparing for the dairy products judging team. Charge, $2.

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. Offered in 1933-'34, and alternate years thereafter. Mr. Wolberg.
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 and Mr. Caulfield.
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. Offered in 1932-'33, and alternate years thereafter. Mr. Martin.
An advanced course in creamery management for students specializing in dairy manufacturing.

FOR GRADUATE CREDIT

301. Research in Dairy Husbandry. 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(1-0); I and II. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Lienhardt, 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
Assistant Dean Durham

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. Charge, 75 cents.

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 Barnett
Professor Quinlan
Associate Professor Pickett
Associate Professor Balch
Assistant Professor Filinger
Assistant Professor Reitz
Graduate Assistant Bradley

Instruction offered in the Department of Horticulture covers pomology, vegetable gardening, greenhouse practice, forestry, and landscape gardening.

The horticultural farm consists of eighty acres of land devoted exclusively to work in horticulture and forestry. Full equipment of garden tools, spraying machinery and accessories, pruning tools, and special apparatus for floriculture is available at all times for the use of the 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 $7,168.

COURSES IN HORTICULTURE

FOR UNDERGRADUATE CREDIT

105. SYSTEMATIC POMOLOGY. 4(2-6); I. Prerequisite: Hort. 107. Dr. Filinger.

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, Dr. Filinger, and Mr. Bradley.

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. Dr. Filinger.

Growing, harvesting, and marketing small fruits; management of home and commercial plantations.

114. FARM FORESTRY. 3(2-3); I. Prerequisite: Bot. 105. Mr. Pickett.

A study of the growing of forest trees on the farm; methods of planting, care, and harvesting; utilization of woodlot products; value of windbreaks and shelterbelts, their establishment and management. Charge, $1.

119. SILVICULTURE. 3(2-3); I. Prerequisite: Bot. 105. Mr. Pickett.

A study of the influence of site factors on forest trees; theory and practice of germination, seeding and planting of forest trees in the nursery and in the field. Charge, $1.

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.

Principles of greenhouse construction and methods of greenhouse management; conservatories and commercial greenhouses.

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 Dr. Filinger.

Fruit geography, orchard locations, financing the orchard, orchard equipment, orchard economies, 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. Offered in 1931-'32, and alternate years thereafter. 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. Pickett.
A course on the fundamentals of orcharding.

Laboratory.—Advanced apple judging; production and marketing studies. Charge, $1.

207. Spraying. 3(2-3); II. Prerequisite: Chem. 110. Mr. Pickett and Dr. Filinger.
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.

208. Literature of Horticulture. 2(2-0); II. Prerequisite: Hort. 105. Offered in 1933-'34, and alternate years thereafter. Dr. Filinger.
Books, journals, and serials relating to horticulture are reviewed and classified; biographies of leading horticulturists are studied, and bibliographies are prepared.

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.

223. Civic Art. 3(1-6); II. Prerequisite: Hort. 243. Offered in 1931-'32, and alternate years thereafter. 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.

226. 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. Offered in 1932-'33, and alternate years thereafter. 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. Charge, $1.

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 and Mr. Howard.

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.

243. Theory of Landscape Design. 2(2-0); I. Prerequisite: Hort. 125. Offered in 1933-'34, and alternate years thereafter. Mr. Quinlan.

The economic and æsthetic theory of design; taste, character, historic styles, composition; natural elements in design; and planting design.

244. Horticultural Problems. 1 to 6 credits; I, II, and SS. Prerequisites: Consult instructor. Mr. Barnett, Mr. Quinlan, Mr. Pickett, Mr. Balch, and Dr. Filinger.

Investigations in pomology, olericulture, floriculture or landscape gardening are undertaken by advanced or graduate students. Conferences and reports required.

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. Research in Horticulture. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructor. Mr. Barnett, Mr. Balch, Mr. Pickett, Mr. Quinlan, and Dr. Filinger.

Any feasible problem relating to the student's major line of graduate study—pomology, olericulture, floriculture, or landscape gardening. Data collected may form basis for a master's thesis.

Milling Industry

Professor Swanson
Associate Professor Working
Instructor Pence
Miller Oakes
Fellow Anderson

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 $38,181.

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. Prerequisites: Mill. Ind. 109. Mr. Pence and Mr. Oakes.
Relation of roll and bolting surfaces, flour blending, redressing, principles of bleaching, belt management, lubrications, spout construction, methods of checking mill operations. 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.

203. Flour Mill Construction. 3(0-9); I. Prerequisites: Mach. Des. 111 and 121. To be assigned concurrently or after Strength of Materials (Ap. Mech. 216.) Mr. Pence.
A study of the design and construction of modern flour mills, the making of flow sheets, and the selection and placing of machinery.

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. Deposits, $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, $5.

210. Advanced Wheat and Flour Testing. 1 to 5 credits; I and II. Prerequisites: Mill. Ind. 205 and other courses; consult instructor. 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. RESEARCH IN MILLING INDUSTRY. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructors. 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 thesis presented in partial fulfillment of the requirements for the degree of master of science.

Poultry Husbandry

Professor PAYNE
Professor WARREN
Associate Professor SCOTT
Farm Superintendent FEIGHT

The poultry plant, occuping 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 $12,648.

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. Offered in 1931-'32, and alternate years thereafter. 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, $2.

116. MARKET POULTRY AND EGGS. 4(2-6); I. Prerequisite: Poult. Husb. 101. Offered in 1931-'32, and alternate years thereafter. 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, $2.

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. Bennion.

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, $2.

125. Advanced Incubation. 1(0-3) (laboratory 3 times a day, 7 days a week, for not less than 3 weeks, at hours outside the regular schedule); II. Prerequisites: Poult. Husb. 101 and 120. Offered 1931-'32, and alternate years thereafter. Mr. Scott.

Study of the baby chick industry; operation of a Mammoth incubator; packing and shipping of baby chicks. Charge $2.

FOR GRADUATE AND UNDERGRADUATE CREDIT

204. Poultry Genetics. 3(3-0); II. Prerequisite: An. Husb. 221. Dr. Warren.

A study of the literature on inheritance in poultry with special reference to its bearing on practical breeding problems.

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(1-0); I and II. Prerequisites: Consult instructors. Dr. Nabours, Dr. Ibsen, Dr. Warren, Dr. Parker, and Dr. Brunson.

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. Research in Poultry Husbandry. 1 to 8 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, 109, 116, 120, or their equivalent, and such other courses as required. Consult instructors. Mr. Payne and Dr. Warren.

A definite line of investigation in poultry genetics, management, or incubation, which may form the basis of a master's thesis.

305. Animal Nutrition Seminar. 1(1-0); I and II. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Lienhardt, 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 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 in regard to 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. The Summer School bulletin may be secured by addressing a request to the Vice President, Kansas State College, Manhattan, Kan.

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, 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. 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 curriculum 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.

STATE TEACHER'S CERTIFICATE

By substituting nine specified credit hours of work in the Department of Education for elective or required courses in a curriculum in engineering and taking in addition six specified and three elective hours in the Department of Education, graduates in engineering are qualified for the three-year Kansas State teacher's certificate, renewable for life and valid in any high school or other public school in Kansas. A student desiring to qualify for teaching should begin his professional preparation by taking psychology in his junior year or earlier.

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 positions as advisers, consulting engineers, or architects in connection with agricultural development.

The work for 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 student with the modern methods of scientific agriculture and to enable them to apply engineering principles of 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 empirically 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, 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, research, application, commercial, or operation in either the electric power or the electric communication industry.

In order to qualify for the various divisions 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, elective work, giving the student ample opportunity for the selection of extra work along cultural, economic, or technical lines.

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 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 give 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 aëronautical 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)	Elements An. Husb., An. Husb. 125	3(2-4)
Extempore Speech I, Pub. Spk. 106	2(2-0)	Forging, 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)
Metallurgy, Shop 165	2(2-0)	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. Hist. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	17	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)	American Industrial Hist., Hist. 105	3(3-0)
Soils, Agronomy 150	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 I, Econ. 101	3(3-0)		
Farm Structures, Ag. Engr. 105	4(2-6)	Farm Organization, Ag. Econ. 106	3(2-3)
Highway Engineering I,‖ Civ. Engr. 231	2(2-0)	Land Reclamation, Ag. Engr. 150	3(2-3)
Hydraulics, Ap. Mech. 230, 235	4(3-3)	Elec. Engr. C, Elect. Engr. 102, 106	3(2-2, 1)
Highway Materials Lab.‖ Ap. Mech. 250	1(0-3)	Heating & Ventilation A,‖ Mech. Engr. 135	3(3-0)
Machine Tool Work I, Shop 170	2(0-6)	Modern Farm and Home Equipment, Ag. Engr. 115	3(2-3)
Law for Engineers,‖ Hist. 167	2(2-0)	Elective‡‖	2(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	17

Number of hours required for graduation, 139.

* The number before the parenthesis indicates the number of 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.

† 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

Curriculum in Architectural Engineering

FRESHMAN

First Semester		Second Semester	
Chemistry E-1, Chem. 107	4(3-3)	Chemistry E-II, Chem. 108	4(3-3)
College Algebra,* Math. 105	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)
Desc. 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)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Illumination A, Elect. Engr. 116	2(2-0)
Surveying I, Civ. Engr. 102	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	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)
Pencil 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, Mechanical Engr. 135	3(3-0)
Economics I, 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 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

Curriculum in Architecture

FRESHMAN

First Semester		Second Semester	
College Algebra,* Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
Hist. of Arch. I, Arch. 154A	2(2-0)	Hist. of Arch. II, Arch. 157A	2(2-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Desc. Geom. A, Mach. Des. 107	3(0-9)	Sh. & Shad. & Per., Mach. Des. 108	3(0-9)
Object Drawing I, Arch. 111	2(0-6)	Object Drawing II, Arch. 114	2(0-6)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Arch. II, Arch. 107A	3(0-9)
Artillery I, Mil. Tr. 113A (men)	1(0-3)	Artillery II, Mil. Tr. 114A (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)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Total, men	17	Total, men	17
Total, women	16	Total, women	16

SOPHOMORE

First Semester		Second Semester	
Gen. Physics I, Phys. 135	4(3-3)	General Physics II, Phys. 140	4(3-3)
Hist. of Arch. III, Arch. 158A	2(2-0)	Hist. of Arch. IV, Arch. 160A	2(2-0)
Bld. Mat. & Con., Arch. 187A	3(3-0)	Work. Draw. & Spec., Arch. 191	3(0-9)
Pencil Rend. & Sketch., Arch. 116	2(0-6)	Water Color I, Arch. 118	2(0-6)
Design I, Arch. 142	3(0-9)	Design II, Arch. 144	3(0-9)
French I, Mod. Lang. 151	3(3-0)	French II, Mod. Lang. 152	3(3-0)
Artillery III, Mil. Tr. 115A (men)	1(0-3)	Artillery IV, Mil. Tr. 116A (men)	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
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(3-0)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total, men	18	Total, men	18
Total, women	17	Total, women	17

JUNIOR

First Semester		Second Semester	
Ap. Mech. A, Ap. Mech. 102	3(3-0)	Str. of Mat. A, Ap. Mech. 116, 121	4(3-3)
Still-life Drawing, Arch. 117	2(0-6)	Life Drawing I, Arch. 121	2(0-6)
Design III, Arch. 145	5(0-15)	Design IV, Arch. 147	5(0-15)
Rural Architecture, Arch. 153	2(0-6)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Economics I, Econ. 101	3(3-0)	Law for Engineers, Hist. 167	2(2-0)
Hist. of Paint. and Sculp., Arch. 179	3(3-0)	Elective†‖	2(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	17

SENIOR

First Semester		Second Semester	
Interior Design, Arch. 120	2(0-6)	Life Drawing II, Arch. 123	2(0-6)
Design V, Arch. 253	8(0-24)	Design VI, Arch. 256	8(0-24)
Theory of Struc. I, Arch. 192	4(2-6)	Theory of Struc. II, Arch. 194A	5(3-6)
Elective†‖	3(-)	Elective†‖	2(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Arch. 199	R
Total	17	Total	17

Number of 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

Curriculum in Chemical Engineering

FRESHMAN

First Semester		Second Semester	
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)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Engr. Drawing, Mach. Des. 101	2(0-6)	Des. Geometry, Mach. Des. 106	2(0-6)
German I, Mod. Lang. 101	3(3-0)	German II, Mod. Lang. 102	3(3-0)
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)
Adv. Inorganic Chem., Chem. 207	3(3-0)	Quantitative Analysis, Chem. 241	5(1-12)
Mechanism, Mach. Des. 121	3(3-0)	Metallurgy, Shops 165	2(2-0)
Mach. Drawing I, Mach. Des. 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	
Calculus II, Math. 206	3(3-0)	Str. of Mat. E, Ap. Mech. 216, 220	4(3-3)
Ap. Mech., Ap. Mech. 202	4(4-0)	Steam and Gas Engr. II, Mech. Engr. 204, 205	4(3-3)
Steam and Gas Engr. I, Mech. Engr. 201, 202	5(4-3)	Organic Chem. II, Chem. 219	4(2-6)
Organic Chemistry I, Chem. 218	4(2-6)	Elec. Engr. C, Elec. Engr. 102, 106	3(2-2, 1)
Fire Assaying,‖ Chem. 242	2(0-6)	Economics I, Econ. 101	3(3-0)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	18

SENIOR

First Semester		Second Semester	
Industrial Chem. I, Chem. 203	5(3-6)	Industrial Chem. II, Chem. 204	5(3-6)
El. of Chemical Engr., Chem. 280	3(3-0)	Chemical Engr. Prin., Chem. 281	2(2-0)
Phys. Chem. I, Chem. 206	5(3-6)	Chemistry Problems,‖ Chem. 270	3(0-9)
Cryst. and Min., Geol. 209	4(2-6)	Physical Chemistry II,‖ Chem. 272	3(3-0)
		Electives†‖	4(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Chem. 130	R
Total	17	Total	17

Number of 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

Curriculum in Civil 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)	Des. Geometry, Mach. Des. 106	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying II, Civ. Engr. 111	2(0-6)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Metallurgy, Shop 165	2(2-0)
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. 102	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)
Amer. Industrial Hist., Hist. 105	3(3-0)	Law for Engineers, Hist. 167	2(2-0)
Surveying III, Civ. Engr. 151, 155	3(2-3)	Surveying IV, Civ. Engr. 156, 157	3(2-3)
Mach. Drawing I, Mach. Des. 111	2(0-6)	C. E. Drawing I, Civ. Engr. 125	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	
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)	Hydraulics, Ap. Mech. 230, 235	4(3-3)
Highway Engr. I, Civ. Engr. 231	2(2-0)	Ry. Engr. I, Civ. Engr. 145	2(2-0)
Engr. Geology, Geol. 102	4(3-3)	Drain. & Irrig. I, Civ. Engr. 161	2(2-0)
Masonry & Found., Civ. Engr. 120	2(2-0)	Steam & Gas Engr. C, Mech. Engr. 120, 125,	3(2-3)
Water & Sewage Bact., Bact. 125	2(0-6)		
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Str. in Fr. Struc., Civ. Engr. 201	4(4-0)	Des. of Fr. Struc., Civ. Engr. 246	3(0-9)
C. E. Drawing II, Civ. Engr. 205	2(0-6)	Elec. Engr. C, Elec. Engr. 102, 106	3(2-2, 1)
Water Supply, Civ. Engr. 220	2(2-0)	Con. Design, Civ. Engr. 250, 255	3(2-3)
Sewerage, Civ. Engr. 225	2(2-0)		
Highway Mat. Lab., Ap. Mech. 250	1(0-3)		
Economics I, Econ. 101	3(3-0)	Electives†‖	8(-)
Astron. & Geod.,‖ Civ. Engr. 211, 216	4(2-6)	Seminar, Gen. Engr. 105	R
Seminar, Gen. Engr. 105	R	Inspection Trip, Civ. Engr. 180	R
Total	18	Total	17

Number of 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

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)
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. Drawing, Mach. Des. 101	2(0-6)	Desc. Geometry, Mach. Des. 106	2(0-6)
Foundry Production, Shop 161	1(0-3) *and*	Metallurgy, Shop 165	2(2-0)
Forging, Shop 150	1(0-3) *or*	Foundry Production, Shop 161	1(0-3) *and*
Elec. Mach. & Con., Elec. Engr. 112	2(0-6)	Forging, Shop 150	1(0-3) *or*
Extem. Speech I, Pub. Spk. 106	2(2-0)	Elec. Mach. & Con., Elec. Engr. 112	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. I, Mach. Des. 111	2(0-6)	Mach. Draw. E-II, Mach. Des. 117	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Prin. Elec. Engr., Elec. Engr. 120	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	17	Total	18

JUNIOR

First Semester		Second Semester	
Direct-cur. Mach. I, Elec. Engr. 203	3(3-0)	Dir.-cur. Mach. II, Elec. Engr. 206, 208	4(2-4, 2)
Elec. Meas., Elec. Engr. 227, 229	4(2-4, 2)	Alternating-current Machines I, Elec. Engr. 209	4(4-0)
Applied Mech., Ap. Mech. 202	4(4-0)	Elec. Mach. Des., Elec. Engr. 270	1(0-3)
Calculus IIA, Math. 206A	4(4-0)	Str. of Mat. E, Ap. Mech. 216, 220	4(3-3)
Machine Tool Work I, Shop 170	2(0-6)	Economics I, Econ. 101	3(3-0)
		Elective†‖	2(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	17	Total	18

SENIOR

First Semester		Second Semester	
Alternating-current Machines II, Elec. Engr. 214, 215	5(3-4, 2)	Alternating-current Machines III, Elec. Engr. 224, 225	5(3-4, 2)
Electrical Communication I, Elec. Engr. 217, 218	3(2-2, 1) *or*		
Pub. Util. Mangt., Elec. Engr. 290	3(3-0)		
Steam & Gas Engr. I, Mech. Engr. 201, 202,	5(4-3)	Steam & Gas Engr. II, Mech. Engr. 204, 205,	4(3-3)
Hydraulics Rec., Ap. Mech. 230	3(3-0)	Bus. Engl. & Sales.,‖ Engl. 125	3(3-0)
Corp. Organiz. & Fin.,‖ Econ. 219	2(2-0)	Elective†‖	5(5-0)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Inspection trip	R		
Total	18	Total	17

Number of hours required for graduation, 139.

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* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Extempore Speech until the second semester, junior year.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

‖ Omitted by students taking Advanced Course, Coast Artillery.

Curriculum in Landscape Architecture

FRESHMAN

First Semester		Second Semester	
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)
General Botany I, Bot. 101	3(1-4, 2)	Gen. Botany II, Bot. 105	3(1-4, 2)
Des. Geom. A, Mach. Des. 107	3(0-9)	Sh. & Shad. & Per., Mach. Des. 108	3(0-9)
Object Drawing I, Arch. 111	2(0-6)	Object Drawing II, Arch. 114	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying II, Civ. Engr. 111	2(0-6)
Artillery I, Mil. Tr. 113A (men)	1(0-3)	Artillery II, Mil. Tr. 114 A (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)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Total, men	17	Total, men	17
Total, women	16	Total, women	16

SOPHOMORE

First Semester		Second Semester	
Hist. of Arch. I, Arch. 154A	2(2-0)	Hist. of Arch. II, Arch. 157A	2(2-0)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Arch. II, Arch. 107A	3(0-9)
Surveying III, Civ. Engr. 151, 155	3(2-3)	Water Color I, Arch. 118	2(0-6)
General Chem., Chem. 110	5(3-6)	Plant Ecology, Bot. 228	2(2-0)
Landsc. Gardening I, Hort. 125	3(3-0)	El. of Hort., Hort. 107	3(2-3)
		General Geology, Geol. 103	3(3-0)
Artillery III, Mil. Tr. 115A (men)	1(0-3)	Artillery IV, Mil. Tr. 116A (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)
		Elective†	1(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total, men	17	Total, men	17
Total, women	16	Total, women	16

JUNIOR

First Semester		Second Semester	
Hist. of Arch. III, Arch. 158A	2(2-0)	Hist. of Arch. IV, Arch. 160A	2(2-0)
Pencil Rend. and Sketch., Arch. 116	2(0-6)	Extem. Speech 1, Pub. Spk. 106	2(2-0)
Design I, Arch. 142	3(0-9)	Design II, Arch. 144	3(0-9)
Bldg. Mat. & Con., Arch. 187A	3(3-0)	Plant Materials II, Hort. 226	3(2-3)
Theory of Land. Des., Hort. 243	2(2-0)	Work. Draw. & Spec., Arch. 191	3(0-9)
Plant Materials I, Hort. 224	3(2-3)	Soils, Agron. 130	4(3-3)
Plant Physiology I, Bot. 208	3(3-0)		
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	17

SENIOR

First Semester		Second Semester	
Landscape Construc., Hort. 227	3(2-3)	Civic Art, Hort. 223	3(1-6)
Greenhouse Const. & Mngt., Hort. 128	3(3-0)	Landsc. Gardening III, Hort. 246	3(1-6)
Highway Engr. I, Civ. Engr. 231	2(2-0)	City Planning, Arch. 249	3(0-9)
Highway Materials Lab., Ap. Mech. 250	1(0-3)	Economics I, Econ. 101	3(3-0)
Silviculture, Hort. 119	3(2-3)	Inspection Trip, Arch. 199	R
Landsc. Gardening II, Hort. 238	3(1-6)	Seminar, Gen. Engr. 105	R
Plant Pathology I, Bot. 205	3(1-4, 2)	Elective†‖	6(-)
Seminar, Gen. Engr. 105	R		
Total	18	Total	18

Number of 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

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. Drawing, Mach. Des. 101	2(0-6)	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)
{Engr. Woodwork, Shop 101	1(0-3)}	Elements of Steam and Gas Power, Mech. Engr. 130	2(0-6) *or*
{Forging, Shop 150	1(0-3)} *or*	{Engr. Woodwork, Shop 101	1(0-3)}
Elements of Steam and Gas Power, Mech. Engr. 130	2(0-6)	{Forging, 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 Analyt. Geom., Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Mechanism, Mach. Des. 121	3(3-0)	American Indus. Hist., Hist. 105	3(3-0)
Mach. Draw. I, Mach. Des. 111	2(0-6)	Mach. Draw. II, Mach. Des. 116	3(0-9)
Metallurgy, Shop 165	2(2-0)		
Metallography I, Shop 167	1(0-3)	Foundry Production, Shop 161	1(0-3)
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	
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. 201, 202	5(4-3)	Steam and Gas Engr. II, Mech. 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 I, 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, Elec. Engr. 230, 231	4(3-2, 1)	Electrical Engr. M-II, Elec. Engr. 242, 243	4(3-2, 1)
Power Plant Engr., Mech. Engr. 206	3(0-9)	Heat. & Vent., Mech. Engr. 210, 215	3(2-3)
Mach. Design I, Mach. Des. 204, 205	5(3-6)	Machine Design II, Mach. Des. 210	2(0-6)
Hydraulics, Ap. Mech. 230, 235	4(3-3)	Commercial Engr.,‖ Elec. Engr. 250	2(2-0)
Factory Option:		*Factory Option:*‖	
Factory Engr., Shop 245	2(2-0)	Factory Design, Shop 255	2(0-6)
		Machine Tool Work III, Shop 193	1(0-3)
		Elective†	3(-)
Power Option:		*Power Option* ‖	
Ad. Thermody., Mech. Engr. 230	2(2-0)	Steam Turb., Mech. Engr. 235	2(2-0)
		Elective†	4(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Mech. Engr. 180	R
Total	18	Total	17

Number of 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.

‖ Omitted by students taking Advanced Course, Coast Artillery.

Agricultural Engineering

Professor Fenton
Associate Professor Zink
Assistant Professor Logan
Instructor Barger

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 engines is arranged to cover thoroughly the construction, operation, and repair of the numerous modern tractors which are part of the regular equipment; draft 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 $11,454.

COURSES IN AGRICULTURAL ENGINEERING

FOR UNDERGRADUATE CREDIT

101. Farm Buildings 3(2-3)*; II. Mr. Fenton and Mr. Barger.

Requirements, details of arrangements, and materials of construction for barns and storage, and work buildings for the farm; preparation of plans and 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. Farm Machinery. 3(2-3); I and II. Mr. Logan and assistants.

Construction, operation, adjustment, power, requirements, tests, and use of tillage, seeding, harvesting, feed processing and miscellaneous machines both field and belt operated. (For agricultural students.) Charge, $2.

111. Field and Power Machinery. 4(2-6); I. Prerequisites: Mechanism (Mach. Des. 121.) Engineering Physics II (Phys. 150.) Mr. Logan and assistants.

Development, design, and utilization of tillage, seeding, harvesting and crop processing machinery for all forms of farm power. Charge, $2.

115. Modern Farm and Home Equipment. 3(3-2); II. Prerequisite: Hydraulics (Ap. Mech. 230, 235.) Mr. Logan.

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* 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.

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); I. Mr. Barger.
Introductory principles of mechanics and physics as applied to the construction and operation of farm machinery. (For freshman agricultural engineers.) Charge, $1.

123, 124.† Farm Equipment. 3(2-3); II and SS. Mr. Barger.
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. Zink and Mr. Barger.
Theory, design, operation, adjustment and application of the internal combustion engine in agriculture, special emphasis on tractors; study of manual, animal, wind and electric power. Charge, $3.

130. Gas Engines and Tractors. 3(2-3); I, II, and SS. Mr. Barger and assistants.
Principles and application of the internal combustion engine; engine mechanisms, carburetion, valve timing, ignition, cooling, lubrication and fuels. Selection and use of tractors in agriculture. (For agricultural students.) Charge, $2.

140, 145. Land Improvement. 3(2-3); I and II. Prerequisite: Soils (Agron. 133.) Mr. Fenton.
Principles and practices of land improvement by terracing and other methods of erosion control; drainage, irrigation, land clearing; use of explosives in agriculture; practical farm surveying. (For agricultural students.) Charge, $1.

150. Land Reclamation. 3(2-3); II. Prerequisites: Hydraulics (App. 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

201. Power and Machinery in Agriculture. 2(2-0); I, II and SS. Prerequisite: Junior or senior classification. Mr. Fenton and Mr. Zink.
History and development of machinery in agriculture. The application, selection, management, and cost of machines; future development. A survey course dealing with the mechanization of agriculture. Open to all students who have not taken Ag. Engr. 108 or Ag. Engr. 130.

205. Agricultural Engineering Problems. 2(0-6) to 5(0-15). Prerequisite: Permission of instructors. Mr. Fenton and Mr. Zink.
Problems in the design, construction or application of machinery or power in agriculture, structures, modern conveniences, rural electrification.

215. Tractor Research. 2(0-6) to 5(0-15); I. Prerequisite: Farm Motors (Ag. Engr. 125, 127) or its equivalent. Mr. Zink and Mr. Barger.
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 (Phys. 150) or equivalent. Mr. Fenton.
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.

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† 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
Associate Professor Cheek*
Instructor Koenitzer
Instructor Pickett
Instructor Gibson
Instructor Taylor
Instructor Adair†
Assistant Railsback

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 Venturi meters. 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 $35,204.

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 stress 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 Materials 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 I. Mr. Robert, Mr. Dawley, and Mr. Pickett.

Composition, resolution, and conditions of equilibrium of concurrent and

* Absent on leave, year 1932-'33.

† Temporary appointment, year 1932-'33.

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 meter. Charge, $1.

250. Highway Materials Laboratory. 1(0-3); I. Prerequisite: Strength of Materials Laboratory. Mr. Scholer, Mr. Koenitzer, and Mr. Gibson.

A comprehensive course in the examination and testing of road materials. Charge, $1.50.

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 Laboratory. Mr. Scholer.

An advanced course in the properties and testing of the various materials used in road construction.

276. Design of Concrete Mixtures. 3(1-6); I and II. Prerequisite: Strength of Materials Laboratory. Mr. Scholer and Mr. Dawley.

Practical applications of the fundamental principles of concrete making; using various kinds of cement and placing special emphasis on the proper de-

signing, mixing and placing of concrete mixtures to meet certain strength and durability requirements. Charge, $2.50.

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 and Mr. Robert.

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, II, and SS. Prerequisite: consult instructors. 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*
Associate Professor Helm
Assistant Professor Wichers
Assistant Professor Smith
Instructor Ware*
Instructor Lockard†

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.

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* Absent on leave, year 1932-'33.

† Temporary appointment, year 1932-'33.

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 $20,056.

COURSES IN ARCHITECTURE

FOR UNDERGRADUATE CREDIT

106A. Elements of Architecture I. 3(0-9); I and II. 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); I and II. Prerequisite: Elements of Architecture I. 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); I, 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, II, 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); I, 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 and SS. Prerequisite: Arch. 118. Mr. Helm. Drawing from the living model in charcoal. Deposit, $5.

123. Life Drawing II. 2(0-6); II and SS. Prerequisite: Arch. 121. Mr. Helm. A continuation of Life Drawing I. Deposit, $5.

124. Domestic Architecture. 2(2-0); 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.

133. Clay Modeling. 2(0-6); I and SS. 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 and Mr. Ware.
A study of the technique and drawing of fragments, casts, still-life, etc., in this medium, also outdoor sketching.

135. Pen and Ink Drawing II. 2(0-6); I, II, and SS. Prerequisite: Arch. 134. Mr. Helm and Mr. Ware.
A continuation of Pen and Ink Drawing I (Arch. 134).

137. Block Prints. 2(0-6); I and SS. Prerequisite: Arch 114 or approval of instructor. Mr. Helm.
A study of the carving of original compositions in linoleum and wood blocks. Charge, $1.

142, 144. Design I and II. 3(0-9) each; I and II each. Prerequisites: For I, Arch. 107A and 114; for II, Arch. 142. Mr. Smith, and Mr. Ware.
An analysis of achitectural composition and rendering. Charge, $1 for each course.

145, 147. Design III and IV. 5(0-15) each; I and II each. Prerequisites: For III, Arch. 117 and 144; for IV, Arch. 145. Mr. Weigel, Mr. Smith, and Mr. Ware.
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. Weigel and 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, II, and SS, each, Mr. Helm.
The principles of advertising arrangements; making various types of advertizing 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.

179. History of Painting and Sculpture. 3(3-0); I. Mr. Smith.
A study of development of painting, sculpture, furniture and the minor arts to the fifteenth 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 visit 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. 192. Mr. Cheek.

A continuation of Theory of Structures I applied to steel and masonary structures.

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, II and SS, each. 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, II, and SS, each. Prerequisites: Arch. 117 and Arch. 134. Mr. Helm.

Instruction is given in the technical principles of etching on copper and zinc plate. Charge, $1 for each course.

221. Problems in Architectural Development. 1 to 10 credits; I, II, and SS. Mr. Weigel.

Under direct supervision of some member of the departmental staff, study of problems in architectural development.

230, 235. Oil Painting I and II. 2(0-6) each; I and II each 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 outdoor sketching.

240, 241. Landscape Painting I and II. 1(0-3) each; SS only. Prerequisite: Arch. 118, or Arch. 230, or equivalent. Mr. Helm.

Outdoor sketching and painting in oil or water color.

244. General History of Architecture. 3(3-0); II. Mr. Smith.

The historic architectural styles of the world studied and analyzed; written papers, with sketches, required of each student. (Elective for nonarchitectural students.)

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 each. Prerequisites: For V, Arch. 118 and 147; for VI, Arch. 253. Mr. Weigel.

Continuation of Design IV; special training in interior design and decoration. Charge, $1 for each course.

296, 298. 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.

FOR GRADUATE CREDIT

301, 304. Advanced Design I and II. 3(0-9) to 10 (0-30) each; I, II, and SS, each. 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, II, and SS.

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

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 baseline 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 $22,361.

COURSES IN CIVIL ENGINEERING

FOR UNDERGRADUATE CREDIT

102. Surveying I. 2(0-6); I, II, and SS. Prerequisite or parallel: Plane Trigonometry (Math. 101). Mr. White, Mr. Crawford, and Mr. Morse.

The use and care of engineer's surveying instruments, and plane surveying practice. Charge, $1.

111. Surveying II. 2(0-6); I, II, and SS. Prerequisite: Surveying I. Mr. White and Mr. Morse.

Land surveying, the U. S. system of public land surveys, route surveying, the legal survey, the stadia survey, and calculations of areas and boundaries. Charge, $1.

120. Masonry and Foundations. 2(2-0); I. 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. Prerequisite: Surveying IV (Civ. Engr. 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 and II. Prerequisite; Surveying II. Mr. White and Mr. Crawford.

Topographic, municipal and underground surveying; the celestial sphere; elements of horizontal and vertical curves and earthwork.

Laboratory.—Topographic surveying and topographic mapping.

156, 157. Surveying IV. 3(2-3); I and II. Prerequisite: Surveying III. Mr. Furr.

Field engineering; various problems in curve selection and location, including pertinent curve, spiral and earthwork computations; railway track and cross-over exercises.

161. Drainage and Irrigation I. 2(2-0); II. Prerequisite or parallel: Hydraulics (Ap. Mech. 230, 235). Mr. Furr 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. Prequisite: Senior classification. Mr. Conrad and assistants.

A trip of three to four days to Kansas City and other nearby 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.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Stresses in Framed Structures. 4(4-0); I, II, 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 or parallel: Stresses in Framed Structures. 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. Crawford.
A study of sewer systems and sewage treatment.

228. Sanitary Engineering Design. 2(0-6); II. Prerequisites: Water Supply (Civ. Engr. 220) and Sewerage (Civ. Engr. 225). Mr. Frazier.
Design of water purification plants, sewage treatment plants, water distribution systems and sewage collecting systems. Estimates of cost and methods of financing.

231. Highway Engineering I. 2(2-0); I. Prerequisite: Surveying II (Civ. Engr. 111). Mr. Furr.
Fundamental principles, location, design, 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.

247. Economics of Design and Construction. 4(4-0); II. Prerequisites: Highway Engineering I and Stresses in Framed Structures. Mr. Conrad.
Primarily a study of methods in plant, construction costs, and economy in design.

250, 255. Concrete Design. 3(2-3); II and SS. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Frazier.
Design of reinforced buildings, retaining walls, dams, and bridges.

Laboratory.—Drawing reinforced concrete retaining walls, dams, slab bridges, and girder bridges.

256. Reinforced Concrete Arches. 3(3-0); II. Prerequisite: Concrete Design (Civ. Engr. 250, 255). Mr. Conrad.
Various types of reinforced 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 maps, profiles, and estimates from the survey.

276. Highway Economics. 3(3-0); I. Prerequisite: Highway Engineering I. Mr. Furr.
Economic concepts, highway transport, design, and construction problems as affected by recent findings of research agencies.

280, 285. Drainage and Irrigation II. 4(2-6); II. Prerequisites: 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, consult instructor. 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 Jorgenson
Assistant Professor Bueche
Instructor Sitz
Instructor Paslay

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 are 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.

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, instrument transformers, watt-hour meters, and rotating standards.

There are three 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. A short wave laboratory is equipped with a short wave transmitter and receiver for experimental broadcasting and reception of short wave communications.

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.

Two special laboratories are provided for the research conducted by the electrical engineering staff and for television and other special investigations made by graduate students.

The equipment belonging to the department is valued at $57,708.

COURSES IN ELECTRICAL ENGINEERING

FOR UNDERGRADUATE CREDIT

102, 106. Electrical Engineering C. 3(2-2, 1); II. Prerequisite: Engineering Physics II (Physics 150). Mr. Jorgenson and Mr. Sitz.

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.

112. Electrical Machinery and Construction. 2(0-6); I and II. 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.

116. Illumination A. 2(2-0); II. Prerequisite: Engineering Physics II (Phys. 150) or General Physics II (Phys. 140). Mr. Hunt.

The various methods used for interior wiring; methods of calculating the necessary number and size of electric circuits in a building; wiring specifications; and fundamental principles of illumination. For architects and architectural engineers.

120. Principles of Electrical Engineering. 2(2-0); I and II. Prerequisites: Chemistry EI and EII (Chem. 107 and 108), and Trigonometry (Math. 101). Mr. Kloeffler and Mr. Bueche.

The fundamental principles of electronics.

190. Inspection Trip. R; I. Prerequisite: Senior classification. Mr. Kloeffler 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.

195. Thesis. 1(0-3); I; and 2(0-6), II. Mr. Kloeffler, Mr. Brenneman, Mr. Kerchner, Mr. Hunt, Mr. Bueche, and Mr. Paslay.

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. Direct-current Machines I. 3(3-0); I, II, and SS. Prerequisites: Calculus I (Math. 205) and Engineering Physics II (Physics 150). Mr. Brenneman, Mr. Hunt, and Mr. Sitz.

A detailed study of the fundamental principles of magnetic and electric circuits and their application to the various types of direct-current machines.

206, 208. Direct-current Machines II. 4(2-4, 2); I, II, and SS. Prerequisite: Direct-current Machines I. Mr. Brenneman, Mr. Hunt, Mr. Jorgenson, and Mr. Sitz.

A detailed study of special types of direct-current machinery, dynamo losses, and commutation.

Laboratory.—A series of experiments to show the fundamental principles, characteristics and operation of direct-current machines. Charge, $3.

209. Alternating-current Machines I. 4(4-0); I, II, and SS. Prerequisites: Calculus IIA (Math. 206A) and Direct-current Machines I (Elec. Engr. 203). Mr. Kerchner, Mr. Hunt, and Mr. Jorgenson.

A mathematical treatment of alternating-current phenomena.

214, 215. Alternating-current Machines II. 5(3-4, 2); I, II, and SS. Prerequisite: Alternating-current Machines I. Mr. Kerchner, Mr. Hunt, and Mr. Jorgenson.

Principles of design, construction and operation of transformers and alternating-current generators.

Laboratory.—A series of experiments illustrating the characteristics of alternating-current circuits, transformers, and alternating-current generators. Charge, $3.

217, 218. Electrical Communication I. 3(2-2, 1); I. Prerequisite: Alternating-current Machines I (Elec. Engr. 209.) Mr. Kloeffler and Mr. Bueche.

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.) 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(3-4, 2); I, II, and SS. Prerequisite: Alternating-current Machines II. Mr. Kerchner, Mr. Hunt, Mr. Jorgenson, and Mr. Paslay.

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. (Elec. Engr. 215.) Tests on machines listed in Elect. Engr. 224. Charge, $2.

227, 229. Electrical Measurements. 4(2-4, 2); I and II. Prerequisites: Calculus I (Math. 205) and Engineering Physics II (Physics 150.) Mr. Brenneman and Mr. Bueche.

Methods for electric and magnetic measurements; resistance, quantity, current, electromotive force, capacity, inductance.

Laboratory.—Characteristics of electron tubes; measurement of resistance, inductance, and capacity. Charge, $3.

230, 231. Electrical Engineering M-I. 4(3-2, 1); I. Prerequisites: Calculus I and Engineering Physics II. Mr. Hunt and Mr. Sitz.

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; and 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. 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. 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. Charge, $1.50.

238, 239. Electrical Instruments and Meters. 3(2-3); II. Prerequisite: Alternating-current Machines I. 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.

242, 243. Electrical Engineering M-II. 4(3-2, 1); II. Prerequisite: Electrical Engineering M-1 (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.

250. Commercial Engineering. 2(2-0); II. Prerequisite: Economics (Econ. 101). Mr. Kloeffler.

The relation of the engineer to commercial life; salesmanship; humanics.

270. Electrical Machine Design. 1(0-3); I and II. Prerequisite: Direct-current Machines I (Elec. Engs. 203). Mr. Brenneman and Mr. Hunt.

The principles of electrical design; each student makes calculation for electromagnets and a direct-current motor.

275. Advanced Alternating Currents. 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 by symbolic notation.

280. Transmission and Distribution of Electrical Energy. 3(3-0); II. Prerequisite: Elec. Engr. 214. Mr. Brenneman.

Transmission line design, economic and technical features; and properties of cables and insulators.

284. Transient Electrical Phenomena. 3(3-0); II. Prerequisite: 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.

287. Advanced Illuminating Engineering. 3(3-0); II. Prerequisites: Engineering Physics II (Phys. 150), and Calculus IIA (Math. 206A). Mr. Hunt.

The various theories on the property of light, the theoretical distribution curves from light sources of various shapes, psychological and physiological phases of lighting, daylight illumination in buildings, and spectrophotometry.

288. Electron Tubes. 3(3-0); I. Prerequisites: Principles of Electrical Engineering (Elect. Engr. 120) and Alternating-current Machines I (Elect. Engr. 209). Mr. Bueche.

An advanced study of the characteristics, theory of operation, and the applications of electron tubes and photo-electric cells.

290. Public Utility Management. 3(3-0); II. Prerequisites: Economics (Econ. 101). Mr. Kloeffler.

The problems of depreciation, finance, rates, and public regulation in gas, electric, and telephone properties.

FOR GRADUATE CREDIT

301. Electric Circuits I. 3(3-0); I. Prerequisite: Alternating-current Machines III (Elec. Engr. 224). Mr. Kerchner.

Methods of determining short-circuit currents in networks; equivalent impedances of multi-circuit transformers; symmetrical components for analysis of unbalanced polyphase circuits and analysis of induction motor performance on unbalanced voltages; short transmission lines in steady state.

304. Electric Circuits II. 3(3-0); II. Prerequisite: Electric Circuits I (Elec. Engr. 301). Mr. Kerchner.

Long transmission lines in steady state with various terminal conditions; transmission charts; harmonics in circuits; general circuit constants; transmission problems involving synchronous machines.

307. Operational Circuit Analysis. 3(3-0); I or II. Prerequisite: Alternating-current Machines I (Elec. Engr. 209). Mr. Brenneman and Mr. Paslay.

Heaviside's Operational Calculus applied to electric circuit theory.

312. High Frequency Alternating Currents. 3(3-0); II. Prerequisites: Alternating-current Machines I (Elect. Engr. 209) and Radio Communication (Elect. Engr. 219), or equivalent. Mr. Bueche and Mr. Paslay.

An advanced study of high-frequency currents in coupled and resonant circuits; the analytical treatment of vacuum tubes as used for amplification, modulation, and detection.

316. Advanced Electrical Theory. 2 to 6 credits; I and II. Prerequisite: Alternating-current Machines III (Elect. Engr. 224). Mr. Kloeffler.

An advanced course in electrical theory designed to meet the needs of graduate students.

336. Electrical Engineering Research. 1 to 10 credits; I or II. Prerequisite: Alternating-current Machines II (Elec. Engr. 214). Mr. Kloeffler, Mr. Brenneman, Mr. Kerchner, and Mr. Bueche.

Special investigations adapted to the needs of individual students; may be used as the basis of a master's thesis. The laboratory work is correlated with the work of the Engineering Experiment Station.

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 freshman 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
Associate Professor Gingrich
Instructor Olsen
Instructor Branigan

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 mechanical transmission of power, analysis of the action of machine parts, and design of machine elements and of complete machines with careful regard to strength, stiffness, and general operating efficiency. They consider also aërodynamic forces and airplane structures.

The department owns equipment valued at $7,817.

COURSES IN DRAWING AND MACHINE DESIGN

FOR UNDERGRADUATE CREDIT

101. Engineering Drawing. 2(0-6); I, II, and SS. Mr. Smutz and Mr. Gingrich.

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: Engineering Drawing (Mach. Design 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 and II. Prerequisite: Solid Geometry. 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); I and II. Prerequisites: Descriptive Geometry A (Mach. Design 107), 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: Descriptive Geometry (Mach. Design 106). Mr. Durland, Mr. Olsen, and Mr. Branigan.

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 (Mach. Design 111). Mechanism (Mach. Design 121) must precede or accompany this course. Mr. Durland and Mr. Olsen.

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 (Mach. Design 111). Mr. Pearce and Mr. Olsen.

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 and Mr. Olsen.

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 is furnished by projects in machine design, aërodynamics, or flour-mill design; subject of the investigation is 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 and II. Prerequisites: Strength of Materials (Ap. Mech. 211), Machine Drawing II (Mach. Design 116), and Steam and Gas Engineering II (Mech. Eng. 204, 205). Mr. Pearce, Mr. Durland, and Mr. Olsen.

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); I and II. Prerequisite: Mach. Design 204, 205. Mr. Pearce, Mr. Durland, and Mr. Olsen.

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.

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, 251. Aërodynamics. 4(3-3); I. Prerequisite: Applied Mechanics (Ap. Mech. 202). Mr. Pearce and Mr. Durland.

A general introduction into aërodynamics, particularly as regards action of air foils, effects of parasite drag, prediction of performance, and analysis of stability and control.

Laboratory.—Determination of performance curves and the stability of an airplane.

255. Airplane Design. 2(0-6); II. Prerequisites: Aërodynamics (Mach. Design 250, 251) and Strength of Materials (App. Mech. 211, 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. Prerequisites: Consult instructors. Mr. Pearce and Mr. Durland.

At the option of the student this course may include (a) the design of a

machine, (b) 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, or (c) the investigation of some phase of aërodynamics. The course may furnish material for the master's thesis.

Mechanical Engineering

Professor Calderwood
Professor Mack
Associate Professor Brainard
Instructor Flinner

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, fuel, 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 $44,285.

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 I. 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. Calderwood and Mr. Brainard.

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 I or General Physics I. 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.

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 I (Math. 205). 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 and II. Prerequisite: Mech. Eng. 204. Mr. Mack, Mr. Brainard, and Mr. Flinner.

Complete power-plant testing; special investigations of steam-engine performance; 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. Heating and Ventilation. 3(2-3); II. Prerequisite: Mech. Engr. 204. Mr. Mack.

Fundamental principles of heating and ventilation; study of heat losses from buildings, different methods of heating, layout of piping and duct systems, temperature control, air conditions, and artificial cooling.

Laboratory.—Tests of fans, blowers, radiators, house heating boilers, and automatic ventilators; the design of heating and ventilating systems for buildings. Charge, $1.

221. Refrigeration. 2(2-0); I. 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. Internal Combustion Engines. 2(2-0); II. Prerequisite: Mech. Engr. 201. Mr. Flinner.

General principles of the internal combustion engine with special reference to its use as an airplane motor; study of cycles of operation, fuels, carburetors, ignition systems, engine requirements, altitude performance, reliability, and types of airplane engines.

FOR GRADUATE CREDIT

305. Mechanical Engineering Research. 1 to 10 credits; I, II, and SS. Prerequisite: Consult instructors. Mr. Calderwood, and Mr. Mack.

The laboratory work is correlated with the work of the Engineering Experiment Station. Investigations of 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
Instructor Grant
Instructor Greeley
Instructor McCollum
Instructor Abrahamson
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 farm shop, 65 by 75 feet, is equipped for handling farm-shop projects. The machine shop, 40 by 170 feet, is well equipped with the necessary machines. The blacksmith shop is 50 by 100 feet and is equipped with twenty modern downdraft forges, arc and oxyacetylene welding outfits, and other important equipment. The iron and brass foundries are 27 by 100 and 24 by 34 feet, respectively. The metallography laboratory occupies 3,200 square feet of floor space and is well equipped for class and research work.

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 $46,040.

COURSES IN SHOP PRACTICE

FOR UNDERGRADUATE CREDIT

101. ENGINEERING WOODWORK. 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); I, II, and 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. Mr. Aiman and Mr. Irwin.

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. Aiman.

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. Prerequisites: Shop 120. Mr. Aiman and Mr. Irwin.

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. Aiman and Mr. Irwin.

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 may 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. 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. Aiman and Mr. Irwin.

An opportunity to specialize in wood finishing, cabinet work, or some other work of special interest to the student. Charge, $2.50.

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. 1(0-3); I and II. Mr. Lynch and Mr. Greeley.

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. Greeley.

(*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 and II. 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 I. 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 welded airplane parts. Consideration is also given to welding equipment used in the construction of the airplane. Charge, $2.50.

170. Machine Tool Work I. 2(0-6); I, II, and SS. Prerequisite: Shop 161. Mr. Jones, Mr. Abrahamson, and Mr. McCollum.

Practice in chipping, filing, shaper and planer work; scraping, drilling, and turning on the lathe. Charge, $5.

173. Sheet Metal Work. 2(0-6); I, II, and SS. Prerequisite: Engineering Drawing or equivalent. Mr. Graham.

Covers developments, the use of templets, practice in soldering, brazing folding, wiring, flanging, seaming, rolling, and the more common operations on sheet metal. Charge, $2.50.

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.

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, Mr. Abrahamson, and Mr. McCollum.

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

245. Factory Engineering. 2(2-0); I. Prerequisite: 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 245) is used in the design of a factory.

261. Advanced Shop Practice. 1 to 10 credits; I, II, and SS. Mr. Carlson and assistants.
Continuation of Courses Shop 101, 135, 140, 147, 150, 158, 161, 175, 193, 255 or 265. 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 fixtures 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.

264. Structure and Properties of Metals. 3(2-3); I, II, and SS. Not open to students who have credit in Shop 167. Prerequisite: Chemistry E-I and E-II or may be taken with Chemistry E-II. Mr. Sellers.
A study of the structure and properties of the more common metals and alloys. Charge, $2.50.

265. Metallography II. 2(0-6); I and II. Prerequisite: Shop 167. Mr. Sellers.
A continuation of course 167, with work in brass, bronze, aluminum and advanced work in steel. Charge, $5.

286. 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. All assignments must be approved by the head of the department.

FOR GRADUATE CREDIT

301. Research in Shop Practice. 1 to 10 credits; I, II, and SS. Prerequisite: Consult instructors. 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 master's thesis. All assignments must be approved by the head of the Department of Shop Practice.

Engineering in the Summer School

The College offers summer courses in free-hand and mechanical drawing, water-color and oil painting, manual training, and shop practice for high-school and grade-school 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.

The Division of General Science

Rodney Whittemore Babcock, *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. Nine 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 the 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.

A four-year curriculum is offered in applied music, preparing the student with a major in voice, piano, violin, organ, or other instrument, and with a minor in another of these subjects. Students completing this curriculum are awarded the degree of Bachelor of Music. If the required subjects in Education have been elected, they are eligible to receive a three-year special state certificate in music renewable for three-year terms.

A four-year curriculum in music education is also offered, with specialization in voice, instrument, or public school band or orchestra. Students completing this curriculum are awarded the degree of Bachelor of Science in Music Education, and are eligible to receive a special state certificate to teach music and permission to teach any nonmusic subject in which they have completed fifteen or more college hours; students completing this curriculum with sufficient extra hours so that not more than forty hours in music are submitted to the State Board of Education are eligible to receive the state three-year, renewable-for-life certificate.

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

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, Phys. 135	4(3-3)	General Physics II, Phys. 140	4(3-3)
General Zoölogy, Zoöl. 105	5(3-6)	Psychology A, Educ. 181	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 I, Econ. 101	3(3-0)
Current History, Hist. 126	1(1-0)		
Extem. Speech I, Public Spk. 106	2(2-0)	Gen. Microbiology, Bact. 101	3(1-6)
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 hours. Women: The same, except no military science. Total, 120 hours.

Pre-Medical and Pre-Pharmacal Adaptation of Curriculum in General Science

The following arrangement of required and elective subjects is prepared for students who wish to enter medical school at the end of two years. Students wishing to enter a school of pharmacy must elect German, and in the sophomore year substitute Botany I and Botany II for General Zoölogy and Comparative Anatomy, and General Microbiology for English Literature. At least 60 hours must be completed in the two years.

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* The number before the parenthesis indicates the number of 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.

† 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.

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)
French I, Mod. Lang. 151	3(3-0)*or*	Modern Language (cont)	3(3-0)
German I, Mod. Lang. 101	3(3-0)	Current History, Hist. 126	1(1-0)
Library Methods, Lib. Econ. 101	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	
Modern Language (cont.)	3(3-0)	English Literature, Engl. 172	3(3-0)
Organic Chemistry I, Chem. 218	4(2-6)	Organic Chemistry II, Chem. 219	4(2-6)
General Physics I, Physics 135	4(3-3)	General Physics II, Physics 140	4(3-3)
General Zoölogy, Zoöl. 105	5(3-6)	Comp. Anat. of Vertebrates, Zoöl. 246	4(2-6)
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	16 or 17	Total	15 or 16

Curriculum in Industrial Chemistry

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)
Engr. Drawing, Mach. Des. 101	2(0-6)	Des. Geometry, Mach. Des. 106	2(0-6)
General Geology, Geol. 103	3(3-0)	Machine Drawing I, Mach. Des. 111	2(0-6)
		Library Methods, Lib. Ec. 101	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	16 or 17	Total	16 or 17

SOPHOMORE

First Semester		Second Semester	
Inorg. Preparations, Chem. 202	2(0-6)	Quant. Analysis, Chem. 241	5(1-12)
Plane Anal. Geometry, Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Engr. Physics I, Physics 145	5(4-3)	Engr. Physics II, Physics 150	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)	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	
German I, Mod. Lang. 101	3(3-0)	German II, Mod. Lang. 102	3(3-0)
Organic Chemistry I, Chem. 218	4(2-6)	Organic Chemistry II, Chem. 219	4(2-6)
Physical Chemistry I, Chem. 206	5(3-6)	Physical Chemistry II, Chem. 272	3(3-0)
Calculus II, Math. 206	3(3-0)	Elec. Engr. C, Elec. Engr. 102, 106	3(2-2, 1)
Fire Assaying, Chem. 242	2(0-6)	History of Chemistry, Chem. 208	1(1-0)
		Electives †	3(-)
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Amer. Govt., Hist. 151, 152, or 153	3(3-0)	Economics I, Econ. 101	3(3-0)
Indust. Chemistry I, Chem. 203	5(3-6)	Indust. Chemistry II, Chem. 204	5(3-6)
Scientific German, Mod. Lang. 237	4(4-0)	Chemistry Problems, Chem. 270	3(0-9)
		Inspection Trip, Chem. 130	R
Electives †	5(-)	Electives †	5(-)
Total	17	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 hours. Women: The same, except no military science. Total, 129 hours.

† See footnote p. 173.

Curriculum in Industrial Journalism

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)	General Geology, Geol. 103	3(3-0)
Modern Language I *	3(3-0)	Modern Language II*	3(3-0)
Library Methods, Lib. Ec. 101	1(1-0)	Journalistic Vocations, Ind. Jour. 140	2(2-0)
Option related to an Industry or to Applied Science*	3(-)	Option related to an Industry or to Applied Science*	4(-)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
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	
El. Journalism, Ind. Jour. 151	2(2-0)	Industrial Writing, Ind. Jour. 161	2(2-0)
Prin. of Typography, Ind. Jour. 101	3(2-3)	English Literature, Engl. 172	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)*or*	General Botany II, Bot. 105	3(1-4, 2)*or*
General Botany I, Bot. 101	3(1-4, 2)	General Microbiology, Bact. 101	3(1-6)*if*
Modern Language Readings*	3(3-0)	General Botany I is chosen the first semester.	
		Psychology A, Educ. 181	3(3-0)
Option related to an Industry or to Applied Science*	2 or 4(-)	Option related to an Industry or to Applied Science or Social Science*	7 or 4(-)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
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	
Advanced Reporting, Ind. Jour. 163	3(3-0)	Jour. for Women, Ind. Jour. 172	2(2-0)*or*
Ind. Feature Writing, Ind. Jour. 167	2(2-0)	The Rural Press, Ind. Jour. 181	2(2-0)*or*
Prin. of Adv., Ind. Jour. 178	4(4-0)	Adv. Practice, Ind. Jour. 225	2(2-0)
American Literature, Engl. 175	3(3-0)	Copy Reading, Ind. Jour. 254	2(0-6)
		History of English Lit., Engl. 181	3(3-0)
Option related to an Industry or to Applied Science or Social Science*	3(-)	Extempore Speech I, Pub. Spk. 106	2(2-0)
		Current History, Hist. 126	1(1-0)
		Options and Electives*	5(-)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
Total	15	Total	15

* 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 industry 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), group 37 (manual training), or group 38 (printing), 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.

Proficiency equivalent to nine hours of study in a modern language is required. Each unit of German, French or Spanish offered for entrance reduces this requirement in that language by three hours, an equal amount of additional electives being chosen.

Electives are to be chosen in groups of usually not fewer than eight semester hours, unless then are selected in subjects which extend fields already entered through the required subjects or the options.

† Electives are to be chosen, with the advice and approval of the dean, in groups of not less than eight semester hours, or in courses which extend fields already entered in the required work.

SENIOR

First Semester		Second Semester	
Current History, Hist. 126	1(1-0)	Ethics of Journalism, Ind. Jour. 273	3(3-0)
Editorial Practice, Ind. Jour. 257	2(2-0)	American Govt., Hist. 151	3(3-0)
Contem. Thought, Ind. Jour. 255	3(3-0)		
Electives and Options*	9(-)	Electives and Options*	9(-)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
Total	15	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; other prescribed subjects, 39 or 40 hours; general electives, 14 or 15 hours; total, 124 hours. Women: The same, excepting no military science, total, 120 hours.

Curriculum in Music Education

Students wishing special training in Band or Orchestra make the following substitution:

Instrument, 16 hours, for Voice, 6 hours, Piano, 2 hours, and Voice or Instrument, 8 hours, and take Chorus, R(1-0), throughout the senior year.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Ear Tr. & Sight Singing I, Mus. 105	2(1-3)	Ear Tr. & Sight Singing II, Mus. 106	2(1-3)
Piano, Mus. 161	2(1-6)	Piano, Mus. 161	2(1-6)
Voice, Mus. 156	2(1-6)	Voice, Mus. 156	2(1-6)
Orch. Instruments I, Mus. 151A	½(1-)	Orch. Instruments II, Mus. 151B	½(1-)
Choral Ensemble, Mus. 194	½(0-2)	Choral Ensemble, Mus. 194	½(0-2)
Psychology B, Educ. 102	3(3-0)	Phys. or Biol. Science	3(-)
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	
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Ear Tr. & Sight Singing III, Mus. 107	2(1-3)	Ear Training & Sight Singing IV, Mus. 108	2(1-3)
Piano, Mus. 161	1(½-6)	Piano, Mus. 161	1(½-6)
Voice, Mus. 156	1(½-6)	Voice, Mus. 156	1(½-6)
Orch. Instr. III, Mus. 151C	½(1-)	Orch. Instr. IV, Mus. 151D	½(1-)
Choral Ensemble, Mus. 194	½(0-2)	Choral Ensemble, Mus. 194	½(0-2)
School Music I, Mus. 138	2(2-0)	School Music II, Mus. 139	2(2-0)
Conducting I, Mus. 117	1(1-0)	English Literature, Engl. 172	3(3-0)
Phys. or Bio. Science	5(-)	Non-music elective	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	15 or 16	Total	15 or 16

JUNIOR

First Semester		Second Semester	
Counterpoint, Mus. 108A	2(2-0)	Music Form & Analysis, Mus. 111	1(1-0)
History & Appre. of Music I, Mus. 112	3(3-0)	History & Appre. of Music II, Mus. 113	3(3-0)
Voice or Instrument	2(1-6)	Voice or Instrument	2(1-6)
Conducting II, Mus. 128	1(1-0)	School Music III, Mus. 143	2(2-0)
Orch. Instr. V, Mus. 151E	½(1-)	Orch. Instr. VI, Mus. 151F	½(1-)
Choral Ensemble, Mus. 194	½(0-2)	Choral Ensemble, Mus. 194	½(0-2)
Educational Psychology, Educ. 109	3(3-0)	Educ. Admin. A, Educ. 105	3(3-0)
Methods of Teach. Music, Mus. 141	3(3-0)	American Literature, Engl. 175	3(3-0)
Total	15	Total	15

* See footnote p. 173.

SENIOR

First Semester		Second Semester	
Voice or Instrument	2(1-6)	Voice or Instrument	2(1-6)
Orch. Instr. VII, Mus. 151G	½(1-)	Orch. Instr. VIII, Mus. 151H	½(1-)
Choral Ensemble, Mus. 194	½(0-2)	Choral Ensemble, Mus. 194	½(0-2)
Teach. Partic. in Music I, Mus. 146	2(2-0)	Teach. Partic. in Music II, Mus. 147	1(1-0)
Instr. & Orches., Mus. 136	3(3-0)	Education elective	3(3-0)
English elective	3(3-0)		
Non-music electives	4(-)	Non-music electives	8(-)
Total	15	Total	15

Summary.—Women: Physical education, required; theoretical music, 40 hours; applied music, 24 hours; other prescribed subjects, 35 hours; restricted electives, 6 hours; nonmusic electives, 15 hours. Total, 120 hours. Men: The same, except that military science, 4 hours, is also required. Total, 124 hours.

Curriculum in Applied Music

Students majoring in piano or pipe organ are required to take Piano Ensemble R(1-0) each semester.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Music Major	4(1-12)	Music Major	4(1-12)
Ear Tr. & Sight Singing I, Mus. 105	2(1-3)	Ear. Tr. & Sight Singing II, Mus. 106	2(1-3)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Modern Language	3(3-0)	Modern Language	3(3-0)
Orch. Instr. I, Mus. 151A	½(1-)	Orch. Instr. II, Mus. 151B	½(1-)
Ensemble, Mus. 183	½(0-2)	Ensemble, Mus. 183	½(0-2)
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	
Music Major	4(1-12)	Music Major	4(1-12)
Music Minor	2(1-6)	Music Minor	2(1-6)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Orch. Instr. III, Mus. 151C	½(1-)	Orch. Instr. 1V, Mus. 151D	½(1-)
Ensemble, Mus. 183	½(0-2)	Ensemble, Mus 183	½(0-2)
Recital I, Mus. 181A	R(-)	Recital II, Mus. 181B	R(-)
History & Appre. of Music I, Mus. 112	3(3-0)	History & Appre. of Music II, 113	3(3-0)
Modern Language	3(3-0)	Modern Language	3(3-0)
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	
Music Major	4(1-12)	Music Major	4(1-12)
Music Minor	2(1-6)	Music Minor	2(1-6)
Counterpoint, Mus. 108A	2(2-0)	Music Form & Analysis, Mus. 111	1(1-0)
Orch. Instr. V, Mus. 151E	½(1-)	Orch. Instr. VI, Mus. 151F	½(1-)
Ensemble, Mus. 183	½(0-2)	Ensemble, Mus. 183	½(0-2)
Recital III, Mus. 181C	R(-)	Recital 1V, Mus. 181D	R(-)
Conducting I, Mus. 117	1(1-0)	Psychology B, Educ. 183	3(3-0)
Physics for Musicians, Phys. 158	5(4-3)	Electives, nonmusic	4(-)
Total	15	Total	15

SENIOR

First Semester		Second Semester	
Music Major	4(1-12)	Music Major	4(1-12)
Orch. Instr. VII, Mus. 151G	½(1-)	Orch. Instr. VIII, Mus. 151H	½(1-)
Ensemble, Mus. 183	½(0-2)	Ensemble, Mus. 183	½(0-2)
Recital V, Mus. 181E	R(-)	Recital VI, Mus. 181F	R(-)
Methods and Materials for the Studio, Mus. 149	1(2-0)	Instr. & Orches., Mus. 136	3(3-0)
		Practice Teaching	R(1-)
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Electives, nonmusic	6(-)	Electives, nonmusic	4(-)
Total	15	Total	15

Summary.—Women: Physical education, required; theoretical music, 26 hours; applied music, 48 hours; other prescribed subjects, 32 hours; nonmusic electives, 14 hours. Total, 120 hours. Men: The same, except that military science, 4 hours, is also required. Total, 124 hours.

