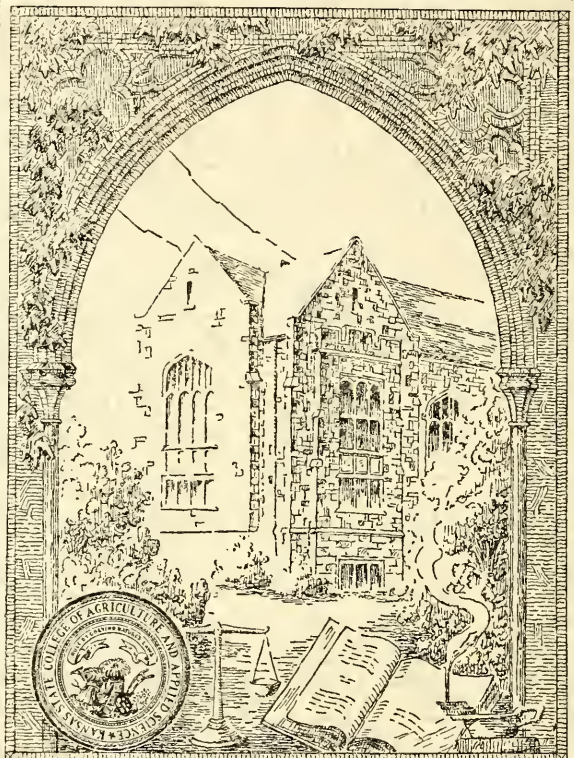






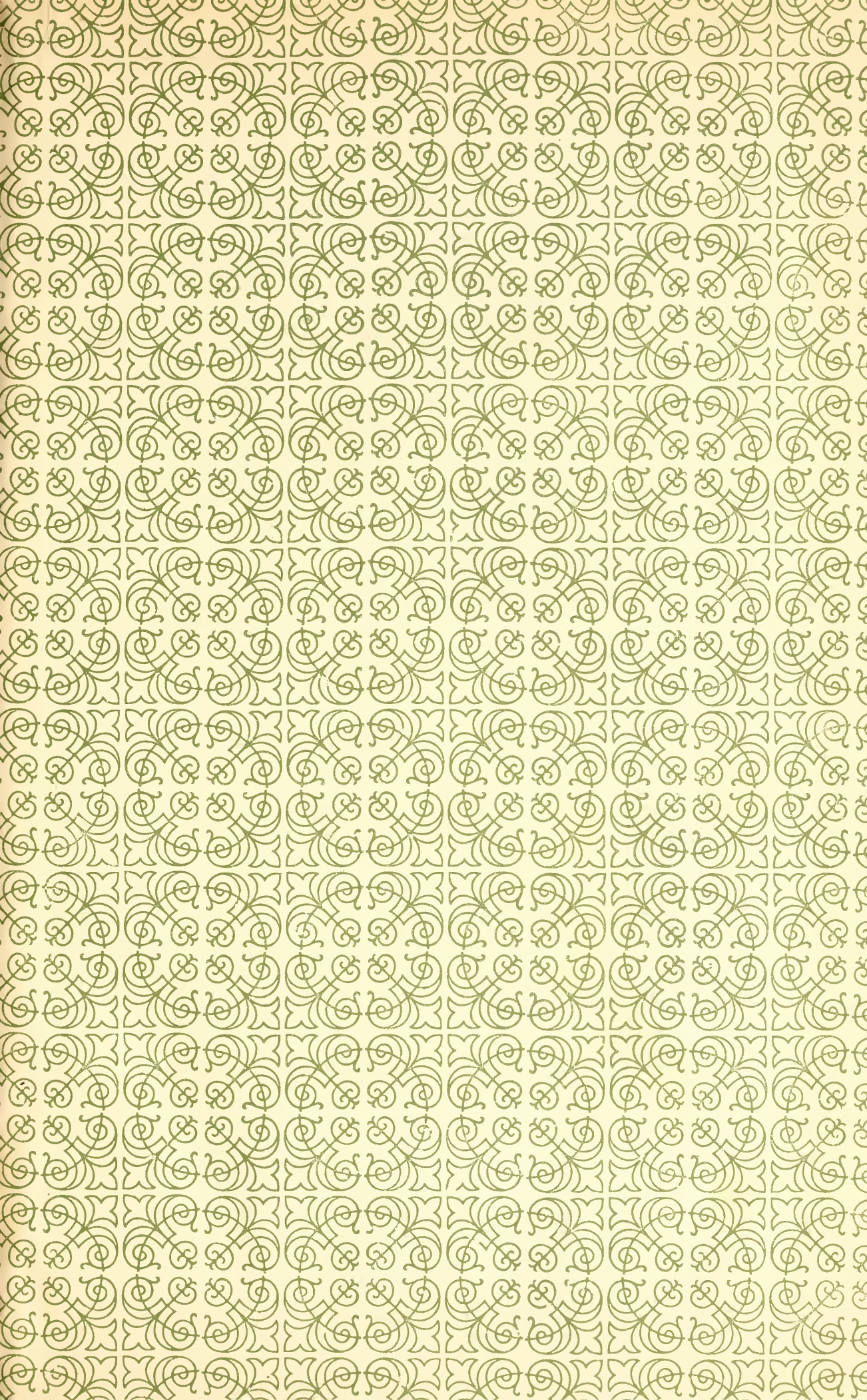
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**OF AGRICULTURE AND**  
**APPLIED SCIENCE**

















# KANSAS STATE COLLEGE BULLETIN

VOLUME XVI

MAY 15, 1932

NUMBER 6

## COMPLETE CATALOGUE NUMBER

SIXTY-NINTH SESSION, 1931-'32



ANNOUNCEMENTS FOR 1932-'33

STUDENT LISTS FOR 1931-'33

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MANHATTAN, KANSAS

PUBLISHED BY THE KANSAS STATE COLLEGE  
OF AGRICULTURE AND APPLIED SCIENCE

---

PRINTED BY KANSAS STATE PRINTING PLANT

B. P. WALKER, STATE PRINTER

TOPEKA 1932

14-4059

*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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A243  
1931/32

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VOLUME XVI

MARCH 1, 1932.

NUMBER 3

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ANNOUNCEMENTS FOR THE SESSION OF 1932-'33



KANSAS STATE COLLEGE  
OF AGRICULTURE AND APPLIED SCIENCE



MANHATTAN, KANSAS

Published by the College

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# CALENDAR

1932

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

FEBRUARY							AUGUST						
..	1	2	3	4	5	6	..	1	2	3	4	5	6
7	8	9	10	11	12	13	7	8	9	10	11	12	13
14	15	16	17	18	19	20	14	15	16	17	18	19	20
21	22	23	24	25	26	27	21	22	23	24	25	26	27
28	29	..	..	..	..	..	28	29	30	31	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..

MARCH							SEPTEMBER						
..	..	1	2	3	4	5	..	..	..	..	1	2	3
6	7	8	9	10	11	12	4	5	6	7	8	9	10
13	14	15	16	17	18	19	11	12	13	14	15	16	17
20	21	22	23	24	25	26	18	19	20	21	22	23	24
27	28	29	30	31	..	..	25	26	27	28	29	30	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..

APRIL							OCTOBER						
..	..	..	..	..	1	2	..	..	..	..	..	1	
3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	16	17	18	19	20	21	22
24	25	26	27	28	29	30	23	24	25	26	27	28	29
..	..	..	..	..	..	..	30	31	..	..	..	..	..

MAY							NOVEMBER						
1	2	3	4	5	6	7	..	..	1	2	3	4	5
8	9	10	11	12	13	14	6	7	8	9	10	11	12
15	16	17	18	19	20	21	13	14	15	16	17	18	19
22	23	24	25	26	27	28	20	21	22	23	24	25	26
29	30	31	..	..	..	..	27	28	29	30	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..

JUNE							DECEMBER						
..	..	..	1	2	3	4	..	..	..	..	1	2	3
5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	..	..	25	26	27	28	29	30	31
..	..	..	..	..	..	..	..	..	..	..	..	..	..

1933

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

FEBRUARY							AUGUST						
..	..	..	1	2	3	4	..	..	1	2	3	4	5
5	6	7	8	9	10	11	6	7	8	9	10	11	12
12	13	14	15	16	17	18	13	14	15	16	17	18	19
19	20	21	22	23	24	25	20	21	22	23	24	25	26
26	27	28	..	..	..	..	27	28	29	30	31	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..

MARCH							SEPTEMBER						
..	..	..	1	2	3	4	..	..	..	..	1	2	3
5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	31	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..

APRIL							OCTOBER						
..	..	..	..	..	1	1	1	2	3	4	5	6	7
2	3	4	5	6	7	8	8	9	10	11	12	13	14
9	10	11	12	13	14	15	15	16	17	18	19	20	21
16	17	18	19	20	21	22	22	23	24	25	26	27	28
23	24	25	26	27	28	29	29	30	31	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..

MAY							NOVEMBER						
..	1	2	3	4	5	6	..	..	..	1	2	3	4
7	8	9	10	11	12	13	5	6	7	8	9	10	11
13	15	16	17	18	19	20	12	13	14	15	16	17	18
21	22	23	24	25	26	27	19	20	21	22	23	24	25
28	29	30	31	..	..	..	26	27	28	29	30	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..

JUNE							DECEMBER						
..	..	..	1	2	3	..	..	..	..	..	1	2	3
4	5	6	7	8	9	10	3	4	5	6	7	8	9
11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	31	..	..	..	..	..	..



# THE COLLEGE CALENDAR

## SUMMER SESSION, 1932

- June 6, Monday.—Registration of students for nine-week Summer School begins at 8 a. m.  
June 6, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.  
June 6 to Aug. 6, Monday to Saturday.—Nine-week Summer School in session.  
June 6 to 10, Monday to Friday.—4-H Club Round-up.  
June 15, Wednesday.—Preliminary reports on masters' theses are due.  
July 4, Monday.—Independence Day, holiday.  
July 11 to Aug. 6, Monday to Saturday.—Four-week Summer School in session.  
July 15, Friday.—Abstracts of masters' theses are due.  
July 29, Friday.—Masters' theses are due.  
Aug. 5, Friday.—Commencement exercises at 8 p. m. for those receiving degrees at end of Summer School.  
Aug. 6, Saturday.—Summer Schools close.  
Aug. 13, Saturday.—Reports of all Summer School grades due in registrar's office.

## FIRST SEMESTER, 1932-'33

- Sept. 9, Friday.—All members of the instructional force on duty.  
Sept. 10, Saturday.—Meeting of assigners with committee on schedule at 2 p. m.  
Sept. 10, Saturday.—Meeting of assigners with deans at 3 p. m.  
Sept. 12, Monday.—Admission and registration of students begin at 7:45 a. m.  
Sept. 12, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.  
Sept. 14, Wednesday.—Registration of students closes at 9:30 a. m.  
Sept. 14, Wednesday.—Opening convocation, 11 a. m. to 12 m.  
Sept. 14, Wednesday.—\* All classes, except freshmen, meet according to schedule, beginning at 1 p. m.  
Sept. 14 and 15, Wednesday and Thursday.—† Mental tests for freshmen, 1 to 4:30 p. m.  
Sept. 15, Thursday.—All freshmen attend classes according to schedule, 8 a. m. to noon.  
Sept. 23, Friday.—† All freshman students meet at 11 a. m.  
Sept. 23, Friday.—Annual student-faculty informal reception, 8 p. m.  
Oct. 8, Saturday.—Examinations to remove conditions.  
Oct. 15, Saturday.—Scholarship deficiency reports to students and deans are due.  
Nov. 12, Saturday.—Midsemester scholarship deficiency reports to students and deans are due.  
Nov. 15, Tuesday.—Preliminary reports on masters' theses are due.  
Nov. 23, Wednesday.—Thanksgiving vacation begins at noon.  
Nov. 26, Saturday.—Thanksgiving vacation closes at 6 p. m.  
Dec. 15, Thursday.—Programs of study due from candidates for the master's degree in 1933.  
Dec. 21, Wednesday.—Winter vacation begins at 6 p. m.  
Jan. 4, 1933, Wednesday.—Winter vacation closes at 6 p. m.  
Jan. 5, Thursday.—Abstracts of masters' theses are due.  
Jan. 9, Monday.—Farmers' Short Course and Dairy Manufacturing Short Courses begin.  
Jan. 19, Thursday.—Masters' theses are due.  
Jan. 20 to 28, Friday to Saturday.—Examinations at close of semester.  
Jan. 28, Saturday.—First semester closes at 11 a. m.  
Jan. 28, Saturday.—Semester scholarship deficiency reports to students and deans are due not later than 6 p. m.

## SECOND SEMESTER, 1932-'33

- Jan. 30, Monday.—Meeting of assigners with committee on schedule at 2 p. m.  
Jan. 30, Monday.—Examinations for students deficient in entrance subjects, 8 a. m. to 5 p. m.  
Jan. 31, Tuesday.—Admission and registration of students begin at 7:45 a. m.  
Feb. 1, Wednesday.—Registration closes at 5 p. m.  
Feb. 2, Thursday.—\* All classes meet according to schedule, beginning at 8 a. m.  
Feb. 7 to 10, Tuesday to Friday.—Farm and Home Week.  
Feb. 11, Saturday.—Reports of all grades for first semester due in registrar's office.  
Feb. 22, Wednesday.—Washington's Birthday, holiday.  
Feb. 25, Saturday.—Examinations to remove conditions.  
Mar. 4, Saturday.—Farmers' Short Course and Dairy Manufacturing Short Courses close at noon.  
Mar. 4, Saturday.—Scholarship deficiency reports to students and deans are due.

\* 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.

- Mar. 15, Wednesday.—Preliminary reports on masters' theses are due.  
 April 1, Saturday.—Midsemester scholarship deficiency reports to students and deans are due.  
 April 6, Thursday.—Announcement of elections of seniors to Phi Kappa Phi.  
 April 13, Thursday.—Easter vacation begins at 6 p. m.  
 April 17, Monday.—Easter vacation closes at 6 p. m.  
 May 8, Monday.—Abstracts of masters' theses are due.  
 May 16 and 23, Tuesday to Tuesday.—Examinations for seniors.  
 May 23 to 31, Tuesday to Wednesday.—Examinations at close of semester.  
 May 24, Wednesday.—Masters' theses are due.  
 May 28, Sunday.—Baccalaureate services, beginning at 8 p. m.  
 May 30, Tuesday.—Memorial Day, holiday.  
 May 31, Wednesday.—Alumni Day. Business meeting at 2 p. m., banquet at 6 p. m.  
 June 1, Thursday.—Seventieth Annual Commencement at 10 a. m.  
 June 1, Thursday.—Semester scholarship deficiency reports to students and deans are due not later than noon.  
 June 15, Thursday.—Reports of all grades for second semester due in registrar's office.

#### 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 28, Friday.—Masters' theses are due.  
 Aug. 4, Friday.—Commencement exercises at 8 p. m. for those graduating at end of Summer School.  
 Aug. 5, Saturday.—Summer Schools close.  
 Aug. 12, Saturday.—Reports of all grades for Summer School due in registrar's office.

#### FIRST SEMESTER, 1933-'34

- 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.



## REGISTRATION AND ASSIGNMENT SCHEDULE

The following tabulation shows the schedule of hours for registration and assignment of students for the college year 1932-'33, arranged according to the initial letters of their last names:

### FIRST SEMESTER

#### MONDAY, SEPTEMBER 12, 1932

<i>Hours.</i>	<i>Initial letters.</i>
7:45 to 9:30.....	D, F, Q, R
9:45 to 11:15.....	G, J, O, W, Y
12:30 to 2:00.....	H, I, K, Z
2:15 to 3:45.....	A, C, L

#### TUESDAY, SEPTEMBER 13, 1932

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

#### WEDNESDAY, SEPTEMBER 14, 1932

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

#### TUESDAY, JANUARY 31, 1933

7:45 to 9:30.....	B, T, V
9:45 to 11:15.....	H, I, K, Z
12:30 to 2:00.....	P, S
2:15 to 3:45.....	E, M, N, U, X

#### WEDNESDAY, FEBRUARY 1, 1933

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

## The State Board of Regents

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<i>Name and address</i>	<i>Term expires</i>
C. M. HARGER, <i>Chairman</i> , Abilene.....	June 30, 1934
B. C. CULP, Beloit.....	June 30, 1932
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
W. E. IRELAND, Yates Center.....	June 30, 1932
DREW McLAUGHLIN, Paola.....	June 30, 1934
FRED M. HARRIS, Ottawa.....	June 30, 1934

---

F. C. JORGENSEN, *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. MACHIE
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; 1011 Kearney.

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

A. B., University of Nebraska, 1897; A. M., *ibid.*, 1901; Ph. D., University of Heidelberg, 1904.

A 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.

\* 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; 1503 Fairchild.
- 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 30; 401 Denison.
- RALPH R. DYKSTRA, D. V. M., Dean of Division of Veterinary Medicine (1911, 1919); Professor of Surgery and Head of Department of Surgery and Medicine (1911, 1913).  
D. V. M., Iowa State College, 1905. V 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; 1719 Laramie.
- WALTER WILLIAM CARLSON, M. E., Professor and Head of Department of Shop Practice (1910, 1917); Superintendent of Shops (1910, 1912); Industrial Engineer, Engineering Experiment Station (1913).  
B. S., K. S. C., 1908; M. E., *ibid.*, 1916. S 62; 1722 Laramie.
- HARRY JOHN CHARLES UMBERGER,<sup>1</sup> 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.

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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 (Nov. 1, 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 151; 321 N. 16th.

HALLAM WALKER DAVIS, A. M., Professor of English (1913, 1918); Head of Department of English (1913, 1921).

A. B., Indiana University, 1909; A. M., Columbia University, 1913.  
K 54; 1727 Fairview

VIVIAN 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 HIDDLESTON 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; 323 N. 15th.
- 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; Collee 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; 1430 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,<sup>2</sup> 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 304; 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.

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2. Absent on leave, Oct. 15, 1931, to June 10, 1932.



PERCY LEIGH GAINNEY, Ph. D., Professor of Bacteriology (1914, 1922); Soil Bacteriologist, Agricultural Experiment Station (1914).

B. Agr., North Carolina A. and M. College, 1908; M. S., *ibid.*, 1910; A. M., Washington University, 1911; Ph. D., *ibid.*, 1927. V 261; 1123 Houston.

FORREST FAYE FRAZIER, C. E., Professor of Civil Engineering (1911, 1922).

C. E., Ohio State University, 1910. E 123; 1815 Leavenworth.

ROYCE GERALD KLOEFFLER, 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; 1407 Laramie.

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, B. S., Professor, State Home Demonstration Leader, Division of College Extension (1923).

B. S., South Dakota State College, 1908. A 36; 1110 Kearney.

HERMAN 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 95; 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.



- 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.
- LILIAN CLARA WILLIAMS BAKER,<sup>3</sup> A. M., Professor and Head of Department of Clothing and Textiles (1924).  
B. S., K. S. C., 1914; A. M., University of Chicago, 1921. L 56; 522 N. 14th.
- 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,<sup>4</sup> 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. 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 128A; 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; Paddleford Apts.
- 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; 1728 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, 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 (1921, 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 63; 1115 Bertrand.

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3. Absent on leave, year 1931-'32.

4. On sabbatical leave, Sept. 1, 1931, to Sept. 8, 1932.

- WILLIAM LINDQUIST, B. M., Professor of Voice and Head of Department of Music (1925, 1927).  
B. M., Cosmopolitan School of Music and Dramatic Art, Chicago, 1925.  
M 33; 202 S. 17th.
- FLOYD PATTISON, M. S., Professor of Mechanical Engineering, Home Study Service, Division of College Extension (1919, 1927).  
B. S., K. S. 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, B. S., Professor, State Club Leader, Division of College Extension (1922, 1927).  
B. S., University of Minnesota, 1917.  
A 37; 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 Denison.
- 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 62; 927 Moro.
- WILLARD HUNGATE MARTIN, M. S., Professor of Dairy Husbandry (1925, 1928).  
B. S., Purdue University, 1918; M. S., Pennsylvania State College, 1922.  
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.
- 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; 710 Humboldt.
- 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 WHITEMORE 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, A. M., Professor of Public Speaking (1923, 1930).  
A. B., Fairmont College, 1917; A. M., University of Oklahoma, 1921.  
G 55; 1520 Humboldt.
- ALLAN PARK DAVIDSON, M. S., Professor of Agricultural Education (1919, 1930).  
B. S., K. S. C., 1914; M. S., *ibid.*, 1925. G 29; 1600 Humboldt.
- ARTHUR D. WEBBER, M. S., Professor of Animal Husbandry (June 1, 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 (June 25, 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; July 1, 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; July 1, 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; July 1, 1931); Mammalogist, Agricultural Experiment Station (1924).  
B. S., Dakota Wesleyan University, 1913; M. S., University of Chicago, 1916, Ph. D., Harvard University, 1923. F 7; 1614 Humboldt.
- LEON REED QUINLAN, M. L. A., Professor of Horticulture, in Charge of Landscape Gardening (1927; July 1, 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; Sept. 1, 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; Sept. 1, 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,<sup>1</sup> 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 314; 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 120; 918 N. 10th.

ERNEST BLAINE WELLS, M. S., Associate Professor of Soils, Division of College Extension (1920, 1924).

B. S. A., West Virginia University, 1917; M. S., K. S. C., 1922. E. Ag 202; 1615 Leavenworth.

IRA NICHOLS CHAPMAN, M. S., Associate Professor of Agricultural Economics, Division of College Extension (1922, 1925).

B. S., K. S. C., 1916; M. S., *ibid.*, 1926. W. Ag 338; 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.

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



- 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.
- EMMA HYDE, A. M., Associate Professor of Mathematics (1920, 1926).  
A. B., University of Kansas, 1912; A. M., University of Chicago, 1916.  
A 58; 320 N. 15th.
- CLARENCE FLAVIUS LEWIS, M. S., Associate Professor of Mathematics (1920, 1926).  
A. B., University of Denver, 1913; M. S., K. S. 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 53; 1636 Fairchild.
- CHARLES MECLAIN CORRELL, Ph. M., Associate Professor of History and Government (1922, 1926); Assistant Dean, Division of General Science (1927).  
B. S., K. S. C., 1900; Ph. B., University of Chicago, 1907; Ph. M., *ibid.*, 1908.  
F 64 and A 49; 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 36; 501 Sunset.
- WALDO HIRAM LYONS,<sup>3</sup> A. M., Associate Professor of Mathematics (1924, 1926).  
A. B., University of Denver, 1912; A. M., *ibid.*, 1916. E 223; 1126 Laramie.
- AUGUSTIN WILBER BREEDEN, A. M., Associate Professor of English (1926).  
Ph. B., University of Chicago, 1924; A. M., *ibid.*, 1925. K 52; 1728 Laramie.
- FRED ALBERT SHANNON, Ph. D., Associate Professor of History and Government (1926).  
A. B., Indiana State Normal School, 1914; A. M., Indiana University, 1918; Ph. D., University of Iowa, 1924. F 59; 1525 Humboldt.
- DWIGHT WILLIAMS, A. M., LL. B., Associate Professor of History and Government (1926).  
A. B., University of Minnesota, 1916; LL. B., *ibid.*, 1918; A. M., *ibid.*, 1926.  
F 60; 1740 Fairview.
- 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,<sup>6</sup> 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 147; R. R. 1.
- EARL MILO LITWILLER, M. S., Associate Professor of Horticulture, Home Study Service, Division of College Extension (1924, 1927).  
B. S., K. S. C., 1924; M. S., *ibid.*, 1926. A 5; 1431 Humboldt.

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3. Absent on leave, year 1931-'32.

6. Absent on leave, Oct. 1, 1931, to June 30, 1932.

- 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.
- NORA ELIZABETH DALBEY,<sup>7</sup> A. M., Associate Professor of Botany and Plant Pathology (1918, 1927).  
A. B., University of Kansas, 1913; A. M., *ibid.*, 1914. H 54; 1429 Laramie.
- 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; 1710 Fairchild.
- CLIFF ERRETT AUBEL,<sup>8</sup> 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, 1918; M. S., K. S. C., 1927. V 55A; 1417 Pierre.
- FRANK JACOBS CHEEK, JR., C. E., Associate Professor of Structural Design (1923, 1928).  
A. B., Center College, 1914; C. E., Rensselaer Polytechnic Institute, 1919. E 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.
- ETHEL MAY ARNOLD,\* A. M., Associate Professor of Art (1922-Oct. 27, 1931).  
B. S., K. S. C., 1918; Graduate, French-American School of Costume Design, Los Angeles, 1921; A. M., University of Chicago, 1925.
- 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; 332 N. 15th.
- 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.

\* Deceased.

7. Absent on leave, February to May, 1932.

8. Absent on sabbatical leave, Oct. 15, 1931, to June 30, 1932.

- 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; 1425 Laramie.
- 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; 804 Moro.
- 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; 501 Sunset.
- 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 325; 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; 1508 Humboldt.
- 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; 327 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 27; 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 35; 1734 Fairchild.



- JOHN WALLACE LUMB, D. V. M., M. S., Associate Professor of Veterinary Medicine, Division of College Extension (1924; July 1, 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; July 1, 1931).  
B. S., Oregon Agricultural College, 1924; M. S., K. S. C., 1927.  
W. Ag 230; 918 Ratone.
- KATHERINE JANE HESS, M. S., Associate Professor of Clothing and Textiles (1925; July 1, 1931).  
B. S., K. S. C., 1900; M. S., *ibid.*, 1926. L 62; 601 Fremont.
- WILLIAM HUGH RIDDELL, M. S., Associate Professor of Dairy Husbandry (1929; July 1, 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; Sept. 1, 1931).  
B. S., University of Michigan, 1911; M. S., University of Illinois, 1917; Ph. D., *ibid.*, 1920. D 30; 1110 Thurston.
- RANDOLPH FORNEY GINGRICH, M. S., Associate Professor of Engineering Drawing and Descriptive Geometry (1923; Sept. 1, 1931); Assistant Superintendent of Building and Repair (1923; July 1, 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; Sept. 1, 1931).  
B. D., Syracuse University, 1924. E 305; 1508 Humboldt.
- ALPHA CORINNE LATZKE, M. S., Associate Professor and Acting Head of the Department of Clothing and Textiles (1929; Sept. 1, 1931).  
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; Sept. 1, 1931).  
B. S., Kansas State Teachers College, Emporia, 1924; A. M., State University of Iowa, 1927; Ph. D., *ibid.*, 1930. L 64; 1220 Laramie.
- HARRY EDWARD VAN TUYL, D. V. M., Major V. C., U. S. A., Associate Professor of Military Science and Tactics (1929; Nov. 1, 1931).  
D. V. M., K. S. C., 1917; Honor Graduate, U. S. A. Veterinary School, 1923.  
V 27; 807 Osage.