Curriculum in Physical Education for Men

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)
Extem. Spk. I, Pub. Spk. 106	2(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)
Total	17	Total	17

SOPHOMORE

First Semester		Second Semester	
Apparatus, Phys. Ed. 109	1(0-3)	Boxing, Phys. Ed. 132	1(0-3)
Football II, Phys. Ed. 127	2(1-3)	Personal Hygiene, Phys. Ed. 119	2(2-0)
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. 181	3(3-0)	History and Principles of Phys. Educ., Phys. Ed. 192	3(3-0)
Current History, Hist. 126	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	17

JUNIOR

First Semester		Second Semester	
Extem. Speech II, Pub. Spk. 108	2(2-0)	Sociology, Econ. 151	3(3-0)
School Hygiene, Phys. Ed. 196	3(3-0)	Baseball, Phys. Ed. 133	2(1-3)
Wrestling, Phys. Ed. 128	1(0-3)	Psych. Chld. and Adol., Educ. 250	3(3-0)
First Aid and Mas., Phys. Ed. 113A	3(3-0)	Educ. Admin. A, Educ. 105	3(3-0)
Org. and Admin. of Phys. Educ. M, Phys. Ed. 146B	2(2-0)		
Prac. Teach. in Phys. Educ. I, Phys. Ed. 135,	1(0-3)	Prac. Teach. in Phys. Educ. II, Phys. Ed. 136B	2(0-6)
El. Jour., Ind. Jour. 151	2(2-0)		
Elective†	3(-)	Elective†	3(-)
Total	17	Total	16

SENIOR

First Semester		Second Semester	
Phys. Diagnosis and Prescript., Phys. Ed. 124A	3(3-0)	Physiol. of Exercise, Phys. Ed. 123	2(2-0)
		Teaching Partic. in Phys. Educ., Phys. Ed. 137	3(-)
Prac. Teach. in Phys. Educ. III, Phys. Ed. 136C	2(0-6)	Educ. Sociology, Educ. 239	3(3-0)
Educ. Psychology, Educ. 109	3(3-0)	Public-school Program in Phys. Educ., Phys. Ed. 142	2(2-0)
Gen. Microbiology, Bact. 101	3(1-6)		
Elective†	4(-)	Elective†	5(-)
Total	15	Total	15

Summary.—Military science, 4 hours; physical education, 49 hours; professional education, 18 hours; other prescribed subjects, 45 hours; general electives, 15 hours. Total, 131 hours.

† See footnote p. 177.

Curriculum in Physical Education for Women

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)
Personal Health, Child Welfare 101	2(2-0)		
Phys. Educ. W, Phys. Ed. 151A	R(0-3)	Phys. Educ. 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	15

SOPHOMORE

First Semester		Second Semester	
Human Anatomy, Zoöl. 123A	5(3-6)	Psychology A, Educ. 181	3(3-0)
English Literature, Engl. 172	3(3-0)	Kinesiology W, Phys. Ed. 184	2(2-0)
Embryology A, Zoöl. 135	3(2-3)	Physiology, Zoöl. 130	4(3-3)
Playground Management and Games W, Phys. Ed. 182A	2(1-3)	History and Prin. of Phys. Ed., Phys. Ed. 192	3(3-0)
		Current History, Hist. 126	1(1-0)
Phys. Educ. W, Phys. Ed. 153	R(0-3)	Phys. Educ. 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	15	Total	15

JUNIOR

First Semester		Second Semester	
School Hygiene, Phys. Ed. 196	3(3-0)	American Literature, Engl. 175	3(3-0)
General Microbiology, Bact. 101	3(1-6)	Educ. Admin. A, Educ. 105	3(3-0)
Phys. Diagnosis W, Phys. Ed. 170	3(3-0)	Psych. of Chld. and Adol., Educ. 250	3(3-0)
		Therap. and Mas., Phys. Ed. 173	3(2-3)
Folk Dancing I, Phys. Ed. 160	1(0-3)	Folk Dancing II, Phys. Ed. 161	1(0-3)
Phys. Educ. W, Phys. Ed. 151A	R(0-3)	Phys. Educ. W, Phys. Ed. 152A	R(0-3)
Gen. Technic V, Phys. Ed. 157E	2(1-3)	Gen. Technic VI, Phys. Ed. 157F	2(1-3)
Elective†	3(-)		
Total	15	Total	15

SENIOR

First Semester		Second Semester	
Amer. Hist. Survey, Hist. 104	3(3-0)	Educ. Sociology, Educ. 239	3(3-0
Educ. Psychology, Educ. 109	3(3-0)	Organization and Administration of Phys. Educ. W, Phys. Ed. 176	2(2-0)
Applied Nutrition, Food & Nutr. 121	2(2-0)		
Teach. and Adapt. of Phys. Educ., Phys. Ed. 188	3(3-0)	Teaching Participation in Phys. Educ., Phys. Ed. 186	3(-)
Phys. Educ. W, Phys. Ed. 153	R(0-3)	Phys. Educ. W, Phys. Ed. 154	R(0-3)
Gen. Technic VII, Phys. Ed. 157G	2(1-3)	Gen. Technic VIII, Phys. Ed. 157H	2(1-3)
Elective†	2(-)	Elective†	5(-)
Total	15	Total	15

Summary.—Physical education, 41 hours; professional education, 18 hours; other prescribed subjects, 51 hours; general electives, 10 hours. Total, 120 hours.

Curriculum in Commerce

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Phys. or Bio. Science*	3(-)	Phys. or Bio. Science*	5(-)
Modern Language*	3(3-0)	Modern Langauge*	3(3-0)
Current History, Hist. 126	1(1-0)	Current History, Hist. 126	1(1-0)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Am. Ind. History, Hist. 105	3(3-0)*or*
College Algebra, Math. 104	3(3-0)	Hist. of Commerce & Ind., Hist. 110	3(3-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Educ. M, Phys. Ed. 103	R(0-2)*or*	Phys. Educ. M, Phys. Ed. 104	R(0-2)*or*
Phys. Educ. W, Phys. Ed. 151A	R(0-3)	Phys. Educ. W, Phys. Ed. 152A	R(0-3)
Total	15 or 16	Total	15 or 16

* See footnote p. 178.

† Electives are to be chosen with the advice and approval of the dean, in groups of not less than eight semester credits, and from departments other than physical education.

SOPHOMORE

First Semester		Second Semester	
Com'l Correspondence, Engl. 122	3(3-0)	Psychology A, Educ. 181	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)
Economics I, Econ. 101	3(3-0)	Economics II, Econ. 104	3(3-0)
History Elective	3(-)	Amer. Govt., Hist. 151, 152 *or* 153	3(3-0)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Educ. M, Phys. Ed. 105	R(0-2)*or*	Phys. Educ. M, Phys. Ed. 106	R(0-2)*or*
Phys. Educ. W, Phys. Ed. 153	R(0-3)	Phys. Educ. W, Phys. Ed. 154	R(0-3)
Total	15 or 16	Total	15 or 16

JUNIOR

First Semester		Second Semester	
Elements of Statistics, Math. 126	3(3-0)	Investments, Econ. 222	3(3-0)
Business Management, Econ. 126	2(2-0)	Sociology, Econ. 151	3(3-0)
Money & Banking, Econ. 116	3(3-0)		
Marketing, Econ. 246	3(3-0)		
Electives †	4(-)	Electives †	9(-)
Total	15	Total	15

SENIOR

First Semester		Second Semester	
Business Law I, Hist. 163	3(3-0)	Business Law II, Hist. 164	3(3-0)
Public Finance, Econ. 214	3(3-0)	Business Finance, Econ. 217	3(3-0)
Electives †	9(-)	Electives †	9(-)
Total	15	Total	15

Summary.—Men: Physical education, required; military science, 4 hours; commerce courses, 44 hours; other prescribed courses, 45 hours; special and general electives, 31 hours. Total, 124 hours. Women: The same except military science, 4 hours, not required. Total, 120 hours.

Curriculum in Commerce with Special Training in Accounting

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Phys. or Bio. Science*	3(-)	Phys. or Bio. Science*	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)
College Algebra, Math. 104	3(3-0)	American Ind. History, Hist. 105	3(3-0)*or*
Extem. Speech I, Pub. Spk. 106	2(2-0)	Hist. of Commerce & Industry, Hist. 110	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 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

* 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. Proficiency equivalent to nine hours of study in a modern language is required. Each unit of German, French, or Spanish offered for entrance reduces this requirement in that language by three hours, an equal amount of additional electives being chosen. 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.

† Twelve hours of special electives must be chosen from the following group: Economics 223, Credits and Collections; 229, Transportation Problems; 233, Labor Problems; 242, Property Insurance; 244, Life Insurance; 246, Economic Problems; 251, Advanced Economics; 257, Social Problems; 280, Advanced Accounting; 282, Income Tax Accounting; 283, Accounting Systems; 284, Institutional Accounting; 285, Auditing; 287, Cost Accounting; 289, Governmental Accounting; 292, C. P. A. Problems; Education 237, Psychology of Advertising and Selling; 243, Psychology and Personnel Management: English 123, Written and Oral Salesmanship; 223, Advanced Problems in Commercial Correspondence: History and Government 260, Government Regulation of Business: Industrial Journalism 178, Principles of Advertising; and Mathematics 150, Mathematics of Investment.

SOPHOMORE

First Semester		Second Semester	
Accounting I, Econ. 133	3(2-3)	Accounting II, Econ. 134	3(2-3)
Modern Language*	3(3-0)	Economics II, Econ. 104	3(3-0)
Economics I, Econ. 101	3(3-0)	American Govt. History, 151, 152, *or* 153	3(3-0)
Commercial Correspondence, Engl. 122	3(3-0)	English Literature, Engl. 172	3(3-0)
Math. of Investments, Math. 150	3(3-0)	Psychology A, Educ. 181	3(3-0)
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. Educ. W, Phys. Ed. 154	R(0-3)
Total	15 or 16	Total	15 or 16

JUNIOR

First Semester		Second Semester	
Adv. Accounting, Econ. 280	3(3-0)	Cost Accounting, Econ. 287	3(3-0)
Elements of Statistics, Math. 126	3(3-0)	Income Tax Accounting, Econ. 282	2(2-0)*or*
Money & Banking, Econ. 116	3(3-0)	Accounting Systems, Econ. 283	2(2-0)
Business Management, Econ. 126	2(2-0)	Business Finance, Econ. 217	3(3-0)
Electives†	4(-)	Electives †	7(-)
Total	15	Total	15

SENIOR

First Semester		Second Semester	
Auditing, Econ. 285	3(3-0)	C. P. A. Problems, Econ. 292	3(3-0)
Govt. Accounting, Econ. 289	2(2-0)	Income Tax Accounting, Econ. 282	2(2-0)*or*
Public Finance, Econ. 214	3(3-0)	Accounting Systems, Econ. 283	2(2-0)
Business Law I, Hist. 163	3(3-0)	Business Law II, Hist. 164	3(3-0)
Electives †	4(-)	Electives †	7(-)
Total	15	Total	15

Summary.—Men: Physical education, required; military science, 4 hours; commerce courses, 56 hours; other prescribed courses, 42 hours; electives, 22 hours. Total, 124 hours. Women: The same except military science, 4 hours, not required. Total, 120 hours.

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

* 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. Proficiency equivalent to nine hours of study in a modern language is required. Each unit of German, French, or Spanish offered for entrance reduces this requirement in that language by three hours, an equal amount of additional electives being chosen. 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.

† Attention is called to the list of special electives for the curriculum in Commerce (p. 178), from which electives should be chosen as far as possible.

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.

1. English Language

Students majoring in English should elect courses 114 and 117, 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		Second Semester	
Advanced Composition I, Engl. 114	3(3-0)	Advanced Composition II, Engl. 117	3(3-0)
Commercial Correspondence, Engl. 122	3(3-0)	Writ. & Oral Salesmanship, Engl. 123	3(3-0)
Oral English, Engl. 128	3(3-0)	Methods of Teaching English, Engl. 134	3(3-0)
The Short Story I, Engl. 228	3(3-0)	The Short Story II, Engl. 230	3(3-0)
Engineering English, Engl. 110	2(2-0)	Technical Writing, Engl. 207	2(2-0)
Agricultural English, Engl. 137	3(3-0)	Adv. Probs. in Coml. Corres., Engl. 223	3(3-0)

2. English Literature

First Semester		Second Semester	
Chaucer, Engl. 260	3(3-0)	Milton and the Puritan Revolt, Engl. 262	3(3-0)
The English Bible, Engl. 271	3(3-0)	American Survey, Engl. 265	2(2-0)
Shakespearean Drama I, Engl. 273	3(3-0)	Shakespearean Drama II, Engl. 274	3(3-0)
Wordsworth, Shelley, & Keats, Engl. 278	3(3-0)	English Essayists of the Eighteenth and Nineteenth Century, Engl. 276	3(3-0)
World Classics I, Engl. 280	3(3-0)	World Classics II, Engl. 281	3(3-0)
Contemporary Fiction, Engl. 283	3(3-0)	Contemporary Drama, Engl. 284	3(3-0)
The Novel I, Engl. 286	3(3-0)	The Novel II, Engl. 287	3(3-0)
English Survey I, Engl. 288	2(2-0)	English Survey II, Engl. 290	2(2-0)
American Literature, Engl. 175	3(3-0)	Browning and Tennyson, Engl. 293	3(3-0)
The Literature of the Middle West, Engl. 268	3(3-0)	Contemporary Poetry, Engl. 297	3(3-0)

3. German

First Semester		Second Semester	
German I, Mod. Lang. 101	3(3-0)	German II, Mod. Lang. 102	3(3-0)
German Readings, Mod. Lang. 111	3(3-0)	German Short Stories, Mod. Lang. 201	3(3-0)
Scientific German, Mod. Lang. 237	4(4-0)	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, 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		Second Semester	
French I, Mod. Lang. 151	3(3-0)	French II, Mod. Lang. 152	3(3-0)
French Readings, Mod. Lang. 161	3(3-0)	French Short Stories, Mod. Lang. 251	3(3-0)
French Drama I, Mod. Lang. 257	3(3-0)	French Drama II, Mod. Lang. 258	3(3-0)
		French Comp. & Conv., Mod. Lang. 261	3(3-0)
Spanish I, Mod. Lang. 176	3(3-0)	Spanish II, Mod. Lang. 177	3(3-0)
Spanish Readings, Mod. Lang. 180	3(3-0)	Spanish Short Stories, Mod. Lang. 272	3(3-0)
The Spanish Novel, Mod. Lang. 275	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		Second Semester	
Plane Analy. Geometry, Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Calculus II, Math. 206	3(3-0)	Meth. of Teach. Mathematics, Math. 122	3(3-0)
Differential Equations, Math. 201	3(3-0)	Advanced Calculus I, Math. 210	3(3-0)
Advanced Calculus II, Math. 213	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		Second Semester	
Adv. Inorg. Chemistry, Chem. 207	3(3-0)	Ind. Electrochem., Chem. 205	2(2-0)
Industrial Chemistry I, Chem. 203	5(3-6)	Industrial Chemistry II, Chem. 204	5(3-6)
Physical Chemistry I, Chem. 206	5(3-6)	Physical Chemistry II, Chem. 272	3(3-0)
Surface Tension and Related Phenomena, Chem. 209	2(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 Inor. Chem., Chem. 271	2(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		Second Semester	
Organic Chemistry I, Chem. 218	4(2-6)	Organic Chemistry II, Chem. 219	4(2-6)
		Stereoisomeric and Tautomeric Compounds, Chem. 225	2(2-0)
Organic Preparations, Chem. 223	5(0-15)	Carbocyclic and Heterocyclic Compounds, Chem. 226	2(2-0)
Physiological Chemistry, Chem. 231	5(3-6)	Qual. Org. Analysis, Chem. 224	2(0-6)
Pathological Chemistry, Chem. 235	2(2-0)	Laboratory Technique in Animal Nutrition, Chem. 239	2(0-6)
Biochemical Analysis, Chem. 237	2(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		Second Semester	
Adv. Qual. Analysis, Chem. 240	3(1-6)	Quan. Analysis, Chem. 241	5(1-12)
Quan. Analysis A, Chem. 250	3(1-6)	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		Second Semester	
Household Physics, Phys. 101	4(3-2)	Harmonics, Phys. 221	3(3-0)
Photography, Phys. 120	2(1-3)	Methods of Teaching Physics, Phys. 223	3(3-0)
Modern Physics, Phys. 249	3(3-0)	Meteorology, Phys. 133A	3(3-0)
Molecular Phys. & Heat, Phys. 220	3(2-3)	Descriptive Astronomy, Phys. 155	3(3-0)
Wireless Telephony, Phys. 130	2(1-3)	Storage Batteries, Phys. 235	2(1-3)
Spectroscopy, Phys. 229	3(2-3)	Electron Theory and Radioactivity, Phys. 233	3(3-0)
Radio Measurements, Phys. 245	2(1-3)	Advanced Light Laboratory, Phys. 258	1(0-3) or 2(0-6)
Advanced Electrical Laboratory, Phys. 256	1(0-3) or 2(0-6)	Advanced Heat Laboratory, Phys. 254	1(0-3) or 2(0-6)
Advanced Mechanics Laboratory, Phys. 252	1(0-3) or 2(0-6)	Biophysics, Phys. 264	3(2-3)
Experimental Problems in Physics, Phys. 260	1(0-3) or 2(0-6)		

10. Microbiology

Courses 101, 106 or 121A may be followed in order by 202, 204, 211 and 206.

First Semester		Second Semester	
General Microbiology, Bact. 101	3(1-6)	Household Microbiology, Bact. 121	3(1-6)
Agricultural Microbiology, Bact. 106	3(1-6)	Soil Microbiology, Bact. 202	3(3-0)
Hygienic Bacteriology, Bact. 206	4(2-6)	Soil Microbiology Lab., Bact. 204	2(0-6)
Pathogenic Bacteriology II, Bact. 116	4(2-6)	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		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)	Nature and Develpt. of Plants, Bot. 110	3(3-0)
Morph. of the Fungi, Bot. 206	3(1-6)	Plant Histology, Bot. 216	3(1-6)
Plant Physiology I, Bot. 208	3(3-0)	Plant Physiology II, Bot. 210	3(1-4, 2)
Fruit Crop Diseases, Bot. 202	2(1-2, 1)	Plant Ecology, Bot. 228	2(2-0)
Botanical Problems, Bot. 232	1 to 5(-)	Field Crop Diseases, Bot. 241	3(1-6)
Taxonomic Botany of the Flowering Plants, Bot. 225	3(1-4, 2)	Vegetable Diseases, Bot. 246	3(1-6)
Literature of Botany, Bot. 266	2(2-0)	Botanical Problems, Bot. 232	1 to 5(-)
		Plant Cytology, Bot. 268	3(1-6)

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		Second Semester	
Human Physiology, Zoöl. 235	4(3-3)	Comp. Anat. of Vertebrates, Zoöl. 246	4(2-6)
Cytology, Zoöl. 214	4(2-6)	Evol. & Heredity, Zoöl. 217	3(2-3) or 4(2-6)
Parasitology, Zoöl. 208	3(2-3)	Embryology B, Zoöl. 219A	4(3-3)
Comp. & Human Neur., Zoöl. 250	3(2-3)	Adv. Embryology, Zoöl. 220	4(2-6)
Taxonomy of Parasites, Zoöl. 240	2(1-3)	Human Parasitology, Zoöl. 218	3(3-0)
Field Zoölogy, Zoöl. 205	3(1-6)	Zoöl. Technic, Zoöl. 206	1 or 2(-)
Heredity and Eugenics, Zoöl. 216	2(2-0)	Zoöl. and Ent. Seminar, Zoöl. 225	1(1-0)
Zoöl. Problems, Zoöl. 203	1 or 2(-)	Research in Zoöl., Zoöl. 301	1 to 8 cr.
Genetics Seminar, Zoöl. 227	1(1-0)		
Research in Zoölogy, 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		Second Semester	
Engineering Geology, Geol. 102	4(3-3)	General Geology, Geol. 103	3(3-0)
Economic Geology, Geol. 207	4(3-3)	Historical Geology, Geol. 203	4(3-3)
Crystallography and Mineralogy, Geol. 209	4(2-6)	Physiographic Geol., Geol. 110	3(3-0)
Invert. Paleontology, Geol. 220	4(3-3)	Structural Geol. Geol. 215	4(3-3)
		Vert. Paleontology, Geol. 255	3(3-0)

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		Second Semester	
Gen. Entomology, Ent. 101	3(3-0)	Principles of Taxonomy, Ent. 216	1(1-0)
Gen. Economic Entomology, Ent. 203	3(2-3)	Taxonomy of Insects I, Ent. 217	2(0-6)
External Insect Morphology, Ent. 211	3(1-6)	Taxonomy of Insects II, Ent. 218	3(0-9)
Internal Insect Morphology, Ent. 212	3(0-9)	Adv. Gen. Entomology, Ent. 221	3(3-0)
Ent. & Zoöl. Literature, Ent. 231	2(2-0)	Staple Crop Entomology, Ent. 206	3(2-3)
Medical Entomology, Ent. 226	3(2-3)	Entomological Problems, Ent. 238	2 to 4 cr.
Advanced Apiculture B, Ent. 228	3(2-3)	General Apiculture, Ent. 208	3(2-3)
		Insect Physiology, Ent. 241	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		Second Semester	
Ancient Civilizations, Hist. 101	3(3-0)	Medieval Europe, Hist. 102	3(3-0)
English History, Hist. 121	3(3-0)	Current History, Hist. 126	1(1-0)
American History I, Hist. 201	3(3-0)	Am. Indust. History, Hist. 105	3(3-0)
American History II, Hist. 202	3(3-0)	American History III, Hist. 203	3(3-0)
American Agr'l History, Hist. 204	3(3-0)	Latin America, Hist. 208	3(3-0)
Modern Europe I, Hist. 115	3(3-0)	Modern Europe II, Hist. 223	3(3-0)
The Far East, Hist. 229	2(2-0)	20th Century Europe, Hist. 224	2(2-0)
Hist. of Com. & Ind., Hist. 110	3(3-0)	The British Empire, Hist. 226	2(2-0)
Am. Political Parties, Hist. 206	2(2-0)	History of the Home, Hist. 225	3(3-0)
Immig. & Intern'l. Rel., Hist. 228	2(2-0)	International Law, Hist. 256	2(2-0)
Am. Government, Hist. 151	3(3-0)	Gov't Regulation of Bus., Hist. 260	2(2-0)
Am. Nat'l Government, Hist. 152	3(3-0)	Am. State Gov't, Hist. 153	3(3-0)
Comparative Government, Hist. 252	2(2-0)	History of Religions, Hist. 231	2(2-0)

16. Law

First Semester		Second Semester	
Farm Law, Hist., 175	2(2-0)	Commercial Law, Hist. 160	1(1-0)
Business Law I, Hist. 163	3(3-0)	Business Law II, Hist. 164	3(3-0)
Land Law, Hist. 276	2(2-0)	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		Second Semester	
Economics I, Econ. 101	3(3-0)	Money and Banking, Econ. 116	3(3-0)
Public Finance, Econ. 214	3(3-0)	Business Finance, Econ. 217	3(3-0)
Labor Problems, Econ. 233	2(2-0)	Transportation Problems, Econ. 229	2(2 0)
Marketing, Econ. 246	3(3-0)	Business Management, Econ. 126	2(2-0)
Advanced Economics, Econ. 251	3(3-0)	Economic Problems, Econ. 248	(-)
Sociology, Econ. 151	3(3-0)	Community Organization, Econ. 267	3(3-0)
Rural Sociology, Econ. 156	3(3-0)	Advanced Sociology, Econ. 273	3(-)
Social Problems, Econ. 257	2(2-0)	Adv. Rural Sociology, Econ. 270	3(-)
Accounting I, Econ. 133	3(2-3)	Life Insurance, Econ. 244	2(2-0)
Adv. Accounting, Econ. 280	3(3-0)	Accounting II, Econ. 134	3(2-3)
Auditing, Econ. 285	3(3-0)	Investments, Econ. 222	3(3-0)
Governmental Acct., Econ. 289	2(2-0)	Accounting Systems, Econ. 283	2(2-0)
Property Insurance, Econ. 242	2(2-0)	Institutional Accounting, Econ. 284	2(2-0)
		Cost Accounting, Econ. 287	3(3-0)
		Income Tax Acct., Econ. 282	2(2-0)
		C. P. A. Problems, Econ. 292	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 courses 101 or 102 in psychology, and courses 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		Second Semester	
Psychol. A, B, or C, Educ. 181, 183, 185	3(3-0)	Methods of Teaching, Educ. 111	3(3-0)
School Management, Educ. 107	3(3-0)	Educ'l. Psychology, Educ. 109	3(3-0)
Educational Administration A, Educ. 105	3(3-0)	Educ'l Sociology, Educ. 239	3(3-0)
		Psychology of Childhood and Adolescence, Educ. 250	3(3-0)
Mental Measurements, Educ. 252	3(3-0)		
Educ'l Measurements, Educ. 212	3(3-0)		
Technic of Mental Testing, Educ. 261	3(1-6)	Abnormal Psychology, Educ. 254	3(3-0)
Introd. to Philosophy, Educ. 220	3(3-0)	Advanced Psychology, Educ. 256	3(3-0)
Statistical Methods Applied to Education, Educ. 223	3(3-0)	Philosophy of Education, Educ. 206	3(3-0)
		Rural Life and Educ., Educ. 201	3(3-0)
		Vocational Education, Educ. 241	3(3-0)
Agric. Educ. B, Educ. 330	3(3-0)	Teaching Participation in Home Economics, Educ. 160	3(3-0)
Teaching Participation in Agriculture, Educ. 161	3(3-0)	Methods of Teaching Industrial Arts, Educ. 140	3(3-0)
Methods of Teaching Home Economics, Educ. 132	3(3-0)	Methods of Teaching Agriculture, Educ. 136,	3(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		Second Semester	
El. Journalism, Ind. Jour. 151	2(2-0)	Industrial Writing, Ind. Jour. 161	2(2-0)
Ind. Feature Writ., Ind. Jour. 167	2(2-0)	Jour. for Women, Ind. Jour. 172	2(2-0)
Materials of Jour., Ind. Jour. 265	2(2-0)	Magazine Features, Ind. Jour. 270	2(2-0)
		Jour. Surveys, Ind. Jour. 278	2(0-6)

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.

APPLIED MUSIC.

Offered Both Semesters.

Instrument, Mus. 153	0-4 credits	Double Bass, Mus. 167	0-4 credits
Voice, Mus. 156	0-4 credits	Organ, Mus. 172	0-4 credits
Violin, Mus. 158	0-4 credits	Choral Ensemble, Mus. 194	½ credit
Piano, Mus. 161	0-4 credits	Orchestra, Mus. 195	½ credit
Violoncello, Mus. 163	0-4 credits	Band, Mus. 198	½ credit

THEORETICAL MUSIC

First Semester		Second Semester	
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Counterpoint, Mus. 108A	2(2-0)	Musical Form & Analysis, Mus. 111	1(1-0)
History & Apprec. of Music I, Mus. 112	3(3-0)	History & Apprec. of Music II, Mus. 113	3(3-0)
School Music I, Mus. 138	2(2-0)	School Music II, Mus. 139	2(2-0)
Meth. of Teach. Music, Mus. 141	3(3-0)	School Music III, Mus. 143	2(2-0)
Instrn. & Orchestrn., Mus. 136	3(3-0)		

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		Second Semester	
Infantry V, Mil. Tr. 109	3(2-3)	Infantry VI, Mil. Tr. 110	3(2-3)
Infantry VII, Mil. Tr. 111	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		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 & Field Spts., Phys. Ed. 140A	2(1-3)
Football II, Phys. Ed. 127	2(1-3)	Baseball, Phys. Ed. 133	2(1-3)
Basket Ball, Phys. Ed. 130A	2(1-3)	Wrestling, Phys. Ed. 128	1(0-3)
Swimming M I, Physics. Ed. 121	1(0-3)	Swimming M II, Phys. Ed. 122	1(0-3)
Boxing, Phys. Ed. 132	1(0-3)	Playground Management and Games M, Phys. Ed. 145A	2(2-0)
School Hygiene, Phys. Ed. 196	3(3-0)	Personal Hygiene, Phys. Ed. 119	2(2-0)
Apparatus, Phys. Ed. 109	1(0-3)		
First Aid and Mas., Phys. Ed. 113A	3(3-0)		

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 and Games W, Phys. Ed. 182A	2(1-3)	General Technic IV, Phys. Ed. 157D	2(1-3)
General Technic III, Phys. Ed. 157C	2(1-3)	General Technic VI, Phys. Ed. 157F	2(1-3)
General Technic V, Phys. Ed. 157E	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. 205	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*	American State Government, Hist. 153	3(3-0)
American Natl. Government, Hist. 152	3(3-0)	Modern Europe I, Hist. 115	3(3-0)
Latin America, Hist. 208	3(3-0)	Modern Europe II, Hist. 223	3(3-0)
Agric. Economics, Agric. Ec. 101	3(3-0)	English History, Hist. 121	3(3-0)
Money and Banking, Econ. 116	3(3-0)	Economics I, Econ. 101	3(3-0)
Business Finance, Econ. 217	3(3-0)	Public Finance, Econ. 214	3(3-0)
Marketing of Farm Prod., Agric. Ec. 202	3(3-0)	Labor Problems, Econ. 233	2(2-0)
Agric. Land Prob., Agric. Ec. 218	3(3-0)	Sociology, Econ. 151	3(3-0)

31. Applied Science

Students in the curriculum of 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. 241	3(1-6)
Fruit Crop Diseases, Bot. 202	2(1-2, 1)	Vegetable Diseases, Bot. 246	3(1-6)
Farm Forestry, Hort. 114	3(2-3)	Plant Ecology, Bot. 228	2(2-0)
Seed Identification and Weed Control, Agron. 105	2(1-3)	Nature and Development of Plants, Bot. 110,	3(3-0)
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)
Landscape Gardening I, Hort. 125	3(3-0)	General Microbiology, Bact. 101	3(1-6)
Hygienic Bacteriology, Bact. 206	4(2-6)	Staple Crop Ent., Ent. 206	3(2-3)
Gen. Entomology, Entom. 101	3(3-0)	General Apiculture, Ent. 208	3(2-3)
Gen. Economic Entom., Ent. 203	3(2-3)	Applied Nutrition, 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		Second Semester	
Household Physics, Physics 101	4(3-3)	Household Microbiology, Bact. 121	3(1-6)
Foods I, Food & Nutr. 102	5(3-6)	Clothing for the Individual, Clo. & Text. 102,	5(2-9)
Foods II, Food & Nutr. 107	3(1-6)	Costume Design I, Art. 130	2(0-6)
Human Nutrition, Food & Nutr. 112	3(3-0)	Textiles, Clo. & Text. 116	3(2-3)
Dietetics, Food & Nutr. 202	4(3-3)	Interior Decoration I, Art. 113	2(0-6)
Applied Nutrition, Food & Nutr. 121	2(2-0)	Principles of Art I, Art 124	3(3-0)
Elementary Design I, Art 101A	2(0-6)	Advanced Design A, Art 105	2(0-6)
Intermediate Design, Art 103	2(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		Second Semester	
General Botany I, Bot. 101	3(1-4, 2)	General Botany II, Bot. 105	3(1-4, 2)
El. of An. Husb., An. Husb. 125	3(2-4)	El. of Horticulture, Hort. 107	3(2-3)
El. of Dairying, Dairy Husb. 101	3(2-3)	Dairy Cattle Judging, Dairy Husb. 104	1(0-3)
El. Org. Chemistry, Chem. 123	3(2-3)	Prin. of Feeding, An. Husb. 152	3(3-0)
Plant Pathology I, Bot. 205	3(1-4, 2)	Field Crop Diseases, Bot. 241	3(1-6)
Soils, Agron. 130	4(3-3)	Farm Crops, Agron. 101	4(2-6)
Farm Poultry Production, Poul. Husb. 101	2(1-2, 1)	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		Second Semester	
Engr. Drawing, Mach. Des. 101	2(0-6)	Descr. Geom., Mach. Des. 106	2(0-6)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Arch. II, Arch. 107A	3(0-9)
Object Drawing I, Arch. 111	2(0-6)	Object Drawing II, Arch. 114	2(0-6)
Design I, Arch. 142	3(0-9)	Design II, Arch. 144	3(0-9)
Coml. Illustration I, Arch. 165	2(0-6)	Coml. Illustration II, Arch. 170	2(0-6)
General Hist. of Arch., Arch. 244	3(3-0)	Domestic Arch., Arch. 124	2(2-0)
Pencil Rend. & Sketch., Arch. 116	2(0-6)	Pen and Ink Drawing I, Arch. 134	2(0-6)
Water Color I, Arch. 118	2(0-6)	Water Color II, Arch. 119	2(0-6)
Still Life Drawing, Arch. 117	2(0-6)	Life Drawing I, Arch. 121	2(0-6)
Clay Modelling, Arch. 133	2(0-6)	Life Drawing II, Arch. 123	2(0-6)
Adv. Free-hand Drawing I, Arch. 201	2(0-6)	Adv. Free-hand Drawing II, Arch. 206	2(0-6)
Etching I, Arch. 217	2(0-6)	Etching II, Arch. 218	2(0-6)
Oil Painting I, Arch. 230	2(0-6)	Oil Painting II, Arch. 235	2(0-6)
History of Painting & Sculpture, Arch. 179	3(3-0)	Block Prints, Arch. 137	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		Second Semester	
Engr. Drawing, Mach. Des. 101	2(0-6)	Engr. Woodwork I, Shop 101	1(0-3)
Descr. Geom., Mach. Des. 106	2(0-6)	Manual Training for Primary Grades, Shop 117	2(0-6)
Woodworking for Grammar Grades, Shop 120	2(0-6)	Woodworking I for High Schools, Shop 125,	2(0-6)
Woodworking II for High Schools, Shop 130,	2(0-6)	Wood Turning, Shop 135	2(0-6)
Forging I, Shop 150	1(0-3)		
Machine Tool Work I, Shop 170	2(0-6)	Farm Carpentry I, Shop 147	3(1-6)
Machine Tool Work III, Shop 193	1(0-3)	Machine Tool Work II, Shop 192	2(0-6)
Gas Engines and Tractors, Ag. Engr. 120	3(2-3)	Metallurgy, Shop 165	2(2-0)
Machine Drawing I, Mach. Des. 111	2(0-6)	Farm Buildings, Ag. Engr. 101	3(2-3)
Reed Furn. Constr., Shop 119	2(0-6)	Surveying I, Civ. Engr. 102	2(0-6)
Foundry Production, Shop 161	1(0-3)	Farm Shop Methods, Shop 175	3(1-6)
Adv. Shop Practice, Shop 261	1 to 5 cr.	Metallography I, Shop 167	1(0-3)

38. Printing.

Students in industrial journalism may elect fifteen hours from this group in order to fulfill the requirement in respect to subjects related to an industry, or they may elect courses in this group to satisfy elective requirements, choosing not fewer than eight credits.

First Semester		Second Semester	
Ad. Composition I, Ind. Jour. 108	2(0-6)	Ad. Composition II, Ind. Jour. 111	2(0-6)
Ad. Composition III, Ind. Jour. 112	2(0-6)	Job Composition I, Ind. Jour. 114	2(0-6)
Job Composition II, Ind. Jour. 118	2(0-6)	Job Composition III, Ind. Jour. 120	2(0-6)
Press Work I, Ind. Jour. 122	2(0-6)	Press Work II, Ind. Jour. 126	2(0-6)

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		Second Semester	
Milling Practice I, Mill. Ind. 109	3(1-6)	Prin. of Milling I, Mill. Ind. 104	2(1-3)
Wheat and Flour Testing, Mill. Ind. 205	3(0-9)	Prin. of Milling II, Mill. Ind. 106	1(0-3)
		Milling Practice II, Mill. Ind. 111	3(1-6)
Advanced Wheat and Flour Testing, Mill. Ind. 210	1 to 5(-)	Milling Qualities of Wheat, Mill. Ind. 212	3(3-0)
Farm Crops, Agron. 101	4(2-6)	Exptl. Baking, Mill. Ind. 206	3(1-6)
Grain Marketing, Ag. Ec. 203	3(3-0)	Grain Grading and Judging, Agron. 108	2(0-6)
Quantitative Analysis A, Chem. 250	3(1-6)	Quant. Analysis B, Chem. 251	3(1-6)
El. Org. Chemistry, Chem. 123	3(2-3)	The Chemistry of Proteins, Chem. 236A	3(2-3)
Milling Technology I, Mill. Ind. 201	2(0-6)	Milling Technology II, Mill. Ind. 202	2(0-6)
Mill. Ind. Problems, Mill. Ind. 214	1 to 5 cr.	Colloidal Chemistry, Chem. 213	2(2-0)

Bacteriology

Professor Bushnell
Professor Gainey
Associate Professor Fay
Assistant Professor Brandly
Assistant Professor Foltz

The Department of Bacteriology occupies part 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 $24,165.

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, classifications and distribution of bacteria, factors necessary for the development of bacteria, culture media, cultural features, staining values, and fundamental principles of applied bacteriology.

Laboratory.—The student prepares culture media and becomes familiar with

* The number before the parenthesis indicates the number of 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.

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. Prerequisite: Chem. 122, Gen. Org. Chemistry. Dr. Gainey and Mr. Fay.

A general course emphasizing particularly the relation of microörganisms 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 microörganisms; 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; epizoötic 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 microörganisms studied morphologically, culturally, and biochemically; quantitative and qualitative examinations of milk and of water. II: Microscopical and cultural characteristics of pathogenic microörganisms continued; laboratory animal inoculations, autopsy, and diagnosis; prevention and treatment of specific infectious diseases; experimental production of antitoxins, agglutinins, precipitins, and cytolysins, etc. Deposit, $10.

121. 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 microörganisms; 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.

125. Water and Sewage Bacteriology. 2(0-6); I. Prerequisite: Chemistry E-II. Dr. Gainey.

A course designed to acquaint the student of engineering with the fundamentals of water purification and sewage disposal, as affected by the action of microörganisms; quantitative and qualitative analysis of water supplies; laboratory study of some of the important microbial changes involved in the disposal of sewage. Deposit, $5.

FOR GRADUATE AND UNDERGRADUATE STUDY

202. Soil Microbiology. 3(3-0); II. Prerequisite: Course 101 or 106. Offered in 1932-'33 and alternate years thereafter. Dr. Gainey.

The influences of depth and character of soil, temperature, moisture, chemical action, aëration, and other factors upon the activities of soil microörganisms; 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. Offered in 1932-'33 and alternate years thereafter. 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, dentrification, 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 121. Offered in 1933-'34 and alternate years thereafter. 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, technic involved in the diagnosis of various infectious diseases; 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 microörganisms 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, 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 microörganisms 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. 163.) 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.

222. Physiology of Microörganisms. 3(3-0); I. Prerequisite: Course 101, 106, 116, or 121. Offered in 1933-'34 and alternate years thereafter. Mr. Fay.

A general survey of the chemistry and physics of microbial processes. Textbook and other assigned readings. Deposit, $10.

225. Bacteriological Technic. 3(0-9); II. Prerequisite: Course 101, 106, 116, or 121. Offered in 1933-'34 and alternate years thereafter. Dr. Gainey.

Advanced training in the technic of laboratory manipulation; fundamental experiments and special experiments selected according to the interest of the student. Printed outlines furnished. Deposit, $5.

229. Advanced Serology. 5(3-6); II. Prerequisite: Course 116 or 206. Offered in 1934-'35 and alternate years thereafter. Dr. Bushnell.

Theories of immunity and immunization; preparation, purification, and standardization of the various biological products used in human and veterinary medicine. Laboratory arranged according to the material available. Textbook and other assigned readings. Deposit, $10.

235. Bacteriology of Butter Cultures. 1(0-3); II. Prerequisite: Course 211. Mr. Fay.

The bacteriological and chemical aspects of butter cultures.

270. Bacteriological Problems. 1 to 4 credits; I, II and SS. Prerequisite: Course 101, 106, 116, or 121. Dr. Bushnell, Dr. Gainey, Mr. Fay, and Dr. Brandly.

Special problems assigned, credit depending upon the amount and quality of work done. Deposit, $3 per credit hour.

275. 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

301. Research in Bacteriology. 1 to 10 credits; 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 subjects for investigation chosen and outlined in consultation with him; opportunity to do experiment-station and advanced research work during vacation 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. Deposit, $3 per credit hour.

Botany and Plant Pathology

Professor Melchers
Professor Miller
Professor Davis
Professor Haymaker
Professor Gates
Assistant Professor Elmer
Assistant Professor Lefebvre
Instructor Horn
Instructor Newcomb
Associate Pathologist Johnston*
Associate Pathologist Fellows*
Assistant Pathologist Boyle*
Junior Pathologist Ficke*
Graduate Assistant Wismer

The instruction given in the Department of Botany and Plant Pathology has a three-fold 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

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

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 $50,149.

COURSES IN BOTANY

FOR UNDERGRADUATE CREDIT

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, Dr. Lefebvre, Miss Horn, and Miss Newcomb.

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, $3.75.

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, $3.75.

110. Nature and Development of Plants. 3(3-0); II. Dr. Haymaker.

A general survey of the plant kingdom emphasizing structure, life processes, identification, classification, evolutionary development, geographical distribution, economic importance, etc.

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.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Fruit Crop Diseases. 2(1-2, 1); I. Prerequisite: Course 205. Offered in 1933-'34 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.

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 pathogenes which cause them. Charge, $2.

206. Morphology of the Fungi. 3(1-6); I. Prerequisite: Course 205. Offered in 1932-'33 and in alternate years thereafter. Dr. Lefebvre.

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 101 and 102 or 110. Dr. Miller.

A detailed study of the plant cell, solutions and membranes in relation to the cell, root systems, intake of water, intake of solutes, elements used, and loss of water.

210. Plant Physiology II. 3(1-6); II. Prerequisite: Course 208. Dr. Miller.

Methods used in obtaining experimental data in regard to the more common functions of plants. Charge, $5.

211. Plant Physiology III. 3(3-0); II. Prerequisite: Course 208. Dr. Miller.

A continuation of course 208, including a detailed study of photosynthesis, nitrogen metabolism, fat metabolism, digestion, translocation, respiration, and growth.

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.

216. Plant Histology. 3(1-6); II. Prerequisite: Course 101 or 105. Offered in 1933-'34 and in alternate years thereafter. Miss Newcomb.

A thorough training in the principles and practice of microtechnical methods in botany, including the study of anatomy of the higher plants. Charge, $4.

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 near-by 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. Prerequisite: Consult professor in charge.

Presentation of investigational work in botany, including plant pathology, plant physiology, plant ecology, taxonomy, morphology, and genetics; fundamental 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. Additional credit in ecology may be secured by arranging for additional work and by registering for Botanical Problems, course 232.

232. Botanical Problems. 1 to 5 credits; I, II, and SS. Prerequisites: Courses 101 and 105, and approval of the head of the department. Mr. Mel-

chers, Dr. Miller, Mr. Davis, Dr. Haymaker, Dr. Gates, Dr. Lefebvre, Dr. Elmer, Miss Horn, and Miss Newcomb.

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.

241. Field-crop Diseases. 3(1-6); II. Prerequisite: Course 205. Offered in 1933-'34 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.

246. Vegetable Diseases. 3(1-6); II. Prerequisite: Course 205. Offered in 1933-'34 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.

250. Morphology and Anatomy of the Higher Plants. 3(1-6); II. Prerequisites: Courses 101 and 105. Offered in 1934-'35 and in alternate years thereafter. Dr. Lefebvre.

A study of the structure and development of the various tissues and organs of the seed plants. Charge, $4.

266. Literature of Botany. 2(2-0); I. Prerequisites: Courses 101, 105, and 205. Miss Horn.

Aims of the course: (1) A general survey of the field of botanical literature, with special reference to the foundational works and authors that students of botany should know. (2) To study current botanical publications and review works of modern botanists appearing in the current serials. (3) To learn the use of keys to botanical literature and standard methods for preparation of special bibliographies and papers. (4) To gain some knowledge of the more important botanical classics and biographies.

268. Plant Cytology. 3(1-6); II. Prerequisites: Course 101 or Zoölogy course 105. Offered in 1932-'33 and in alternate years thereafter. Miss Newcomb.

The structure, development, and functions of the plant cell with special reference to chromosome behavior and its bearing upon genetic results. Charge, $3.

FOR GRADUATE CREDIT

301. Plant Pathology III. 3(1-4, 2); I. Prerequisite: Course 205. Offered in 1932-'33 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 master's thesis. Work is offered in the following lines:

Plant Pathology. Mr. Melchers, Dr. Haymaker, Dr. Elmer, and Dr. Lefebvre.
Plant Physiology. Mr. Davis and Dr. Miller.
Taxonomy and Ecology. Dr. Gates and Miss Horn.
Histology, Cytology, and Anatomy. Miss Newcomb.

Chemistry

Professor KING
Professor HUGHES
Professor BRUBAKER
Professor COLVER
Professor LATSHAW
Professor TAGUE
Associate Professor KEITH
Associate Professor BROWN
Associate Professor VAN WINKLE
Associate Professor BARHAM
Assistant Professor HALL
Assistant Professor PERKINS
Assistant Professor HARRISS
Assistant Professor WHITNAH
Assistant Professor LASH
Assistant Professor MARLOW
Assistant Professor SMITS
Instructor ANDREWS
Instructor McDOWELL*
Instructor REED
Instructor BENNE
Instructor SHENK
Instructor NIELSON
Graduate Assistant HOSTETTER
Graduate Assistant DORF
Graduate Assistant McGEHEE
Graduate Assistant CALDWELL

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 1,700 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 $76,306.

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, Dr. Marlow, Dr. Nielson, Mr. Benne, Mr. Shenk, Mr. Dorf, and Mr. McGehee.

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.

* Absent on leave, 1932-'33.

II: Ordinary methods of separation and detection of the more common metals, nonmetals, acids, bases, and salts. 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. Van Winkle, Mr. Andrews, Mr. Reed, and Mr. Hostetter.

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, Dr. Lash, Miss Harriss, Dr. Marlow, Mr. Benne, Mr. Shenk, Dr. Nielson, Mr. Dorf, and Mr. McGehee.

A general treatment of some of the principal laws and theories of chemistry; preparation, properties, and uses of some of the important metallic and nonmetallic 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.

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. Barnham, Dr. Marlow, and Mr. Shenk.

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 and Mr. Reed.

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 toxological 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 hours 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 application 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 and 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, electrical nature of matter, 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 adsorption; and colloidal formation.

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 activity.

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 heterocylic 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.

220. ORGANIC CHEMISTRY. 5(3-6); I and II. Prerequisite: Chemistry II. Dr. Colver.

The more important classes of organic compounds, particularly the aliphatic hydrocarbons, alcohols, aldehydrates, ketones, acids and esters, the fats, proteins and carbohydrates, and such carbocylic compounds as the hydrocarbons, phenols, acids and esters that have a general interest.

Laboratory.—Preparation and study of the chemical and physical properties of one or more representative examples of the classes of compounds studied in the classroom. 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 a 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 asymetric carbon atoms of sugar; geometrical isomerism; and keto-enol tautomerism.

226. Carbocyclic and Heterocyclic Compounds. 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, prine, 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. 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, isolation, 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.

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.

Preparation 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 and SS. Prerequisite: Chemistry II or equivalent. Dr. Brubaker.
Practically the same as courses 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, II, and SS, 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, and SS. Prerequisites: For A, Chemistry II; for B, course A. Dr. Brubaker.
Course A: General procedure 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 and SS., 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 hours 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.

265. The Chemistry of the Carbohydrates. 2(2-0); I or II, when requested by a sufficient number. Prerequisite: An approved course in organic chemistry. Dr. Whitnah.

The occurrence, structure, reactions, synthesis, and uses of the more important carbohydrates.

270. Chemistry Problems. 1 to 5 credits; I, II, and SS.

Individual problems to fulfill the thesis requirements of students in agricultural chemistry, chemistry, and industrial curricula. Deposit, $10.

271. Selected Topics in Inorganic Chemistry. 2(2-0); II. Prerequisite: A course in physical chemistry. Dr. Lash and Dr. Nielson.

Material from such topics as thermal analysis, temperature measurements, atomic hydrogen, the hydrides, the halogens, solutions, and the ammonia system.

272. Physical Chemistry II. 3(3-0); II. Prerequisite: A beginning course in physical chemistry and calculus. 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.

275. Chemistry Seminar. Twice a month, throughout the year, the officers of the department, with the more advanced students and such others as wish to, meet for papers and discussions 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.

277. Chemical Literature. 1(1-0); I or II when requested by a sufficient number. Prerequisite: Organic Chemistry II. Mr. Reed.

A course designed to train the student to make efficient use of chemical literature, and to give him the necessary procedure to follow in collecting available information in our library.

280. Elements of Chemical Engineering. 3(3-0); 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.

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.

285. Methods of Teaching Chemistry. 3(3-0); I or II. Prerequisite: Ten hours of college chemistry following at least one high-school unit of physical science or its equivalent, and junior standing. Miss Harriss.

Survey of high-school course of study, review of approved texts, making of lesson plans for specific topics, demonstration of lessons, study of necessary laboratory equipment and of literature emphasizing subject matter and methods of presentation.

287. Corrosion. 3(3-0); I. Prerequisites: Organic Chemistry, and Physical Chemistry or concurrent registration. Dr. Van Winkle.

The theories and various factors involved in the corrosion of iron, steel and nonferrous metals; methods of testing for and preventing corrosion.

290. Biochemistry of Internal Secretions. 2(2-0); I or II, when requested by a sufficient number. Prerequisite: Chemistry 231. Dr. Marlow.
The chemistry of the glands of internal secretions.

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, Dr. Barham, and Dr. Whitnah.
Biochemistry. Dr. Hughes, Dr. Tague, Dr. Whitnah, and Dr. Marlow.
General and Physical Chemistry. Dr. King, Dr. Hall, Dr. Keith, and Dr. Lash.

305. Animal Nutrition Seminar. 1(1-0); I and II. For prerequisites, consult instructor. Dr. Hughes.
Experiments in nutrition, the methods employed, and validity of conclusions drawn.

Economics and Sociology

Professor Kammeyer
Associate Professor Hill
Assistant Professor Stewart
Assistant Professor Thompson
Assistant Professor Jones
Assistant Professor Holtz
Instructor Beals

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 thirty-three 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 $1,337.

CERTIFICATE OF CERTIFIED PUBLIC ACCOUNTANT

By act of the Kansas legislature passed March 24, 1915, provision is made for the examination for the certificate of Certified Public Accountant. Applicants must be citizens of the United States or must have declared their intention to become citizens. They must be at least twenty-one years of age; must have good moral character; must have a high-school education or the equivalent thereof; must have four years of experience and study in accountancy, at least three of which must have been in the office of a public accountant or on their own account; and must pass an examination in auditing, accounting, and business law given by the State Board of Examiners.

Examination questions are prepared and graded by the American Institute of Accountants and examinations are held in May and November of each year.

COURSES IN ECONOMICS

FOR UNDERGRADUATE CREDIT

101. Economics I. 3(3-0); I, II, and SS. Not open to students who have credit in Agricultural Economics. Dr. Kammeyer, Mr. Stewart, Mr. Thompson, and Mr. Beals.

An introductory study of the fundamental facts, concepts, and principles pertaining to modern economic phenomena; a foundation course for all specialized studies in economics.

104. Economics II. 3(3-0); II and SS. Prerequisite: Economics I or Ag. Econ. 101. Dr. Kammeyer, Mr. Stewart, Mr. Thompson and Mr. Beals.

The most urgent contemporary economic problems in the light of generally accepted economic principles; critical examination of the problems and the various proposed remedies; the solutions which seem to offer the greatest promise of successful operation.

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 federal farm loan system, and state banks; savings banks, trust companies, building and loan associations and other institutional forms of credit.

126. Business Management. 2(2-0); I, II, and SS. Prerequisite: Economics, or may be taken concurrently. Dr. Kammeyer.

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

214. Public Finance. 3(3-0); 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. Not open to students taking Taxation and Land Ownership (Ag. Ec. 219).

217. Business Finance. 3(3-0); II. Prerequisites: Money and Banking (Econ. 116) and Accounting II (Econ. 134). Mr. Thompson.

Those problems of business finance which actually arise from day to day in the average industrial concern, including both manufacturing and trading enterprises; the relationship of these financial problems to the problems of original construction, purchase, production, distribution, and consumption of goods; analysis of the most recent financial developments.

219. Corporation Organization and Finance. 2(2-0); I. Prerequisite: Economics (Econ. 101). Open only to engineering students. Mr. Thompson.

The organization and classification of business enterprises, their financial structure, and internal management: the principal forms of corporate stocks and bonds, underwriting procedure, marketing securities, and other processes of financial management.

222. Investments. 3(3-0); II and SS. Prerequisite: Money and Banking (Econ. 116). Mr. Stewart.

Financial types of investment securities; investment risks; effect of eco-

nomic trends upon investment values; functions of investment banks; investment policies suitable for various investment classes.

223. Credits and Collections. 2(2-0); II. Prerequisite: Economics (Econ. 101). Dr. Kammeyer and Mr. Thompson.

The fundamental principles of credits and collections with special attention given to mercantile credits, credit instruments, the sources of credit information, credit department organization and management, technical and legal aspect of collections, and credit and collection control.

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. Stewart.

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. Stewart.

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.

246. Marketing. 3(3-0); I. Prerequisite: Economics. Mr. Beals.

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.

251. Advanced Economics. 3(3-0); I and SS. Open only to seniors and graduates. Dr. Kammeyer or Mr. Thompson.

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. Thompson.

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. II. 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. I. Prerequisite: Course 151 (Sociology). Dr. Hill.
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, Condercet; and the sociological systems of Comte, Spencer, Gumplowicz, 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

133, 134. ACCOUNTING I AND II. 3(2-3) each; I, II, and SS. Prerequisite: For 134, course 133. Mr. Jones and Mr. Beals.

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 references to depreciation, inventories, and intangibles; and several other topics.

FOR GRADUATE AND UNDERGRADUATE CREDIT

280. ADVANCED ACCOUNTING. 3(3-0); I and SS. Prerequisite: Course 134. Mr. Jones.

Advanced course in accounting theory with special emphasis upon the analysis of accounting statements and the preparation of special reports such as statements of affairs and realization and liquidation statements.

282. INCOME-TAX ACCOUNTING. 2(2-0); II. Given in 1929-'30 and alternate years thereafter. Prerequisite: Advanced Accounting or Cost Accounting. 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. Jones and Mr. Beals.

The construction and installation of accounting systems for commercial enterprises.

284. INSTITUTIONAL ACCOUNTING. 2(2-0); II. Mr. Stewart.

A study of accounting principles and their application to cafeteria, lunch and tea rooms, restaurants, dormitories, clubs, and other institutions.

285. AUDITING. 3(3-0); I. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Jones and Mr. Beals.

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 and SS. Prerequisite: Course 134. Mr. Beals.

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. Jones and Mr. Beals.

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. 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
Professor Davidson
Associate Professor Alm
Assistant Professor Holtz
Assistant Professor Hall
Assistant Professor Quinlan
Instructor Langford
Instructor Baxter
Instructor Lyness
Assistant Quist

The courses in this department have been organized with the following objectives in view: (1) To meet the requirements of the Kansas State Board of Education in education and psychology for state certificates for teachers; (2) to give general information in the fields of psychology and public education; (3) to meet the requirements for a major in graduate work for the degree of Master of Science. The department has a well-equipped shop and laboratories for carrying on research in psychology and education. The department's equipment is valued at $5,450.

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 hours in Psychology, three in Educational Administration, three in Educational Psychology, three in Special Methods of Teaching, and three in Teaching Participation in High School.
      (2) Three hours elected from the Department of Education, and approved by head of department.
   c. Credit obtained in college courses in methods of teaching special subjects will be accepted to the extent of three 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 hours of college credit, following at least three high-school units.
      Foreign Languages.—Not less than fifteen 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 hours of college credit, following at least two high-school units.
      Physical Science.—Not less than ten 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 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 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 sixty hours of college work, including three hours in Psychology, three in School Management, three in Methods of Teaching, and three in Teaching Participation in Grade Schools.
   Not more than fifteen hours in any one department will be accepted on transcripts showing only sixty hours of credit, and not more than twenty hours credit presented from correspondence courses will be accepted.
   b. Valid in any elementary school.
3. Certificates for Teachers of Vocational Agriculture.
   a. Complete four years of college work with degree, including the following:
   (1) Not less than fifty hours in technical or practical agriculture.
   (2) Not less than twenty-one hours of science related to agriculture.
   (3) Eighteen hours in the Department of Education: viz., three in Psychology, three in Educational Administration, or in Principles of Secondary Education, three in Educational Psychology, three in Vocational Education, three in Special Methods in Agriculture, and three in Teaching Participation in Agriculture.
   (4) Eighteen hours in mechanical lines related to farm-shop problems.
   b. Valid for three years and may be renewed for life.
4. Certificate for Teachers of Vocational Home-making.
   a. Complete four years of college work with degree, including the following:
   (1) Thirty-four hours in technical home economics, as required in the curriculum in Home Economics, three in Child Welfare, and three in Practice Work in Household Management.
   (2) Eighteen hours in the Department of Education: viz., three in Psychology, three in Educational Administration or three in Principles of Secondary Education, three in Educational Psychology, three in Vocational Education, three in Special Methods in Home Economics, and three in Teaching Participation in Home Economics.
   b. Valid for three years and may be renewed for life.

5. To comply with the regulations of the State Board of Education regarding teachers' certificates based on four years of college work, the student must complete at least twenty-four of the last thirty semester hours or fifty of the last sixty semester hours, in residence at the college granting the degree.

COURSES IN EDUCATION

FOR UNDERGRADUATE CREDIT

105. Educational Administration A. 3(3-0); I, II, and SS. Dr. Andrews.
The organization of state, city, and county school systems; organization of school systems in Kansas, both rural and city; the school laws of Kansas.

107. School Management. 3(3-0); I, II, and SS. Limited to freshmen and sophomores. Mr. Davidson.
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, II, and SS. Prerequisites: General Psychology and junior or senior standing. Dr. Strickland.
The native equipment of human beings which serves as a basis for education, individual differences, and psychology of learning.

111. Methods of Teaching. 3(3-0); I, II, and SS. Prerequisite: General Psychology. Open to freshmen and sophomores only. Dr. Andrews.
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.

130. Teaching Participation in Grade School. 3(3-0); I, II. Prerequisites: Psychology, Methods of Teaching, and School Management. Not open to students below sophomore standing.
The work in this course is done in an elementary school of Manhattan. Appointment must be made at the time of registration for the semester during which it is done.

132. Methods of Teaching Home Economics. 3(3-0); I, II, and SS. Prerequisites: Foods I and II, Clothing I and II, and Psychology. Mrs. Rust and Mrs. Baxter.
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. Methods of Teaching 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 coördinating farm mechanics work.

138. Methods of Teaching Biology. 3(3-0); I, II, and SS. Prerequisites: Psychology; basic courses in Botany, Entomology, Microbiology, and Zoölogy; and at least junior standing. Dr. Williams.
State high-school course of study and approved texts, objectives, motivation, planning instruction, teaching technique and materials, classroom and laboratory organization, professional literature, and ethics of the science.

140. Methods of Teaching 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. Methods of Teaching Physics. 3(2-3).
(See Department of Physics, course 224.)

142. Methods of Teaching 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. Methods in Arithmetic. 2(2-0); SS.
(See Department of Mathematics, course 123.)

146. Teaching Participation in Physical Education. 3 credits. I.
(See Department of Physical Education, courses 137 and 186.)

147. Methods of Teaching Chemistry. 3(3-0); I or II.
(See Department of Chemistry, course 285.)

148. Methods of Teaching Modern Languages. 3(3-0); I or II.
(See Department of Modern Languages, course 198.)

149. Methods of Teaching Social Sciences. 3(3-0); I and SS.
(See Department of History and Government, course 233.)

152. Methods of Teaching Art. 3(3-0); I and II.
(See Department of Art, course 142.)

160. Teaching Participation in Home Economics. 3 credits. I, II, and SS. Prerequisites: Food I and II, and Clothing I and II; prerequisite or parallel. Educ. 132. Mrs. Rust and Mrs. Baxter.
Supervised teaching carried on in the home economics classes of the Manhattan high school.

161. Teaching Participation 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 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.

164. Teaching Participation in High School. 3(3-0); I and II. Prerequisites: Educational Psychology and Methods in the subject in which the teaching participation is done. Not open to students below senior standing. Dr. Strickland.
Work done in classes in the Manhattan High School for which special appointment must be made at the time of registration for the semester in which it is done. The work may be elected in Biology, English, Mathematics, Modern Languages, Physical Science, and Social Science.

165. Teaching Participation in Art. 3(3-0); I and II.
(See Department of Art, course 146.)

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. Extracurricular Activities. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Dr. Holton and visiting instructors.
A careful survey of the extracurricular activities of 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.

206. Philosophy of Education. 3(3-0); II and SS. Prerequisites: 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.

212. Educational Measurements. 3(3-0); I, II, and SS. Prerequisites: General Psychology and Educational Psychology. Dr. Strickland.
The scientific measurement of achievement as distinguished from intelligence testing.

219. The Curriculum. 3(3-0); SS. 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 cur-

riculum examined for its minimum essentials both in the elementary school and in the high school.

220. 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.

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.

230A. Vocational Guidance. 3(3-0); I, II, and SS. Prerequisites: Educational Administration, Psychology. 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.

232. Teaching Subjects Related to Home Economics. 1 to 3 credits; I, II, and SS. Prerequisites: Psychology, and 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 are related to vocational home-making, required in the Smith-Hughes high-school courses.)

234. Methods in Adult Home-making Classes. 1 to 3 credits; SS. Prerequisites: Psychology, and Methods of Teaching Home Economics, or their equivalent.

The principles of teaching applied to adult classes and a demonstration class in one or more phases of home making.

236. Principles of Secondary Education. 3(3-0); I, II, and SS. Prerequisites: Psychology, and junior or senior standing. Dr. Williams.

A brief historical study of secondary education following the origin and development of present-day principles in the field of secondary education; objectives of junior and senior high-school organization, administration and supervision; curriculum and methods of organizing and conducting secondary education; field problems in junior and senior high school. A limited amount of field work is required.

239. Educational Sociology. 3(3-0); I, II, and SS. Prerequisites: General Psychology, and junior or senior standing. 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.

241. Vocational Education. 3(3-0); I, II, and SS. Prerequisites: Educational Administration or Principles of Secondary Education, and junior or senior standing. 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.

244. History of Education. 3(3-0); II. 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.

FOR GRADUATE CREDIT.

306. Educational Administration C. 3(3-0); SS. Prerequisite: Educational Administration A, or its equivalent. Dr. Andrews.

The constitutional and legal basis of public-school administration, study of judicial decisions in order to discover the legal principles involved. Major topics: Creation of school districts; rules and authority of boards of education; control of school property; management of funds; liability of districts and district officers; taxation; employment and dismissal of teachers; rights and duties of parents and pupils; discipline and punishment; curriculum and textbooks. Intended primarily for school executives.

309. Problems in Educational Psychology. 1 to 3 credits; I, II, and SS. Prerequisites: Psychology, Educational Psychology. Dr. Strickland.

A study of problems, recent experimentations, and applications of the principles of educational psychology.

311. Problems in Educational Measurement. 1 to 3 credits; I, II, and SS. Prerequisites: Educational Psychology and Educational Measurement. Dr. Strickland.

Problems in refining educational measurement and using its results.

312. Problems in Teaching Methods. 1 to 3 credits; I, II, and SS. Prerequisites: Educational Psychology, and senior or graduate standing. Dr. Strickland.

Individual problems in development and definition of effective teaching procedure.

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.

314. 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.

315. Supervision in Home Economics. 2 credits; I, II, and SS, by appointment. Prerequisites: Psychology, Methods of 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.

317. Problems in Educational Administration. 3(3-0); I, II, and SS. Prerequisites: Educational Administration and one year of teaching experience. Dr. Andrews.

Two types of problems are considered: (1) The income of the public schools; taxation inequalities and equalization devices; the state and federal unit; possible solutions of revenue problems; (2) The administration of the teaching staff, including training, certification, recruiting, placement, promotion, training in service, tenure, rating, teaching load, salary schedules, professional ethics, legal and social status, professional organizations, health and leisure, retirement and the organization of the teaching staff. The course is primarily for school executives.

322. Problems in Statistical Methods Applied to Education. 1 to 3 credits. I, II, and SS. Prerequisites: Course 223 or equivalent, 12 hours of college mathematics, and full graduate standing. Dr. Andrews.

The solution of some statistical problem in research or thesis preparation; the theory of statistics from a more advanced point of view; regression curves and various methods of correlation; the literature of statistics.

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.

333. Problems in Educational Sociology. 1 to 3 credits. I, II, and SS. Prerequisites: General Psychology, Educational Psychology, and graduate standing. Dr. Holton.
Research problems in the social organization of the school and the social inheritance of school populations, with special reference to the development of desirable personality traits.

335. Technique of Educational Research. 1(1-0); I, II, and SS. Prerequisite: Candidacy for a master's degree in Education. Dr. Andrews.
A critical review of the methods employed in collecting and preparing for presentation the materials submitted for the master's thesis, involving rigorous examination of evidence, the place and function of statistical methods in social science, and rigorous use of objective methods in scientific research.

337. Problems in Vocational Education. 1 to 3 credits. I, II, and SS. Prerequisites: Vocational Education, and Educational Administration or Principles of Secondary Education. Dr. Williams.
The solution of some vocational education problem in research or in thesis preparation. Problems in administration, supervision, or curriculum building in the varied vocational fields to meet community needs.

COURSES IN PSYCHOLOGY

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.

181. Psychology A. 3(3-0); I, II, and SS. Not open to juniors or seniors, or to those who have credit in courses 183 or 185. 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.

183. Psychology B. 3(3-0); I. Not open to students who have credit in courses 181 or 185. Dr. Peterson.
Based on the same facts and principles as course 181, 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.

185. Psychology C. 3(3-0); I, II, and SS. Not open to freshmen or sophomores, nor to students who have credit in courses 181 or 183. Dr. Alm and Mr. Langford.
The same general content as course 181, with some additional materials in the application of psychology; more attention given to the methods by which new facts are discovered and interpreted.

FOR GRADUATE AND UNDERGRADUATE CREDIT

250. The Psychology of Childhood and Adolescence. 3(3-0); I, II, and SS. 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.

252. 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.

254. Abnormal Psychology. 3(3-0); II. Prerequisite: Psychology A, B, or C. Dr. Alm.

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.

256. Advanced Psychology. 3(3-0); II. Prerequisite: Psychology. Mr. Langford.

Fundamental problems, methods, and interpretations of general psychology.

259. 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.

261. The Technic of Mental Testing. 3(1-6); I or II. Prerequisites or parallels: Courses 252 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.

265. Psychology of Advertising and Selling. 3(3-0); II. Prerequisite: Psychology A, B, or C. Dr. Peterson.

Psychological factors underlying effective selling and advertising, including a survey of experimental results and of present advertising and selling practices in the light of the principles of psychology.

267. Animal Psychology. 3(3-0); I and SS. Prerequisite: Psychology A, B, or C. Dr. Alm.

The aims and methods of research in animal psychology; animal behavior from the standpoint of sensory capacities, perception, nature and limitations of learning, delayed reaction, insight and other higher functions; review of the better research contributions.

270. Social Psychology. 3(3-0); II. Prerequisite: Psychology A, B, or C. Mr. Langford.

A study of the individual as a member of the group including results of experiments upon and observations of the individual in the group situation.

273. Psychology and Personnel Management. 3(3-0); I. Prerequisites: A grade above C 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 achievements, etc.

276. Psychology of Art. 3(3-0); II. Prerequisite: Psychology A, B, or C. Brief introduction to the philosophy of art; interpretation of psychological principles used in production and appreciation of art; review of experimental æsthetics. Attention given to pictorial art and music, with special emphasis on the former.

FOR GRADUATE CREDIT

370. 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. Enrollment by recommendation of the instructor not later than mid-semester.

373. 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.

376. Research in Psychology. 1 to 10 credits; I and II. Members of Graduate Faculty.

Individual research problems in the field of psychology.

Courses for Four-week Session of Summer School

FOR GRADUATE AND UNDERGRADUATE CREDIT

283. Administration and Supervision of Secondary Schools. 2(2-0); four-week session. 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 principals of rural high schools and superintendents of small city systems.)

285. The Project Method in Agricultural Education. 2(2-0); four-week session. Prerequisites: Education 136 and 161. Mr. Davidson or Mr. Hall.

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.

287. Organization and Conduct of Class Projects. 2 credits; four-week session. Prerequisites: Education 236 and 241. Mr. Davidson or Mr. Hall.

Fundamentals and principles on which productive class projects should be organized. Research and field work in class project study will be undertaken.

289. Administration and Supervision of Vocational Education. 2(2-0); four-week session. 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.

291. Community Problems in Vocational Agriculture. 2 credits; four-week session. Dr. Williams or Mr. Davidson.

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.

293. Problems in Evening School Classes. Class, 2 hours, daily; 2 credits; four-week session. Open to college graduates who have taught one year of vocational agriculture. Mr. Davidson or Mr. Hall.

Problems of organization, curriculum, and methods of teaching evening schools and classes sponsored by the national vocational education act. Designed for teachers in service.

295. Organization Problems in Teaching Farm Mechanics. Class, 2 hours, daily; 2 credits; four-week session. Prerequisites: Educ. 136 and 161. Mr. Davidson or Mr. Hall.

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.

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

195. 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.

196. 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.

197. 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
Associate Professor Callahan
Assistant Professor Garvey
Assistant Professor Parker
Instructor Bower
Instructor Aberle
Instructor Scott

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 $1,907.

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, Mr. Callahan, Miss Garvey, Mrs. Parker, Miss Bower, Miss Aberle, and Miss Scott.

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, Miss Sturmer, Miss Elcock, Mr. Breeden, Mr. Callahan, Miss Garvey, Mrs. Parker, Miss Bower, Miss Aberle, and Miss Scott.

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. 0(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.

114. Advanced Composition I. 3(3-0); I. Prerequisite: College Rhetoric II. Mr. Davis, 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.

117. Advanced Composition II. 3(3-0); II. Prerequisite: College Rhetoric II. Mr. Davis, 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.

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.

125. Letter Writing and Salesmanship. 3(3-0); II. Prerequisite: College Rhetoric II. Mr. Callahan.

The basic principles of business letter writing and salesmanship as they apply in the field of engineering, with practice in the writing of different kinds of business letters and the preparation of sales material, both oral and writtten.

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); II and 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. Those details of grammar closely related to the use of English as a tool are stressed.

FOR GRADUATE AND UNDERGRADUATE CREDIT

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.

228, 230. 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, Miss Sturmer, Miss Elcock, Mr. Breeden, Mr. Callahan, Miss Garvey, Mrs. Parker, Miss Bower, Miss Aberle, and Miss Scott.

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, Miss Sturmer, Miss Elcock, Mr. Breeden, Mr. Callahan, Miss Garvey, Mrs. Parker, Miss Bower, Miss Aberle, and Miss Scott.

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, II, and SS. 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 prospective of the field of English letters, and to study the works of authors in relation to their own periods.

FOR GRADUATE AND UNDERGRADUATE CREDIT

255. Cultural Readings. 3(3-0); I and II. Not open to students having credit in English 172, 175, or 181. Prerequisite: College Rhetoric II. Mr. Conover, Mr. Davis, and Mr. Matthews.

A reading course in English and American literature, designed for students in agriculture, engineering, and other technical curricula. Lectures on literature of general cultural value, and reports on assigned readings of especial interest to the technically trained man.

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 seventeenth 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.

268. The Literature of the Middle West. 3(3-0); I. Prerequisite: English Literature. Mr. Callahan.

A study of the literature produced in that section of America known as the Middle West, particularly Kansas and the surrounding territory; its backgrounds, authors, and literature since the close of the Civil War.

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. Wordsworth, Shelley, and Keats. 3(3-0); I. Prerequisite: English Literature. Mr. Rockey.

A study of the chief works of Wordsworth, Shelley, Keats, Coleridge, and Byron, with some consideration of the period as a revival of romanticism.

280, 281. World Classics I and II. 3(3-0) each; I and II, respectively. Prerequisite for each: English 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 and SS. Prerequisite: English Literature. Mr. Conover.

The more important British and American fiction since Hardy.

284. Contemporary Drama. 3(3-0); II. Prerequisite: English 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. Prerequisite: English Literature. Mr. Breeden.

I: The English novel, its historical 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. Prerequisite: History of English Literature. 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: 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. 1 to 8 credits; I, II, and SS. Prerequisites: Consult head of department and instructors concerned.

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.

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 Smith
Professor Parker
Associate Professor Painter
Assistant Professor Bryson
Assistant Professor Wilbur

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. The department has a well classified library containing the frequently used books and bulletins in the various courses. Field stations with all the necessary equipment provide means for the study of insects under normal field conditions.

The department owns equipment valued at $31,447.

COURSES IN ENTOMOLOGY

FOR UNDERGRADUATE CREDIT

101. General Entomology. 3(3-0) or 4(3-3); I. Dr. Smith.

A popular, general course dealing with insects and related Arthropods in their varied relations to plants and animals, including man. The subject matter is given a biological emphasis and is particularly selected to fill a place in the general cultural education of all classes of students and of prospective teachers and writers in the field of biology who will, in most cases, take only this one course in entomology.

Students expecting to use this course as a prerequisite to other courses in entomology should register also for the laboratory, which is the same as for course 203. General Zoölogy is a prerequisite for all other courses in entomology, except Milling Entomology. Charge, when the laboratory is elected, $1.

116. Milling Entomology. 1(1-0); I. Offered 1933-'34 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 Economic Entomology, or General Entomology with the laboratory and General Zoölogy. Dr. Parker.

The most important insect pests of orchard, garden, and forest, and standard methods of controlling their ravages.

203. General Economic Entomology. 3(2-3); I, II. Prerequisite: General Zoölogy. Mr. Dean and Mr. Bryson.

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. Staple Crop Entomology. 3(2-3); II. Prerequisite: General Economic Entomology, or General Entomology with the laboratory and General Zoölogy. Mr. Dean and Mr. Wilbur.

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.

208. General Apiculture. 3(2-3); I and II. Prerequisite: General Economic 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.

211. External Insect Morphology. 3(1-6); I. Prerequisite: General Economic Entomology. Mr. Wilbur.

The external anatomy of representative insects belonging to a number of orders, the types studied being selected to represent 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, $1.50.

212. Internal Insect Morphology. 3(0-9); II. Prerequisite: Course 211. Dr. Painter.

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. Taxonomy of Insects I. 2(0-6); II. Prerequisites: General Economic Entomology and External Insect Morphology; Principles of Taxonomy must be taken with the course. Dr. Painter.

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.

218. Taxonomy of Insects II. 3(0-9); II. Prerequisite: Taxonomy of Insects I. Dr. Painter, or other specialist.

A group is selected, and intensive study of the insects and literature of the group is made so that the student may become proficient in their determination. Charge, $1.

221. Advanced General Entomology. 3(3-0); II. Prerequisite: General Economic Entomology, or General Entomology with the laboratory and General Zoölogy. 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 Economic Entomology or General Entomology with the laboratory and General Zoölogy. Dr. Smith.

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: General Apiculture. Dr. Parker.

A continuation of General 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: General Apiculture or its equivalent. Dr. Parker.

A continuation of General 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: Introductory courses in zoölogy and entomology or in biology. Dr. Smith.

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.

235. Field Entomology. 2(0-6); I. Prerequisite: General Economic Entomology. Dr. Painter.

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, Dr. Smith, 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.

241. Insect Physiology. 2(2-0); II. Prerequisite: External Insect Morphology. Dr. Parker.

An elementary study of the more important physiological processes in insects with emphasis on the relation of form and function in the life of these animals. Lectures and assignment readings.

FOR GRADUATE CREDIT

305. Advanced Insect Physiology. 2(2-0); II. Prerequisites: Internal Insect Morphology, 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. Assigned readings and reports.

316. Research in Entomology. Prerequisites: (1) For research in taxonomy and morphology, Entomology 203, 211, 217, and Cytology; (2) for re-

search in economic entomology, Entomology 203, 206, and 217. Mr. Dean, Dr. Smith, 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
Instructor Byrne

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 110, or equivalent. Mr. Sperry and Mr. Byrne.

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. Mr. Sperry and Mr. Byrne.

The structural and dynamic features of the earth; the rock-forming minerals; the rocks and their decay; a short history of the earth. Charge, $1.50.

110. Physiographic Geology. 3(3-0); II. Prerequisite: Course 102 or 103. Mr. Sperry and Mr. Byrne.

The topography of the earth and the forces that have produced it. Stress is laid on the origin of the topographic features of North America. Charge, $1.50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Historical Geology. 4(3-3); I and II. Prerequisite: Course 102 or 103. Mr. Sperry and Mr. Byrne.

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 102 or 103, and General Chemistry. 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 and Mr. Byrne.

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.

215. Structural Geology. 4(3-3); II. Prerequisites: Courses 102 or 103, and 203. Mr. Sperry.

The mechanics of the earth's crust. The aim is to give a means of interpreting the structures found in the earth.

Laboratory.—Study of joints, faults, and folds produced artificially; a few field trips for the purpose of observing the structures found near Manhattan. Charge, $1.50.

220. Invertebrate Paleontology. 4(3-3); I. Prerequisites: Courses 102 or 103, and 203. Mr. Byrne.

Evolution and geologic history of the invertebrate animals.

Laboratory.—The classification and identification of invertebrate fossils. Charge, $1.50.

230. Field Methods in Geology. 3(1-6); II. Prerequisites: Courses 103 and 203. Mr. Byrne.

The construction of geologic maps, including a complete map of the Manhattan area; the application of field methods to the problems of geology. Charge, $1.50.

235. Optical Mineralogy. 4(2-6); II. Prerequisite: Course 209. Mr. Sperry.

The use of the polarizing microscope in identifying crystal fragments, powders, sediments, and thin sections; optical methods of microscopic research. Charge $1.50.

240. Principles of Geography. 3(3-0); I. Mr. Byrne.

An introductory course in college geography, emphasizing the relationships between human activities and the geologic environment. Charge, $1.50.

255. Vertebrate Paleontology. 3(3-0); II. Prerequisites: Course 203 or ten hours of zoölogy. Mr. Byrne.

The evolution, geologic history, and classification of the vertebrates. Charge, $1.50.

275. Geologic Problems. 1 to 3 credits; I, II, and SS. Mr. Sperry and Mr. Byrne.

An individual problem in a particular phase of geology investigated under the guidance of an instructor.

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 $1,680 is owned by this department.

COURSES IN HISTORY

FOR UNDERGRADUATE STUDY

101. Ancient Civilizations. 3(3-0); I 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); II 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.

104. American History Survey. 3(3-0); I, II, and SS. Mr. Price.

A survey of American history and institutions from the newer viewpoint. Based on lectures, with special library studies of assigned topics. Combines constitutional, political, diplomatic, economics and social phases of the growth of our republic, with background and interpretation. Charge, $1.

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, Mr. Correll, and Miss Alsop.

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. Not open for credit to students who have credit in course 104. Prerequisite, when taken for graduate credit: Six credits of college history. Mr. Price.

Beginning of the American nation: The origin and development of American nationality and democracy to 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. Charge, $1.

202. American History II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Six 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 War of 1812 to the Civil War. Charge, $1.

203. American History III. 3(3-0); II and SS. Prerequisite, when taken for graduate credit: Course 104, 105, 201, or 202. Mr. Price, Mr. Iles, or Dr. Shannon.

The new industrial age: Review of the industrial conditions in America just before the Civil War; the effects of that war; the political and governmental activities of the period since 1860 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: Six 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. Offered in 1934-'35 and alternate years thereafter. Prerequisite, when taken for graduate credit: Six 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. This course is intended to supplement course 105 or 204.

208. Latin America. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Six credits of college history. Mr. James.

European background, discovery, exploration, and settlement of Spanish and Portuguese colonies in America; development of the Spanish administrative system; Spanish-American wars for independence; liberation of Brazil; rise of the Hispanic-American republics; their relations with each other and with the United States; social and economic conditions; present-day problems of the republican period.

223. Modern Europe II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 115 or equivalent. Mr. Parrish.

European adjustments following the period of the industrial revolution, the French revolution, and the fall of the Napoleonic Empire; the rising tide of nationalism and democracy; political and social reforms; progress of science; social and economic movements; expansion of European influence in Asia and Africa; the World War, and the new Europe.

224. Twentieth Century Europe. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 223, or equivalent. 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, the new nations and international relations.

225. History of the Home. 3(3-0); II. Prerequisite, when taken for graduate credit: Six 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 since 1485; 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, when taken for graduate credit: Six credits of college history. Mr. James.

The English phases 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: Six credits of college history. Mr. Price and Mr. James.

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 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. The Far East. 2(2-0); II and SS. Prerequisite, when taken for graduate credit: Six 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 rôle of China and 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: Six 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.

233. Methods of Teaching the Social Sciences. 3(3-0); I and SS. Prerequisite, when taken for graduate credit: Fifteen college credits in social sciences. When taken for undergraduate credit, consult instructor. Mr. Iles.

The course of study, texts and supplementary material, classroom methods, problems and special devices, with especial reference to history and civics in elementary and secondary schools.

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 given 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.

290. Historical Method and Bibliography. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Six credits of college history. Dr. Shannon, assisted by other teachers of the department.

A study of historians and of historical works, together with instruction as to methods employed in the writing of history or of historical articles or theses. Required of all graduates majoring in history, and recommended to undergraduates majoring in history.

FOR GRADUATE CREDIT

301. Research in History. 1 to 8 credits; I, II, and SS. Prerequisite or contemporary: Course 290 and consult instructors. 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. 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.

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 I 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; I and II. 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 1931-'32 and alternate years thereafter. Not open to students having credit in course 160, 163, or 167. 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. Offered 1934-'35 and alternate years thereafter. Mr. Iles or Mr. Williams.

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); I. 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, 160, 163, or 167. 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
Associate Professor Charles
Assistant Professor Amos
Assistant Professor Hostetter
Assistant Professor 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. 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 $12,440.

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 other students who take Journalism Lectures or courses designated "Journalism fee charged," pay a charge of $1.50 a semester. Only one journalism fee is charged a student in a given 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 typographical 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. Journalism fee charged.

102. Printing Practice. 2(0-6); SS. Mr. Amos.

A study of general printing-shop practice, including cost finding—a course intended particularly for high-school teachers of printing and for those who expect to have editorial supervision of publications, including high-school papers.

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. Journalism fee charged.

II and III: Course 108 continued; more complicated work studied. Journalism fee charged.

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. Journalism fee charged.

II and III: Color work, tabular forms, and other complicated kinds of job work. Journalism fee charged.

122, 126. 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. Journalism fee charged.

II: I continued, with more advanced work in mixing inks and in color work. Journalism fee charged.

COURSES IN INDUSTRIAL JOURNALISM

FOR UNDERGRADUATE CREDIT

140. JOURNALISTIC VOCATIONS. 2(2-0); II. Mr. Rogers.
The publishing field, daily and weekly newspapers, news agencies and syndicates, trade and business press, agricultural press, women in journalism, the field of advertising, circulation, magazines, free-lance writing, publicity, photography and art, the labor press, and religious journalism. Journalism fee charged.

151. ELEMENTARY JOURNALISM. 2(2-0); I and SS. Prerequisites: Course 140. Mr. Thackrey and Miss Hostetter.
Methods of obtaining news of various types, the writing of the lead, and the general styles of the news story. Journalism fee charged.

153. KANSAS STATE COLLEGIAN JOURNALISM. 1(0-3); I, II, and SS. Prerequisite: Permission of instructor. Mr. Thackrey.
The gathering and writing of news, or advertising practice, on *The Kansas State Collegian* under the supervision of the instructor.

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, and to give them an understanding of the needs and problems of editors. Much practice given in agricultural writing. Journalism fee charged.

161. INDUSTRIAL WRITING. 2(2-0); I. Prerequisite: Course 151. Mr. Thackrey and Miss Hostetter.
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. Journalism fee charged.

163. ADVANCED REPORTING. 3(3-0); I. Prerequisite: Course 161. 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.) Journalism fee charged.

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. Journalism fee charged.

172. JOURNALISM FOR WOMEN. 2(2-0); II. Prerequisite: Course 167. Miss Hostetter.
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. Journalism fee charged.

175. INDUSTRIAL, TRADE, AND BUSINESS PUBLICATIONS. 3(2-3); II. Mr. Rogers.
Survey of that field of journalism which concerns itself with the subject matter and the specialized interests of industry, trade, and business; practice writing for papers in this field.

178. PRINCIPLES OF ADVERTISING. 4(4-0); I and II. Prerequisites: For industrial journalism students, course 161; for commerce students, Written and Oral Salesmanship. Mr. Keith.

Study of goods to be advertised, analysis of the market, psychology of advertising, preparation of advertising copy, and other important matters; application of the principles involved; building up of circulation of periodical publications; soliciting advertising; premiums and other plans for increasing circulation; the advertising agency, circulation analysis and fixing of advertising rates. Journalism fee charged.

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. Journalism fee charged.

183. News Bureau Methods. 2(2-0); I. Prerequisite: Course 151. 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. Journalism fee charged.

FOR GRADUATE AND UNDERGRADUATE CREDIT.

225. Advertising Practice. 2(2-0); II. Prerequisite: Course 178. Mr. Keith.

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; the making of layouts and consideration of such advertising production methods as art work, typography, engraving processes.

254. Copy Reading. 2(0-6); II. Prerequisite: Course 163. Mr. Thackrey.

Practice in the work required of a copy reader, whether on a newspaper, an agricultural journal, or some other publication. Journalism fee charged.

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. Miss Hostetter.

The writing of editorials suitable for farm papers, trade papers, and newspapers; the shaping of editorial policies. Journalism fee charged.

265. Materials of Journalism. 2(2-0); I. Mr. Thackrey.

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 Mr. Charles.

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. Journalism fee charged.

273. History and Ethics of Journalism. 3(3-0); II. Prerequisite: Course 255. Mr. Thackrey.

The history of journalism from its beginning and the history of printing as far as this is concerned with periodical publications. 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.

278. Journalism Surveys. 2(0-6); II. Mr. Rogers and Miss Hostetter.
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 semi-serious; writing paragraphs, light verse, and similar material, with stress on practice in writing humor.

287. Current Periodicals. 3(3-0); II. Miss Hostetter.
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
Reference Librarian Davis
Loan Librarian Camp
Reference Assistant Swenson
Documents Librarian 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 tends to increase largely his efficiency in study throughout the entire course.
The books and pamphlets in the library are valued at $311,977; other equipment has a value of $77,277.

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
Assistant Professor Daugherty

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 $849.

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. Dr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, and Mr. Daugherty.

Functions of acute right triangles, geniometry, 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, and Mr. Daugherty.

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. Dr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, and Mr. Daugherty.

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. 104. Prerequisite: Plane geometry and one year of high-school algebra. Dr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, and Mr. Daugherty.

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, Dr. Stratton, Miss Hyde, Mr. Lyons, Mr. Lewis, Mr. Janes, Miss Mossman, and Miss Holroyd.

Coördinate systems, projections, loci, straight line conics, parametric and empirical equations, with a discussion of the general equation of the second degree.

122. Methods of Teaching Mathematics. 3(3-0); I and II. Miss Hyde and Miss Holroyd.

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 on the teaching of mathematics; emphasis on pedagogical questions, with some reference to the historical development of elementary mathematics.

123. 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 and II. 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 secondary principles used in analysis of statistical data.

150. MATHEMATICS OF INVESTMENT. 3(3-0); I and II. Prerequisite: Accounting II (Econ. 134). Mr. Janes.
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. Prerequisite: Plane Analytical Geometry. Mr. Remick, Mr. White, Dr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Mr. Janes, and Miss Mossman.
The usual topics of differential calculus, with integration of standard forms, definite integrals, rational fractions, and integration by parts.

206. CALCULUS II. 3(3-0); I, II, and SS. Prerequisite: Calculus I. Mr. Remick, Mr. White, Dr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Mr. Janes, and Miss Mossman.
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; series.

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 treatment 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.

223. Fourier's Series and Partial Differential Equations. 3(3-0); II. Prerequisite: Differential Equations. Mr. White.
An introduction to Fourier's integrals and series with applications to problems in physics involving partial differential equations.

225. Modern Plane Geometry. 3(3-0); II. Prerequisite: Plane Analytical Geometry. Dr. Stratton.
Properties of a triangle and its circles, harmonic ranges and pencils, inversion, poles and polars, etc.

230. Vector Analysis. 3(3-0); I or II. Prerequisite: Calculus II. Dr. Babcock.
An introduction to the methods of vector algebra and geometry, with applications, and to the elements of tensors.

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. Dr. Stratton.
Mechanics in its relation to mathematical analysis.

312. Higher Geometry. 3(3-0); II. Prerequisite: Modern Plane Geometry. Dr. Stratton.
Linear dependence, homogeneous coördinates, cross ratio, properties of conics, elements of projective geometry.

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. Research in Mathematics. 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 SULLIVAN, Lieut. Colonel Inf., U. S. A.
Associate Professor HUMPHREYS, Major C. A. C., U. S. A.
Associate Professor VAN TUYL, Major V. C., U. S. A.
Associate Professor SWIFT, Capt. Inf., U. S. A.
Assistant Professor YOUNG, Capt. C. A. C., U. S. A.
Assistant Professor REHM, Capt. Inf., U. S. A.
Assistant Professor RYDER, 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.
Military Property Custodian CLAEREN, Major, E. O. R. L.
Instructor SEAY, Staff Sergeant, D. E. M. L., U. S. A.
Instructor WILLIAMS, Staff Sergeant, D. E. M. L., U. S. A.
Instructor ALLEN, Staff Sergeant D. E. M. L., 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 who are citizens of the United States, and 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 make 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 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.

Any article of uniform clothing requiring repairs because of improper use or manifest lack of care will be repaired at the expense of the student concerned. Any such article damaged sufficiently to make reissue undesirable will be paid for by the student concerned. In either instance the extent and cause of the damage will be determined by the commandant or by a member of the regular military faculty designated by him.

As the proper care and prompt return of uniform clothing and other government property is considered an important part of military training, no course in that subject will be regarded as completed by any student who is indebted to the College for loss of, or damage to, government property.

A laboratory fee of 50 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 $3,422. 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. Swift, Capt. Ryder, and Capt. Rehm.

(*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 101A. Capt. Swift, Capt. Ryder, and Capt. Rehm.

(*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 102A. Capt. Rehm.

(*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 103A. Capt. Rehm.

(*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 Ryder.

(*a*) *Practical.* Instructors of freshmen and sophomores in all basic course subjects, map reading and sketching.

(*b*) *Theoretical.* Infantry drill. Combat principles of the rifle section and platoon, map reading and sketching.

110. INFANTRY VI. 3(2-3); II. Prerequisite: Infantry V. Captain Ryder.

(*a*) *Practical.* Instructors in all basic course subjects, firing of 27-mm. and trench mortar, combat principles of the rifle and platoon.

(*b*) *Theoretical.* 37-mm. gun and trench mortar, machine gun.

111. INFANTRY VII. 3(2-3); I. Prerequisite: Infantry VI. Captain Swift.

(*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 Swift.

(*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, Lieut. Madison and Lieut. Myrah.

(*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, Lieut. Madison, and Lieut. Myrah.

(*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 A continued.

(*b*) *Theoretical.* Continuation of section (*b*), course 115 A to include the duties of the first-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. Lieut. Madison.

(*a*) *Practical.* Duties as cadet officers and noncommissioned officers in connection with course 113A to 116A, artillery matériel, and sketching.

(*b*) *Theoretical.* Topography, position finding, gunnery for heavy artillery.

118. ARTILLERY VI. 3(2-3); II. Prerequisites: Artillery V and Plane Trigonometry. Lieut. Madison.

(*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 matériel, 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 matériel, 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 Fort Sheridan, Ill.

BASIC COURSES, VETERINARY CORPS

(For students in the Division of Veterinary Medicine only.)

121A. MILITARY SCIENCE (VET.) I. 1(0-3); I. Major Van Tuyl.

(*a*) *Practical.* Same as course 101A (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 121A. Major Van Tuyl.

(*a*) *Practical.* Same as course 102A (Infantry II).

(*b*) *Theoretical.* Organization and administration, sanitation, logistics, first aid.

123A. MILITARY SCIENCE (VET.) III. 1(0-3); I. Prerequisite: Course 122A. Major 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 123A. Major Van Tuyl.

(*a*) *Practical.* Same as courses 102A (Infantry) and 123A.

(*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(1-0); I. Prerequisite: Course 124A. Major 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 129A. Major Van Tuyl.

(*a*) *Practical.* Continuation of section (*a*), course 129A.

(*b*) *Theoretical.* Sanitation, including inspection of meat and food products.

131A. MILITARY SCIENCE (VET.) VII. 1(1-0); I. Prerequisite: Course 130A. Major Van Tuyl.

(*a*) *Practical.* Continuation of section (*a*), course 129A.

(*b*) *Theoretical.* Hospitals, hospitalization, and sanitation.

132A. MILITARY SCIENCE (VET.) VIII. 1(1-0); II. Prerequisite: Course 131A. Major Van Tuyl.

(*a*) *Practical.* Continuation of (*a*), course 129A.

(*b*) *Theoretical.* Communicable diseases, foreign inspections, 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 $625.

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 Dr. Limper.

Introductory course; grammar completed.

111. German Readings. 3(3-0); I. Prerequisite: German II or equivalent. Dr. Cortelyou and Dr. Limper.

Readings of fairly easy, idiomatic selections from modern authors; grammatical drill; sight readings; German conversation based on the text.

FOR GRADUATE AND UNDERGRADUATE CREDITS

201. German Short Stories. 3(3-0); II, when requested by a sufficient number. Prerequisite: German Readings or the equivalent. Dr. Cortelyou and Dr. Limper.

Interesting short stories by modern authors.

206. German Comedies. 3(3-0); II. Prerequisite: German Readings or the equivalent. Dr. Cortelyou and Dr. Limper.

Recent one-act comedies of literary merit and of a realistic, lively, and cleanly humorous nature; conversation and composition based on the text.

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. Prerequisite: For II, I or one year of high-school French. Dr. 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. Dr. 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. Dr. Limper and Miss Pettis.
Modern short stories by such writers as Daudet, Maupassant, and Zola.

257. FRENCH DRAMA I. 3(3-0); I or II. Prerequisite: 12 hours of college French or the equivalent. Dr. Limper and Miss Pettis.
French classic drama—Corneille, Molière, Racine, Marivaux, and others.

258. FRENCH DRAMA II. 3(3-0); I or II. Prerequisite: 12 hours of college French or the equivalent. Dr. Limper and Miss Pettis.
Modern French drama—Brieux, Hervieu, Maeterlinck, Rostand, and others.

261. FRENCH COMPOSITION AND CONVERSATION. 3(3-0); II, when requested by a sufficient number. Prerequisite: 12 hours of college French, or equivalent. Miss Pettis.
Class period devoted to practice in speaking French; written themes required as preparation for each recitation.

263. THE FRENCH NOVEL. 3(3-0); I, II, and SS, by appointment. Prerequisites: Courses 257 and 258, or the equivalent. Dr. Limper and Miss Pettis.
A panoramic view of the French novel in the various periods of literary production.

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.

194. SPANISH COMPOSITION AND CONVERSATION I. 3(3-0); I. Prerequisite: Spanish Readings or equivalent. Miss Crittenden.
Written composition with review of Spanish grammar; practice in taking Spanish dictation and in speaking Spanish.

197. SPANISH COMPOSITION AND CONVERSATION II. 3(3-0); II. Prerequisite: Course 194 or its equivalent. Miss Crittenden.
A continuation of course 194 with written themes, giving the student an opportunity to express his own ideas in Spanish.

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 Béquer, 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.

GENERAL COURSE IN MODERN LANGUAGES

FOR UNDERGRADUATE CREDIT

198. METHODS OF TEACHING MODERN LANGUAGES. 3(3-0); I or II. Prerequisites: 15 hours of college credit in a foreign language and junior or senior standing. Dr. Limper and Miss Pettis.

The objectives, course of study, texts and teaching materials, teaching technique, and professional literature bearing upon the effective teaching of modern foreign languages.

Music

Professor LINDQUIST
Assistant Professor HARTMAN
Assistant Professor PAINTER
Assistant Professor SAYRE
Assistant Professor JEFFERSON
Assistant Professor DOWNEY
Assistant Professor MARTIN
Assistant Professor STRATTON
Assistant Professor TORDOFF
Assistant Professor PELTON
Assistant Professor JESSON
Assistant Professor GROSSMANN*
Instructor MAURITS

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 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 $23,196.

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 substitutions 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, one hour each semester; for Orchestra or Band, one-half hour each semester; for School Music methods, two hours each semester. Any student having a full assignment may, upon recommendation of the director of the Department of Music together with the approval of the student's dean, take music without credit.

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* Absent on leave, year 1932-'33.

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:

CURRICULUM IN APPLIED MUSIC

Voice majors: A voice of superior quality, ability to sing in time and in tune, and a practical knowledge of musical notation.

Piano and Organ majors: A considerable degree of proficiency in the fundamentals of piano technic and in the playing of the easier classics.

Other instrumental majors: A practicable knowledge of the fundamental technique of playing the instrument in the study of which the student desires to major, and a considerable degree of proficiency in the playing of the easier classics written for that instrument.

CURRICULUM IN MUSIC EDUCATION

School Music majors: A practicable degree of proficiency in the fundamentals of piano technique and sight reading, and the ability to sing in time and in tune.

Band and Orchestra majors: A practicable degree of proficiency in the fundamentals of piano technic.

A list of examination material may be had by writing the director of the Department of Music.

COURSES IN THEORETICAL 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. Stratton 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. Stratton and 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(1-3) 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.

111. Musical Form and Analysis. 1(1-0); I, II, and SS. Prerequisites: Harmony IV and Counterpoint. Mr. Jesson.
The various forms used in composition; the music of Bach, Haydn, Mozart, Beethoven, Schumann, Chopin, Brahms, Wagner, and others.

112, 113. History and Appreciation of Music I and II. 3(3-0) each; I and II, respectively. Mr. Lindquist.
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.

116. 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.

117. Conducting I. 1(1-0); I, II, and SS. Mr. Lindquist.
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.

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.

136. Instrumentation and Orchestration. 3(3-0); I, II, and SS. Prerequisites: Harmony I to IV, and Counterpoint. Mr. Downey.
All of the instruments of the band and orchestra studied with relation to tone color, range and function; simple and familiar compositions scored for all forms of ensemble, including full orchestra.

138, 139. School Music I and II. 2(2-0) each; I and II, respectively, and SS. Prerequisites: Ear Training and Sight Singing I and II. Miss Hartman.
I: Methods and materials for teaching music in kindergarten and the primary grades.
II: Methods and materials for teaching music in the elementary grades.

141. Methods of Teaching Music. 3(3-0); I, II, and SS. Prerequisites: School Music I and II. Miss Hartman.
A comparison of methods of various series of music textbooks for the grades.

143. School Music III. 2(2-0); I, II, and SS. Prerequisites: School Music I and II, and Methods of Teaching Music. Miss Hartman.
Methods and teaching materials suitable for junior and senior high school.

149. Methods and Materials for the Studio. 1(2-0); I and II. Mr. Lindquist, Miss Tordoff, Mr. Downey, Mr. Martin, and Mr. Jesson.
Methods of teaching fundamental technic, selection of teaching materials, and the outlining of courses of study; discussion of principles and processes involved in various phases of vocal and instrumental study as a means of

music education. Designed for students majoring in voice or some instrument in the Curriculum in Applied Music; taught in separate divisions for voice, piano, organ, violin, etc.

151A to 151H. Orchestral Instruments I to VIII. ½(1-0) each; I, II, and SS. Mr. Downey, Mr. Martin, and assistants.

A course designed to acquaint the student with the methods of tone production of the most important instruments of the orchestra.

COURSES IN APPLIED MUSIC

146, 147. Teaching Participation in Music I and II. 2(2-0) and 1(1-0), respectively; I and II, respectively. Prerequisite: Methods of Teaching Music.

Practice and observation of teaching music in the Manhattan public schools under the supervision of Miss Hartman.

153. Instrument. 0 to 4 credits; I, II, and SS. Offered to students taking work in the Curriculum in Applied Music and to students who desire special training in band or orchestra in the Curriculum in Music Education. Elective in other curricula. Mr. Downey, Mr. Martin, and assistants.

156. Voice. 0 to 4 credits; I, II, and SS. For the Curricula in Applied Music and Music Education, and elective in other curricula. Mr. Lindquist, Mr. Sayre, and Miss Maurits.

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.

158. Violin. 0 to 4 credits; I, II, and SS. For the Curricula in Applied Music and Music Education, and elective in other curricula. Mr. Martin and assistants.

161. Piano. 0 to 4 credits; I, II, and SS. For the Curricula in Applied Music and Music Education, and elective in other curricula. Miss Tordoff, Miss Painter, Miss Jefferson, Mr. Stratton, and Mr. Jesson.

Instruction outlined for each semester 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.

163. Violoncello. 0 to 4 credits; I, II, and SS. For the Curricula in Applied Music and Music Education, and elective in other curricula. Mr. Downey.

167. Double-bass. 0 to 4 credits; I, II, and SS. For the Curricula in Applied Music and Music Education, and elective in other curricula. Mr. Downey.

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 violoncello, or the equivalent. Mr. Downey.

A practical course in the playing of string duets, trios, and quartets.

172. Organ. 0 to 4 credits; I, II, and SS. For the Curricula in Applied Music and Music Education, and elective in other curricula. Mr. Jesson.

176A to 176H. Piano Ensemble I to VIII. R(1-0); I (courses A, C, E, G) and II (courses B, D, F, H). Required of all students majoring in piano or organ in the Curriculum in Applied Music. 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.

181A to 181F. Recital I to VI. R(-); I (courses A, C, and E) and II (courses B, D, and F). Required of all students taking work in the Curriculum in Applied Music. A joint solo recital appearance in course IV, and an entire solo recital in course VI.

183. Ensemble. ½(0-2) each semester. For the curricula in Applied Music and Music Education, and elective in other curricula. Mr. Lindquist, Miss Hartman, Mr. Sayre, and Mr. Downey.

Required ensemble work may be taken in Choral Ensemble (course 194), Orchestra (course 195), or Band (course 198).

187. Practice Teaching of Music. R(1-0); II. Mr. Lindquist, Mr. Downey, Mr. Martin, Miss Tordoff, and Mr. Jesson.

Practice teaching in private classes for students in the curriculum in applied music.

194. Choral Ensemble. ½(0-2) each semester. Weekly rehearsals, all special rehearsals, and public performances. Prerequisites: A voice of good quality, a knowledge of musical notation, and the ability to sing in time and in tune. Mr. Lindquist, Miss Hartman, Mr. Sayre, and Miss Maurits.

Membership in both the College Chorus and the Men's Glee Club or the College Chorus and the Women's Glee Club.

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.

191. Chorus. Weekly rehearsals, all special rehearsals, and public performances; I and II. Prerequisites: Ability to read musical notation and to sing in time and in tune. Membership is open to the entire student body, and to others who may qualify. 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-five of the best male voices in the College. Membership is open to the entire student body, including graduate students, and vacancies in the club are filled by competitive tryouts. 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. Two separate divisions are maintained: the Study Club, the membership of which is selected by competitive tryouts, and the Concert Club, to which members of the Study Club may be elected after one year's service. Membership is open to the entire student body, including graduate students, and vacancies in the club are filled by competitive trial. This organization is also available for a limited number of concert engagements throughout the state. Miss Hartman and Mr. Sayre.

195. Orchestra. ½(0-2) each semester. Weekly rehearsals, all special rehearsals, and public performances. Mr. Downey.

The College Orchestra, composed of about fifty players, maintains a correct and well-balanced instrumentation, including all of the instruments of the

modern symphony orchestra; and, in the preparation of programs of symphonic music, opera and oratorio accompaniments, offers the actual routine experience necessary for the development of efficient orchestra playing. Vacancies are filled by competitive tryouts, and membership is open to the entire student body and to others who may qualify.

198. BAND. ½(0-2) each semester. Weekly rehearsals, all special rehearsals, and public performances. Mr. Downey and Mr. Martin.

The College Band plays for all military functions and major athletic events, and makes several concert appearances on the campus during the year. It is also available for a limited number of concert engagements throughout the state. Membership is open to the entire student body, and vacancies are filled by competitive trial.

FEES IN MUSIC

	Gradation of Teachers							
Course	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Two lessons each week for a semester:								
Voice	$38	$36	..	$32	..	$30*	$24*	$14†
Piano	..	36	$34	32	..	30*	24*	14†
Organ	..	36	..	..	..	30*	24*	14†
Violin	..	36	..	..	..	30*	24*	14†
Violoncello	..	36	..	..	..	30*	24*	14†
Other orchestral instruments	..	..	..	..	$30	30*	24*	14†
One lesson each week for a semester:								
Voice	21	20	..	18	..	17*	14*	9†
Piano	..	20	19	18	..	17*	14*	9†
Organ	..	20	..	..	..	17*	14*	9†
Violin	..	20	..	..	..	17*	14*	9†
Violoncello	..	20	..	..	..	17*	14*	9†
Other orchestral instruments	..	..	..	..	17	17*	14*	9†

Piano ensemble—$2 a semester.
Orchestral Instruments I to VIII—$2 a semester.
Piano rent, one hour daily—$4 a semester.
Piano rent, two hours daily—$6 a semester.
Organ rent, one hour weekly—$3 a semester.

Physical Education and Athletics

Professor AHEARN
Professor MCMILLIN
Professor SAUM
Professor WASHBURN
Assistant Professor CORSAUT
Assistant Professor ROOT
Assistant Professor B. L. PATTERSON
Instructor GEYER
Instructor HAYLETT
Instructor MOLL
Assistant MAYTUM
Assistant MYERS
Mr. B. R. PATTERSON

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 hygiene 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 locker, plunge baths, shower baths, and other accommodations. The gymnasium equipment is valued at $9,699.

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.

Men taking the physical education course 103, 104, 105, 106 are required to furnish their own uniforms consisting of white sleeveless shirt, short white gym pants, and rubber-soled shoes.

Men majoring in physical education are required to wear a special uniform for their gymnasium class work, which costs approximately $9.

* Fees for children. † Student assistants' fees.

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.

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. Root, Mr. Moll, and Mr. Patterson.

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. Prerequisites: 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. GYMNASTICS 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); I. 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. Root.

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); II. Mr. Patterson.

Instruction in various modes of attack and defense; discussion of training, wrestling and boxing tournaments, and related topics. Deposit, $3.

133. Baseball. 2(1-3); II and SS. Mr. Ahearn.

Theory and technic, each position being studied separately; rules, schedules, equipment, strategy, signals, team organization, plays, and players. Deposit, $3.

135, 136B. Practice Teaching in Physical Education I and II. 1(0-3) and 2(0-6), respectively. 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, and intramural teams, and officiate in intramural games. The theory of teaching and officiating is also discussed. Deposit, $3 for each course.

136C. Practice Teaching in Physical Education III. 2(0-6). Mr. Washburn. Continuation of courses 135 and 136B. Deposit, $3.

137. Teaching Participation in Physical Education. 3(3-0); I and II. Prerequisites: Practice Teaching I and II. Not open to students below senior standing. Mr. Washburn.

Work done in classes in the Manhattan public schools for which special appointment must be made at the time of registration for the semester in which it is done.

140A. Track and Field Sports. 2(1-3); II. 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, and Miss Maytum.

Natural dancing, swimming and corrective gymnastics offered throughout the year; hockey, field ball, soccer, volley ball, tennis, basket ball, archery, baseball, track and field sports given in season. Deposit, $2.50 each semester. A refund of 50 cents, each semester, is made upon return of key.

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. Swimming fee, $1 each semester.

157A. General Technic I. 2(1-3); I. Miss Maytum.
Theory and practice of child rhythms and folk dancing. Deposit, $2.50.

157B. General Technic II. 2(1-3); II. Miss Geyer.
Theory and practice of advanced gymnastics. Deposit, $2.50.

157C. General Technic III. 2(1-3); I. Miss Geyer.
Theory and practice of hockey, soccer, and volley ball. Deposit, $2.50.

157D. General Technic IV. 2(1-3); II. Miss Geyer.
Theory and practice of baseball, and field and track. Deposit, $2.50.

157E. General Technic V. 2(1-3); I. Miss Saum and Miss Maytum.
Theory and practice of archery, pyramids, stunts, and tumbling. Deposit, $2.50.

157F. General Technic VI. 2(1-3); II. Miss Geyer.
Methods of teaching basket ball, gymnastics, and tennis. Deposit, $2.50.

157G. General Technic VII. 2(1-3); I. Miss Maytum.
Methods of teaching natural dancing. Deposit, $2.50.

157H. General Technic VIII. 2(1-3); II. Miss Saum.
Methods of teaching swimming. Deposit, $2.50.

160. Folk Dancing I. 1(0-3); I. Prerequisites: Courses 151A to 154. Miss Maytum.

Singing games for gymnasium, classroom, and playground; selected and graded list of simple folk dances. Material adapted for use in elementary schools. Deposit, $2.50.

161. Folk Dancing II. 1(0-3); II. Prerequisite: Course 160. Miss Maytum.

A selected list of folk dances and clog dances for use in junior and senior high schools. Deposit, $2.50.

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.

173. Therapeutics and Massage. 3(2-3); 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, $2.50.

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 Patterson.
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, $2.50.

182A. Playground Management and Games W. 2(1-3); I, and SS. Prerequisites: Courses 151A and 152A. Miss Maytum.
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, $2.50.

184. Kinesiology W. 2(2-0); II. 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.

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, $2.50.

186. Teaching Participation in Physical Education. 3(-); II. 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, $2.50.

188. Teaching and Adaptation of Physical Education. 3(3-0); I. Prerequisites: Courses 161, 157A to 157F, 168 and 182A. Miss Patterson.
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.

190. Elementary and Intermediate Swimming W. No credit. 0(0-3); SS.
Beginning class for those who do not know how to swim; intermediate class for those who can swim sidestroke length of pool. Charge, $1. This course may be substituted for one semester of the physical education requirement. Deposit, $2.50.

FOR UNDERGRADUATE CREDIT—MEN AND WOMEN

192. History and Principles of Physical Education. 3(3-0); II. Prerequisite: Sophomore standing. Miss Patterson.
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
Associate Professor Chapin
Assistant Professor Hartel
Assistant Professor Maxwell
Assistant Professor Avery
Assistant Professor Hudiburg

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 $34,816.

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); II. Mr. Hamilton and Mr. Hudiburg.

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); I and 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 physiography.

134. Agricultural Physics. 3(3-0); II. 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, each. 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. Chapin, Mr. Maxwell, and Mr. Hudiburg.

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 and II. Mr. Hartel.

An introductory course in astronomy largely descriptive in character. Field work includes a study of the constellations, and observation with the five-inch refracting telescope.

158. Physics for Musicians. 5(4-3); I. Prerequisites: Harmony I and II. Mr. Floyd and Mr. Chapin.

Selected laws and principles from the general field of physics which apply to an understanding of the physics of music, musical instruments, and voice; quantitative laboratory work on the laws presented in the course. Deposit, $3.

FOR GRADUATE AND UNDERGRADUATE CREDIT

204. Apparatus Design, Construction, and Calibration. 1(0-3) or 2(0-6); I. Prerequisite: College Physics and adequate mechanical skill. Mr. Floyd, Mr. Brackett, and Mr. Hudiburg.

A course in the design, construction and calibration of apparatus open to students to whom research problems have been assigned in any department of the college, to teachers of science, and to others. Deposit, $3.

213. Acoustics. 1(1-0); I. Prerequisite: College Physics II. Mr. Floyd and Mr. Chapin.

Acoustic properties of buildings; architectural defects which give rise to poor acoustics; special methods for avoiding such troubles in construction of buildings and for correcting them in constructed buildings.

220. Molecular Physics and Heat. 3(2-3); I. Prerequisite: One year of college physics. Mr. Floyd, Mr. Raburn, and Mr. Chapin.

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.

221. Harmonics. 3(3-0); II. Prerequisites: One year of music and course 158. Mr. Floyd and Mr. Chapin.

Lectures, library work, and demonstrations dealing with pitch, loudness, quality, resonance, consonance, dissonance, scales and chords.

223. Methods of Teaching Physics. 3(3-0); 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.

229. Spectroscopy. 3(2-3); I. Prerequisites: College Physics and College Chemistry. Mr. Hamilton and Mr. Raburn.

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, Mr. Floyd, and Mr. Chapin.

An advanced course in light, dealing with reflection, refraction, interference, diffraction, and polarization.

233. The Electron Theory and Radioactivity. 3(3-0); II. Prerequisites: College Physics and College Chemistry. Mr. Raburn and Mr. Lyon.

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 and Mr. Hudiburg.

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. Prerequisites: 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.

247. History of Physics. 2(2-0); II. Prerequisite: One course in physics. Mr. Brackett and Mr. Lyon.

Beginnings and development of physics; the interactions between physical science and philosophy in the different ages; the rise of modern physics and its effect upon contemporary thought; and a brief survey of the present state of physical reasoning.

249. Modern Physics. 3(3-0); I. Prerequisites: College physics (1 yr.) and chemistry (1 yr.). It is recommended but not required that course 247 be taken first. Mr. Brackett and Mr. Lyon.

Theories involved in recent advances in physics reviewed critically 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); I. 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: Differenial thermometers, vaporization, ratio of specific heats, vapor density and humidity, thermal conductivity, the mechanical equivalent, isotherms, etc.

255. Advanced Electricity and Magnetism. 2(2-0); I. Prerequisites: Calculus II (Math. 206) and one year of college physics. This may be taken with or without course 256. Mr. Lyon and Mr. Hudiburg.

A second course in electricity and magnetism in which the standard derivations and discussions of magnetism, magnetic circuits, electrostatics, electrodynamics, electrical circuits, electromagnetic induction and of elementary alternating currents are developed with the use of calculus.

256. Advanced Electrical Laboratory. 1(0-3) or 2(0-6); I. Prerequisite: One year of college physics. Mr. Brackett, Mr. Lyon, and Mr. Maxwell.

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. Hamilton.

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, Mr. Brackett, and Mr. Floyd.

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 8 credits; I, II, and SS. Prerequisite: Consult instructor.

Problems in original investigations; new and important fields investigated.

Public Speaking

Professor Hill
Professor Summers
Associate Professor Heberer
Associate Professor Given
Instructor Elliott

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 intercollegiate debating teams. Students are urged to ally themselves with the organizations representing those various activities.

The equipment of this department has a value of $237.

COURSES IN PUBLIC SPEAKING

FOR UNDERGRADUATE CREDIT

101. Oral Interpretation. 2(2-0); I and II. Mr. Given and Mrs. Elliott.

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. Mr. Given 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. Summers, Mr. Heberer, Mr. Given, 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 I, respectively. Prerequisites: For I, course 106; for II, course 121, or for both, by arrangement with instructor. Dr. Summers.

I: Fundamentals of argumentation applied to 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: Practical application of debate theory, with particular attention to the discussion type of debate, and to the use of various methods of persuasion of audiences. Opportunity given to participate in classroom discussion debates for criticism.

123, 124. Intercollegiate Debate I and II. 2 credits each. Prerequisite for I: Course 121; for II: Course 122, and permission of the head of the department. Dr. Summers.

I: Practical experience in intercollegiate contest debating.

II: Practical experience in intercollegiate debates of the discussion type.

126. Parliamentary Procedure. 1(1-0); II. Dr. Summers.
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.

138. Public Speaking for Teachers. 1(1-0); SS. Dr. Hill and Mr. Heberer.
A course designed to give the teacher training in the art of reading and speaking from the public platform, and a knowledge of the principles of public speaking as they apply to pedagogy. Practice work predominates.

142. Oratorical Contest. 2(-); II. Prerequisite: Course 101 or the permission of the head of the department.
Practical experience in modern types of intercollegiate and recognized intersociety contest oratory. Limit of credits for contest participation, four hours.

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.

160. Radio Speaking and Announcing. 2(1-3); I and II. Prerequisites: Course 106 and permission of the instructor. Dr. Summers.
The essentials of radio speaking voice, preparation of material for broadcast, announcing, and customary studio regulations. Offered by the department of Public Speaking in conjunction with the staff of the College radio station. The equipment of the College broadcasting station is used for laboratory work.

164. The Radio Program. 2(2-0); II. Prerequisite: Course 160, or permission of instructor. Dr. Summers, Mr. Heberer, and Miss Hostetter.*
Analysis of program types, with particular attention to educational, dramatic, and advertising programs; experience in the planning of programs and in the construction and presentation of original features.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Phonetics. 4(3-3); I. Prerequisites: Courses 101, 106, and 108.
The science of speech sounds with special emphasis upon the formation of sounds by the human voice mechanism.

205. 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.

* Of the Department of Industrial Journalism and Printing.

FOR GRADUATE CREDIT

301. Research in Speech. 1 to 8 credits; I, II, and SS. Prerequisite: Consult instructor. Dr. Hill and Mr. Given.

Individual research problems in the general field of speech and in the fields of the drama and pageantry, speech defects, speech psychology, speech types, lecture recital and lecture.

305. Clinical Problems of Defective Speaking. 4(2-6); II. Prerequisites: Courses 101, 106, 108, and 201.

A study of corrective methods. Practical problems assigned when defective cases are available.

Zoölogy

Professor Nabours
Professor Ackert
Professor Harman
Professor Johnson
Assistant Professor Wimmer
Assistant Professor Harbaugh
Instructor Dobrovolny
Instructor Goodrich
Assistant Stebbins
Graduate Assistant Groetsema
Graduate Assistant Sabrosky
Grad. Research Asst. Eisenbrandt
Grad. Research Asst. Glading

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.

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 technique. The equipment belonging to the department is valued at $44,875.

COURSES IN ZOOLOGY

FOR UNDERGRADUATE CREDIT

105. General Zoölogy. 5(3-6); I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Mr. Harbaugh, and Mr. Goodrich.

Structures, functions, relations and evolution of types of both invertebrates and vertebrates in the class, laboratory and in nature. Charge, $3.

123A. Human Anatomy. 5(3-6); I. Prerequisite: General Zoölogy (Zoöl. 105) or equivalent. Dr. Wimmer.

Special attention to the human skeleton, musculature, and organs; study of dissectible models, skeletons, and charts. Charge, $3.

130. Physiology. 4(3-3); I, II, and SS. Prerequisites: Zoöl. 105, or equivalent, and General Chemistry, or equivalent. Dr. Wimmer.

A general study of the functions of the organs and organ systems of the body and their relationship and coördinations. Charge, $3.

135. Embryology A. 3(2-3); I and SS. Prerequisite: 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.

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. Wimmer, Mr. Harbaugh, and Mr. Goodrich.

Individual problems in heredity, parasitology, physiology, cytology, embryology, protozoölogy, ecology, ornithology, and neurology assigned by the instructors in charge.

205. Field Zoölogy. 3(1-6); I. Prerequisite: Zoöl. 105. Mr. Harbaugh.

A general survey of the animal kingdom with collection, preservation, and identification of local forms; notes on their life histories, distribution, and relationship. 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 photomicography, museum mounting and labeling, and introduction to taxidermy. Charge, $3.

208. Parasitology. 3(2-3); I. Prerequisite: Zoöl. 105, or equivalent. Dr. Ackert.

A study of the biology, pathology, and prophylaxis of the principal external and internal parasites of the domestic animals. Charge, $2.

212. Invertebrate Zoölogy. 4(2-6); I. Prerequisite: Zoöl. 105 or equivalent. Mr. Goodrich.

The main groups of invertebrates, with emphasis on biological principles. Charge, $3.

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.

Human inheritance and the interactions of nature 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.

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 or II. Prerequisites: Zoöl. 105 and 201 or 135, 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(1-0); I and II. 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.

231. Endocrinology. 2(2-0); SS. Prerequisite: Consult instructor. Dr. Johnson.
The functions of the various ductless and sex glands, and general consideration of the physiology of reproduction in higher vertebrates.

235. Human Physiology. 4(3-3); I. Prerequisites: Zoöl. 105 and Organic Chemistry. For upperclassmen, with the consent of the instructor, and graduate students. Dr. Wimmer.
Similar to Physiology (Zoöl. 130) in treatment but more intensive. Charge, $3.

236. Problems in the Teaching of Zoölogy. 3(3-0); I, II, and SS. For selected assistants. May be elected among state teachers' certificate requirements after completing prerequisites, which are 10 hours of Zoölogy and 10 hours of Education. Mr. Harbaugh.
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 local field; technique in the teaching of the subjects.

240. Taxonomy of Parasites. 2(1-3); I. Prerequisite: Zoöl. 105 and 208 or 218. Dr. Ackert and Mr. Goodrich.
Structure of animal parasites; relation of certain animal groups; principles of classification; identification of parasites of man and of domestic animals.

246. Comparative Anatomy of Vertebrates. 4(2-6); 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: Consult instructor. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Wimmer, Mr. Harbaugh, and Mr. Goodrich.
Individual research problems are assigned in the fields of heredity and experimental evolution, parasitology, cytology, embryology, ecology, physiology, neurology, endocrinology, and protozoölogy.

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, and to cultivate an attitude of economic and social responsibility.

The curricula as outlined below are 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. The training given is as varied as it is broad. It includes a knowledge of the laws of health; an 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 four-year curriculum leading to the degree of Bachelor of Science with special training in dietetics and institutional management.

A four-year curriculum leading to the degree of Bachelor of Science with special training in journalism.

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.

THE CURRICULUM 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, 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.

This curriculum is recommended for all who desire general training in home economics or who have not yet determined the special field in which they wish to major. It is the curriculum to be chosen by those who wish to teach home economics or to engage in home demonstration work.

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 INSTITUTIONAL ECONOMICS AND DIETETICS

This curriculum is designed to meet the needs of the student who wishes to become a dietitian or director of food services in college dormitory, cafeteria, tea room, or hotel. It meets the requirements set by the American Dietetic Association for entrance to accredited hospitals and at the same time provides practical training for the management of the food unit of various types of institutions. Usually after graduation the student serves an apprenticeship in a recommended establishment to round out her training and experience.

THE CURRICULUM IN HOME ECONOMICS AND JOURNALISM

This curriculum is planned for those students having special aptitude and interest in writing as a vocation. The broad field of home economics and its intimate bearing on the daily lives of people makes the combination of home economics subject matter with technical training in journalism peculiarly desirable for the woman journalist. The basic courses in home economics supply assurance in their knowledge and approach to the subject and the journalism courses assist in the successful, popular presentation of the facts. In the business world, in foods, textiles, and in household equipment, persons having received such training are in demand for many varied positions.

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.

CERTIFICATE 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. Psychology, Educ. 109	3(3-0)	Child Care and Training I, Child Welf. 201	3(1-6)
Prin. of Secondary Educ., Educ. 236	3(3-0)	Home Management, Hshld. Econ. 116	3(1-6)
Vocational Educ., Educ. 241	3(3-0)	Adv. Clothing, Clo. and Text. 126	3(1-6)
Methods of Teach. Home Econ., Educ. 132	3(3-0)		
Supervised Teach. in Home Econ., Educ. 160,	3(-)		

Curriculum in Home Economics

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	*3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
Elementary Design I, Art 101A	2(0-6)	Elementary Design II, Art 101B	2(0-6)
Foods I, Food & Nutr. 102	5(3-6) *or*		
Psychology A, Educ. 181	3(3-0) *and*	Psychology A, Educ. 181	3(3-0) *and*
Personal Health, Child Welf. 101	2(2-0)	Personal Health, Child Welf. 101	2(2-0) *or*
H. E. Fr. Lectures, Gen. H. E. 101	R(1-0)	Foods I, Food & Nutr. 102	5(3-6)
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	15	Total	15

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)	Embryology B, Zoöl. 219A	4(3-3) *or*
Costume Design I, Art 130	2(0-6)	Physiology, Zoöl. 130	4(3-3)
Foods II, Food & Nutr. 107	3(1-6)	Clothing for the Indiv., Clo. & Text. 102	5(2-9)
Economics I, Econ. 101	3(3-0)	Household Physics,† Physics 101	4(3-3)
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	16	Total	16

JUNIOR

First Semester		Second Semester	
German I & II,‡§ Mod. Lang. 101 and 102	6(6-0) *or*	German Readings,§ Mod. Lang. 111	3(3-0) *or*
French I & II, Mod. Lang. 151 and 152	6(6-0)	French Readings, Mod. Lang. 161	3(3-0)
Human Nutr., Food & Nutr. 112	3(3-0)	Textiles, Clo. & Text. 116	3(2-3)
The House, Hshld. Econ. 107	3(2-3)	Hshld. Microb., Bact. 121	3(1-6)
Current History, Hist. 126	1(1-0)	American History I,§ Hist. 201	3(3-0)
Elective‖	3(-)	Elective‖	3(-)
Total	16	Total	15

SENIOR

First Semester		Second Semester	
Dietetics, Food & Nutr. 202	4(3-3)	Amer. Govt.,§ Hist. 151, 152, or 153	3(3-0)
The Family, Child Welfare 216	2(2-0)	Family Health, Child Welf. 211	3(3-0)
Elective‖	9(-)	Interior Decoration I, Art. 113	2(0-6)
		H. E. Sr. Lectures, Gen. H. E. 151	R(1-0)
		Elective‖	8(-)
Total	15	Total	16

Total requirements for degree of Bachelor of Science in Home Economics, 124 hours.

* The number before the parenthesis indicates the number of 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 take a minimum of nine hours of French or German unless they have had one or more years of either language in high school. In

Curriculum in Home Economics With Special Training in Art

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
Elementary Design I, Art 101A	2(0-6)	Elementary Design II, Art 101B	2(0-6)
Foods I, Food & Nutr. 102	5(3-6)*or*	Psychology A, Educ. 181	3(3-0)*and*
Psychology A, Educ. 181	3(3-0)*and*	Personal Health, Child Welf. 101	2(2-0)*or*
Personal Health, Child Welf. 101	2(2-0)	Foods I, Food & Nutr. 102	5(3-6)
H. E. Fr. Lectures, Gen. H. E. 101	R(1-0)		
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	15	Total	15

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
General Zoölogy,* Zoöl. 105	5(3-6)	Foods II, Food & Nutr. 107	3(1-6)
Ancient Civilizations, Hist. 101	3(3-0)	Clothing for the Indiv., Clo. & Text. 102	5(2-9)
Intermediate Design, Art 103	2(0-6)	Current History, Hist. 126	1(1-0)
Costume Design I, Art 130	2(0-6)	Advanced Design A, Art 105	2(0-6)
		Drawing I, Art 120	2(0-6)
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	15	Total	16

JUNIOR

First Semester		Second Semester	
German I & II,[1] Mod. Lang. 101 and 102	6(6-0)*or*	German Readings,[1] Mod. Lang. 111	3(3-0)*or*
French I & II,[1] Mod. Lang. 151 and 152	6(6-0)	French Readings,[1] Mod. Lang. 161	3(3-0)
Human Nutr., Food & Nutr. 112	3(3-0)*or*	Medieval Europe, Hist. 102	3(3-0)
Applied Nutr., Food & Nutr. 121	2(2-0)	Costume Design III, Art. 138	2(0-6)
Hist. & App. of Music I, Music 112	3(3-0)	Interior Decoration I, Art 113	2(0-6)
Costume Design II, Art 134	2(0-6)	Elective	6(-)
Elective	2 or 3(-)		
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Child Care and Train. I, Child Welf. 201	3(1-6)	American History I,[1] Hist. 201	3(3-0)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Principles of Art II, Art 126	3(3-0)
Principles of Art I, Art 124	3(3-0)	Interior Decoration III, Art 117	2(0-6)
Interior Decoration II, Art 115	2(0-6)	H. E. Sr. Lectures, Gen. H. E. 151	R(1-0)
Elective	5(-)	Elective	8(-)
Total	15	Total	16

Number of hours required for graduation, 124.

case one year of language has been taken in high school, the student will be held for six hours of the same language in advance of the previous work; if two years of language have been taken in high school, the student will be held for three hours of the same language. The requirement of three or six hours of language not taken because of language study in high school may be met by advanced language courses or by electives chosen with the approval of the dean.