### 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 38; 1528 Pierre.
- EDWARD C. JONES, M. E., Assistant Professor of Machine Tool Work (1916, 1920).  
B. M. E., Iowa State College, 1905; M. E., *ibid.*, 1922. S 32; R. 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 309; 1013 Laramie.
- DAVID LESLIE MACKINTOSH, M.S., Assistant Professor of Animal Husbandry (1921, 1922).  
B. S., University of Minnesota, 1920; M. S., K. S. 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 Agronomy (1923).  
B. S. in Agr., K. S. C., 1921. Ag 201; 3156 Broadway, Parsons, Kan.
- FRANK OTTO BLECHA, M.S., Assistant Professor of Agricultural Extension;  
District Agricultural Agent, Division of College Extension (1919, 1923).  
B. S., K. S. 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 30A; 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; 1230 Vattier.
- GAY TETLEY KLEIN, M.S., Assistant Professor of Poultry Husbandry, Division  
of College Extension (1925, 1926).  
B. S., University of Missouri, 1923; M. S., K. S. 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; 1649 Fairchild.
- 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.

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\* On sabbatical leave, April 15 to June 15, 1932.

- 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.  
A 62A; 1601 Fairchild.
- ERNEST KNIGHT CHAPIN,<sup>4</sup> M. S., Assistant Professor of Physics (1923, 1926).  
A. B., University of Michigan, 1918; M. S., *ibid.*, 1923. C 57; 1860 Anderson.
- 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 JORGENSEN, 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 35; 1116 Bluemont.
- GEORGIANA SMURTHWAITE, M. S., Assistant Professor and Assistant Home Demonstration Agent Leader, Division of College Extension (1924, 1927).  
B. S., Utah Agricultural College; M. S., K. S. C., 1931. A 36; 1531 Leavenworth.
- JEPHTHA 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; 1116 Bluemont.
- 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.
- HELEN DOROTHY RUSHFELDT DUFF, A. M., Assistant Professor of English (1920, 1927).  
A. B., University of Minnesota, 1915; A. M., Columbia University, 1920.  
A 63A; 513 N. 16th.
- ESTHER BRUNER, M. S., Assistant Professor of Clothing and Textiles (1920, 1927).  
B. S., K. S. C., 1920; M. S., *ibid.*, 1921. L 51; 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 53; 1440 Laramie.

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4. On sabbatical leave, year 1931-'32.

- ALICE CLAYPOOL JEFFERSON, B. M., Assistant Professor of Piano (1925, 1927).  
Graduate, American Conservatory of Music, 1921; B. M., *ibid.*, 1929.  
MA 8; 1429 Laramie.
- MYRTLE ANNICE GUNSELMAN, 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 of 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.*, 1926. V 55; 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., Assistant Professor of Agricultural Economics (1927, 1928).  
B. S., K. S. C., 1921; M. S., *ibid.*, 1928. W. Ag 330B; 1723 Leavenworth.
- MARTINE A. SEATON, B. S., Assistant Professor of Poultry Husbandry, Division of College Extension (1928).  
B. S. in Agr., University of Missouri, 1924. 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; 1429 Laramie.
- MADALYN AVERY, B. S., Assistant Professor of Physics (1928).  
B. S., K. S. C., 1924. C 31; 1429 Laramie.
- LYLE WAYNE DOWNEY, B. M., Assistant Professor of Music (1928); Director of College Band, and Instructor in Band Instruments (1928, 1929).  
A. B., James Millikin University, 1923; B. M., American Conservatory, 1928.  
M 31; 1728 Fairview.
- 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; 1447 Anderson.



JOHN HARVEY MADISON, 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.

RAY EUGENE MARSHALL, First Lieut. Inf., U. S. A., Assistant Professor of Military Science and Tactics (1928).

B. S., K. S. C., 1922; Graduate, U. S. Infantry School, 1928. N 26; 345 N. 15th.

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 Agricultural 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, B. S., Assistant Professor of Agricultural Extension; District Agricultural Agent, Division of College Extension (1922, 1928).

B. S., K. S. C., 1914. 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.

ANNA GRACE SEYLER,<sup>9</sup> M. D., Assistant College Physician (1929-Jan. 31, 1932).

A. B., University of Denver, 1924; M. D., University of Colorado, 1927. A 64; 1104 Vattier.

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.

ETHEL JUSTIN MARSHALL, M. S., Assistant Professor of Home Economics, Home Study Service, Division of College Extension (1928, 1929).

B. S., K. S. C., 1910; M. S., *ibid.*, 1926. A 2; 630 Moro.

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

B. S., K. S. C., 1925. E 216; 1621 Leavenworth.

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

B. S., K. S. C., 1928. E. Ag 202; 1024 Laramie.

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. A 62A; 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; 1212 Fremont.

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9. Resigned.



- HAROLD NATHAN BARHAM, Ph.D., Assistant Professor of Chemistry (1929).  
A. B., Bethany College, 1921; M. S., Ohio State University, 1922; Ph. D., University of Kansas, 1928. C 56; 900 Bluemont.
- GENEVIEVE JACKSON BOUGHNER,<sup>9</sup> A. B., Assistant Professor of Industrial Journalism (1929-Jan. 31, 1932).  
A. B., University of Minnesota, 1916. K 33A; Wareham Hotel.
- 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; 1531 Leavenworth.
- 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, 1929. 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 78; 1203A Moro.
- JOHN VERN HEPLER, B.S., Assistant Professor of Agricultural Extension, District Agricultural Agent, Division of College Extension (1921, 1930).  
B. S., K. S. C., 1915. A 60; 1740 Fairview.
- 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, 1928; M. S., Iowa State College, 1925. E. Ag 8A; 1006 Bertrand.

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9. Resigned.

- 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.
- ROBERT ELLIOTT CURTIS,<sup>9</sup> B. S., Assistant Professor of Agricultural Economics, Division of College Extension (1919, 1930-Nov. 30, 1931).  
B. S., K. S. C., 1916. Courthouse; 923 Laramie.
- WILLIAM SCOTT SPEER, B. S., Assistant Professor of Agricultural Economics, Division of College Extension (1926; Jan. 15, 1931).  
B. S., K. S. C., 1925. F. B. Office; Kingman, Kan.
- LAWRENCE FENER HALL, M. S., Assistant Professor of Education (1929; April 1, 1931).  
B. S., K. S. C., 1923; M. S., *ibid.*, 1927. G 28; 810 Vattier.
- HAROLD EDWIN MYERS, M. S., Assistant Professor of Soils (1929; July 1, 1931).  
B. S., K. S. C., 1928; M. S., University of Illinois, 1929. E. Ag 206; 1116 Bluemont.
- WALTER HENRY ATZENWEILER, B. S., Assistant Professor of Agricultural Economics, Division of College Extension (1926; July 1, 1931).  
B. S., K. S. C., 1930. W. Ag 363; 1447 Anderson.
- GEORGE ALBERT FILINGER, Ph. D., Assistant Professor of Pomology (Aug. 1, 1931); Assistant Pomologist, Agricultural Experiment Station (Aug. 1, 1931).  
B. S., K. S. C., 1924; M. S., *ibid.*, 1925; Ph. D., Ohio State University, 1931.  
H 35; 1131 Thurston.
- EUGENE ARTHUR CLEAVENGER, B. S., Assistant Professor of Farm Crops, Division of College Extension (1927; Aug. 15, 1931).  
B. S., K. S. C., 1925. A 34; 1510 Leavenworth.
- VIDA AGNES HARRIS, A. M., Assistant Professor of Art (1927; Sept. 1, 1931).  
B. S., K. S. C., 1914; A. M., University of Chicago, 1927.  
A 56; R. R. 1, West Anderson.
- ARNOLD ROOSEVELT JONES, B. S., Assistant Professor of Accounting (1927; Sept. 1, 1931).  
B. S., University of Kansas, 1927. A 74; 521 Osage.
- MARION HERFORT PELTON, B. M., Assistant Professor of Piano (1928; Sept. 1, 1931).  
B. M., University of Wisconsin, 1927. MA 5; 1425 Laramie.
- CHARLES RAY THOMPSON, A. M., Assistant Professor of Economics and Sociology (1929; Sept. 1, 1931).  
A. B., University of Kansas, 1927; A. M., *ibid.*, 1928. A 51A; 811 Laramie.

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9. Resigned.

ERNEST WILLIAM JOHNSON, B.S., Assistant Professor of Forestry (Sept. 1, 1931); Forest Nurseryman, Fort Hays Branch Agricultural Experiment Station (1927).

B. S., Colorado Agricultural College, 1926.

H 4; 1104 Vattier.

MARION QUINLAN, A. M., Assistant Professor of Child Welfare and Euthenics, Department of Education (Sept. 21, 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; Nov. 1, 1931).

M. B., Oberlin College, 1929.

M 54; 1324 Laramie.

JOHN HERBERT COOLIDGE, B. S., Assistant Professor of Agricultural Economics (Dec. 1, 1931).

B. S., K. S. C., 1925.

Courthouse; 108 N. 17th.

CLARENCE EDWARD CREWS, M. S., Assistant Professor of Agronomy (1928; Feb. 1, 1932); Assistant in Agronomy (1928-Jan. 31, 1932).

B. S., K. S. C., 1928; M. S., *ibid.*, 1930.

THOMAS RUSSELL REITZ, B. S., Assistant Professor of Horticulture (1931; Feb. 1, 1932); Wyandotte County Agricultural Agent, Division of College Extension (Jan. 1, 1931-Jan. 31, 1932).

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

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 28A; 1514 Humboldt.

WILLIAM HAROLD METZGER, Ph. D., Assistant Professor of Soils (Apr. 1, 1932).

B. S., Purdue University, 1922; M. S., K. S. C., 1927; Ph. D., Ohio State University, 1931.

E. Ag 206A; \_\_\_\_\_.

### ASSOCIATE

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

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

W 29; 1131 Kearney.

### INSTRUCTORS

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

S 42; 1814 Anderson.

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

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

A 54; 817 Poyntz.

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

Graduate, Christ's Hospital, Topeka.

A 36; 1212 Fremont.

MARION COFFEE, First Sergt., C. A. C., U. S. A., Instructor in Military Science and Tactics (1920).

N 26; 821 Vattier.

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 63A; 1442 Fairchild.

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

B. S., K. S. C., 1911.

A 36; 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.
- CONIE CAROLINE FOOTE, A. M., Instructor and Specialist in Foods and Nutrition, Division of College Extension (1924).  
B. S., K. S. C., 1921; A. M., Columbia University, 1931. A 36; 513 N. 16th.
- MAUD ELIZABETH DEELEY, B. S., Instructor in Home Furnishings, Division of College Extension (1923, 1925).  
B. S., K. S. C., 1923. A 36; 1000 Kearney.
- FRANCIS DALE PUGH, Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1925).  
N 26; 1637 Anderson.
- HAZEL THOMPSON, Supervisor of Vocational Home Making, Department of Education (1925).
- HUBERT WHATLEY MARLOW, Ph. D., Instructor in Chemistry (1925).  
B. S., North Texas Teachers College, 1925; M. S., University of Chicago, 1928; Ph. D., *ibid.*, 1931. W 29A; 358 N. 15th.
- 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.
- MAY MILES, B. S., Instructor and Assistant State Home Demonstration Leader, Division of College Extension (1926, 1928).  
B. S., University of Illinois, 1926. A 36; 1616 Osage.
- RUTH EMMA TUCKER,<sup>4</sup> M. S., Instructor in Food Economics and Nutrition (1925, 1926).  
A. B., University of Illinois, 1923; M. S., *ibid.*, 1925. L 69; 513 N. 16th.
- ROY CLINTON LANGFORD,<sup>3</sup> M. S., Instructor in Psychology (1925, 1926).  
B. S., K. S. C., 1925; M. S., *ibid.*, 1926.
- HAROLD JEROME BROOKS,<sup>9</sup> M. S., Instructor in Dairy Husbandry (1926-October 15, 1931).  
B. S., University of Missouri, 1924; M. S., South Dakota State College, 1926.
- MAYNARD LEE McDOWELL, 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; R. R. 1.
- 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; 1429 Laramie.
- MARIA MORRIS, M. S., Instructor in Art (1925, 1927).  
B. S., K. S. C., 1911; Graduate, New York School of Fine and Applied Art, 1924; M. S., K. S. C., 1927. A 68B; 816 Juliette.

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3. Absent on leave, year 1931-'32.

4. On sabbatical leave, year 1931-'32.

9. Resigned.

- 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; 1425 Laramie.
- GEORGE FRANCIS BRANIGAN, B.S., Instructor in Engineering Drawing and Descriptive Geometry (1927).  
B. S., University of Nebraska, 1927. E 209; 804 Moro.
- 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.
- HILDA ROSE GROSSMAN, B.M., Instructor in Voice (1927).  
B. M., Chicago Musical College, 1925; Illinois State Certificate in Public-school Music, *ibid.*, 1927.  
MA 14; 1601 Fairchild.
- 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, B.S., Instructor in Electrical Engineering (1927, 1928).  
B. S. in E. E., Iowa State College, 1927. 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.
- PERCY LEROY DEPUY, M.S., Instructor in Animal Husbandry, Home Study Service, Division of College Extension (1928).  
B. S., K. S. C., 1918; M. S., *ibid.*, 1923. A 5; 1725 Leavenworth.
- RUSSELL IRA THACKREY, B.S., Instructor in Industrial Journalism (1928).  
B. S., K. S. C., 1927. K 30A; 1021 Kearney.
- MARGUERITE VELMA HARPER, B.S., Instructor in Household Management, Division of College Extension (1928).  
B. S., K. S. C., 1928. A 36; 1425 Laramie.
- MARGARET ALICE NEWCOMB,<sup>3</sup> M.S., Instructor in Botany and Plant Pathology (1925, 1928).  
B. S., K. S. C., 1925; M. S., *ibid.*, 1927.
- 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; 1447 Anderson.
- CHARLES GEORGE DOBROVOLNY, A.B., Technician and Instructor in Zoölogy (1929).  
A. B., University of Montana, 1928. F 30; 922 N. Manhattan.
- 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.
- VERNON DANIEL FOLTZ, M.S., Instructor in Bacteriology (1927, 1929).  
B. S., K. S. C., 1927; M. S., *ibid.*, 1929. V 52; 1531 Leavenworth.
- MARY MYERS ELLIOTT,\* A.B., Instructor in Public Speaking (1929).  
A. B., University of Kansas, 1926. G 55; 1429 Laramie.

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\* Absent on leave, first semester, 1931-'32.

3. Absent on leave, year 1931-'32.

- EDITH AGNES GOERWITZ, M. B., Instructor in Piano (1929).  
M. B., Northwestern University, 1929. MA 4; 1212 Fremont.
- ARTHUR LEONARD GOODRICH, JR., M. S., Instructor in Zoölogy (1929).  
B. S., College of Idaho, 1928; M. S., University of Idaho, 1929. F 79; 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; 1000 Vattier.
- REED FRANKLIN MORSE, B. S., Instructor in Civil Engineering (1929).  
A. B., Cornell College, 1921; B. S., Iowa State College, 1923. E 220; 1860 Anderson.
- 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.
- HELEN CARMALETA SHARP, M. D., Instructor in Child Welfare and Euthenics (1929).  
B. S., University of Kansas, 1927; M. D., *ibid.*, 1928. L 64; 1429 Laramie.
- JOSEPH THOMAS WARE, JR., 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 30; 1212 Fremont.
- EARL HENRY HAHN, B. S., Instructor in Machine Drawing and Design (1929).  
B. S. in M. E., Iowa State College, 1923. E 209; 1116 Bluemont.
- CONRAD STEPHEN MOLL, B. P. E., Instructor in Physical Education for Men (1929).  
B. P. E., Y. M. C. A. College, 1925. N 36; 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 62; 931 Fremont.
- STERLING MCCOLLOM, Instructor in Shop Practice (1930).  
S 32; 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; 919 N. Juliette.
- 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; 1109 Kearney.
- ANNA TESSIE AGAN, M. S., Instructor in Household Economics (1930).  
B. S., University of Nebraska, 1927; M. S., K. S. C., 1930. L 53; 914 Osage.
- IVAR ABRAHAMSON, B. S., Instructor in Shop Practice (1930).  
B. S., University of Arizona, 1929. S 31; 1116 Bluemont.



- HARVEY HULICK ALLEN, Staff Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1930).  
N 26; 511 N. Juliette.
- NINA MYRTLE BROWNING, M. S., Instructor in Food Economics and Nutrition (1930).  
B. S., K. S. C., 1923; M. S., *ibid.*, 1927. L 47; 908 Laramie.
- FRANK BYRNE, B. S., Instructor in Geology (1930).  
B. S., University of Chicago, 1927. F 80; 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 13; 1119 Laramie.
- ROBERT DODDS DAUGHERTY, M. S., Instructor in Mathematics (1930).  
Ph. B., Iowa Wesleyan College, 1910; M. S., State University of Iowa, 1930.  
S 52; 615 Humboldt.
- 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.
- ARTHUR OLLIVIER, M. S., Instructor in Mathematics (1930).  
A. B., Iowa Wesleyan College, 1919; M. S., State University of Iowa, 1930.  
F 1A; 624 Houston.
- CARRIE MAE WEBBER, A. M., Instructor in Art (1930).  
B. S., Columbia University; A. M., *ibid.*, 1929. A 68B; 1636 Fairchild.
- 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 36; 1425 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; Sept. 1, 1931).  
A. B., Southeast Missouri State Teachers College, 1927; A. M., University of Missouri, 1930. A 2; 1215 Thurston.
- RALPH EDWARD HODGSON, M. S., Instructor in Dairy Husbandry (1929, 1930).  
B. S., University of Wisconsin, 1929; M. S., K. S. C., 1930. W 151; 1116 Bluemont.
- 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 35; 1425 Laramie.
- MABEL RACHEL SMITH, B. S., Instructor in Junior Extension, Assistant State Club Leader, Division of College Extension (1929; July 1, 1931).  
B. S., K. S. C., 1926. A 35; 1613 Fairchild.
- WILLIAM EDWIN JENNINGS, D. V. M., Instructor in Surgery and Medicine (Aug. 16, 1931).  
D. V. M., Cornell University, 1931. VH 53; Vet. Hospital.
- WARD HILLMAN HAYLETT, A. B., Instructor in Physical Education for Men (1928; Sept. 1, 1931).  
A. B., Doane College, 1926. N 33; 1642 Laramie.

EUNICE LEOLA KINGSLEY, M.S., Instructor in Botany and Plant Pathology (1929; Sept. 1, 1931).

B. S., North Dakota Agricultural College, 1926; M. S., K. S. C., 1931.  
H 32; 1816 Leavenworth.

MAURICE CHARLES MOGGIE,<sup>10</sup> M.S., Instructor in Education (1930; Sept 1, 1931).

B. S., K. S. C., 1929; M. S., *ibid.*, 1931. G 32C; 1429 Laramie.

ARAMINTA HOLMAN PADDLEFORD,<sup>10</sup> B.S., Instructor in Art (Nov. 1-30, 1931).

B. S., Columbia University.

WENDELL EVERETT BEALS, M.B.S., Instructor in Accounting (Sept. 1, 1931).

B. S., University of Kentucky, 1930; M. B. A., Northwestern University, 1931.  
A 74; 927 Moro.

ARMIN ERVIN BRANDHORST,<sup>10</sup> M.S., Instructor in Physics (Sept. 1, 1931).

A. B., Central Wesleyan College, 1929; M. S., K. S. C., 1931. C 53; 914 Bluemont.

ROBERT IVAN LOCKARD,<sup>10</sup> B.S., Instructor in Architecture (Sept. 1, 1931).

B. S., K. S. C., 1930. E 223; 1326 Fremont.

DELOS CLIFTON TAYLOR, B.S., Instructor in Applied Mechanics (Sept. 1, 1931).

B. S. in C. E., K. S. C., 1925. E 14; 1014 Vattier.

GLENN ALLEN AIKENS,<sup>10</sup> M.S., Instructor in Bacteriology (Oct. 1, 1931).

B. S., K. S. C., 1924; M. S., *ibid.*, 1931. V 28; 1409 Laramie.

CHRIS RAY BRADLEY,<sup>10</sup> B.S., Instructor in Horticulture (Oct. 1, 1931).

B. S., K. S. C., 1927. H 35; 1116 Bluemont.

FLOYD BYRON WOLBERG, B.S.A., Instructor in Dairy Husbandry (1930; Oct. 15, 1931).

B. S. A., University of Wisconsin, 1928. W. Ag 125; 1212 Fremont.

ARAMINTA HOLMAN PADDLEFORD,<sup>10</sup> B.S., Instructor in Art (Nov. 1, 1931).

B. S., Columbia University, 1922. Paddleford Apt.

LEROY CLAY PASLAY,<sup>10</sup> B.S., Instructor in Electrical Engineering (Nov. 1, 1931).

B. S., K. S. C., 1930. E 30; 512 N. Denison.

PAULINE PINCKNEY,<sup>10</sup> Instructor in Art (Dec. 1, 1931).

### ASSISTANTS

ALANSON LOLA HALLSTED,<sup>1</sup> 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.

10. Temporary appointment.

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

- MARY KIMBALL, B.S., First Assistant to the Registrar (1918).  
B. S., K. S. C., 1907. A 29; 1311 Laramie.
- MYRTLE EVELYN ZENER, Secretary to the Vice President (1918).  
A 46; 1104 Vattier.
- CHESTER WILLIS OAKES, 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.
- BRUCE BUNYAN SMITH, Assistant in Agricultural Engineering (1918).  
Bks. 2; 830 Laramie.
- ALICE MAUDE MELTON, B.S., Assistant to the Dean, Division of General Science (1900, 1919).  
B. S., K. S. C., 1898. A 47; 831 Leavenworth.
- 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; 817 Poyntz.
- CLARENCE OSBORN PRICE, Assistant to the President (1920).  
A 30; 501 Bluemont.
- JOSEPH FARRINGTON MERRILL, B.S., Assistant Chemist, Agricultural Experiment Station (1921).  
B. S., University of Maine, 1907. C 3; 318 N. 16th.
- 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; 1101 Bertrand.
- 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.
- 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, B.S., Secretary to the Dean, Division of Home Economics (1928).  
B. S., K. S. C., 1912. L 29; 808 N. 12th.
- CHARLOTTE CROUCH LAMPRECHT, Assistant to the Dean, Division of Home Economics (1928).  
Diploma, Kansas State Teachers College, Emporia, 1903. L 46; 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.
- RALPH OSCAR LEWIS, B. S., Assistant in Soil Survey, Department of Agronomy (1929).  
B. S., K. S. C., 1929. E. Ag 207; ———.
- 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.
- ERWIN HENRY KROEKER,<sup>9</sup> B. S., Assistant in Milling Industry (1930-Oct. 1, 1931).  
B. S., K. S. C., 1930.
- HAZEL ALMA LYNESS, B. S., Itinerant Teacher of Adult Home-making Education (1930).  
B. S., K. S. C., 1922. G 29; 924 Moro.
- HENRY WILBERT LOY, JR., B. S., Assistant Chemist, Agricultural Experiment Station (1930).  
B. S., K. S. C., 1930. C 3A; 1224A Moro.
- VIRGINIA CHAMBERS, B. S., Assistant in Education (1930).  
B. S., Oklahoma A. and M. College, 1926. T 31; 1226 Vattier.
- FRANCES LEE CLAMMER,<sup>10</sup> Assistant in German (1930).  
A 69; 926 Pierre.
- ROBIN DALE COMPTON, Radio Operator, Division of College Extension (1930).  
N 83; 730 Moro.
- RUTH BERYL McCAMMON, B. S., Technician, Department of Food Economics and Nutrition (1930).  
B. S., K. S. C., 1930. L 13; 1027 Kearney.
- LOLIE SMITH, M. S., Research Assistant in Household Economics (1929).  
B. S., Texas State College for Women, 1916; M. S., K. S. C., 1930. T 56; 1613 Fairchild.
- EUNICE ELLER, R. N., Nurse, Department of Student Health (1930).  
R. N., Bethany Methodist Hospital, Kansas City, 1929. College Hospital.

9. Resigned.

10. Temporary appointment.

- HELEN ALBERTA HEMPHILL,<sup>10</sup> B.S., Assistant in Industrial Journalism (1930).  
B. S., K. S. C., 1930. K 30; 359 N. 14th.
- ROBERT FREDERICK CHILDS, B.S., Assistant Chemist (Mar. 15, 1931).  
B. S., K. S. C., 1929. C 3; 721 Osage.
- MARY VIVIEN NICKELS, B.S., Assistant in Education (July 1, 1931).  
B. S., K. S. C., 1931. G 32D; 1215 Poyntz.
- THELMA FERN McCLURE,<sup>10</sup> B.S., Assistant in Child Welfare and Euthenics  
(Aug. 1, 1931).  
B. S., K. S. C., 1930. L 32B; 1429 Laramie.
- EDNA CHRISTINE BROWN, R.N., Nurse, Department of Student Health (Sept.  
1, 1931).  
R. N., St. Barnabas Hospital, Salina, 1917. College Hospital.
- ISABELLE GILLUM, M.S., Assistant in Food Economics and Nutrition (Sept. 1,  
1931).  
B. S., University of Texas, 1927; M. S., K. S. C., 1929. L 68; 1317 Laramie.
- ALTA SARAH HEPLER, B.S., Assistant in Education (Sept. 1, 1931).  
B. S., K. S. C., 1920. G 32B; R. R. 4.
- GEORGE CLIFFERD KELLEY, B.S., Assistant in Mathematics (Sept. 1, 1931).  
B. S., Kansas State Teachers College, Pittsburg, Kan., 1928. S 56; 500 Humboldt.
- MARION GIBBONEY KIRKPATRICK,\* B.M., Assistant in Public Speaking (Sept. 1,  
1931).  
B. M., K. S. C., 1928. G 55; 1203 Moro.
- KATHLEEN KNITTLE, B.S., Assistant to the Dean of Women (Sept. 1, 1931).  
B. S., K. S. C., 1923. A 42; 726 Leavenworth.
- LORRAINE MAYTUM, B.S., Assistant in Physical Education for Women (Sept. 1,  
1931).  
B. S., University of Wisconsin, 1926. N 1; 1300 Fremont.
- ROBERT WARREN KELLOGG,<sup>10</sup> Assistant in Chemistry (Sept. 10, 1931-Oct. 31,  
1931).
- BRUCE ROSS TAYLOR,<sup>5</sup> B.S., Assistant in Animal Husbandry (Sept. 15, 1931).  
B. S., K. S. C., 1931. E. Ag 12; 1326 Fremont.
- WALTER HENRY VON TREBRA,<sup>5</sup> B.S., Assistant in Crop Improvement (Sept. 16,  
1931).  
B. S., K. S. C., 1924. E. Ag 309A; 1622 Osage.
- FLORENCE MARGARET STEBBINS, M.S., Assistant in Genetics, Department of Zo-  
ology (Oct. 1, 1931).  
B. S., K. S. C., 1923; M. S., *ibid.*, 1928. Insectary; 312 N. 15th.
- GEORGE ELWIN HENDRIX,<sup>10</sup> B.S., Assistant in Agricultural Economics (Feb.  
1-Apr. 30, 1932).  
B. S., K. S. C., 1924.