§ An option of equivalent hours in the fields of mathematics, chemistry, physics, botany, or zoölogy may be taken instead of the course marked, with the advice and approval of the dean.

‖ Electives are chosen with the approval of the dean during the sophomore year. They give opportunity for special training in the various fields. If the teaching of home economics is elected, certain educational and technical subjects are required as given under "Certification for Teaching Home Economics."

* 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.

1. See respective footnote under Curriculum in Home Economics.

Curriculum in Home Economics With Special Training in Institutional Economics and Dietetics

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
Elementary Design I, Art 101A	2(0-6)	Elementary Design II, Art 101B	2(0-6)
Foods I, Food & Nutr. 102	5(3-6)*or*	Psychology A, Educ. 181	3(3-0)*and*
Psychology A, Educ. 181	3(3-0)*and*	Personal Health, Child Welf. 101	2(2-0)*or*
Personal Health, Child Welf. 101	2(2-0)	Foods I, Food & Nutr. 102	5(3-6)
H. E. Fr. Lectures, Gen. H. E. 101	R(1-0)		
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	15	Total	15

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)	Embryology B, Zoöl. 219A	4(3-3)*or*
Costume Design I, Art 130	2(0-6)	Physiology, Zoöl. 130	4(3-3)
Household Physics,* Physics 101	4(3-3)	Foods II, Food & Nutr. 107	3(1-6)
Economics I, Econ. 101	3(3-0)	Clothing for the Indiv., Clo. & Text. 102	5(2-9)
Phys. Education W, Phys. Ed. 153	R(0-3)	Current History, Hist. 126	1(1-0)
		Phys. Education W, Phys. Ed. 154	R(0-3)
Total	17	Total	16

JUNIOR

First Semester		Second Semester	
German I and II,* Mod. Lang. 101 and 102,	6(6-0)*or*	German Readings,* Mod. Lang. 111	3(3-0)*or*
French I and II,* Mod. Lang. 151 and 152	6(6-0)	French Readings,* Mod. Lang. 161	3(3-0)
Physiological Chemistry, Chem. 231	5(3-6)	Inst. Econ. I, Inst. Econ. 202	4(1-9)
Household Micro., Bact. 121	3(1-6)	Inst. Equipment, Inst. Econ. 230	2(2-0)
Child Care and Training I, Child Welf. 201	3(1-6)	Experimental Cookery, Food & Nutr. 255	2(0-6)
		Human Nutr., Food & Nutr. 112	3(3-0)
		Elective	2(-)
Total	17	Total	16

SENIOR

First Semester		Second Semester	
Dietetics, Food & Nutr. 202	4(3-3)	Diet. for Abn. Conditions, Food & Nutr. 205	2(1-3)*or*
Inst. Econ. II, Inst. Econ. 206	2(2-0)	Tea Room Management, Inst. Econ. 225	3(0-9)
Inst. Purchasing, Inst. Econ. 215	2(2-0)	Field Work in Nutr., Food & Nutr. 215	3(2-3)
Sociology, Econ. 151	3(3-0)	Inst. Accounting, Econ. 284	2(2-0)
Meth. of Teaching H. E., Educ. 132	3(3-0)	Food Ec. & Nutr. Seminar, Food & Nutr. 251,	2(2-0)*or*
Meats H. E., An. Husb. 176	1(0-3)	Nutr. of Dev., Food & Nutr. 210	2(2-0)
		Elective	5 or 6
Total	15	Total	15

Number of hours required for graduation, 124.

* See respective footnote under Curriculum in Home Economics.

Curriculum in Home Economics With Special Training in Journalism

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
Elementary Design I, Art 101A	2(0-6)	Elementary Design II, Art 101B	2(0-6)
Foods I, Food & Nutr. 102	5(3-6)*or*	Psychology A, Educ. 181	3(3-0)*and*
Psychology A, Educ. 181	3(3-0)*and*	Personal Health, Child Welf. 101	2(2-0)*or*
Personal Health, Child Welf. 101	2(2-0)	Foods I, Food & Nutr. 102	5(3-6)
H. E. Fr. Lectures, Gen. H. E. 101	R(1-0)		
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	15	Total	15

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)	Embryology B, Zoöl. 219A	4(3-3)*or*
Costume Design I, Art 130	2(0-6)	Physiology, Zoöl. 130	4(3-3)
Foods II, Food & Nutr. 107	3(1-6)	Clothing for the Indiv., Clo. & Text. 102	5(2-9)
		Current History, Hist. 126	1(1-0)
El. Journalism, Ind. Jour. 151	2(2-0)	Jour. for Women, Ind. Jour. 172	2(2-0)
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	15	Total	15

JUNIOR

First Semester		Second Semester	
German I and II,* Mod. Lang. 101 and 102	6(6-0)*or*	German Readings,* Mod. Lang. 111	3(3-0)*or*
French I and II,* Mod. Lang. 151 and 152	6(6-0)	French Readings,* Mod. Lang. 161	3(3-0)
Human Nutr., Food & Nutr. 112	3(3-0)	The House, Hshld. Econ. 107	3(2-3)
Household Physics,* Physics 101	4(3-3)	Prin. of Adv., Ind. Jour. 178	4(4-0)
Ind. Feature Writing, Ind. Jour. 167	2(2-0)		
Elective	1(-)	Elective	6(-)
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Dietetics, Food & Nutr. 202	4(3-3)	American History I,* Hist. 201	3(3-0)
Child Care and Training I, Child Welf. 201	3(1-6)	Interior Decoration I, Art 113	2(0-6)
Sociology, Econ. 151	3(3-0)	The Family, Child Welf. 216	2(2-0)
Amer. Government,* Hist. 151, 152, or 153	3(3-0)	H. E. Sr. Lectures, Gen. H. E. 151	R(1-0)
Elective	3(-)	Elective	9(-)
Total	16	Total	16

Number of hours required for graduation, 124.

* See respective footnote under Curriculum in Home Economics.

Curriculum in Home Economics and Nursing

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
Foods I, Food & Nutr. 102	5(3-6)	German I and II,* Mod. Lang. 101 and 102	6(6-0)
Psychology A, Educ. 181	3(3-0)	Current History, Hist. 126	1(1-0)
H. E. Fr. Lectures, Gen. H. E. 101	R(1-0)		
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	16	Total	15

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)	Embryology B, Zoöl. 219A	4(3-3) *or*
Physiological Chemistry, Chem. 231	5(3-6)	Physiology, Zoöl. 130	4(3-3)
Foods II, Food & Nutr. 107	3(1-6)	Gen. Microbiology, Bact. 101	3(1-6)
Phys. Education W, Phys. Ed. 153	R(0-3)	Amer. Government,* Hist. 151, 152, or 153	3(3-0)
		Elective	2(-)
Total	16	Total	15

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 31 college hours.

SENIOR

First Semester		Second Semester	
(Specialized work in affiliated hospitals).		American History I,* Hist. 201	3(3-0)
Equivalent to 15 college hours.		Dietetics, Food & Nutr. 202	4(3-3)
		The Family, Child Welf. 216	2(2-0)
		H. E. Sr. Lectures, Gen. H. E. 151	R(1-0)
		Elective	7(-)
		Total	16

Number of hours required for graduation, 124.

* See respective footnote under Curriculum in Home Economics.

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 hours.

Child Care and Training

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. 250	3(3-0)
The Family, Child Welf. 216	2(2-0)	Child Care and Training II, Child Welf. 206	3(3-0)
Field Work in Nutrition, Food & Nutr. 215	3(2-3)	Pos. Child Health, Child Welf. 111	2(2-0)
Heredity & Eugenics, Zoöl. 216	2(2-0)	Problems in Child Welfare and Euthenics, 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		

Costuming

History of Costume, Clo. & Text. 225	2(2-0)	Prin. of Adv., Ind. Jour. 178	4(4-0)
Adv. Clothing, Clo. & Text. 126	3(1-6)	Prin. of Art I, Art 124	3(3-0)
Clothing Economics, Clo. & Text. 201	3(3-0)	Labor in Clothing & Text. Industries, Clo. & Text. 220	1(1-0)
Sociology, Econ. 151	3(3-0)	Medieval Europe, Hist. 102	3(3-0)
Costume Design II, Art 134	2(0-6)	Prob. in Clothing & Text., Clo. & Text. 215	1 to 3
Intermediate Design, Art 103	2(0-6)	Modern Europe I, Hist. 115	3(3-0)

Food and Nutrition

Physical Chemistry I, Chem. 206	5(3-6)	College Algebra, Math. 104	3(3-0)
Microchemical Meth. of Anal., Chem. 245	1(0-3)	Plane Trigonometry, Math. 101	3(3-0)
Human Physiology, Zoöl. 235	4(3-3)	Physiological Chemistry, Chem. 231	5(3-6)
Hygienic Bacteriology, Bact. 206	4(2-6)	Biochem. Prep., Chem. 234	5(0-15)
Problems in Food Econ. & Nut., Food & Nut. 248	1 to 5	Quantitative Analysis, Chem. 241	5(1-12)
Food Econ. & Nutrition Seminar, Food & Nut. 251	1 to 4	Food Analysis, Chem. 257	3(0-9)
Field Work in Nutrition, Food & Nut. 215	3(2-3)	Histology I, Path. 102	4(2-6)
Bact. Problems, Bact. 270	1 to 4	Human Parasitology, Zoöl. 218	3(3-0)
Stat. Meth. Applied to Educ., Educ. 223	3(3-0)	Nutrition of Dev., Food & Nut. 210	2(2-0)

Home Making

Child Care and Training I, Child Welf. 201	3(1-6)	Child Care and Training II, Child Welf. 206	3(3-0)
The Family, Child Welf. 216	2(2-0)	Principles of Art I, Art 124	3(3-0)
Sociology, Econ. 151	3(3-0)	Econ. of Household, Hshld. Econ. 265	2(2-0)
Community Organization, Econ. 267	3(3-0)	Adv. Clothing, Clo. & Text. 126	3(1-6)
Problems in Foods, Food & Nut. 243	1 to 3	Meats (HE), An. Husb. 176	1(0-3)
Home Management, Hshld. Econ. 116	3(1-6)	His. of Engl. Lit., Engl. 181	3(3-0)
World Classics I, Engl. 280	3(3-0)	Psychology of Childhood & Adolescence, Educ. 250	3(3-0)
The Nut. of Dev., Food & Nut. 210	2(2-0)		

Lecturing and Demonstrating

Oral English, Engl. 128	3(3-0)	Dramatic Reading, Pub. Spk. 102	2(2-0)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Extem. Speech II, Pub. Spk. 108	2(2-0)
Oral Interp., Pub. Spk. 101	2(2-0)	Rural Sociology, Econ. 156	3(3-0)
Sociology, Econ. 151	3(3-0)	Com. Organization, Econ. 267	3(3-0)
Technical Writing, Engl. 207	2(2-0)	Ind. Writing, Ind. Jour. 161	2(2-0)
Meats (HE), An. Husb. 176	1(0-3)		
Ind. Feat. Writing, Ind. Jour. 167	2(2-0)		

* See respective footnote under Curriculum in Home Economics.

Social and Welfare Work

Child Care and Training I, Child Welf. 201	3(1-6)	Child Care and Training II, Child Welf. 206	3(3-0)
The Family, Child Welf. 216	2(2-0)	Labor Problems, Econ. 233	2(2-0)
Econ. of the Household, Hshld. Econ. 265	2(2-0)	Rural Sociology, Econ. 156	3(3-0)
Sociology, Econ. 151	3(3-0)	Social Problems, Econ. 257	2(2-0)
Latin America, Hist. 208	3(3-0)	Modern Europe II, Hist. 223	3(3-0)
Community Org., Econ. 267	3(3-0)	Immi. & Int. Rel., Hist. 228	2(2-0)
Field Work in Nutrition, Food & Nut. 215	3(2-3)	Problems in Child Welfare and Euthenics, Child Welf. 221	1 to 5

Textiles

College Algebra, Math. 104	3(3-0)	Physical Chemistry I, Chem. 206	5(3-6)
General Physics I, Physics 135	4(3-3)	Qual. Organ. Analysis, Chem. 224	2(0-6)
General Physics II, Physics 140	4(3-3)	Problems in Clothing and Textiles, Clo. & Text. 215	1 to 3
Plane Trigonometry, Math. 101	3(3-0)	Human Physiology, Zoöl. 235	4(3-3)
Clothing Economics, Clo. & Text. 201	3(3-0)	Statistical Methods Applied to Education, Educ. 223	3(3-0)
Experimental Textiles, Clo. & Text. 312	2 to 5	Bact. Problems, Bact. 270	1 to 4
		Advanced Textiles, Clo. & Text. 205	3(1-6)

Art

Associate Professor Barfoot
Associate Professor Everhardy
Assistant Professor Harris
Assistant Professor Morris
Instructor Pinckney
Instructor Dutton

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, and to provide an art background for homemaking or other professional work. Depending upon the interests of the students they may specialize in design, interior decoration, costume design, or teaching of art.

This department owns equipment valued at $10,649.

COURSES IN ART

FOR UNDERGRADUATE CREDIT

101A. Elementary Design I. 2(0-6); I, II, and SS.* Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.

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.

101B. Elementary Design II. 2(0-6); I, II, and SS. Prerequisite: Course 101A. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.

A continuation of course 101A incorporating a unit in history and appreciation of art. Charge, 50 cents; deposit, 25 cents.

103. Intermediate Design. 2(0-6); I, II, and SS. Prerequisite: Course 101B. Miss Barfoot, Miss Everhardy, Miss Harris, and Miss Morris.

A continuation of course 101B with special emphasis on color possibilities and different design media. Charge, 50 cents; deposit, 25 cents.

105. Advanced Design A. 2(0-6); I and II. Prerequisite: Course 103. Miss Barfoot, Miss Everhardy, and Miss Morris.

A continuation of course 103, with emphasis on art structure. Charge, 50 cents; deposit, 25 cents.

107. Design for Camp Counselors. 2(2-6); II. Prerequisite: Course 101B. Miss Barfoot, Miss Everhardy, and Miss Harris.

* The number before the parenthesis indicates the number of 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.

A course to meet the needs of physical education students who are prospective summer-camp directors. Theory and practice in design and processes. Charge, 50 cents; deposit, 25 cents.

110. Public-school Art. 2(1-3); SS. Prerequisite: Course 101B. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.
Methods and problems in art as aids for the public-school teacher. Charge, 50 cents; deposit, 25 cents.

113. Interior Decoration I. 2(0-6); I, II, and SS. Prerequisite: Course 101B. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.
A study of the design of the small modern home. Charge, 50 cents; deposit, 25 cents.

115. Interior Decoration II. 2(0-6); I. Prerequisite: Course 113. Miss Everhardy, Miss Harris, Miss Morris, and Miss Pinckney.
A continuation of course 113, with attention paid especially to the relationship between the American home and modern culture and art. Charge, 50 cents; deposit, 25 cents.

117. Interior Decoration III. 2(0-6); II. Prerequisite: Course 115. Miss Everhardy, Miss Morris, and Miss Pinckney.
A continuation of course 115 with a study also of the historic background of architecture and furniture. Charge, 50 cents; deposit, 25 cents.

120. Drawing I. 2(0-6); I and II. Prerequisite: Course 101B. Miss Barfoot, Miss Harris, Miss Morris, and Miss Dutton.
Representative sketching, decorative illustrating, and creative designing in which a variety of mediums and technique is employed. Charge, $1.50; deposit, 25 cents.

122. Drawing II. 2(0-6); I and II. Prerequisite: Course 120. Miss Barfoot, Miss Harris, Miss Morris, and Miss Dutton.
A continuation of course 120. Charge, $1.50; deposit, 25 cents.

124. Principles of Art I. 3(3-0); I. Prerequisite: Course 101B. Miss Barfoot, Miss Harris, and Miss Morris.
A study of color and form with relation to the history of architecture and the minor arts.

126. Principles of Art II. 3(3-0); II. Prerequisite: Course 124. Miss Barfoot, Miss Harris, and Miss Morris.
A continuation of course 124 with emphasis on the history of painting and sculpture.

130. Costume Design I. 2(0-6); I, II and SS. Prerequisite: Course 101B. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.
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); I and II. Prerequisite: Course 130. Miss Morris, Miss Harris, and Miss Dutton.
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); I and II. Prerequisite: Course 134. Miss Harris, Miss Morris, and Miss Dutton.
A continuation of course 134, particularly in relation to historic costume. Charge, 50 cents; deposit, 25 cents.

142. Methods of Teaching Art. 3(3-0); I and II. Prerequisites: Courses

105, 120, 134, Education 181 and junior or senior standing. Miss Barfoot and Miss Everhardy.

The growth of art education in the United States; methods of presenting problems in art, and use of illustrative materials.

146. Teaching Participation in Art. 3 credits; I and II. Prerequisite: Course 142. Miss Barfoot and Miss Everhardy.

Supervised teaching in grades and high school.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Advanced Design B. 2(0-6); I, II, and SS. Prerequisite: Course 105, 120, or permission of instructor. Miss Barfoot, Miss Everhardy, and Miss Harris.

A continuation of advanced design, emphasizing creative skill and the development of style. Charge, 50 cents; deposit, 25 cents.

207. Costume Design IV. 2(0-6); I, II, and SS. Prerequisite: Course 138 or permission of the instructor. Miss Harris and Miss Morris.

A course to develop skill and further creative expression in dress design. Charge, 50 cents; deposit, 25 cents.

220. Problems in Elementary Design. 1 to 3 credits; I, II, and SS. Prerequisites: 8 credits in art or permission of instructor. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.

Problems in design planned with the student to meet her particular needs. Charge, 50 cents; deposit, 25 cents.

225. Problems in Intermediate Design. 1 to 3 credits; I, II, and SS. Prerequisite: Course 220 or permission of instructor. Miss Barfoot, Miss Everhardy, Miss Harris, and Miss Morris.

Problems in advance of course 220. Charge, 50 cents; deposit, 25 cents.

230. Problems in Teaching Art. 3 credits; SS. Prerequisites: Course 101B; and Education, course 132 or its equivalent. Miss Barfoot 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.

232. Problems in Interior Decoration. 1 to 3 credits; I, II, and SS. Prerequisite: Course 117 or permission of instructor. Miss Harris, Miss Morris, and Miss Pinckney.

Problems in interior decoration planned with the students to meet their particular needs. Charge, 50 cents; deposit, 25 cents.

235. Problems in Costume Design. 1 to 3 credits; I, II, and SS. Prerequisites: 8 credits in art or permission of instructor. Miss Harris, Miss Morris, and Miss Dutton.

Problems in costume design planned with the student to meet her particular needs. Charge, 50 cents; deposit, 25 cents.

FOR GRADUATE CREDIT

301. Research in Art. 2 to 10 credits; I, II, and SS. Prerequisites: Consult instructors. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Pinckney, and Miss Dutton.

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.

305. Problems in Advanced Design. 1 to 3 credits; I, II, and SS. For prerequisites, consult instructors. Miss Barfoot, Miss Everhardy, Miss Morris, Miss Harris, Miss Pinckney, and Miss Dutton.

Problems in advance of course 225 designed primarily for the graduate student. Charge, 50 cents; deposit, 25 cents.

Child Welfare and Euthenics

Professor Ford
Associate Professor Triplett
Instructor Kell
Instructor Williams
Assistant McClure
Graduate Assistant Fisher
Graduate Assistant Lewis

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 satisfaction 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 $2,448.

COURSES IN CHILD WELFARE AND EUTHENICS

FOR UNDERGRADUATE CREDIT

101. Personal Health. 2(2-0); I, II. No prerequisite. Miss Williams.
Personal hygiene as a means of maintaining and improving health.

111. Positive Child Health. 2(2-0); I, II, and SS. For prerequisites consult instructor. Miss Williams.
Public health aspects of school hygiene; organization and administration of health work in public schools.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Child Care and Training I. 3(1-6); I, II, and SS. Prerequisites: Embryology or Physiology, Psychology, and Human Nutrition. Dr. Ford, Dr. Triplett, Mrs. Kell, Miss McClure, Mrs. Fisher, Miss Lewis.
Giving children the right start toward obtaining important life objectives.
Laboratory.—Directed observations and assisting in the nursery school. Charge, $1.

206. Child Care and Training II. 3(3-0); II. For prerequisites consult instructor. Dr. Ford.
Community and home problems in child welfare.

211. Family Health. 3(3-0); I, II. Prerequisites: Embryology or Physiology, and Household Microbiology. Dr. Ford and Miss Williams.
Physical and mental 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 Family. 2(2-0); I and II. Prerequisite: Senior or graduate standing. Consult instructor. Dr. Ford.
Factors that play a part in successful family life to-day.

221. Problems in Child Welfare and Euthenics. 1 to 5 credits; I, II, and SS. Prerequisite: Child Care and Training I. Consult instructors. Dr. Ford, Dr. Triplett, Dr. Sharp and Mrs. Kell.
Individual investigation of a special problem in some phase of child welfare or euthenics; 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 instructors. Dr. Ford and Dr. Triplett.

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

Associate Professor Latzke
Associate Professor Cowles
Associate Professor Hess
Assistant Professor Bruner
Assistant Professor Quinlan
Grad. Research Asst. Haas

Clothing is an important factor in both the physiological and psychological well-being of the individual and of the family. The wise selection of 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 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 and department stores, and extension workers.

The equipment belonging to this department is valued at $11,177.

COURSES IN CLOTHING AND TEXTILES

FOR UNDERGRADUATE CREDIT.

102. Clothing for the Individual. 5(2-9); I, II, and SS. Prerequisite: Elementary Design I; prerequisite or parallel: Costume Design I. Miss Latzke, Miss Cowles, Mrs. Hess, and Miss Bruner.

The factors that influence the individual in the selection and purchase of clothing; self-analysis as a basis of clothing choices, knowledge of clothing fabrics, the use of the clothing budget, knowledge of buying procedures; the care of clothing.

Laboratory.—Design and construction of costumes that express individuality through the correct use of line and color. Charge, $2; deposit, 25 cents.

111. Clothing II. 3(1-6); I and II. Prerequisites: Clothing I and Costume Design I. Miss Cowles.

Design principles as applied to types of individuals and to their clothing; economic considerations for being suitably and tastefully dressed.

Laboratory.—Determination of individual type, study of body lines and measurements leading to the testing and altering of a foundation pattern; designing and constructing a silk or wool dress that expresses individuality through the correct use of line and color. Charge, $1; deposit, 25 cents.

116. Textiles. 3(2-3); I, II, and SS. Prerequisites: Organic Chemistry. Clothing for the Individual or Clothing II. Mrs. Hess and Miss Bruner.

Fabrics and the factors that influence their wearing qualities and appearance; practical application of this knowledge to the everyday problems of the consumer.

Laboratory.—Becoming acquainted with fabrics and their uses; identification of fabrics microscopically and chemically; testing the effect on fabrics of various methods of cleaning. Charge, $2; deposit, 25 cents.

126. Advanced Clothing. 3(1-6); I, II, and SS. Prerequisites: Clothing for the Individual, or Clothing II, and Costume Design I. Open to juniors and seniors. Miss Quinlan.

Development of understanding and appreciation of the use of line, form, texture and color by draping a dress or coat to express the mental and physical characteristics of the individual. A study of the social significance of fashion as explained through its origin and function.

Laboratory.—Design is worked out first in muslin and then in silk or wool. Charge, $2.50; deposit, 25 cents.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Clothing Economics. 3(3-0); I and SS. Prerequisites: Clothing for the Individual or Clothing II, Textiles, and Economics. Miss Latzke.

The organization of the textile industries and markets, wages and standards of efficiency in workmanship, standardization of fabrics, and legislation concerning textiles. Topics are assigned for reading and investigation in addition to classroom work.

205. Advanced Textiles. 3(1-6); I. Prerequisites: Textiles and Organic Chemistry. Mrs. Hess and Miss Bruner.

Study of scientific literature; equipment and research problems in colleges and commercial plants; approved methods of fabric analysis; theories of bleaching and dyeing.

Laboratory.—Charge, $3; deposit, 25 cents.

215. Problems in Clothing and Textiles. 1 to 3 credits; I, II, and SS. For prerequisites consult instructors. Miss Latzke, Mrs. Hess, Miss Bruner and Miss Quinlan.

An assigned problem in some phase of clothing or textiles. Charge, to be arranged with the instructor.

220. Labor in the Clothing and Textile Industries. 1(1-0); II. For prerequisites consult instructors. Miss Latzke and Miss Cowles.

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.

225. History of Costume. 2(2-0); I and II. Prerequisite: Junior or Senior standing. Miss Cowles.

History of ancient and modern costume in its various phases of development and in relation to the life of the people and the growth of civilization.

FOR GRADUATE CREDIT

301. Research in Clothing and Textiles. 2 to 10 credits; I, II, and SS. For prerequisites consult instructors. Miss Latzke, Mrs. Hess, Miss Bruner, and Miss Quinlan.

A research problem considering the hygienic or economic aspects of textiles, or an investigation of clothing as it is related to art, psychology, and other sciences may be chosen as the problem, depending on the courses elected. Charge, to be arranged with the instructor.

304. Clothing and Textiles Seminar. 1(1-0); II. Prerequisites: Graduate standing. Miss Latzke, Mrs. Hess, Miss Bruner, and Miss Quinlan.

A study of the field of clothing and textiles through assigned readings and discussions; special attention is given recent literature bearing on progress in the field.

312. Experimental Textiles. 2 to 5 credits; by appointment. Prerequisite: Advanced Textiles. Mrs. Hess and Miss Bruner.

The work covered in this course consists primarily of experimental work with textiles. Written reports of all work done will be required before a student will receive credit for the course. Fee arranged by instructor.

Food Economics and Nutrition

Professor Pittman
Professor Kramer
Associate Professor Ahlborn
Instructor Tucker
Instructor Vail
Instructor Browning
Instructor McMillan
Technician McCammon
Graduate Assistant Lee
Grad. Research Asst. Brill
Grad. Research Asst. Kunerth

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 the 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 $20,255.

COURSES IN FOOD ECONOMICS AND NUTRITION

FOR UNDERGRADUATE CREDIT

102. Foods I. 5(3-6); I and II. Miss Tucker, Miss Vail, Miss Browning, and Miss McMillan.

A study of fundamentals of elementary nutrition and food economics. Practice in food preparation and meal service. Charge, $5; deposit, 25 cents.

107. Foods II. 3(1-6); I and II. Prerequisites: Organic Chemistry and Foods I or equivalent.

Practice in testing, formulating, and stating food principles as applied to food preparation. Charge, $4; 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.

121. Applied Nutrition. 2(2-0); I and II. Prerequisite: Organic Chemistry or permission of instructor. Dr. Pittman and Miss Ahlborn.

Practical nutrition for the college student, including food requirements, food selection, and food habits. Designed for men and women students not majoring in home economics.

176. Meats HE. 1(0-3); I and II.

See Department of Animal Husbandry, Division of Agriculture, course 176.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Dietetics. 4(3-3); I, II, and SS. Prerequisites: Foods II and Human Nutrition. Dr. Pittman, Miss Ahlborn, and Miss Tucker.

Consideration of food requirements in health throughout infancy, childhood, adolescence, adult life, and old age. Practical application of principles of human nutrition.

Laboratory.—Studies of weight, measure, and cost of some common food materials; standard portions of foods; charted recipes; weighed portions of proteins and minerals; vitamin exhibits; shares. Ideal diets for infants, children, and adults, individually and in groups. Charge, $4.50; deposit, 25 cents.

205. Dietetics for Abnormal Conditions. 2(1-3); II. Prerequisite: Dietetics. Dr. Kramer.

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‡ 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.

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. Pittman.

Detailed study of nutrition of the mother in pregnancy and lactation. Food requirements of the fetus, infant, and preschool child, and the school child through the period of adolescence.

215. Field Work in Nutrition. 3(2-3); I, II, and SS. Prerequisites: Human Nutrition and Dietetics. Miss Tucker and Miss Browning.

Survey of field of child nutrition, study of malnutrition, field work with school children, special work with malnourished and normal individuals. Charge to be arranged with instructor.

248. Problems in Food Economics and Nutrition. 1 to 5 credits; I, II, and SS. Prerequisite: Senior or graduate standing. Dr. Pittman and Dr. Kramer.

Problems dealing with 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 to be arranged with instructor.

251. Food Economics and Nutrition Seminar. 1 to 4 credits; I, II, and SS. Prerequisite: Human Nutrition. Dr. Kramer.

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.

255. Experimental Cookery. 2 credits; I, II, and SS. Prerequisites: Foods II and Household Physics. Miss Tucker, Miss Vail, and Miss McMillan.

Presentation of processes of food preparation from the experimental standpoint. Charge, $1 to $3.

FOR GRADUATE CREDIT

305. Research in Food Economics and Nutrition. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructors. Dr. Pittman and Dr. Kramer.

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(1-0); I and II. Prerequisite: Consult instructors. Dr. Pittman and Dr. Kramer.

Reports of experiments in nutrition. Methods employed and validity of conclusions discussed.

310. Problems in Foods. 1 to 3 credits; I, II, and SS. Prerequisites: Consult instructors. Dr. Pittman, Miss Tucker, Miss Vail, and Miss McMillan.

Foods problems are assigned for individual study. Charge to be arranged with instructor.

General Home Economics

Dean Justin
Assistant Dean Ahlborn

COURSES IN GENERAL HOME ECONOMICS

FOR UNDERGRADUATE CREDIT

101. Home Economics Freshman Lectures. 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 Lectures. 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.

COURSES IN HOME ECONOMICS EDUCATION*

Professor Rust Instructor Baxter

FOR UNDERGRADUATE CREDIT

132. Methods of Teaching Home Economics. 3(3-0); I, II, and SS. Mrs. Rust and Mrs. Baxter.

See Department of Education, Division of General Science.

160. Teaching Participation in Home Economics. 3 credits; by appointment. Mrs. Rust and Mrs. Baxter.

See Department of Education, Division of General Science.

FOR GRADUATE AND UNDERGRADUATE CREDIT

251. Teaching Subjects Related to Home Economics. 1 to 3 credits; I, II, and SS. Prerequisites: Psychology, and Methods of Teaching Home Economics. Mrs. Rust.

See Department of Education, Division of General Science.

FOR GRADUATE CREDIT

313. Research in Organization and Presentation of Home Economics. 1 to 10 credits; I, II, and SS. Prerequisites: Graduate standing and confirmation of Division of Home Economics. Dean Justin and Mrs. Rust.

See Department of Education, Division of General Science.

314. Problems in Organization and Presentation of Home Economics. 1 to 5 credits; I, II, and SS. Prerequisite: Senior or graduate standing. Dean Justin and Mrs. Rust.

See Department of Education, Division of General Science.

315. Supervision in Home Economics. 2 credits; I, II, and SS. Prerequisites: Psychology, Methods of Teaching Home Economics, and experience in teaching home economics. Mrs. Rust.

See Department of Education, Division of General Science.

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* The six courses named here are given by the Department of Education for the Division of Home Economics. Professor Rust and Instructor Baxter are appointed coöperatively by that department and the Division of Home Economics.

† Of the Department of Education.

Household Economics

Dean JUSTIN
Assistant Professor GUNSELMAN*
Assistant Professor TAYLOR
Instructor AGAN
Assistant DAY
Grad. Research Asst. NORRIS

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 an opportunity is offered for studying problems in housing, household administration, household equipment, 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 $4,789.

COURSES IN HOUSEHOLD ECONOMICS

FOR UNDERGRADUATE CREDIT

107. THE HOUSE. 3(2-3); I, II, and SS. Prerequisites: Foods I, and Household Physics. Miss Taylor and Miss Agan.

Criteria for judging the adequacy of certain types of dwellings in meeting the housing needs of the family; management of time, effort, and income—important factors in providing and maintaining family life in the home; choice of equipment.

Laboratory.—Selection, care, and operation of certain equipment for the home. Charge, $1.

116. HOME MANAGEMENT. 3(1-6); I, II, and SS. Prerequisite: Senior standing. Miss Gunselman and Miss Agan.

Offers opportunity and help to the student in the application of the knowledge received in the basic home economics courses to the management of a home; and helps to develop an understanding of the essential attitudes that bring satisfaction in group living and family life.

Laboratory.—Residence is required in the management houses for a period of six weeks.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. HOUSEHOLD EQUIPMENT I. 2(0-6); I and II. Prerequisite: Household Physics. Miss Taylor.

Practical studies which involve care, construction, operation, and repair of various pieces of equipment used in the home. Charge, $2.50.

206. HOUSEHOLD EQUIPMENT II. 3(1-6); II. Prerequisite: Household Equipment I or consult instructor. Miss Taylor.

Selection, care, construction, operation and testing of mechanical, electrical, and heat equipment from the standpoint of the physical and chemical principles involved. Charge, $2.50.

238. PROBLEMS IN HOUSEHOLD EQUIPMENT. 1 to 5 credits. I, II, and SS. Prerequisite: Household Physics or consult instructor.

Special problems in selection, care, operation, and testing of household equipment. Charge, $1.

243. PROBLEMS IN HOUSEHOLD ECONOMICS. 1 to 5 credits; I, II, and SS. Prerequisites: Consult instructors. Dr. Justin, Miss Gunselman, Miss Taylor, and Miss Agan.

Special problems for individual investigation in standards of living and family expenditures; housing, household equipment, organization and methods of housework; use of home-makers' leisure time or social aspects of the household and of the family.

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* Absent on leave, 1932-'33.

265. Economics of the Household. 2(2-0); I, II, and SS. Prerequisites: Foods II and Economics. Miss Gunselman.
Problems of income, housing, standards of living, budgets, and accounts.

FOR GRADUATE CREDIT

301. Research in Household Economics. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructors. Dr. Justin, Miss Gunselman, and Miss Taylor.
An individual research problem in the field of household economics, housing or equipment. This may form the basis for a part or all of a master's thesis.

Institutional Economics

Professor West
Assistant Professor Wood
Assistant Welch
Assistant Quist
Graduate Assistant Fowler
Graduate Assistant ———

The successful administration of the institution involves the wise expenditure of time, energy, and money, in order that 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 $13,846.

COURSES IN INSTITUTIONAL ECONOMICS

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Institutional Economics I. 4(1-9); I, II, and SS. Prerequisite: Foods II. Miss Wood and graduate assistant.
Food problems of institutions, including preparation and serving of food in large quantities, menu planning and food costs.
Laboratory.—Carried on in College cafeteria where food is prepared and served in large quantities. Charge, $2.50.

205. Institutional Economics II. 2(2-0); I and II. Prerequisite: Institutional Economics I. Graduate students may parallel Institutional Economics I and II. Mrs. West.
A study of the organization and administration problems of the food and house department of certain institutions such as the school lunch, dormitories, hospitals, cafeterias; floor plans and equipment of institutional kitchens and dining rooms.

210. Problems in Institutional Administration. 1 to 5 credits; I, II, and SS. 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 Purchasing. 2(2-0); I and II. Prerequisite: Institutional Economics I. Mrs. West.
Study of producing areas, the distribution of food products, and methods of purchasing food in large quantities.

218. School Lunch-room Management. 2(1-3); II and SS. Prerequisite: Foods II. Mrs. West.
Organization, administration, equipment, food purchasing, food costs, and menu planning for the school lunch; banquet service for secondary schools.

225. Tea-room Management. 3(0-9); I, II, and SS. Prerequisites: Institutional Economics I. Prerequisites or parallel: Institutional Economics II and Institutional Purchasing. Miss Wood and graduate assistant.

Practical experience in the planning, preparation, and serving of food to the public. The College Tea Room serves as a laboratory for this course. Charge, $2.50.

230. Institutional Equipment. 2(2-0); I and II. Prerequisite: Foods II. Miss Wood.

A study of the different types of equipment for the house and food departments of institutions, including selection, arrangement, installation, and care.

FOR GRADUATE CREDIT

301. Research in Institutional Economics. 2 to 10 credits; I, II, and SS. 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 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 Kansas State 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

PREVETERINARY OR FIRST YEAR[1]

(Thirty semester credits of approved college or university work, having the following distribution, are required.)

English	5 or 6 semester hours
General Inorganic Chemistry	5 to 10 semester hours
Zoölogy	5 semester hours
Military Science[2]	2 semester hours
Optional courses	9 to 15 semester hours
Total	30 or 32 semester hours

The optional courses should preferably be selected from a modern language (German or French), physics, and mathematics.

FRESHMAN OR SECOND YEAR

First Semester		Second Semester	
Anatomy I, Anat. 104	*4(3-3)	Anatomy II, Anat. 110	8(4-12)
Histology I, Path. 102	4(2-6)	Histology II, Path. 106	3(1-6)
Gen. Org. Chemistry, Chem. 122	5(3-6)	Path. Bact. I, Bact. 111	4(2-6)
Medical Botany, Bot. 126	2(1-3)		
Mil. Sci. (Vet.) I,[2] Mil. Tr. 121A	1(0-3)	Mil. Sci. (Vet.) II,[2] Mill. Tr. 122A	1(0-3)
Phys. Education M,[3] Phys. Ed. 103	R(0-2)	Phys. Education M,[3] Phys. Ed. 104	R(0-2)
Total	16	Total	16

SOPHOMORE OR THIRD YEAR

First Semester		Second Semester	
Anatomy III, Anat. 112	4(1-9)	Pathology I, Path. 203	5(3-6)
Comp. Physiology I, Anat. 222	4(3-3)	Comp. Physiology II, Anat. 227	4(3-3)
El. of An. Husb., An. Husb. 125	3(2-4)	Farm Poultry Production, Poult. Husb. 101	2(1-2, 1)
Path. Bact. II, Bact. 116	4(2-6)	Feeding Live Stock, An. Husb. 172	3(3-0)
Dairy Cattle Judging, Dairy Husb. 104	1(0-3)	Dairy Inspection II, Dairy Husb. 119	2(1-3)
Mil. Sci. (Vet.) III,[4] Mil. Tr. 123A	1(0-3)	Mil. Sci. (Vet.) IV,[4] 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	16 or 17	Total	16 or 17

JUNIOR OR FOURTH YEAR

First Semester		Second Semester	
Surgery I, Surg. and Med. 102	5(5-0)	Surgery II, Surg. and Med. 107	5(5-0)
Materia Medica, Surg. and Med. 158	4(3-3)	Dis. of Large Animals I, Surg. and Med. 175	5(5-0)
Pathology II, Path. 208	4(3-3)	Pathology III, Path. 211	3(2-3)
Parasitology, Zoöl. 208	3(2-3)	Therapeutics, Surg. and Med. 163	3(3-0)
Clinics I, Surg. and Med. 138	2(0-6)	Clinics II, Surg. and Med. 141	2(0-6)
Total	18	Total	18

* The number before the parenthesis indicates the number of 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. The courses of the preveterinary year may be taken in Kansas State College or in an approved junior college, college, or university.

2. Military Science I, II, III and IV shall be taken during the preveterinary and freshman years, unless the matriculant enrolls in this college as a freshman, in which event they shall be taken during the freshman and sophomore years.

3. The courses in physical education may be taken during the preveterinary and freshman years, unless the matriculant enrolls in this college as a freshman, in which event they shall be taken during the freshman and sophomore years.

4. If basic military science has been completed, it is to be left out of the sophomore year.

SENIOR OR FIFTH YEAR

First Semester		Second Semester	
Dis. of Large Animals II, Surg. and Med. 177,	5(5-0)	Inf. Dis. of Large Animals, Surg. and Med. 181	5(5-0)
Dis. of Small Animals, Surg. and Med. 186	2(2-0)	Obstet. & Breeding Dis., Surg. and Med. 130,	5(5-0)
Surgical Exercises, Surg. and Med. 112	1(0-3)	Poultry Diseases, Bact. 217	2(2-0)
Meat Hygiene, Path. 217	3(3-0)	Medical Economics & Law, Surg. and Med. 191	2(2-0)
Pathology IV, Path. 214	3(2-3)	Clinics IV, Surg. and Med. 147	4(0-12)
Clinics III, Surg. and Med. 144	4(0-12)		
Total	18	Total	18

Number of hours required in the preveterinary year ..... 32 or 30
Number of hours required in the freshman, sophomore, junior and senior years ... 132 or 134

Total number of hours required for graduation 164

EXTRACURRICULAR ELECTIVES

First Semester	Second Semester
Vaccine Manu. I, Path. 228 ..... 2(1-3)	Special Histology, Path. 252 ..... 3(1-6) Vaccine Manu. II, Path. 231 ..... 2(1-3)

First or Second Semester

Pathological Technic and Diagnosis I, Path. 222 ..... 2 to 5(-)
Pathological Technic and Diagnosis II, Path. 223 ..... 2 to 5(-)
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(-)

Six-year Curriculum in Animal Husbandry and Veterinary Medicine

FRESHMAN

Freshman year of the curriculum in Agriculture

SOPHOMORE

First Semester		Second Semester	
Agricultural Economics, Agric. Econ. 101	3(3-0)	Feeding Live Stock, An. Husb. 172	3(3-0)
Soils, Agron. 130	4(3-3)	Farm Crops, Agron. 101	4(2-6)
College Rhetoric II, Engl. 104	3(3-0)	Genetics, An. Husb. 221	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)	Farm Poult. Pro., Poult. Husb. 101	2(1-2, 1)
		Gen. Economic Entomol., Ent. 203	3(2-3)
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, Gen. Agric. 103	R	Agric. Seminar, Gen. Agric. 103	R
Total	16	Total	16

JUNIOR

First Semester		Second Semester	
Anatomy I, Anat. 104	4(3-3)	Anatomy II, Anat. 110	8(4-12)
Histology I, Path. 102	4(2-6)	Histology II, Path. 106	3(1-6)
Medical Botany, Bot. 126	2(1-3)	Path. Bact. I, Bact. 111	4(2-6)
Electives	6	Electives	1
Agric. Seminar, Gen. Agric. 103	R	Agric. Seminar, Gen. Agric. 103	R
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Anatomy III, Anat. 112	4(1-9)	Pathology I, Path. 203	5(3-6)
Comp. Physiology I, Anat. 222	4(3-3)	Comp. Physiology II, Anat. 227	4(3-3)
Path. Bact. II, Bact. 116	4(2-6)	Dairy Inspection II, Dairy Husb. 119	2(1-3)
Electives	4	Electives	5
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

The work of the first four years leads to the degree Bachelor of Science in Agriculture. The junior and senior electives provided must be officially approved, before assignment, by the dean of the Division of Agriculture and the head of the Department of Animal Husbandry. Upon the completion of the Fifth and Sixth years the student is eligible for the degree Doctor of Veterinary Medicine.

Six-year Curriculum in General Science and Veterinary Medicine

FIRST YEAR

Freshman year of curriculum in General Science, replacing Mil. Sci. (Vet.) I-II, Mil. Tr. 121A, 122A, for Infantry I-II, Mil. Tr. 101A, 102A.

SECOND YEAR

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Modern Europe II, Hist. 223	3(3-0)	Economics I, Econ. 101	3(3-0)
Gen. Physics I, Phys. 135	4(3-3)	Gen. Physics II, Phys. 140	4(3-3)
Gen. Organic Chemistry, Chem. 122	5(3-6)	General Zoölogy, Zoöl. 105	5(3-6)
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	16	Total	16

THIRD YEAR

First Semester		Second Semester	
Amer. History I, Hist. 201	3(3-0)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Amer. Government, Hist. 151, 152, or 153	3(3-0)		
Medical Botany, Bot. 126	2(1-3)	Path. Bact. I, Bact. 111	4(2-6)
Histology I, Path. 102	4(2-6)	Histology II, Path. 106	3(1-6)
Anatomy I, Anat. 104	4(3-3)	Anatomy II, Anat. 110	8(4-12)
Total	16	Total	17

FOURTH YEAR

Sophomore year of curriculum in Veterinary Medicine, omitting Mil. Sci. (Vet.) III-IV, Mil. Tr. 123A, 124A, and Physical Education M, Phys. Ed. 105, 106.

FIFTH YEAR

Junior year of the curriculum in Veterinary Medicine

SIXTH YEAR

Senior year of the curriculum in Veterinary Medicine

Number of hours required for completion of six-year curriculum, 200

The work of the first four years leads to the degree Bachelor of Science. Upon the completion of the fifth and sixth years the student is eligible for the degree Doctor of Veterinary Medicine.

Anatomy and Physiology

Professor Burt
Associate Professor McLeod

This branch of veterinary medicine extends over the freshman year and the first semester of the sophomore year 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 $10,124.

COURSES IN ANATOMY

FOR UNDERGRADUATE CREDIT

104. Anatomy I.* 4(3-3); I. Dr. McLeod.
A detailed study of the bones of the horse, and a comparative study of the bones of other animals and of man. Deposit, $3.

110. Anatomy II. 8(4-12); II. Prerequisite: Anatomy I. Drs. Burt and McLeod.
Dissection of the trunk and limbs of the horse; study of the nerves, viscera, and joints, and of the blood and nerve supply of the same. Deposit, $5.

112. Anatomy III. 4(1-9); I. Prerequisite: Anatomy II. Dr. Burt.
Dissection and study of all structures of the head of the horse with exception of the bones of the head; the comparative anatomy of other domestic animals. Deposit, $5.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Special Anatomy. 2 to 4 credits; II. Prerequisite: Any course in Anatomy and Physiology (104, 110, 112, 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.

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* The number before the parenthesis indicates the number of hours of credit; the first numeral within the parentheses 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.

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 PHYSIOLOGY

FOR GRADUATE AND UNDERGRADUATE CREDIT

215. Problems in Physiology. 3 to 5 credits; I and II. Prerequisite: Any course in Anatomy and Physiology (131, 222, or 227), or their equivalent. Drs. Burt and McLeod.
Individual investigational problems in the physiology of digestion, reproduction, endocrin glands, etc.

222. Comparative Physiology I. 4(3-3); 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.

227. Comparative Physiology II. 4(3-3); II. Prerequisites: Same as for course 222. 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 infectious, 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 $16,450.

COURSES IN HISTOLOGY

FOR UNDERGRADUATE CREDIT

102. Histology I. 4(2-6); I. Prerequisite: Zoölogy 105. Dr. Leasure.

Care and manipulation of the microscope; microscopical examination and study of the cell, the developing embryo, the specialized tissues, blood-forming organs, the digestive tract, etc. Previously prepared specimens are studied with the microscope and drawn by the student. Deposit, $3.

106. Histology II. 3(1-6); II. Prerequisite: Path. 102. 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. Deposit, $3.

COURSES IN PATHOLOGY

FOR UNDERGRADUATE AND GRADUATE CREDIT

203. Pathology I. 5(3-6); II. Prerequisite: Anat. 222, Bact. 116, Chem. 122, and Path. 106. Drs. Lienhardt and Leasure.

General pathology, treating of the history of pathology, predisposition, immunity, congenital and inherited disease, etiology, course and termination of disease. Deposit, $3.

208 Pathology II. 4(3-3); I. Prerequisites: Path. 203 and Anat. 227. Drs. Lienhardt and Leasure.

Special pathology, study of specific pathological processes occurring in the various organs of the body. Sectioned and mounted specimens of diseased tissues are studied microscopically and drawn by the student. Deposit, $3.

211. Pathology III. 3(2-3); II. Prerequisite: Path. 208. Drs. Lienhardt and Leasure.

Special pathology; continuation of Pathology II; also clinical pathology. Deposit, $3.

214. Pathology IV. 3(2-3); I. Prerequisite: Path. 211. Dr. Lienhart.

Pathology of the infectious diseases and laboratory diagnosis. Deposit, $2.50.

217. Meat Hygiene. 3(3-0); I. Prerequisite: Path. 211. Dr. Kitselman.

Kinds and classes of stock, traffic and transportation of animals, inspection before and after slaughter, disposition of the condemned from economic and hygienic standpoints; different methods of preservation, adulterations, and sanitary laws and regulations dealing with healthful meat production.

222, 223. Pathological Technic and Diagnosis I and II. 2 to 5 credits each; I and II each. Prerequisites: For I, Path. 203; for II, Path. 211 and 222. Drs. Lienhardt and Leasure.

Pathological technic; collecting, fixing, hardening, embedding in celloidin and paraffin, also freezing and sectioning of tissues; methods of preserving gross specimens; practice in post-mortem and laboratory diagnosis. Deposit, $3 to $7.50 for each course.

228, 231. Vaccine Manufacture I and II. 2 to 5 credits 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 anaërobes, and practical production of blackleg biological products and anti-hog-cholera serum and virus. Deposit, $3 to $7.50 for each course.

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 222, 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, $1.50 to $15.

310. Animal Nutrition Seminar. 1(1-0); I and II. For prerequisites, 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 Jennings

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 $6,925.

COURSES IN SURGERY

FOR UNDERGRADUATE CREDIT

102. Surgery I. 5(5-0); I. Prerequisite: Junior and senior classification in Veterinary Medicine. Dr. Dykstra.

Lectures, recitations, and demonstrations on the fundamental principles of surgery, methods of restraint, asepsis and antisepsis, anæsthesia, division of tissues, union of tissues, control of hemorrhage, neoplasms, and animal dentistry.

107. Surgery II. 5(5-0); II. Prerequisite: Surgery I. Dr. Dykstra.

Lectures, recitations and demonstrations on the surgical diseases of domesticated animals, and including horseshoeing.

112. Surgical Exercises. 1(0-3); I. Drs. Dykstra, Frank, and Jennings.

Major surgical operations on anæsthetized domesticated animals and on cadavers. Charge, $5.

FOR GRADUATE CREDIT

301. Research in Surgery. 1 to 10 credits; I and II. Prerequisites: Surgery I and II, Anatomy I, II, and III, 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.

COURSES IN OBSTETRICS

FOR UNDERGRADUATE CREDIT

130. Obstetrics and Breeding Diseases. 5(5-0); II. Dr. Frank.

Physiology and reproduction, principles of normal and abnormal parturition, special attention given to handling of reduced fertility.

COURSES IN CLINICS

FOR UNDERGRADUATE CREDIT

138, 141. Clinics I and II. 2(0-6) each; I and II respectively. Drs. Dykstra, Frick, Frank, and Jennings.

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 medical agents. Deposit, $5 for each course.

144-147. Clinics III and IV. 4(0-12) each; I and II, respectively. Prerequisite: Junior or senior veterinary assignment. Drs. Dykstra, Frick, Frank, and Jennings.

Diagnosis and treatment of hospital patients, including the keeping of clinic records, the administering of all medicines, changing of dressings on surgical wounds, etc.; assisting clinicians in out-clinic work. Deposit, $5 for each course.

150. Extra Clinics. 1(0-3); I, II, and SS. Prerequisite: Clinics 141 or 147. Drs. Dykstra, Frick, Frank, and Jennings.

A course in clinics intended for those undergraduate students desiring clinical training in addition to that offered in the curriculum in Veterinary Medicine. Deposit, $2.50.

COURSES IN MATERIA MEDICA

FOR UNDERGRADUATE CREDIT

158. Materia Medica. 4(3-3); I. Drs. Frank and Jennings.

Pharmaceutical principles, metrology, prescription writing, physical properties, active constituents, incompatibility, official preparations, dosage and therapeutic use, and a thorough course in the compounding of prescriptions. Deposit, $3.

163. Therapeutics. 3(3-0); II. Prerequisite: Materia Medica. Dr. Jennings.

Physiological and therapeutic methods of handling various diseased conditions, symptoms, and antidotes of poisons.

COURSES IN MEDICINE

FOR UNDERGRADUATE CREDIT

175, 177. Diseases of Large Animals I and II. 5(5-0) each; II and I respectively. Drs. Frick and Frank.

I: Different diagnostic methods employed for the detection of disease; 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 large domestic animals.

186. Diseases of Small Animals. 2(2-0); I. 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.

191. Medical Economics and Law. 2(2-0); II. The veterinarian's legal responsibilities; national and state live-stock laws, quarantine regulations, fundamental and practical business principles, etc.

FOR GRADUATE CREDIT

310. Research in Medicine. 1 to 10 credits; I, II, and SS. Prerequisites: Materia Medica, Diseases of Large Animals I and II, and Infectious Diseases of Large Animals (Surg. and Med. 158, 175, 177, and 181 respectively). Dr. Frick.
An attempted solution of some of the medical and parasitological problems confronting the practitioner of veterinary medicine. 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 who cannot go to college, and it is their wish that this majority also be served. Kansas State 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.

The present development of extension work is made possible not only because the people of the state desire to have such work done but because much new light is being constantly thrown on the essentials in agriculture and home economics 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 information on practical subjects in agriculture and home economics as developed by the experiment stations and by the United States Department of Agriculture, and also by the experience of the best farmers and home makers, should be made more readily available to everyone. 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 United States congress passed the Smith-Lever act, 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."

Under this act coöperation of the agricultural colleges and the United States Department of Agriculture is assured and extension work has become a national as well as a state project, and its effectiveness has been greatly increased. During 1932-'33, the following appropriations were available for extension work:

Federal Smith-Lever	$97,695.22
Supplementary Smith-Lever	33,662.59
Capper-Ketcham	30,652.72
Additional Federal coöperative	26,500.00
Federal Coöperative Demonstration Funds	10,700.00
State Smith-Lever	*73,901.00
College Extension	19,175.00
County appropriation to support supplementary Smith-Lever, Capper-Ketcham, and additional federal coöperative	175,943.73
Total	$468,230.26

The Extension Division is subdivided into six departments, namely: extension schools in agriculture and home economics and the supervision of agricultural extension specialists, county agent work, boys' and girls' club work, rural engineering, and home-study service, each department with its own head and staff. The heads of departments are responsible to the director, who is dean of the Division of College Extension. Through this organization it is possible to administer the work effectively and economically and 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

* Because of reduction in valuation and with levy remaining constant, this appropriation was reduced from $101,841.

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 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, 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.

The value of the radio station and equipment is $27,927.

The value of additional equipment in the administrative office amounts to $6,195.

Extension Schools

In Agriculture and Home Economics and the Supervision of 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
E. H. Leker, Plant Pathology
W. S. Speer, Fieldman, South Central, Farm Bureau-Farm Mgn. Assn.
I. N. Chapman, Fieldman, North Central, Farm Bureau-Farm Mgn. Assn.
Jas. W. Linn, Dairy Husbandry
Dwight M. Seath, Dairy Husbandry
L. E. Willoughby, Crops
E. B. Wells, Soils
E. A. Cleavinger, Crops
Vance Rucker, Marketing
J. H. Coolidge, Farm Management

This department has direct supervision over farm and home institute organizations, extension schools in agriculture and home economics, and the work of the extension agricultural specialists. The department also has charge of the program and arrangements for Farm and Home Week, annual state-wide farmers' meetings, and the scheduling of judges for county and local fairs.

FARM AND HOME INSTITUTES

Each farm and home institute of the state is an association of farmers and farm home makers with regular officers, constitution and by-laws. Some organizations hold six or more monthly meetings, and practically all of them have no less than three, for no institute organization can obtain state aid unless, in addition to the annual meeting, at which representatives of the College must be present, it also holds at least three local meetings. It is the plan of the College 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 known need or interest of a particular community or a plan to start or encourage certain definite lines of work.

Farm and home institutes have been a very effective agency in bringing information in regard to improved practices in agriculture, rural engineering and home economics to the people of the state. Many of these institutes have now become local units of the Farm Bureau in the counties where they are located and are carrying forward their work as a part of that organization.

This department owns equipment valued at $1,890.

EXTENSION SCHOOLS

Extension schools are meetings of one or two days' duration conducted for the purpose of giving practical instruction in agriculture, rural engineering and home economics. Most of these schools are organzied on the project basis and are an important feature in the yearly program of work conducted by each specialist. Results of demonstrations and experiments are given at these meetings and suggestions are made for their practical application under local conditions.

Extension schools are classified according to the subject matter presented. Each year schools are held in horticulture, animal husbandry, veterinary medicine, entomology, poultry, dairy, agronomy, marketing, farm management and plant pathology. In addition to these specialized meetings, schools are held that are more general in character, which are designed to present the extension program best suited to the entire community or county. Home economics and 4-H club work have an important place on the program of these schools.

Any Kansas community desiring to hold an extension school may obtain full information in regard to the organization necessary by writing the Extension Division or by making application to the county agent in farm-bureau counties.

EXTENSION SCHEDULES

The specialists of this division work in extension schools and institutes during the winter months only, and a portion of this time is devoted to cooperative 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 coöperative demonstration work. The latter phase of the work of the extension specialists is being especially met by the organization of coöperative demonstration work in each branch of agriculture in a certain number of counties each year. In much of the coöperative work each specialist has from 10 to 100 or more coöperators 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 specialists make to each point varies from two to four, in the case of the specialist in soils, and to six, in the case of the specialists in horticulture and entomology. The aim in all of this coöperative 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 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 departments 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 the people of the state, the work of the specialist becomes largely a matter of teaching and training leaders, such as the county agricultural agents, home demonstration agents, 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. Each year the specialists are becoming more and more 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 has no place in the program under the present system.

COUNTY AND LOCAL FAIRS

The agricultural specialists devote some time each year to judging the live stock and agricultural products at county and local fairs. Under such a plan an excellent opportunity for lectures and demonstration work is furnished the specialists. 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 expenses of the trip to Manhattan, with reduced railroad rates, should not prevent any farmer from attending. The investment in knowledge and enthusiasm will tend toward more 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 investigational work in all lines of agriculture, home economics, and rural 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

Dan M. Braum, Allen
J. A. Hendriks, Anderson
Joe M. Goodwin, Atchison
Sherman S. Hoar, Barton
T. F. Yost, Bourbon
R. L. Stover, Brown
L. L. Compton, Butler
Ebur S. Schultz, Chase
R. T. Patterson, Cherokee
Harvey J. Stewart, Cheyenne
Lyle Mayfield, Clark
J. B. Taylor, Clay
Dale Scheel, Cloud
Leland M. Sloan, Coffey
L. A. Sutherland, Comanche
E. H. Aicher, Cowley
Roy E. Gwin, Crawford
O. W. Greene, Dickinson
Chas. E. Lyness, Doniphan
J. A. Terrell, Douglas
Geo. W. Sidwell, Edwards
Ralph O. Lewis, Ellsworth
L. E. Crawford, Finney
Robt. S. Trumbull, Ford
H. A. Biskie, Franklin
Paul B. Gwin, Geary
J. Edward Taylor, Grant
D. W. Ingle, Gray
H. L. Murphey, Greeley
J. W. Farmer, Greenwood
J. N. Lowe, 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
T. W. Kirton, Kingman
L. B. Harden, Labette
Harry C. Baird, Lane
Preston O. Hale, Leavenworth
Raymond Wm. O'Hara, Lincoln
W. J. Daly, Linn
Carl L. Howard, Lyon
M. L. Robinson, McPherson
F. A. Hagans, Marion
W. O'Connell, Marshall
John H. Shirkey, Meade
Glenn C. Isaac, Miami
R. W. McBurney, Mitchell
A. W. Knott, Montgomery
D. Z. McCormick, Morris
R. L. Rawlins, Nemaha
Lester Shepard, Neosho
Frank Zitnik, Ness
Fred J. Sykes, Norton
E. L. McIntosh, Osage
Paul Evans, Ottawa
H. B. Harper, Pratt
R. W. Stumbo, Rawlins
Geo. W. Hinds, Reno
M. M. Taylor, Rice
H. L. Hildwein, Riley
B. W. Wright, Russell
Ray L. Graves, Saline
J. D. Montague, Sedgwick
W. H. Robinson, Shawnee
C. E. Dunbar, Sheridan
L. D. Morgan, Sherman
E. O. Graper, Smith
E. H. Teagarden, Stafford
L. M. Knight, Sumner
John M. Buoy, Thomas
L. F. Neff, Washington
A. C. Thomson, Washington
(Assistant County Agent)
C. E. Agnew, Wilson
M. C. Axelton, Woodson
K. L. Backus, Wyandotte

Provision is made for county-agent work in this state 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, the state farm-bureau law, effective July 1, 1915, 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, November 1, 1932, there are seventy-eight active farm bureaus in Kansas, as follows:

Allen	Edwards	Leavenworth	Rawlins
Anderson	Ellsworth	Lincoln	Reno
Atchison	Finney	Linn	Rice
Barton	Ford	Lyon	Riley
Bourbon	Franklin	McPherson	Russell
Brown	Geary	Marion	Saline
Butler	Grant	Marshall	Sedgwick
Chase	Gray	Meade	Shawnee
Cherokee	Greeley	Miami	Sheridan
Cheyenne	Greenwood	Mitchell	Sherman
Clark	Harper	Montgomery	Smith
Clay	Harvey	Morris	Stafford
Cloud	Hodgeman	Nemaha	Sumner
Coffey	Jackson	Neosho	Thomas
Comanche	Jefferson	Ness	Washington
Cowley	Jewell	Norton	Wilson
Crawford	Johnson	Osage	Woodson
Dickinson	Kingman	Ottawa	Wyandotte
Doniphan	Labette	Pawnee	
Douglas	Lane	Pratt	

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 the work. The county agent interests himself in practically every farm activity, especially where there is need for improvement.

The value of the equipment belonging to this department is $1,386.

Home Economics

Miss Amy Kelly, State Home Demonstration Leader, in Charge

Miss Loretta McElmurry, Clothing
Miss Maude Deely, Home Furnishings
Miss W. Pearl Martin, Home Health and Sanitation
Miss Conie Foote, Foods and Nutrition
Miss Frances Shewmaker, Foods and Nutrition
Miss Marguerite Harper, Home Management

There are approximately eight hundred women who receive instruction each year in home economics at the Kansas State College, and there are several thousand throughout the state who have had the advantage of resident instruction either in this or some other institution. 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 Eco-

nomics Extension, and with such a project in view six specialists were regularly employed 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.

This department owns equipment valued at $1,646.

Home Demonstration Agent Work

Miss Amy Kelly, State Home Demonstration Leader
Miss Ellen M. Batchelor, District Home Demonstration Agent Leader
Miss May Miles, District Home Demonstration Agent Leader
Miss Georgiana H. Smurthwaite, District Home Demonstration Agent Leader.

Miss Minnie Belle Peebler, Allen County
Miss Glyde E. Anderson, Barton County
Miss Ruth J. Peck, Bourbon County
Miss Nora E. Bare, Butler County
Miss Ethyl Danielson, Comanche County
Miss Christiana Marie Shields, Crawford County
Mrs. Mamie May Searles, Ford County
Miss Eula May Neal, Franklin County
Miss Ethel Watson, Greenwood County
Miss Helen Brewer, Harper County
Miss Alberta Sherrod, Harvey County
Miss Mary Elsie Border, Johnson County
Miss Christine Wiggins, Labette County
Miss Iva Holladay, Leavenworth County
Miss Gertrude Allen, Lyon County
Miss Grace Reeder, Miami County
Miss Vernetta Fairbairn, Montgomery County
Miss Sara Jane Patton, Neosho County
Miss Ruth K. Huff, Pratt County
Miss Clytice Ross, Rawlins County
Miss Gladys Myers, Reno County
Miss Ella Meyer, Rice County
Mrs. Laura I. Winter, Sedgwick County
Mrs. Mary D. Zeigler, Shawnee County
Miss Edith Painter, Smith County
Mrs. Maud H. Gaston, 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 determined 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 of organization. In such counties, the work of the home demonstration agents is undertaken as part of the regular extension program, which includes the development of farm activities, home activities, and community activities. There are twenty-six 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 Kansas State 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: A well-equipped office, adequate stenographic help; transportation facilities; and a county appropriation of not less than $2,400 to the farm bureau for the salary and expenses of the agricultural agent and home demonstration agent.

Boys' and Girls' 4-H Club Work

M. H. Coe, State Club Leader
A. J. Schoth, Assistant State Club Leader
Lora Hilyard, Assistant State Club Leader
Mabel R. Smith, Assistant State Club Leader
J. H. Johnson, County Club Agent, Sedgwick County
R. N. Lindburg, County Club Agent, Butler County

Boys' and girls' 4-H club work is one of the very important phases of Kansas State College extension service. This work is conducted coöperatively with the United States Department of Agriculture, counties and county farm bureaus. The clubs are organized with the help of such organizations as farm and breed associations, business and civic 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 agent, 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 basis on which club work is founded is the project selected by the 4-H club member. This project is an important piece of work relating to the farm or home, the doing of which will demonstrate better practices in agriculture and home making. A club member receives instructions, keeps a complete record of his work, makes a final report on the entire year's project, explains the work to others, and participates in many related contests. Seventeen projects are offered to 4-H club members in Kansas as follows: beef, swine, sheep, dairy, poultry, colt, sorghum, corn, garden, potato, wheat, clothing, baking, canning, room improvement, supper, and leadership.

4-H club work is available to all boys and girls between the ages of 10 and 20 years, inclusive. All the young people of one community interested in club work organize into one organization. Such clubs vary in size from five to fifty or more. The club members are allowed a choice of projects, thus making it possible for some members of a club to select one project while others may select others. The importance of unity or group selection is stressed. 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, and have a program consisting of the various matters in which young people are interested.

4-H club work is voluntary in nature. Certain minimum requirements are specified, including age of club members, conducting a project, attendance at club meetings, record keeping, and some others, but aside from these requirements the work is voluntary. No systematic course of instruction is attempted, but each member is given suggestions through printed circulars or by means of leaders trained by college specialists as to the method of handling his project, but he is not required to adopt these methods. Either partial or complete ownership of a project under his own supervision is an essential requirement of 4-H club work. All projects deal with the very essential but common ordinary affairs of rural life and home making. Books are studied incidentally and to supplement the actual work of the project, but club work is primarily learning by doing.

Leadership is another very essential characteristic of 4-H club work. It 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 and 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 experiences.

By means of exhibits, demonstration teams, judging teams, and other public participation, club members pass on their knowledge and information to others and in so doing these young people secure valuable training for appearance in public. Their exhibits at local and state fairs have been remarkable both from the standpoint of quality and quantity. Prizes which are awarded are based primarily upon the record kept by the club member as well as the excellence of the product itself. Such records include time spent, material used, cost, and other interesting items.

Interspersed with all of these essentials of 4-H club work are the so-called club activities which include club tours, contests, field meetings, festivals, annual club round-up at the College, county 4-H club camps during the summer and many other club functions, all of which lend color to the work for young people and bring them in contact with leaders and others of importance. These activities bring to them incentives for highest endeavor, not only individually, but also in groups within the communities, counties, states, and finally into national competition. All of this brings to them a wholesome contact which serves to awaken youth, develop and broaden ideals, and stimulate the desire to achieve.

This department owns equipment valued at $804.

Rural Engineering

Walter G. Ward, Extension Architect, in Charge
John S. Glass, Extension Agricultural Engineer

Engineering as applied to agricultural pursuits is, each year, increasing in importance. Its inclusion in the extension service of the Kansas State College began twenty years ago to meet the demands for information on land drainage and irrigation. Later the work of this department was enlarged to include other phases of agricultural engineering.

Kansas farms present numerous problems in engineering. The construction and maintenance of 166,000 sets of farm buildings, valued at more than $386,000,000, 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 annually in a number of 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 53,000 tractors and 21,000 combines comprise a part of the more than $168,000,000 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. Information on the economic selection and management of this equipment is disseminated before groups of distributors and farmers by means of one-day and two-day extension schools.

Assistance is given the farmers of Kansas with their problems of land drainage, irrigation, and the control of soil erosion. More than one-half of the counties in the state are conducting from three to forty-five demonstrations in coöperation with this department.

The control of erosion is being recognized as an important problem in all sections of the state. As a solution to this problem, terracing is a practical, economical farm practice. Kansas now has approximately 50,000 acres of land protected by these demonstration terraces.

In addition to the information furnished through meetings held in the counties, several thousand mail inquires of an engineering nature are answered each

year. The work in the counties is conducted principally in coöperation with the county farm bureaus.

This department owns equipment valued at $1,054.

Home-Study Service

CORRESPONDENCE STUDY

GEORGE GEMMELL, Head of Department
B. H. FLEENOR, Education
ADA BILLINGS, History and Government
JESSE M. SCHALL, English
FLOYD PATTISON, Industrial Subjects

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 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. These are no longer an experiment but are a demonstrated success. By utilizing 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.

The equipment belonging to this department is valued at $1,457.

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. The 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. The 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. The 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. The 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.

FEES

The enrollment for credit courses is $12.50 a year. The 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 arrangement, 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. The 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 units 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

Course No.			*Number of assignments*	*Unit H.S. credit*
		AGRICULTURE		
PCA	1.	Elementary Agriculture I	20	½
PCA	2.	Elementary Agriculture II	20	½
		DRAWING		
PCD	3.	Shop Mechanical Drawing I	20	½
PCD	4.	Shop Mechanical Drawing II	20	½
		ENGLISH		
PCE	1C.	Grammar and Composition (first year)	20	½
PCE	2L.	Literature (first year)	20	½
PCE	3C.	Composition (second year)	20	½
PCE	4L.	Literature (second year)	20	½
PCE	5C.	Composition (third year)	20	½
PCE	6L.	Literature (third year)	20	½
		HISTORY AND CIVICS		
PCH	1.	Ancient History I	20	½
PCH	2.	Ancient History II	20	½
PCH	3.	Modern History I	20	½
PCH	4.	Modern History II	20	½
PCH	5.	American History I	20	½
PCH	6.	American History II	20	½
PCH	7.	Community Civics	20	½
PCH	8.	Constitution of United States	20	½
PCH	9.	World History I	20	½
PCH	10.	World History II	20	½
		MATHEMATICS		
PCM	1.	Algebra I	20	½
PCM	2.	Algebra II	20	½
PCM	3.	Algebra III	20	½
PCM	4.	Plane Geometry I	20	½
PCM	5.	Plane Geometry II	20	½
PCM	6.	Solid Geometry	20	½
PCM	7.	Bookkeeping	20	½
		SCIENCE		
PCS	1.	Physical Geography	20	½
PCS	2.	Botany	20	½
PCS	4.	Physiology	20	½
PCS	5.	General Science	20	½
PCC	1.	Commercial Geography	20	½
PCC	2.	Elementary Economics	20	½
PCC	3.	Elementary Sociology	20	½

College Credit Courses

DIVISION OF AGRICULTURE

Course No.	AGRONOMY	*Assignments*	*Semester credit*
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	2	16
CE 10.	Essentials of Steam and Gas Power Engineering	2	16

DIVISION OF HOME ECONOMICS

	CLOTHING AND TEXTILES		
CHE 1.	Textile Fabrics	2	16
CHE 2.	Applied Nutrition	2	16
	HOUSEHOLD ECONOMICS		
CHE 4.	Economics of the Household	2	16
	CHILD WELFARE AND EUTHENICS		
CHE 3.	Family Health	3	24
CHE 5.	Child Welfare II	3	24
CHE 6.	Problems in Child Welfare	1-5	..
CHE 7.	The Child and His Heredity	2	16
CHE 8.	The Home and Its Development	3	24
CHE 9.	The Home and the Changing Social Order	2	16
CHE 10.	Personal Health	2	16

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

Course No.	EDUCATION (PROFESSIONAL)	*Assignments*	*Semester credit*
CP 2.	Educational Psychology	3	24
CP 3.	Educational Sociology	3	24
CP 4.	History of Education	3	24
CP 5.	School 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
CP 9.	School Discipline	2	16
CP 13.	Vocational Guidance	2	16
CP 14.	Vocational Education	3	24
CP 16.	The Organization and Administration of Home Projects in Home Economics	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 6.	Solid Geometry	2	16
CM 7.	Plane Trigonometry	3	25
CM 8.	College Algebra	3	25
CM 9.	College Algebra	5	40

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 practices 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 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 portions 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 allotments increasing annually by $10,000 until a total of $60,000 was 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 agricultural 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 steps 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 Kansas State 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 Kansas State 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 increased 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, and (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 and the people of 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 in Kansas highway construction; atmospheric resistance of automobiles; farm sewage disposal systems; Lewis factors for nonstandard gear teeth; durability of belt fastenings; road-material resources of Kansas; *pisé de terre* construction; durability of concrete; processing and handling grain and forage; deterioration of concrete in silos; harvesting and storage of grain crops; volume changes in concrete; harvesting and baling hay; rural electrification; modernizing the home; farm refrigeration; elastic properties of concrete; relation of potential gradient to meteorological elements; tool rooms and storerooms of

school shops; wind pressures on farm buildings; electrolytes for storage batteries; tractor fuels; television apparatus, electrical grounds, wind-electric plants, and low-cost residential construction.

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 test road materials for use in federal-aid road construction in this state.

Some of the results of the investigations are published as bulletins of the Engineering Experiment Station, which are sent free to any citizen of the state upon request. Thirty such bulletins have been published. 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, as far as possible, to the heads of departments in whose fields the particular matters lie.

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:

* A study of calcium and phosphorus in various forms of milk and cheese.

* Vitamin content of foods relating to human nutrition:

a. Fruits.
b. Vegetables.
c. Cereals.
d. Eggs.

Utilization by human subjects of the nitrogen and phosphorus of different cuts of meat.

Factors affecting the quality of cakes.

* Composition of cooked meats.

Dietary studies—group, individual.

A study of electric and other types of stoves commonly used in the farm household for cooking purposes.

* A study of the coefficient of protection of clothing fabrics.

* A study of the silk fiber, weighted and unweighted, as affected by:

a. Light.

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* The investigations starred are being supported in part by funds from the Agricultural Experiment Station.

† Sec. 5, ch. 64, Laws of 1917.

b. Light and moisture.
c. Light and perspiration.

Coefficient of absorption of textile materials.
Comparative study of certain body measurements:
a. With those of selected commercial patterns.
b. With those of certain commercial made garments.
The development of motor abilities of preschool children.
Methods in parent education.
Behavior records for nursery school.
Health education for college students.
The ability of individuals to maintain equilibrium under varying conditions.

Degrees and Certificates Conferred

In the Year 1932

Sixty-ninth Annual Commencement

June 2, 1932

DEGREES CONFERRED

HONORARY DEGREES

DOCTOR OF LAWS

Robert H. Hazlett, LL. B., University of Michigan, 1873; El Dorado, Kan.

GRADUATE COURSES

MASTER OF SCIENCE

Alvin Ray Aller, B. S., Bethany College, 1931, Johnson
Malcolm Llewellyn Alsop, B. S., Kansas State College of Agriculture and Applied Science, 1929, Wamego
Clement Henry Ault, B. S., University of Idaho, 1930, Moscow, Idaho.
Madalyn Avery, B. S., Kansas State College of Agriculture and Applied Science, 1924, Wakefield
Jane Wilson Barnes, B. S., Kansas State College of Agriculture and Applied Science, 1912, Manhattan
Ted DeVinne Beach, B. S., University of Nevada, 1930, Manhattan
Helen Virginia Brewer, B. S., Kansas State College of Agriculture and Applied Science, 1929, Peabody
Frank Brokesh, B. S., Kansas State College of Agriculture and Applied Science, 1928, Munden
Jasper Leland Brubaker, B. S., Kansas State College of Agriculture and Applied Science, 1930, Manhattan
Gladys Griffin Calvert, B. S., Kansas State College of Agriculture and Applied Science, 1930, Manhattan
*Elisha Joseph Castillo, B. S., Kansas State Teachers College of Emporia, 1923, Independence
Virginia Chambers, B. S., Oklahoma Agricultural and Mechanical College, 1926, Grandfield, Okla.
John Herbert Coolidge, B. S., Kansas State College of Agriculture and Applied Science, 1925, Manhattan
Esther Margaret Cormany, B. S., Kansas State College of Agriculture and Applied Science, 1926, Enid, Okla.
Florence Pyle Day, B. S., University of Nebraska, 1921, Manhattan
Harindar Singh Dinsa, B. S. A., University of Idaho, 1931, Manhattan
Dick Albert Dodge, B. S., Kansas State College of Agriculture and Applied Science, 1931, Manhattan
Carl Alfred Dorf, A. B., Bethany College, 1920, Lindsborg
Helen Frances Evers, A. B., Southwestern College, 1929, Winfield
Elizabeth Fairbank, B. S., Kansas State College of Agriculture and Applied Science, 1929, Topeka
Kenney Lee Ford, B. S., Kansas State College of Agriculture and Applied Science, 1924, Manhattan
Dorothy Isabel Gallemore, B. S., Kansas State College of Agriculture and Applied Science, 1928, Arkansas City
Clarence Emmett Ghormley, B. S., Kansas State College of Agriculture and Applied Science, 1931, Hutchinson
Virginia Noah Gibson, B. S., Kansas State Teachers College of Pittsburg, 1928, Manhattan
Bonnie Virginia Goodman, B. S., Southwest Texas State Teachers College, 1926, Troup, Tex.
Max Leyland Graham, B. S., University of Utah, 1931, Manhattan
Lucille Alma Gramse, B. S., Kansas State College of Agriculture and Applied Science, 1923, Perry

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* In absentia.

Orville Elton Hays, B. S., Kansas State College of Agriculture and Applied Science, 1930, Manhattan
George Elwin Hendrix, B. S., Kansas State College of Agriculture and Applied Science, 1924, Lane
Harper Delmar Horton, A. B., Sterling College, 1928, Plevna
Abram Eldred Hostetter, B. S., McPherson College, 1925, Hope
Arthur J. Howard, B. S., Michigan State College of Agriculture and Applied Science, 1930, Ypsilanti, Mich.
Merle Raymond Hubbard, A. B., Southwestern College, 1929, Kingman
Caleb Lee Jorgensen, B. S., University of Nebraska, 1930, Minden, Neb.
Ernest Lester Lahr, B. S., Kansas State College of Agriculture and Applied Science, 1921, Abilene
Ingovar Leighton, B. S., Kansas State College of Agriculture and Applied Science, 1924, West Helena, Ark.
Robert Ivan Lockard, B. S., Kansas State College of Agriculture and Applied Science, 1930, Norton
Zeldabeth Long, A. B., State College of Washington, 1931, Pullman, Wash.
Hazel Alma Lyness, B. S., Kansas State College of Agriculture and Applied Science, 1922, Walnut
*Thelma Fern McClure, B. S., Kansas State College of Agriculture and Applied Science, 1930, Hutchinson
William Granville Nicholson, B. S., Kansas State College of Agriculture and Applied Science, 1931, Eureka
Opal Frances Osborne, B. S., Kansas State College of Agriculture and Applied Science, 1928, Hanston
Dale Albert Porter, A. B., Kalamazoo College, 1930, Kalamazoo, Mich.
Dorothy Raburn, B. S., Kansas State College of Agriculture and Applied Science, 1931, Manhattan
Kathryn Elizabeth Randle, B. S., Kansas State College of Agriculture and Applied Science, 1907, Riley
Niles Franklin Resch, B. S., Kansas State College of Agriculture and Applied Science, 1932, Independence, Mo.
Galen Emil Schwandt, B. S., Kansas State College of Agriculture and Applied Science, 1929, Manhattan
Petrus Johannes Serfontein, B. S. A., University of Toronto, 1931, Trompsburg, Orange Free State, South Africa
Wallace Sullivan, A. B., Fort Hays Kansas State College, 1913; B. S. A., Colorado Agricultural College, 1916, Manhattan
Francis Leonard Timmons, B. S., Kansas State College of Agriculture and Applied Science, 1928, Manhattan
*Harold Everett Tower, B. S., Montana State College of Agriculture and Mechanic Arts, 1928, Polson, Mont.

PROFESSIONAL DEGREES IN ENGINEERING

ARCHITECT

Francis Hall Wilkinson, B. S., Kansas State College of Agriculture and Applied Science, 1927, Wichita

CIVIL ENGINEER

Carlton McCrary Barber, B. S., Kansas State College of Agriculture and Applied Science, 1927, El Dorado
Victor John Englund, B. S., Kansas State College of Agriculture and Applied Science, 1923, Green River, Wyo.
Lestle Wilbur Newcomer, B. S., Kansas State College of Agriculture and Applied Science, 1923, El Dorado
Philip Myron Noble, B. S., Kansas State College of Agriculture and Applied Science, 1926; M. S., ibid., 1931, Denver, Colo.
Irvin Leslie Peffley, B. S., Kansas State College of Agriculture and Applied Science, 1925, Denver, Colo.
Charles Turnipseed, B. S., Kansas State College of Agriculture and Applied Science, 1926, Arkansas City

ELECTRICAL ENGINEER

Floyd Archie Decker, B. S., Kansas State College of Agriculture and Applied Science, 1927, Tucson, Ariz.
Elmer Carl Kuhlman, B. S., Kansas State College of Agriculture and Applied Science, 1926, Kansas City, Mo.

MECHANICAL ENGINEER

Howard McCune Chandler, B. S., Kansas State College of Agriculture and Applied Science, 1903, Bellaire, Long Island, N. Y.
William Taylor Howard, B. S., Kansas State College of Agriculture and Applied Science, 1928, Tulsa, Okla.

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* In absentia.

UNDERGRADUATE CURRICULA

Division of Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

Dallas Dale Alsup, Pittsburg
Paul Warren Archer, Hutchinson
Ralph David Barnhart, Sterling, Colo.
John Gregory Bell, Potter
Jay Russell Bentley, Ford
Robert Overall Blair, Manhattan
Fred Virgil Bowles, Walnut
John Clarence Carter, Bradford
Emerson Dwight Chilcott, Jewell
William Joseph Conover, Elkhart
Wilber Abrum Copenhafer, Manhattan
Leonard Eldren Croy, Norcatur
Duane Huber Daly, Armington, Ill.
Edward Glenn Dawson, Manhattan
Salvador Baldonado Della, Santa Maria, Ilocos Sur, P. I.
Thomas David Dicken, Winfield
Keith Barber Dusenbury, Anthony
Howard Carl Edinborough, Tescott
Carl Emmert Elling, Lawton
Myron Wayne Ewing, Beloit
Frank Ryder Freeman, Kirwin
*Ervil Scott Fry, Manhattan
George Adamson Gillespie, Welda
Charles Thomas Hall, New Albany
John Bonar Hanna, Clay Center
*Clarence Leslie Harder, Minneapolis
Alfred Werner Helm, Chanute
Kermit Roosevelt Huyck, Morrowville
Luther Arthur Jacobson, Horton
Earl H. Johnson, Norton
John Willis Jordan, Claflin
John Ralph Justice, Manhattan
George Raymond Kent, Wakefield
Claude Lewis King, Olsburg
Fred Short Kruger, Horton
Francis Dean McCammon, Manhattan
Ted Roosevelt McCandless, St. John
William Loy McMullen, Oberlin
Fred Elmo McVey, Oak Hill
Clark Carlyle Milligan, Boyle
Hugh Isaac Moore, Wakarusa
Lawrence Dale Morgan, Manhattan
Claire Winfield Munger, Hoisington
Ralph Conrad Munson, Junction City
Will Martin Myers, Bancroft
Charles William Nauheim, Hoyt
Albert Arnold Pease, Fort Scott
Lewis Sylvanus Perkins, Argonia
Charles Edwin Powell, Frankfort
Leonard Abbott Rees, Abilene
Earl Hubert Regnier, Spearville
Roland Cribner Rogler, Manhattan
Milton Ernest Saffry, Alma
Ebur Samuel Schultz, Miller
Oliver Wendell Shoup, Udall
Leland Milton Sloan, Leavenworth
Joseph Daniel Smerchek, Garnett
Ralph Owen Snelling, West Point, Ind.
Alvin Howard Stephenson, Clements
Richard William Stumbo, Bayard
Chester Gordon Thompson, Randolph
Obed Lee Toadvine, jr., Dighton
George Washington, Manhattan
Leroy Albert Wilhelm, Arkansas City
Carl Williams, Dodge City

Division of Engineering

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Alfred Louis Casey, Corning
Elmer Field Clark, Jewell City
Glenn Leslie Ellithorpe, Russell
Kale Max Fones, jr., Kansas City, Mo.
Nathan Bartlett Geer, Wakarusa
Ralph Carroll Hay, Parker
Lloyd Wendling Hurlbut, Sylvan Grove
*Vernon Stanley Peterson, Gypsum
Roy Nelson Selby, Manhattan

BACHELOR OF SCIENCE IN ARCHITECTURE

Howard Taft Blanchard, Garden City
Clarence Eckhart Brehm, Wichita
Ernest Samuel Cooke, Emporia
Luis Alfredo Cortes Silva, Bogota, Columbia, S. A.
Chester Barton Freeman, Junction City
Hugh Jones, Horton
Niles Franklin Resch, Independence, Mo.
Fred Madison Root, Medicine Lodge
John Melville Turner, Holton
Ralph Richard Wagner, Emporia

BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING

Raymond Usher Brooks, Hutchinson
Raymond Kenneth Hoefener, Leavenworth
Vern Waldo Johnson, Salina
Albert Leonard Reed, Cassoday
Claude Marion Rhoades, Newton
Charles Francis Smith, Manhattan
Lee Otis Stafford, Republic
Elmo Erville Young, Hutchinson

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

*Robert Warren Kellogg, Manhattan
Louis Dunham Kleiss, Coffeyville
William Norton Tomlinson, Garfield

* In absentia.

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Lawrence Charles Benne, Washington
Harvey Gerald Bobst, Almena
Lyle Clark Brisbin, Girard
Hugo Homer Carlson, Lindsborg
Cecil Clyde Crane, Severy
*Dale Everett Crangle, Mankato
Robert William Cunningham, Emporia
Ray Spencer DeLaMater, Wichita
Robert Cooper Dial, Manhattan
James Lawrence Hurley, Glasco
Glenn Vivian Joines, Manhattan
Edgar Colberg Laird, Wichita
Jess Roland Mathias, Manhattan
Thomas Daniel Morgan, Kansas City, Mo.
Paul Clutter Perry, Little River
James Chalmers Rayburn, Newton
John Alvin Richardson, Douglass
Clark Rife, Anthony
Henry John Schwartz, Hanover
Kenneth Leroy Shay, Miltonvale
Karl Jarolin Svaty, Ellsworth
Ernest Julius Underwood, Topeka
Clair M. Worthy, Wetmore
Milton Cris Zimmerman, Osborne

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Clifford Elroy Armstrong, Pittsburg
Carl William Brown, Mildred
Herman Charles Bunte, Hutchinson
Merl Leroy Burgin, Coats
Gilbert Underwood Combs, Manhattan
Kenneth Elwyn Converse, Hays
Ira Vernon Curtis, Asbury, Mo.
Gerald Michael Donahue, Ogden
Howard Andrew Elwell, Hutchinson
John Enns, Newton
James Henry Farmer, Pratt
Hayden Adelbert Fleck, Maple Hill
Alva Leo Frashier, Manhattan
Charles Elmore Funk, Iola
Paul Anton Haas, Kansas City
Kermit Harris, Peabody
Willard Sandman Hemker, Great Bend
Nobert Julius Klinge, Topeka
Philip Ott Lautz, La Junta, Colo.
Jewell Warren Massey, Manhattan
Walter Rankin Mitchell, Salina
Dale Leora Norris, Raymond
Earl Conley North, Manhattan
Loren Terry Palmer, Parsons
Clifford Arthur Palmquist, Concordia
Frederick Gerald Powell, Frankfort
*Sylvester John Rever, Parsons
Richard McHenry Roper, Manhattan
Robert Jacob Rychel, Downs
Mart Benjamin Sanders, Marion
Harry Clinton Sawin, Waterville
LaVelle Robert Schruben, Dresden
Ralph William Sexton, Neodesha
Curtis Daniel Sides, Manhattan
Melvin Ernest Smith, Ames
Paul Francis Snyder, Elkhart
Wayne Tolley, Delphos
Dick Estes West, Hartford
Sydney Francis Weybrew, Wamego

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

*Johan Albrecht Berg von Linde, Manhattan
Donald Parker Brenz, Arkansas City
Clifford Beamer Carlson, Attica
Ward Edmond Dale, Topeka
William Hall, Lindsborg
Lynn Bandy Hicks, Oil Hill
Robert Lee Hodshire, Coffeyville
Edwin Louis Hulland, Wilson
Russell Everett James, Wetmore
Clifford Wayne Kewley, Stockton
Eugene Clifford Livingston, Hutchinson
Alvin Dietrick Meyer, Haven
Robert Wilson Miller, Haviland
Kenneth Dale Phelps, Pratt
Henry Ruff, Newton
Orville Abraham Runkle, Hiattville
John Seaton Schafer, Manhattan
Leon Virgil Schmutz, Chanute
Lloyd Loomis Vrooman, jr., Independence

Division of General Science

BACHELOR OF SCIENCE

Roy Herbert Armstrong, Lecompton
Millicent Charlotte Aspelin, Dwight
Mary Alta Beach, Edwardsville
Alice Katherine Brill, Westmoreland
Barbara Brubaker, Manhattan
Clark Wayne Burch, Manhattan
Margaret Brooks Chaney, Manhattan
Mary Henrietta Clark, Kansas City
Clarence Ralph Collins, Manhattan
Ruby Stover Connell, Manhattan
Oliver Hazard Perry Cook, Cawker City
Mary Josephine Cortelyou, Manhattan
Harold Wakeling Crawford, Brooklyn, N. Y.
Loua Marjorie Dean, Manhattan
Avis A. Downey, Manhattan
Blanche Margaret Duguid, Olathe
Beulah Ellis, Coldwater
Verona Anna Fark, Greensburg
*Ruth Treadway Freeman, La Harpe
Grace Gould, Beloit
Helen Margaret Halstead, Manhattan
Meryle Hammett Hodges, Winfield
William Huey, Ogden
Helen Mary Hughes, Manhattan
Ruth Emilyn Jenkins, Jewell
Jennie Mae Karns, Circleville
Thomas Russell Kimball, Manhattan
Edwin Frederick Kotapish, Blue Rapids
Malcolm Laman, Manhatatn
*Russell Laman, Rice
Charles Herbert Lantz, jr., Manhattan
Freda Nixon Leasure, Manhattan
Elizabeth Maris Lloyd, Leavenworth
Wilbur McDaniel, Michigan Valley
Mildred Elnora Mellinger, Milford
Vera Jane Miles, Jewell
Harry Earl Miller, Manhattan
Grace Selina Morehouse, Irving
Clark Leroy Morford, Olsburg
Harriet Elizabeth Mountain, Wichita
Daniel Ronald Musser, Jewell
Julia Anna Noell, Syracuse
Carol Lee Owsley, Manhattan
Pauline Anne Patchin, Parsons
Emma Evelyn Rathbone, Manhattan
Adda Louise Reed, Manhattan
Arthur Vernon Roberts, Vernon
Hobart Muir Smith, Manhattan

* In absentia.

BACHELOR OF SCIENCE—CONCLUDED

Pearl Fay Snyder, Osborne
Mona Valeria Stoops, Bellaire
Ione Strickland, Manhattan
Robert Eldon Teter, Eldorado
Corabelle Tolin, Havensville
Selma Elin Turner, Manhattan
Helene Hahn Varney, Manhattan
John Lee Vaupel, Manhattan
Forrest Vincent Waller, Faucett, Mo.
Joseph N. Weaver, Harper
*Edna Metz Wells, Raleigh, N. C.
Ethel Sue Wells, Winona
Kenneth Paul White, Kingsdown
Estelle Winters, Onaga

BACHELOR OF SCIENCE IN COMMERCE

Clare Kenneth Alspach, Wilsey
Gordon Ingraham Blair, Junction City
John Arthur Bryan, Leoti
Vance Lindell Burch, Manhattan
Mary Latta Carney, Manhattan
Keith Gerald Friel, Manhattan
Glen Russell Harsh, White Deer, Tex.
Adelaide Hutter, Neodesha
John Hoffman Johntz, Abilene
Georgia Anne McNickle, Ashland
Martin Nicholas Mayrath, Dodge City
Joseph William Menzie, Manhattan
Forrest Leroy Schooley, Hutchinson
Edna Mae Socolofsky, Tampa
Raymond Guy Spence, Salina
Wesley Ellwood Swenson, Manhattan
John Dollar Tedrow, Medicine Lodge
Martha Alice Wilson, Blue Rapids

BACHELOR OF SCIENCE IN INDUSTRIAL CHEMISTRY

John Edmond Anderson, Belvue
John Trumbull Correll, Manhattan
Forrest Malcolm Faulconer, Clay Center
Howard Kenneth Learned, Plevna
Ralph Berchard Parker, Broughton
Frank Lynn Smith, Manhattan
Maynard Harold Solt, Manhattan
Edith Catherine Thummel, Washington, D. C.

BACHELOR OF SCIENCE IN INDUSTRIAL JOURNALISM

Ora Joy Ansdell, Jamestown
John Alexander Bird, Hays
James Percy Chapman, Manhattan
Edwin Roy Chesney, Wichita
Wyona Myrtle Florence, Manhattan
Virginia Forrester, Manhattan
Rachel Joy Lamprecht, Manhattan
Elizabeth Lill, Mount Hope
Mildred Miranda McMullen, Norton
Esther Elizabeth Morgan, Hutchinson
Alfred Dale Thomas, Ellsworth

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Elden LeRoy Auker, Norcatur
Elmer Carson Black, Utica
Henry Oliver Cronkite, Belle Plaine
Virginia Edelblute, Manhattan
Verna Mae Eveleigh, Boyd
Fritz Gustave Knorr, Savannah, Mo.
Robert Francis Lang, Denver, Colo.
Marjorie Nelson Lyles, Saffordville
Raymond John McMillin, Manhattan
Frank B. Prentup, Fort Riley
Charlotte Louise Remick, Manhattan
Galvesta May Siever, Manhattan
Ruth Elizabeth Silkensen, Dell Rapids, S. D.
Ralph Francis Vohs, Osawatomie
Maxine Wickham, Manhattan

BACHELOR OF SCIENCE IN MUSIC EDUCATION

Margaret Louise Colver, Manhattan
Lucile Maude Correll, Manhattan
Helen Thelma Dobson, Solomon
Alice Mary Irwin, Manhattan
Benjamin Eber Markley, Bennington
Carol Elizabeth Moore, Ashland
Marion Herfort Pelton, Manhattan
Gladys Maxine Roe, Manhattan
Esther Clara Stuewe, Alma
Jo Marie Wise, Manhattan

BACHELOR OF MUSIC

Helen Gertrude Durham, Manhattan

Division of Home Economics

BACHELOR OF SCIENCE IN HOME ECONOMICS

Vivian Forestine Albright, Netawaka
Mabel Caroline Amthauer, Dwight
Dorothy Gertrude Barlow, Manhattan
Bertha Gesine Barre, Tampa
Mildred Eleanor Beil, Bavaria
Katherine Taylor Bird, Manhattan
Margaret Jewell Bottorf, Formoso
Mildred Whitehead Bowles, Walnut
Mary Esther Brittain, Atchison
Margaret Iola Buck, Derby
Elizabeth Doris Butrum, Holton
Ida Margaret Chitwood, Meriden
Olive Josephine Clark, Leavenworth
Helen Josephine Cook, Oakley
Ruth Esther Crawford, Burns
Ola Antoinette Curtis, Lincoln
Louise Davis, Nashville, Tenn.
Mildred Rae Edlin, Herington
Eva Merle Filson, Scott City
Bernadine Eathel Finch, Oketo
Lois Maxine Fleming, Iola
Edith Martha Fritz, Manhattan
Virginia Louise Gibson, Potwin
Eolia Eunice Gilson, Manhattan
Ferne Acille Glover, Burr Oak
Esther Isabelle Gould, Manhattan
Virgiline Wilma Hanes, Augusta
Reba Mildred Harman, Manhattan
Violet Alvina Heer, Manhattan
Inez Mildred Hill, Topeka
Dorothy Priscilla Hinman, Hutchinson
Serena Louise Huey, Ogden

* In absentia.

BACHELOR OF SCIENCE IN HOME ECONOMICS—CONCLUDED

Winifred Johnson, Frankfort
Edith Goddard Lauck, Maplehill
Maurine Theresa Lewis, Manhattan
Velma Liles, Kingsdown
Madge Louise Limes, La Harpe
Ruth Mildred Lowrey, Selden
Edith Louise McCauley, Coldwater
Sylvia Geneva McDaniels, Scottsville
Zula Gladys McDonald, Severy
Helen Charlotte Mangelsdorf, Atchison
Ella Jane Meiller, Minneapolis
Merna Beatrice Miller, Kansas City
Sarah Elizabeth Miller, Centerville
Edith Alice Painter, Meade
Helen Jane Pembleton, Ness City
Mildred Aileen Porter, Mount Hope
Esther Clarabel Quenzer, Bazine
Mildred Marian Rewerts, Leoti
Tille Helen Rife, Anthony
Loretta Maye Sawin, Waterville
Mary Elizabeth Sayre, Manhattan
Norma Harriet Sayre, Ingalls
Eunice Alvine Schroeter, Ellinwood
Jennie Faye Schweiter, Wichita
Emma Frances Schepek, Narka
Loula Marie Simmons, Manhattan
Libbie Ann Smerchek, Garnett
Daphyne Vivian Smith, Manhattan
Ruth Irene Smith, Lawrence
Kathryn Elizabeth Songster, Wellington
Bessie Loretta Sparks, Kingman
Mable Anna Steiner, Moundridge
Helen Theodora Teichgraeber, Marquette
Clea Maurine Van Meter, Ada
Beatrice Petrinella Vaught, Plains
Nellie Vera Wasson, Neosho, Mo.
Delta Nadine Whitmore, Manhattan
Catharine Eva Zink, Lincoln

BACHELOR OF SCIENCE IN HOME ECONOMICS AND NURSING

Grace Marie Crick, Ashton
Thelma Reed, Kanopolis

Division of Veterinary Medicine

DOCTOR OF VETERINARY MEDICINE

Dalys Lewis Berry, Wilsey
Loyd Edwin Boley, Topeka
Virgil Howard Clark, Webber
Ben Harrison Dean, Manhattan
Charles Eugene Dimon, Manhattan
David Franklin Engle, Abilene
John Lester George, Mulberry
Harold P. Hartzell, Manhattan
Melvin Eugene Hodgson, Hutchinson
Will Sydney Hornsby, Millington, Tenn.
Chester Anson Paige, Manhattan
Glen Frank Patton, Cawker City
Helen Sophie Richt, Omaha, Neb.
John Howard Rust, Manhattan
Frederick Ferdinand Schmidt, Junction City
Fred Storz, Kansas City
Howard Irwin Thaller, Manhattan
Arthur Frederick Van Meveren, Orange City, Iowa

COMMISSIONS AWARDED

SECOND LIEUTENANT, OFFICERS' RESERVE CORPS

Merle Walter Allen, Manhattan
Dalys Lewis Berry, Wilsey
Elmer Carson Black, Utica
Loyd Edwin Boley, Topeka
Stanley Hyde Brockway, Topeka
Virgil Howard Clark, Webber
*George R. Collier, Colwich
Ben Harrison Dean, Manhattan
Charles Eugene Dimon, Manhattan
Gerald Michael Donahue, Ogden
Max Leon Eaton, Colby
Milton Ehrlich, Marion
John Lester George, Mulberry
Harold P. Hartzell, Manhattan
Willard Sandman Hemker, Great Bend
Melvin Eugene Hodgson, Hutchinson
Will Sydney Hornsby, Millington, Tenn.
Lynn Arthur Horwege, Belleville
John Jay Jewett, Halstead
Aloysius Joseph Koster, Manhattan
Fred Short Kruger, Holton
Harold LeRoy Nonamaker, Osborne
Chester Anson Paige, Manhattan
Glen Frank Patton, Cawker City
Laurence Allen Pratt, Manhattan
Ralph Edwin Roderick, Manhattan
John Newby Romine, Mt. Clemens, Mich.
*Robert Talbot Romine, Mt. Clemens, Mich.
Ralph William Sexton, Neodesha
Lee Otis Stafford, Republic
William Norton Tomlinson, Garfield
Arthur Fred Van Meveren, Orange City, Iowa
*Ivan Lee Welty, Hill City
Dick Estes West, Hartford
Max Allen Wickham, Manhattan
Zint Elwin Wyant, Topeka

CERTIFICATES AWARDED

FARMERS' SHORT COURSE

Floyd Draper Armstrong, Atchison
Arnold J. Duerksen, Hillsboro
Ansel Black Ellis, Lyons
Charles Earl Finney, El Dorado
Roy Elsworth Freer, North Topeka
Whittier H. Kennedy, Bison, Okla.
Herman Frank Kley, Atchison
James Renwick Mathews, Sterling
Andrew Olson, Junction City
Gerard Aloysius Still, Atchison
Paul Dallas Taggart, Emporia

DAIRY MANUFACTURING SHORT COURSE

Julius Edward Immenschuh, St. Marys
John David Markley, Mound City

*In absentia.

Eighth Annual Summer School Commencement

August 5, 1932

DEGREES CONFERRED

MASTER OF SCIENCE

Frank Milton Adair, B. S., Kansas State College, 1930, Manhattan
George Howard Adams, B. S., University of Nebraska, 1930, Manhattan
Leslie Linnaeus, Aspelin, B. S., Kansas State College, 1931, Dwight
Walter Henry Atzenweiler, B. S., Kansas State College, 1926, Manhattan
Noel Bennion, B. S., Utah State Agricultural College, 1928, East Logan, Utah
Howard Bertsch, B. S., Oregon State Agricultural College, 1931, Corvallis, Ore.
Lyman Jacob Bratzler, B. S., University of Illinois, 1930, Manhattan
Grace Dorothy Brill, B. S., Kansas State College, 1931, Westmoreland
Raymond Usher Brooks, B. S., Kansas State College, 1932, Hutchinson
Thomas Walter Bruner, B. S., Kansas State College, 1924, Auburn
Floyd Alfred Clayton, B. S., Kansas State College, 1930, El Dorado
Russell Mark Coco, A. B., Louisiana State Normal College, 1931, Bordelonville, La.
Nellie Laverne Curry, A. B., Sterling College, 1927, Winchester
Eugene Cypert, jr., A. B., University of Arkansas, 1931, Manhattan
Lyle Wayne Downey, A. B., James Milliken University, 1923, Manhattan
Charles Merlyn Dubois, B. S., State College of Washington, 1931, Colville, Wash.
Ralph Wilson Frank, B. S., Kansas State College, 1929, Manhattan
Lee Gemmell, B. S., Kansas State College, 1931, Manhattan
Kenneth Duree Grimes, B. S., Kansas State College, 1931, Manhattan
*Harold Herbert Higginbottom, B. S., Kansas State College, 1927, Manhattan
Hazel Juanita Hoke, B. S., Kansas State College, 1927, Manhattan
Paul Richard Hoyt, A. B., Friends University, 1931, Wichita
Verda Ellen Hudson, B. S., Kansas State College, 1906, Manhattan
Ingrid Karin Jernberg, B. S., Bethany College, 1931, Lindsborg
George Clair Jordan, B. S., Kansas State College, 1929, Manhattan
Elbert Elvin Karns, B. S., Kansas State College, 1931, Bucklin
Bruce Alvin Kindig, B. S., Fort Hays Kansas State College, 1924, Medicine Lodge
Dorothea Elizabeth Klein, B. S., Kansas State College, 1931, Topeka
Clara Mable Littleford, B. S., Battle Creek College, 1930, Salt Lake City, Utah
Charles Alden Logan, B. S., Kansas State College, 1925, Manhattan
Laura Elizabeth McAdams, B. S., Kansas State College, 1923, Salina
Ruth Beryl McCammon, B. S., Kansas State College, 1930, Manhattan
Hiram Temple McGehee, B. S., Kansas State College, 1931, Manhattan
Raymond John McMillin, B. S., Kansas State College, 1932, Manhattan
Helen Sawtell Mauck, A. B., University of Kansas, 1910, Junction City
Thomas Nelson Meroney, B. S., Kansas State College, 1930, Manhattan
Otto Martin Miller, B. S., University of Nebraska, 1926, McPherson
Merna Myrthra Monroe, B. S., Iowa State College, 1929, Manhattan
Harry Albert Myers, B. S., Kansas State College, 1922, Wamego
Mary Vivien Nickels, B. S., Kansas State College, 1931, Manhattan
Linus Aloysious Noll, B. S., Kansas State College, 1928, Keats
Noble Wayne Patterson, B. S., Kansas State Teachers College of Pittsburg, 1917, Junction City
Eugene Forrest Peterson, B. S., Kansas State College, 1931, Yates Center
Dryden Marie Quist, B. S., Iowa State College, 1924, Manhattan
Elizabeth Ruth Ransom, B. S., State College of Washington, 1927, Seattle, Wash.
Edris William Rector, B. S., Kansas State College, 1931, Manhattan
Roger Eli Regnier, B. S., Kansas State College, 1924, Fairview
Esther Joanne Rockey, B. S., Kansas State College, 1931, Manhattan
Pearl Elzora Rorabaugh, B. S., Kansas State College, 1929, Lebanon
Maud Grace Ryder, B. S., Ohio University, 1931, Huntington, W. Va.
Sophia Mary Shirley, B. S., Kansas State Teachers College of Pittsburg, 1922, Osage City
Dale Harold Sieling, B. S., Kansas State College, 1931, Hays
Earl LeRoy Sitz, B. S., Iowa State College, 1927, Manhattan
William Emil Steps, B. S., Kansas State College, 1931, Halstead
Russell Ira Thackery, B. S., Kansas State College, 1927, Manhattan
Marian Irene Young, A. B., Phillips University, 1929, Cedar Point

UNDERGRADUATE CURRICULA

Division of Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

Cirilo Lagmay Adan
James Lister Baird
Elery Lowe Collins
Oscar Miles Hardtarfer
Harold LeRoy Nonamaker
Franklin Leonard Parsons
Irving Everett Peterson

* In absentia.

Division of Engineering

BACHELOR OF SCIENCE IN ARCHITECTURE

John Eberth Brink

BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING

John Wesley Burke

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Stanley Hyde Brockway
Max Leon Eaton
*Raymond Carl Rohrdanz

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

*Clarence John Allen
Robert Sheldon Florer
Melvin Arthur Griffith
Lester Theodore Hagadorn
Robert LeRoy Hahn
Howard LeVasseur Kipfer
James Raymond Knox
Ralph Edwin Roderick
Charles Edward Russell
Zint Elwin Wyant, Jr.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Gerald Edwin Cain
Max Charles Fleming
Edgar Daniel Furse
Carl Jesus Martinez
Theodore Joseph Rostocil
George Audrain Shafer
*Elmer Oscar Wangerin

BACHELOR OF SCIENCE IN FLOUR MILL ENGINEERING

Adolph Rudolph Hraba

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Chilton Albright
Joseph Charles Fickel
Garland Newton Purcell

Division of General Science

BACHELOR OF SCIENCE

Harriett Aletha Aikins
Merle Vernon Chase
Burdell Edwin Curl
*Edmond Ray Dailey
Agatha Marie Dougan
Elwin Elton Feather
Mary Caroline Harrison
Josephine Fisk Jelinek
Florence Marie Leonard
Cedric Earle McIlvain
Lawrence Norbert Marx
Wilbur Smith Nay
Leone Evelyn Pacey
Robert Emil Pfuetze
Esther Erma Rairdon
Harold Duane Richardson
Byron LeRoy Shepherd
Francisco Antonio Sierra de Soto
Paul William Spens
Mary Irene Yoder

BACHELOR OF SCIENCE IN COMMERCE

George Illingworth Boone
Alvin Albert Hostetler
Joseph Claude Johnson
John Howard Kelley
Francis Glenn Smith

BACHELOR OF SCIENCE IN INDUSTRIAL JOURNALISM

Henry Wright Allard
Paul Lawrence Dittemore
Alice Louise Fincham
Dorothea Annette LaFollette
Eve Aileen Thompson

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Edith Elaine Miller
George Samuel Wiggins
Helena Gertrude Wilbur
Ernest Sherman Wild

BACHELOR OF SCIENCE IN MUSIC EDUCATION

Helen Sproul Brittain
Rilda Maxine Brown
Alice Mae Clema
Hilda Rosine Grossmann
Gail McAninch
Leona Irene Maas
Donovan Donald Plumb
Olive Elsie Van Pelt

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* In absentia.

Division of Home Economics

BACHELOR OF SCIENCE IN HOME ECONOMICS

Frieda Opal Antener
Maurine Marguerite Bryan
Hilma Ruth Davis
Ruth Mary Emrich
Lois Alta Graham
Frances Ada Hester
Carolyn Alvenia Hirt
Loretta Alberta Hofman
Lelia Grace James
Naomi Marie Johnson
Mary Alice McCreight
Edna Estella Maxwell
Luella Gertrude Parrott
Vera Linnea Peterson
Lyla Sophia Roepke
*Mercedes Virginia Shute
Josephine Nell Skinner

Division of Veterinary Medicine

DOCTOR OF VETERINARY MEDICINE

Oliver Elroy Flory
William Laurie Jones

* In absentia.

HONORS

PHI KAPPA PHI

CANDIDATES FOR THE MASTER'S DEGREE, 1932

Walter Henry Atzenweiler
Madalyn Avery
Virginia Chambers
Russell Mark Coco
John Herbert Coolidge
Eugene Cypert, jr.
Helen Frances Evers
Elizabeth Fairbank
Dorothy Isabel Gallemore
Lucille Alma Gramse
George Clair Jordon
Ingovar Syble Leighton
Clara Littleford
Linus Aloysius Noll
Pearl Elzora Rorabaugh
Maud Grace Ryder
Galen Emil Schwandt
Dale Harold Sieling
William Emil Steps
Harold Everett Tower

GRADUATES, CLASS OF 1932

Division of Agriculture

Jay Russell Bentley
Duane Huber Daly
Tom David Dicken
William Loy McMullen
Will Martin Myers
Charles William Nauheim
Franklin Leonard Parsons
Irving Everett Peterson

Division of Engineering

Carl William Brown
Hugo Homer Carlson
Ernest Samuel Cooke
Gerald Michael Donahue
Max Leon Eaton
Kale Max Fones, Jr.
William Hall
Ralph Carroll Hay
Edwin Louis Hulland
Norbert Julius Klinge
Jewell Warren Massey
Paul Clutter Perry
Garland Newton Purcell
John Seaton Schafer
Lee Otis Stafford
William Norton Tomlinson

Division of General Science

Elmer Carson Black
Barbara Brubaker
Alice Mae Clema
Lucile Maude Correll
Mary Josephine Cortelyou
Avis A. Downey
Blanche Margaret Duguid
Rachel Joy Lamprecht
Wilbur McDaniel
Benjamin Eber Markley
Grace Selina Moorehouse
Forrest Leroy Schooley
Edna Mae Socolofsky
Edith Catherine Thummel
Corabelle Tolin
Selma Elin Turner
Edith Sue Wells

Division of Home Economics

Ruth Esther Crawford
Madge Louise Limes
Ella Jane Meiller
Thelma Reed
Mildred Marian Rewerts
Lyla Sophia Roepke
Emma Frances Shepek
Catherine Eva Zink

Division of Veterinary Medicine

Loyd Edwin Boley
John Lester George

SENIOR HONORS

(Class of 1932)

In each division of the College high honors are awarded at commencement to not more than three per cent of the senior class having the highest standing in scholarship during their junior and senior years. Honors are also awarded to not more than an additional seven per cent of the senior class.

Division of Agriculture

HIGH HONORS

Ervil Scott Fry
*Will Martin Myers

HONORS

*Jay Russell Bentley
Duane Huber Daly
*Thomas David Dicken
George Raymond Kent
*William Loy McMullen
Franklin Leonard Parsons

Division of Engineering

HIGH HONORS

Carl William Brown
*Max Leon Eaton
*William Hall
Paul Clutter Perry

HONORS

Gerald Michael Donahue
*Edwin Louis Hulland
Jewel Warren Massey
Clifford Arthur Palmquist
Garland Newton Purcell
George Audrain Schafer
*John Seaton Schafer
*Melvin Ernest Smith
William Norton Tomlinson

Division of General Science

HIGH HONORS

Rilda Maxine Brown
Alice Mae Clema
*Lucile Maude Correll
*Mary Josephine Cortelyou
*Wilbur McDaniel
Ethel Sue Wells

HONORS

Helen Sproul Brittain
*Barbara Brubaker
Loua Marjorie Dean
*Avis A. Downey
Blanche Margaret Duguid
Meryle Hammett Hodges
Cedric Earle McIlvain
Lawrence Norbert Marx
Byron Le Roy Shepherd
*Forrest Leroy Schooley
*Corabelle Tolin
*Selina Elin Turner
Estelle Winters

Division of Home Economics

HIGH HONORS

*Thelma Reed
Lyla Sophia Roepke
*Emma Frances Shepek

HONORS

Frieda Opal Antener
Grace Marie Crick
Ruth Esther Crawford
Ella Jane Meiller
Mildred Marian Rewerts
Jennie Faye Schweiter

Division of Veterinary Medicine

HIGH HONORS

John Lester George

HONORS

Loyd Edwin Boley

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* These persons were awarded sophomore honors at the end of their sophomore year.

SOPHOMORE HONORS

In each division of the College 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.

Division of Agriculture

Kenneth Davis
John Russell Latta
Charles Dean McNeal
James Warren Mather
Wilfred Harold Pine

Division of Engineering

Edward Louis Broghamer
Vorras Alexander Elliott
Donald George Gentry
Ruth Elizabeth Langenwalter
Marion Lowell Michael
Howard Elliott Rivers
Hubert Lowell Rivers
Charles Scott Skinner
Dean Edwin Swift
Burl Zimmerman

Division of General Science

Jessie Yahn Andrews
Oma Marie Bishop
Dorothy Velma Blackman
Francis Woodrow Boyd
Marcia Noyes Conrad
Helen Beulah Cook
Amel Louise Gage
Catherine Beatrice Mitchell
Hester Marie Perry
Harriet Reed
Dorothy Rosencrans
Richard Melville Seaton
Helen Sherwood Selwyn
Waldo Wayne Wilmore

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Helen Elizabeth Boler
Amelia Nargaret Croft
Barbara Lautz
Florence McKinney
Emma Maxine Morehead
Helen May Pickrell

Division of Veterinary Medicine

Bradbury Bedell Coale
Carl William Schulz

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Esther Bruner; Manhattan
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Alfred Louis Casey; Corning
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Arnold Ervin Chase; Abilene
Robert Frederich Childs; Manhattan
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Esther Evangeline Christensen; Randolph
Alfred Lester Clapp; Manhattan
Orem Richard Clency; Manhattan
Ruth Clency; Manhattan
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Russell Mark Coco; Bordelonville, La.
Clarence Ralph Collins; Manhattan
Evelyn M. Colwell; Manhattan
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Jay James Cress; Manhattan
Nelle La Verne Curry; Winchester
Eugene Cypert, Jr.; Manhattan
Carrie Elvard Davis; Delavan
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Earle Reed Dawley; Manhattan
Hope Dawley; Manhattan
Florence Pyle Day; Pawnee City, Neb.
Loua Marjorie Dean; Manhattan
Salvador Baldonado Della; Manhattan
Linnea Carlson Dennett; Manhattan
Willis Edwin DeValois; Shelby, Iowa
Miriam Lenore Dexter; Manhattan
Robert Cooper Dial; Manhattan
Charles George Dobrovolny; Manhattan
Gerald Michael Donahue; Ogden
Lyle Wayne Downey; Oak Park, Ill.
Carl Alfred Dorf; Lindsborg
Avis A. Downey; Manhattan
Charles Dubois; Colville, Wash.
Meredith Ernestine Dwelly; Manhattan
Max Leon Eaton; Colby
Philip Joseph Edwards; Athol
Leslie Lee Eisenbrandt; Chanute
Wallace O. Elkins; Manhattan
Mary Myers Elliott; Manhattan

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Glenn Leslie Ellithorpe; Russell
Kermit Vernon Engle; Manhattan
Herman Farley; Manhattan
Zelda Arliene Finch; Oketo
Ladek Charles Fiser; Mahaska
Helen Bernice Fisher; Manhattan
Theodore Allen Fleck; Garrison
Lois Maxine Fleming; Iola
Goldine C. Fletcher; Kensington
Mary Genevieve Fletcher; Pawnee City
Arthur Oran Flinner; Manhattan
Sina Faye Fowler; Manhattan
Roy Leslie Fox; Manhattan
Harry Orwin Frazier; Clay Center
Vernon Eugene Frye; Quenemo
Eldred La Monte Gann; Burden
Harold David Garver; Overland Park
Grace Geffert; Manhattan
Harriet Geffert; Manhattan
Cora Mae Geiger; Salina
Lee Gemmell; Manhattan
Clarence Emmett Ghormley; Hutchinson
William Everett Gibson; Manhattan
Pat O. Gill; Enid, Okla.
Isabelle Gillum; Manhattan
Lester Odell Gilmore; Manhattan
Malaeska Ginter; Manhattan
Ben Glading; Manhattan
Ferne Acille Glover; Burr Oak
Arthur Leonard Goodrich; Manhattan
Archie Verne Grady; St. George
Clarence Owen Grandfield; Manhattan
Helen Jeanette Greene; Beverly
Kenneth Duree Grimes; Topeka
Frederic Groetsema; Manhattan
Golda Pearle Haas; Hutchinson
Lucia Mary Haggart; Salina
Alvin Bentley Haines; Hutchinson
Thomas Elliot Hall; Manhattan
Helen Margaret Halstead; Manhattan
Richard Edward Hamler; Manhattan
Marguerite Velma Harper; Manhattan
Vida Agnes Harris; Manhattan
Wesley Tinnon Hart; Phillipsburg
John Vance Hays; Manhattan
Harriett Heckert; Tescott
Lenora Heckert; Tescott
Ruth Dillon Heckler; Dallas, Tex.
Florence Beck Heizer; Riley
George Gerald Hensley; Mankato
Alta Sarah Hepler; Manhattan
William Stanley Herrmann; Bucklin
Katharine Paddock Hess; Manhattan
Lynn Bandy Hicks; Oil Hill
Harold Herbert Higginbottom; Manhattan
Arlie William Higgins; Ingalls
Madge D. Hildreth; Altamont
Garnet Isal Hill; Westmoreland
Inez Mildred Hill; Topeka
Hazel Juanita Hoke; Manhattan
Fred Charles Homann; Bozeman, Mont.
Elsa Ottilia Horn; Manhattan
Elizabeth Marie Hoover; Preston
Herbert Dals Hoskins; Harveyville
Abram E. Hostetter; Hope
Anna Howarth; Raton, N. Mex.
Hazel Dell Howe; Manhattan
Margaret Joye Howe; Manhattan
David Elbert Howery; Scott City
Paul Richard Hoyt; Wichita
Leo Everett Hudiburg; Independence
Serena Louise Huey; Ogden
William Huey; Ogden
Ollie Hulse; Manhattan
Wilbur William Humphrey; Pleasanton
Hazel Lenore Hyde; Augusta
Esther Victoria Hyrup; Mentor
Leota Irvine; Stafford
Letha Irvine; Stafford
Merle Marlin Jackson; Leavenworth
Ura Geuss Jackson; Hiawatha
Almyra Viola Jacobson; Manhattan
William Charles Janes; Manhattan
George Jelinek; Ellsworth
Francis G. Jennings; Arnold
William Edwin Jennings; Albany, N. Y.
Ingrid Karin Jernberg; Lindsborg
Margaret Louise Jodon; Salina
George William Johnson; Reamsville
Julian Almon Johnson; Kiowa
Faith Eleanor Johnston; Oakley
Edward C. Jones; Manhattan
Ruth Cress Jones; Manhattan
George Clair Jordan; Jewell
John Willis Jordan; Claflin
Gervacio E. Juan; Castillejov, P. I.
Helen Louise Kadel; Scottsville
Elbert Elvin Karns; Bucklin
Henry Daniel Karns; Concordia
Edward E. Kaufman; Kingman
Vernice Eva Keach; Chanute
Robert Warren Kellogg; Sedan
John Howard Kelly; Mayetta
Samuel Greensberry Kelly; Manhattan
Yun Suh Kim; Shanghai, China
Bruce Alvin Kindig; Medicine Lodge
Robert Callen King; Junction City
Laurel Lucille Kingsley; Manhattan
Herbert Henry Kirby; Toronto
Inge Kallesoe Kjar; Lemwig, Denmark
Dorothy Elizabeth Klein; Topeka
Wesley Koehler; Lakin
Lester Henry Koenitzer; Manhattan
Vera Barbara Kretzmeier; Manhattan
Fred Short Kruger; Manhattan
Bernice Lydia Kunerth; Ames, Iowa
Malcolm Laman; Concordia
Walter Leroy Latshaw; Manhattan
Verna Latzke; Chapman
Lesta Lolita Laurence; Abilene
Herbert Joseph Leach; Fletcher, Vt.
Lily Lee; Hongkong, China
Helen Lefebore; Havensville
Mildred Woodcock Leker; Manhattan
Angele Regine Leonard; Junction City
Clarence Flavius Lewis; Manhattan
Maurine Theresa Lewis; Manhattan
James Walton Linn; Manhattan
Peter Linscheid; Arlington
Clara Littleford; Salt Lake City, Utah
Charles Alden Logan; Manhattan
Catharine Lorimer; Kansas City, Mo.
Lindsay Baily Loring; Manhattan
Viola Bell Lotspeich; Okeene, Okla.
Alvin Ernest Lowe; Argonia
Ruth Mildred Lowrey; Manhattan
Henry Wilbert Loy, Jr.; Manhattan
Georgie Seaman Lyman; Ulysses
Hazel Alma Lyness; Walnut
Agnes Jeanne Lyon; Manhattan
Ethel Jean Lyons; St. Louis, Mo.
Laura Elizabeth McAdams; Salina
Verl Ephriam McAdams; Medicine Lodge
Isaiah C. McAlister; Jefferson
Lucille McCall; Winfield
Francis Dean McCammon; Manhattan
Ruth Beryl McCammon; Manhattan
Harriet Elizabeth McConnell; Cherryvale
Zula Gladys McDonald; Severy
Iris McGee; Waynoka, Okla.
Hiram Temple McGehee; Manhattan
James Dan McGregor; Columbus
Conway McLeavy; Dwight
Eva Myrtle McMillan; Manhattan

GRADUATE STUDENTS—*Continued*

Ray John McMillin; Manhattan
William Loy McMullen; Oberlin
Leona Irene Maas; Alma
David Leslie Mackintosh; Manhattan
Osseo W. Maddox; Manhattan
Charles Mantz; Spearville
Vivian Anna Marley; Manhattan
Carl Jesus Martinez; Manhattan
Laurence Norbert Marx; Manhattan
James Otis Mason; Houston, Tex.
Helen Sawtell Mauck; Junction City
Ezra Perle Mauk; Mulvane
Mary Evangeline Maxwell; Manhattan
Elizabeth Cora May; Holton
Thomas Nelson Meroney; Manhattan
Velma Meserve; Ellis
Manie Herbert Meyer; Manhattan
Buford John Miller; Piedmont
Harry Carl Miller; Manhattan
Otto Martin Miller; McPherson
Walter Rankin Mitchell; Salina
William Edward Moling; Manhattan
Conrad Stephen Moll; Manhattan
Merna Myrtha Monroe; Manhattan
Laurie Arvid Monson; Canon City, Colo.
George Montgomery; Manhattan
Leslie Eugene Moody; Ogden
Martha Mildred Moore; Howard
Clark Leroy Morford; Olsburg
Lawrence Dale Morgan; Manhattan
Olive Elfa Morgan; Hugoton
Maria Morris; Manhattan
Mary Hope Morris; Manhattan
Reed Franklin Morse; Manhattan
Willard Dow Munson; Madison
Donald Dudley Murphy; Manhattan
Pearl Frances Musgrave; Hillsdale
Daniel Ronald Musser; Jewell
Harold Edwin Myers; Manhattan
Harry Albert Myers; Wamego
Charles William Nauheim; Hoyt
Mary Vivian Nickels; Manhattan
Linus A. Noll; Keats
Harold Le Roy Nonomaker; Osborne
Winifred Daisy Beeby Norman; Topeka
Dale Leora Norris; Raymond
Lois Marie Oberhelman; Barns
Rufus Gardiner Obrecht; Topeka
Martha Luella O'Neill; Winchester
Merton Louis Otto; Smith Center
Carol Lee Owsley; Manhattan
Ruthetta Owsley; Manhattan
Floyd Earl Palmer; Ashland
Franklin Leonard Parsons; Ruleton
Le Roy Clay Paslay; Manhattan
Noble Wayne Patterson; Junction City
Clara K. Paulsen; Stafford
Oliver Pearson; Lindsborg
Jessie Lenore Peck; Jewell
Mary Aleta Peck; Council Grove
Paul Clutter Perry; Little River
Eugene Forrest Peterson; Yates Center
Helen Mills Peterson; Sidell
Iver Eugene Peterson; Concordia
Ruth A. Phillips; Junction City
Gerald Pickett; Manhattan
Miriam Picking; Abilene
Irene Olive Pierson; Stanton, Iowa
Frances Edna Potter; Natoma
Frederick Gerald Powell; Frankfort
Frank B. Prentup; Fort Riley
Galen Stephen Quantic; Riley
George Le Roy Quigley; Halstead
Elizabeth Quinlan; Manhattan
Dryden Marie Quist; Manhattan
Dorothy Raburn; Manhattan
Alice Dresser Rader; Manhattan
George Hemrod Railsback; Manhattan
Ernest Lee Raines; Mound City
Earl Ramsey; Filer, Idaho
Elizabeth Ruth Ransom; Manhattan
Dorothy Readhimer; Natchitoches, La.
Edris W. Rector; Manhattan
Willard Virgil Redding; Coffeyville
G. Nathan Reed; Manhattan
Thelma Reed; Kanopolis
Roger Eli Regnier; Fairview
Alma Margaret Richhart; Nickerson
John Bissell Roberts; Manhattan
Sarah Helen Roberts; Manhattan
Ralph Rogers; Madison
Emily May Rogler; Manhattan
Pearl Elzora Rorabaugh; Lebanon
Amanda Christina Rosenquist; Osage City
Frank Louis Rosser; Brookville
Vance Mather Rucker; Manhattan
Robert Henry Russell; Manhattan
Ben Davis Russum; Topeka
Helen M. Rust; Manhattan
Maud Grace Ryder; Manhattan
Curtis Williams Sabrosky; Manhattan
Olga Barbara Saffry; Alma
Myron L. Sallee; Manhattan
Pauline Willa Samuel; Manhattan
Dorothy Saville; Manhattan
Raymond Schlotterbeck; Wichita.
Ruth Schlotterbeck; Lyons
La Velle Robert Schruben; Hoxie
Luke Michael Schruben; Dresden
William Joseph Schultis; Sylvan Grove
Hildred Renetta Schweiter; Wichita
Harold Martin Scott; Manhattan
W. Allen Searcy; Independence, Mo.
Florence Cynthia See; Ransom
Lela Mae Segrist; Manhattan
Petrus Johannes Serfontein; Trompsburg, S. Africa
Sheridan Settler; Council Grove
John Henry Shenk; Manhattan
Byron Le Roy Shepherd; Manhattan
Sophia M. Shirley; Osage City
Beulah Le Verne Siddens; Manhattan
Curtis Daniel Sides; Manhattan
Dale Harold Sieling; Hays
Kermit James Silverwood; Ellsworth
Lonnie Joseph Simmons; Manhattan
Mildred Loveless Skinner; Marion
Ralph Owen Snelling; Manhattan
Maynard Harold Solt; Manhattan
Irimie Dumitru Staicu; Bucharest, Roumania.
Arlo Lester Steele; Manhattan
Alvin Howard Stephenson; Clements
William Emil Steps; Halstead
H. Arlo Stewart; Topeka
Esra Ervin Stockebrand; Yates Center
Gladys Juanita Stoops; Bellaire
Charles William Stratton; Manhattan
Ida Jane Summers; Manhattan
Esther Holmberg Swanson; Manhattan
Martha E. Swoyer; Wilmot
Viola Ann Sykes; Ida Grove, Iowa
Francisco Rioja Taberner; San Juan, P. I.
Delos Clifton Taylor; Manhattan
Helen Theodora Teichgraeber; Marquette
Howard Everett Tempero; Broughton
Emily Sheppeard Thackrey; Manhattan
Russell Ira Thackrey; Manhattan
Marcia Edythe Tillman; Manhattan
Francis Leonard Timmons; Manhattan
John Melville Turner; Holton
Selma Elin Turner; Manhattan
Lois Castle Vance; Enid, Okla.
Olive Elsie Van Pelt; Beloit
Leland Stanford Van Scoyoc; Manhattan

GRADUATE STUDENTS—*Concluded*

Margaret Varns; Ellsworth
Rollo Evans Venn; Wichita
Walter Henry Von Trebra; Manhattan
Verne Ingeborg Wagner; McFarland
Eugene Haley Walker; Manhattan
Forrest Lorenzo Walker; Manhattan
Joseph Ardrey Watson; Howard
Jewell Kimball Watt; Topeka
Howard Gilbert Webber; Coolidge
Arthur Edward Weber; Manhattan
Ray Edward Weide; Leona
Bessie Brooks West; Manhattan
Paul Charles Westerman; Manhattan
Leola Jane White; Manhattan
Kathryn Whitten; Wakarusa
Donald Alden Wilbur; Manhattan
George Frank Wiley; Chanute
Leroy Albert Wilhelm; Arkansas City
Carl Williams; Dodge City
Jennie Williams; Manhattan
Ruah Williams; Clay Center
Helen Mildred Wilmore; Halstead
James Herdman Wilmoth; Blue Rapids
Claude Leonard Wilson; Ottawa
Olah Wilson; Madill, Okla.
Wilbor Owens Wilson; Manhattan
Margaret Selina Windett; Quenemo
Marion Rudolph Winkler; Atchison
Estelle Adele Winters; Onaga
Chester Aaron Wismer; Pomona
Floyd Byron Wolberg; Iola, Wis.
Le Velle Wood; Manhattan
Thella Eileen Wood; Manhattan
Horace Fetzer Yoder; Manhattan
Marian Irene Young; Cedar Point
Iscah Marian Zahm; Topeka
Ruth Wanda Zeigler; Winfield
Frank Jesse Zink; Manhattan

GRADUATE STUDENTS PURSUING WORK IN ABSENTIA

Ellis Buchanan Babbit; Hiawatha
Silas Solomon Bergsma; Hill City
Zelda Arliene Finch; Oketo
Harold David Garver; Overland Park
Clarence Fay Gladfelter; Emporia
Archie Verne Grady; St. George
Edward William Grigg; Coffeyville
Ruth Dillon Heckler; Dallas, Tex.
Arlie William Higgins; Ingalls
Julian Alman Johnson; Kiowa
Henry Daniel Karns; Concordia
Ezra Perle Mauk; Mulvane
Winifred Daisy Beeby Norman; Topeka

SENIOR STUDENTS PURSUING GRADUATE WORK

Merle Walter Allen; Manhattan
Lewis Harold Bacon; Sylvan Grove
Leslie Matthew Bryson; Abilene
Louise Helen Chalfant; Wichita
Herbert William Clutter; Larned
Garlie Franklin Collins; Manhattan
Carl Clarence Conger; Iola
Ralph Martin Conrad; Manhattan
Loyd Marion Copenhafer; Manhattan
James Romayne Cribbett; Parsons
Ward Edmond Dale; Topeka
William De Ozro Davis; Manhattan
Milbern Harry Davison; Manhattan
Harold Mead Denison; Topeka
Andrew Brian Erhart; Timken
Robert August Evers; Quincy, Ill.
Maynard Hancock Finley; Emporia
Thomas Elliott Hall; Manhattan
John Hamon; Valley Falls
Raymond Thomas Harper; Manhattan
James Wilbur Haupt; Newton
Thomas Clark Hinkle; Carbondale
Zadock Wayne Hook; Manhattan
Seward Ellis Horner; Abilene
Otis Fearing Hornish; Bucklin
Raymond Hickman Hughes; Manhattan
James William Hunter; Manhattan
Julius Godfrey Immer; Hudson
Joel Platt Kesler; Overbrook
Herbert Henry Kirby; Toronto
Harold Le Roy Kugler; Abilene
Mildred Woodcock Leker; Manhattan
Eva Elizabeth Lisk; Manhattan
Harold Clyde Love; Wilsey
Alvin Ernest Lowe; Argonia
Everett John McNay; Clay Center
Frank Stephen Martin; Manhattan
Thomas Ellsworth Martin; Manhattan
Grant Gould Miller; Offerle
John Ivan Miller; Prescott
Joyce Walker Miller; Sycamore
Gilbert Carlyle Moore; Louisburg
Stuart Redington Mudge; Salina
William Newell Page; Detroit
Virginia Janette Peterson; Manhattan
June Roberts; Ford
Raymond Rollin Roepke; Manhattan
Harold Thomas Rowland; Clay Center
Arthur Warwick Rucker; Americus
Aileen Rundle; Clay Center
Mary Alice Schnacke; La Crosse
Elwyn Space Shonyo; Bushton
Joseph Charles Slechta; E. St. Louis, Ill.
Charles Watson Stull; Osborne
Helen Marie Tedman; Mount Hope
George Baldridge Telford; Manhattan
Irene Lillice Todd; Topeka
Dale Vawter; Liberty
Charles Fayette Ward; Pratt
Anne Elizabeth Washington; Manhattan

SPECIAL STUDENTS PURSUING GRADUATE WORK

David George Griffiths; Manhattan

Undergraduate Students

The following lists include seniors, juniors, sophomores, freshmen and special students in College. For students in the Summer Schools 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; Acct, commerce and accounting; Ar, architecture; ArE, architectural engineering; C, commerce; CE, civil engineering; ChE, chemical engineering; EE, electrical engineering; FME, flour mill engineering; GS, general science; HE, home economics; HE&A, home economics and art; HE&J, home economics and industrial journalism; HE&N, home economics and nursing; IE&D, institutional economics and dietetics; IC, industrial chemistry; IJ, industrial journalism; LA, landscape architecture; LG, landscape gardening; M, applied music; MuE, music education; ME, mechanical engineering; PE, physical education; VM, veterinary medicine.