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\* Appointed for the first semester 1931-'32.

5. Appointed for the year 1931-'32.

10. Temporary appointment.

## 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 Building and Repairs, Custodian, and Heat and Power Departments (1916, 1925).  
PP 28; 1015 Humboldt.
- FAY ARTHUR WAGNER, B. S., Superintendent, Garden City Branch Agricultural Experiment Station (1919).  
B. S. in Agr., New Mexico Agricultural College, 1916. Garden City, Kan.
- THOMAS BRUCE STINSON, B. S., Superintendent Tribune Branch Agricultural Experiment Station (1924).  
B. S., K. S. 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<sup>1</sup>

- 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., Iowa State College, 1913. Garnett, Kan.
- ERNEST LEE MCINTOSH, B. S., Osage County Agricultural Agent, Division of College Extension (1920, 1923).  
B. S., K. S. 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.

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



- 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, B.S., Pawnee County Agricultural Agent, Division of College Extension (1921, 1928).  
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., Fairmont 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.
- 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.

- NEIL LEWIS RUCKER, B. S., Ellsworth County Agricultural Agent, Division of College Extension (1926, 1930).  
B. S., K. S. C., 1913. Ellsworth, Kan.
- GEORGE SMITH ATWOOD, B. S., Hodgman 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.
- AMWEL EDWIN JONES,<sup>9</sup> B. S., Dickinson County Agricultural Agent, Division of College Extension (1927-Dec. 31, 1931).  
B. S., K. S. C., 1917. Abilene, 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.
- JOHN TANTON WHETZEL,<sup>9</sup> B. S., Thomas County Agricultural Agent, Division of College Extension (1927, 1930-Dec. 31, 1931).  
B. S., K. S. C., 1927. Colby, 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.

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9. Resigned.

- 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, B.S., Butler County Club Agent, Division of College Extension (1929).  
B. S., K. S. C., 1928. El Dorado, Kan.
- EDWARD ALBERT STEPHENSON, JR.,<sup>9</sup> B.S., Chase County Agricultural Agent, Division of College Extension (1929-Jan. 31, 1932).  
B. S., K. S. C., 1928. Cottonwood Falls, 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.
- RAY LEWIS REMSBURG,<sup>9</sup> B.S., Kingman County Club Agent, Division of College Extension (1929-Dec. 31, 1931).  
B. S., K. S. C., 1929. Kingman, Kan.
- OGDEN WORLEY GREENE, B.S., Dickinson County Agricultural Agent, Division of College Extension (Feb. 1, 1932); Pratt County Agricultural Agent, Division of College Extension (1929-Jan. 31, 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.

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9. Resigned.



- HARVEY J. STEWART, B.S., Cheyenne County Agricultural Agent, Division of College Extension (1929).  
B. S., K. S. C., 1928. St. Francis, Kan.
- JESTER BAILEY TAYLOR, B.S., Saline County Club Agent, Division of College Extension (1930).  
B. S., Oklahoma A. and M. College, 1925. Salina, Kan.
- FRED HOLLISTER DODGE,<sup>11</sup> B.S., Ness County Agricultural Agent, Division of College Extension (1930).  
B. S., K. S. C., 1921. Ness City, Kan.
- DAVID MARION HOWARD, B.S., Sherman County Agricultural Agent, Division of College Extension (1930).  
B. S., K. S. C., 1920. Goodland, Kan.
- DALE ALVORD SCHEEL, 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.
- LAWRENCE WILLIAM DECKER,<sup>9</sup> M.S., Comanche County Agricultural Agent, Division of College Extension (1930-Dec. 10, 1931).  
B. S., Purdue University, 1929; M. S., K. S. C., 1930. Coldwater, Kan.
- GLENN CHARLES ISAAC, B.S., Miami County Agricultural Agent, Division of College Extension (1930).  
B. S., K. 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.

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9. Resigned.

11. Absent on leave, beginning July 21, 1931.

- 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, B.S., Clay County Agricultural Agent, Division of College Extension (1930).  
B. S., K. S. C., 1928. Clay Center, Kan.
- PAUL EVANS, B.S., Ottawa County Agricultural Agent, Division of College Extension (Dec. 1, 1930).  
B. S., K. S. C., 1923. Minneapolis, Kan.
- JAMES NOEL LOWE, B.S., Harper County Agricultural Agent, Division of College Extension (Dec. 1, 1930).  
B. S., Oklahoma A. and M. College, 1924. Anthony, Kan.
- JOEL ALLEN TERRELL, B.S., Douglas County Agricultural Agent, Division of College Extension (Feb. 1, 1931).  
B. S., K. S. C., 1930. Lawrence, Kan.
- CLAIR EBER DUNBAR, B.S., Sheridan County Agricultural Agent, Division of College Extension (Feb. 9, 1931).  
B. S., K. S. C., 1931. Hoxie, Kan.
- TERRELL WEAVER KIRTON, B.S., Kingman County Agricultural Agent, Division of College Extension (Feb. 15, 1931).  
B. S., K. S. C., 1929. Kingman, Kan.
- ROBERT LOUIS RAWLINS, B.S., Nemaha County Agricultural Agent, Division of College Extension (Mar. 28, 1931).  
B. S., K. S. C., 1929. Seneca, Kan.
- RICHARD WILLIAM STUMBO, B.S., Rawlins County Agricultural Agent, Division of College Extension (April 16, 1931).  
B. S., K. S. C., 1931. Atwood, Kan.
- MERRILL MEDSGAR TAYLOR, B.S., Rice County Agricultural Agent, Division of College Extension (April 16, 1931).  
B. S., K. S. C., 1930. Lyons, Kan.
- FRANK ZITNIK,<sup>10</sup> B.S., Ness County Agricultural Agent, Division of College Extension (Aug. 20, 1931).  
B. S., K. S. C., 1931. Ness City, Kan.
- LELAND MILTON SLOAN, B.S., Coffey County Agricultural Agent, Division of College Extension (Dec. 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.
- EBER SAMUEL SCHULTZ, B.S., Chase County Agricultural Agent, Division of College Extension (Mar. 1, 1932).  
B. S., K. S. C., 1932. Cottonwood Falls, Kan.

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10. Temporary appointment.

HOME DEMONSTRATION AGENTS<sup>1</sup>

- LAURA WINTER, Sedgwick County Home Demonstration Agent, Division of College Extension (1925).  
Wichita, Kan.
- ESTHER MAE HUYCK,<sup>9</sup> B.S., Rawlins County Home Demonstration Agent, Division of College Extension (1925—Oct. 31, 1931).  
B. S., South Dakota State College, 1925. Atwood, Kan.
- ELLA M. MEYER, B.S., Ford County Home Demonstration Agent, Division of College Extension (1925, 1930).  
B. S., K. S. C., 1907. Dodge City, Kan.
- CHARLOTTE ELIZABETH BIESTER,<sup>9</sup> B.S., Johnson County Home Demonstration Agent, Division of College Extension (1924—Oct. 10, 1931).  
B. S., University of Illinois, 1921. Olathe, 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, B.S., Harvey County Home Demonstration Agent, Division of College Extension (1927).  
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, B.S., Douglas County Home Demonstration Agent, Division of College Extension (1928; Feb. 1, 1931).  
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.
- JESSIE CAMPBELL, B.S., Rice County Home Demonstration Agent, Division of College Extension (1928, 1929).  
B. S., K. S. C., 1925. Lyons, Kan.
- MARGARET ANNABEL KOENIG,<sup>9</sup> B.S., Clay County Home Demonstration Agent, Division of College Extension (1929-Dec. 15, 1931).  
B. S., K. S. C., 1928. Clay Center, 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.

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

9. Resigned.



- IVA LUELLA HOLLADAY, B.S., Leavenworth County Home Demonstration Agent, Division of College Extension (1929).  
B. S., K. S. C., 1929. Leavenworth, Kan.
- RACHEL MARKWELL,<sup>9</sup> B.S., Morris County Home Demonstration Agent, Division of College Extension (1929-Feb. 6, 1932).  
B. S., Oklahoma A. and M. College, 1926. Council Grove, Kan.
- FLORENCE MABLE FUNK, B.S., Cherokee County Home Demonstration Agent, Division of College Extension (1929).  
B. S., K. S. C., 1929. Columbus, Kan.
- LINNEA CARLSON DENNETT, B.S., Riley County Home Demonstration Agent, Division of College Extension (1929).  
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, B.S., Kingman County Home Demonstration Agent, Division of College Extension (1929).  
B. S., Oklahoma A. and M. College, 1926. Kingman, Kan.
- MARY ELSIE BORDER, B.S., Johnson County Home Demonstration Agent, Division of College Extension (1929; Oct. 11, 1931).  
B. S., Ohio State University, 1926. Olathe, Kan.
- EDITH O'BRIEN ROSEVEAR, B.S., Allen County Home Demonstration Agent, Division of College Extension (1930).  
B. S., K. S. C., 1911. Iola, 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 ELIZABETH BLAND, B. S., Harper County Home Demonstration Agent, Division of College Extension (1930).  
B. S., K. S. C., 1930. Anthony, Kan.
- LOUISE BARTON SLOAN,<sup>9</sup> B.S., Wyandotte County Home Demonstration Agent, Division of College Extension (1930-Jan. 31, 1932).  
B. S., K. S. C., 1928. Kansas City, Kan.
- RUTH KATHRINA HUFF, B.S., Pratt County Home Demonstration Agent, Division of College Extension (1931).  
B. S., K. S. C., 1924. Pratt, Kan.
- ALICE EDNA McLEAN,<sup>9</sup> A. B., Saline County Home Demonstration Agent, Division of College Extension (1931-Dec. 31, 1931).  
A. B., University of Illinois, 1922. Salina, Kan.
- MARGARET ELIZABETH CRUMBAKER, B.S., Smith County Home Demonstration Agent, Division of College Extension (Jan. 2, 1931).  
B. S., K. S. C., 1919. Smith Center, Kan.
- ETHLYN ADELIN DANIELSON, B.S., Comanche County Home Demonstration Agent, Division of College Extension (Jan. 2, 1931).  
B. S., K. S. C., 1925. Coldwater, Kan.

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9. Resigned.

- MARY HELENE WILSON,<sup>9</sup> B. S., Marion County Home Demonstration Agent, Division of College Extension (Jan. 2, 1931-Dec. 31, 1931).  
B. S., K. S. C., 1930. Marion, Kan.
- MARY CHRISTINE WIGGINS, B. S., Labette County Home Demonstration Agent, Division of College Extension (Feb. 1, 1931).  
B. S., K. S. C., 1929. Altamont, Kan.
- CHRISTIANA MARIE SHIELDS, B. S., Crawford County Home Demonstration Agent, Division of College Extension (June 20, 1931).  
B. S., K. S. C., 1929. Girard, Kan.
- GLYDE ESTELLA ANDERSON, B. S., Barton County Home Demonstration Agent, Division of College Extension (July 1, 1931).  
B. S., K. S. C., 1926. Great Bend, Kan.
- EDITH ALICE PAINTER, B. S., Dickinson County Home Demonstration Agent, Division of College Extension (Oct. 19, 1931).  
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.

## GRADUATE ASSISTANTS

- MERLE RAYMOND HUBBARD, A. B., Graduate Assistant in Chemistry (1929).  
A. B., Southwestern College, 1929. D 29; 1417 Humboldt.
- ORVILLE ELTON HAYS, B. S., Graduate Assistant in Agronomy (1930).  
B. S., K. S. C., 1930. E. Ag 216; R. R. 8.
- ABRAM ELDRED HOSTETTER, B. S., Graduate Assistant in Chemistry (1930).  
B. S., McPherson College, 1925. D 30; 914 Bluemont.
- THOMAS NELSON MERONEY, B. S., Graduate Assistant in Animal Husbandry (1930).  
B. S., K. S. C., 1930. E. Ag 24; 820 N. Manhattan.
- ARTHUR J. HOWARD, B. S., Graduate Assistant in Landscape Gardening (Feb. 1, 1931).  
B. S., Michigan State College, 1930. H 8; 1116 Bluemont.
- CALEB LEE JORGENSEN, B. S., Graduate Assistant in Agronomy (Feb. 1, 1931).  
B. S., University of Nebraska, 1930. E. Ag 304A; 1415 Fairchild.
- GEORGE HOWARD ADAMS, B. S., Graduate Assistant in Animal Husbandry (Sept. 1, 1931).  
B. S., University of Nebraska, 1930. E. Ag 13; 1116 Bluemont.
- NOEL BENNION, B. S., Graduate Assistant in Poultry Husbandry (Sept. 1, 1931).  
B. S., Utah State College, 1928. W. Ag 229; 804 Moro.
- HELEN VIRGINIA BREWER, B. S., Graduate Assistant in Food Economics and Nutrition (Sept. 1, 1931).  
B. S., K. S. C., 1929. L 11; 1425 Laramie.
- GRACE DOROTHY BRILL, B. S., Graduate Assistant in Child Welfare and Euthenics (Sept. 1, 1931).  
B. S., K. S. C., 1931. L 32; 918 N. Manhattan.
- NELLE LA VERNE CURRY, A. B., Graduate Assistant in Institutional Economics (Sept. 1, 1931).  
A. B., Sterling College, 1927. T 31; 1425 Laramie.

9. Resigned.

- EUGENE CYPERT, JR., A. B., Graduate Assistant in Zoölogy (Sept. 1, 1931).  
A. B., University of Arkansas, 1931. F 36; 612 Vattier.
- HARINDAR SINGH DINSA, B. S., Graduate Assistant in Horticulture (Sept. 1, 1931).  
B. S., University of Idaho, 1931. H 4; 1230 Fremont.
- CARL ALFRED DORF, A. B., Graduate Assistant in Chemistry (Sept. 1, 1931).  
A. B., Bethany College, 1930. W 26; 1002 Houston.
- CHARLES DUBOIS, B. S., Graduate Assistant in Dairy Husbandry (Sept. 1, 1931).  
B. S., Washington State College, 1931. W. Ag 127; 810 N. Manhattan.
- FREDERIC GROETSEMA, A. B., Graduate Assistant in Zoölogy (Sept. 1, 1931).  
A. B., Kalamazoo College, 1931. F 36; 1116 Bluemont.
- LINDSAY BAILY LORING, B. S., Graduate Assistant in Botany and Plant Pathology (Sept. 1, 1931).  
B. S., Washington State College, 1931. H 56; 1025 Bluemont.
- HIRAM TEMPLE MCGEHEE, B. S., Graduate Assistant in Chemistry (Sept. 1, 1931).  
B. S., K. S. C., 1931. W 26; R. R. 1.
- CLYDE NEWMAN,<sup>5</sup> B. S., Graduate Assistant in Machine Design (Sept. 1, 1931).  
B. S. in E. E., K. S. C., 1931. E 209; 918 Moro.
- WILLIAM GRANVILLE NICHOLSON, B. S., Graduate Assistant in Agricultural Economics (Sept. 1, 1931).  
B. S., K. S. C., 1931. W. Ag. 327; 1326 Fremont.
- DRYDEN MARIE QUIST, B. S., Graduate Assistant Institutional Economics (Sept. 1, 1931).  
B. S., Iowa State College, 1924. T 51; 1210 Thurston.
- CURTIS WILLIAMS SABROSKY, A. B., Graduate Assistant in Zoölogy (Sept. 1, 1931).  
A. B., Kalamazoo College, 1931. F 36; 1116 Bluemont.
- HILDRED RENETTA SCHWEITER, B. S., Graduate Assistant in Bacteriology (Sept. 1, 1931).  
B. S., K. S. C., 1931. V 53B; 312 N. 15th.
- CHESTER AARON WISMER, B. S., Graduate Assistant in Plant Pathology (Sept. 1, 1931).  
B. S., K. S. C., 1931. H 56; 1126 Bluemont.

#### GRADUATE RESEARCH ASSISTANTS

- CLEMENT HENRY AULT, B. S., Graduate Research Assistant in Agronomy (1930).  
B. S., University of Idaho, 1930. E. Ag 208; 1208 Kearney.
- TED DE VINNE BEACH, B. S., Graduate Research Assistant in Zoölogy (1930; Sept. 1, 1931).  
B. S., University of Nevada, 1929. F 38; 1116 Bluemont.
- DALE ALBERT PORTER, A. B., Graduate Research Assistant in Zoölogy (1930).  
A. B., Kalamazoo College, 1930. F 38; 1166 Bluemont.
- FRANK MILTON ADAIR, B. S., Graduate Research Assistant in Applied Mechanics (Sept. 1, 1931).  
B. S. in M. E., K. S. C., 1930. E 111; 930 Fremont.

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5. Appointed for the year 1931-'32.



- LESLIE LINNAEUS ASPELIN, B.S., Graduate Research Assistant in Mechanical Engineering (Sept. 1, 1931).  
B. S., K. S. C., 1931. E 105; 1428 Laramie.
- HOWARD BERTSCH, B.S., Graduate Research Assistant in Dairy Husbandry (Sept. 1, 1931).  
B. S., Oregon State College, 1931. W. Ag 127; 810 N. Manhattan.
- ARTHUR SENSENY BROWN,<sup>9</sup> B.S., Graduate Research Assistant, Engineering Experiment Station (Sept. 1, 1931-Jan. 31, 1932).  
B. S., Pennsylvania State College, 1924. E 24; 1116 Bluemont.
- RUSSELL MARK COCO, A.B., Graduate Research Assistant in Zoölogy (Sept. 1, 1931).  
A. B., Louisiana State Normal School, 1931. F 5; 1326 Fremont.
- ESTHER MARGARET CORMANY, B.S., Graduate Research Assistant in Clothing and Textiles (Sept. 1, 1931).  
B. S., K. S. C., 1926. L 55; 323 N. 15th.
- LUCILLE ALMA GRAMSE, B.S., Graduate Research Assistant in Food Economics and Nutrition (Sept. 1, 1931).  
B. S., K. S. C., 1923. L 11; 1425 Laramie.
- KENNETH D. GRIMES, B.S., Graduate Research Assistant in Electrical Engineering (Sept. 1, 1931).  
B. S. in E. E., K. S. C., 1931. E 24; 1617 Leavenworth.
- HAROLD H. HIGGINBOTTOM,<sup>5</sup> B.S., Graduate Research Assistant in Electrical Engineering (Sept. 1, 1931).  
B. S. in E. E., K. S. C., 1927. E 22; 814 Leavenworth.
- ELBERT ELVIN KARNS, B.S., Graduate Research Assistant, Engineering Experiment Station (Sept. 1, 1931).  
B. S., K. S. C., 1931. E 217; 1715 Anderson.
- CLARA LITTLEFORD, B.S., Graduate Research Assistant in Institutional Economics (Sept. 1, 1931).  
B. S., Battle Creek College, 1930. T 59B; 1601 Humboldt.
- ZELDABETH LONG, A.B., Graduate Research Assistant in Food Economics and Nutrition (Sept. 1, 1931).  
A. B., Washington State College, 1931. L 4; 1019 Moro.
- OPAL FRANCES OSBORNE, B.S., Graduate Research Assistant in Household Economics (Sept. 1, 1931).  
B. S., K. S. C., 1928. T 54; 1729 Laramie.
- EUGENE FORREST PETERSON, B.S., Graduate Research Assistant, Engineering Experiment Station (Sept. 1, 1931).  
B. S. in E. E., K. S. C., 1931. E 22; 1617 Leavenworth.
- MAUD GRACE RYDER, B.S., Graduate Research Assistant in Institutional Economics (Sept. 1, 1931).  
B. S. in Ed., Ohio University, 1931. T 52A; 1440 Laramie.
- WILLIAM EMIL STEPS, B.S., Graduate Research Assistant, Engineering Experiment Station (Sept. 1, 1931).  
B. S., K. S. C., 1931. E 27; 307 N. 16th.
- FAITH WINIFRED BRISCOE, B.S., Graduate Research Assistant in Bacteriology (Sept. 15, 1931).  
B. S., K. S. C., 1931. V 26; 1212 Thurston.

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5. Appointed for the year 1931-'32.

9. Resigned.

## FELLOWS.

SAMUEL GREENBERRY 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.

## OTHER OFFICERS

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

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

ADRIAN AUGUSTUS HOLTZ, Ph. D., Men's Adviser and Secretary of Young Men's Christian Association (1919); Assistant Professor of Sociology (1929).  
 A. B., Colgate University, 1909; Ph. M., University of Chicago, 1910; B. D., *ibid.*, 1911; Ph. D., *ibid.*, 1914. A 43; 419 Denison.

DOROTHY JEAN MACLEOD, A. B., Secretary of the Young Women's Christian Association (1930).  
 A. B., Washington State College, 1927. L 37, 38; 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.

## 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, R. I. Thackrey.

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, Mrs. C. O. Swanson, William Lindquist.

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

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. Filingier.

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, J. H. Madison.

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

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### 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  
 R. D. NICHOLS, Cost of Production Investigations<sup>1</sup>

W. G. NICHOLSON, Graduate Assistant

#### 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<sup>1</sup> (on leave)  
 A. E. ALDOUS, Pasture Management  
 F. L. DULEY, Soils  
 A. M. BRUNSON, Corn Breeding<sup>1</sup>  
 J. W. ZAHNLEY, Crops  
 H. H. LAUDE, Crops  
 A. L. CLAPP, Coöperative Experiments  
 F. L. TIMMONS, Coöperative Experiments  
 C. D. DAVIS, Crops  
 I. K. LANDON, Southeastern Kansas Experimental Fields  
 H. E. MYERS, Soils  
 R. O. LEWIS, Soil Survey  
 ELISABETH HARLING, Seed Analyst  
 C. E. CREWS, Farm Foreman  
 CARL BOWER, Corn Breeding<sup>1</sup>  
 C. O. GRANDFIELD, Forage Crops<sup>1</sup>  
 C. L. JORGENSEN, Graduate Assistant  
 O. E. HAYS, Graduate Assistant  
 C. A. AULT, Graduate Research Assistant

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

## ANIMAL HUSBANDRY—

C. W. McCAMPBELL, in Charge  
 A. D. WEBER, Cattle Investigations  
 C. E. AUBEL, Swine Investigations (on sabbatical leave)  
 R. F. COX, Sheep Investigations  
 D. L. MACKINTOSH, Horse Investigations  
 H. L. IBSEN, Animal Genetics  
 W. E. CONNELL, Live Stock  
 GEORGE H. ADAMS, Graduate Assistant  
 T. N. MERONEY, Graduate Assistant

## BACTERIOLOGY—

L. D. BUSHNELL, in Charge  
 P. L. GAINNEY, Soil Bacteriology  
 A. C. FAY, Dairy Bacteriology (on sabbatical leave)  
 C. A. BRANDLY, Poultry Disease Investigations

## BOTANY—

L. E. MELCHERS, in Charge<sup>1</sup>  
 E. C. MILLER, Plant Physiology  
 O. H. ELMER, Plant Pathology  
 F. C. GATES, Taxonomy  
 HURLEY FELLOWS, Cereal Investigations<sup>1</sup>  
 C. O. JOHNSTON, Cereal Investigations<sup>1</sup>  
 C. H. FICKE, Cereal Investigations<sup>1</sup>  
 L. W. BOYLE, Cereal Investigations<sup>1</sup>

## 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  
 CHARLES DU BOIS, Graduate Assistant  
 HOWARD BERTSCH, 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<sup>2</sup>

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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.