SENIORS

Erwin Abmeyer (Ag); Grantville
Donald Adair Adell (CE); Manhattan
Leonard Rusco Adler (EE); Goddard
Linden Moore Alcorn (VM); Manhattan
Robert Joseph Alexander (ArE); Independence, Mo.
Gayle Derwood Allen (VM); Manhattan
†Merle Walter Allen (GS-1; Grad2); Manhattan
Juliana Amos (MuE); Manhattan
Clarence Hobert Anderson (AA); Richland
†Harold Lee Anderson (IC-1; Grad-2); Manhattan
Olin Alvin Anderson (VM); Manhattan
William Joseph Angerer (VM); Manhattan
Ethel Marie Antrim (HE); Spivey
Mildred Caroline Aspelin (GS); Dwight
John Darwin Astle (CE); Manhattan
La Faun Astle (IJ); Hutchinson
Omo Arthur Attwood (IC); Manhattan
Herbert Willard Avery (VM); Wakefield
Lois Louise Avis (HE); Fostoria
Nathan Lea Axton (EE); El Dorado
Mark Justice Babb (C); Lebanon
†Lewis Harold Bacon (Ag); Sylvan Grove
Albert Kilian Bader (ArE); Junction City
Dale Evertt Barkalow (EE); Burden
Mildred Evelyn Beard (MuE); McPherson
Crawford Beeson (IC); Wamego
Paula Anne Bellinger (GS); Manhattan
Kenneth Urbon Benjamin (EE); Deerfield
Jewell Robert Benson (ME); Topeka
Lynn Nathan Berry (CE); Manhattan
Robert Charles Besler (ME); Manhattan
Roy Wilson Best (ME); Manhattan
Max William Bickford (GS); Phillipsburg
John Milan Biddison (EE); Manhattan
Margaret Doreen Bierman (HE); Kensington
John Sherman Biggs, Jr. (CE); Manhattan
Oma Louise Bishop (IJ); Abilene
Clifford Hibbard Black (Ar); Manhattan
Loren Cleatus Blackburn (VM); Manhattan
Ellen Grace Blair (HE); Williamsburg
Maxine Rose Blankenship (HE); Downs
Douglass Arthur Bly (EE); Pierceville
Nelle Miller Boellner (C); El Dorado
Victor Wayne Boellner (C); El Dorado
Ernest Verle Bogle (CE); Pittsburg
Thomas Lenord Bond (VM); Manhattan
Anton Borecky (GS); Holyrood
Donald Houts Bowman (Ag); Manhattan
George William Boys (EE); Linwood
Alice Marguerite Bozarth (M); Lenora
Ferrell McClellan Bozarth (AE); Lenora
Helen Bradley (HE); Sedan
Virgil Edward Bradley (CE); Belle Plaine
Fred Ewing Brady (EE); Topeka
Frank Robert Brandenburg (AA); Riley
Paul Jacob Brandly (VM); Manhattan
Emmett Newton Breen (PE); El Dorado
Justina Veronica Brening (HE); Burns
Veva May Brewer (IJ); Mount Hope
Joseph Emil Brinkman (EE); Americus
Mary Vashti Brookshier (HE); Osborne
Edith Alice Brown (HE); Partridge
Lawrence Edwin Brown (IC); Fall River
Allen Vincent Brunke (VM); Manhattan
Ray James Bryan (GS); Woodbine
†Leslie Matthew Bryson (ChE); Abilene
Thomas Maxwell Buck (IC); Abilene
Wilma Mae Bucknell (GS); Olathe
Burnill Howard Buikstra (GS); Cawker City
Gladys Ruth Buikstra (HE); Manhattan
Kenneth Charles Burgert (EE); El Dorado
Clifton Andrew Byers (GS); Manhattan
Duane Le Roy Cady (VM); Manhattan
Marcine Dorotha Campbell (PE); Hollis
Wayne Wiat Cantral (CE); Manhattan
Velma Lorence Capper (GS); Manhattan
Merrill Levern Carter (IC); Smith Center
Marjorie Henrietta Casper (HE); Clifton
Francis Willard Castello (Ag); McCune
Boyd Ralph Cathart (Ag); Winchester
Victor Clare Cavin (EE); La Crosse
†Louise Helen Chalfant (GS); Wichita
Willard Martin Cheney (EE); Abilene
Lester Raymond Chilson (Ag); Oberlin
Blanch Lucille Christensen (HE); Bushong
Donald Christy (AE); Scott City
Willa Christine Church (HE); Kansas City, Mo.
Erick R. Claassen (ME); Newton
Mary Lou Clark (PE); Burr Oak
Miriam Clark (GS); Iola
†Herbert William Clutter (Ag); Larned
Wesley Samuel Coblentz (Ag); Great Bend
Adalyn Bell Coffman (GS); Roodhouse, Ill.
Raymond Joseph Cohorst (Ag); Marysville
George R. Collier (EE); Colwich
Eugene Frederick Collins (GS); Wellsville
†Garlie Franklin Collins (ChE); Manhattan

† Also pursuing graduate study.

SENIORS—*Continued*

Ward Colwell (IJ); Onaga
Robin Dale Compton (EE); Manhattan
Earl Eugene Comstock (CE); Wichita
†Carl Clarence Conger (Ag); Iola
Wilmer I. Conger (VM); Ionia
†Ralph Martin Conrad (IC); Manhattan
Joseph Brady Cook (GS); Cawker City
†Loyd Marion Copenhafer (LG-1; Grad-2); Manhattan
James Delos Corrigan (C); Holyrood
Sam Prentis Cory (CE); Hutchinson
Grant Fuller Cottrell (VM); Andover
Earl Clark Coulter (Ag); Willis
Gertrude Alice Cowdery (GS); Lyons
Walter Ellis Crabb (LA); Lebanon
Robert Norman Craft (AA); Latham
Mary Elizabeth Crawford (HE); Madison
†James Romayne Cribbett (IC); Parsons
Edward Everett Criner (C); Wichita
Marian Hazel Crocker (IJ); Manhattan
George Richard Crossen (ME); Turner
Isabel Clara Cunningham (IJ); Manhattan
Blanche Irene Curry (HE); Winchester
Ray Curry (VM); Selma
Harold Amos Daily (Ag); Waverly
†Ward Edmond Dale (CE); Topeka
William Neet Dale (ME); Manhattan
Lloyd Henry Dalton (C); Ottawa
Laurence Robert Daniels (Ag); St. Francis
Richard Perry Daniels (EE); Topeka
Roy Emanuel Danielson (EE); Topeka
Floyd Ewing Davidson (Ag); Madison
Helen Louise Davis (HE&A); Topeka
†William De Ozro Davis (ME); Manhattan
†Milbern Harry Davison (CE); Manhattan
Phares Decker (Ag); Holton
†Harold Mead Denison (EE); Topeka
Orville Frederick Denton (Ag); Denton
Bertus Johannas Deters (IC); Cawker City
Dale D. Dixon (GS); Norcatur
Edith Marie Dobson (IJ); Manhattan
Louis Elmer Dobson (LA); Manhattan
Harvey Phillip Donnell (EE); Manhattan
Esther Ita Dorgan (GS); Alta Vista
Joseph Alfred Doubrava (CE); Lorraine
Roberta Josephine Downie (GS); Garden City
Truman Ben Drury (EE); Burden
Maurice Leland DuMars (IJ); Agra
Florence Durham (HE); Randall
Helen Gertrude Durham (MuE); Manhattan
Ethel Amelia Eberhart (Ar); Topeka
Rudolph Eugene Eberle (CE); Emporia
Eugenia May Ebling (IJ); Lindsborg
Sarah Elenora Echord (GS); La Cygne
Milton Ehrlich (C); Marion
Kenneth Joseph Ekdahl (C); Manhattan
Oscar Sievert Ekdahl (Ar); Manhattan
Margaret Virginia Elder (HE); Hutchinson
George Harold Ellinger (EE); Abbyville
Gene Ellis (CE); Council Grove
Louis Garner Elser (CE); Fort Riley
Andrew Charles Elson (LG); Kansas City
Roy Wayland Engler (ChE); Topeka
†Andrew Brian Erhart (Ag); Timken
Alvie William Etzel (ChE); Topeka
Charles William Evans (EE); Washington
James Howard Evans (C); Barnard
†Robert August Evers (GS); Quincy, Ill.
Robert Clifton Eychner (ChE); Jewell
Paul Eugene Fairbank (PE); Topeka
Fern Opal Falkenburgh (IE&D); Manhattan
Gerald Emerson Feldhausen (AE); Frankfort
Glenn David Ferguson (EE); McPherson
Elmer Fred Finke (VM); Manhattan
†Maynard Hancock Finley (EE); Emporia
Lendall Kiple Firth (VM); Manhattan
Charles Emil Fisher (Ag); Cuba
Leonice Marie Fisher (HE); Fort Scott
John Sebastian Florell (ArE); Manhattan
Frances Ann Fockele (MuE); Le Roy
Max Frank Fockele (C); Ottawa
Anthony Dom. Fornelli (CE); Cherokee
Glenn Sylvester Fox (Ag); Rozel
Marian Frances Freedlun (ArE); Chanute
Homer Lyle French (GS); Pretty Prairie
Beulah May Frey (HE); Elmdale
Harry Winston Ganstrom (Ar); Hollis
Margaret Adele Gard (GS); Manhattan
Leonard Elvin Garrison (GS); Manchester
Elizabeth Gaston (IJ); Manhattan
Paul Carl Geilenfeldt (VM); Manhattan
Bernard Kenneth Geraghty (EE); Selden
Harold Gibson (EE); Manhattan
Nadine Alice Gibson (HE); Emporia
Neil Fought Gibson (CE); Ottawa
Harriet Cordilla Gilson (GS); Manhattan
Ed Cephas Glover (EE); Coolidge
Frank Henry Goodrick (CE); Lawrence
Linn Alvin Gore (ME); Bushton
Edith Gwendolyn Gosney (HE); Goddard
Luella Elizabeth Graham (GS); Topeka
Geraldine Virginia Grass (C); La Crosse
Albert Benjamin Green (IC); Manhattan
Marion Winn Griffin (ChE); Merriam
Orrin Franz Grover (IC); Manhattan
Robert Henry Gump (VM); Abilene
Alberta Maude Gurtler (IE&D); Topeka
Arthur Carroll Hadley (Ar); Wichita
Dorotha Hadsell (IJ); Manhattan
Lela Mae Hahn (C); Glen Elder
*Florence Hall (HE); Mankato
Lyman Monroe Hall (C); Manhattan
Mabel Lillian Hall (GS); Kensington
†Thomas Elliot Hall (Ag-1; Grad-2); Manhattan
Bernard Eugene Hammond (EE); Salina
†John Hamon (Ag); Valley Falls
Frances Pearle Hampshire (HE); Manhattan
Oran Andrew Harger (EE); Manhattan
†Raymond Thomas Harper (Ag); Manhattan
*Marion Bernice Harris (HE); Elk Garden, W. Va.
Ronald Clark Hartman (ChE); Lyons
Harry Linn Hasler (PE); El Dorado
*Ada Haukenberry (GS); Manhattan
†James Wilbur Haupt (ME); Newton
Raymond William Hayes (VM); Manhattan
Merle Preston Haymond (IC); Burdett
Achille Charles Hebert (EE); Manhattan
Harold Ray Heckendorn (EE); Cedar Point
Ivalee Beryl Hedge (HE); Manhattan
Wilbur Gould Heer; (ME); Manhattan
Betty Lucile Heffelfinger (IJ); Newton
John James Heimerich (ArE); Clay Center
Hubert Raymond Hein (AH&V); Washington
Marie Antoinette Henney (IJ); Hutchinson
Frances Katheryn Marie Larson Herzig (HE); Smolan
Keith Harry Hinchcliff (Ar); Manhattan
Harry Wilson Hinckley (MuE); Barnard
†Thomas Clark Hinkle (Ag); Carbondale
Walter Clarence Hinkle (AE); Colorado Springs, Colo.
Esther Elzana Hobson (PE); Kingman
Eugene Harry Hobson (AE); Atchison
Mabel Virginia Hodgson (HE); Little River
Lawrence Chester Hoener (ME); Preston
Carl Edward Holliday (C); Kansas City
Harvey Collins Holm (AA); Dwight
Alfred Arnold Holmquist (CE); Manhattan
Mary Holton (HE); Manhattan

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* Matriculated 1932-'33.

† Also pursuing graduate study.

SENIORS—*Continued*

George Leslie Honstead (C); Waterville
†Zadock Wayne Hook (GS); Manhattan
Otis Horchem (C); Ransom
†Seward Ellis Horner (GS); Abilene
†Otis Fearing Hornish (GS); Bucklin
Mary Caroline Houser (IJ); Wooster, Ohio
Clair Louis Howard (CE); Clyde
James William Howard (IJ); Douglass
Genevieve Loban Hoyt (IJ); Manhattan
Claude Hudson (VM); Manhattan
Harlow Kenyon Hudson (VM); Manhattan
†Raymond Hickman Hughes (GS); Manhattan
Muriel Imogene Hugunin (C); Manhattan
†James William Hunter (Ag); Manhattan
†Julius Godfrey Immer (IC); Hudson
Sue Washington Irons (HE); Winter Haven, Fla.
William Francis Irwin (VM); Wilsey
Conley Gordon Isenberg (VM); Manhattan
Frances Marie Jack (MuE); Russell
Roberta Amelia Jack (HE&A); Russell
*Amor James Jefferis (EE); Kincaid
Paul William Jenicek (AE); Bushton
Rex Mortimer Jennings (Acct); Hoyt
Elmer Roy Jensen (EE); Herington
Irving Mauritz Johnson (EE); Smolan
Rowena Myra Johnson (GS); Fort Scott
Florence Nevada Jones (HE&A); El Dorado
Richard Hulett Jurden (VM); Manhattan
Manuel Charles Kastner (VM); Manhattan
*Cleta Helene Keck (GS); Manhattan
Martin Fred Keck (Ag); Manhattan
Mary Elizabeth Keegan (GS); Great Bend
Sylvester Harwood Keller (AE); Newton
Margaret Mary Kelley (HE); Winfield
Floyde Noble Kennedy (ArE); Anthony
Russell Anthony Kern (GS); Manhattan
†Joel Platt Kesler (EE); Overbrook
Glenn Monroe Kilmer (ME); McPherson
†Yun Suh Kim (Ag-1; Grad-2); Shanghai, China
†Herbert Henry Kirby (EE-1; Grad-2); Toronto
William Goodman Kirby (CE); Toronto
Ruth Vera Kistler (HE); Kingman
Doris De Ette Kline (GS); Miltonvale
Clovis Le Roy Knecht (GS); Leona
Margaret Marie Knerr (Ag); Manhattan
Zora Lee Knox (HE); Emporia
Al Joseph Koster (ME); Manhattan
Ada Leah Krause (GS); Marysville
Edith Emma Krause (GS); Marysville
Lilly Anna Krause (GS); Marysville
Alden Krider (Ar); Newton
Margaret Bacon Krider (Ar); Manhattan
Elsie Della Kruger (GS); Holton
†Harold Le Roy Kugler (AA); Abilene
Wilbur Eugene Laird (CE); Burr Oak
Kenneth George Lancaster (ME); Junction City
Florence Mary Landrum (GS); Effingham
Leora Mae Lang (C); Cuba
Benjamin Reigle Lantz (LA); Salina
Thelma Lois Large (PE); Protection
Ernest Ira Largent (C); Oak Hill
Marjorie La Shelle (C); Manhattan
Louise Frances Layman (IJ); Arlington
Beulah Mae Leach (HE); Bird City
Helen Louise Leisz (IJ); Salina
†Mildred Woodcock Leker (HE-1; Grad-2); Manhattan
Marjorie Iris Lemon (MuE); Wakefield
Carolyn Alise Leonard (HE); Coolidge
Albert Edgar Letts (EE); El Dorado
Nathaniel Clyde Lewis (PE); Topeka
William Hautecoyne Lindley (VM); Vicksburg, Miss.
Dorothy Edna Linge (HE); Topeka
†Eva Elizabeth Lisk (HE); Manhattan
John Royer Long (ChE); Abilene
†Harold Clyde Love (Ag); Wilsey
James Elbert Loveless (AA); Denton, Tex.
Verla Jessie Lovell (HE); Topeka
Virginia Louise Lovett (MuE); Great Bend
†Alvin Ernest Lowe (Ag-1; Grad-2); Argonia
Gerald Lowell (IC); Hollis
Hugo Frederick Lucas (ME); Manhattan
Henry Norbert Luebcke (AE); Marysville
Robert Wagoner Lukens (Ag); Beloit
Margaret Anna Lynch (HE); Hutchinson
Warren Peer Lyttle (EE); Council Grove
Verna Elaine McAdams (GS); Parsons
Mildred Katherine McBride (HE); Boyle
Mollie Beatrice McBride (HE); Atwood
Hal H. McCord (ArE); Manhattan
Frank Clemens McCurdy (GS); Leavenworth
Ivan Earnest McDougal (EE); Atwood
Ruben Harold McElroy (CE); Randall
Willard Lawrence McFillen (AE); Manhattan
Clifford Ladell McGinnis (VM); Valley Falls
Selma Mae McGinnis (HE); Manhattan
Velmer Wayne McGinnis (VM); Manhattan
Ruth Alice McIlnay (HE); Wichita
Emily Mae McKenzie (PE); Wayne
Robert Tullose McLean (VM); El Cajon, Cal.
Francis Thurul McMahon (CE); Beattie
†Everett John McNay (Ag); Clay Center
Robert Fred McNitt (AA); Washington
Alice Marie Maixner (HE); Wilson
Arvid Irvin Mall (C); Manhattan
Dorothy Lorraine Maltby (PE); Canton
Merle Mark (HE); Abilene
†Frank Stephen Martin (ChE); Manhattan
James Willard Martin (EE); Sabetha
†Thomas Ellsworth Martin (AE); Manhattan
Vera Isabell Martin (HE); Hastings, Neb.
Mildred Ruth Masden (MuE); Lenora
James Milton Mason (ME); Manhattan
Carolyn Mather (GS); Burdett
Murray Edgar Matter (AE); Jewell
Norris R. Meek (GS); Wellington
Charles Hubert Mehaffey (EE); Farmington
Florence Ruth Melchert (HE&A); Ottawa
Norman John Mellies (EE); Ellinwood
John Alden Meredith (CE); Wakarusa
Alfreda Meyer (GS); Frankfort
John Wesley Meyers (C); Merriam
†Grant Gould Miller (EE); Offerle
†John Ivan Miller (Ag); Prescott
†Joyce Walker Miller (AA); Sycamore
Marion Francis Miller (ME); Norton
Mildred Miller (MuE); Manhattan
Hiroshi Miyata (EE); Honolulu, Hawaii
John Henry Moehlman (EE); Manhattan
John George Mogge (C); Goodland
†Gilbert Carlyle Moore (Ag); Louisburg
Neal Francis Morehouse (GS); Manhattan
Alvin Morgan (Ag); Manhattan
Earl Frederick Morrison (PE); Colby
John Rex Morrison (EE); Great Bend
Marjorie Morrow (HE); Parsons
†Stuart Redington Mudge (EE); Salina
Esther Laura Mundell (HE); Nickerson
Gaylord Russell Munson (Ag); Junction City
James Byron Nash (ChE-1; IC-2); Parsons

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* Matriculated 1932-'33.

† Also pursuing graduate study.

SENIORS—*Continued*

Shelby Merle Neelly (PE); Hopewell
Norris William Nelson (Ag); McPherson
James Lisle Neville (CE); Coffeyville
Edwin Mahlon Newman (CE); La Crosse
Joseph Fedelis Nieberding (VM); Marysville
Arthur Benjamin Niemoller (EE); Wakefield
Lucy Ermine Nixon (HE); Manhattan
Lawrence Bertram Noble (ME); Manhattan
Orville Arthur Noell (EE); Manhattan
Sidney Bertrand North (C); Coffeyville
Orville Phillip Nuffer (C); Leonardville
Evelyn Jean Nuzman (IJ); Manhattan
Carl Gerhardt Ossmann (ArE); Concordia
Harold Weekley Overbey (Ag); Winfield
Carmy Gross Page (AA); Norton
†William Newell Page (AA); Detroit
Arlie Edward Paige (EE); Minneapolis
*Ruth Evelyn Parcels (HE); Hiawatha
Carl Edward Pate (ChE); Parsons
Lloyd Everett Patterson (EE); St. John
Margaret Virginia Patterson (HE); Kansas City, Mo.
Merle Fairchild Patterson (HE); Manhattan
Leonard William Patton (Ag); Manhattan
Doris Ina Paulson (PE); El Dorado
Marion Wesley Pearce (AA); Miltonvale
Eugene Way Peck (VM); Manhattan
Frederick Adams Peery (IJ); Manhattan
Eugene Joseph Peltier (CE); Concordia
Francis Joseph Perrier (ME); Olpe
Robert Bruce Perry (IC); Manhattan
†Virginia Janette Peterson (GS); Manhattan
Marion Edgar Phillips (CE); Wichita
Deets Pickett (VM); Manhattan
Lawrence Bryan Pilcher (PE); Glasco
Mila Margaret Pishney (HE); Cleburne
Alvin George Ploger (Ag); Kinsley
Dale Franklin Pocock (C); Le Roy
Nancy Elizabeth Poole (GS); Kansas City, Mo.
Harrel Elise Porter (HE); Parsons
Ralph Pratt (GS); Herington
Charles Joseph Prehal (VM); Manhaattan
Marjorie McDonald Pyle (GS); Manhattan
Guilford Ross Railsback (IJ); Langdon
Edith Le Verne Ramey (HE); Manhattan
Marjorie Elizabeth Ramey (HE); Manhattan
John Milton Raven (AA); Morrowville
Albert Lawrence Reed (Ag); Manhattan
Ernest Harold Reed (GS); Norton
Eunice Reed (Ar); Kanopolis
Arthur Abraham Regier (EE); Elbing
Adelaine Reid (HE); Iola
Katherine Reid (GS); Manhattan
Jake Louis Reineccius (VM); Manhattan
John Henry Reinecke (IJ); Great Bend
Wilma Elizabeth Reinhardt (HE); Bison
Harlan Cromer Rhodes (C); Manhattan
Laurence Walter Rice (CE); Topeka
Wayne C. Richards (EE); Manhattan
†John Bissell Roberts (Ag-1; Grad-2); Manhattan
†June Roberts (AE); Ford
William Robert Roberts (EE); Manhattan
Alex Stephen Robertson (VM); Manhattan
Philip Dean Rockwood (C); Parker
Martha Hess Rodda (IE&D); Arma
†Raymond Rollin Roepke (IC); Manhattan
Ernest Herman Rogalsky (GS); McPherson
Elizabeth Roniger (HE); Hymer
Merle Marguerite Ross (GS); Dover
Edward Charley Rostocil (C); Zurich
Esther May Row (GS); Larned
†Harold Thomas Rowland (GS); Clay Center
Merritt Roscoe Royer (CE); Manhattan
†Arthur Warwick Rucker (EE); Americus
Emily Olive Rumold (MuE); Herington
†Aileen Rundle (HE); Clay Center
Loyal Luther Rush (VM); Erie
Louise Rust (HE); Manhattan
Olin Sandlin (Ag); Palco
Carl Herman Sartorius (IC); Garden City
Karl Marion Scanlan (ME); Manhattan
Jean Willard Scheel (IJ); Emporia
Martha Louise Scheu (PE); Manhattan
Lorina Amelia Schlemmer (HE); Kansas City, Mo.
†Mary Alice Schnacke (IJ); La Crosse
Robert Allen Schober (Ar); Manhattan
Grace Leona Scholz (HE); Manhattan
Jonah Schreiner (GS); Manhattan
†Luke Micheal Schruben (AA-1; Grad-2); Dresden
Maurice Elmer Schruben (MuE); Dresden
Florence Etta Schwendener (HE); Abilene
Arthur Merle Scott (ArE); Pittsburg
James Foster Scott (IJ); Manhattan
William Arthur Sells (EE); Effingham
Floyd Henry Seyb (AA); Pretty Prairie
Laurence C. Seyb (GS); Pretty Prairie
Ralph Franklin Shaner (VM); Topeka
LeNora Marie Shara (C); Narka
Leona Edythe Shara (HE); Narka
James Leroy Sharp (C); Newton
Genevieve Marie Shellhaas (GS); Junction City
Josephine Clara Shellhaas (GS); Junction City
†Elwyn Space Shonyo (IC); Bushton
Earl Lee Simms (PE); Republic
Sadie Sylvia Sklar (Ar); Manhattan
†Joseph Charles Slechta (GS); E. St. Louis, Ill.
Lisle Le Roy Smelser (CE); Manhattan
Helen Elsie Smerchek (HE); Garnett
Esther Smiley (HE&A); Manhattan
Leland Maxwell Smiley (GS); El Dorado
Hubert Leslie Smith (VM); Manhattan
Louis Jasper Smith (CE); Neodesha
Pansy Smith (HE); Moran
Pauline Jessie Minick Smith (HE); Talmage
Ralph Ottis Smith (EE); Hutchinson
Roy Blanchett Smith (PE); Herington
Russell B. Smith (ME); Manhattan
*Velma Dot Smith (GS); Moundridge
*Virginia K. Smith (GS); Moundridge
Walter Bruce Smith (ME); Hoisington
William Richard Smith (Ag); Manhattan
William Berchard Snodgrass (VM); Manhattan
Adrian Ramsey Sorrells (IJ); Kansas City
Elizabeth Caroline Steele (HE&N); Manhattan
Virginia Maurine Steele (HE); Manhattan
Earl Raymond Stegman (ME); Plains
James Byron Stephenson (CE); Sedan
William Russell Stewart (EE); Homemont
Ruth Vernetta Stiles (IJ); Kansas City
Homer John Stockwell (AE); Menden
John Ransom Stone, Jr. (EE); Leavenworth
Elden G. Stoskopf (ME); Baxter Springs
Ruth Evangeline Strickland (GS); Manhattan
†Charles Watson Stull (EE); Osborne
Geneva Mae Sutter (HE); Effingham
Geneva Harriet Swan (HE); Washington
Hughel Kamlage Tatum (ME); Larned
Elmer Alexander Taylor (AE); Solomon

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* Matriculated 1932-'33.

† Also pursuing graduate study.

SENIORS—*Concluded*

Lewis Whitney Teall (CE); Larned
†Helen Marie Tedman (HE); Mount Hope
†George Baldridge Telford (C); Manhattan
John Franklin Thackrey (IJ); Manhattan
Florence Mae Thompson (HE); Harper
Penn Thompson (AA); Manhattan
Thomas Marion Thompson (VM); Mulberry
Arthur Chase Thomson (Ag); McCune
†Irene Lillice Todd (HE); Topeka
Blanche Louise Tomson (HE); Dover
Gladys Clara Tonn (GS); Haven
Harold Arthur Totten (EE); Clifton
Eva Madeline Townsend (IE&D); Phillipsburg
Richard Duncan Turk (VM); Manhattan
Ralph Arthur Van Camp (IJ); Council Grove
Lyle Raymond Van Doren (ME); Manhattan
Fred Lewis Van Scoyoc (ME); Oak Hill
Robert Vernon Vaupel (C); New Cambria
Marvin Eugene Vautravers (Ag); Centralia
†Dale Vawter (ME); Liberty
Edwin August Veeh (GS); Stuttgart
Stephen Vesecky (AA); Kansas City
Raymond Beaty Wagner (Ag); Richmond
Betty Jane Wagstaff (PE); Topeka
Wilbur Wahl (LG) Wheaton
Fred Henry Walker, Jr. (Ag); Manhattan
Samuel Cyril Walker (CE); Junction City
Pearl Author Walters (CE); Norwich
†Charles Fayette Ward (GS); Pratt
Eugene Aubrey Ward (Ag); Lawrence
Jerrold Jay Wardell (Ag); Manhattan
Paul Frank Warner (ChE); Whiting
Ellen Grace Warren (IJ); Manhattan
†Anne Elizabeth Washington (GS); Manhattan
Harvey Russell Webb (ME); Sedan
Herschel William Weber (LG); Novinger, Mo.
Eugene Lincoln Wells (CE); Meriden
James Wesley Wells (ChE); Winona
Robert Lloyd Wentz (EE); Wichita
Helen Frances Weygandt (HE); Keats
Dorothy Grace White (GS); Burlington
Mabel Louise Whitford (IJ); Hutchinson
Max Wible (ArE); Caldwell
Max Allen Wickham (C); Manhattan
Esther Irene Wiedower (IJ); Spearville
†George Frank Wiley (ME-1; Grad-2); Chanute
Donald Manly Williams (GS); Manhattan
Allen Rea Wilson (C); Manhattan
Bessie Ann Wilson (HE); Kansas City
Robert Jerome Wilson (C); Manhattan
Florence Lillian Wiltse (GS); River Forest, Ill.
Lois Emily Windiate (HE); Nickerson
Lillian Geneva Witter (HE); Plains
Agnes Anna Wolkensdorfer (HE); Herndon
Joe Edgar Woodford (ME); Manhattan
Clifford Jay Woodley (ME); Tecumseh
Gene Neill Woodruff (IC); Kansas City
John Dewey Woodruff (CE); Dodge City
Rex Valentine Woodward (EE); Medicine Lodge
John Preston Woolcott (FME); Manhattan
Alfred Eugene Wooster (EE); Erie
Eleanor Emily Wright (IJ); Concordia
Harold Brockway Wright (ChE); Hutchinson
Donald Wilson Wyatt (IJ); Stockton
Ernestine Henrietta Young (GS); Arkansas City
Evelyn Hannah Young (PE); Arkansas City
Everett Fairbanks Yoxall (AA); Woodston
Robert Allen Zebold (AA); Little Rock, Ark.
Walter William Zeckser (AA); Alma
Iva May Zimmerman (GS); Simpson
Mark Joseph Zoeller (C); Manhattan

JUNIORS

Zelda Laurraine Ackenhausen (GS); Manhattan
Joseph Shirley Adams (Ag); Leoti
Cirilo Lagmay Adan (VM); Sison, P. I.
Genevieve Lucille Ailstock (IJ); Wellington
John Henry Allen (EE); Seneca
Mary Elizabeth Allman (HE); Manhattan
*Rosalind Almen (HE); McPherson
Robert Louis Anderes (VM); Kansas City
*Lyllian Gale Anderson (GS); Lincoln
Julius Porter Anderson (Ar); Center, Tex.
Verna Lucille Anderson (PE); Topeka
Lawrence Alfred Antenen (C); Bazine
*Marie Rosabelle Appel (GS); Bushton
Cecil Frances Arens (EE); Topeka
Donald Maurice Atkins (Ag); Manhattan
Thomas Burt Avery (Ag); Coldwater
Walter Worth Babbit (Ag); Willis
*Dorothy Lillian Bacon (MuE); Atchison
*Francis Daniel Baker (IJ); Junction City
Josephine Alice Baker (MuE); Miltonvale
Dorothy Attol Baldwin (GS); Manhattan
Russell Raymond Ballou (GS); Glasco
*John Henry Barhydt (GS); Hutchinson
Viola Frances Barron (HE&A); Kensington
*Richard Sherwood Bean (EE); Schenectady, N. Y.
*Frederick Elmer Beeler (C); Jewell
*Ray Gordon Beesley (EE); Gove
Paul Wayne Beitler (AA); Coldwater
Henry Daniel Bentrup (EE); Deerfield
Marcus Lorenzo Bergsten (VM); Cleburne
John Stephen Bidnick (ME); Kansas City
James Kenneth Bigford (Ag); Manhattan
John Alexander Black (CE); Galena
Dorothy Velma Blackman (GS); Manhattan
Addison Blair (VM); Manhattan
Gertrude Elizabeth Blair (IJ); Junction City
Hazel Florence Bland (HE); Garden City
Major Guy Bliss (CE); Minneapolis
*William Theodore Blowers (C); Kansas City
Howard Bohnenblust (EE); Leonardville
Helen Elizabeth Boler (HE); Dover
Opal O. Bowers (HE); Payette, Ida.
Francis Woodrow Boyd (IJ); Phillipsburg
Evelyn Marie Braden (HE); Wichita
Harry Bernard Brandon (C); Osawatomie
Mabel Rebecca Brasche (HE); Volland
Edward Louis Broghamer (ME); Wilkes Barre, Pa.
Earl Copeland Brookover (CE); Scott City
Richard Carlton Brown (ArE); Hill City
Rita Brown (PE); Edmond
Lloyd Richard Burdge (ME); Parsons
*David Dwight Burkhead (GS); Gove
Vernon Edward Burnet (Ag); Atlanta
John Bruce Burrows (ME); Chetopa

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* Matriculated 1932-'33.

† Also pursuing graduate study.

JUNIORS—*Continued*

Frank Sherman Burson (AA); Monument
Marvin James Busby (VM); Manhattan
Ulrich William Busch (Ar); Manhattan
*Raymond Leroy Buskirk (LG); Latham
Everett Leslie Byers (Ag); Hepler
Floyd William Caldwell (CE); Parsons
Olyn Danford Calhoon (AA); Manhattan
Ethel Irene Call (HE); Mound Valley
Richard Henry Campbell (AA); Grenola
*Shirley Polland Campbell (EE); Wichita
Cyril Anthony Carberry (VM); Manhattan
Cesar Bandelio Cardenas (ME); Manhattan
John Carr (Ar); Salina
*Mary Margaret Carr (IE&D); Kansas City, Mo.
*Vernon Lee Carter (CE); Coffeyville
Samuel Marshall Caughron (C); Manhattan
Cornelius Donald Chalmers (CE); Scranton
Virgil Theodore Chapman (CE); Manhattan
William Harley Chilson (Ag); Oberlin
Paul Edward Chleboun (VM); Manhattan
Arnold Joseph Churchill (ME); Junction City
Mary Jane Frances Clark (HE); Junction City
Thelma Mae Cless (C); Rossville
Bradbury Bedell Coale (VM); Manhattan
Harry Wyant Coberly (Ag); Gove
Ralph Elias Cole (IJ); Alton
*Franklin Grimes Colladay (ME); Hutchinson
Ruth Elizabeth Collins (HE); Ottawa
William Vaughn Combs (AA); Linn
Donald Emery Compton (C); Manhattan
*Zelma Nadine Conn (IE&D); Kirbyville, Tex.
Marcia Noyes Conrad (GS); Manhattan
Bertha Lina Cook (HE); Effingham
Orlena Rusha Cook (GS); Effingham
Ruth Martha Cook (HE); Larned
Edgar Alexander Cooper (EE); Stafford
Delbert James Jay Costa (GS); Hutchinson
Forrest Oliver Cox (VM); Blue Rapids
Pauline Violet Crawford (HE); Luray
Wayne Russel Criswell (ME); Manhattan
Ralph William Crouch (Acct); Everest
Richard Jerome Crowley (Ar); Manhattan
Gerald Lloyd Cubbison (CE); Gardner
George Jackson Davidson (Ar); Manhattan
Julia Marie Davis (HE); Nebraska City, Neb.
Kenneth S. Davis (Ag); Manhattan
William Barry Davis (CE); Burr Oak
*Marvin DeLapp (ME); Cherokee
Stephen Delladio (EE); Frontenac
Harold Oscar Dendurent (IJ); Goodland
Mary Falwell Dexter (HE); Columbus, Ga.
Walter Edward Dicke (VM); Louisburg
*Dean Alfred Dillon (EE); Highland
Merle Alfred Dodge (IC); Manhattan
William Lovejoy Dole (CE); Almena
Lawrence Beers Donaldson (EE); Kansas City, Mo.
John Joseph Donnelly (ME); Manhattan
*Frances Lorine Doornbos (GS); El Dorado
Orva Harrison Douglas (ME); Courtland
Wallace Reed Dudley (Ag); Goodland
George Wallace Duncan (Ar); Topeka
John Leroy Duncan (LG); Manhattan
Louis Bion Earle (EE); Washington
Margaret Laura Easterday (IJ); Greeley, Colo.
Arthur Harold Eberhart (EE); Burlington
*Doris Eunice Eberle (HE); McPherson
Dale Henry Edelblute (Ag); Keats
*George Wathen Edelen, Jr. (CE); Kansas City, Mo.
Olin Orlondo Ediger (CE); Newton
Marguerite Lena Edwards (HE); Athol
*Glen Ferrell Egan (CE); Altamont
Hal Field Eier (CE); Atwood
Loren Omer Elliott (Ag); Valley Center
Vorras Alexander Elliott (ME); McPherson
Vera May Ellithorpe (Ar); Russell
Oran Sylvester Emrich (EE); Wakefield
*Marian Edith Evans (Acct); Hartford
*Ralph Frederick Exline (CE); Salina
Ethel Belle Fairbanks (C); Manhattan
Eugene Patrick Farrell (ChE); St. Marys
John Moses Ferguson (AE); Bazine
*Kathleen Edith Fields (GS); Atchison
*Voight Raymond Fisher (CE); Atchison
Nathan Fligstein (IJ); Manhattan
Bernard Eugene Foote (VM); Manhattan
Blair Chester Forbes (ME); Leavenworth
Mildred Viola Forrester (PE); Wamego
LaVare June Fossnight (GS); Ottawa
*James C. Foulds (ME); Hutchinson
Donald Fox (IC); Longford
Archie French (EE); Augusta
Edna Henrietta Fritz (HE&A); Manhattan
Lawrence Charles Froelich (C); Abilene
*Marjorie Christine Fuhrman (HE); Atchison
Muriel Marietta Fulton (GS); Wichita
Ralph Dana Gage (PE); Manhattan
Edwin John Gantenbein (Ag); Elmo
Clara Bess Garrison (HE); Lincolnville
Donald George Gentry (CE); Manhattan
Richard Dale Gentry (EE); Garden City
Madge Kent Gibbs (HE); Manhattan
*William E. Gildersleeve (EE); Kingston, N. Y.
*George Lawrence Gill (IC); Raymond
Clarence Lee Gish (Ag); Abilene
Jack Going (ME); Topeka
Steve Walter Golem (IC); Olathe
Frank Donald Gomez (VM); Manhattan
Mae Gordon (HE); De Soto
Ralph Melvin Graham (PE); El Dorado
Hazel Roney Grant (GS); Manhattan
*Donald Clair Green (CE); Independence
Henry L. Greene (ChE); Topeka
Howard Homer Greene (ME); Topeka
*Jack Sylvester Gribben (IC); Parsons
Mayrie Anne Griffith (IJ); Topeka
Paul Wilson Griffith (Ag); Edmond
*Robert Merriam Groesbeck (IJ); Manhattan
Harold Ebert Grogger (Ag); Solomon
James Herbert Gumm (CE); Manhattan
Virginia Kay Haggart (HE); Topeka
Phil Creager Haggman (GS); Scandia
John Lowell Hakl (VM); Manhattan
Wilburn Hale (ME); Manhattan
Mary Aileen Hanley (HE); Topeka
Helen May Hanson (HE); Clifton
Louis Benton Hanson (Ag); Jamestown
*Helen Ruth Harper (IE&D); Herington
*Monita Harris (HE); Parsons
Kenneth Wilson Harter (IJ); El Dorado
Richard Otto Hashagen (EE-1; IC-2); Leavenworth
Irving Bennett Hawk (AA); Effigham
Louis Ernest Hay (ME); Clay Center
Frederick William Hayer (EE); Syracuse
Allen Richard Heidebrecht (EE); Buhler
Ralph G. Hendrickson (EE); Manhattan
John Herbert Hensley (VM); Manhattan
*ElDon Howard Hermes (EE); Great Bend

* Matriculated 1932-'33.

JUNIORS—*Continued*

Maybeth Herndon (HE); Amy
Richard Leo Herzig (M); Salina
Harold Crutchfield Hibbs (ArE); Osborne
*William Clarence Higdon (ME); Kansas City, Mo.
Frederick William Hill (C); Huntington, N. Y.
Ursula Edith Hiller (MuE); Manhattan
*Doyle F. Hoagland (EE); Jetmore
Claude Allen Hodshire (ME); Coffeyville
Tom Holmes (EE); Emporia
Eugene Honeycutt (PE); Blue Rapids
Ruth Geneva Hopkins (GS); Garden City
Pius H. Hostetler (Ag); Harper
Kenneth Rives Hougland (Ag); Olathe
Clarence Everett Hughes (C); Stockton
Walter Clare Hulburt (AE); Wichita
John Mark Hurd (VM); Manhattan
*Russell Joseph Hurt (EE); Manhattan
Don Curtis Hutchinson (Acct); Hutchinson
George Lyons Huyett (EE); Berryton
George Raleigh Irvine (AE); Stafford
*Eleanor Jane Irwin (IE&D); Highland
Wayne Worley Jacobs (Ag); Harper
Doris Jaedicke (Acct); Hanover
Amy Eva Jasperson (IJ); Colby
Ray Christian Jensen (VM); Herington
Edward Groh Johnson (EE); Emporia
Harry Clarence Johnson (FME); Marquette
Marie Johnson (HE&A); Columbus
Donald Robert Johnston (C); Manhattan
Louise Hamilton Johnston (C); Manhattan
Lenore Elizabeth Jones (PE); Chanute
Louise Emma Jones (GS); Manhattan
Mary Irene Jordan (HE&A); Beloit
Helen Shell Joseph (HE); Kirwin
William Gottlieb Kaeser (C); Manhattan
Clarence Eugene Keith (AA); Ottawa
Eugene R. Kell (LG); Manhattan
*Florence Faye Keller (HE); Delia
Edward Guerrant Kelly (GS); Manhattan
Ida Emma Comstock Kelly (C); Fort Scott
Lawrence Lincoln Kelly (LG); Seymour, Mo.
Ronald A. Kennedy (VM); Manhattan
Daniel Oscar Kent (GS); Monroe, Mich.
*Joseph Burdett Kepler (EE); Fort Scott
Howard Luther Kester (VM); Cottonwood Falls
John Ambrose Key (ChE); Kansas City
Alice Day Kimball (GS); Manhattan
Howard Maxwell Kindsvater (IC); Wichita
Clara Bess King (HE); Manhattan
Roy Charles Kirkpatrick (EE); Manhattan
Alton Sawyer Knechtel (ArE); Manhattan
Frances Irene Knerr (GS); Manhattan
Arthur Henry Knost (VM); Manhattan
Benjamin Christ Kohrs (AA); Elmo
Clark F. Kostner (C); Murdock
Louise Kinney Krehbiel (HE&A); Newton
Waldo Ottive Kretzmeier (Ar); Manhattan
Amelia Kroft (IE&D); Wilson
William Carroll Lacy (EE); Everest
*Geraldine Frances Lancaster (HE); Parsons
Donald Clell Landon (IC); Topeka
Ruth Elizabeth Langenwalter (Ar); Wichita
*Liebmann Gordon Langston (C); Hutchinson
Raymond Price Latimer (AA); Topeka
Helen Katherine Latta (HE); Holton
John Russell Latta (Ag); Holton
Barbara Lautz (HE&A); La Junta, Colo.
James Buchanan LeClere (PE); Coffeyville
*Walter John Leemhuis (EE); Rome, N. Y.
Wilbur Max Lehman (Ag); Wathena
Guy Hussey Lemon (IC); Manhattan
*Charlotte Louise Leuenberger (GS); Overland Park
Lois Isabell Lewellen (HE); Newton
Grace M. Light (C); Liberal
Leora Bernice Light (PE); Liberal
*Ruth Merriam Linscott (HE); Farmington
Charles Howard Lockhart (GS); Junction City
*Orval Franklin Lockhart (ME); Hays
Elmer Ira Long (VM); Manhattan
Ada Grace Lorimer (HE); Olathe
John William Loth (EE); Manhattan
Jack Algernon Lowell (PE); Glen Elder
Virgil Ferdernand Lundberg (EE); Falun
Arthur Conrad Lundgren (EE); Osage City
Carrie Ann McAninch (MuE); Stockdale
*Kenneth Deardorff McCall (CE); Manhattan
Max Elton McCluggage (FME); Manhattan
Zada Gayle McCutchen (PE); Kingman
Alvin Rutti McDonald (VM); Bremen
Robert Carlyle McIntire (CE); Belleville
Donald King McKenzie (Ag); Solomon
Florence E. McKinney (HE); Bartlesville, Okla.
Katheryn Ann McKinney (PE); Bartlesville, Okla.
Tillman Henry McNary (ChE); Manhattan
Ione Olivia Clothier McNay (IJ); Manhattan
Charles Dean McNeal (AA); Boyle
Margaret Alice Madaus (IE&D); Hutchinson
*Madge Elizabeth Mahoney (GS); Atchison
Katherine Amelia Manker (HE); Vernal, Utah
Ralph Edwin Mariner (ME); Fredonia
Clara Jean Martin (MuE); Manhattan
James Warren Mather (AA); Grinnell
*Hugh Sickner Maxwell (EE); Wichita
Gladys Edra Mellinger (HE); Milford
Everil Dwain Merkley (VM); Manhattan
Clarence Charles Merriman (VM); Manhattan
Ernestine Merritt (IE&D); Haven
Elmer Louis Metcalf (VM); Manhattan
Lloyd William Michael (VM); Eudora
Clement Lambert Miller (VM); Manhattan
Elsie Lee Miller (HE); Manhattan
Erma Jean Miller (PE); Manhattan
Harrison Allen Miller (EE); Cawker City
John Arville Miller (Ag); Meriden
Norris Edward Miller (ME); Kansas City
Philip Ray Miller (CE); Wells
Reba Clare Miller (C); Haviland
James Martin Mills (CE); Kansas City
Catherine Beatrice Mitchell (C); Concordia
Ralph Emen Mitchell (Ar); Manhattan
Orville Bertrand Moody (Ag); Riley
Orven Donald Moore (C); Byers
Virgil Stanton Moore (ChE); Altoona
Maxine Emma Morehead (HE); Baltimore, Ohio
Helen Kathryn Morgan (PE); Newton
Lee Thomas Morgan (AA); Hugoton
Mary Kathryn Morgan (HE); Manhattan
Muriel Frances Morgan (HE); Manhattan
Irene Morris (HE); Paxico
J. Atwood Morrison (C); Hutchinson
Dorothea Jeanette Moser (GS); Blue Rapids
Bernice Naomi Mosser (C); Larned
Lillian Kelly Mosshart (C); Manhattan
*Mildred Rella Mowery (HE); Salina
Harold Hawley Munger (CE); Manhattan

* Matriculated 1932-'33.

JUNIORS—*Continued*

Arthur Raymond Munns (ArE); Kansas City
Leslie Eugene Murphy (ME); Galena
Hal Thomas Mydland (VM); Horton
Obed Edmund Myrah (AH&V); Manhattan
Joseph P. Neill (Ag); Miltonvale
Harold Milton Nellans (ME); Potwin
Jennie Joy Nelson (HE); Holton
Nevlyn Richard Nelson (AA); Belle Plaine
Norman August Nelson (C); Jennings
Raymond Maurice Nelson (CE); Troy
Tillman Harvey Nelson (VM); Manhattan
Paul A. Neuschwanger (EE); Bloomington
Clifford Franklin Newell (EE); Manhattan
James B. Nichols (VM); Manhattan
Herbert Truman Niles (AA); Olivet
Merwin Edgar Nixon (Ag); Manhattan
Gilbert George Noble (CE); Lyons
James Carr North (Ag); Kansas City, Mo.
Don Leroy Nutter (IJ); Republic
Clayton Omar Obenland (IC); Manhattan
Ruth Obenland (GS); Manhattan
Milo Claire Oberhelman (GS); Randolph
Roberta Delane Odle (HE&A); Manhattan
Cora Maurine Oliphant (PE); Offerle
Morton Dennison Olmstead (GS); Manhattan
*Ethel Olney (IE&D); St. Joseph, Mo.
*Glenn O. Olson (EE); Opolis
*James Andrew O'Malley (ChE); St. Joseph, Mo.
Edwin George Orrick (CE); Ellis
Audrey Evelyn Osborn (HE&A); Waverly
Henry John Osterholtz (VM); Manhattan
Richard Reese Owen (GS); Fort Riley
Betty Ozment (HE); Manhattan
Gene Pakozdi (EE); New York, N. Y.
Clair Norman Palmer (EE); Kincaid
Edith Corene Parker (IJ); Manhattan
John Roland Patton (AA); Columbus
Lormor Allen Pearman (Acct); Holton
Miriam Peck (GS); Jewell
Kathryn Ruth Pelton (GS); Manhattan
Erma Juanita Perry (HE); Greenleaf
Hester Marie Perry (IC); Fredonia
*Lloyd Arthur Perry (EE); Essex Junction, Vt.
Paul Chadwick Perry (ME); Manhattan
Milfred John Peters (IJ); Halstead
Elmer Petsch (ME); Waterville
Howard Bratton Pettibon (C); Hutchinson
Helen Mae Pickrell (HE); Minneapolis
Benjamin David Pile (EE); Ottawa
Wilfred Harold Pine (Ag); Lawrence
*George Ernest Pinter (EE); Waterbury, Conn.
Lucile May Piper (HE); Kanorado
Hal Walter Poole (EE); Topeka
John Stook Rader (CE); Smith Center
Paul Francis Ragland (IJ); Manhattan
James Frederick Ransom (ME); Manhattan
Mary Elizabeth Ransopher (IJ); Clyde
Harlen Edwin Rathbun (Ar); Manhattan
Paul Beck Rayburn (C); Newton
Evelyn Elleen Reber (HE); Morrill
*Margaret Mary Reddy (IJ); Baxter Springs
Harriet M. Reed (GS); Holton
Helen Marjorie Reed (GS); Circleville
Henry Clay Reppert (IJ); Harris
Nelson Stanley Reppert (IJ); Harris
James Hazen Rexroad (GS); Hutchinson
*William C. Rhodes (CE); Neodesha
James Cornelius Richards, Jr. (ChE); Manhattan
Culver Willis Rippetoe (VM); Meriden
Joseph Alexander Ritchie (Ag); McLouth
Howard Elliott Rivers (Ar); Manhattan
Hubert Maxwell Rivers (ChE); Manhattan
Stanley Irving Roberts (ME); Chanute
Herbert Louis Robinson (ChE); Cimarron
Sidney Alfred Robinson (C); Parsons
Eugene Curtis Roe (Ag); Manhattan
Paul John Rohm (C); Topeka
Robert Talbot Romine, Jr. (Ag); Kansas City, Mo.
Maxine Gan Roper (HE); Manhattan
Leland Jay Rose (EE); Council Grove
Dorothy Rosencrans (GS); Manhattan
Lois Rosencrans (PE); Manhattan
Arthur George Rosenkrans (ME); Dorsey, Neb.
Leonard Anthony Rosner (VM); Bucyrus
Sarah Frances Rosser (HE&A); Pratt
Mira May Roth (HE); Ness City
William Hugh Roth (CE); Ness City
Carl H. Rupp (Ag); Moundridge
Dougal Russell, Jr. (PE); Manhattan
Mabel Esther Russell (MuE); Manhattan
Robert Newton Salkeld (CE); Lincoln
*Marion K. Salmans (Acct); Garden City
Mary Katherine Samuel (HE); Manhattan
William Ned Samuel (LA); Manhattan
*Nils Irmaii Saven (EE); Gardner, Mass.
Mildred Erma Ruth Schlickau (HE); Haven
Erma Ann Schmedemann (GS); Manhattan
Lawrence Ralph Schmutz (C); Chanute
Carl William Schultz (VM); Manhattan
Ephraim Orion Schwab (AE); Gridley
Beverly Horace Scott (CE); Atwood
Clifford Le Roy Scott (GS); Norway
Harold J. Scott (C); Altoona
James Herndon Scott (EE); Kansas City, Mo.
*Lloyd Hoyt Scott (EE); Sidney, N. Y.
Sarah Elizabeth Scott (IJ); Manhattan
Lois Mae Scripter (HE); Herington
*John Leon Sealey (ChE); Salina
Richard Melvin Seaton (IJ); Manhattan
Martin Gerhard Seibel (CE); Ellis
Elsie Fern Selby (HE); Manhattan
Ben Alfred Sellers (CE); Lyons
Gardner Charles Sellers (GS); Downs
Hollis Lee Sexson (HE); Goodland
Marvin Riederer Shaw (FME); Holton
Mildred Faye Shawver (HE&A); Kincaid
Helen Georgia Shedd (HE); Tribune
*Frances Martha Shields (IJ); Hoxie
Melvin William Shroeder (EE); Grandview, Mo.
Herbert Franklin Sibert (VM); Manhattan
Althea Lenora Siddens (HE); Blaine
Albert Earnie Siler (EE); Garden City
Val Silkett (Ag); Downs
William Philip Simpson (CE); Salina
Revis Everett Sisney (IJ); Bonner Springs
Charles Scott Skinner (CE); Tyro
Gladys Naomi Skinner (C); Topeka
Loren Courtland Skinner (ChE); Tyro
Louise Sklar (VM); Manhattan
Andrew C. Skradski (C); Kansas City
Walter S. Smith (C); Cottonwood Falls
*Maurice Sheppard Smyth (EE); St. Joseph, Mo.
Norman John Sollenberger (CE); Manhattan
Herbert Eugene Somerville (C); Manhattan
Ted Sommers (GS); Leoti
Howard Scott Spear (EE); Leoti
Ralph Westly Spears (CE); Mulvane
*Ernest Rudolph Specht (CE); Emporia
*Jane Elizabeth Speed (HE&A); Parsons
Elsie Virginia Speer (IJ); Manhattan

* Matriculated 1932-'33.

JUNIORS—*Concluded*

*Marian Stahlman (GS); Potwin
*Betty Stanley (MuE); Wichita
Mabel Sophie Stener (IJ); Courtland
Charles William Stewart (AE); Hunter
Marion R. Stiles (IC); Jewell
Lois D. Stingley (PE); Manhattan
Jewel Stockdale (HE); Kansas City
Edward Stone (C); Manhattan
Thomas Benjamin Stone (CE); Leavenworth
Aaron Cecil Stoner (C); Wichita
Emma Anna Storer (IJ); Muncie
*Frank Burnette Stratford (C); El Dorado
Doris Catherine Streeter (HE); Milford
Hilmar Clinton Stuart (GS); Nickerson
Loran Glenn Stuky (EE); Steamboat Springs, Colo.
William Herman Sunderland (CE); Fairview
Byron Gilman Swain (IJ); McPherson
Santos Dumont Swancy (EE); Kansas City
Jane Allen Swenson (PE); Phoenix, Ariz.
Dean Edwin Swith (CE); Olathe
Melvin Paul Tack (EE); Gaylord
William A. Talbott, Jr. (GS); Wichita
*James Willett Taylor (AA); Lawrence
Robert Ray Teagarden (Ag); La Cygne
Arthur Rheinhart Thiele (VM); Bremen
Ruth Thomas (IJ); Baxter Springs
*Dwight Jesse Thompson (Ag); Wichita
*Marianna Elizabeth Thompson (GS); McPherson
Marion Thompson (HE&A); Manhattan
Walter Theodore Thompson (ME); Osage City
Willis Alexander Thomson (VM); McCune
Richard Fred Thonen (ME); Whiting
John Herman Tietze (C); Kansas City
*Arthur Duckworth Tindall (IC); Hutchinson
Helen Tolin (PE); Havensville
Olen Trotter (EE); Anthony
Linford L. Truax (AA); Peabody
Charles Frederick Turner (C); Hartford
Ernest John Ubelaker (GS); Willis
Jorn Boyd Underwood (IJ); Manhattan
Lillian Marie Vail (GS); Marysville
John Sumner Van Aken (IC); Lyons
James Paul Vandergriff (GS); Douglass
*Loyal Van Doren (CE); Hays
Grace Emily Van Scoyoc (HE); Mont Ida
Edna Greever Van Tuyl (IJ); Manhattan
Francis Arthur Vaughn (CE); Hartford
Paul Burton Vautravers (GS); Centralia
John Emery Veatch (AE); Manhattan
Carl Norton Vickburg (ChE); Talmage
*Charles Henry Vinckier (CE); Kansas City, Mo.
Harold Parker Walker (AA); Bucklin
Camilla Joyce Wallace (GS); Ness City
Wilfred Nuffer Wallace (ME); Augusta
Esther Loretta Walters (HE); Manhattan
William Theodore Walters (CE); Manhattan
Laura Lillian Ward (HE); St. Joseph, Mo.
Eugene Decatur Warner (ArE); Ottawa
*Forest Otto Waters (EE); Fort Scott
Harold Clinton Weathers (CE); Haviland
Virgil Leland Weaver (EE); Garden City
Russell Wayne Webb (C); Hardtner
Samuel Omer Webster (EE); Manhattan
Marvin Arthur Weihe (ArE); Bushton
*John Fletcher Wellemeyer (GS); Kansas City
Ovitt Melvin Wells (EE); Syracuse
Melvon Hadson Wertzberger (AA); Alma
Neil Joseph Weybrew (Ag); Wamego
Robert Gnon White (AE); Manhattan
*Mary Bessie Whitelaw (IJ); Kingman
Paul C. Wilber (ME); Belleville
Jane Gibbons Wilcox (HE&A); Fort Riley
Millard Waldo Wilcox (CE); Wichita
Leroy Albert Wilkinson (ArE); Manhattan
*Prentice Fay Willis (GS); Manhattan
D. Alice Wilsey (PE); Washington
Alma Wilsey (GS); Washington
Albert Bentley Wilson (Ag); Manhattan
Lewis Alfred Wilson (CE); Valley Center
Ralph Waldo Winget (ME); Garden City
Donald Henry Woodman (LG); Manhattan
Abram Dwight Woodruff (VM); Manhattan
Kennith Daniel Worley (IJ); Randall
*Rachel Faye Worrel (IJ); Manhattan
*Joyce G. Wright (EE); Topeka
Burl Zimmerman (ArE); Manhattan

SOPHOMORES

Lyman Emmett Abbott (PE); Phillipsburg
Orval Jack Abel (GS); Manhattan
*William Roy Adair (PE); Los Angeles, Cal.
Carson Hugh Adams (EE); Sterling
Charles Edward Adams (EE); Garden City
Robert Francis Adams (CE); Wellington
Louis Carlyle Aicher, Jr. (EE); Hays
Bartlett Vernattie Allen (GS); Manhattan
Raymond Jacob Anderson (EE); Le Roy
Myrtle Louise Andres (PE); Alta Vista
*Ellen Ardath Armstrong C); Sylvia
Ralph W. Armstrong (CE); Manhattan
Richard Elliott Armstrong (PE); Riley
Lawrence Robert Arnett (Acct); Broughton
*Clarisa Emeline Arnold (HE); Frankfort
Stephen Grieve Asbill (VM); Manhattan
Clarence William Ater (AA); Fort Scott
Buford Dean Baker (CE); Chanute
Charleen Alyce Baker (IJ); Greensburg
Monroe Balton (VM); Kansas City
John Virgil Baptist (EE); Uniontown
Ralph Raymond Barr (EE); Manhattan
Wilma Mildred Barr (GS); Manhattan
Alice Loy Barrier (IC); Topeka
*Elizabeth Sarah Battersby (PE); Salina
Charles Benjamin Bayles (CE); Manhattan
Buell Wesley Beadle (IC); St. Marys
Charles Ludwig Beal (Ar); Avoca, N. Y.
Hazel Aelene Bebermeyer (HE); Enterprise
*Thomas Gilbert Beckwith (ME); Hiawatha
George Rowan Bell (ME); New Cambria
Walter Mark Bellairs (CE); Salina
*Ethel Mae Bellis (IE&D); Ottawa
Fred Jacob Benson CE); Grainfield
Esto Ray Berkey (CE); Manhattan
Raymond J. Bertholf (Ar); Pueblo, Colo.
Jack Edward Bieber (Acct); Osborne
Paul Everett Blackwood GS); Talmo
Dan Wesley Blain (PE); El Dorado
Arthur August Boeka (Ag); Colby
Albert Henry Boggs (CE); Emporia
Norman Cellars Booth (EE); Topeka
William Raymond Brady (AA); Vermillion
*Fred Charles Bramlage (Acct); Junction City
Ben Edward Brandejsky (EE); Severy
Francis Eastham Brenner (EE); Waterville
*Lee Justin Brewer (Ag); Hartford
Wilma De Nell Brewer (GS); Riley
Wesley Herman Brinckman (C); Manhattan
George Ralph Brindle (ME); Fredonia
*Eunice Brown (GS); Sylvia
*Frank Otto Brown (IJ); Kansas City
Henry McLauren Brown (Ag); Fall River
William Everett Brown GS; Junction City

* Matriculated 1932-'33.

SOPHOMORES—*Continued*

Eva Brownewell (PE); Wichita
*Anna Lee Evelyn Brubaker (HE); Aliceville
*E. Marjorie Brubaker (HE); Marysville
Stanley Franklin Brubaker (EE); Aliceville
Jeanne Virginia Bryan (IJ); Delia
John Ross Bryant (Ag); Wichita
Charlotte Lela Buchmann (IJ); Clay Center
Wayne Burbank (AA); Benton
Max Lewis Burk (IJ); Manhattan
Mary Alberta Burdette (HE); Kansas City
Chester Lacartus Burr (CE); Galena
Tom Bateman Bushby (PE); Belleville
*LeRoy Warden Butler (Ar); Independence
Wilma Lois Byers (GS); Hepler
Marjorie Call (IJ); Manhattan
*Gerald Wayne Callahan (EE); Coffeyville
Leonard Willis Carrel (EE; Topeka
Robert Steele Cassell (ArE); Salina
*Elizabeth Jo Cates (IJ); Salina
Joseph Leon Cavanaugh (VM); Esbon
Robert Miles Chambers (ChE); Hutchinson
*Walter Eugene Chappell (AE); Chanute
Charles Elbert Cheney (EE); Abilene
Claude Cyril Cheney (GS); Kanorado
Hilbrand David Chilen (LG); Miltonvale
Alvin Joseph Clark (ME); Pratt
Elda Ione Clausen (HE); Alton
Ralston Clouse (EE); Preston
*James Wendell Coate (IC); Miltonvale
James Pratt Coffman (EE); Sedgwick
Thelma Louise Coffman (GS); Manhattan
Charles Elmer Cole (EE); Everest
Donald Warlick Collins (CE); Junction City
Catharine Helen Colver (MuE); Manhattan
Wilber Eugene Combs (EE);
Bartlesville, Okla.
Pauline Elizabeth Compton (C);
Manhattan
Ned Dennis Conrow (Ag); Manhattan
Lenore Vinneal Converse (HE); Harveyville
Ivan Bernard Conwell (GS); Manhattan
Olga Elizabeth Cook (HE); Leavenworth
Wilma Cook (PE); Ash Valley
*Hildred Ann Cooper (HE); Chase
Donald Risdon Cornelius (Ag); Wheaton
Bernice Eileen Covey (MuE); Miltonvale
William Chris Covington (C); Wellington
William David Cowan (GS); Manhattan
Wilma Marion Cowdery (HE&A); Lyons
Chevalier Francis Crandell (EE);
Falls City, Neb.
Merle Levon Cranston (EE-1; IC-2);
Langdon
Wade Overton Crawford (ArE); Manhattan
Joseph Franklin Creed (PE);
Bartlesville, Okla.
David Scott Crippen (EE); Council Grove
Roy Doubt Crist (AE); Brewster
Julia Ellen Crow (MuE); Silver Lake
*Carol May Cunningham (HE&N);
El Dorado
Dale Rush Curtis (EE); Manhattan
Philip Burdette Dale (IC); Topeka
Arthur Henry Daman (VM); Salina
Lawrence Aldon Darnell (GS); Osborne
Stephen Prema Das (Ag); Bangalvere, India
Sam Lyle Daugherty (GS); Waterville
*Russell Thomas Daulton (Ag);
Flemingsburg, Ky.
Anna Marie Davis (HE); Manhattan
Caldwell Davis, Jr. (AA); Bronson
Ella Rae Davis (IE&D); Manhattan
Evan Lloyd Davis (Ar); Topeka
Paul Alvin Davis (GS); Emmett
Jessie Gertrude Dean (IJ); Princeton
K Ruth De Baun (IJ-1; HE&J-2); Topeka
Willem Jacobus Dekker (VM); Manhattan
Narcissus Baldonada Della (C); Manhattan
*Myron Samuel Dendurent (ChE); Goodland
*John William Dennis (ME); Oswego
Jean McDougal Dexter (HE&A);
Columbus, Ga.
Raymond John Dicken (Ag); Winfield
Ferne Lucille Dixon (HE); Agra
Ernest Dobrovolny (GS); Manhattan
Raymond Joseph Doll (AA); Ellinwood
Laurence Charles Donat (VM); Manhattan
Josephine Bernice Donnelly (C);
Goodland
Hal Hollingsworth Doolittle (EE);
Kansas City, Mo.
*Merlin McKirahan Douglas (EE); Topeka
Alice Louise Droz (IE&D); Humboldt
Wendell Dubbs (EE); Ransom
Alley Hugh Duncan (EE); Andover
Albert Richard Duree (EE); Perry
Henry Duvanel (Ag); Benton
Edward Albert Dyck (GS); Halstead
Carl D. Eagan (C); Goodland
Harold Francis Eddington (CE);
Dodge City
Helen Virginia Ehrlich (HE&A); Marion
Lucy Elizabeth Elkins (HE&A); Wakefield
Albert Roland Elliott (GS); Stafford
Ellurena Pauline Emery (HE); Kansas City
Florence Muriel Emery (GS); Tescott
James Russel Epperson (C); Hutchinson
George Erdtmann, Jr. (PE); Ellsworth
Lewis Saxton Evans (Ag); Washington
Robert Lyle Evans (EE); Sabetha
Evelyn Pauline Ezell (HE); Pratt
Wilson Blaine Fagerberg (GS); Olsburg
Herbert Henry Fechner (VM); Manhattan
Louise Agnes Fenner (C); Jewell City
Panice Verla Finch (IJ); Oketo
Rex Bird Finley (CE); Elk Falls
Oscar Frederich Fischer (VM);
Junction City
Loyal Harrell Fisk (VM); Manhattan
William David Fitch (MuE); Manhattan
John Leo Flentie (ME); Centralia
Belle Amanda Forney (HE); Goodland
Hazel Mary Foust (C); Leona
Ella Louise Fouts (IJ); McPherson
Richard George Fowler (IJ); Holton
Edward W. Frahm (VM); Manhattan
*Edith Fern Frankenbery (HE); Altoona
John Warren Frazier (CE); Manhattan
Velma Mary French (IJ); Concordia
Frank Harold Fulker (Ag); Culver
*Elsie Marie Fulks (IE&D); Langdon
*George Elwyn Fuller (PE); Topeka
Don Bernard Fullmer (CE); Elkhart
*Max Wayne Gallagher (C); Wellington
*Fred Earl Garrison, Jr. (ArE); Parsons
George Junior Garrison (Ag); Goodland
Clarence Henry Gatch (Acct); Woodbine
Chester Dale George (GS); Manhattan
Hugh Cecil Getty (ChE); Winchester
Dwight Ivan Gillidett (ArE); Plains
William David Gilligan (PE);
Schenectady, N. Y.
William Rollie Gohn (ME); Protection
*Karl Leonard Goss (IJ); Dwight
*Carlyle Cawthorn Grage (AA); Wichita
Celestine C. Graham (Ag); Stockton
Harry White Grass III (LG); La Crosse
Ronald George Grebner (CE); Manhattan
Harold Stacy Greve (EE); Anthony
Maurice Lee Gunn (C); Great Bend
George Van Arsdale Hahm (EE);
Manhattan
Frank Frederick Hamilton (EE); Norton

* Matriculated 1932-'33.

SOPHOMORES—*Continued*

Richard Howard Hamilton (EE); Washington
Mary Louise Hampshire (HE); Manhattan
*Lurton Elno Hankins (ME); Topeka
James Leslie Hanlin (GS); Manhattan
Homer Peter Hanson (PE); Riley
Lawrence George Harmon (Ag); Hutchinson
Harold Hall Harris (EE); Grinnell
Helen Ethel Harris (HE); Kansas City
Kenneth Warden Harris (ME-1; IC-2); Kansas City, Mo.
George Bertrand Harrop (C); Manhattan
Howard Lee Hartman (ME); Hoisington
John Leffel Hartman (ME); Omaha, Neb.
Clarence Evan Haughawaut (IJ); Onaga
*Alunda Mae Hayes (HE); Onaga
David Armand Hays (IJ); Manhattan
Harriet Glenn Healy (C); Manhattan
Elmon Graves Heaton (GS); Norton
*Hazel Ruth Heikes (GS); Wakefield
Robert Leroy Heinshon (EE); Newton
Richard Lyle Heinz (PE); Grainfield
Karl Mills Hemker (EE); Great Bend
Paul Wilson Hensleigh (Ag); Winchester
Lucille Evangeline Herndon (MuE); Amy
Edward William Herskowitz (ChE); Manhattan
Leonard Wilbur Hibbs (VM); Manhattan
Paul Myron Hicks (EE); Norcatur
Margaret Higdon (MuE); South Haven
*Neva Inez Hilton (HE); Attica
Paul Nelson Hines (AE); Ashland
Kenneth Harold Hinkle (Ar); Manhattan
Rolland Theodore Hinkle (ME); Carbondale
Everett A. Hinz (ME); Abilene
Homer Orello Hoch (EE); Riley
Arthur Jacob Hochuli (ChE); Holton
Garland Clarence Hoglund (IC); Miller
Rosema Louise Holman (HE); Manhattan
*Mabel Marie Holt (GS); Manhattan
Crosby Johnson Hook (VM); Braymer, Mo.
*Boyd Herbert Hope (AA); Moundville, Mo.
Victor Hopeman (AE); Independence
*Maurice Wilson Horrell (EE); Baldwin
*Page Hyre House (EE); Wichita
Jack Wesley Householder (C); Clay Center
Edward Anderson Houser (EE); Rock
David Marion Howard (VM); Manhattan
Junior H. Howard (EE); Oberlin
Howard Busby Hudiburg (ChE); Independence
Archie Huey (CE); Ogden
Margaret Hughes (C); Manhattan
Anita Ann Humbert (HE); Harper
Mary Frances Hurley (HE); Paola
Patricia Deverlaux Irwin (MuE); Manhattan
Donald Fred Isaacson (AH&V); Topeka
Leonard Barclay Izard (EE); Carthage, Mo.
Frances Marian Jacks (IJ); Harper
Shirley Maxine Jacobs (MuE); Lenora
Thelma Irene Jacobs (C); Concordia
Frank Edwin Jacobson (C); Manhattan
*Glenn Curtis James (GS); Andover
George Homer Jameson (LG); Garrison
Dolores Marie Jehlik (HE); Cuba
Frances Marie Jessee (HE); Centralia
Harold Jack Jewell (VM); Manhattan
Charles Jobes, Jr. (ChE); Pretty Prairie
Dorothy Etna Jobling (GS); Manhattan
George Loomis Jobling (ChE); Caldwell
Geneva Johnson (HE&J); Frankfort
Genevie Rachel Johnson (C); Topeka
Howard Walter Johnson (C); Sublette
*James Meredith Johnson (AE); Sylvia
Jay Bernard Johnson (C); Olsburg
Ruth Caroline Johnson (HE); Belvue
Sanford Edwin Johnson (VM); Manhattan
Tom Robert Johnson (C); Topeka
Vinton Gustaf Johnson (EE); Manhattan
Ruth Elizabeth Jorgenson (HE); Manhattan
William Henry Juzi (Ag); Florence
Jane Kahl (IJ); Topeka
Walter Clifton Kellen (C); Manhattan
*Althea Leonore Keller (HE); Enterprise
Warren Ferdinand Keller (EE); Great Bend
Donald Clifford Kelley (VM); Great Bend
Samuel Kelsall III (VM); Lawrence
*Robert Burton Kendall (CE-1; GS-2); Dwight
Elna Ralph Kennedy (VM); Chase
George Miller Kerr (VM); Manhattan
James Randle Ketchersid (AH&V); Hope
Henry Adams Kilian (EE); Chapman
Jay Grant Kimball (C); Manhattan
Ned William Kimball (GS); Manhattan
Leslie Waterman King (FME); Wichita
Walter Henry King (GS); Manhattan
Henry Charles Kirk (Acct); Scott City
*Walter Meredith Kirkpatrick (AA); Hutchinson
Darwin Bruce Kissinger (CE); Manhattan
Zelda Mary Kleven (HE); Superior, Neb.
Joseph Frank Knappenberger (VM); Penalosa
Kathryn Marie Knechtel (HE); Larned
*Jack William Knittle (GS); Salina
*Marian Elizabeth Knostman (IJ); Oak Park, Ill.
*William Charles Kosinar (ArE); Manhattan
James Kral (VM); Omaha, Neb.
Duane Eldon Kratzer (Acct); Salina
Dorothy Orlene Krig (HE); Manhattan
Elenor Lee Kubin (IJ); McPherson
*Virgil Thornton Lake (AA); Lake City
Edwin Rector Lamb (Ag); Manhattan
Elizabeth Lamprecht (HE); Manhattan
Leslie Kummer Lancaster (Acct); Junction City
Olga Christene Larsen (HE); Vesper
Warren Donald Larson (C); Manhattan
Bernice Fawn Lathrop (IJ); Smith Center
*Fred Christopher Latimer (GS); Manhattan
*Jaconette Lawrence (IJ); Council Grove
*Georgia Brinson Lewis (IJ); Wichita
Walter Morris Lewis (Ag); Larned
*Vivian Ruth Light (C); Manhattan
*Melvin August Lindahl (EE); Enterprise
Ralph Lee Locke (EE); Erie
William Yew Look (ME); Denver, Colo.
*Myra Estelle Lorimer (GS); Olathe
*Florence Elma Lovejoy (HE); Almena
Madeline Marie Lowe (IJ); Manhattan
Otto Walter Ludloff (VM); Honolulu, Hawaii
Lois Anne Lumb (HE); Wakefield
Chauncey Karl Lundberg (IJ); Manhattan
Gilbert Gordon Lundgren (Ag); Clyde
De McAninch (C); Wamego
Ralph Fillmore McAtee (PE); Council Grove
Lester La Verne McBride (VM); Manhattan
Myrna Amelia McClure (GS); Manhattan
Herbert McCollom (CE); Dodge City
George Lester McColm (Ag); Emporia
Mary Lucile McConathy (HE); Roodhouse, Ill.
Edmund Burke McCormick (GS); Manhattan

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SOPHOMORES—*Continued*

Neil Arthur McCormick (ChE); Oatville
Lloyd Everett McDaniel (GS); Michigan Valley
Vida Edith McDaniel (HE); Edson
Glenn Melvin McFadden (VM); Natoma
Edward Nash McGraw (VM); Manhattan
James Lawrence McIntire (ME); Burlingame
Mary Roberta McMullen (HE&N); Oberlin
Welda Lucille McNally (IJ); Olathe
Joe Kenneth McNay (PE); Manhattan
Don Lee Mace (VM); Manhattan
George Woodrow Maddox (GS); Manhattan
Lehman Dedrick Madsen (EE); Corbin
Joe David Manges (VM); Courtland
*Geneva Louise Marble (HE); Troy
Wilma Nina Marsh (HE); Chanute
Arlene Marshall (HE); Herington
Joseph Ralph Marshall (PE); Kansas City
John Mark Martin (CE); Kansas City
Wallace Bayless Martin (ChE); Wichita
Elva Coreen Marty (HE); Courtland
Philip Sheridan Mason (IC); Manhattan
Irl McClellan Mayden (GS); Manhattan
James Daniel Mayden (EE); Junction City
Floyd James Mayer (CE); Wetmore
Harriet Katharine Mayer (MuE); Alta Vista
Allen Edward Mayhew (ChE); Belpre
Bessie Louise Meador (GS); Olathe
Ruth Marie Mears (HE); Simpson
Verna Florence Melchert (IE&D); Lorraine
David Frances Mickey (CE); Junction City
Edgar William Millenbruck (VM); Herkimer
Edwin Louis Millenbruck (VM); Herkimer
Cecil M. Miller (C); Lyons
Donald Wesley Miller (GS); Hanover
Roy Forest Miller (VM); Atlantic, Iowa
Kenneth Byron Milliken (CE); Tecumseh
Loyal Kay Mock (ME); Osborne
Milton Hiram Mohn (ChE); Ellinwood
George Eugene Monroe (IJ); Lyons
Charles Calvin Moore (Acct); Manhattan
John Ewing Moore (ME); Muscotah
Howard Anthony Moreen (Ag); Salina
*Joseph Wade Morey (GS); Narka
Emory Lavern Morgan (Ag); Ottawa
Reece Donald Morgan (Ar); Hugoton
Myrtle Mae Morris (HE); Paxico
Opal Emma Morris (GS); Riley
Stanley Chattan Morris (IJ); Paxico
Frances Emma Moss (HE); Lincoln
John Englin Bertus Mouw (VM); Manhattan
Roland Alpheus Munsell (Ag); Sedgwick
Charles Ernest Murphey (Ag); Leoti
Robert Dean Murphy (ChE); Tulsa, Okla.
Charles Cornelius Murphy (IC); Clyde
*Helen Cecile Murphy (C); Manhattan
Joseph Patrick Murphy (C); Schenectady, N. Y.
*Margaret Nina Myers (IJ); Wichita
Williamette Navarre (HE); Rossville
*Ruth Kathryn Neihart (IJ); Lyndon
Mildred Violet New (HE); Leavenworth
Chapin Smith Newell (IJ); Holton
H. Vedder Nichols (C); Manhattan
Thelma Eleanor Nichols (IJ); Manhattan
Helen Marie Niemeier (HE); Manhattan
Charlotte Celestine Nix (HE); Kansas City, Mo.
Mollie Berthel Nix (HE); Kansas City, Mo.
Marion Burns Noland (Ag); Falls City, Neb.
Wamoth Denais Odle (GS); Manhattan
Maxine Josephine Osbourne (IE&D); Manhattan
Wilbert Elwin Osterholtz (VM); Manhattan
Robert Franklin Owen (GS); Fort Riley
Joenetta Orlena Owens (HE); Manhattan
Robert Alden Paige (AA-1; IJ-2); Manhattan
*Udelle Roberta Palmer (HE); Randolph
R. L. Parker (AA); Kansas City
*Willard Alden Parker (AA); Clearwater
Frank George Parsons (Ag); Winfield
Gladys Elsa Paulsen (MuE); Onaga
Eusebio Antonio Perez Herrera (VM); Panama City, Panama
Harold Allen Perkins (Ag); Kansas City
Martha Lou Perkins (PE); Lawrence
Lois Maurine Peterson (HE&A); Garrison
Melvin George Peterson (EE); Manhattan
Kenneth James Phelps (CE-1; C-2); Manhattan
William Hayden Phillips (C); Salina
Floye Poague (C); Havensville
William Elby Polk (ME); Augusta
John Donald Porter (C); Mount Hope
*Gene Wilson Porter (CE); Anness
Charles Frank Prchal (VM); Omaha, Neb.
William Hardy Prentus (EE); Clay Center
Mary Eleanor Price (C); Manhattan
Leland John Propp (C); Marion
Arnold William Purtzer (CE); Netawaka
*Winifred Marguerite Purviance (GS); Milford
Julia Elizabeth Rader (IJ); Manhattan
Louise Ratliff (IJ); Manhattan
Edwin Essick Reed (ME); Kanopolis
Frances Lillian Reed (HE); Pomona
*Howard Eugene Rhoads (CE); Arkansas City
Rachel Edith Roberts (HE&A); Morrill
*Freda Marie Robertson (HE); Barry, Ill.
William Henry Rockey (VM); Manhattan
Grethel Mildred Roderick (HE); Manhattan
Clinton Gerald Roehnman (PE); White City
Melvin Palmer Rogers (Ag); Glasco
George Albert Rogler (Ag); Matfield Green
*Dale S. Romine (AA); Oswego
*Charles James Rooney (EE); Fayetteville, N. Y.
*Ethel Agnes Rosey (MuE); Junction City
Harold Eugene Ross (C); Wamego
Paul Daniel Ross (VM); Otterville, Mo.
Jessie Marguerite Rowland (HE); Clay Center
Earl Leo Ruff (EE); Manhattan
Paul Wesley Rust (AA); Manhattan
John McPherson Rutherford (ChE); Fort Riley
Mary Catherine Ryan (HE); Manhattan
Kenneth Earl Sadler (VM); Wagner, S. D.
Frank Alfred Samuelson (ME); Hutchinson
Mildred Bernice Sands (GS); Wichita
Mary Lois Saxton (GS); Scott
*Bill Campbell Scales (C); Kansas City, Mo.
*Alan Maxwell Schaible (ChE); Fairview
Lyle Leon Schlaefli (CE); Cawker City
Clarence Schmidt (VM); Manhattan
*Carl William Schnell (C); Jamaica, N. Y.
Theodore Eliot Schoeni (GS); Kensington
Leo Nicholas Schowengerdt (C); Osawatomie
Lloyd Jay Sconce (Ag); Halstead
Dean Doctor Scott (AA); Bonner Springs
John Monroe Sears (EE); Kanorado
Margaret Seaton (IJ); Fredonia

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SOPHOMORES—*Continued*

Betty Anne Shackelford (MuE); Manhattan
Helen Bernice Shackelford (HE); Manhattan
Denelda Ethel Shafer (IJ); Manhattan
Leland Knoy Shaffer (C); Minneola
Allan Rudd Shank (EE); Woodbine
Roberta La Vone Shannon (GS); Geneseo
La Grande Clarence Shaw (VM); Manhattan
Edward Temple Sheldon (GS); Topeka
Juanita Lorena Shields (MuE); Lost Springs
*Karl Gardner Shoemaker (AA); Pomona
Harriet Elizabeth Shrack (C); Pratt
Kenneth Edward Shreve (IC); Kansas City, Mo.
Ward Haynes Shurtz (EE); Manhattan
Virgil Edwin Siddens (Ar); Manhattan
Eugene Schisler Sims (CE); Le Roy
Harry Grant Sitler (Ag); Lake City
Rose Martha Skradski (HE); Kansas City
Arlene Frances Smith (PE); Topeka
Carl Gust Smith (C); Great Bend
*Elizabeth Smith (HE&J); Kansas City
Sylvia Faye Smith (HE&N); Maplehill
Lola Helena Somers (HE); Canton
Frederick Wilbur Songer (ArE); Olathe
*Fred Joseph Sorenson (ArE); Kansas City
Elroy Clarence Sowers (EE); Leoti
Kenneth Ross Speed (Ar); Holton
*Mary Katherine Sperling (HE&A); Stafford
Robert William Spiker (C); Emporia
Lawrence Eric Spong (GS); Enterprise
Jacob Emil Spring (VM); Pittsburg
Mary Ellen Springer (HE); Manhattan
Anselm Ignatius Sramek (EE); Atwood
Earl Louis Stadel (AE); Manhattan
Charles Dougherty Stafford (VM); Manhattan
Irma Lyle Stanbery (GS); Jewell
*Henry Herman Stark (ChE-1; Ag-2); Wellington
Clarence Melvin Stay (VM); Manhattan
Orin Grover Steele (AA); Barnes
Robert Louis Stephenson (C); Holton
John Gilbert Stewart (CE); Abilene
Walter Martyn Stingley (CE); Manhattan
Edward James Stoklasa (VM); Clarkson, Neb.
Oren Paul Stoner (PE); Sabetha
Lyle Wesley Streets (ArE); Altoona
Ray Stremel (EE); Garden City
Eugene Everett Sundgren (Ag); Falun
Edna Lucy Swank (GS); Hill City
Richard William Swart (GS); Manhattan
Ferne Ethelyn Tannahill (HE); Manhattan
Charles Andrew Taylor (GS); St. Louis, Mo.
Homer Otis Taylor (C); Topeka
*Melvin Elmer Taylor (C); Palmer
Charlie Bailey Team (Ag); Wichita
Lloyd Campbell Teas (CE); Manhattan
Victor Preston Terrell (Ar); Syracuse
Fred Daniel Thomas (ArE); Sublette
Lewis Ivan Thomas (ME); Garden City
Doris Jenelle Thompson (HE); Marion
James Otis Thompson (GS); Dodge City
*Kenneth Boyd Thompson (MuE); Wichita
Albert Adam Thornbrough (AA); Lakin
*Ethel Augusta Ernestine Thurow (HE); Macksville
Wallace William Thurston (EE); Elmdale
Ansel Walter Tobias (AE); Lyons
*John Sherman Todd (Ag); Olathe
Marian Agnes Todd (IE&D); Leavenworth
Vera Annabel Trusler (MuE); Junction City
Charles William Turner (EE); Saffordville
Trena Evelyn Turner (HE&A); Manhattan
William Martin Turner (ME); St. Marys
Thelma Lucile Twidwell (HE&A); Frankfort
Grace Kolck Umberger (MuE); Manhattan
John David Umberger (CE); Manhattan
Pauline Vail (HE); Plains
Alice Van Meter (HE); Ada
Margaret Van Orsdol (HE); Silver Lake
John Victor Venard (CE); Ada
Ferne Vesecky (IJ); Kansas City
Helen Louise Vickburg (GS); Talmage
Clarence Campbell Vierling (VM); Manhattan
William Fennando Waddell (VM); St. Joseph, Mo.
Marian Josephine Wait (IE&D); Superior, Neb.
Elizabeth Daniel Walbert (HE); Columbus
Dent McCalmont Walker (GS); Anthony
Edwin Leslie Walker (AE); Junction City
Robert Elston Wallerstedt (EE); Manhattan
*Ellis Murrell Wampler (Ar); Wichita
Melvin Orville Ward (Acct); Egbert, Wyo.
Glen Rudolph Warner (ME-1; GS-2); Manhattan
Verne Orville Warner (GS); Osawatomie
William Barnes Warner (EE); Wellington
Dorothy Gertrude Washington (HE); Manhattan
Clement Earl Watson (VM); Manhattan
George William Watson (PE); Clifton
James Howard Watson (Ag); Merriam
Retta Verdetta Watts (HE&A); Kansas City
Nellamarie Wells (C); Jewell
Lillis Raphael Wempe (VM); Seneca
John Leslie West (VM); Manhattan
Winston Douglas Wetlaufer (PE); Manhattan
Ida May Weygandt (HE); Keats
Alice Elinor White (C); Jewell
Bertha May White (C); Jewell
Elouise Arlie White (C); Dalhart, Tex.
*Mary Jane Whyte (IJ); Wallula
Harold Wierenga (GS); Cawker City
Howard I. Wildman (Ag); Manhattan
*Mary Elizabeth Wilkes (IE&D); Leavenworth
Eleanor May Wilkinson (HE); Humboldt, Neb.
Eunice Carolyn Williams (HE); Osage City
Theodore Sheilds Williams (VM); Kansas City
William Welton Williamson (VM); Manhattan
*Edna Pearl Willis (HE&J); Leoti
Luke Avery Wilper (CE); Harris
Anona Margaret Wilson (GS); Manhattan
Marie Alphonsine Wilson (HE); Manhattan
*Melvin Leckrone Wilson (Ag); East St. Louis, Ill.
Ruby Alice Wilson (IE&D); Council Grove
Walter Edwin Wilson (LG); Blackfoot, Idaho
*Harry Lester Wimmer (ME); St. George
Casper Charles Winter (Ar); Dresden
Edwin Stravel Wiseman (VM); Delphos
William Alexander Wishart (Ag); Manhattan
Wilbur Harold Wiswell (VM); Manhattan
Winifred Wolf (IJ); Ottawa
*Esther Marie Wright (Ar); Kansas City, Mo.

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SOPHOMORES—*Concluded*

Velda Pauline Wunder (PE); Valley Falls
*Spencer Hastings Wyant (ME); Topeka
Claude Clayton Young (EE); Utica
Glenn Mayer Young (EE); Kansas City
Wayne Winkleman Young (C); Alexander
*William Telford Young (AA); Englewood
Herman Wilson Zabel (ChE); Westmoreland
Leonard Albert Zerull (EE); Ellis
Frederic Zickfoose (VM); Rossville
Ruth Virginia Zirkle (HE); Jamestown

FRESHMEN

*Jake Arthur Abendshien (EE); Turon
*George Neal Adams (LA); Manhattan
*James Black Adams (ME); Goodland
*Scott George Adams (EE); Moran
Virginia May Adams (HE); Oak Mills
*Edward Howard Aicher (GS); Winfield
*Voma Elda Alda Alcott (HE); Colby
*Lucille Eugenia Allman (IJ); Manhattan
*Francis Allison (CE-1; Pre-Vet-2); Olathe
Earl Preston Anderson (Ag); Waynesville, Mo.
*James Darius Andie (Pre-Vet); Kansas City, Mo.
*Georgia Amelia Appel (HE); Bushton
Violet Velesta Arensman (HE&N); Copeland
*Carroll Charles Arnett (Acct); Clay Center
Julio Perez Arrojo (AE); Havana, Cuba
*Lester Joseph Asher (ME); Cheyenne, Wyo.
*Elwyn Athey (C); Junction City
*Arthur Clyde Ausherman (Ag); Elmont
*Dorothy Alice Bacon (HE); Sylvan Grove
*Warren Mason Bailey (Ar); New Hampton, Iowa
*Virgil Elaine Baker (GS); Ozawkie
*Dwight Theodore Ball (ArE); Pratt
*Margaret Louise Ballard (HE); Topeka
*Donald Max Bammes (Ar); Manhattan
Kenneth Benson Banks (Ar); Gypsum
*Kemp Elmo Barley (EE); Burlington
*James Knox Barnd (IJ); Ness City
*Mary Frances Barrett (HE); Quinter
*Guy William Bayles (Pre-Vet); Newton, Ill.
*Bernard Frank Beaver (IC); Ottawa
Clyde Harry Beckman (GS); Randolph
*Raymond Royal Beeler (Ag); Mankato
*Herbert Wayne Beeman (Ar); Hutchinson
*Susanne Murry Beeson (HE); Wamego
*Ruby Ina Beitler (C); Coldwater
*Kaye Willis Benjamin (C); Deerfield
*Frances Mildred Berggren (HE); Morganville
*Chandler Price Berryman (C); Fredonia
*Mary Emily Berryman (GS); Fredonia
*Lucile Elizabeth Bilderback (HE); Nortonville
Byron Woodrow Black (IC); Utica
*Kathryn Daisy Black (PE); Council Grove
*Mary Estelle Blackman (IJ); Manhattan
Blanche Louise Blair (HE); Manhattan
*Paul Lang Blakslee (ME); Manhattan
*Robert Vincent Blanche (ChE); Leavenworth
*Hazen Paul Bledsoe (EE); Strong City
*Arthur Randolph Blythe (Ag); White City
*Marje Lorraine Blythe (GS); White City
*John Schirmer Boettcher (GS); Holton
*Lehmann M. Booker (PE); Altoona
*Martha Elise Boss (HE); Hiawatha
Fred E. Bothe (VM); Manhattan
*Jack Vincent Boyd (C); Topeka
Glen Herbert Boyles (Ag); Manhattan
*Mary Elizabeth Boys (GS); Linwood
*Katherine Marie Brannick (GS); Junction City
*Walter Louis Braun (Pre-Vet); Carleton, Neb.
*William Allen Brewer (PE); Manhattan
John M. Bright (AH&V); Lawrence
*Charlotte Norma Brooks (HE&N); Brewster
*Gertrude Alice Brown (HE); Sedan
Kenneth Lee Brubaker (C); Hugoton
Vernon Clare Brubaker (C); Abilene
*Marian Louise Buck (GS); Abilene
*Jack Woods Burch (ME); Manhattan
*Grace Louise Burson (HE); Oakley
*Ona Lee Burson (PE); Manhattan
*Ben Butler (Pre-Vet); Phoenix, Ariz.
*David J. Butterfield (CE); Kansas City, Mo.
*Arthur Samuel Cain, Jr. (GS); Leavenworth
Gilbert Carmon Campbell (GS); McCracken
*Nancy Jane Campbell (HE); Lakin
*Ronald M. Campbell (GS); Manhattan
*William Frank Campbell (ArE); Independence
*Clarence Canary (ChE); Manhattan
Loren David Carbiener (C); Lucas
*Leland Virgil Carlson (C); Topeka
*Alice Loree Carnahan (HE); Galena
*Gordon Albert Carter (Ag); Bunker Hill
*Jack Crosby Carter (CE); Topeka
*Keith Scoville Casto (ME); McPherson
*Raymond Ivan Chaffee (LG); Talmage
*Willard Alton Challender (Ag); Sedgwick
*John Edward Cheatham (Ag); Valley Falls
*Howard Vance Cheney (Ag); Grainfield
Calvin Leroy Chestnut (Ag); Quinter
*Orville Benjamin Chestnut (Ag); Denison
*Joe Elbert Childers (ArE); Chapman
*Raymond Ernest Chitwood (EE); Meriden
Ralph Durland Churchill (PE); Junction City
*Charles Hageman Clark (CE); Manhattan
*Doris Marie Clark (ME); Sheridan, Wyo.
*George Jay Clark (EE); Riley
*Keith Earl Clayton (C); El Dorado
*Doris Louise Clydesdale (HE); Gaylord
*John Porter Coble (Pre-Vet); Odessa, Mo.
*Mary Josephine Coffman (GS); Sedgwick
*Pauline Madalind Cole (IJ); Osawatomie
Robert Cole (C); Wetmore
*Fredrich Monroe Coleman (EE-1; Ag-2); Sylvia
*Eunice May Coll (IE&D); Ottawa
*Fern Leon Collins (C); Washington
*Horace Reynolds Collins (Pre-Vet); Washington
*Marjorie Anne Conner (C); Luray
*Harold Richard Conwill (Ar); Hutchinson
*Robert William Cook (VM); West Plains, Mo.
*Warden Harold Cook (ChE); Eskridge
*Louis Herman Cool, Jr. (Ag); Glasco
*Mary Elizabeth Cooper (IJ); Manhattan
*Russell Parker Cope (VM); Hastings, Neb.
*Helen Pauline Copeland (C); Randolph
*Ruby Margaret Corr (HE); Clearwater
*DuFay Hamilton Coryell (EE); Junction City

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FRESHMEN—*Continued*

*Robert George Cotten (Pre-Vet); Kansas City
*Samuel Frank Felix Cox (Pre-Vet); Kansas City
*Clarence Crawford (GS); Luray
*Kenneth A. Crawford (C); Springfield, S. D.
*Cibyl Elizabeth Crocker (IJ); Manhattan
*Victor Jackson Croskey (CE); Kansas City
*Maurice Crouch (VM); Kansas City
Maxine Gacella Crouch (HE); Kansas City
*Charles Marin Crow (C); Manhattan
Collins Mackey Crum (ArE); Onaga
*Doris Marjorie Dalton (MuE); St. George
*Ivernia Rosetta Danielson (IJ); Manhattan
*Lois La Von Darby (MuE); Morrowville
*Jane Harney Daughters (HE&J); Manhattan
*Martha Lynn Daughters (IJ); Manhattan
*Kermit Lee Davies (Ag); Emporia
*Lloyd Morgan Davies (Ag); Emporia
*Carrye Mai Davis (HE); Kansas City
*Miriam Marie Davis (HE); Holton
*Claude Holmes Denchfield (Ag); Piedmont
*Louise Denton (GS); Manhattan
*Wayne Vorine Dexter (IJ); Waterville
*Evelyn Elizabeth Diehlman (HE); Findlay, Ohio
*Robert Mitchell Dill (ChE); Winchester
*Helen Lucile Dittemore (HE); Manhattan
*Randall Louis Diver (ME); Chanute
*William Francis Dixon, Jr. (ME); Junction City
*Ruth Virginia Dobson (IJ); Manhattan
*Carl Elbern Dodson (Ag); Denison
*Virginia Dole (HE); Salina
*John Charles Donohue (ArE); Ogden
*Laura June Donat (MuE); Verdigre, Neb.
*Ned Emory Drake (C); Manhattan
Homer Eugene Dreier (ArE); Kansas City
*Rollin Woodrow Dunahugh (Ag); Clyde
*Elma Irene Edwards (IJ); Athol
*James Bernard Edwards (PE); Manhattan
*George Howard Eicholtz (ArE); Abilene
*Pauline Elizabeth Eiler (GS); Oberlin
*Frank Hugh Elayer (ArE); Manhattan
*Ethelyn Mae Elliott (HE); Halstead
*Sam Dixon Elliott (EE); Plains
*Theodore Franklin Emerson (EE); Wellington
Eugene Valda Enlow (EE); Topeka
*William Carl Erdtmann (PE); Ellsworth
Charles Vern Everett (ME); Racine, Wis.
*Albert Ross Ewing (EE); Great Bend
*Margaret Jane Fairman (HE); Manhattan
*William Ransdell Farmer (MuE); Kansas City
*Walter Wallace Fechner (Pre-Vet); Alta Vista
Paul Franklin Feleay (CE); Manhattan
Charles Ozias Files (EE); Overland Park
*James Boyd Finney (GS); Beloit
Gwendoline Predetta Fisher (HE); Marion
Doyle Harold Fisk (VM); Manhattan
Charles Morton Fitzmorris (CE); Fredonia
*Frank Wayne Fitzmorris (ME); Fredonia
*Mary Elizabeth Fleenor (HE&A); Manhattan
*Donald Eugene Flenthrope (Ag); Wamego
*Dudley King Flint (EE); Girard
*George William Folmer (AA); Olathe
*Edward Gerng Fong (ME); Denver, Colo.
*Frank Sauble Ford (CE); Eureka
*Gayle Herbert Foster (PE); Manhattan
James Raymond Freeland (C); Manhattan
*William Bertrand Freeman (GS); Junction City
Lenus Carl Frevert (AE); Holyrood
*Charles Frederick Frey (C); Alma
Wanita Lorain Fry (HE); Brewster
*Mildred Iona Frymire (HE&N); Lawrence
*William Grant Fuller (ME); Ponca City, Okla.
*Louis Wayne Fundis (Ag); Le Roy
*Wesley George Fundis (Ag); Le Roy
*Townsend Galley (ChE); Newton
Dale Franklin Gamber (C); Culver
*Donald Emerson Garr (EE); Wichita
*Dale Martin Garvey (IJ); Waverly
*Gilbert Lee Gaumer (Ar); Gypsum
*Robert Allen Geiger (ME); Oberlin
Charles William Gentz (Ag); Herington
George Willis Geiber (AA); Oneida
*Fern Maxine Geyer (HE); Topeka
*Maxine Gibbs (PE); Manhattan
*Mildred Elmyra Gibbs (HE); Kansas City
*Paul Gilbert Gibson (CE); Chanute
*Anna G. Gill (HE); Sylvia
*Dorothy Josephine Gill (HE&A-1; Ar-2); Concordia
*Paul Gilpin (Ag); Topeka
*Elnora Marguerite Gilson (GS); Manhattan
*Mary Margaret Glass (IE&D); Manhattan
*Martha Elizabeth Gordon (HE); Waterville
*Elsie Gertrude Gottschalk (PE); Wichita
*Robert Elmer Gouge (VM); Sedalia, Mo.
*Francis Irving Gould (C); Manhattan
*George William Grammer (GS); Junction City
*Leonard Ervin Grape (GS); Leavenworth
*Margaret Elizabeth Green (HE&A); Pratt
*Margaret Clarissa Greene (HE); Beverly
*George Arnold Greenwald (LG); McCracken
*Gertrude Elizabeth Greenwood (HE); Kansas City
*David Walter Gregory (Ag); Cheney
*Ruth Gresham (GS); Manhattan
Percy Thomas Griffin (Ag); Mission Ridge
*Orin Dean Griffing (Ag); Council Grove
*Arnold Milton Grimes (AA); Lyons
*Sarah Anna Grimes (IE&D); Manhattan
*David La Monte Gripton (IC-1; ME-2); Smith Center
John Merlin Griswold (Ag); Marysville
*Tom Conrad Groody (GS); Manhattan
*Ira Emmett Grove (CE); Irving
Frank Richard Groves (C); Atchison
Howard James Haas (Ag); Almena
*Maurice Alfred Haas (ChE-1; GS-2); Ellenwood
William Phillip Hackney (Ag); Wellington
*Mildred Maurine Haddock (HE); Lindsey
*Richard Simpson Haggman (IJ); Courtland
*Thomas Benton Haines (ChE); Casper, Wyo.
*Maxine Elsie Hale (IJ); Mankato
*Howard Laird Hall (ChE-1; Acct-2); Manhattan
*John Fenwick Hall (CE); Junction City
*Norman Lee Hall (Ag); Powhattan
*Geraldine Ruth Hammon (MuE); St. John
*Dorsey Woodrow Hancks (GS); Wamego
*Harry Major Hancks (MuE); Wamego
*Earl Russell Hanna (GS); Manhattan
*Clarke Daniel Hanson (GS); Jamestown
*Marvin Arvid Hanson (ME); Newton
*Maurice Edward Hanson (ME); Newton
Mildred Betty Hanson (HE&A); Topeka
*Ralph Densmore Hanson (GS); Concordia

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FRESHMEN—*Continued*

*Boyce Parshall Hardman (MuE); Hill City
*Charles Franklin Hardman (ChE); Anthony
*Paul Francis Hardman (EE); Hill City
*Dorothy Elizabeth Harker (C); Concordia
*Doris Lucille Harman (HE&A); Tulsa, Okla.
*Jane Harman (IJ); Manhattan
*Betty Harold (GS); Sabetha
*Clare Barton Harris (LA); Pratt
*Robert Le Roy Harris (IC); Topeka
*Jerome Harshaw (Acct); Manhattan
*Eleanor Sarah Hart (C); Overbrook
*George William Hartter (ChE); Sabetha
*George Deloy Haynes (EE); Abilene
Todd Heath (Ag); Marienthal
*James Eugene Hemphill (GS); Clay Center
John Lyman Henderson (VM); Manhattan
*Shellburne Evald Hendricks (EE); Lebanon, Neb.
*Joe Franklin Hendrickson (PE); Lebanon
*Dwight Kirk Henry (Ag); Lecompton
*Fern Henry (HE&A); Salina
*Loyd Wayne Herring (Ag); Tulia, Tex.
*Walter Herrmann (PE); Offerle
William Hugh Hervey (VM); Belle Plaine
*John Clare Higginbottom (FME); Herington
*Ione Marie Hill (C); Harper
*Ernest Marvin Hilyard (GS); Reece
*Walter F. Hines (GS); Ashland
*Tella Hinshaw (IJ); Bennington
*Glenda Mae Hodge (GS); McPherson
*Irene Hofmann (HE); Manhattan
*Vincent Benedict Holbert (C); Manhattan
*Thomas Medrey Hollis (GS); Manhattan
*Virginia Katherine Holman (HE&A); Manhattan
*Robert Harley Holmes (Ag); Wichita
*Seawillow Belle Holmes (IJ); Belleville
*Arliss Evelyn Honstead (GS-1; HE&J-2) Waterville
*George Harold Hoopingarner (Ag); Manter
*Vernon Orely Hopper (C); Ness City
*Mary Elizabeth Horn (HE); Holton
Le Roy William Horne (GS); Alma
*Mary Alice Howard (HE); Garnett
*Eugene Everett Howe (GS); Stockdale
Morna Evalina Howe (HE&A); Stockdale
*Harold Kenneth Howell (EE); Quinter
*Imogene Hubbard (HE); Bartlesville, Okla.
*Leahe Lucinne Hudson (IJ); Fredonia
*Wilma Charlotte Huggins (GS); Wheaton
*Charles Wilfred Hughes (ChE); Pittsburg
John Robert Hughey (C); Junction City
Louis Julius Hunter (CE); Topeka
*Kenneth Ray Hurley (EE); Pratt
*Vincent Rochford Hurst (ChE); Ozawkie
*Lavon Albert Hybskmann (C); Axtell
*Alta May Irwin (HE); Wakarusa
*Irvin Irwin (Pre-Vet); Wilsey
*James Phil Jackson (Ag); Hutchinson
*Arthur Randolph James (ArE); Macon, Mo.
*Benjamin Henry James (Pre-Vet); Kansas City
*Zola Marie James (HE); Washington
*Fred Alva Jenkins (PE); Osage City
*Robert Sidney Jensen (PE); Leavenworth
Carl Johnson (Ag); Greeley
*Carl J. Johnson (MuE); Fort Riley
Esther Elizabeth Johnson (HE); Ottawa
*Lorraine Howard Johnson (CE-1; C-2); Talmo
*Lucile Johntz (PE); Abilene
*Mildred Mae Jolitz (GS); Solomon
*Georgia Leila Jones (HE&A); Kansas City
*Margaret Elizabeth Jones (Acct); White City
*Wynona Elizabeth Jones (HE); Clay Center
*Margaret Elaine Joyce (HE&A); Oswego
William W. Justus (IJ); Hill City
*Mark H. Kannal (C); Kansas City
*Helen Anna Karns (GS); Bucklin
*Robert Carr Kassner (ME); Detroit
*Eugene Franklin Keas (PE); Chanute
*Donelda Dee Keeney (IJ); Lucas
*Mary Edith Kendall (IJ); Great Bend
*Walter Charles Kern, Jr. (C); Leavenworth
*Leon Roscoe King (EE); Topeka
*Louis E. King (PE); Belleville
*Robert Winston Kirk (Ag); Scott City
*Dwight David Klinger (Ag); Ashland
Elizabeth Rachel Knechtel (GS); Larned
*Artha Lee Knisely (GS); Liberal
*Omar Ellsworth Knox (GS); Augusta
*Martha Elizabeth Koestel (HE); Partridge
*Milton Clarence Kohrs (Ag); Elmo
*Victor Merle Krainbill (Ag); Bern
*Le Roy Francis Kratochvil (PE); Irving
*Mildred Kratochvil (HE); Clay Center
*Seth William Kuykendall (EE); Pratt
*Donald James Lacey (C); Herington
*Gerald August Lake (ChE); Manhattan
*Horace Holman Lamborn (Ag); Leavenworth
Aaron Joseph Lane (CE); Manhattan
*John Ephriam Lane (CE); Manhattan
*Keith Obed Lassen (VM); Phoenix, Ariz.
James Sylvester Latucky (ME); Westbury, N. Y.
*Alice Arcelia Lavering (HE); Manhattan
*William Henry Laws (GS); Manhattan
*David Woodrow Leach (GS); Caney
*Dwight Raymond Lee (CE); Salina
*John Milton Leeper (Ag); Topeka
*Ida Christena Legler (C); Robinson
*Eula Mae Lesh (GS); Topeka
*Dorothy Aylene Leshosky (IE&D); Cuba
*Lloyd Milton Lewis (C); Bavaria
Reeves Rankin Lewis (CE); Valley Center
*Bernice Marie Light (HE); Yates Center
*Hanry James Lindenstruth (VM); Marshfield, Mo.
*Pearl Phyllis Lindquist (HE); Emmett
*Raymond Edwin Lippenberger (Ar); Fort Morgan, Colo.
*Luella Mary Lisk (HE); Manhattan
*Marjorie Agnes Lomas (HE); Manhattan
*Charles Curtis Long (PE); Manhattan
*Donald Kenneth Long (Ag); Neodesha
*Joseph Merrit Long (PE); Edmond
Russell Keith Long (ME); Manhattan
*Paul John Longley (CE); Lebanon
*George Allen Lopp (Pre-Vet); Kansas City
*Gladys Gertrude Lorson (C); Elmo
Ernest Dennison Luder (C); Caldwell
Clark Hayes Ludvickson (C); Severy
*Wesley James Lund (CE); Alta Vista
Vera McBratney (HE); Wichita
*Minnie Lucille McBride (GS); Manhattan
*William Hewitt McCamish (CE); Manhattan
*Ambrosia Lavinia McClaren (PE); Galena
*Jack Hall McCleskey (EE); Abilene
*Rex Cole McCluggage (IJ); Manhattan
*Elizabeth Vance McClymonds (HE); Walton
*John Edwin McColm (Ag); Emporia
*Max M. McCord (GS); Manhattan
*George Herbert McCurdy (GS); Ottawa
*Albert Edward McKay (GS); Manhattan
*Carl Emmit McKee, Jr. (AE); Dodge City
*Elizabeth Hull McKeen (HE&A); Manhattan
*Hazel Alida McKibben (HE); Topeka

* Matriculated 1932-'33.

FRESHMEN—*Continued*

*Maxine Belle McKinley (GS); Manhattan
*Don Avlin McNeal (IJ); Boyle
*Burton C. Mader (C); Florence
*Russell Martin Madison (Pre-Vet); Manhattan
*Frederick Belser Majors (Acct); Elmo
*Nevabelle Mall (PE); Manhattan
*Albert Lee Mallon (Ag); Anthony
*Kathleen Louise Mallon (GS); Anthony
*Ralph William Manly (GS); Manhattan
*Richard Fredrick Marin (EE); Topeka
*Vincent Paul Marks (PE); Ogden
*Dale Henry Martin (PE); Allen
*Delite Martin (IJ); Lewis
*Joe Potro Martinez (GS); Manhattan
*Edmund Peter Marx (GS); Manhattan
*Ward B. Masden (ME-1; C-2); Manhattan
Merton Gilbert Mathews (C); Manhattan
Thurman Lowell Mathias (GS); Manhattan
*Charles Edgar Maxwell (CE); Columbus
Dale Winter Maxwell (CE); Columbus
William Albert Maxwell (C); Manhattan
*Howard Allen May (ChE); Kansas City Mo.
*Mildred Mathilda Mehaffey (PE); Farmington
*Iola Silva Meier (PE); Abilene
*Glenn Blanchard Meredith (GS); Wakarusa
*Joseph Dudley Metts (EE); Oberlin
*Frances Lucille Meyer (HE); Lillis
*Weldene Jo Middlekauff (PE); Beatrice, Neb.
*Betty Marguerite Miller (HE&J); Salina
*Dean Hanlin Miller (ChE); Ness City
*Josephine Elizabeth Miller (HE); Manhattan
*Robert Martin Miller (Ag); Lawrence
*Frederick James Millican (EE); Topeka
*Alvin Jess Mistler (ChE-1; Ag-2); Leavenworth
Dorothy Helen Modine (HE); Olsburg
*Floyd Edward Monroe (Pre-Vet); Dover, N. J.
*Ziba Thomas Moore (IJ); Oketo
*Frances Metta Morgan (PE); Manhattan
James Orville Morse (C); Manhattan
*Gilbert Marcus Mott (PE); Burlington
*Charles Ambrose Mulbern (ChE); Selden
*Harold Deane Munal (GS); Milford
*Lillian Jones Munal (GS); Milford
*Elmer Lewis Munger (CE); Manhattan
*Mary Janet Murdock (IJ); Wichita
*Byron Hamilton Murphy (Ag); Topeka
*Edward Aloysius Murphy (VM); Kansas City
*Royse Peak Murphy (Ag); Norton
*Raymond A. Murray (IJ); Schenectady, N. Y.
*Eltie Mae Musgrove (HE&A); Fort Riley
*Charles Walter Myers (Ag); Bancroft
*James Lowell Myler (Ag); Andover
*Lois Pauline Narramore (HE&A); Elmdale
*Roland Seldon Nash (GS); Eskridge
*Wilson Naylor (C); Manhattan
Robert Bennett Neihart (CE); Lyndon
*Marjie Esther Nesmith (HE); Salina
Richard Frank New (Ag); Leavenworth
*Herbert Stephenson Neyhart (IJ); Burlington
Hilmer Arthur Nichols (EE); Manhattan
*Lane Orville Nicholas (GS); Manhattan
*Lloyd Lowell Nicolay (ME); Scranton
*Bertha Elizabeth Nixon (HE); Manhattan
*Jean Marie Nixon (HE); Stockdale
*Paul Talogi Nomura (VM); Honolulu, Hawaii
*Myra Camelia Ogg (HE); Ottawa
*Agnes Elizabeth Olds (HE); Delphos
*William Ralph Olin (C); El Dorado
Orin Olinger (AE); Hugoton
*Richard Eugene Omohundro (EE-1; Pre-Vet-2); Wellington
Richard Charles Othberg (EE); Scandia
*Eleanor Otto (GS); Manhattan
*Christine Louise Overley (HE&N); Belle Plaine
*Marianne Ozment (IJ); Manhattan
*Stanis Marie Packwood (HE&J); Tecumseh, Neb.
*Mary Jane Pae (IJ); Concordia
*Helen Patricia Paff (GS); Sedgwick
*Margaret Eleanor Paige (HE); Manhattan
*Peggy Parker (HE&A-1; C-2); Hill City
*Earl Walter Parsons (Ag); Winfield
*Dan Partner (IJ); El Dorado
*Sidney Claude Patterson (CE); Lenora
*George Ralph Pauling, Jr. (GS); Manhattan
*William Carl Paulson (CE); El Dorado
*Ellen Isabel Payne (GS); Manhattan
*Kermit Adrion Pearson (Acct); Council Grove
*George Buell Peck (C); Topeka
*Walter Eugene Peery (EE); Manhattan
*Oril Evernden Pennington (Ag); Winston, Mo.
Charlotte Penny (IJ); Manhattan
*Vincent Lorin Peters (ME); Ness City
*Jack Edwin Petrie (IJ); Wichita
*Forrest Wayne Pettey (C); Clay Center
*Kenneth Osler Pettijohn (Ar); Fort Morgan, Colo.
*Max Ensign Pfuetze (GS); Manhattan
*Howard Walter Phelps (EE); Manhattan
*Herbert Ivan Phetteplace (ChE); Smith Center
*Ronald D. Pickett (EE); Manhattan
*Blanche Amy Pierce (HE); Burden
*Remo Lenori Pilla (Ag); Port Alezre, Brazil
*Elizabeth Alice Pittman (HE); Lewistown, Mont.
*Margaret Henrietta Ploger (HE&N); Kinsley
*Gerald Samuel Porter (PE); Jewell
*Harriet Alese Priest (M); Dodge City
*William Potts Priestley (GS); Paola
*Walter Byram Purviance (GS-1; Ar-2); Milford
*Ruth Irene Ramsay (PE); Garnett
*Ival James Ramsbottom (Ag); Munden
*Rex Rankin (GS); Corning
*Willard Glidden Ransom (AE); Manhattan
*Mary Elizabeth Ransopher (HE); Manhattan
*Elizabeth Reed (C); Holton
*Harold Duane Reed (Ar); Marysville
*Margaret Elena Reed (HE-1; MuE-2); Manhattan
*William Lincoln Rees (CE); Topeka
*David Alexander Reid (GS); Manhattan
David Mason Reid (CE); Lebo
*Jackson Chilcott Remmele (IC); Manhattan
Rowland Herman Renwanz (CE); Enterprise
*Ora Lea Riepe (HE); Dighton
*Lloyd Carr Riggs (IJ); Manhattan
*Arden Ballard Rinehart (AA); Greensburg
*John Ernest Robert (GS); Maplehill
Leland Roberts (MuE); Ogden
*Charles Eugene Roper (EE); Atchison
*Claude Floyd Ross (ChE); Dover
*John Kelsey Ross (IJ); Timken

* Matriculated 1932-'33.

FRESHMEN—*Continued*

*Worth Follett Ross (GS); Manhattan
*James Warren Rowland (Acct); Clay Center
Robert Homer Russell (C); Manhattan
*Amy Louise Rust (GS); Manhattan
*Mary Elizabeth Rust (HE); Manhattan
*Orval Emanuel Ruth (MuE); Cherokee
*Joe Wesely Saip (C); Belleville
Edwin Charley Sample (Ag); Council Grove
*Roy Ellsworth Sandels (PE); Belleville
*William Lloyd Schade (ME); Manhattan
Floyd K. Schafer (EE); Sterling
*Mary Ruth Schaumloeffel (GS); Marysville
*Virgil Raymond Schibler (Ag); Manhattan
*Opal Clara Kathryn Schlickau (PE); Haven
*Vida Mae Schmidler (HE); Barnes
*Rosemary Schmidt (MuE); Junction City
*Phillip William Schneider (Acct); Beattie
*Lawrence Wicks Schoolcraft (C); Fredonia
*William Henry Schorer (C); Clyde
*Richard Gordon Schorling (EE); Kansas City
*Herbert Oliver Schrepel (GS); Hoisington
*John Leonard Scott (Ag); White City
*Marvin Dean Scott (C); Pratt
*Wayne Sears Scott (IJ); Topeka
*Betsy Ruth Sesler (GS); Wamego
*Royal Franklin Shaner (ME); Topeka
*Lucile Nellie Shannon (GS); Manhattan
Joseph Howard Shaw (LA); Holton
*Garnet Evadna Shehi (IJ); Topeka
*Willard J. Sherar (PE); Latham
*Frank Jessup Shildeler (IJ); Girard
*Eilen Amanda Shields (GS); Hoxie
*Delmer Ernest Shreve (ME); Augusta
*Libert Russell Schultz (Ag); Eureka
*Quintin Gerald Siebert (GS); Marion
*James Monroe Siever (GS); Manhattan
*Martha Jean Singleton (HE); Benedict
*Dwight Ellsworth Sisney (IJ); Bonner Springs
*Harold Milton Skaggs (C); Dodge City
*John Cleo Slatten (EE); Bethany, Mo.
*Elizabeth Annetta Sloop (IE&D); Nortonville
*Francis Edwin Smith (Ar); Stockton
*Marvin J. Smith (GS); Manhattan
*Wilmer Ray Smittle (Ag); Columbus
*Herbert Abijah Snow (ME); Anthony
Karl Henry Speed (EE); Holton
*Robert Drake Spencer (Ag); Leavenworth
*Maurice Havelyn Stauffer (Ag); Hymer
*Marlin Ira Steffey (GS); Valley Falls
*Pauline Steiner (GS); St. George
*Paul William Stephenson (AA); Clements
Frank Eugene Sterba (VM); Cuba
*Wilma Carolyn Stewart (GS); Muscotah
*Ruth Jane Stone (IJ); Manhattan
Marguerite Corinna Stoops (GS); Bellaire
*John Frederick Stoskopf (EE); Hoisington
*J. Maurice Street (CE); Yates Center
Roberta Louise Strowig (HE); Paxico
*Frank Bernard Stuckey (Ag); Leavenworth
*Theron Fred Sturdy (GS); Harper
*Charles Leslie Stutz (IC); Manhattan
*Jean Peyton Sullivan (IJ); Manhattan
Francis William Summers (GS); Waterville
*Earl Sutton (C-1; CE-2); Abilene
Leonard Leo Sweeney (VM); Manhattan
*Frances Maxine Tannahill (HE); Manhattan
*Dorothy Rebecca Taylor (HE); Downs
*Arthur Louis Tellejohn (VM); Kansas City
*William Woodrow Templer (CE-1; GS-2); Moline
*Charles Teare Thompson (ME); Cheney
Dale Elliott Thompson (CE); Clay Center
*Ned Odell Thompson (AA); Manhattan
*Vera Minnie Thompson (HE); Harveyville
*George Wayne Thornbrough (GS); Lakin
*Emerson Myron Thwing (EE); Craig, Mo.
*Eleanor Tibbetts (GS); Westmoreland
*Charles Clarence Tillotson (ChE); Sublette
*Wayne Tjaden (Ag); Wichita
James Towner (CE); Dwight
*Oda Mae Tracy (MuE); Manhattan
Wayne Albert Trichler (Ag); Altoona
*Mary Josephine Troutt (IJ); Risco, Mo.
*Graydon Tipton Trusler (PE); Junction City
*Walter Charles Tuchfarber (ChE); Olathe
*William Elihu Tuttle (ME-1; Acct-2); Lucas
*Irwin John Twiehaus (Pre-Vet); Manhattan
*Marvin John Twiehaus (VM); Independence, Mo.
*Claude Comden Uhrig (Ag); Preston
*Willard Merril Van Sant (Pre-Vet); Dixon, Cal.
*Mervin Earl Vantuyl (EE); Peabody
*Emil John von Lehe (EE); Clifton
*Kirkland Harris Waddell (AE); Syracuse
Mark Wadick (EE); Chapman
*Virginia Edith Wagner (HE); Richmond
*Edward Le Roy Waller (ArE); Wellington
*James Thomas Wallingford (ArE-1; C-2); Leavenworth
*Evelyn Jean Walter (HE); Manhattan
Charles Philip Walters (GS); Manhattan
*Vona Beatrice Wandling (HE); Sharon Springs
*Maxwell Perrine Wann (GS); Leavenworth
*Joseph Duane Ward (Ar); Peabody
*Nina Catharine Ward (HE); Concordia
*Charlotte Ella Warren (IE&D); Stapleton, Neb.
*Walter Herman Warstler (ME); Columbus
*Durward Albert Watson (PE); Osborne
*Winston Davis Watts (C); Pratt
*Madeline Estelle Weathers (PE); Haviland
*Edith Sophia Weber (HE); Waterville
Dorothy Joe Webster (HE); Manhattan
*Wayne Embree Webster (PE); Manhattan
*Junior Weir (EE); Stafford
*Eleanor Marie Weller (MuE); Abilene
Carl Edward Wendell (VM); Manhattan
*Leon Elbert Wenger (AA); Powhattan
*Magdalene Wenger (HE); Powhattan
*Francis Linton Wesley (CE); Oswego
*Mabel Marie Wetzig (HE); Junction City
*James Joseph Wheatley (ME); Chanute
*Amy Esther Wheeler (HE); Manhattan
*William Lawrence Wheelock (IC-1; ChE-2); Pleasanton
Alfred Emmett White, Jr. (VM); Manhattan
*William Henry Donald White (IJ); Kansas City, Mo.
*Marguerite Lois Whitten (HE); Wakarusa
Keith Wicham (ME); Manhattan
*John Bennett Wilcox (Ag); Lawrence
*Kelly Wilcox (Ag); Jamestown
*Lettie Marcia Wilcox (IJ); Fort Riley
*Frank Edward Wilkeson (Ag); Salina
*Jennie Lee Wilkinson (HE-1; MuE-2); Topeka
*Wilhelmenia Edna Wilkinson (HE); Topeka
Wayne Clifford Williams (Ag); Broughton
*Willard Williams (ME); Sycamore
*Cleo Grace Wilson (HE); Manhattan
*Walter Woodrow Wilson (GS); Manhattan

* Matriculated 1932-'33.