## 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  
 ZELDABETH LONG, Graduate Research Assistant  
 LUCILE GRAMSE, Graduate Research Assistant

## HORTICULTURE—

R. J. BARNETT, Pomologist, in Charge  
 L. R. QUINLAN, Landscape Gardening  
 W. F. PICKETT, Orchard Investigations (on sabbatical leave)  
 W. B. BALCH, Floriculture and Vegetable Gardening  
 G. A. FILINGER, Pomology  
 CHRIS R. BRADLEY, Assistant in Orchard Investigations  
 H. S. DINSA, Graduate Assistant  
 A. J. HOWARD, Graduate Assistant

## MILLING INDUSTRY—

C. O. SWANSON, in Charge  
 EARL B. WORKING, Wheat and Flour Investigations  
 R. O. PENCE, Milling Technology  
 C. W. OAKES, Milling

## POULTRY HUSBANDRY—

L. F. PAYNE, in Charge  
 D. C. WARREN, Genetics  
 H. M. SCOTT, Poultry Production  
 F. J. FEIGHT, Superintendent of Poultry Farm  
 NOEL BENNION, Graduate 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<sup>1</sup>

## ZOOLOGY—

R. K. NABOURS, in Charge  
 J. E. ACKERT, Parasitology  
 G. E. JOHNSON, Injurious Mammals  
 FLORENCE STEBBINS, Genetics  
 CHARLES G. DOBROVOLNY, Technician  
 TED D. BEACH, Graduate Research Assistant  
 DALE A. PORTER, Graduate Research Assistant  
 RUSSELL M. COCO, Graduate Research Assistant

## BRANCH EXPERIMENT STATIONS

## FORT HAYS—

L. C. AICHER, Superintendent  
 E. W. JOHNSON, Forest Nurseryman  
 A. L. HALLSTED, Dry-land Agriculture Investigations<sup>1</sup>  
 A. F. SWANSON, Cereal Crop Investigations<sup>1</sup>  
 D. A. SAVAGE, Forage Crop Investigations<sup>1</sup>  
 R. H. DAVIS, Soil Erosion Investigations<sup>1</sup>  
 R. R. DRAKE, Soil Erosion Investigations<sup>1</sup>

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



GARDEN CITY—

F. A. WAGNER, Superintendent

R. L. VON TREBRA, Dry-land Agriculture Investigations<sup>1</sup>

COLBY—

E. H. COLES, Superintendent<sup>1</sup>

J. B. KUSKA, Dry-land Agriculture Investigations<sup>1</sup>

TRIBUNE—

T. B. STINSON, Superintendent

## Engineering Experiment Station

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### 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  
FRANKLIN ZINK, Farm Machinery  
C. A. LOGAN, Rural Electrification and Home Equipment  
E. L. BARGER, Farm Power  
E. E. KARNS, Graduate Research Assistant

#### 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  
F. M. ADAIR, Graduate Research Assistant

#### 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  
W. E. STEPS, Graduate Research Assistant

#### 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  
H. H. HIGGINBOTTOM, Graduate Research Assistant  
E. F. PETERSON, Graduate Research Assistant  
A. S. BROWN, Graduate Research Assistant

#### MACHINE DESIGN—

C. E. PEARCE, in Charge  
M. A. DURLAND, General Investigations  
G. F. BRANIGAN, General Investigations  
E. H. HAHN, General Investigations

MECHANICAL ENGINEERING—

- J. P. CALDERWOOD, in Charge
- A. J. MACK, General Investigations
- B. B. BRAINARD, General Investigations
- A. O. FLINNER, General Investigations
- L. L. ASPELIN, Graduate Research Assistant

PHYSICS—

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

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### 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  
HELEN SHARP, Public Health

#### CLOTHING AND TEXTILES—

ALPHA LATZKE, in Charge  
KATHERINE HESS, Physics of Textiles  
ESTHER BRUNER, Chemistry of Textiles  
ESTHER CORMANY, Assistant

#### FOOD ECONOMICS AND NUTRITION—

MARTHA S. PITTMAN, in Charge  
MARTHA KRAMER, Nutrition  
RUTH McCAMMON, Food and Nutrition  
ZELDABETH LONG, Assistant  
LUCILE GRAMSE, Assistant

#### HOUSEHOLD ECONOMICS—

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

#### INSTITUTIONAL ECONOMICS—

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

# The Kansas State College of Agriculture and Applied Science

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## 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 1873. This location is adjacent to Manhattan, a city which has a residential population of ten thousand, and is unsurpassed for wholesomeness of influence by any city in the state.

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

Manhattan is reached by the Union Pacific and Rock Island railways and connecting lines, and by state highways Nos. 13 and 29, and U. S. highways 40, 40N, and 40S. It has motor-bus service between the railway stations and the College, and with cities to the east and to the west. Practically all of the streets are paved, and an ample supply of pure water is provided.

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

## AIMS AND PURPOSES

The Kansas State 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.

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

The second important aim of the Kansas State 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

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The College campus occupies a commanding and attractive site upon an elevation adjoining the western limits of the city of Manhattan, with motor-bus service into town and to the railway stations. The grounds are tastefully laid out according to the designs of a landscape architect, and are extensively planted with a great variety of beautiful and interesting trees, arranged in picturesque groups, masses, and border plantings, varied by banks of shrubbery and interspersed with extensive lawns, gardens, and experimental fields. Broad, well-shaped, macadamized avenues lead to all parts of the grounds. Cement walks connect the buildings with one another and with the entrances. Including the campus of 155 acres, the College owns 1,428.7 acres of land at Manhattan valued at \$413,093. Outside the campus proper, all of the land is devoted to educational and experimental work in agriculture. Within the College grounds, much of the space not occupied by buildings and needed for drives and ornamental plantings is devoted to orchards, forest and fruit nurseries, vineyards, and gardens.

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

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

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

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

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

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

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

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



**ENGINEERING HALL.** Erected, east wing, 1909; main portion, 1920. Cost, \$270,000. Dimensions: Main portion, 60 x 236 feet, east wing, 113 x 200 feet. Three stories in height, but much of the east wing is built on the gallery plan rather than by complete floor separation into different stories. This building contains the general offices and library of the Division of Engineering, and the offices, drafting rooms, and laboratories of the Departments of Agricultural Engineering, Applied Mechanics, Architecture, Civil Engineering, Electrical Engineering, Machine Design, 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, 1913; cost, \$25,000; dimensions, 80 x 160 feet; two stories and basement. Consists of three sections, arranged like the letter H, and a glazed tile silo of 200 tons capacity. The west wing contains nine box stalls and twenty-six single stalls, equipped with sanitary feed mangers and racks, and is designed especially for the housing of horses. The east wing contains twelve box stalls and thirty single stalls for the breeding cattle and the show herd. The central section has an office, feed rooms, a washing floor, and a basement containing the engine room. The loft, to which a driveway leads, has storage space for ten carloads of grain and 100 tons of hay and straw and contains the grinding apparatus. The barn is used by the Department of Animal Husbandry.

**FARM MACHINERY HALL.** Erected, 1870; cost, \$11,250; dimensions, 46 x 95 feet; two stories. This was the first building erected on the present campus. It was originally designed as a College barn, and first used for that purpose. It has been used as a general College building, and successively by the Department of Botany and the Department of Veterinary Medicine. The first floor, a large hall, was used for many years as an armory by the Department of Military Science. The entire building is now used by the Department of Agricultural Engineering and contains modern types of farm machinery.

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

nels are carried the steam and electric energy to the different parts of the campus.

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

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

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

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

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

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

**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 Copenhagen Wilson in memory of her husband, Davies Wilson.

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

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

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

**VETERINARY HOSPITAL.** Erected, 1923. Contract price, \$118,000. The building is of stone and of fireproof construction throughout, with general 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, 1912; west wing erected, 1923; cost of portions now completed, \$500,000; cost of building when developed and completed as planned, \$1,000,000. Each of the wings now completed is 80 feet wide and 169 feet long and four stories high. An 80 x 50 foot one-story annex on the east wing serves as a meats laboratory, and a similar annex on the west wing serves as a creamery. A stock-judging pavilion (45 x 100 feet) is located between the two wings and is divided into two large stock-judging rooms, each having a seating capacity of 475. The two wings and the stock-judging pavilion are used by the Departments of Agricultural Economics, Agronomy, Animal Husbandry, Dairy Husbandry, Milling Industry, Poultry Husbandry, and the general offices of the Agricultural Experiment Station and of the Division of Agriculture. The equipment includes an electrically operated flour mill capable of manufacturing 75 barrels of flour a day, a modern creamery, a well-equipped meats laboratory, and modern laboratories for instructional and investigative work in seed testing, market milk, soils, field crops, farm organization, grain grading, etc.

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

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

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

**GENERAL-PURPOSE BUILDING.** Erected, 1918; dimension, 40 x 80 feet; two stories. Built as barracks No. 6 for the S. A. T. C. This building is used by the Department of Electrical Engineering and as a hospital for patients with contagious diseases.

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

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

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

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

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

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

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

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



## The College Library

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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, 1931, the Library contained 96,000 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

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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 a case develops while the student is in the hospital, he will be transferred, at his own expense, to a hospital of his choice. Treatment of chronic cases by the College physicians cannot be guaranteed. However, when practicable, treatment of such cases may be undertaken on the same basis as acute cases. Fractures and dislocations of a serious nature are not treated, but minor cases may be treated at the option of the head physician. Students with fractures are admitted to the hospital.

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

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

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

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

The department owns equipment valued at \$10,864.

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

## Requirements for Admission

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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:

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

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. No other subjects are taught in classes at the College with a view to providing the high-school work necessary for successfully carrying certain curricula.

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 plane geometry, one unit, may be taken by correspondence in the department of home study.

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, three or four units  
ENGLISH                      Journalism, one-half or one unit  
   Public Speaking, one-half or one unit
- GROUP II ..... French, one, two, three or four units  
FOREIGN                      German, one, two, three, or four units  
LANGUAGES                    Greek, one, two, three, or four units  
   Latin, one, two, three, or four units  
   Spanish, one, two, three, or four units
- GROUP III ..... Elementary algebra, one or one and one-half units  
MATHEMATICS                Plane geometry, one unit  
   Advanced algebra, one-half unit  
   Solid geometry, one-half unit  
   Plane trigonometry, one-half unit
- GROUP IV ..... \*Botany, one-half or one unit  
NATURAL                      \*Chemistry, one unit  
SCIENCES                      \*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 ..... American history, one unit  
HISTORY AND                Civics, one-half or one unit  
SOCIAL SCIENCES            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 ..... Higher arithmetic, one-half unit  
NORMAL TRAINING        Methods and management, one-half unit  
SUBJECTS                    \*Music, one unit  
   Psychology, one-half unit  
   Reviews  
   Grammar, geography, and reading }  
   twelve weeks each, or                    } 1 unit  
   Two of these, eighteen weeks each }
- GROUP VII ..... \*Agriculture, one-half, one, two, three, or four units  
INDUSTRIAL                \*Domestic art, one-half, one, or two units  
SUBJECTS                    \*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

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\* 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.

GROUP VIII .....	Bookkeeping, one-half or one unit
COMMERCIAL	Commercial geography, one-half unit
SUBJECTS	Commercial law, one-half unit
	Salesmanship, one-half unit
	*Stenography and typewriting, one-half or one unit each

### 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 after September 5, 1932, cannot be acted upon completely before the opening days of College.

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

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

### ADMISSION

**ADMISSION BY EXAMINATION.** Examinations for admission will be held at the College on Monday, September 12, 1932; Monday, January 30, 1933; and Monday, June 5, 1933. These examinations are given for the benefit of those students who need some additional high-school credits to qualify them for entrance to the freshman class. Applications for these examinations should be made in advance to the registrar.

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

It is greatly to the advantage of the prospective student to see to it that this blank, properly filled out and *indicating the curriculum he wishes to take here*, be sent to the College as soon as possible after graduation. A permit to register will then be sent him by the registrar before the first of September. This permit *cannot be sent* unless the prospective student sees that the information as to curriculum is sent to the registrar. This will greatly facilitate the work of entrance. The student will present this permit at the registration room in Nichols Gymnasium, and will not be compelled to wait for his turn to meet the Committee on Admission. High-school transcripts received after September 5, 1932, 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.

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\* 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.

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 those who are twenty-one years of age or older, without requiring them to meet the regular entrance requirements, provided (1) they show good reason for not taking a regular course; (2) they be assigned only to such work as they are qualified to carry successfully; (3) they do superior work in the subjects assigned. The age limit is not applied to special students of music.

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

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

### KANSAS HIGH SCHOOLS AND ACADEMIES IN ACCREDITED RELATIONS WITH THE COLLEGE

(Candidates admitted without examination)

Abbyville	Auburn	Bucyrus
Abilene	Augusta	Bucyrus H. S.
Ada	Aurora	Wea H. S.
Adams	Axtell	Buffalo
Admire	Axtell H. S.	Buhler
Agenda	St. Michael's H. S.	Bunkerhill
Agra	Baldwin	Burden
Alden	Bancroft	Burdett
Alexander	Barclay	Burdick
Allen	Barnard	Diamond Valley H. S.
Alma	Barnes	Burlingame
Almena	Basehor	Burlington
Altamont	Bavaria	Burns
Labette Co. Com.	Baxter Springs	Burr Oak
Alta Vista	Bazine	Burrton
Alton	Beattie	Bushong
Altoona	Beeler	Bushton
Americus	Belle Plaine	Byers
Andale	Belleville	Caldwell
Andover	Belmont	Cambridge
Anthony	Beloit	Caneiro
Anthony H. S.	Beloit H. S.	Caney
Spring Twp. H. S.	St. John's H. S.	Canton
Antrim	Belpre	Carbondale
St. John P. O.	Belvue	Cassoday
Appanoose	Bendena	Castleton
Pomona P. O.	Benedict	Cawker City
Arcadia	Bennington	Cedar
Argonia	Bentley	Cedar Point
Arkansas City	Benton	Cedarvale
Arlington	Bern	Centerview
Arma	Berryton	Centralia
Arnold	Beverly	Chanute
Asherville	Bird City	Chapman
Ashland	Bison	Dickinson Co. Com.
Assaria	Blaine	Chase
Atchison	Bloom	Chautauqua
Atchison H. S.	Blue Mound	Cheney
St. Benedict's College	Blue Rapids	Cherokee
Academy	Bluff City	Crawford Co. Com.
Mt. St. Scholastica	Bogue	Cherryvale
Academy	Bonner Springs	Chetopa
Athens	Brewster	Cimarron
Glen Elder P. O.	Bronson	Circleville
Athol	Brookville	Clafin
Atlanta	Brownell	Clay Center
Attica	Brownville	Clay Co. Com.
Atwood	Brewster P. O.	Clayton
Rawlins Co. Com.	Bucklin	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  
 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  
   Osage 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  
   Brookville 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.  
   Catholic College Academy  
 Hazelton  
 Healy  
 Hepler  
 Herrington  
 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  
   Horton H. S.  
   St. Leo's H. S.  
 Howard  
 Hoxie  
   Sheridan Co. Com.  
 Hoyt  
 Hudson  
 Hugoton  
   Stevens Co. Com.  
 Humboldt  
 Hunter  
 Huron  
 Hutchinson  
   Hutchinson H. S.  
   Bressee College Academy  
   St. Theresa's Academy  
 Independence  
 Ingalls  
 Inman  
 Iola  
 Ionia  
 Irving  
 Isabel  
 Jamestown  
 Jarbalo  
 Jennings  
 Jetmore  
   Hodgeman Co. Com.  
 Jewell City  
 Johnson  
   Stanton Co. Com.  
 Junction City  
   Junction City H. S.  
   St. Xavier's H. S.  
 Kackley  
 Kanopolis  
 Kanorado  
 Kansas City  
   Argentine H. S.  
   Catholic H. S.  
   K. C. Univ. Academy  
   Pembroke School  
   Rosedale H. S.  
   State School for Blind  
   Sumner H. S.

## Kansas City—Concluded

- Welborn H. S.  
 Western Univ. Academy  
 Wyandotte H. S.  
 Keats  
 Kensington  
 Kincaid  
 Kingman  
 Kingsdown  
 Kinsley  
 Kiowa  
 Kipp  
 Kirwin  
 Kismet  
 La Crosse  
 La Cygne  
 Lafontaine  
 La Harpe  
 Lake City  
 Lakin  
 Lane  
 Langdon  
 Lansing  
 Larned  
   Larned H. S.  
   Zook H. S.  
 Latham  
 Lawrence  
   Haskell Institute  
   Liberty Memorial H. S.  
   Oread Training School  
 Leavenworth  
   Immaculate Conception  
   Leavenworth H. S.  
   St. Mary's Academy  
 Lebanon  
 Lebo  
 Lecompton  
 Lehigh  
 Lenora  
 Leon  
 Leona  
 Leonardville  
 Leoti  
   Wichita Co. Com.  
 Leoville  
 Le Roy  
 Levant  
 Lewis  
 Liberal  
 Lillis  
 Lincoln  
 Lincolnville  
 Lindsborg  
 Linn  
 Linwood  
 Little River  
 Logan  
 Lone Elm  
 Longford  
 Long Island  
 Longton  
 Lorraine  
 Lost Springs  
 Louisburg  
 Louisville  
 Lovewell  
   Sinclair R. H. S.  
 Lucas  
 Luray  
 Lyndon  
 Lyons  
 McCracken  
 McCune  
 McDonald  
 McLouth  
 McPherson  
   McPherson H. S.  
   Central College Academy
- Macksville  
 Madison  
 Mahaska  
 Maize  
 Manhattan  
   Manhattan H. S.  
   Sacred Heart Academy  
 Mankato  
 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  
 Pretty Prairie  
 Preston  
 Princeton  
 Protection  
 Quenemo  
 Quincy  
 Quinter  
 Radium  
 Ramona  
 Randall  
 Randolph  
 Ransom  
 Rantoul  
 Raymond  
 Reading  
 Reece  
 Republic  
 Reserve  
 Rexford  
 Richfield  
 Richmond  
 Riley  
 Riverton  
 Robinson  
 Rock Creek

- Rolla  
 Rosalia  
 Rosedale  
 Rose Hill  
 Rossville  
 Roxbury  
 Rozel  
 Ruleton  
 Russell  
 Russell Springs  
 Sabetha  
 Saffordville  
   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. Marys  
   St. Marys H. S.  
   St. Mary's College  
   Academy  
   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  
 Talmadge  
 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  
 Vermilion  
 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  
 Waterville  
 Wathena  
 Waverly  
 Wayside  
 Wea  
   Bucyrus P. O.  
 Webber  
 Webster  
 Weir  
 Welborn  
   Kansas City P. O.  
 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  
 Winona  
 Woodbine  
 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 and Certificates

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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 Electrical Engineering
- Bachelor of Science in Flour-mill Engineering
- Bachelor of Science in Landscape Architecture
- Bachelor of Science in Mechanical Engineering

Bachelor of Science in Home Economics (Home Economics; Home Economics and Art; Home Economics, and Institutional Economics and Dietetics; Home Economics and Journalism)

Bachelor of Science in Commerce (Commerce; Commerce and Accounting)

Bachelor of Science in Industrial Chemistry

Bachelor of Science in Industrial Journalism

Bachelor of Science in Physical Education

Bachelor of Music

Bachelor of Science in Music 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.

### **CERTIFICATES**

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

1. The farmers' short course.
2. Any one of the dairy-manufacturing short courses.



## General Information

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### DUTIES AND PRIVILEGES

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

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

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

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

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

### EXPENSES

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

**MATRICULATION FEE.** A matriculation or entrance fee of \$10 for residents of Kansas, or \$15 for nonresidents, is charged all students in College curricula. 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 \$25 a semester or \$20 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 \$10.

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

The student-health fee entitles the student to receive the services of the College physicians for any illness contracted while in College. It also includes the cost of medicine, and free hospital service up to three days. The fee does not include the cost of surgical operations, reduction of fractures, or the treatment of chronic conditions.

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

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

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

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

## FOR RESIDENTS OF KANSAS

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

## FOR NONRESIDENTS OF KANSAS

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

## FOR ALL SHORT-COURSE STUDENTS

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

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

**LABORATORY EXPENSE.** In all laboratories students are required to pay for supplies used and for apparatus broken or lost. The cost in the several sub-



jects ranges from 50 cents to \$10 a semester. Charges are noted under the descriptions of the several courses; changes in charges are effective September 1.

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

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

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

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

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

A student permitted to withdraw 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 corresponding to the remaining time of the first three-fourths of the term or semester; that is, the fees for at least the last one-fourth of a term or semester are retained.

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

<i>Curriculum</i>	<i>First semester</i>	<i>Second semester</i>
Agricultural Administration .....	\$19.00	\$11.00
Agricultural Engineering .....	18.00	7.50
Agriculture .....	19.00	11.00
Agriculture with Landscape Gardening.....	20.25	8.50
Animal Husbandry and Veterinary Medicine (six year),	19.00	11.00
Applied Music (not including sheet music).....	12.25	2.25
Architectural Engineering .....	21.25	6.20
Architecture .....	28.75	6.20
Chemical Engineering .....	20.25	7.00
Civil Engineering .....	22.75	11.60
Commerce .....	12.75	3.25
Commerce and Accounting .....	13.75	3.25
Electrical Engineering .....	23.50	10.00
Flour Mill Engineering .....	21.00	10.00
General Science .....	19.25	5.50
General Science Pre-Medic and Pre-Pharmaceutical Adap.,	18.50	5.50
General Science and Veterinary Medicine (six year),	26.00	2.25
Home Economics .....	10.25	5.00
Home Economics and Art.....	8.75	3.50
Home Economics and Industrial Journalism.....	12.00	7.75
Home Economics and Institutional Econ. and Dietetics,	12.00	7.50
Home Economics and Nursing .....	12.75	8.50
Industrial Chemistry .....	20.75	8.25
Industrial Journalism .....	13.00	6.25



<i>Curriculum</i>	<i>First semester</i>	<i>Second semester</i>
Landscape Architecture .....	\$22.00	\$6.25
Mechanical Engineering .....	23.75	16.00
Music Education (not including sheet music).....	13.25	2.25
Physical Education for Men.....	11.75	6.00
Physical Education for Women.....	9.00	6.60
Veterinary Medicine .....	30.50	3.75

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

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

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

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

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

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

## BOARDING AND ROOMING HOUSES

The Christian associations of the 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 Calvin Hall on the campus. Taxi service may be had from either station.

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

Van Zile Hall, a dormitory for women students, is located on the campus. It accommodates one hundred twenty-five women. It is a beautifully furnished, well-equipped, fire-proof building of stone. Applications for rooms are considered in the order in which they are received. To validate an application for residence in the Hall a deposit of \$10 is required. This amount is credited on the first payment for room and board, or is refunded provided request is made to the dean of women by August 1. The contract for room

and board in Van Zile Hall is for a full semester (eighteen weeks) and the obligation is canceled only for reasons satisfactory to the dean of women. All correspondence in regard to the dormitory should be addressed to "Dean of Women, Kansas State College, Manhattan, Kan."

### SELF-SUPPORT

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

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

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

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 \$41,000, is lent to students at 6 per cent per annum. The fund is administered by a committee appointed by the directors of the Alumni Association. The committee announces no specific rules governing the granting of loans, but in general gives preference to junior and senior students, and to loans of smaller amounts on short time over larger amounts which cannot be paid for several years. Alumni are urged to take life memberships and thus add to the funds available to worthy students. Students wishing loans from this fund may address Dr. W. E. Grimes, chairman of the Alumni Loan Fund Committee, Manhattan, Kan.

Acknowledgment of additions to the Life Membership Fund is made at this place from year to year. Since the last report and up to October 12, 1931, the following-named persons have completed payments for life membership: Bernard M. Anderson, Hazel L. Anderson, Earl B. Ankenman, Frances



M. Backstrom, Nora E. Bare, Edgar Lee Barger, Kay H. Beach, Raymond A. Bell, Kenneth C. Benne, Roscoe E. and Winifred Cowan Blair, Floyd A. Blauer, Mame Alexander Boyd, Donna Duckwall Brainard, Margaret Brenner, Albert L. Bridenstine, Harold J. Brodrick, Con M. and Winifred Houghton Buck, Ira N. Chapman, Mary Polson Charlton, Clarence H. Chase, Jr., R. Louise Child, James D. Colt, Jr., Marie Correll, Max E. Crannell, J. J. Curtis, Robert E. Curtis, Loyal H. Davies, Percy G. Davis, Linnea Carlson Dennett, Bertha Kimball Dickens, Rebecca Dubbs, Herbert B. Evans, E. Gladys Flipppo, Helen Freeburg, Theodore R. Freeman, Carl E. Friend, Howard W. Garbe, Harold D. and Elizabeth Circle Garver, Cora Mae Geiger, George Gemmell, Esther Waugh Gillette, Helen J. Greene, Minnie R. Hahn, Florence Harold, Frank C. Harris, Ella S. Hathaway, Carl Heinrich, Virginia Schwager Hoglund, Ruth L. Holton, Bion S. Hutchins, Philip J. Isaak, William Harold Jobling, Alvin A. and Frances Sheldon Johnson, J. Harold Johnson, Margaret M. Justin, Annie M. Kerr, R. C. and Lottie Lasswell Ketterman, Ralph E. Kimport, James H. Kirk, Bessie A. Leach, Edward H. Leker, B. Belle Little, Ruth McCammon, Elbert B. Macy, Alice T. Marston, John Z. Martin, Buford J. Miller, Warren Moore, J. Jerry Moxley, Henry Otto, Helen Dow Peck, William Henry Phipps, Craig E. Pickett, James W. Pratt, Margaret Raffington, Stephen M. Raleigh, Ray Lewis Remsberg, Marguerite L. Richards, Ruby T. Scholz, Fred W. Schultz, Ursula S. Senn, Elizabeth Dickens Shaffer, Anna Maude Smith, Esther O. Snodgrass, Carol L. Stratton, Joseph B. and Mary Weible Sweet, Oliver E. Taintor, Marcia Story Throckmorton, Francis L. Timmons, Trena Dahl Turner, Harry Umberger, Mary Pierce Van Zile, Elsie G. Wall, Frank A. Waugh, Everett J. Weeks, Marie Coons Weigel, Ruth V. Welsh, and Stella Blain Wood.

**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 \$1,000 to be loaned to deserving students who were former successful 4-H club members. This fund is loaned in units of \$50, drawing interest at 6 per cent per annum. The fund has been created by the efforts of the members of the Collegiate 4-H Club in editing and publishing the "Who's 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 Alumnae Pan-Hellenic Fund is loaned to women students. Applications should be made to the president, City Pan-Hellenic, through Dean Mary P. Van Zile.

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

**THE 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. The same organization offers prizes of books for stock judging. The faculty of the Department of Animal Husbandry offers prizes of books or papers on stock judging.

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

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

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

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

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

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

**MARGARET RUSSEL SCHOLARSHIP AWARD.** Beginning September, 1931, Phi Alpha Mu, the honor society for women taking work offered in the curriculum in general science, will award \$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 record in their freshman year.

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

**SHORT-STORY WRITING.** The Quill Club offers annually \$10 in gold 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 smaller shields surrounding a larger shield containing these words: "Recognition for superior attainments in Agricultural Journalism. Presented by Arthur Capper to students in the Department of Industrial Journalism and Printing, Kansas State College."

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

First prize, gold medal and \$25.

Second prize, silver medal and \$15.

Third prize, bronze medal and \$10.

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

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

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

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



**SCHOLARSHIPS**

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

**FOR 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.

The Folger Coffee Company of Kansas City, Mo., offers \$300 annually for the purpose of providing two 4-H Club scholarships of \$150 each for any full-term course at the Kansas State 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 K. S. C., and give promise of ability to do research work. Work may be pursued in any department of the 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 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 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 PUBLICATIONS

The official organ of the College is *The Kansas Industrialist*, published and printed at the College weekly by the Department of Industrial Journalism and Printing. Its pages are filled with articles of interest, with special reference to agriculture and the industries. Particular attention is paid to information concerning the work of the College, to investigations of the Experiment Stations, and to local and alumni news. *The Kansas Industrialist* will be sent to any address for \$3 a year. The alumni having active membership in the Alumni Association receive *The Kansas Industrialist* free of charge.

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

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

### 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.

### 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 re-assignment, and any student desiring a change in his assignment must apply to his dean. Any change in a student's assignment is made in the office of his dean. Teachers desiring that assignments be changed send requests to the proper deans. Notices of changes are furnished the registrar, the student, and the student's assigner. Changes are effective at once, and the registrar, through the heads of departments, sends notices or enrollment cards to the teachers affected.

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

### SCHOLARSHIP DEFICIENCIES

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

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

Students dismissed at the end of the first semester 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 an-



nounce 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 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 department 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 requirement 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 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. Students who are permitted to take work in a manner radically different from that provided by any curriculum are classified as special students.

### 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:

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

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. Calvin Hall is the headquarters of the association, to which all young women of the College are at all times cordially welcome. An office for the general secretary and rest rooms for the young women are maintained in this building during the College year.

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

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

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

#### THE NEWMAN CLUB

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

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

#### LITERARY SOCIETIES

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

#### SCIENCE CLUB

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



### AGRICULTURAL SOCIETIES

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

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

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

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

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

The Klod and 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:

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

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

### THE COLLEGE BAND

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

### THE COLLEGE ORCHESTRA

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

### ATHLETIC ORGANIZATIONS

By means of the gymnasium the College is prepared to give complete physical as well as mental training. This building, which is equipped with all the usual accessories, assists in developing and maintaining physical tone and health in the student body. In addition to the gymnasium classes and physical training in the military corps of cadets, all young men are encouraged

to develop their physical skill by playing on practice teams in various athletic lines. In the fall football teams are organized; in the fall and winter, basket ball; while in the spring baseball, tennis, and track athletics prevail. Every possible encouragement is given all students desirous of participating in these games to enter the practice teams and receive the necessary instruction. The most proficient of these have opportunity to enter the first teams and participate in intercollegiate contests. The College authorities encourage all reasonable and sane athletic development as a means for the training of physical qualities desirable in men everywhere. Professionalizing tendencies are strictly repressed, and the athletic rules adopted by the faculty prevent by proper regulation all participation in intercollegiate games on the part of students deficient in their studies.

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



# The Division of Graduate Study

JAMES EDWARD ACKERT, *Dean*

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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. The administration of graduate study was carried on 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 1910 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.

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 is the president of the College, and its secretary the secretary of the Graduate Council. The graduate faculty offers all graduate courses, and at the call of the chairman holds meetings for the consideration and adoption of general rules of procedure in the administration of the graduate work.

The Graduate Council determines, subject to the authority of the president of the College and the State Board of Regents and in accordance with any general regulations adopted by the graduate faculty, matters of curriculum, admission to graduate study and to candidacy for advanced degree, 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 by the Graduate Council upon the recommendation of the major instructor and head of the department after the student has demonstrated by his work for a period of two months or longer that he has the ability to do major work of graduate grade.

Application blanks for admission to graduate study may be secured from the dean of the Division of Graduate Study. Every applicant for admission must submit with his application an official transcript of his college record.

## REGISTRATION

Students applying for graduate work should present themselves to the 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.

## DEGREES

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

## FEES AND EXPENSES

**TUITION.** There is no charge for tuition.

**MATRICULATION FEE.** A matriculation fee of \$10 for residents of Kansas, or \$15 for nonresidents, is charged all 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 \$25 a semester or \$20 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 \$10. The incidental fee for members of the College faculty, including graduate assistants and graduate research assistants, is prorated.

**STUDENT-HEALTH FEE.** Graduate students are excused from payment of the student-health fee and do not receive the benefits of the student-health service.

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

**LABORATORY FEES.** Laboratory fees, ranging from 50 cents to \$10 a semester, are charged graduate students in the various subjects. 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 the master's 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 \$10 to \$15 a month for a room suitable for two occupants. Less desirable quarters and less desirable locations may be obtained at a lower rate. There are great differences in the accommodations offered. Those for which the higher prices are charged are modern in all respects, and light, heat, and bath are included in the cost stated.

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

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



**CANDIDACY FOR MASTER'S DEGREE**

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

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

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

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

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

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

**CONFERRING OF THE DEGREE.** Candidates for advanced degrees are required to be present in person, unless arrangements have been made in advance for the conferring of the degree in absentia. Application for this privilege should be made to the dean of the Division of Graduate Study. Degrees are conferred only at the end of the second semester and of summer school. Candidates for the degree at the end of the second semester are required to be present at the exercises of baccalaureate Sunday, unless excused by the Council of Deans.

**PROGRAM OF STUDY**

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

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

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

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



proved by the Graduate Council upon the recommendation of the major instructor, the head of the department, and the dean of the division.

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

It will be noted that in the announcements of the various departments of the College, certain courses are open to both graduate and undergraduate students. For graduate credit in such courses the student must do extra work. No credit earned during the undergraduate course may be counted for graduate credit, unless the student is assigned to it by the dean of the Division of Graduate Study.

#### VACATION CREDIT

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

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

#### GRADUATE WORK IN ABSENTIA

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

#### GRADUATE ASSISTANTSHIPS

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

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

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

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

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

A few industrial fellowships are usually available.

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.

### GRADUATE LOAN

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 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.

### CANDIDACY FOR PROFESSIONAL DEGREES

#### ENGINEERING AND ARCHITECTURE

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

If he 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.

#### **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.



# The Division of Agriculture

LELAND EVERETT CALL, *Dean*

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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 state and national institutions, agricultural extension work, teaching of agriculture, service in the industries directly involving agriculture and a variety of other lines of public and private service of an agricultural nature. The demand for well-trained, reliable men in all these lines is always extensive. The primary aim of the College in training men in agriculture is to fit them for service in which they will develop into agricultural leaders, either as farmers or in some other capacity, and as such contribute to the upbuilding of rural institutions and the improvement of American country life.

## EQUIPMENT

The facilities for such training at this College are of a high order. The college owns 1,428.7 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 agriculture with special training in landscape gardening.

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

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

**DEGREES**

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

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

**CHOOSING A CURRICULUM**

The curriculum in agriculture and the curriculum in agricultural administration have a common freshman year. It 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 opportunity for men who by nature and training are adapted to the work. The United States Department of Agriculture, the state colleges and departments of agriculture, high schools, private institutions of secondary and college rank, and a great variety of commercial interests, are constantly demanding men trained in agriculture.

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



*student begins his practical training in agriculture on the first day he enters College.*

ANALYSIS OF THE CURRICULUM IN AGRICULTURE.

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

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

	<i>Semester credits</i>	
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:

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

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

#### STATE TEACHER'S CERTIFICATE

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

	<i>Semester credits</i>
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
<b>Total .....</b>	<b>32</b>

**THE CURRICULUM IN LANDSCAPE GARDENING**

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

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

**THE CURRICULUM IN ANIMAL HUSBANDRY AND VETERINARY MEDICINE**

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

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

**Curriculum in Agriculture**

**FRESHMAN**

**FIRST SEMESTER**

**SECOND SEMESTER**

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

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 <sup>2</sup>
El. of Horticulture, Hort. 107.....3(2-3)	Prin. of Feeding, An. Husb. 152.....3(3-0)
Agric. Economics, Ag. Ec. 101.....3(3-0)	College Rhetoric II, Engl. 104.....3(3-0)
Anat. and Physiol., Anat. 131.....3(2-3)or	
Plant Physiology I, <sup>3</sup> Bot. 208.....3(3-0)	
Soils, Agron. 130.....4(3-3)or	Farm Crops, Agron. 101.....4(2-6)or
Farm Crops, Agron. 101.....4(2-6)	Soils, Agron. 130.....4(3-3)
Farm Poul. Pro., Poul. Husb. 101, 2(1-2, 1)	General Zoölogy, Zoöl. 105.....5(3-6)
Infantry III, Mil. Tr. 103A.....1(0-3)	Infantry IV, Mil. Tr. 104A.....1(0-3)
Phys. Education M, Phys. Ed. 105..R(0-2)	Phys. Education M, Phys. Ed. 106..R(0-2)
Agric. Seminar, <sup>1</sup> Gen. Agric. 103.....R	Agric. Seminar, <sup>1</sup> 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 I, Bot. 205.....3(1-4, 2)	Farm Organization, Ag. Ec. 106.....3(2-3)
Agric. Microbiology, Bact. 106.....3(1-6)	Agric. Journalism, Ind. Jour. 160...3(2-3)
Electives .....7	Electives .....7
Agric. Seminar, <sup>1</sup> Gen. Agric. 103.....R	Agric. Seminar, <sup>1</sup> Gen. Agric. 103.....R
Total..... 16	Total..... 16

SENIOR

FIRST SEMESTER	SECOND SEMESTER
Electives .....16	Agric. Relationships, Gen. Agric. 105, R(1-0)
Agric. Seminar, <sup>1</sup> Gen. Agric. 103.....R	Electives .....16
	Agric. Seminar, <sup>1</sup> 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:

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

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 requirements in points as well as in hours. See section headed: The Point System.



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

SUBSTITUTIONS TO MEET CERTAIN OBJECTIVES

Students desiring more definitely to prepare themselves for scientific or special work in the field of agriculture may, with the approval of the dean of the Division of Agriculture and the head of the department in which they expect to major, substitute courses in the 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

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Botany I, Bot. 101.....	3(1-4, 2)
Gen. Chemistry, Chem. 110.....	5(3-6)
El. of An. Husb., An. Husb. 125.....	3(2-4)or
El. of Dairying, Dairy Husb. 101.....	3(2-3)
Freshmen Lect., Gen. Agric. 102.....	1(2-0)
Infantry I, Mil. Tr. 101A.....	1(0-3)
Phys. Education M, Phys. Ed. 103..	R(0-2)
Agric. Seminar,* Gen. Agric. 103.....	R

Total..... 16

SECOND SEMESTER

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

Total..... 16

SOPHOMORE

FIRST SEMESTER

Psychology A, Educ. 101.....	3(3-0)
Agric. Economics, Agric. Ec. 101....	3(3-0)
College Algebra A, Math. 107.....	5(5-0)
Soils, Agron. 130 .....	4(3-3)or
Farm Crops, Agron. 101.....	4(2-6)
Infantry III, Mil. Tr. 103A.....	1(0-3)
Phys. Education M, Phys. Ed. 105..	R(0-2)
Agric. Seminar,* Gen. Agric. 103.....	R

Total..... 16

SECOND SEMESTER

El. of Hort., Hort. 107.....	3(2-3)
Feeding L. S., An. Husb. 172.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Soils, Agron. 130 .....	4(3-3)or
Farm Crops, Agron. 101.....	4(2-6)
Farm Poul. Pro., Poul. Husb. 101, 2(1-2, 1)	
Infantry IV, Mil. Tr. 104A.....	1(0-3)
Phys. Education M, Phys. Ed. 106..	R(0-2)
Agric. Seminar,* Gen. Agric. 103.....	R

Total..... 16

JUNIOR

FIRST SEMESTER

Agric. Journalism, Ind. Jour. 160....	3(2-3)
Agric. Seminar,* Gen. Agric. 103.....	R
Electives .....	13

Total..... 16

SECOND SEMESTER

Agric. Seminar,* Gen. Agric. 103.....	R
Electives .....	16

Total..... 16

SENIOR

FIRST SEMESTER

Agric. Seminar,* Gen. Agric. 103.....	R
Electives .....	16

Total..... 16

SECOND SEMESTER

Agric. Relationships, Gen. Agric. 105, R(1-0)	
Agric. Seminar,* Gen. Agric. 103.....	R
Electives .....	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.	<i>Credits</i>	<i>Credits</i>
	<i>in fields</i> 1, 2, 3, 4, 5	<i>in fields</i> 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
<b>Total .....</b>	<b>61</b>	<b>61</b>

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 Agriculture with Special Training in Landscape Gardening**

**FRESHMAN**

**FIRST SEMESTER**

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

Total men .....	16
Total women .....	15

**SECOND SEMESTER**

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

Total men .....	16
Total women .....	15

**SOPHOMORE**

**FIRST SEMESTER**

Object Draw. I, Arch. 111.....	2(0-6)
Agric. Economics, Agric. Ec. 101....	3(3-0)
Silviculture, Hort. 119 .....	3(2-3)
Soils, Agron. 130 .....	4(3-3)
Landscape Gardening I, Hort. 125....	3(3-0)
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 153..	R(0-3)
Agric. Seminar,* Gen. Agric. 103.....	R

Total men .....	16
Total women .....	15

**SECOND SEMESTER**

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

Total men .....	17
Total women .....	16

**JUNIOR**

**FIRST SEMESTER**

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

Total.....	16
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**SECOND SEMESTER**

General Econ. Entomology, Ent. 203..	3(2-3)
Agric. Journalism, Ind. Jour. 160....	3(2-3)
Surveying III, Civ. Engr. 151, 155...	3(2-3)
Plant Materials II, Hort. 226.....	3(2-3)
Plant Ecology, Bot. 228.....	2(2-0)
Horticultural Problems, Hort. 244..	2( - )
Agric. Seminar,* Gen. Agric. 103.....	R

Total.....	16
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\* Four meetings each semester.

SENIOR

FIRST SEMESTER

Landscape Gardening II, Hort. 238..	3(1-6)
Plant Physiology I, Bot. 208.....	3(3-0)
Spraying, Hort. 207.....	3(2-3)
Pencil Rend. & Sketch., Arch. 116....	2(0-6)
Landscape Constr., Hort. 227.....	3(2-3)
Electives <sup>1</sup> .....	2
Agric. Seminar,* Gen. Agric. 103.....	R

SECOND SEMESTER

Agric. Relationships, Gen. Agric. 105, R(1-0)	
Landscape Gardening III, Hort. 246, 3(1-6)	
Water Color I, Arch. 118.....	2(0-6)
Civic Art, Hort. 223.....	3(1-6)
Horticultural Problems, Hort. 244....	4( - )
Electives .....	4
Agric. Seminar,* Gen. Agric. 103.....	R

Total..... 16

Total..... 16

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

**Electives in Industrial Journalism**

Provision is made for students desiring to prepare for the field of agricultural journalism to major in industrial journalism. They thus secure to a large extent the agricultural training provided in either the curriculum in agriculture or the curriculum in agricultural administration, but instead of securing advanced intensive training in some field of agricultural production or 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 .....	3(3-0)
Editorial Practice .....	2(2-0)	Copy Reading .....	2(0-6)
Industrial Feature Writing .....	2(2-0)	Ethics of Journalism .....	2(2-0)
The Rural Press .....	2(2-0)	Journalism Surveys .....	2(0-6)

\* 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.



## Agricultural Economics

Professor GRIMES  
 Professor GREEN  
 Associate Professor EVANS  
 Associate Professor HOWE

Assistant Professor HODGES  
 Assistant Professor HENNEY  
 Assistant Professor MONTGOMERY  
 Graduate Assistant NICHOLSON

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

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

The equipment belonging to the department is valued at \$4,153.†

### COURSES IN AGRICULTURAL ECONOMICS

#### FOR UNDERGRADUATE CREDIT

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

Economic principles as they relate to agriculture.

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

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

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' re-

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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 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, 1931.

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

lations; 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); II. 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.

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## 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 CREWS  
 Assistant LEWIS  
 Assistant VON TREBRA  
 Seed Analyst HARLING  
 Graduate Assistant JORGENSEN  
 Graduate Assistant HAYS  
 Grad. Research Asst. AULT

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 \$30,422.

## 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.

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\* Absent on leave, year 1931-'32.



105. SEED IDENTIFICATION AND WEED CONTROL. 2(1-3); I. Prerequisite: Agron. 101. Mr. Zahnley and Mrs. Harling.

Methods of propagation, control, and eradication of weeds.

*Laboratory.*—Identification of weed plants and seeds; germination and purity testing; field trips. Charge, \$2.50.

108. GRAIN GRADING AND JUDGING.. 2(0-6); II. Prerequisite: Agron. 101. Mr. Zahnley.

Practice in grading and judging crops and crop products, including wheat, corn, oats, barley, rye, buckwheat, flax, rice, alfalfa, clover, soybeans, cowpeas, and various kinds of hay. Charge, \$3.50.

114. ADVANCED GRAIN JUDGING. 2(0-6); I. Prerequisite: Agron. 108. Mr. Zahnley.

Identification, commercial grading and judging, and presenting orally and in writing the merits of samples of the various kinds of field crops. Charge, \$3.50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. CROP IMPROVEMENT. 3(2-3); or 4(2-6); II. Prerequisites: Agron. 101 and An. Husb. 221. Dr. Parker and Mr. von Trebra.

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.

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 reports upon completion of problems; credit varies with amount and quality of work done. Deposit, \$5.

211. CROP ECOLOGY. 2(2-0); II. Prerequisite: Agron. 101. Mr. 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.

212. ORIGIN AND CLASSIFICATION OF CROP PLANTS. 3(1½-4½); II. Prerequisite: Agron. 101. Offered in 1932-'33, and alternate years thereafter. Dr. Parker, Mr. Zahnley, and Mr. Laude.

Geographical and botanical origin of crop plants; characters used in identification of varieties of crop plants and related wild forms. Charge, \$2.50.

213. SPECIAL CROPS. 2(2-0); II. Prerequisite: Agron. 101. 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. CROP RESEARCH. 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 Mr. Hanna.

Fundamental principles underlying the management of soils. Charge, \$3.50.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT

231. DRY-LAND FARMING. 2(2-0); I. Prerequisite: Agron. 130. Mr. Myers. Principles underlying the cultivation methods and farming systems under light rainfall conditions.

232A. ADVANCED SOIL FERTILITY. 3(2-3); I. Prerequisite: Agron. 130. Dr. Duley.

Physical, chemical, and biological factors which influence the fertility of the soil and practical use of manure, fertilizer, lime, and legumes. Charge, \$5.

233. SOIL SURVEY. 2(1-3); II. Prerequisite: Agron. 130. Mr. Myers and Mr. Lewis.

Types of soils of the United States and methods of mapping soil areas; special attention to study of Kansas soils in the field.

236. SOIL PROBLEMS. 1(0-3) to 4 (0-12); I, II, and SS. Prerequisites depend on problem assigned. Mr. Throckmorton, Dr. Duley, and Mr. Myers.

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); I. 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. SOIL RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisites: Agron. 130 and Chem. 250. Mr. Throckmorton, Dr. Duley, and Mr. Myers.

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 CONNBELL  
 Assistant TAYLOR  
 Graduate Assistant MERONEY  
 Graduate Assistant ADAMS

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 \$33,242. This includes live stock having a value of \$25,906.

### COURSES IN ANIMAL HUSBANDRY

FOR UNDERGRADUATE CREDIT

125. ELEMENTS OF ANIMAL HUSBANDRY. 3(2-4); I and II. Mr. Bell, Mr. Mackintosh, 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.

\* Absent on leave, year 1931-'32.



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.

155. BEEF-CATTLE PRODUCTION. 3(2-3); II. Prerequisite: An. Husb. 152 or 172. Mr. Weber.

Economical methods of growing and fattening market cattle; practice in feeding, management, and housing of cattle.

158. SWINE PRODUCTION. 3(2-3); II. Prerequisite: An. Husb. 152 or 172. Mr. Aubel.

Economical methods of growing swine for the market; practice in the feeding, management, and housing of swine.

161. SHEEP PRODUCTION. 3(2-3); I. Prerequisite: An. Husb. 152 or 172. Mr. Cox.

Economical methods of growing, fitting, and finishing sheep for market; practice in the feeding, management, and housing of sheep.

164. HORSE PRODUCTION. 3(2-3); I. Prerequisite: An. Husb. 152 or 172. Mr. Mackintosh.

Economical methods of growing, handling, and housing horses for breeding purposes, for work, and for the market; practice in feeding, handling, and housing horses.

167. MEATS. 2(1-3); II. Prerequisites: An. Husb. 125 and 152 or 172. Mr. Mackintosh.

Killing and dressing, cutting, and curing 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 Nut. 106. Mr. Mackintosh.

The selection, cutting, and curing of meats; particular attention to grading of carcasses and uses of the various cuts of meats. Charge, \$1.

185. BREED STUDIES. 3(3-0); 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.

FOR GRADUATE AND UNDERGRADUATE CREDIT

221. GENETICS. 3(3-0); I, II, and SS. Prerequisites: Zoöl. 105 and Bot. 105. Dr. Ibsen.

A general study of variation, Mendelian inheritance, and related subjects.

223. ANIMAL BREEDING. 3(3-0); I. Prerequisite: An. Husb. 221. Mr. Aubel. The physiology of reproduction; general principles of heredity; variation; systems of mating; influence of pedigrees and herdbook standard; and an analysis of the breeding practices of leading breeders.

225. ADVANCED GENETICS. 4(3-3); II. Prerequisite: An. Husb. 221. Dr. Ibsen.

Genetics studied in greater detail than in An. Husb. 221; particular attention to the relation of chromosomes to heredity.

227. GENETICS SEMINAR. 1(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.

270. LIVE-STOCK MANAGEMENT. 3(2-3); I. Prerequisites: An. Husb. 125 and 152 or 172. Dr. McCampbell and other members of the department.

This course deals with the details of management, including general care, shipping, fitting, showing, etc.

274. ADVANCED MEATS. 1 to 4 credits; II. Prerequisite: An. Husb. 167. Mr. Mackintosh.

Grading of carcasses; studies in nutritive value of different grades of meat; factors influencing the quality of meats; factors influencing dressing percentages of meat animals; and identification of meats from different animals.

290. PROBLEMS IN TRAINING AGRICULTURAL JUDGING TEAMS. Class, 2 hours daily; 2 credits. 2d SS. Prerequisites: An. Husb. 125, Agron. 101, Poultr. 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 agricultural judging teams in animal husbandry, agronomy, poultry husbandry, and dairy husbandry. Practice in each field is a part of the course.

#### FOR GRADUATE CREDIT

301. RESEARCH IN ANIMAL HUSBANDRY. 1 to 10 credits; I and II. Prerequisites: An. Husb. 155, 158, 161, and 164. Dr. McCampbell.

Special problems in beef-cattle production, swine production, sheep production, horse production, pure-bred live-stock production, and genetics.

305. ANIMAL NUTRITION SEMINAR. 1(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. Reed.

The supply of wool and the demand for it; and the method of producing marketing, storing, grading, and manufacturing wool.

## Dairy Husbandry

Professor FITCH  
Professor CAVE  
Professor MARTIN  
Associate Professor RIDDELL

Assistant Professor CAUFIELD  
Instructor WOLBERG  
Graduate Assistant DUBOIS  
Graduate Research Asst. BERTSCH

The activities of the Department of Dairy Husbandry may be divided into two groups; those that deal with the production of milk and those that deal with the marketing and manufacturing of the several dairy products. In order to get first-hand information a dairy herd is maintained and a creamery operated. The animals in the dairy herd are used by judging classes and in experiments in the feeding, care, and management of dairy animals. Up-to-date methods in creamery operation are exemplified in the creamery.

The dairy herd consists of excellent types of the four dairy breeds: Jersey, Guernsey, Ayrshire, and Holstein. These animals are pure-bred, and a number have been entered in the advanced registry of their respective breeds. The excellence of the herd is shown by the yearly records of the cows that have been officially tested. The average for the Guernseys is 9,532 pounds of milk and 432 pounds of butter fat; for the Ayrshires, 11,614 pounds of milk and 442 pounds of butter fat; for the Holsteins, 13,925 pounds of milk and 492 pounds of butter fat; and for the Jerseys, 6,897 pounds of milk and 400 pounds of butter fat.

The Department of Dairy Husbandry is provided with ample room in the west wing of Waters Hall. The creamery is located in a one-story annex on the north end of this wing. In this building the department has the most up-to-date equipment available for handling butter, cheese, milk, ice cream, and condensed milk on a quantity basis, and is equipped far better than ever before to instruct students interested in the manufacturing side of dairying.

Students who have specialized in dairying are now among the leading dairy-cattle breeders of the state. Others who were interested in the manufacturing



side of dairying are in responsible positions with creameries and milk companies or in business for themselves. The dairy industry is expanding in Kansas, and this is bringing a greater demand for men with experience and knowledge of dairying.

The instruction in the Department of Dairy Husbandry includes the study of the selection and breeding of dairy animals, the production of milk, its manufacture into butter, cheese, and other dairy products, and its sale on the market. The success of the instruction in judging dairy animals may be assumed from the fact that in thirteen national contests the Kansas team has averaged better than third place.

This department owns equipment valued at \$43,314. This figure includes live stock to the value of \$18,847.

## COURSES IN DAIRY HUSBANDRY

### FOR UNDERGRADUATE CREDIT

101. **ELEMENTS OF DAIRYING.** 3(2-3); I and II. Mr. Cave, Mr. Martin, Mr. Caulfield, Mr. Wolberg, Mr. Bertsch, and Mr. DuBois.

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.*—Practice in making the Babcock test, in use of the lactometer, in separation of milk, and in farm butter making. Charge, \$2.50.

104. **DAIRY CATTLE JUDGING.** 1(0-3); I and II. Mr. Wolberg.

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. 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.

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. 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.

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. DAIRY RESEARCH. 1 to 10 credits; I and II. Prerequisites: Dairy Husb. 108, 109, 211, or 108, 111, 116, and 226.

Special investigations in dairy husbandry or dairy manufactures which may form the basis of a thesis in partial fulfillment of the requirement for the degree of master of science.

305. ANIMAL NUTRITION SEMINAR. 1(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.

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## General Agriculture

Dean CALL

102. FRESHMAN LECTURES. 1(2-0); I. Dean, assistant dean, heads of departments, and freshman advisers of the Division of Agriculture, assisted by a professor of education and various other members of the College faculty.

A two-fold object: (1) To assist in development of ability to study effectively, and (2) to inform regarding prospective opportunities for service in various fields of work open to agricultural graduates, and requirements for success in these fields; and regarding the relationship between agricultural and other subject matter in well-balanced agricultural training.