FRESHMEN—*Concluded*

*Olive Wimmer (HE&N); St. George
*Ben N. Winchester (PE-1; Pre-Vet-2); Kinsley
*Elmer Benjamin Winner (Ag); Topeka
*Walter John Wohlforth (CE); Easton
*Wilma Ray Womer (PE); Topeka
*John D. Woodman (GS); Manhattan
*Edith Pauline Woodruff (GS); Clyde
*John Donald Wright (IJ); Oketo
*James Wallace York (EE); Vinland
*Electa Grace Young (HE); Haddam
Winifred Mary Young (GS); Wakefield
*Colleen Lucille Zacharias (HE); Oak Mills
*Ella Clara Zeckser (HE); Alma
Lester Allen Zerbe (Ag); Salina
*James Elias Ziegler (Ag); Junction City
*Richard Homer Ziegler (Ag); Junction City
*Thomas Hockleman Ziegler (IJ); Junction City
*Joseph Zitnik (Ag); Scammon
*Emanuel Zoglin (Ag); Kansas City, Mo.
*Homer Edward Zweifel (Pre-Vet); New Glarus, Wis.

SPECIAL STUDENTS

Ivar M. Abrahamson (ME); Manhattan
*Jesse Fred Bachelor (GS); Belleville
*George Armington Baldry (Ag); Neosho, Mo.
Mary Emily Baum (Ar); Junction City
Frances Elaine Bell (HE); Marysville
*Malina Jane Berglund (C); Lindsborg
*Emil Leo Betty (GS); Manhattan
Ervin William Bevlin (Ag); Morgantown, W. Va.
*Margaret Marie Bigelow (GS); Manhattan
*Florence Violet Biggs (GS); Fort Riley
Elmer Carson Black (GS); Utica
Lucy Irene Branham (GS); Kansas City
Elizabeth Wilba Breeden (GS); Manhattan
*Kay Elizabeth Brewer (GS); Wichita
Clark Wayne Burch (GS); Manhattan
Jeanne Durand Burt (GS); Manhattan
Edna Pieplow Chapman (HE); Hutchinson
James Percy Chapman (GS); Manhattan
Emerson Dwight Chilcott (GS); Jewell
Marian Doretta Childs (GS); Hoisington
John Russell Clark (GS); Manhattan
Dorothy Margaret Cortelyou (GS); Manhattan
Helena Wilhelmina Cott (GS); Milford
Harvey Ellis Davidson (ME); Manhattan
Helen Louise Davis (GS); Manhattan
*Elizabeth Lee Deming (GS); Manhattan
*Hazel Viola Dobson (GS); Manhattan
*Jessie Leone Dobson (GS); Sharon Springs
*Catherine Ehrgott (GS); Fort Riley
Ralph Wilson Frank (GS); Manhattan
Bartlett Geer (GS); Wakarusa
†David George Griffiths (GS); Manhattan
Virginia Marie Gross (GS); Russell
William Upton Guerrant (GS); Manhattan
Grace Mary Gustafson (GS); Marysville
Avis Charlotte Hall (HE); Manhattan
Floyd J. Hanna (AA); Manhattan
*John William Hanna (GS); Manhattan
Murville Jennings Harbaugh (GS); Manhattan
*Caroline Augusta Janssen (GS); Lorraine
Elbert Elvin Karns (GS); Bucklin
*John C. Kauffman (GS); Abilene
*Elmer Charles Kile (GS); Manhattan
*Marion Joseph Knier (GS); Valley Falls
*Gladys May Loy (GS); Wakeeney
*Charles Green McClave (GS); Great Falls, Mont.
Sterling Alfred McCollum (ME); Manhattan
Esther Almira McFillen (GS); Manhattan
Lorraine McMullen (GS); Hutchinson
Marian Merrideth Manion (GS); Goodland
Charles Sherwood Manley (GS); Junction City
Ann Eliza Martin (GS); Eskridge
Harold Baldwin Miller (GS); Manhattan
*Kathleen Foss O'Donnell (GS); Junction City
*Ross Ida Paden (HE); Clay Center
*Clarice Marie Painter (GS); Manhattan
Marigold Laura Peterson (GS); Manhattan
*William Bryan Peterson (VM); Harlan, Ia.
*Elinor May Pryor (GS); Wichita
*Helen Rudbeck (GS); Manhattan
Robert Jacob Rychel (GS); Downs
Charles Arthur Schubert (GS); Centralia
*Nancy Leona Schultz (GS); Manhattan
Fontella Katherine Shepherd (HE); Manhattan
*Hortense Denelda Mae Sibert (GS); Manhattan
Raymond R. Spilman (GS); Manhattan
*Katharine Holden Thayer (GS); Fort Riley
*Marjorie Angelina Van Scoyoc (GS); Mont Ida
John G. Wadham (GS); Marysville
*Carrol Kramer Ward (GS); Junction City
*Leland Raigh Wilson (GS); Manhattan
*William Wheeler Wylie (GS); Manhattan

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* Matriculated 1932-'33.
† Also pursuing graduate study.

Summer School Students

Nine-week Session

Henry Caffee Abell; Stockdale
Zelda Laurraine Ackenhausen; Manhattan
Frank Milton Adair; Manhattan
George Howard Adams; Manhattan
Irene T Adams; Frankfort
Cirilo Lagmay Adan; Sison, P. I.
Donald Adair Adell; Manhattan
Harriett Aletha Aikins; Ozawkie
Chilton Albright; Manhattan
Linden Moore Alcorn; Adair, Iowa
Vera Ethel Alderman; Coffeyville
Gayle Derwood Allen; Manhattan
John Jones Allen; Manhattan
Agnes Mae Allender; Junction City
Agnes Matilda Almquist; Bridgeport
Max Donald Alwin; Morrowville
Gwendolyn Blanche Ames; Rydal
Juliana Amos; Manhattan
Ethel Valeria Anderson; Manhattan
Hazel Lillian Anderson; Bronson
Helen Rose Anderson; Thayer
John Edmond Anderson; Belvue
Ross H. Anderson; Richland
Verna Lucille Anderson; Topeka
Edwin Lee Andrick; Burden
Ruth Evangel Angstead; Manhattan
Frieda Opal Antener; Independence
Georgia Ruth Anton; Satanta
Josephine Arnett; Broughton
Clais Yvonne Arnold; Colby
Jesse K. Ashcraft; Williamsburg
Leslie Linnaeus Aspelin; Dwight
Millicent Charlotte Aspelin; Dwight
Rhoda Anna Austin; Emporia
Thomas Burt Avery; Coldwater
Lois Louise Avis; Fostoria
Ellis Buchanan Babbit; Kansas City
Margaret May Bacon; Manhattan
James Lister Baird; Wellsville
Alvin Kornelius Banman; Mathiston, Miss.
Paul Willis Barber; Sabetha
Dorothy Barfoot; Decorah, Iowa
E. Myrtle Barker; Junction City
Glen Q. Barleen; Concordia
Sadie Barr; Manhattan
Johanna Helena Barre; Tampa
Lenore Cress Batchelor; Manhattan
Laura Belle Baxter; Manhattan
Zelma Mae Beaty; Halstead
Dietrich D. Becker; Webster
Gladyne Baumgartner Becker; Webster
Mildred Eleanor Beil; Bavaria
John Gregory Bell; Potter
Paula Anne Bellinger; Manhattan
Noel L. Bennion; Manhattan
Mabel A. Berges; Onaga
Carl John Bergman; Randolph
Virgil L. Bergman; Manhattan
Caroline A. Bertram; Haddam
Margaret Odella Bertrand; Clay Center
Howard Bertsch; Manhattan
Ethel Mae Bess; Manhattan
Rosa C. Best; Manhattan
Roy Wilson Best; Wichita
Ervin William Bevlin; Manhattan
Max William Bickford; Phillipsburg
John Alexander Bird; Hays
Lottie Findley Bird; Hill City
Clifford Hibbard Black; Manhattan
John Alexander Black; Galena
Dorothy Velma Blackman; Manhattan
Mary Estelle Blackman; Manhattan
Cora Alice Blackwill; Gove
Addison Blair; Manhattan
Ellen Grace Blair; Williamsburg
Gertrude Elizabeth Blair; Junction City
Hazel Florence Bland; Garden City
Nelle Miller Boellner; El Dorado
Victor Wayne Boellner; El Dorado
Ernest Verle Bogle; Pittsburg
Helen Elizabeth Boler; Dover
George Illingworth Boone; Manhattan
William S. Bork; Miltonvale
Fred E. Bothe; Manhattan
Paul R. Bowers; Stockton
Mary Helen Bowes; Alma
Glen Herbert Boyles; Manhattan
Gladys Katherine Bradley; Agenda
Virgil Edward Bradley; Belle Plaine
Lyman Jacob Bratzler; Manhattan
Leslie J. Brethour; Dwight
Kay Elizabeth Brewer; Wichita
Veva May Brewer; Wichita
Alice Katherine Brill; Westmoreland
Grace Dorothy Brill; Westmoreland
John Eberth Brink; Leavenworth
Joseph Emil Brinkman; Americus
Helen Sproul Brittain; Manhattan
Mary Esther Brittain; Atchison
Stanley Hyde Brockway; Topeka
Earl C. Brookover; Scott City
Carroll Wright Brooks; Manhattan
Raymond Usher Brooks; Hutchinson
Arthur Senseny Brown; Chambersburg, Pa.
Joseph Oscar Brown; Ramona
Maxine Brown; Manhattan
Helen Correll Browne; Norton
Barbara Brubaker; Manhattan
Stanley Franklin Brubaker; Manhattan
Ray James Bryan; Woodbine
Edwin George Brychta; Blue Rapids
Maurine Marguerite Bryan; Delia
Wilma Mae Bucknell; Olathe
Norman Edward Burandt; Belleville
Wilson M. Burbridge; Troy
Vance L. Burch; Manhattan
Esther Beatrice Burgan; Miltonvale
Helen Burger; Seneca
Kenneth Charles Burgert; El Dorado
John Wesley Burke; Glasco
Emma Caroline Bushell; Broughton
Lucille Edith Byarlay; Green
Marion John Caldwell; El Dorado
Harold Robert Callahan; Junction City
James Phillip Callahan; Manhattan
Mary Maxine Campbell; Manhattan
Nadine Estline Campbell; Dover
Wayne W. Cantral; Manhattan
Velma Lorence Capper; Manhattan
Cyril A. Carberry; Manhattan
Emma Olive Carkoff; Miltonvale
Astrid Ingeborg Carlson; Clifton
Vera Maud Carney; Manhattan
Abbie Mae Carpenter; Clay Center
Alfred Louis Casey; Corning
Robert Bell Casey; Anderson, S. C.
Robert Steele Cassell; Salina
Edna Neetta Chapin; Westphalia
Arnold Ervin Chase; Abilene
Merle Vernon Chase; Abilene
Nettie Evelyn Chavey; Clyde
Willard Martin Cheney; Abilene
Lester Raymond Chilson; Oberlin
Grace Lucille Chitwood; Garnett

SUMMER SCHOOL—*Continued*

Vivian Winifred Chitwood; Garnett
Blanch Lucille Christensen; Bushong
Christine Willa Church; Kansas City, Mo.
Erick R. Claassen; Newton
Alfred Lester Clapp; Manhattan
Bertha Mae Clark; Alta Vista
Hazel Clark; Onaga
William D. Clarke; Paola
Orem Richard Clency; Manhattan
Ruth Clency; Manhattan
John Chester Cluff; Stillwater, Okla.
Wesley Samuel Coblentz; Great Bend
Russell Mark Coco; Bordelonville, La.
Adalyn Bell Coffman; Roodhouse, Ill.
Thelma Louise Coffman; Manhattan
George William Cole; Nevada, Mo.
William N. Cole; Paola
Donald Warlick Collins; Junction City
Elery Lowe Collins; Fontana
Minnie K. Colvin; Junction City
Evelyn M. Colwell; Manhattan
C. Doris Compton; Manhattan
Gladys Josephine Compton; Willis
Robin Dale Compton; Manhattan
Earl Eugene Comstock; Wichita
George Thompson Conn; Washington, D. C.
Malvin A. Conner; Manhattan
Darline Grinstead Conover; Manhattan
Ralph Martin Conrad; Manhattan
Esther Margaret Cormany; Junction City
Mary Ellen Cormany Junction City
John Trumbull Correll; Manhattan
Sam Prentis Cory; Hutchinson
Una Idella Coutermarsh; Bala
Robert Norman Craft; Latham
Helene Alice Crawford; Green
William Wesley Crawford; Manhattan
Allen Baxter Crow; Harper
Leonard E. Croy; Norcatur
Mary Lewellyn Cunningham; Concordia
Burdell Edwin Curl; Bartlett
Nelle La Verne Curry; Winchester
Charlotte Cutting; Lenora
Eugene Cypert; Jr.; Manhattan
Lena Marguerite Cyr; Greenleaf
Doris Marjorie Dalton; St. George
Lois La Vone Darby; Morrowville
Martha Mary Davies; Bala
Anna Marie Davis; Manhattan
Carrie Elvard Davis; Delavan
Clara Belle Davis; Blaine
Dorothy Mae Davis; Delavan
Hilma Ruth Davis; Manhattan
Julia Marie Davis; Nebraska City, Neb.
Kenneth S. Davis; Manhattan
Hope Dawley; Manhattan
Florence P. Day; Manhattan
Emma Mildred Dean; Nickerson
Jessie Gertrude Dean; Princeton
Narcissus Baldonada Della; Manhattan
Linnea Carlson Dennett; Manhattan
Orville Frederick Denton; Denton
Hilda Marie Deschner; Beloit
Irene Evelyn Deschner; Beloit
Robert Cooper Dial; Manhattan
Mary Beatrice Dickson; Washington
Dorothy Alice Dietz; Esbon
Paul Lawrence Dittemore; Manhattan
Eleanor I. Dobkins; Marysville
Charles George Dobrovolny; Manhattan
Ernest Dobrovolny; Manhattan
Edith Marie Dobson; Manhattan
Hazel Viola Dobson; Manhattan
Dorothy Gertrude Dodson; Clay Center
Frances Lorine Doornbos; El Dorado
Esther Ita Dorgan; Alta Vista
Joseph Alfred Doubrava; Lorraine
Agatha Marie Dougan; Council Grove
Myrtle Dougherty; Manhattan
Lyle Wayne Downey; Oak Park, Ill.
Charles Dubois; Colville, Wash.
Mary Edmona Dudley; Topeka
Maurice Leland DuMars; Agra
Maxine M. Dunback; Belleville
Kenneth Dunlop; Detroit
Meredith Ernestine Dwelly; Manhattan
Max Leon Eaton; Colby
Doris Eunice Eberle; McPherson
Rudolph Eugene Eberle; Emporia
A. Thornton Edwards; Junction City
Karl D. Edwards; Junction City
Philip Joseph Edwards; Athol
Hal Field Eier; Atwood
Wallace O. Elkins; Manhattan
Everett Ward Emery; Baldwin
Florence Muriel Emery; Tescott
Ruth Mary Emrich; Tyronza, Ark.
James Russel Epperson; Manhattan
James Howard Evans; Barnard
Wilson Blaine Fagerberg; Olsburg
Herman Farley; Manhattan
Vera Lottie Farrell; Clay Center
Edna Elna Farren; Garnett
Elwin Elwood Feather; Minneapolis
Herbert Henry Fechner; Manhattan
Joseph Charles Fickel; Manhattan
Kathleen Edith Fields; Atchison
Anne Bessie Filinger; Cuba
Zelda Arliene Finch; Oketo
Panice Verla Finch; Oketo
Maynard Hincock Finley; Emporia
Esther Irene Finney; Beloit
Ladek Charles Fiser; Mahaska
Theodore Allen Fleck; Garrison
Ernestine Ernst Fleming; Paola
Lois Maxine Fleming; Iola
Max Charles Fleming; Paola
Goldine C. Fletcher; Kensington
Mary Genevieve Fletcher; Pawnee City, Neb.
Thelma Lorena Fleury; Jamestown
Arthur Oran Flinner; Manhattan
Maxine Elizabeth Fones; Kansas City, Mo.
Georgia Ellen Forrester; Wheaton
Sina Faye Fowler; Mendota, Mo.
Roy Leslie Fox; Manhattan
Evelyn Foy; Marysville
Harry Orwin Frazier; Clay Center
John Warren Frazier; Manhattan
Marian Frances Freedlun; Chanute
James Raymond Freeland; Manhattan
Beulah May Frey; Elmdale
Florence Etta Fuller; Miltonvale
Edgar Daniel Furse; Pleasanton
Ralph Dana Gage; Minneapolis
Eldred La Monte Gann; Burden
Elizabeth Gaston; Manhattan
Maud Harris Gaston; Manhattan
Clarence Henry Gatch; Woodbine
Clela Irene Gates; Beloit
Velma Lucille Gates; Beloit
Cora Mae Geiger; Salina
Lee Gemmell; Manhattan
Verda Verene German; Glen Elder
Harold Gibson; Manhattan
William Everett Gibson; Manhattan
C. I. Gilbreath; Kingman
Pat O. Gill; Enid, Okla.
Bernice Grace Gillette; Oberlin
Isabelle Gillum; Manhattan
Malaeska Milton Ginter; Manhattan
Ferne Acille Glover; Burr Oak
Jack Going; Topeka
Frank Henry Goodrick; Lawrence
Gwendolyn Gosney; Goddard
Archie Verne Grady; St. George
Lois Alta Graham; Peabody

SUMMER SCHOOL—*Continued*

Dorothy Nelle Graves; Neosho
Senioh Gray; Kansas City
Albert Benjamin Green; Dallas, Tex.
Helen Jeanette Greene; Beverly
Ruth Gresham; Manhattan
Melvin Arthur Griffith; Osage City
David George Griffiths; Manhattan
Kenneth Duree Grimes; Topeka
Robert Merriam Groesbeck; Manhattan
Hilda Rosine Grossman; Manhattan
Alberta Maude Gurtler; Topeka
Carroll Wright Guthrie; Mt. Vernon, Mo.
Golda Pearle Haas; Hutchinson
Dorothy Hadsell; Manhattan
Lester Theodore Hagadorn; Manhattan
Lucia Mary Haggart; Salina
Marjorie Estella Haggart; Salina
Phil Greager Haggman; Scandia
George Van Arsdale Hahm; Manhattan
Robert Le Roy Hahn; Arkansas City
Alvin Bentley Haines; Hutchinson
Wilburn Hale; Manhattan
Lyman Monroe Hall; Manhattan
Mabel Lillian Hall; Kensington
Newell Martin Hall; Manhattan
Helen Margaret Halstead; Manhattan
Doris Independence Hamilton; Glen Elder
Richard Edward Hamler; Manhattan
Nina Loretta Hammann; McPherson
Irene J. Hank; Holton
John William Hanna; Manhattan
Gladys Viona Hanson; Leonardville
James D. Haptonstall; Republic
Oscar Miles Hardtarfer; Lawrence
Oran A. Harger; Oberlin
A. Alberta Harness; Brush, Colo.
Don McDowell Harper; Emporia
Ruth Marian Harpel;
Wessington Springs, S. Dak.
Marguerite Velma Harper; Emporia
Mary Caroline Harrison; Galena
Clark Hartman; Lyons
Julia Ruth Hartman; Manhattan
Mary Ann Hartzell; Rossville
Roy Hastings; Goodland
Ada Haukenberry; Manhattan
Gertrude Elizabeth Haworth; Clyde
Byron Clifton Hayes; Ogallah
Harriett Heckert; Tescott
Lenora Heckert; Tescott
Ruth Dillon Heckler; Dallas, Tex.
Florence Josephine Hedlind; Clay Center
Hazel Marian Hefling; Burrton
Harold Arthur Heimerich; Clay Center
Hubert Raymond Hein; Washington
Florence Beck Heizer; Riley
Georgia Hemphill; Clay Center
Dorothy Gennevieve Hendricks; Webber
Ella Bernadine Henry; Clay Center
George Gerald Hensley; Mankato
William Stanley Herrmann; Bucklin
Frances Ada Hester; Medicine Lodge
Irene Higbee; Climax
Harold Herbert Higginbottom; Manhattan
Arlie William Higgins; Seneca
Madge D. Hildreth; Altamont
Garnet Isal Hill; Westmoreland
Inez Mildred Hill; Topeka
Rolland Theodore Hinkle; Carbondale
Carolyn Alvenia Hirt; Bucklin
Zelma E. Hockett; Manhattan
Loretta Alberta Hofman; St. George
Bernadine Adah Hofmann; Clay Center
Maxine Hofmann; Manhattan
Hazel Juanita Hoke; Manhattan
Vincent Benedict Holbert; Manhattan
Naomi Mabel Holm; White City
Seawillow Belle Holmes; Belleville
Tom Holmes; Emporia
Ruby Marie Holtman; Leonardville
Marguerite Elizabeth Holzapfel; Miltonvale
Mildred Pauline Holzapfel; Miltonvale
Janie Mae Hood; Washington
Elizabeth Marie Hoover; Preston
Seward Ellis Horner; Abilene
Maurice Wilson Horrell; Baldwin City
Herbert Dale Hoskins; Harveyville
Alvin Albert Hostetler; Hutchinson
Kenneth Rives Hougland; Olathe
Lester Carlton Howard; Worden, Mont.
Lois Elda Howard; Worden, Mont.
Mary Alice Howard; Garnett
Hazel Dell Howe; Manhattan
Margaret Joye Howe; Manhattan
David Elbert Howery; Scott City
Paul Richard Hoyt; Wichita
Lela Ethel Huber; Manhattan
Howard Busby Hudiburg; Independence
Harlow Kenyon Hudson; Manhattan
Robert Huey; Ogden
Serena Louise Huey; Ogden
Irene Berniece Hughes; Oak Hill
Opal Carola Hughes; Oak Hill
Sibyl Maud Humbert; Danville
Bernice Marie Hunter; Formoso
Harry George Hunter; Formoso
Hazel Lenore Hyde; Augusta
Louise Elizabeth Hyde; Beloit
Irene Marie Ingmire; White City
Leota Irvine; Stafford
Letha Irvine; Stafford
Percy Jennings Isaacson; Manhattan
Ima Irene Isom; Lebanon
Ura Geuss Jackson; Hiawatha
Wayne Worley Jacobs; Harper
Mary Margaret James; Manhattan
William Charles Janes; Manhattan
George Jelinek; Ellsworth
Josephine Fisk Jelinek; Manhattan
Paul William Jenicek; Bushton
Francis G. Jennings; Arnold
Myrta Virginia Jennings; Lebo
William Edwin Jennings; Manhattan
Marie Karoline Jermark; Delphos
Ingrid Karin Jernberg; Lindsborg
George Loomis Jobling; Caldwell
Margaret Louise Jodon; Salina
Carol Leroy Johnson; Alta Vista
Frances Martha Johnson; Devon
George Roll Johnson; Council Grove
Helen Marie Johnson; Oberlin
Jay Bernard Johnson; Olsburg
Joseph Claude Johnson; Russell
Marie Johnson; Columbus
Naomi Marie Johnson; Oskaloosa
Paul Eugene Johnson; Garnett
Ruth Caroline Johnson; Belvue
William Laurie Jones; Manhattan
George Clair Jordan; Jewell
Helen Shell Joseph; Kirwin
William Henry Juzi; Florence
Gertrude Beulah Kammer; Atchison
Elbert Elvin Karns; Bucklin
Henry Daniel Karns; Concordia
Edward Kasel; Manhattan
Edward E. Kaufman; Kingman
E. Lynn Kay; Brewster
Vernice Eva Keach; Chanute
Mary Elizabeth Keegan; Great Bend
Elizabeth M. Keilen; Salina
Eugene Rex Kell; Manhattan
Vera Arnetta Kellogg; Herington
John Howard Kelly; Mayetta
Ronald A. Kennedy; Manhattan
Glenn Monroe Kilmer; McPherson
Jay Grant Kimball; Manhattan
Bruce Alvin Kindig; Medicine Lodge
Howard Maxwell Kindsvater; Wichita
Cornie Louise King; Delphos
Pauline Mae King; Manhattan

SUMMER SCHOOL—*Continued*

Robert Callen King; Junction City
Eunice Velma Kinner; White City
Howard Le Vasseur Kipfer; Manhattan
Mary Belle Kirk; Scott City
Leroy Reginald Kirkpatrick; El Reno, Okla.
Darwin Bruce Kissinger; Manhattan
Ruth Vera Kistler; Kingman
Dorothea Elizabeth Klein; Topeka
Doris De Ette Kline; Miltonvale
Alton Sawyer Knechtel; Larned
James Raymond Knox; El Dorado
Wesley Koehler; Lakin
Otho Merton Koontz; Jetmore
James Kral; Manhattan
Lilly Anna Krause; Marysville
Vera Barbara Kretzmeier; Manhattan
Elsie Della Kruger; Holton
Lucille O. Laessig; Gypsum
Dorothea Annette LaFollette; Utica
Malcolm Laman; Concordia
Mabel Luvina Lambotte; Rossville
Velma Celesta Lambotte; Rossville
Kenneth George Lancaster; Junction City
Benjamin Reigle Lantz, Jr.; Salina
Eveline Juliet Larson; Leonardville
Warren Donald Larson; Manhattan
Cheryl Delphine Lassey; Miltonvale
Irene Mary Lasswell; Havensville
Alta Lathrop; Smith Center
Raymond Price Latimer; Manhattan
Verna Latzke; Chapman
Margaret Laughlin; Turon
Lesta Lolita Laurence; Abilene
Louise Frances Layman; Arlington
Lily Lee; Hongkong, China
Wayne Howard Lee; Junction City
Helen Lefebore; Havensville
Mildred Irene Leipersberger; Clay Center
Ada Elizabeth Leiszler; Clifton
Mildred Woodcock Leker; Manhattan
Angele Regine Leonard; Junction City
Florence Marie Leonard; Manhattan
Maurine Theresa Lewis; Manhattan
Vivian Ruth Light; Manhattan
James Walton Linn; Manhattan
Peter Linscheid; Arlington
Alice L. Lintz; Wamego
Eva Elizabeth Lisk; Manhattan
Wyvonne Little; Louisville
Clara Littleford; Salt Lake City, Utah
Laura Ann Lewelyn; Bala
Doris Elizabeth Lloyd; Oak Hill
Glenn Orville Lloyd; Oak Hill
Twila Ellen Lloyd; Oak Hill
Alice Lucille Lofton; Washington
Charles Alden Logan; Manhattan
Florence Margaret Long; Mayetta
John Royer Long; Abilene
Ada Grace Lorimer; Olathe
Catharine Lorimer; Kansas City, Mo.
Verla Jessie Lovell; Topeka
Gerald Lowell; Hollis
Ruth Mildred Lowrey; Manhattan
Henry Wilbert Loy, Jr.; Manhattan
Hugo Frederick Lucas; Manhattan
Otto Walter Ludloff; Honolulu, Hawaii
Emily L. Lund; Green
Elvera M. Lundine; Hope
Hattie Limaea Lundine; Hope
Georgie Seaman Lyman; Ulysses
Hazel Alma Lyness; Walnut
Sumner V. Lyons; Lucas
Laura Elizabeth McAdams; Salina
Isaiah C. McAlister; Jefferson, Tex.
Gail McAninch; Stockdale
Lester Lo Verne McBride; Manhattan
Mildred Katherine McBride; Boyle
Mollie Beatrice McBride; Atwood
Kenneth D. McCall; Manhattan
Lucille McCall; Winfield
Ruth Beryl McCammon; Manhattan
Mayme Catharine McCawley; Hollenberg
Lola May McCleery; Esbon
Anna Evelyn McClung; Harper
Myrna Amelia McClure; Manhattan
Thyra Corrine McClure; Manhattan
Harriet Elizabeth McConnell; Cherryvale
Mary Alice McCreight; Soldier
R. Harold McElroy; Randall
Willard Lawrence McFillin; Manhattan
Iris McGee; Waynoka, Okla.
Hiram Temple McGehee; Manhattan
James Dan McGregor; Columbus
Ruth Alice McIlnay; Wichita
Cedric Earle McIlvain; Smith Center
Elizabeth Hull McKeen; Manhattan
Ada McKeever; Holton
Mary Isabelle McKenzie; Solomon
Margaret Roselyn McKinney; Junction City
Conway McLeavy; Dwight
Ruby Rebecca McMichael; Almena
Selena Charlene McMillen; Haddam
Ray John McMillin; Manhattan
William Loy McMullen; Oberlin
Meta Marie McNeil; Miltonvale
Owen R. McNeil; Delphos
Reva McNeil; Miltonvale
Robert Fred McNitt; Washington
Leona Irene Maas; Alma
Avis Loretta Mack; Clay Center
David Leslie Mackintosh; Manhattan
Alice Marie Maixner; Wilson
Grace Sadie Mann; White City
Vivian Anna Marley; Manhattan
Daniel Claire Marshall; Manhattan
Flossie Pearl Martin; Cuba
James William Martin; Sabetha
Thomas Ellsworth Martin; Manhattan
Carl Jesus Martinez; Manhattan
James Milton Mason; Manhattan
James Otis Mason; Houston, Tex.
Helen Sawtell Mauck; Junction City
Madge Maupen; Iola
Edna Estella Maxwell; Manhattan
Mary Evangeline Maxwell; Manhattan
Henrietta Johanna Meenen; Clifton
Norman John Mellies; Ellinwood
Etta E. Mensch; Wamego
John A. Meredith; Auburn
Frances Mergenmeier; Seneca
Thomas Nelson Meroney; Manhattan
Velma Meserve; Ellis
Alfreda Meyer; Frankfort
Beatrice Meyer; Lillis
Marcella Meyer; Lillis
John Max Milam; Bartlesville, Okla.
Edgar William Millenbruch; Herkimer
Edith Elaine Miller; Salina
Elsie Lee Miller; Manhattan
Erma Jean Miller; Manhattan
Jack Eward Miller; Manhattan
Otto Martin Miller; McPherson
James Martin Mills; Kansas City
Dorothy Lucille Mitchell; Belleville
Hiroshi Miyata; Honolulu, Hawaii
Milton Hiram Mohn; Ellinwood
Conrad Stephen Moll; Manhattan
Merna Myrtha Monroe; Manhattan
Laurie Arvid Monson; Canon City, Colo.
Tom Allen Montgomery; Hill City
Earl Atlas Moody; Kansas City
Leslie Eugene Moody; Ogden
Marjorie Branson Moore; Munden
M. Matilda Moore; Junction City
Martha Mildred Moore; Howard
Virgil Stanton Moore; Altoona
Margaret Naida More; Glen Elder
Ruth Eleanor More; Glen Elder

SUMMER SCHOOL—*Continued*

Neal Francis Morehouse; Manhattan
Virgil Idmire Morey; Narka
Wade Morey; Narka
Clark Leroy Morford; Olsburg
Alice Lucille Morgan; Concordia
Olive Elfa Morgan; Hugoton
Mina Virginia Morley; Dodge City
Irene Morris; Paxico
Marguerite Morris; Paxico
Mary Hope Morris; Manhattan
Merle Dallas Morris; Riley
John Rex Morrison; Great Bend
Reed Franklin Morse; Manhattan
Lillian Kelly Mosshart; Manhattan
Elizabeth Emma Mueller; Washington
Willard Dow Munson; Madison
Donald Dudley Murphy; Manhattan
Margaret Boore Muse; Manhattan
Pearl Frances Musgrave; Hillsdale
Harry Albert Myers; Wamego
James Byron Nash; Parsons
Wilbur S. Nay; Manhattan
Walter Naylor; Burr Oak
Erma Mildred Neelly; Hopewell
Naomi Mary Neelly; Hopewell
Shelby Merle Neelly; Hopewell
Benjamin A. Neill; Miltonvale
Chrystal Iva Nelson; Manhattan
Nevlyn Richard Nelson; Belle Plaine
Zetta Blanche Nelson; Manhattan
Paul A. Neuschwanger; Osborne
Bertha Ruth New; Lenexa
Bernice Marie Newbury; Council Grove
Edwin M. Newman; La Crosse
Mary Vivien Nickels; Manhattan
Dorothea M. Nielson; Marysville
Marcella Elaine Nolan; Lillis
Linus A. Noll; Keats
Harold Le Roy Nonamaker; Osborne
Irene Winifred Nordstrom; Randolph
Winifred Daisy Beeby Norman; Topeka
Dale Leora Norris; Raymond
Claire Nulton; Manhattan
Aldene Nussbaumer; Lebanon
Lois Marie Oberhelman; Barns
Milo Claire Oberhelman; Randolph
Wamoth Denaia Odle; Manhattan
Celoa May Oleson; Speed
Harold Ollhoff; Herington
Elna Joyce Olson; Manhattan
Mable Bessie Olson; Elk Falls
Verna Elvira Olson; Clifton
Frieda Marie Oltjen; Hiawatha
Martha Luella O'Neill; Winchester
Elva I. Osborne; Formoso
Ruthetta Owsley; Manhattan
Marian Ozment; Manhattan
Leone Evelyn Pacey; Manhattan
Arlie Edward Paige; Minneapolis
Clair Norman Palmer; Kincaid
Floyd Earl Palmer; Ashland
Udelle Roberta Palmer; Randolph
Ruth Lucille Palmquist; Concordia
Ruth Evelyn Parcels; Hiawatha
Lois Lilly Parker; Broughton
Augustus Stanley Parr; Rossville
Florence A. Parsons; Miltonvale
Frank Leonard Parsons; Ruleton
Marian Parsons; Barnard
Le Roy Clay Paslay; Manhattan
Florence Virginia Patterson; Glen Elder
Lloyd Everett Patterson; St. John
Noble Wayne Patterson; Junction City
Reba L. Patterson; Glen Elder
Clara K. Paulsen; Stafford
Dorothy Esther Peak; Densmore
Oliver Pearson; Lindsborg
Jessie Lenore Peck; Jewell
Mary Aleta Peck; Council Grove
Frederick Adams Peery; Manhattan
Theresa Agnes Pendergast; Blaine
Ethel M. Pentico; Agenda
Marsciene Perreault; Clyde
John Davis Perrill; Salina
Erma Juanita Perry; Greenleaf
Robert Bruce Perry; Manhattan
Eugene Forrest Peterson; Yates Center
Helen Mills Petersen; Sidell
Irving Everett Peterson; Haddam
Iver Eugene Peterson; Concordia
Mary Katherine Peterson; Riley
Lorrayne G. Peterson; Randolph
Melvin George Peterson; Manhattan
Virginia Janette Peterson; Manhattan
Ruth A. Phillips; Junction City
Hazel Pickard; Haddam
Merle V. Pickard; Haddam
Deets Pickett; Manhattan
Encie Elizabeth Picking; Abilene
Lawrence Bryan Pilcher; Glasco
Lucile May Piper; Goodland
Donovon Donald Plumb; Manhattan
Sylvia Beryl Plymire; Beloit
Frances Edna Potter; Natoma
Frederick Gerald Powell; Frankfort
Ralph Pratt; Herington
Frank B. Prentup; Fort Riley
Orville Fredrich Preuss; Manhattan
Garland Newton Purcell; El Dorado
Kenneth Webb Putney; Manhattan
Dryden Marie Quist; Manhattan
Dorothy Raburn; Manhattan
Alice Dresser Rader; Manhattan
E. Glenn Rader; Severy
Julia Elizabeth Rader; Manhattan
Esther Erma Rairdon; Havensville
Earl Ramsey; Filer, Idaho
Elizabeth Ruth Ransom; Manhattan
Amy Rasher; Solomon
Edris W. Rector; Manhattan
Katherine Reid; Manhattan
Lowell N. Renberger; Manhattan
Nelson Stanley Reppert; Harris
Harold Duane Richardson; Long Island
Alma Margaret Richhart; Nickerson
Edna Margaret Riechers; Clay Center
Lloyd Carr Riggs; Manhattan
Ewalt Arnold Rindt; Herington
Marian Riordan; Solomon
Neva Merle Ritter; Esbon
Hubert Maxwell Rivers; Dodge City
John Bissell Roberts; Manhattan
Sarah Helen Roberts; Manhattan
Wilmer Manbeck Robrock; Manhattan
Ralph Edwin Roderick; Manhattan
Lyla Sophia Roepke; Manhattan
Raymond Rollin Roepke; Manhattan
Ralph Rogers; Madison
Emily May Rogler; Manhattan
Paul John Rohm; Manhattan
Helen Katheryn Romig; Bethany, Mo.
Robert Talbot Romine, Jr.; Manhattan
Charles Eugene Roper; Atchison
Pearl Elzora Rorabaugh; Lebanon
Evelyn Anna Rosell; Leonardville
Lois Rosencrans; Manhattan
Amanda Christina Rosenquist; Osage City
Bertha Eleanor Ross; Junction City
Jessie Mary Irene Ross; Clifton
Merle Marguerite Ross; Dover
Paul Daniel Ross; Otterville, Mo.
Frank Louis Rosser; Brookville
Ethelyn V. Rostine; Hutchinson
Dorothy Dee Roy; Wilsey
Arthur Warwick Rucker; Americus
Vance Mather Rucker; Manhattan

SUMMER SCHOOL—*Continued*

Helen Rudbeck; Manhattan
Anna Frances Rundus; Belleville
Loyal Luther Rush; Erie
Charles Edward Russell; Fredonia
Helen M. Rust; Manhattan
Monica M. Ryan; Blaine
Maud Grace Ryder; Manhattan
Curtis Williams Sabrosky; Manhattan
Olga Barbara Saffry; Alma
Myron L. Sallee; Manhattan
Pauline Willa Samuel; Manhattan
Grace Marie Sanders; Rossville
Roy E. Sanders; Manhattan
Olin Sandlin; Palco
Dorothy Saville; Manhattan
Frances Elizabeth Schlosser; McPherson
Raymond Schlotterbeck; Wichita
Ruth Schlotterbeck; Lyons
Erma Ann Schmedemann; Manhattan
Wilma Ruth Schmidt; Blue Mound
La Velle Robert Schruben; Hoxie
William Joseph Schultis; Sylvan Grove
La Vonne Reva Schurr; Clay Center
Doris Frieda Marie Schwanke; Alma
Louis Charles Schwanke; Alma
Hildred Renetta Schweiter; Wichita
Florence Etta Schwendener; Abilene
Minnie Scoggins; Lovewell
Arthur Merle Scott; Pittsburg
Bernice Adaline Scott; Manhattan
Harold J. Scott; Altoona
Harold Morton Scott; Manhattan
Marjorie Marie Scott; Altoona
Sarah Elizabeth Scott; Manhattan
W. Allen Searey; Independence, Mo.
Florence Cynthia See; Ransom
Lela Mae Segrist; Manhattan
Petrus Johannes Serfontein;
Trompsburg, So. Africa
George Audrian Shafer; Topeka
Maxine Shaffer; Beloit
Lucile Nellie Shannan; Manhattan
Le Nora Marie Shara; Narka
Leona Edythe Shara; Narka
Leslie Maurice Shaw; Bloomington
Annella Shepard; Vliets
Byron Le Roy Shepherd; Harveyville
Myra Sherwood; Concordia
Sophia M. Shirley; Osage City
Winifred Louise Shoyer; Soldier
Mary Lovicy Shreve; Augusta
Lena Blanche Shumate; Maplehill
Leona Belle Shumate; Maplehill
Beulah Le Verne Siddens; Manhattan
Curtis Daniel Sides; Manhattan
Dale Harold Sieling; Hays
Kermit James Silverwood; Ellsworth
Richard Ray Simmons; Ashland
Arlene G. Simms; Republic
Earl Lee Simms; Republic
Ruth Simpson; Leonardville
Wilma M. Simpson; Clyde
Sister Lorena Heidrick; Concordia
Sister M. Honoria Petett; Concordia
Josephine Nell Skinner; North Topeka
Theodore Skinner; Manhattan
Lois I. Skipton; Haddam
Andrew C. Skradski; Kansas City
Joseph Charles Slechta; East St. Louis, Ill.
Frieda A. Sloop; Lyndon
Alma Pearl Smith; Sabetha
Emma R. Smith; Cleburne
Florence Esther Smith; Clay Center
Gertrude Marie Smith; Delphos
Vera Genevieve Smith; Manhattan
Walter Bruce Smith; Hoisington
Perry Otto Snider; Salina
Elsie Virginia Speer; Manhattan
Paul William Spens; Arlington
Jacob Emil Spring; Pittsburg
Opal Iola Starbird; Maplehill
Rolf Stein; Havana, Cuba
Alice Evelyn Stenstrom; White City
Alvin Howard Stephenson; Clements
William Emil Steps; Halstead
Ethel E. Stewart; Riley
Esra Ervin Stockebrand; Yates Center
Vera A. Stockwell; Kansas City
John Ransom Stone, Jr.; Leavenworth
Gladys Juanita Stoops; Bellaire
Charles William Stratton; Manhattan
Ray Stremel; Garden City
Ruth Evangeline Strickland; Manhattan
Charles Watson Stull; Osborne
Ida Jane Summers; Manhattan
Geneva Harriet Swan; Washington
Eva El Nora Swenson; Alta Vista
Maybelle Alfreda Swenson; Alta Vista
Martha E. Swoyer; Wilmot
Francisco Rioja Taberner; San Juan, P. I.
Loren E. Tackwell; Manhattan
Alberta Margaret Taddiken; Clay Center
Velma Arthena Talbot; Marysville
William A. Talbott, Jr.; Wichita
Beulah Inez Talley; Glasco
Victoria Lucille Tarkowski; Republic
James Willett Taylor; Lawrence
Mary Eloise Taylor; Manchester
Edith Hays Tempero; Clay Center
Elsie May Tempero; Clay Center
Floyd Leonard Tempero; Broughton
Howard Everett Tempero; Broughton
Thelma Mae Terpening; Morrowville
Madeen Pauline Terrass; Alma
Russell Ira Thackrey; Manhattan
Katheryn Helene Thomas; Haddam
Eve Aileen Thompson; Partridge
Florence Mae Thompson; Harper
Lois Pearl Thompson; Esbon
Marian Thompson; Manhattan
Penn Thompson; Manhattan
Arthur Chase Thomson; McCune
Leona Zoe Tibbetts; Westmoreland
Marcia Edythe Tillman; Manhattan
Elmer Fay Timmons; Geneseo
Francis Leonard Timmons; Manhattan
Florence Wilhelmina Toburen; Barnes
Blanche Louise Tomson; Dover
Mildred Ellen Toombs; Wamego
Ludia N. Tuggle; Okmulgee, Okla.
John Melville Turner; Holton
William Martin Turner; St. Marys
Anton Urban, Jr.; Miltonvale
Margaret Ruth Urquhart; Wamego
Lillian Marie Vail; Marysville
Lois Castle Vance; Enid, Okla.
Edna F. Van Deventer; Hill City
Olive Elsie Van Pelt; Beloit
Leland Stanford Van Scoyoc; Manhattan
Edna Greever Van Tuyl; Manhattan
Margaret Varns; Ellsworth
Marvin Eugene Vautravers; Centralia
Rollo Evans Venn; Wichita
Verne Ingeborg Wagner; McFarland
Edwin Leslie Walker; Junction City
Fred Henry Walker; Manhattan
Robert Elston Wallerstedt; Manhattan
Ellis Murrell Wampler; Wichita
Floyd Daniel Wanamaker; Barnes
Zella Ann Wanamaker; Barnes
Maxwell Perrine Wann; Manhattan
Treva A. Warren; Lovewell
Anne Elizabeth Washington; Manhattan
Irene M. Wassmer; Garnett
Jewell Kimball Watt; Topeka
Harvey Russell Webb; Sedan

SUMMER SCHOOL—*Concluded*

Samuel Omer Webster; Manhattan
Ray Edward Weide; Leona
Harold Rowe Weller; Phillipsburg
Lillis Raphael Wempe; Seneca
John Leslie West; Manhattan
Paul Charles Westerman; Manhattan
Opal Augusta Westhausen; Belleville
Alfred Emmett White, Jr.; Manhattan
Vee White; Manhattan
Kathryn Whitten; Wakarusa
Curtis Wieland; Morrowville
Helena Gertrude Wilber; Belleville
Lillian M. Wilber; Belleville
George Frank Wiley; Chanute
Ruth Wilkerson; Manhattan
Myrtle Elizabeth Wilkins; Miltonvale
Arthur Owen Williams; Belleville
Carl Williams; Dodge City
Donald Manly Williams; Manhattan
Lucile Thirza Williams; Marysville
Ruah Williams; Clay Center
Helen Mildred Wilmore; Halstead
Allen Rea Wilson; Manhattan
Claude Leonard Wilson; Ottawa
Daisy Mae Wilson; Irving
Ruth Louise Wilson; New Cambria
Margaret Selina Windett; Quenemo
Estelle Winters; Onaga
Chester Aaron Wismer; Pomona
Lillian G. Witter; Plains
Mary Elizabeth Wohlgemuth; Cummings
Agnes Anna Wolkensdorfer; Herndon
Heloise Wood; Clay Center
Joe Edgar Woodford; Salina
Edith Pauline Woodruff; Clyde
Maude Lillian Worthington; Pleasanton
Iola Mae Wright; Beattie
Ruth Wright; Topeka
Zint Elwin Wyant, Jr.; Topeka
Evelyn Ruth Yarrow; Wakefield
Hulda Yenni; Ogden
Horace Fetzer Yoder; Manhattan
Mary Irene Yoder; Manhattan
Marian Irene Young; Cedar Point
Winifred Mary Young; Wakefield
Florence Marian Zeckser; Alma
Lester Allen Zerbe; Salina

Four-week Session

Clarence Orval Banta; Ottawa
Silas Solomon Bergsma; Hill City
Floyd Albert Blauer; Lebanon
Thomas Walter Bruner; Auburn
Willis Edwin De Valris; Shelby, Iowa
Vernon Eugene Frye; Quenemo
Harold David Garver; Overland Park
Wilbur William Humphrey; Pleasanton
Julian Almon Johnson; Kiowa
Charles Koberg; Big Spring, Tex.
Verl Ephriam McAdams; Medicine Lodge
Charles Mantz; Spearville
Ezra Perle Mauk; Mulvane
Ethel Myrtle Noland; Keats
Merton Louis Otto; Smith Center
Miriam K. Piking; Abilene
Ernest Lee Raines; Mound City
Roger Eli Regnier; Fairview
Hamilton Arlo Stewart; Topeka
Joseph Ardrey Watson; Howard

Students by States, Foreign Countries and Kansas Counties

STATES

Arizona	3	Kentucky	1	Oklahoma	16
Arkansas	2	Louisiana	2	Pennsylvania	2
California	3	Massachusetts	1	South Carolina	1
Colorado	12	Michigan	1	South Dakota	3
Connecticut	1	Mississippi	2	Texas	9
District of Columbia	1	Missouri	59	Utah	2
Florida	1	Montana	5	Vermont	2
Georgia	2	Nebraska	19	West Virginia	2
Idaho	3	New Jersey	1	Wisconsin	3
Illinois	11	New Mexico	1	Wyoming	4
Iowa	8	New York	14		
Kansas	3,143	Ohio	3	Total	3,343

FOREIGN COUNTRIES

Brazil	1	Hawaii	3	Roumania	1
China	2	India	1	South Africa	1
Cuba	2	Panama	1		
Denmark	1	Philippine Islands	3	Total	16
				Grand total	3,359

KANSAS COUNTIES

Allen	9	Greenwood	16	Pawnee	14
Anderson	17	Hamilton	8	Phillips	12
Atchison	25	Harper	19	Pottawatomie	68
Barber	8	Harvey	29	Pratt	21
Barton	22	Haskell	4	Rawlins	6
Bourbon	11	Hodgeman	2	Reno	66
Brown	24	Jackson	41	Republic	49
Butler	45	Jefferson	29	Rice	27
Chase	14	Jewell	43	Riley	870
Chautauqua	4	Johnson	27	Rooks	10
Cherokee	19	Kearny	7	Rush	11
Cheyenne	2	Kingman	11	Russell	14
Clark	6	Kiowa	5	Saline	54
Clay	69	Labette	23	Scott	6
Cloud	64	Lane	3	Sedgwick	64
Coffey	21	Leavenworth	26	Seward	4
Comanche	5	Lincoln	14	Shawnee	116
Cowley	22	Linn	11	Sheridan	7
Crawford	18	Logan	4	Sherman	18
Decatur	15	Lyon	27	Smith	30
Dickinson	80	McPherson	29	Stafford	12
Doniphan	10	Marion	17	Stanton	1
Douglas	15	Marshall	62	Stevens	5
Edwards	8	Meade	5	Sumner	22
Elk	6	Miami	15	Thomas	11
Ellis	9	Mitchell	23	Trego	2
Ellsworth	16	Montgomery	21	Wabaunsee	42
Finney	13	Morris	42	Wallace	2
Ford	20	Morton	2	Washington	51
Franklin	29	Nemaha	24	Wichita	7
Geary	77	Neosho	17	Wilson	23
Gove	12	Ness	17	Woodson	6
Graham	11	Norton	21	Wyandotte	58
Grant	1	Osage	20		
Gray	3	Osborne	19	Total	3,143
Greeley	1	Ottawa	20		

Record of Enrollment and Degrees Conferred, 1863-1933

Year.	Summer school	Housekps' sht. course	Dairy Mfg. 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
1863-64	....	....	....	....	....	....	....	93	....	....	14	..	....	....	....	....	107	....	..
1864-65	....	....	....	....	....	....	....	90	....	....	14	8	1	....	....	....	113	....	..
1865	....	....	....	....	....	....	....	112	....	....	28	5	5	....	....	....	150	....	..
1866-67	....	....	....	....	....	....	....	154	....	....	11	7	1	5	....	....	178	5	..
1867-68	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	168	....	..
1868-69	....	....	....	....	....	....	....	146	....	....	11	10	2	....	1	....	170	....	..
1870-71	....	....	....	....	....	....	....	164	....	....	13	7	5	5	....	....	194	5	5
1871-72	....	....	....	....	....	....	....	162	....	....	22	10	3	2	3	....	202	3	..
1873	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*217	2	1
1873-74	....	....	....	....	....	....	....	136	....	....	24	14	3	6	....	....	183	5	..
1874-75	....	....	....	....	....	....	....	103	....	....	26	10	2	2	....	....	143	2	1
1875-76	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	232	5	..
1876-77	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	234	9	1
1877-78	....	....	....	....	....	....	....	75	....	....	42	23	5	5	....	....	150	4	..
1878-79	....	....	....	....	....	....	1	....	....	....	89	89	16	12	....	....	207	9	2
1879-80	....	....	....	....	....	....	1	....	....	....	166	61	35	11	2	....	276	7	2
1880-81	....	....	....	....	....	....	6	....	....	....	178	48	24	9	2	....	267	8	..
1881-82	....	....	....	....	....	....	5	....	....	....	227	50	19	11	....	....	312	9	2
1882-83	....	....	....	....	....	....	4	....	....	....	241	60	30	12	....	....	347	12	3
1883-84	....	....	....	....	....	....	2	....	....	....	255	92	26	18	2	....	395	17	..
1884-85	....	....	....	....	....	....	2	....	....	....	271	71	36	16	5	....	401	14	1
1885-86	....	....	....	....	....	....	1	....	....	....	273	91	35	24	4	....	428	21	2
1886-87	....	....	....	....	....	....	....	....	....	....	303	100	44	24	10	....	481	21	5
1887-88	....	....	....	....	....	....	....	....	....	....	305	92	46	27	2	....	472	22	1
1888-89	....	....	....	....	....	....	....	....	....	....	266	103	41	28	7	....	445	25	1
1889-90	....	....	....	....	....	....	1	....	....	....	307	105	63	28	10	....	514	27	2
1890-91	....	....	....	....	....	....	....	....	....	....	343	135	50	53	12	....	593	52	2
1891-92	....	....	....	....	....	....	....	....	....	....	336	139	62	37	10	....	584	35	..
1892-93	....	....	....	....	....	....	....	....	....	....	339	110	66	43	29	....	587	39	9
1893-94	....	....	....	....	....	....	....	....	....	....	275	141	72	42	25	....	555	39	6
1894-95	....	....	....	....	....	....	5	....	....	....	276	108	89	64	39	....	572	57	3
1895-96	....	....	....	....	....	....	3	....	....	....	353	121	67	71	32	....	647	66	5
1896-97	....	....	....	....	....	....	6	67	....	....	321	163	69	62	46	....	734	55	8
1897-98	....	....	....	6	....	9	15	77	....	....	316	174	77	82	57	10	803	69	10
1898-99	....	....	....	26	....	35	40	110	....	....	306	177	92	65	40	21	870	53	10
1899-1900	....	24	....	57	47	50	32	162	....	....	376	163	109	69	27	22	1,094	58	3
1900-01	....	47	....	72	109	79	23	318	....	....	348	183	80	74	40	52	1,321	60	9
1901-02	....	41	....	66	125	87	19	298	....	....	396	206	120	65	32	59	1,396	52	3
1902-03	....	63	....	38	123	78	36	342	....	....	471	229	141	86	24	57	1,574	55	..
1903-04	17	51	....	16	122	72	33	443	....	....	403	206	161	114	20	36	1,605	102	1
1904-05	15	88	....	24	99	12	30	500	....	....	289	198	122	117	26	43	1,462	107	2
1905-06	18	92	....	28	118	....	46	598	....	....	373	214	145	110	30	64	1,690	96	4
1906-07	18	134	....	23	179	Engineering short courses	48	144	511	....	411	269	149	133	24	88	1,937	119	5
1907-08	29	188	....	26	173		42	134	528	....	450	357	202	148	26	82	2,192	116	4
1908-09	25	168	....	18	197		42	134	521	....	491	381	243	171	28	86	2,308	147	12
1909-10	22	152	4	111	124		87	89	453	....	456	417	286	170	26	70	2,305	145	2
1910-11	31	142	9	26	285		94	Milling short courses	364	....	533	412	288	248	34	59	2,407	204	2
1911-12	94	160	14	Lunch room management	280		85		580	....	337	461	288	261	44	81	2,523	231	6
1912-13	282	175	11		289		129		654	....	444	432	355	268	50	166	2,928	230	4
1913-14	370	149	12		223		112		....	658	516	431	324	327	64	159	3,027	283	8
1914-15	472	127	18		199	98	120		....	560	575	368	383	321	50	200	3,091	223	6
1915-16	536	85	17		207	188	175		....	484	605	454	305	401	76	219	3,314	342	17
1916-17	586	103	14		228	191	171		....	422	693	471	378	282	68	277	3,340	197	13
1917-18	481	92	....	8	119	135	138		....	231	483	349	294	239	36	190	2,406	215	17
1918-19	519	25	5	....	160	400	199		....	216	810	322	254	201	34	144	2,991	167	7
1919-20	415	57	3	6	117	354	271		....	224	894	401	300	269	43	167	3,352	260	11
1920-21	604	30	10	....	96	278	270	8	Eng. trade courses	280	878	602	318	273	42	294	3,395	249	14
1921-22	820	19	10	....	59	173	297	....		221	931	628	422	296	125	813	3,560	271	28
1922-23	884	19	8	....	55	83	163	12		220	1,004	656	460	401	118	457	3,626	341	31
1923-24	978	12	7	....	43	57	161	3		167	1,160	657	458	413	171	475	3,812	342	42
1924-25	1120	14	14	....	55	54	139	5		47	1,391	679	467	347	185	486	4,031	335	52
1925-26	947	12	11	....	41	29	89	....		....	1,494	725	512	344	182	384	4,019	341	51
1926-27	959	....	18	....	52	....	71	....	19	....	1,311	854	509	411	179	365	4,083	357	77
1927-28	966	....	20	....	57	....	88	....	7	....	1,039	819	584	500	167	418	3,878	428	70
1928-29	920	....	18	....	51	....	57	....	9	....	1,084	743	584	537	197	321	3,879	461	84
1929-30	902	....	13	....	59	....	70	....	9	....	1,128	787	581	554	†432	548	3,987	468	91
1930-31	995	....	24	....	52	....	50	....	7	....	1,077	790	605	528	506	589	4,045	424	91
1931-32	10'9	....	12	....	29	....	54	....	....	....	933	752	633	572	572	688	3,928	486	119
1932-33	995	....	....	....	....	....	72	....	....	....	666	596	552	590	518	630	3,359	....	...

* Estimated. † Figures above this in this column include neither graduate students in summer session, nor undergraduate students pursuing graduate work.

College Enrollment, 1932-1933

The Division.	Men.	Women.	Total.
The Division of Agriculture	**332**	**1**	**333**
Graduate students	60	.....	60
Seniors	72	1	73
Juniors	64	.....	64
Sophomores	65	.....	65
Freshmen	90	.....	90
Special students	3	.....	3
The Division of Veterinary Medicine	**170**	**1**	**171**
Graduate students	2	.....	2
Seniors	40	.....	40
Juniors	37	1	38
Sophomores	53	.....	53
Freshmen	37	.....	37
Special students	1	.....	1
The Division of General Science	**601**	**436**	**1,037**
Graduate students	79	32	111
Seniors	106	95	201
Juniors	94	84	178
Sophomores	124	91	215
Freshmen	171	102	273
Special students	27	32	59
The Division of Home Economics	.....	**451**	**451**
Graduate students	.....	55	55
Seniors	.....	90	90
Juniors	.....	84	84
Sophomores	.....	98	98
Freshmen	.....	119	119
Special students	.....	5	5
The Division of Engineering	**738**	**11**	**749**
Graduate students	28	1	29
Seniors	182	5	187
Juniors	187	2	189
Sophomores	172	1	173
Freshmen	166	1	167
Special students	3	1	4
Totals	1,841	900	2,741
Counted twice	24	6	30
Net totals	1,817	894	2,711
The Summer School (1932)	**447**	**548**	**995**
Totals	2,264	1,442	3,706
Counted twice	219	128	347
Net grand totals	2,045	1 314	3 359
Students Pursuing Graduate Work	**314**	**204**	**518**
Graduate students in regular session	137	85	222
Graduate students in summer session (excluding duplicates)	110	108	218
Graduate students in absentia	10	3	13
Undergraduates carrying graduate work	57	8	65

14-8535

Attendance, 19

	Home economics	Home economics and art	Home economics and journalism	Totals		Counted twice		Net totals		Net grand totals
	omen	Women.	Women.	Women.	Men.	Women.	Men.	Women.		
U										
	80	5	.....	191	1	.....	399	191	590
	63	13	.....	171	1	.....	381	171	552
	71	10	4	190	7	1	407	189	596
	89	14	4	222	15	5	449	217	666
	5	.....	.....	38	.....	.....	34	38	72
	99	7	.....	410	171	98	118	312	430
	407	49	8	1,222	195	104	1,788	1,118	2,906
Gr									
	53	.....	.....	85	.....	.....	137	85	222
	.....	.....	.....	138	48	30	110	108	218
	2	.....	.....	3	.....	.....	10	3	13
	5	.....	.....	8	.....	.....	57	8	65
	60	.....	.....	234	48	30	314	204	518
	467	49	8	1,456	243	134	2,102	1,322	3,424
Co	34	2	.....	.....	.....	.....	57	8	65
	433	47	8	.....	.....	.....	2,045	1,314	3,359
	.....	.....	.....	.....	.....	.....	.....	.....	.....

Summary of Attendance, 1932-1933

Classification.	Agriculture	Agricultural extension	Landscape gardening	Animal husbandry and veterinary medicine	Veterinary medicine	General science		Industrial journalism		Commerce		Commerce and accounting	Physical education		Industrial chemistry		Mines		Home economics	Home economics and art	Home economics and journalism	Home economics and institutional economics	Home economics and nursing	Agricultural engineering	Architecture		Architectural engineering	Chemical engineering	Civil engineering	Electrical engineering	Flour-mill engineering	Landscape architecture	Mechanical engineering	Summer session, 1933			Totals		Counted twice		Net totals		Net grand totals
	Men.	Men.	Men.	Men.	Men.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Men	Women.	Men.	Women.	Men.	Women.	Men	Women.	Women.	Women.	Women.	Men.	Men.	Women.	Men.	Men.	Men.	Men.	Men.	Men.	Men.	Women.	Total.	Men.	Women.	Men.	Women.	Men.	Women.	
Undergraduate																																										
Senior	*48	20	4	1	40	44	33	11	22	30	7	1	9	11	20		2	11	80	5		4	1	14	6	4	*11	14	30	63	1	3	32				400	191	1		398	191	590
Junior	39	19	5	1	*38	22	31	18	18	31	10	6	6	15	12	1	1	7	63	13				9	10	2	8	12	49	62	3	1	35				382	171	1		381	171	552
Sophomore	49	19	4	2	53	49	22	11	29	35	18	9	18	7	9	1	2	14	71	10	4	10	3	9	11	1	8	17	35	66	1	3	25				414	170	7	1	407	169	576
Freshman	80	7	2	1	37	99	38	20	26	47	11	*9	25	15	6		6	11	89	14	4	6	6	6	12	1	11	22	36	44	1	3	31				464	222	15	5	449	217	666
Special					1	27	32												8	5				2		1							3				34	38			34	38	72
Summer session	25	12	1		24	65	251	10	19	25	7		8	7	7		1	16	99	7				2	5	5	1	*4	10	34	35		1	19	289	410	699	289	410	171	98	118	312	430
Totals	*235	77	16	5	*103	255	407	70	114	168	53	125	66	55	54	2	12	59	407	49	8	28	12	41	45	10	142	75	193	270	6	8	145	289	410	699	1,983	1,222	195	104	1,788	1,118	2,909
Graduate																																										
In regular session	37				2	70	31												53					5		1		3	5	9	1		7				137	85			137	85	222
In summer session																																		158	138	296	158	138	48	30	110	108	218
In absentia	1					9	1												2																		10	3			10	3	13
Undergraduates carrying graduate work	22					9	2		1	1					6				5					2				3	2	8			4				57	8			57	8	65
Totals	60				2	88	34		1	1					6				60					5		1		6	7	17	1		11	158	138	296	302	234	48	30	314	204	518
Grand totals	*295	77	16	5	*105	343	441	70	115	169	53	125	66	55	60	2	12	59	467	49	8	28	12	46	45	11	142	81	200	287	7	8	156	447	548	995	2,345	1,456	243	134	2,102	1,322	3,424
Counted twice	19	9	1		19	19	36	10	15	13	3		4	3	6				34	2				3	3	1	*3	8	10	26			12				57	8			57	8	65
Net grand totals	*276	71	15	5	*176	324	405	60	100	156	50	125	62	52	54	2	12	56	433	47	8	28	12	43	42	10	*26	73	181	261	7	7	144				2,045	1,314			2,359		
Group totals						729		160		206			114		56		68								52																	

* One woman. † Two women. ‡ Three women.

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