103. AGRICULTURAL SEMINAR. R(four meetings each semester).

Discussion of general agricultural questions and of agricultural student affairs; programs presented by students, members of the faculty, and invited speakers from outside. 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 JOHNSON  
 Assistant Professor REITZ  
 Instructor BRADLEY  
 Graduate Assistant HOWARD  
 Graduate Assistant DINSA

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 \$5,986.

### 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, Mr. Bradley, and Mr. Dinsa.

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. Johnson.

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. Johnson.

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.

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\* Absent on leave, year 1931-'32.

125. LANDSCAPE GARDENING I. 3(3-0); I and SS. Mr. Quinlan.

An introductory course in the fundamental principles of landscape gardening.

128. GREENHOUSE CONSTRUCTION AND MANAGEMENT. 3(3-0); I. Mr. Balch.

The more important points of greenhouse construction and the proper methods of greenhouse management; commercial greenhouses and private conservatories.

129. FLORAL ARRANGEMENT. 2(1-3); I. Mr. Balch.

The use of flowers and floral pieces for the home and the store.

*Laboratory.*—The arrangement of seasonable flowers for various uses.

130. SCHOOL GARDENING. 2(2-0); SS. Mr. Balch.

A general study of soils, insects, diseases, and machinery as related to vegetable crops and their culture.

133. ELEMENTS OF VEGETABLE GARDENING. 3(2-3); II. Mr. Balch.

The practices necessary for success in vegetable gardening—the fundamentals for the student who becomes a teacher, a county agricultural agent, or a vegetable grower, and a foundation for advanced courses in vegetable production. Charge, \$1.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT

201. PRACTICAL POMOLOGY. 3(2-3); II. Prerequisite: Hort. 105. Mr. Barnett and Dr. Filinger.

Fruit geography, orchard locations, financing the orchard, orchard equipment, orchard economics, fruit manufactured products, and fruit marketing. Lectures and recitations.

*Laboratory.*—Laboratory practice in grading and packing fruits, intensive field work in identification of fruit plant varieties; propagation and advanced pruning of fruit plants. Charge, \$1.

202. SUBTROPICAL POMOLOGY. 2(2-0); II. Prerequisite: Hort. 105. 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. Barnett and Dr. Filinger.

A course on the fundamentals of orcharding.

*Laboratory.*—Advanced apple judging; production and marketing studies. Charge, \$1.

207. SPRAYING. 3(2-3); I. Prerequisite: Chem. 110. 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.

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 and Mr. Howard.

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 and Mr. Howard.

Study and identification of trees, shrubs, and vines for general ornamental planting. Planting plans, sketches, and written reports are required.

227. LANDSCAPE CONSTRUCTION. 3(2-3); I. Prerequisite: Civil Engr. 111. Mr. Quinlan.

Interpretation of topographic maps, preparation of grading plans; structures in relation to the topography, sewage, water supply, lighting, and drainage on the private estate. 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. 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. Balch, and Dr. Filingher.

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 and Mr. Howard.

Advanced course in designing of large parks, cemeteries, golf courses, educational groups, and high-class land subdivisions; construction details; contracts and specifications. Several sketch problems will be given during the course. Charge, \$1.

#### FOR GRADUATE CREDIT

301. HORTICULTURAL RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructor. Mr. Barnett, Mr. Balch, Mr. Quinlan, and Dr. Filingher.

Any feasible problem relating to the student's major line of graduate study—pomology, olericulture, or landscape gardening. Data collected may form basis for a master's thesis.

## Milling Industry

Professor SWANSON  
Associate Professor WORKING

Instructor PENCE  
Miller OAKES

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 \$36,705.

## 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.

205. WHEAT AND FLOUR TESTING. 3(0-9); I. Prerequisites: Mill. Ind. 212 and Chem. 123 and 251 or 260. Dr. Working.

Special quantitative tests applied to cereals and their products; methods of analysis and interpretation of results. Deposit, \$7.50.

206. EXPERIMENTAL BAKING. 3(1-6); II. Prerequisite: Mill. Ind. 205. Dr. Working.

Practice in baking tests; comparison of methods, formulas, and flours; interpretation of results. Charge, \$5.

210. **ADVANCED WHEAT AND FLOUR TESTING.** 1 to 5 credits; I and II. Prerequisites: Mill. Ind. 205 and other courses; consult instructors. Dr. Working. Physiochemical and other methods used in testing wheat and flour. Deposit, \$2.50 per credit.

212. **MILLING QUALITIES OF WHEAT.** 3(3-0); II. Prerequisite: Chem. 123. Dr. Swanson.

Factors which affect the milling qualities of wheat and the quality of flour, such as moisture, respiration, enzymes, harvesting, storage, climate, and soil.

214. **MILLING INDUSTRY PROBLEMS.** 1 to 5 credits; I, II and SS. Prerequisites: Mill. Ind. 212, or such other courses as are necessary for the problem selected. Dr. Swanson, Dr. Working, and Mr. Pence. Charge, \$2.50 per credit hour.

FOR GRADUATE CREDIT.

301. **MILLING INDUSTRY RESEARCH.** 1 to 10 credits; I, II, and SS. Prerequisites: Mill. Ind. 205 and 206, and other courses required by the problem selected. Dr. Swanson, Dr. Working, and Mr. Pence.

A definite line of investigation which may, if sufficient as to quality and quantity, be used as a basis for thesis presented in partial fulfillment of the requirements for the degree of Master of Science.

## Poultry Husbandry

Professor PAYNE  
Professor WARREN  
Associate Professor SCOTT

Graduate Assistant BENNION  
Farm Superintendent FEIGHT

The poultry plant, occupying twenty-four acres and situated just north of the northeast corner of the College campus, is devoted to the breeding and rearing of the stock used for class and experimental work. It is equipped with various types of houses, runs, incubators and brooders, and with flocks of the leading breeds of fowls.

There is in the government and state experiment stations and in schools and colleges an increasing demand for men with experience and systematic training in handling poultry. There is likewise a growing demand for men to enter poultry-packing houses and for men capable of managing poultry-farming enterprises of considerable proportions.

The department owns equipment valued at \$15,167.

### 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

202. POULTRY BREEDING. 2(2-0); II. Prerequisite: An. Husb. 221. Dr. Warren.

Experimental work on inheritance in poultry is reviewed.

POULTRY FARM ORGANIZATION. See Advanced Farm Organization (Ag. Ec. 206A).

POULTRY BACTERIOLOGY. See Poultry Bacteriology (Bact. 216).

POULTRY ANATOMY. See Special Anatomy (Anat. 202).

206. POULTRY PROBLEMS. 1 to 5 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, and such other courses as required. Mr. Payne.

A definite investigation covering some phase of poultry work, to be continued into the next semester if necessary.

210. GENETICS SEMINAR. 1(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. POULTRY RESEARCH. 1 to 10 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, 109, 116, 120, or their equivalent, and such other courses as required. Mr. Payne and Dr. Warren.

A definite line of investigation which may form the basis of a master's thesis.



305. ANIMAL NUTRITION SEMINAR. 1(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.

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## **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 as regards graduate work provided for high school teachers of vocational agriculture. Brief information regarding many of these courses offered in the Summer School may be found in the department descriptions of courses in this catalogue. The Summer School bulletin may be secured by addressing a request to the Vice President, Kansas State College, Manhattan, Kan.

### **SPECIAL COURSES IN AGRICULTURE**

The Farmer's Short Course and the Dairy Manufacturing Short Courses are discussed with other special courses in another part of this catalogue. They may be found by reference to the general index.

# The Division of Engineering

ROY ANDREW SEATON, *Dean*

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The Division of Engineering offers curricula in agricultural engineering, architectural engineering, architecture, chemical engineering, civil engineering, electrical engineering, flour mill engineering, landscape architecture, and mechanical engineering, each leading to the degree of Bachelor of Science in the profession selected.

While the curricula, as scheduled, are believed to be sufficient to cover the needs of the average young man, it is possible to combine portions of the work of two or more of them in such a way that one may be prepared to take up a special line of work for which he desires to fit himself. For example, by substituting certain courses from the departments of chemistry and geology for some of those in the curriculum in mechanical engineering, a young man can fit himself for work in connection with the oil industry. By combining some of the courses in civil and mechanical engineering and by taking additional work in chemistry and geology, a young man may fit himself for special work in connection with the development of the coal fields of the country. In special cases permission will be granted to combine the work on the lines here indicated. With the permission of the dean of the division students desiring to do so may substitute work in the reserve officers' training corps for certain subjects in any of the curricula of the division.

It is believed that the curricula as tabulated give the best preparation for students expecting to follow general work in the profession selected and for those who are not certain what particular branch of the profession they will follow. The substitutions and combinations indicated, and others similar to them, will be permitted only when there is good evidence that the student desiring such work is practically certain to follow the branch selected.

In the case of any of these modifications, the degree granted will be that of the course in which the major portion of the work is taken. In no case will the substitution of an additional amount of technical work for any of the general cultural work in the course be allowed.

## 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 nine additional credit hours in the Department of Education, graduates in engineering are qualified for the three-year Kansas State teachers' certificate, renewable for life and valid in any high school or 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 to agricultural problems. Considerable time is devoted to farm machinery,

farm motors, rural architecture, highway engineering, irrigation, drainage, and concrete construction.

### **CURRICULUM IN ARCHITECTURAL ENGINEERING**

The curriculum in architectural engineering as herein outlined is designed primarily for the student who wishes to specialize in the constructional side of the building profession.

The field of the architectural engineer is wide and varied. It comprises the superintending of building construction, general contracting, the estimating of costs for construction projects, and the designing of the structural members of steel, timber and concrete.

Because of the nature of the work of the architectural engineer in the profession, it is necessary that he be also well grounded in the underlying principles of art and architectural design. In addition to the necessary architectural and engineering requirements the curriculum also provides for general cultural courses. These courses are designed to provide the student with the essentials of a liberal education.

### **CURRICULUM IN ARCHITECTURE**

The curriculum in architecture aims to provide the technical training which will give a broad and sound foundation for the needs of the practicing architect, as well as the essentials of a liberal education. Although closely associated with, and somewhat dependent upon, science and engineering, architecture is primarily a fine art; hence the training of the architect, while including the general fundamentals of engineering and science, must be based primarily upon a study and understanding of the basic architectural principles together with the canons of art and good taste. A major portion of the curriculum is therefore devoted to the study of architectural design, supplemented by those subjects preparatory or contributory to it.

Supporting this line of study the student is given a comprehensive view of the development of civilization together with a more detailed study of the history of architecture and of art. Throughout the course draughtsmanship as applied to architectural design and construction, as well as to free-hand drawing and sketching, is given constant attention. Courses dealing with the fundamental principles of building construction, sanitation, heating, and lighting, together with a careful study of the properties and uses of building materials, are given simultaneously with the courses in design and drawing.

In addition to the above-outlined professional and technical studies, approximately one-quarter of the curriculum is devoted to more general studies designed to broaden the student's view and to give him the essentials of a liberal education. Thus it is the aim not only to provide a fundamental training upon which the student may base his professional development and advancement, but to afford a training which is in the broadest sense educational.

Students pursuing the curriculum in architecture are urged to devote a fifth year to the work. By so doing the student can combine the curricula in architectural engineering and architecture and receive the Bachelor of Science degree in both architectural engineering and architecture.

### **CURRICULUM IN CHEMICAL ENGINEERING**

Though the progress of chemical science and of the chemical industries has been rapid in the last twenty-five years, their development really has only begun. One need but survey briefly the hosts of industries which are dependent upon chemistry for their improvement to realize what opportunities await the trained chemical engineer. Industries which have been more or less 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 electro-



thermal 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 FLOUR-MILL ENGINEERING**

The milling of wheat and other cereals is an important industry in this state. The curriculum in flour-mill engineering is designed to prepare men for the management of mills, for work in connection with the designing of milling plants, and for research work in preparation and utilization of mill products.

The work of the freshman year is the same as in the other engineering courses. The sophomore year is similar to that of the mechanical engineering course, but includes additional chemistry and a beginning course in milling practice. In the junior and senior years, besides the courses dealing with the production, marketing, testing, and milling of grain products, a considerable amount of time is devoted to mechanics, chemistry, history, economics, steam and gas engineering, and flour-mill design.

### **CURRICULUM IN LANDSCAPE ARCHITECTURE**

The aim of the curriculum in landscape architecture is to give to the student such technical training as will equip him for successful practice as a landscape architect.

The work of the landscape architect embraces the design, construction, execution, planting, and maintenance of farmsteads, estates, and other home grounds. In his work he is also called upon to plan parks, playgrounds, real estate subdivisions, country clubs, and boulevards and street systems. City planning and the laying out of town sites is probably the most important work of the landscape architect.

The function of the landscape architect is the fitting of land for human use, convenience, and enjoyment, whether it be in the city or in the country. The work requires a thorough knowledge of the fundamentals of architecture, engineering, and horticulture. Because landscape architecture is primarily a fine art, especial emphasis is given to the study of the fundamental principles of design. A major portion of the curriculum is therefore devoted to the study of architectural and landscape design. These courses are supplemented with courses in drafting, free-hand drawing, and sketching, so the student may develop a facility for expressing his ideas on paper. Throughout the course the student is also given intensive training in the study of plant materials, forestry, and soil conditions.

In addition to professional courses of study the curriculum provides general cultural courses. These courses are designed primarily to give the student the basic elements of a liberal education.

### **CURRICULUM IN MECHANICAL ENGINEERING**

The work in mechanical engineering prepares for the successful management and superintendence of factories and power plants; for the design of power machinery installations; for the design and construction of machine tools, steam and gas engines, compressors, hydraulic machinery, etc.; and for the design and erection of engineering buildings and factories, including the selection, purchasing, and location of the equipment.

The curriculum has been laid out with the aim of securing a judicious mixture of theory and practice, such as will not only give the student the technical skill required for engineering operations, but will also endow him with an understanding of the scientific and economic principles necessary for the solution of engineering and industrial problems.

Throughout the four years the theoretical studies in the classroom are supplemented by practical work in the laboratories in such a manner as very materially to strengthen both. In the testing laboratories the work does not end when the test is completed, but the entire problem must be written up in such a manner as would be approved in the best commercial testing laboratories. The laboratory work in the shops not only gives the student practice in operating the machinery and performing the various mechanical operations, but includes a scientific study of the factors of production, so that the loss of material and expenditure of human effort will be a minimum.

Optional and elective courses are available in the senior year and give the student an opportunity for instruction in the more specialized branches of mechanical engineering, including factory engineering, power production, and aeronautical engineering.



Students pursuing a mechanical engineering curriculum are urged to spend at least two summers in some shop or commercial plant in order to broaden their training.

## Curriculum in Agricultural Engineering

### FRESHMAN

#### FIRST SEMESTER

Chemistry E-I, Chem. 107.....	*4(3-3)
College Algebra,† Math. 104.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Engr. Draw., Mach. Design 101.....	2(0-6)
Agric. Mach. & Con., Agr. Engr. 122, 2-	2(1-3)
Extempore Speech I, Pub. Spk. 106..	2(2-0)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 103..	R(0-2)

Total..... 17

#### SECOND SEMESTER

Chemistry E-II, Chem. 108.....	4(3-3)
Plane Trigonometry, Math. 101.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Descriptive Geom., Mach. Des. 106..	2(0-6)
Elements An. Husb., An. Husb. 125,	3(2-4)
Forging, Shop 150.....	1(0-3)
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104..	R(0-2)

Total..... 17

### SOPHOMORE

#### FIRST SEMESTER

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analytical Geom., Math. 110..	4(4-0)
Metallurgy, Shop 165.....	2(2-0)
Mechanism, Mach. Design 121.....	3(3-0)
Surveying I, Civ. Engr. 102.....	2(0-6)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 105..	R(0-2)

Total..... 17

#### SECOND SEMESTER

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
General Geology, Geol. 103.....	3(3-0)
Mach. Draw. I, Mach. Design 111..	2(0-6)
Surveying II, Civ. Engr. 111.....	2(0-6)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106..	R(0-2)

Total..... 18

### JUNIOR

#### FIRST SEMESTER

Applied Mechanics, Ap. Mech. 202...	4(4-0)
Calculus II, Math. 206.....	3(3-0)
Soils, Agronomy 130 .....	4(3-3)
Fld. & Power Mach., Agr. Engr. 111..	4(2-6)
Carpentry,   Shop 149 .....	2(0-6)
Seminar, Gen. Engr. 105.....	R

Total..... 17

#### SECOND SEMESTER

Str. of Mat., Ap. Mech. 211, 220...	6(5-3)
American Industrial Hist., Hist. 105,	3(3-0)
Farm Crops, Agronomy 101.....	4(2-6)
Farm Motors, Ag. Engr. 125, 127...	4(2-6)
Foundry Production, Shop 161.....	1(0-3)
Seminar, Gen. Engr. 105.....	R

Total..... 18

### SENIOR §

#### FIRST SEMESTER

Economics, Econ. 101 .....	3(3-0)
Farm Structures, Ag. Engr. 105.....	4(2-6)
Highway Engineering I,   Civ. Engr.	
231 .....	2(2-0)
Hydraulics, Ap. Mech. 230, 235.....	4(3-3)
Highway Materials Lab.   Ap. Mech.	
250 .....	1(0-3)
Machine Tool Work I, Shop 170....	2(0-6)
Law for Engineers,   Hist. 167.....	2(2-0)
Seminar, Gen. Engr. 105.....	R

Total..... 18

#### SECOND SEMESTER

Farm Organization, Ag. Econ. 106...	3(2-3)
Land Reclamation, Ag. Engr. 150...	3(2-3)
Electrical Engineering C, Elect. Engr.	
102, 106 .....	3(2-2, 1)
Heating & Ventilation A,   Mech. Engr.	
135 .....	3(3-0)
Modern Farm and Home Equipment,	
Ag. Engr. 115.....	3(2-3)
Elective‡   .....	2( - )
Seminar, Gen. Engr. 105.....	R

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-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)
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)
Extm. 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 IV, Mil. Tr. 116A.....1(0-3)
Artillery III, Mil. Tr. 115A.....1(0-3)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	Phys. Education M, Phys. Ed. 106..R(0-2)
Phys. Education M, Phys. Ed. 105..R(0-2)	
Total..... 18	Total..... 17

## JUNIOR

FIRST SEMESTER	SECOND SEMESTER
Applied Mechanics, Ap. Mech. 202...4(4-0)	Str. of Mat., Ap. Mech. 211, 220...6(5-3)
Calculus II, Math. 206.....3(3-0)	Work. Draw. and Speci., Arch. 191...3(0-9)
Hist. of Arch. III, Arch. 158A.....2(2-0)	Hist. of Arch. IV, Arch. 160A.....2(2-0)
Masonry and Found., Civ. Engr. 120, 2(2-0)	Design II, Arch. 144.....3(0-9)
Design I, Arch. 142.....3(0-9)	Water Color I, Arch. 118.....2(0-6)
Pencil Rend. & Sketch., Arch. 116...2(0-6)	Elective†   .....2( - )
Elective †   .....2( - )	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	
Total..... 18	Total..... 18

## SENIOR

FIRST SEMESTER	SECOND SEMESTER
Str. in Framed Struc., Civ. Engr. 201, 4(4-0)	Des. of Fr. Struc., Civ. Engr. 246...3(0-9)
Civil Engr. Draw. II, Civ. Engr. 205..2(0-6)	Concrete Design, Civ. Engr. 250, 255..3(2-3)
Design III, Arch. 145.....5(0-15)	Design IV, Arch. 147.....5(0-15)
Rural Architecture, Arch. 153.....2(0-6)	Heating and Ventilation A, Mech. Engr. 135 .....3(3-0)
Economics, Econ. 101.....3(3-0)	Business Management,   Econ. 126...2(2-0)
Law for Engineers, Hist. 167.....2(2-0)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	Inspection Trip, Arch. 199.....R
Total..... 18	Total..... 16

Number of 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

College Algebra,* Math. 104.....	3(3-0)
Hist. of Arch. I, Arch. 154A.....	2(2-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Desc. Geom. A, Mach. Des. 107.....	3(0-9)
Object Drawing I, Arch. 111.....	2(0-6)
El. of Arch. I, Arch. 106A.....	3(0-9)
Artillery I, Mil. Tr. 113A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A, R(0-3)	
Engr. Lectures, Gen. Engr. 101.....	R

Total, men .....	17
Total, women .....	16

#### SECOND SEMESTER

Plane Trigonometry, Math. 101.....	3(3-0)
Hist. of Arch. II, Arch. 157A.....	2(2-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Sh. & Shad. & Per., Mach. Des. 108, 3(0-9)	
Object Drawing II, Arch. 114.....	2(0-6)
El. of Arch. II, Arch. 107A.....	3(0-9)
Artillery II, Mil. Tr. 114A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	
Engr. Lectures, Gen. Engr. 101.....	R

Total, men .....	17
Total, women .....	16

### SOPHOMORE

#### FIRST SEMESTER

Gen. Physics I, Phys. 135.....	4(3-3)
Hist. of Arch. III, Arch. 158A.....	2(2-0)
Bld. Mat. & Con., Arch. 187A.....	3(3-0)
Pencil Rend. & Sketch., Arch. 116...2(0-6)	
Design I, Arch. 142.....	3(0-9)
French I, Mod. Lang. 151.....	3(3-0)
Artillery III, Mil. Tr. 115A (men)....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..R(0-3)	

Total, men .....	18
Total, women .....	17

#### SECOND SEMESTER

General Physics II, Phys. 140.....	4(3-3)
Hist. of Arch. IV, Arch. 160A.....	2(2-0)
Work. Draw. & Spec., Arch. 191.....	3(0-9)
Water Color I, Arch. 118.....	2(0-6)
Design II, Arch. 144.....	3(0-9)
French II, Mod. Lang. 152.....	3(3-0)
Artillery IV, Mil. Tr. 116A (men)....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..R(0-3)	

Total, men .....	18
Total, women .....	17

### JUNIOR

#### FIRST SEMESTER

Ap. Mech. A, Ap. Mech. 102.....	3(3-0)
Still-life Drawing, Arch. 117.....	2(0-6)
Design III, Arch. 145.....	5(0-15)
Rural Architecture, Arch. 153.....	2(0-6)
Economics, Econ. 101 .....	3(3-0)
Hist. of Paint. and Sculp., Arch. 179, 3(3-0)	
Seminar, Gen. Engr. 105.....	R

Total.....	18
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#### SECOND SEMESTER

Str. of Mat. A, Ap. Mech. 116, 121, 4(3-3)	
Life Drawing I, Arch. 121.....	2(0-6)
Design IV, Arch. 147.....	5(0-15)
Extm. Speech I, Pub. Spk. 106.....	2(2-0)
Law for Engineers, Hist. 167.....	2(2-0)
Elective†   .....	2( - )
Seminar, Gen. Engr. 105.....	R

Total.....	17
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### SENIOR

#### FIRST SEMESTER

Interior Design, Arch. 120.....	2(0-6)
Design V, Arch. 253.....	8(0-24)
Theory of Struc. I, Arch. 192.....	4(2-6)
Elective†   .....	3( - )
Seminar, Gen. Engr. 105.....	R

Total.....	17
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#### SECOND SEMESTER

Life Drawing II, Arch. 123.....	2(0-6)
Design VI, Arch. 256.....	8(0-24)
Theory of Struc. II, Arch. 194A.....	5(3-6)
Elective†   .....	2( - )
Seminar, Gen. Engr. 105.....	R
Inspection Trip, Arch. 199.....	R

Total.....	17
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Number of 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 IV, Mil. Tr. 116A.....1(0-3)
Artillery III, Mil. Tr. 115A.....1(0-3)	Seminar, Gen. Engr. 105.....R
Seminar, Gen. Engr. 105.....R	Phys. Education M, Phys. Ed. 106..R(0-2)
Phys. Education M, Phys. Ed. 105..R(0-2)	
Total..... 18	Total..... 18

## JUNIOR

FIRST SEMESTER	SECOND SEMESTER
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.
Steam and Gas Engr. I, Mech. Engr.	204, 205 .....4(3-3)
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, 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)	Chemical Problems,   Chem. 270...3(0-9)
Cryst. and Min., Geol. 209.....4(2-6)	Physical Chemistry II,   Chem. 272..3(3-0)
Seminar, Gen. Engr. 105.....R	Electives†   .....4( - )
	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**

Chemistry E-I, Chem. 107.....	4(3-3)
Plane Trigonometry,* Math. 101.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
Surveying I, Civ. Engr. 102.....	2(0-6)
Extm. Speech I, Pub. Spk. 106.....	2(0-2)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 102.....	R(0-2)

Total..... 17

**SECOND SEMESTER**

Chemistry E-II, Chem. 108.....	4(3-3)
College Algebra,* Math. 104.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Des. Geometry, Mach. Des. 106.....	2(0-6)
Surveying II, Civ. Engr. 111.....	2(0-6)
Metallurgy, Shop 165.....	2(2-0)
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104.....	R(0-2)

Total..... 17

**SOPHOMORE**

**FIRST SEMESTER**

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analytical Geom., Math. 110.....	4(4-0)
Amer. Industrial Hist., Hist. 105.....	3(3-0)
Surveying III, Civ. Engr. 151, 155.....	3(2-3)
Mach. Drawing I, Mach. Des. 111.....	2(0-6)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 105.....	R(0-2)

Total..... 18

**SECOND SEMESTER**

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
Law for Engineers, Hist. 167.....	2(2-0)
Surveying IV, Civ. Engr. 156, 157.....	3(2-3)
C. E. Drawing I, Civ. Engr. 125.....	2(0-6)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106.....	R(0-2)

Total..... 18

**JUNIOR**

**FIRST SEMESTER**

Ap. Mech., Ap. Mech. 202.....	4(4-0)
Calculus II, Math. 206.....	3(3-0)
Highway Engr. I, Civ. Engr. 231.....	2(2-0)
Engr. Geology, Geol. 102.....	4(3-3)
Masonry & Found., Civ. Engr. 120.....	2(2-0)
Water & Sewage Bact., Bact. 125.....	2(0-6)
Seminar, Gen. Engr. 105.....	R

Total..... 17

**SECOND SEMESTER**

Str. of Mat., Ap. Mech. 211, 220.....	6(5-3)
Hydraulics, Ap. Mech. 230, 235.....	4(3-3)
Ry. Engr. I, Civ. Engr. 145.....	2(2-0)
Drain. & Irrig. I, Civ. Engr. 161.....	2(2-0)
Steam & Gas Engr. C, Mech. Engr. 120, 125.....	3(2-3)
Seminar, Gen. Engr. 105.....	R

Total..... 17

**SENIOR**

**FIRST SEMESTER**

Str. in Fr. Struc., Civ. Engr. 201.....	4(4-0)
C. E. Drawing II, Civ. Engr. 205.....	2(0-6)
Water Supply, Civ. Engr. 220.....	2(2-0)
Sewerage, Civ. Engr. 225.....	2(2-0)
Highway Mat. Lab., Ap. Mech. 250, 1(0-3)	
Economics, Econ. 101.....	3(3-0)
Electives†  .....	4(-)
Seminar, Gen. Engr. 105.....	R

Total..... 18

**SECOND SEMESTER**

Des. of Fr. Struc., Civ. Engr. 246.....	3(0-9)
Elec. Engr. C, Elec. Engr. 102, 106, 3(2-2, 1)	
Con. Design, Civ. Engr. 250, 255.....	3(2-3)
Electives†  .....	8(-)
Seminar, Gen. Engr. 105.....	R
Inspection Trip, Civ. Engr. 180.....	R

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., Elect. Engr. 112, 2(0-6)	Forging, Shop 150 .....1(0-3), or
Extm. Speech I, Pub. Spk. 106.....2(2-0)	Elec. Mach. & Con., Elect. 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. Elect. Engr., Elect. 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, Elect. Engr. 203, 3(3-0)	Dir.-cur. Mach. II, Elect. Engr.
Elect. Meas., Elect. Engr. 227, 229, 4(2-4, 2)	206, 208 .....4(2-4, 2)
Applied Mech., Ap. Mech. 202.....4(4-0)	Alternating-current Machines I,
Calculus IIA, Math. 206A .....4(4-0)	Elect. Engr. 209.....4(4-0)
Machine Tool Work I, Shop 170....2(0-6)	Elect. Mach. Des., Elect. Engr. 270, 1(0-3)
Seminar, Gen. Engr. 105.....R	Str. of Mat. E, Ap. Mech. 216, 220, 4(3-3)
Total..... 17	Economics, Econ. 101 .....3(3-0)
	Elective†   .....2( - )
	Seminar, Gen. Engr. 105.....R
	Total..... 18

### SENIOR

FIRST SEMESTER	SECOND SEMESTER
Alternating-current Machines II,	Alternating-current Machines III,
Elect. Engr. 214, 215.....5(3-4, 2)	Elect. Engr. 224, 225.....5(3-4, 2)
Electrical Communication I, Elect.	
Engr. 217, 218 .....3(2-2, 1)or	Steam & Gas Engr. II, Mech Engr.
Pub. Util. Mangt., Elect. Engr. 290..3(3-0)	204, 205 .....4(3-3)
Steam & Gas Engr. I, Mech. Engr.	Bus. Engl. & Sales.,   Engl. 125.....3(3-9)
201, 202 .....5(4-3)	Elective†   .....5(5-0)
Hydraulics Rec., Ap. Mech. 230....3(3-0)	Seminar, Gen. Engr. 105.....R
Corp. Organiz. & Fin.,   Econ. 219...2(2-0)	Total..... 17
Seminar, Gen. Engr. 105.....R	
Total..... 18	

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 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 Flour-mill Engineering

### FRESHMAN

#### FIRST SEMESTER

Chemistry E-I, Chem. 107.....	4(3-3)
College Algebra,* Math. 104.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Prin. of Milling I, Mill. Ind. 104....	2(1-3)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
Engr. Woodwork, Shop 101.....	1(0-3)
Forging, Shop 150 .....	1(0-3)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 103..	R(0-2)

Total..... 17

#### SECOND SEMESTER

Chemistry E-II, Chem. 108.....	4(3-3)
Plane Trigonometry, Math. 101.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Des. Geom., Mach. Des. 106.....	2(0-6)
Extem. Speech I, Pub. Spk. 106.....	2(2-0)
Surveying I, Civ. Engr. 102.....	2(0-6)
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104..	R(0-2)

Total..... 17

### SOPHOMORE

#### FIRST SEMESTER

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analyt. Geom., Math. 110.....	4(4-0)
Elem. Organic Chem., Chem. 123....	3(2-3)
Mach. Draw. I, Mach. Des. 111.....	2(0-6)
Quantitative Analysis A, Chem. 250..	3(1-6)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 105..	R(0-2)

Total..... 18

#### SECOND SEMESTER

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
Mechanism, Mach. Des. 121.....	3(3-0)
Mach. Draw. II, Mach. Des. 116....	3(0-9)
Prin. of Mill. II, Mill. Ind. 106....	1(0-3)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106..	R(0-2)

Total..... 18

### JUNIOR

#### FIRST SEMESTER

Applied Mechanics, Ap. Mech. 202...4	(4-0)
Calculus II, Math. 206.....	3(3-0)
Ad. Quantitative Anal., Chem. 260..	1(0-3)
American Ind. Hist., Hist. 105.....	3(3-0)
Farm Crops Laboratory, Agron. 101..	2(0-6)
Milling Practice I, Mill. Ind. 109....	3(1-6)
Milling Entomology, Ent. 116.....	1(1-0)
Seminar, Gen. Engr. 105.....	R

Total..... 17

#### SECOND SEMESTER

Str. of Mat. E, Ap. Mech. 216, 220..4	(3-3)
Economics, Econ. 101 .....	3(3-0)
Grain Grad. and Judg., Agron. 108...2	(0-6)
Mill. Qual. of Wheat, Mill. Ind. 212,	3(3-0)
Milling Practice II, Mill. Ind. 111....	3(1-6)
Machine Tool Work I, Shop 170....	2(0-6)
Seminar, Gen. Engr. 105.....	R

Total..... 17

### SENIOR

#### FIRST SEMESTER

Wheat and Flr. Test., Mill. Ind. 205,	3(0-9)
Grain Marketing, Ag. Ec. 203.....	3(3-0)
Flow Sheet Design, Mach. Des. 214..	2(0-6)
Mill. Tech. I, Mill. Ind. 201.....	2(0-6)
Steam and Gas Engr. I, Mech. Engr.	
201, 202 .....	5(4-3)
Elective†   .....	3( - )
Seminar, Gen. Engr. 105.....	R

Total..... 18

#### SECOND SEMESTER

Exper. Baking, Mill. Ind. 206.....	3(1-6)
Elec. Engr. C., Elec. Engr. 102, 106,	3(2-2, 1)
Flour-mill Design, Mach. Des. 215...2	(0-6)
Mill. Tech. II, Mill. Ind. 202.....	2(0-6)
Steam and Gas Engr. II, Mech.	
Engr. 204, 205 .....	4(3-3)
Elective†   .....	4( - )
Seminar, Gen. Engr. 105.....	R

Total..... 18

Number of 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 Landscape Architecture

## FRESHMAN

## FIRST SEMESTER

Plane Trigonometry,* Math. 101.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
General Botany I, Bot. 101.....	3(1-4, 2)
Des. Geom. A, Mach. Des. 107.....	3(0-9)
Object Drawing I, Arch. 111.....	2(0-6)
Surveying I, Civ. Engr. 102.....	2(0-6)
Artillery I, Mil. Tr. 113A (men).....	1(0-3)and
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A..	R(0-3)
Engr. Lectures, Gen. Engr. 101.....	R

Total, men .....	17
Total, women .....	16

## SECOND SEMESTER

College Algebra,* Math. 104.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Botany II, Bot. 105.....	3(1-4, 2)
Sh. & Shad. & Per., Mach. Des. 108,	3(0-9)
Object Drawing II, Arch. 114.....	2(0-6)
Surveying II, Civ. Engr. 111.....	2(0-6)
Artillery II, Mil. Tr. 114A (men),	1(0-3)and
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A,	R(0-3)
Engr. Lectures, Gen Engr. 101.....	R

Total, men .....	17
Total, women .....	16

## SOPHOMORE

## FIRST SEMESTER

Hist. of Arch. I, Arch. 154A.....	2(2-0)
El. of Arch. I, Arch. 106A.....	3(0-9)
Surveying III, Civ. Engr. 151, 155...	3(2-3)
General Chem., Chem. 110.....	5(3-6)
Landsc. Gardening I, Hort. 125.....	3(3-0)

Artillery III, Mil. Tr. 115A (men), 1(0-3)and  
Phys. Education M, Phys. Ed. 105, R(0-2)or  
Phys. Education W, Phys. Ed. 153..R(0-3)

Seminar, Gen. Engr. 105.....R

Total, men .....	17
Total, women .....	16

## SECOND SEMESTER

Hist. of Arch. II, Arch. 157A.....	2(2-0)
El. of Arch. II, Arch. 107A.....	3(0-9)
Water Color I, Arch. 118.....	2(0-6)
Plant Ecology, Bot. 228.....	2(2-0)
El. of Hort., Hort. 107.....	3(2-3)
General Geology, Geol. 103.....	3(3-0)
Artillery IV, Mil. Tr. 116A, (men),	1(0-3)and
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..	R(0-3)
Elective† .....	1( - )
Seminar, Gen. Engr. 105.....	R

Total, men .....	17
Total, women .....	16

## JUNIOR

## FIRST SEMESTER

Hist. of Arch. III, Arch. 158A.....	2(2-0)
Pencil Rend. and Sketch., Arch. 116..	2(0-6)
Design I, Arch. 142.....	3(0-9)
Bldg. Mat. & Con., Arch. 187A.....	3(3-0)
Theory of Land. Des., Hort. 243.....	2(2-0)
Plant Materials I, Hort. 224.....	3(2-3)
Plant Physiology I, Bot. 208.....	3(3-0)
Seminar, Gen. Engr. 105.....	R

Total.....	18
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## SECOND SEMESTER

Hist. of Arch. IV, Arch. 160A.....	2(2-0)
Extm. Speech I, Pub. Spk. 106.....	2(2-0)
Design II, Arch. 144.....	3(0-9)
Plant Materials II, Hort. 226.....	3(2-3)
Work. Draw. & Spec., Arch. 191.....	3(0-9)
Soils, Agron. 130 .....	4(3-3)

Seminar, Gen. Engr. 105.....R

Total.....	17
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## SENIOR

## FIRST SEMESTER

Landscape Construc., Hort. 227.....	3(2-3)
Greenhouse Const. & Mngt., Hort. 128,	3(3-0)
Highway Engr. I, Civ. Engr. 231....	2(2-0)
Highway Materials Lab., Ap. Mech.	
250 .....	1(0-3)
Silviculture, Hort. 119.....	3(2-3)
Landsc. Gardening II, Hort. 238....	3(1-6)
Plant Pathology I, Bot. 205.....	3(1-4, 2)
Seminar; Gen. Engr. 105.....	R

Total.....	18
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## SECOND SEMESTER

Civic Art, Hort. 223.....	3(1-6)
Landsc. Gardening III, Hort. 246....	3(1-6)
City Planning, Arch. 249.....	3(0-9)
Economics, Econ. 101.....	3(3-0)
Inspection Trip, Arch. 199.....	R
Seminar, Gen. Engr. 105.....	R
Elective†   .....	6( - )

Total.....	18
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Number of 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

Chemistry E-I, Chem. 107.....	4(3-3)
College Algebra,* Math. 104.....	3(3-0)
College Rhetoric I, Engl. 101.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
Extem. Speech I, Pub. Spk. 106.....	2(2-0)
{ Engr. Woodwork, Shop 101.....	1(0-3) }
{ Forging, Shop 150.....	1(0-3) }
Elements of Steam and Gas Power, Mech. Engr. 130.....	2(0-6)
Artillery I, Mil. Tr. 113A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 103..	R(0-2)

Total..... 17

#### SECOND SEMESTER

Chemistry E-II, Chem. 108.....	4(3-3)
Plane Trigonometry, Math. 101.....	3(3-0)
College Rhetoric II, Engl. 104.....	3(3-0)
Des. Geom., Mach. Des. 106.....	2(0-6)
Surveying I, Civ. Engr. 102.....	2(0-6)
Elements of Steam and Gas Power, Mech. Engr. 130.....	2(0-6) or
{ Engr. Woodwork, Shop 101.....	1(0-3) }
{ Forging, Shop 150.....	1(0-3) }
Artillery II, Mil. Tr. 114A.....	1(0-3)
Engr. Lectures, Gen. Engr. 101.....	R
Phys. Education M, Phys. Ed. 104..	R(0-2)

Total..... 17

### SOPHOMORE

#### FIRST SEMESTER

Engr. Physics I, Phys. 145.....	5(4-3)
Plane Analyt. Geom., Math. 110.....	4(4-0)
Mechanism, Mach. Des. 121.....	3(3-0)
Mach. Draw. I, Mach. Des. 111.....	2(0-6)
Metallurgy, Shop 165.....	2(2-0)
Metallography I, Shop 167.....	1(0-3)
Artillery III, Mil. Tr. 115A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 105..	R(0-2)

Total..... 18

#### SECOND SEMESTER

Engr. Physics II, Phys. 150.....	5(4-3)
Calculus I, Math. 205.....	5(5-0)
American Indus. Hist., Hist. 105...	3(3-0)
Mach. Draw. II, Mach. Des. 116...	3(0-9)
Foundry Production, Shop 161.....	1(0-3)
Artillery IV, Mil. Tr. 116A.....	1(0-3)
Seminar, Gen. Engr. 105.....	R
Phys. Education M, Phys. Ed. 106..	R(0-2)

Total..... 18

### JUNIOR

#### FIRST SEMESTER

Ap. Mech., Ap. Mech. 202.....	4(4-0)
Calculus II, Math. 206.....	3(3-0)
Steam and Gas Engr. I, Mech. Engr. 201, 202.....	5(4-3)
Machine Tool Work I, Shop 170.....	2(0-6)
Economics, Econ. 101.....	3(3-0)
Seminar, Gen. Engr. 105.....	R

Total..... 17

#### SECOND SEMESTER

Str. of Mat., Ap. Mech. 211, 220....	6(5-3)
Graphic Statics, Ap. Mech. 225.....	1(0-3)
Steam and Gas Engr. II, Mech. Engr. 204, 205.....	4(3-3)
Machine Tool Work II, Shop 192....	2(0-6)
Nontechnical Elective †  .....	4(-)
Seminar, Gen. Engr. 105.....	R

Total..... 17

### SENIOR

#### FIRST SEMESTER

Electrical Engr. M-I, Elect. Engr. 230, 231.....	4(3-2, 1)
Power Plant Engr., Mech. Engr. 206..	3(0-9)
Mach. Design I, Mach. Des. 204, 205,	5(3-6)
Hydraulics, Ap. Mech. 230, 235.....	4(3-3)
<i>Factory Option:</i> Factory Engr., Shop 245.....	2(2-0)
<i>Power Option:</i> Ad. Thermody., Mech. Engr. 230...	2(2-0)
Seminar, Gen. Engr. 105.....	R

Total..... 18

#### SECOND SEMESTER

Electrical Engr. M-II, Elect. Engr. 242, 243.....	4(3-2, 1)
Heat. & Vent., Mech. Engr. 210, 215,	3(2-3)
Machine Design II, Mach. Des. 210..	2(0-6)
Commercial Engr.,   Elect. Engr. 250,	2(2-0)
<i>Factory Option:</i>    Factory Design, Shop 255.....	2(0-6)
Machine Tool Work III, Shop 193,	1(0-3)
Elective†.....	3(-)
<i>Power Option:</i>    Steam Turb., Mech. Engr. 235....	2(2-0)
Elective†.....	4(-)
Seminar, Gen. Engr. 105.....	R
Inspection Trip, Mech. Engr. 180....	R

Total..... 17

Number of 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  
Assistant SMITH  
Grad. Research Asst. KARNs

This department gives instruction in such branches of engineering as are directly related to agriculture. It also correlates and gives general supervision to such courses presented in other engineering departments as are open to students in agriculture and agricultural engineering, in order that the agricultural application and uses of engineering principles, methods, and materials may be kept clearly before the student.

In all the courses given, the time is carefully apportioned between the classroom and laboratory, in order to present the subject in the clearest and most forceful way. The practical application of theoretical principles is emphasized.

The laboratory equipment is unusually ample and complete; all kinds of modern farm implements and equipment, to the value of \$30,000, are available, hence their construction, operation, adjustment, and care may be fully covered in the field and laboratory studies. The study of traction engines is arranged to cover thoroughly the construction, operation and repair of the numerous modern tractors which are part of the regular equipment; traction tests in conjunction with various types of farm power machinery are also made. The tractor laboratory is equipped with four tractor power units mounted on bases, with various types of tractor ignition apparatus, and with complete apparatus for power and draft tests. All farm machinery and tractor equipment is kept up to date through a system of exchange with the manufacturers whereby old machines are replaced, when advisable, by new ones.

The comparatively recent development of this work, and its rapidly growing importance, render investigational study very valuable, and special attention is given to the courses covering this phase of the subject.

The department possesses equipment valued at \$10,118.

### COURSES IN AGRICULTURAL ENGINEERING

#### FOR UNDERGRADUATE CREDIT

103. FARM BUILDINGS 3(1-6)\*; 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.

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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.



115. MODERN FARM AND HOME EQUIPMENT. 3(2-3); II. Prerequisite: Hydraulics (Ap. Mech. 230, 235). Mr. Logan.

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 practice 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 (Ap. Mech. 230, 235) and Soils (Agron. 133). Mr. Fenton and assistants.

Principles and methods of bringing waste lands into production by drainage, irrigation, terracing, and land clearing. Charge, \$1.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT.

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 developments. 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,

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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.

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.

## Applied Mechanics

Professor SCHOLER  
 Professor ROBERT  
 Associate Professor DAWLEY  
 Associate Professor CHEEK  
 Instructor KOENITZER

Instructor PICKETT  
 Instructor GIBSON  
 Instructor TAYLOR  
 Assistant RAILSBACK  
 Graduate Research Asst. ADAIR

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 \$33,647.

### 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 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.

260. ADVANCED APPLIED KINETICS. 2(2-0); II. Prerequisite: Strength of Materials or Strength of Materials E. Mr. Robert.

Advanced problems in kinetics with special attention to kinetics of rigid bodies.

265. ADVANCED MECHANICS OF MATERIALS. 2(2-0); I. Prerequisite: Strength of Materials. Mr. Scholer.

Theory of elasticity and its applications; advanced problems in continuous girders involving general three-moment equations.

270. HYDRAULIC MACHINERY. 2(2-0); I. Prerequisite: Hydraulics. Mr. Robert.

Characteristics and applications of water wheels, turbines, pumps, and other hydraulic machinery.



275. **ADVANCED HIGHWAY MATERIALS.** 2(1-3); II. Prerequisite: Highway Materials 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 designing, 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 or II. Mr. Scholer, Mr. Robert, and Mr. Dawley.

Many problems related to materials used in engineering construction offer attractive fields for research. A number of special pieces of apparatus in addition to the usual equipment of strength-of-materials laboratory are available for this work. The results of such investigations, if suitable, may be incorporated in bulletins of the Engineering Experiment Station; this work may furnish materials for the master's thesis.

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## Architecture

Professor WEIGEL  
Associate Professor CHEEK  
Associate Professor HELM  
Assistant Professor WICHERS

Assistant Professor SMITH  
Instructor WARE  
Graduate Assistant 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

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† Temporary appointment, year 1931-'32.

of architecture and the allied arts and trades are invited to talk to and to advise the student. During the junior or senior year, under the direction of and in company with a member of the departmental faculty, each student is expected to make a visit to one or more of the neighboring cities, thus enabling him to acquaint himself with the representative work of the profession as well as with the operations and processes involved in the conduct of allied professions and industries.

Students pursuing the curriculum in architecture are urged to devote a fifth year to the work. By so doing, a student can combine the curricula in architectural engineering and architecture and receive the bachelor of science degree in both.

All drawings or designs made during the student's course are to become the property of the department, to be used or returned at the discretion of the faculty.

The department owns equipment valued at \$18,758.

## COURSES IN ARCHITECTURE

### FOR UNDERGRADUATE CREDIT

106A. ELEMENTS OF ARCHITECTURE I. 3(0-9); I and II. Mr. Wichers, Mr. Ware, and Mr. Lockard.

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. Wichers, Mr. Ware, and Mr. Lockard.

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.

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. Weigel, Mr. Smith, and Mr. Ware.

An analysis of architectural composition and rendering. Charge, \$1 for each course.

145, 147. DESIGN III AND IV. 5(0-15) each; I and II 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 advertising designs, such as newspaper advertisements, lettering, and posters; making cover designs for magazines, books, and trade catalogues; for headings, tail pieces, and decorative page arrangements; drawings carried out in black and white and in one or more colors.

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 visits to buildings under construction.

191. WORKING DRAWINGS AND SPECIFICATIONS. 3(0-9); II. Prerequisites: Arch. 142 and 187A. Mr. Weigel and Mr. Wichers.

Preparing working drawings and specifications for suburban residences; drawing complete details for buildings, working out heating, plumbing, and structural problems.

192. THEORY OF STRUCTURES I. 4(2-6); I. Prerequisites: Arch. 191, Applied Mechanics A (Ap. Mech. 102), and Strength of Materials A (Ap. Mech. 116, 121). Mr. Cheek.

Mathematical and graphical solutions of stresses in framed structures under static loading; practical problems in the design of wood construction; occasional inspection trips to buildings under construction.

194A. THEORY OF STRUCTURES II. 5(3-6); II. Prerequisite: Arch. 192. Mr. Cheek.

A continuation of Theory of Structures I applied to steel and masonry 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.

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. Weigel.

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 and Mr. Smith.

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.

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## Civil Engineering

Professor CONRAD  
Professor FRAZIER  
Associate Professor WHITE

Instructor CRAWFORD  
Instructor MORSE  
Graduate Research Asst. STEPS

The purpose of the instruction in the Department of Civil Engineering is to give the student a thorough knowledge of the fundamental principles of engineering and to develop his ability to analyze engineering problems, and thus prepare the graduate to enter any one of the many special fields which are usually included under the title of civil engineering.

In addition to the laboratory equipment of the other engineering departments, which is available to civil-engineering students, the Department of Civil Engineering possesses a good assortment of transits, levels, plane tables, compasses, tapes, and chains. It also owns a precise level, a direction theodolite, a repeating theodolite, four different kinds of solar attachments, and a base-line outfit,

Approximately 90 per cent of the graduates of this department are now engaged in engineering work in cities, in the oil fields, in the government reclamation and valuation service, in consulting engineering, in highway work, in construction work, and in other work in which a knowledge of civil engineering is a prerequisite.

The department owns equipment valued at \$21,862.

## COURSES IN CIVIL ENGINEERING

## FOR UNDERGRADUATE CREDIT.

102, 111. SURVEYING I AND II. 2(0-6) each; I and II each. Prerequisite or parallel (for I): Plane Trigonometry (Math. 101); prerequisite (for II): Surveying I. Mr. White, Mr. Crawford, and Mr. Morse (for I); Mr. Furr and Mr. White (for II).

Course 102, the use and care of engineer's surveying instruments; course 111, land and topographic surveying. Charge, \$1 for each course.

120. MASONRY AND FOUNDATIONS. 2(2-0); I. Prerequisite: Engineering Physics II (Physics 150); prerequisite or parallel: Applied Mechanics I (Ap. Mech. 202). Mr. Frazier.

Design and construction of foundations; stresses in plain masonry structures; the method of designing such structures.

125. CIVIL ENGINEERING DRAWING I. 2(0-6); II. Prerequisite: Machine Drawing I (Mach. Design 111). Mr. White.

Stereotomy, shades and shadows, isometric and perspective drawing; copying working drawings of engineering structures.

145. RAILWAY ENGINEERING I. 2(2-0); II. Prerequisites: Surveying IV and C. E. Drawing I (Civ. Engr. 125, 156, and 157). Mr. Frazier.

Railway engineering based on Wellington's economic theory; study of track construction and maintenance; design of yards and terminals.

151, 155. SURVEYING III. 3(2-3); I and II. Prerequisite: Surveying II. Mr. Furr and Mr. White.

Topographic, city, and mine surveying.

*Laboratory.*—Topographic surveying and topographic mapping.

156, 157. SURVEYING IV. 3(2-3); I and II. Prerequisite: Surveying II; prerequisite or parallel; Calculus I (Math. 205). Mr. Furr.

Railroad curves and earthwork.

161. DRAINAGE AND IRRIGATION I. 2(2-0); II. Prerequisite and parallel: Hydraulics (Ap. Mech. 230, 235). Mr. Conrad and Mr. White.

Design and construction of drainage and irrigation works.

170. THESIS. 1(0-3), I; and 2(0-6), II respectively. Mr. Conrad.

A report on a proposed design and original investigation, or a library research. With approval of Mr. Conrad, thesis work may be taken in some other department, the thesis subject to be selected and approved by the department head before the October first next preceding the student's graduation. An equivalent amount of work in an elective subject approved by the dean of this division may be substituted for thesis.

180. INSPECTION TRIP. R; II. Prerequisite: Senior classification. Mr. Conrad and assistants.

A trip of three to four days to Kansas City and other near-by industrial centers for the purpose of inspecting industrial plants and projects of special interest to civil engineers. The plants inspected are carefully selected to exemplify various engineering applications in practice.

## FOR GRADUATE AND UNDERGRADUATE CREDIT.

201. STRESSES IN FRAMED STRUCTURES. 4(4-0); I and SS. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Conrad.

Computation of stresses in bridges and buildings.

205. CIVIL ENGINEERING DRAWING II. 2(0-6); I and SS. Prerequisite: Strength of Materials Rec. (App. Mech. 211). Mr. Conrad.

Graphic statics and design of simple roof trusses in timber and steel.

211, 216. ASTRONOMY AND GEODESY. 4(2-6); I. Prerequisites: Surveying III (Civ. Engr. 151, 155) and Calculus II (Math. 206). Mr. Frazier.



The elements of practical astronomy; precise methods of surveying and leveling.

*Laboratory.*—Astronomical observations, principally for determining true meridian and latitude; base-line measurements and triangulation work.

220. WATER SUPPLY. 2(2-0); I. Prerequisites: Hydraulics (Ap. Mech. 230, 235). Mr. Frazier.

Water supply from the standpoint of consumption, collection, storage, distribution and purification.

225. SEWERAGE. 2(2-0); I. Prerequisite: Hydraulics (Ap. Mech. 230). Mr. Frazier.

Design and construction of sewer systems and disposal plants.

231. HIGHWAY ENGINEERING I. 2(2-0); I. Prerequisite: Surveying II (Civ. Engr. 111). Mr. Furr.

Location, construction, and maintenance of roads and pavements.

246. DESIGN OF FRAMED STRUCTURES. 3(0-9); II and SS. Prerequisite: Stresses in Framed Structures (Civ. Engr. 201). Mr. Conrad.

The making of general drawings for a highway truss bridge, a railroad truss bridge, and a railroad deck-plate girder.

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); I and II. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Conrad.

Design of reënforced buildings, retaining walls, dams and bridges.

*Laboratory.*—Drawing reënforced concrete retaining walls, dams, slab bridges, and girder bridges.

256. REËNFORCED CONCRETE ARCHES. 3(3-0); II. Prerequisite: Concrete Design (Civ. Engr. 250, 255). Mr. Conrad.

Various types of reënforced concrete arches adapted for use in bridges, buildings, and dams; computation of stresses; arrangement of details.

260, 265. RAILWAY ENGINEERING II. 4(2-6); II. Prerequisite: Railway Engineering I (Civ. Engr. 145). Mr. Frazier.

Railway operation and maintenance.

*Laboratory.*—A reconnoissance and survey of a short railroad; making the maps, profiles and estimates from the survey.

270, 275. HIGHWAY ENGINEERING II. 4(2-6); II. Prerequisite: Highway Engineering I (Civ. Engr. 230). Mr. Furr.

Highway laws, highway administration, and highway economics.

*Laboratory.*—A reconnoissance and survey for a highway a few miles long; making maps, profiles, and estimates from the survey.

276. HIGHWAY ECONOMICS. 3(3-0); I. Prerequisite: Highway Engineering II. Mr. Furr.

Highway transport and construction problems as affected by recent findings of research agencies.

280, 285. DRAINAGE AND IRRIGATION II. 4(2-6); II. Prerequisite: Drainage and Irrigation I (Civ. Engr. 161). Mr. Conrad.

Design of irrigation structures and management of irrigation projects.

*Laboratory.*—Making the survey for a drainage or irrigation project; making maps, estimates, and designs, using the survey as a basis.

## FOR GRADUATE CREDIT.

301. ADVANCED BRIDGE STRESSES. 3(3-0); I. Prerequisite: Stresses in Framed Structures (Civ. Engr. 201). Mr. Conrad.

A study of deflections; stresses in continuous, movable, cantilever, suspension, and steel arch bridges; and secondary stresses.

304. CIVIL ENGINEERING RESEARCH. 3 to 10 credits; I, II, and SS. Prerequisites depend on subject of research. Mr. Conrad, Mr. Frazier, or Mr. Furr.

Original investigation or advanced study in some field relating to the practice of civil engineering.

316. RAILROAD TRANSPORTATION. 3(3-0); II. Prerequisite: Railway Engineering I (Civ. Engr. 146). Mr. Frazier.

A study of the function of the railway system; its relation to industrial development and its correlation with other methods of transportation.

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## Electrical Engineering

Professor KLOEFFLER  
 Professor BRENNEMAN  
 Associate Professor KERCHNER  
 Assistant Professor HUNT  
 Assistant Professor JORGENSEN  
 Assistant Professor BUECHE

Instructor SITZ  
 Instructor PASLAY  
 Graduate Assistant GRIMES  
 Grad. Research Asst. BROWN  
 Grad. Research Asst. PETERSON  
 Grad. Research Asst. HIGGINBOTTOM

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, ameters, 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 luminaries.

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 \$53,552.

## 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. Brenne- man, 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. Brenne- man, 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. Brenne- man, 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 (Elect. 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. (Elect. Engr. 216.) 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. Brenne- man 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 and luminaries. 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-I (Elec. Engr. 230, 231). Mr. Hunt.

The important principles of alternating-current machinery of primary importance to mechanical engineers.

*Laboratory.*—Standard tests of alternators, motors, and transformers, and methods of operating the different types of alternating-current machinery. Charge, \$1.50.

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. Engr. 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. Prerequisites: Alternating-current Machines I and II and Differential Equations (Math. 201). Mr. Brenneman.

Two phases of electrical phenomena; (a) transients in time, and (b) transients in space.

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. Kloeffer.

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. 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. Kloeffer.

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. Kloeffer, 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.

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## 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  
 Instructor HAHN  
 Graduate Assistant NEWMAN

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 aerodynamic forces and airplane structures. Here, too, may be included the courses in flour-mill design which deal with the layout of flow-sheets and selection and arrangement of milling machinery.

The department owns equipment valued at \$7,715.

### COURSES IN DRAWING AND MACHINE DESIGN

#### FOR UNDERGRADUATE CREDIT

101. ENGINEERING DRAWING. 2(0-6); I, II, and SS. Mr. Smutz, Mr. Gingrich, and Mr. Newman.

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. 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: Engineering Drawing (Mach. Design 101). Mr. Durland, Mr. Olsen, Mr. Branigan, and Mr. Hahn.

Conventional representations, working drawings, modern drafting-room systems, and the reproduction of drawings; special emphasis given to proper se-

lection 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, Mr. Olsen, and Mr. Hahn.

The making of free-hand sketches of simple machine parts and complete working drawings from these sketches without further reference to the objects; kinematic problems, including belting, cams, linkages, and gears to fulfill specified conditions.

117. MACHINE DRAWING E-II. 2(0-6); I, II, and SS. Prerequisite: Machine Drawing I (Mach. Design 111). Mr. Pearce, Mr. Olsen, and Mr. Hahn.

Machine sketching from parts of actual machines; complete working and assembly drawings. Practice is given in tracing and blue printing.

121. MECHANISM. 3(3-0); I, II, and SS. Prerequisites: Plane Trigonometry (Math. 101) and Descriptive Geometry (Mach. Design 106). Mr. Pearce, Mr. Olsen, and Mr. Hahn.

A careful study of the fundamental elements of machinery with reference to the transmission of motion and force, and to their forms and arrangements in actual machines; the solution of a large number of graphical and mathematical problems is required.

126. THESIS. 1(0-3), I, and 2(0-6), II, respectively. Mr. Pearce and Mr. Durland.

Excellent material for thesis study is furnished by projects in machine design, aerodynamics, 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.

214. FLOW SHEET DESIGN. 2(0-6); I. Prerequisites: Machine Drawing II (Mach. Design 116) and Milling Practice (Mill. Ind. 109). Mr. Pearce.

The construction of complete flow sheets for medium capacity flour mills.

215. FLOUR-MILL DESIGN. 2(0-6); II. Prerequisites: Strength of Materials E (Ap. Mech. 216), Milling Practice II (Mill. Ind. 111) and Flow Sheet Design (Mach. Design 214). Mr. Pearce.

The making of a design for a medium-capacity flour mill, including the construction of a complete flow sheet, and the selection and planning of the arrangement of the machinery.

225. GRAPHICS OF ENGINEERING FORMULAS. 2(2-0); II. Prerequisite: Plane Analytical Geometry (Math. 110). Mr. Pearce.

Design of empirical equations according to the methods of selected points,

averages, or least squares, and a consideration of general methods of plotting; the diagramming of formulas; construction of nomographic or alignment charts, in which all the variables of a formula are along any straight transversal cutting the lines of the diagram.

250, 251. AÉRODYNAMICS. 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. 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.

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## Mechanical Engineering

Professor CALDERWOOD  
Professor MACK  
Associate Professor BRAINARD

Instructor FLINNER  
Grad. Research Asst. ASPELIN

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 \$41,298.



## COURSES IN MECHANICAL ENGINEERING

## FOR UNDERGRADUATE CREDIT

120, 125. STEAM AND GAS ENGINEERING C. 3(2-3); I and II. Prerequisites: Engineering Physics II and Calculus II. Mr. 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 II. Mr. Mack.

Fundamental principles of heating and ventilation; heat transmission of materials; furnace, steam, hot-water, and fan systems of heating.

170, 175. DAIRY REFRIGERATION. 2(1-3); I. Mr. Brainard.

The elementary theory and principles of operation of various refrigerating and ice-making machinery and of cold storage, with special reference to the dairy industry.

*Laboratory.*—Various types of refrigeration systems and their operation; steam engine operation; tests of refrigeration machines. Charge, \$1.

180. INSPECTION TRIP. R; II. Prerequisite: Senior classification. Mr. Calderwood and assistants.

A trip of three to four days to Kansas City and other nearby industrial centers for the purpose of inspecting industrial plants of special interest to mechanical engineering students. The plants inspected are carefully selected to exemplify various engineering applications in practice.

195. THESIS. 1(0-3), I and 2(0-6), II; respectively. Mr. Calderwood and Mr. Mack.

The department laboratories are well equipped with apparatus suitable for experimental and research work in the field of heat-power engineering. Subject for investigation to be selected in consultation with the department head at the beginning of the senior year.

## FOR GRADUATE AND UNDERGRADUATE CREDIT

201, 202. STEAM AND GAS ENGINEERING I. 5(4-3); I and II. Prerequisites: Mechanism (Mach. Design 121) and Calculus II (Math. 206). Mr. Calderwood, Mr. Mack, Mr. Brainard, and Mr. Flinner.

Heat-power engineering, including valve gears and thermodynamics, with special stress upon the thermodynamics of gases and vapors, and gas and vapor cycles.

*Laboratory.*—Study and calibration of steam gauges, indicators, and planimeters; valve-setting and steam-engine operation; study of calorimeters, flow meters, and feed-water heaters; determination of the indicated and brake horsepower, mechanical efficiency and the steam consumption of high-speed automatic cut-off, Corliss, simple and compound engines; tests of DeLaval, Kerr and Terry steam turbines. Charge, \$1.50.

204, 205. STEAM AND GAS ENGINEERING II. 4(3-3); I and II. Prerequisite: Course 201. Mr. Calderwood, Mr. Mack, Mr. Brainard, and Mr. Flinner.

A detailed study of steam engines, steam boilers, steam turbines, internal-

combustion engines, fuels and combustion, gas producers, and other power-plant equipment.

*Laboratory.*—Proximate analysis of coal; determination of the calorific values of solid, liquid and gaseous fuels; evaporative tests of steam boilers; tests of internal-combustion engines; test of compressed air and refrigerating machinery. Charge, \$1.50.

206. POWER-PLANT ENGINEERING. 3(0-9); I. Prerequisite: Mech. Eng. 204. Mr. Mack, Mr. Brainard, and Mr. Flinner.

Complete power-plant testing; special investigations of steam-engine performance; operation of gas producers; advanced laboratory work on internal-combustion engines; the designing of a complete power plant; and the solution of special problems dealing with power generation. Charge, \$1.50.

210, 215. 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); II. Prerequisite: Mech. Eng. 201. Mr. Mack.

Thermodynamics of refrigeration; systems of refrigeration and their operation, application of refrigeration to ice making, cold storage, and the cooling of gases, liquids, and solids.

230. ADVANCED THERMODYNAMICS. 2(2-0); I. Prerequisite: Mech. Eng. 201. Mr. Calderwood.

The advanced phases of engineering thermodynamics, including research work along fundamental properties of gases and vapors.

235. STEAM TURBINES. 2(2-0); II. Prerequisite: Mech. Eng. 204. Mr. Calderwood.

The theoretical principles involved in the various important types of steam turbines and the construction and operation of some of the commercial types; the selection of a steam turbine as a prime mover for power plants operating under particular operating conditions; the effect of factors such as superheat, vacuum, and pressure.

240. INTERNAL COMBUSTION ENGINES. 2(2-0); II. Prerequisite: Mech. Engr. 204. 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. 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 wood machinery room is 45 by 81 feet and contains an excellent assortment of machines used in exemplifying commercial woodworking methods. The farm shop, 65 by 75 feet, is equipped for handling farm-shop projects. The machine shop, 40 by 170 feet, is one of the best equipped shops of its kind in the country. The blacksmith shop is 50 by 100 feet and is equipped with twenty modern down-draft forges, arc and oxyacetylene welding outfits, and other important equipment. The iron and brass foundries, 27 by 100 and 24 by 34 feet, respectively, are modern in every respect.

A locker room of ample capacity is conveniently located near the shops building for the use of students taking work in the department.

The value of equipment belonging to the department is \$45,570.

### 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); 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. Prerequisite: 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 airplane parts. Consideration is also given to 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 templates, 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. Prerequisites: Shop 170 and Ap. Mech. 211. Mr. Carlson.

Problems of the factory executive, such as the selection, installation, and arrangement of direct and indirect equipment, the standardization of machines and tools, stock and store methods, and the various other factors that have to do with the design and control of factories.

255. FACTORY DESIGN. 2(0-6); II. Prerequisite: Shop 245. Mr. Carlson. Knowledge gained in shops and laboratories and in Factory Engineering (Shop 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, 143, 147, 150, 158, 161, 167, 175, 193, 255 or 275. Opportunity is also offered to specialize to a limited degree along certain lines of shop practice, such as heat treatment of steel, oxyacetylene and electric welding, jig 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. Prerequisites: 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.

270, 275. AUTOMOTIVE ENGINEERING. 2(1-3); II. Prerequisites: Ap. Mech. 211, 220 and Mach. Design 204, 205. Mr. Carlson.

The design and operation of the various parts of the automobile. A course

adapted to the needs of those who expect to follow some phase of automobile work or to take up employment in automobile factories. Charge, \$2.50.

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. **SHOP PRACTICE RESEARCH.** 1 to 10 credits; I, II, and SS. Mr. Carlson, Mr. Sellers and assistants.

The problems related to shop practice offer a broad field for research. Authoritative data are needed by industry in many fields dealing with metallurgy, metallography, foundry, blacksmithing, woodworking, machine-shop practice, the farm shop and the automobile. The results of such investigations, if suitable, may be incorporated in bulletins of the Engineering Experiment Station; this work may furnish material for the master's thesis. All assignments must be approved by the head of the Department of Shop Practice.

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## Engineering in the Summer School

In order to encourage the introduction of manual training and industrial drawing in the common schools and high schools of the state, and to improve the quality of work now being given, the College offers summer courses in mechanical drawing, manual training, and shop practice for high-school and grade teachers.

In addition various courses required in the several engineering curricula are offered in the Summer School. This enables teachers who wish to take an engineering curriculum to get a considerable start on the work during their summer vacations, and also enables College students who are irregular to make up their back courses.

For full information in regard to the courses offered, a special circular giving details concerning the Summer School may be had upon application to the vice president of the College.



# The Division of General Science

RODNEY WHITTEMORE BABCOCK, *Dean.*

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In the land-grant colleges, of which this institution is one, the classical studies of the older type of college are replaced by work in the sciences and in professional and vocational subjects. A sound basis for technical training includes thorough training in mathematics, physical science, and biological science. It is believed, also, that education should include some preparation for the discharge of one's duties to the state and to the community in which he lives. It should afford him that discipline and culture which alone can give him a grasp of the relations among persons and activities, peoples and events, with breadth of view and tolerance of attitude, and hence an influence over his associates and fellow citizens of every station of life.

It is the province of the departments grouped in this division of the College to give this basic, scientific, cultural, and disciplinary training. Their work is not only foundational, but it penetrates through all of the characteristic vocational courses of the institution, as the structural steel of the modern skyscraper penetrates the entire building and forms a secure framework and support for the more readily visible and evidently important parts. The departments of this division thus give unity to all of the four-year curricula offered in the institution. Eleven of these are in charge of this division, and some of them, by means of electives and options, are susceptible of manifold modification and application.

## CURRICULUM IN GENERAL SCIENCE

The curriculum in general science includes the fundamental training in English, mathematics, science, history, economics, military science, and physical training required in the several specialized curricula now offered by the College. Its required subjects constitute the central educational basis of the institution. By means of a number of groups of electives, it gives an opportunity to students to advance themselves still further in these fundamental lines and to give special attention to some, instead of taking the technical subjects characterizing other courses. This opportunity meets the needs of several types of young people, among whom are: (1) Those who have not yet fully decided as to their vocation, but who wish an education that is strong and well balanced in respect to modern science and cultural subjects, as a foundation for further education or as a preparation for sound citizenship and intellectual, esthetic and ethical satisfaction in life. (2) Those who are looking forward to teaching in the high schools of the state. The electives offered allow one to give special attention to mathematics, physical science, biological science, agriculture, home economics, history, economics, English, journalism, music, professional educational subjects, and several other lines. (3) Those who are fitting themselves for research work in the sciences, especially as applied to agriculture, engineering, and other industries. (4) Those for whom a good general education is required or desirable before studying a profession such as law or medicine.

The elective groups offered in this curriculum are to a considerable extent made up of studies required in one or more of the specialized curricula. They provide, also, advanced work not included in the other curricula. The scientific work in connection with the Agricultural and Engineering Experiment Stations, and several fields of state investigation and service, calls for the operation of unusually well-equipped departments in the sciences, and excellent facilities for practical training in this work are thus afforded.

While the curriculum in general science offers a wide choice of electives, these may not be selected aimlessly, or with the idea of choosing the easiest, or of obtaining credit for miscellaneous subjects taken elsewhere or in other curricula. The studies of the freshman and sophomore years are basic and are required of all, without exception. They insure a broad and adequate foundation for subsequent work in the several lines of electives. The electives are to be chosen in groups, approved by the faculty or by the dean of the Division of General Science, and in such a manner as to give logical coherence to the curriculum as a whole. Special combinations in home economics and mechanic arts have been planned to meet the needs of prospective teachers of household arts and manual training. Students changing from other curricula to that in general science receive credit for work done in the other curricula in so far as it can be fitted into the general plan of this one.

The curriculum in general science is thus many in one. Such various combinations of groups are possible that it is not practicable to print all of them in extended form. There are, therefore, formally presented here the required subjects of the curriculum in 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 ample 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 and orchestra. Students completing this curriculum are awarded the degree of Bachelor of Science in Music Education, and are eligible to receive a three-year state certificate, renewable for life.

### **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

College Rhetoric I, Engl. 101.....	*3(3-0)
Chemistry I, Chem. 101.....	5(3-6)
College Algebra,† Math. 104.....	3(3-0)
General Botany I, Bot. 101.....	3(1-4, 2)
Library Methods, Lib. Ec. 101.....	1(1-0)
Infantry I, Mil. Tr. 101A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total.....15 or 16

#### SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Chemistry II, Chem. 102.....	5(3-6)
Plane Trigonometry, Math. 101.....	3(3-0)
General Botany II, Bot. 105.....	3(1-4, 2)
Current History, Hist. 126.....	1(1-0)
Infantry II, Mil. Tr. 102A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

Total.....15 or 16

### SOPHOMORE

#### FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
English History, Hist. 121.....	3(3-0)
General Physics I, Phys. 135.....	4(3-3)
General Zoölogy, Zoöl. 105.....	5(3-6)
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 153..R(0-3)	

Total.....15 or 16

#### SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Modern Europe II, Hist. 223.....	3(3-0)
General Physics II, Phys. 140.....	4(3-3)
Psychology A, Educ. 101.....	3(3-0)
Elective‡ .....	2( - )
Infantry IV, Mil. Tr. 104A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 154..R(0-3)	

Total.....15 or 16

### JUNIOR

#### FIRST SEMESTER

Hist. of Engl. Literature, Engl. 181..	3(3-0)
Amer. Govt., Hist. 151, 152 or 153...	3(3-0)
Current History, Hist. 126.....	1(1-0)
Extem. Speech I, Publ. Spk. 106....	2(2-0)
Elective‡ .....	6( - )

Total..... 15

#### SECOND SEMESTER

American History I, Hist. 201.....	3(3-0)
Economics, Econ. 101.....	3(3-0)
Gen. Microbiology, Bact. 101.....	3(1-6)
Elective‡ .....	6( - )

Total..... 15

### SENIOR

#### FIRST SEMESTER

Elective‡ .....	15( - )
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#### SECOND SEMESTER

Elective‡ .....	15( - )
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*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-Pharmaceutical 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.

\* 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

College Rhetoric I, Engl. 101.....	3(3-0)
Chemistry I, Chem. 101.....	5(3-6)
College Algebra, Math. 104.....	3(3-0)
French I, Mod. Lang. 151.....	3(3-0)or
German I, Mod. Lang. 101.....	3(3-0)
Library Methods, Lib. Econ. 101.....	1(1-0)
Infantry I, Mil. Tr. 101A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

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 Total.....15 or 16

## SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Chemistry II, Chem. 102.....	5(3-6)
Plane Trigonometry, Math. 101.....	3(3-0)
Modern Language (cont.).....	3(3-0)
Current History, Hist. 126.....	1(1-0)
Infantry II, Mil. Tr. 102A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

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 Total.....15 or 16

## SOPHOMORE

## FIRST SEMESTER

Modern Language (cont.).....	3(3-0)
Organic Chemistry I, Chem. 218.....	4(2-6)
General Physics I, Physics 135.....	4(3-3)
General Zoölogy, Zoöl. 105.....	5(3-6)
Infantry III, Mil. Tr. 103A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..R(0-3)	

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 Total.....16 or 17

## SECOND SEMESTER

English Literature, Engl. 172.....	3(3-0)
Organic Chemistry II, Chem. 219....	4(2-6)
General Physics II, Physics 140.....	4(3-3)
Comp. Anat. of Vertebrates, Zoöl. 246,	4(2-6)
Infantry IV, Mil. Tr. 104A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..R(0-3)	

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 Total.....15 or 16

## Curriculum in Industrial Chemistry

## FRESHMAN

## FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Chemistry I, Chem. 101.....	5(3-6)
College Algebra, Math. 104.....	3(3-0)
Engr. Drawing, Mach. Des. 101.....	2(0-6)
General Geology, Geol. 103.....	3(3-0)
Infantry I, Mil. Tr. 101A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

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 Total.....16 or 17

## SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Chemistry II, Chem. 102.....	5(3-6)
Plane Trigonometry, Math. 101.....	3(3-0)
Des. Geometry, Mach. Des. 106.....	2(0-6)
Machine Drawing I, Mach. Des. 111..	2(0-6)
Library Methods, Lib. Ec. 101.....	1(1-0)
Infantry II, Mil. Tr. 102A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

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 Total.....16 or 17

## SOPHOMORE

## FIRST SEMESTER

Inorg. Preparations, Chem. 202.....	2(0-6)
Plane Anal. Geometry, Math. 110....	4(4-0)
Engr. Physics I, Physics 145.....	5(4-3)
Adv. Inorg. Chemistry, Chem. 207...3	(3-0)
Commercial Law, Hist. 160.....	1(1-0)
Infantry III, Mil. Tr. 103A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..R(0-3)	

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 Total.....15 or 16

## SECOND SEMESTER

Quant. Analysis, Chem. 241.....	5(1-12)
Calculus I, Math. 205.....	5(5-0)
Engr. Physics II, Physics 150.....	5(4-3)
Infantry IV, Mil. Tr. 104A (men)...	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..R(0-3)	

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 Total.....15 or 16

## JUNIOR

## FIRST SEMESTER

German I, Mod. Lang. 101.....	3(3-0)
Organic Chemistry I, Chem. 218.....	4(2-6)
Physical Chemistry I, Chem. 206.....	5(3-6)
Calculus II, Math. 206.....	3(3-0)
Fire Assaying, Chem. 242.....	2(0-6)

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 Total..... 17

## SECOND SEMESTER

German II, Mod. Lang. 102.....	3(3-0)
Organic Chemistry II, Chem. 219....	4(2-6)
Physical Chemistry II, Chem. 272...3	(3-0)
Elec. Engr. C, Elec. Engr. 102, 106, 3(2-2, 1)	
History of Chemistry, Chem. 208....	1(1-0)
Electives† .....	3( - )

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 Total..... 17



SENIOR

FIRST SEMESTER

Amer. Govt., Hist. 151, 152, or 153.....	3(3-0)
Indust. Chemistry I, Chem. 203.....	5(3-6)
Scientific German, Mod. Lang. 237.....	4(4-0)
Electives† .....	5( - )

Total..... 17

SECOND SEMESTER

Economics, Econ. 101.....	3(3-0)
Indust. Chemistry II, Chem. 204.....	5(3-6)
Chemistry Problems, Chem. 270.....	3(0-9)
Inspection Trip, Chem. 130.....	R
Electives† .....	5( - )

Total..... 16

*Summary.*—Men: Physical education, required; military science, 4 hours; chemistry, 52 hours; engineering, 9 hours; other prescribed subjects, 55 hours; elective, 13 hours. Total, 133 hours. Women: The same, except no military science. Total, 129 hours.

Curriculum in Industrial Journalism

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
General Chemistry, Chem. 110.....	5(3-6)
Modern Language I*.....	3(3-0)
Library Methods, Lib. Ec. 101.....	1(1-0)
Option related to an Industry or to Applied Science* .....	3( - )
Infantry I, Mil. Tr. 101A (men)....	1(0-3)
Industrial Journalism Lecture.....	R
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total.....15 or 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
General Geology, Geol. 103.....	3(3-0)
Modern Language II*.....	3(3-0)
Journalistic Vocations, Ind. Jour. 140, 2(2-0)	
Option related to an Industry or to Applied Science* .....	4( - )
Infantry II, Mil. Tr. 102A (men)....	1(0-3)
Industrial Journalism Lecture.....	R
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

Total.....15 or 16

SOPHOMORE

FIRST SEMESTER

El. Journalism, Ind. Jour. 151.....	2(2-0)
Prin. of Typography, Ind. Jour. 101.....	3(2-3)
General Zoölogy, Zoöl. 105.....	5(3-6)or
General Botany I, Bot. 101.....	3(1-4, 2)
Modern Language Readings*.....	3(3-0)
Option related to an Industry or to Applied Science* .....	2 or 4( - )
Industrial Journalism Lecture.....	R
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..R(0-3)	

Total.....15 or 16

SECOND SEMESTER

Industrial Writing, Ind. Jour. 161....	2(2-0)
English Literature, Engl. 172.....	3(3-0)
General Botany II, Bot. 105.....	3(1-4, 2)or
General Microbiology, Bact. 101....	3(1-6)if
General Botany I is chosen the first semester.	
Psychology A, Educ. 101.....	3(3-0)
Option related to an Industry or to Appld. Sc. or Social Science*..	7 or 4( - )
Industrial Journalism Lecture.....	R
Infantry IV, Mil. Tr. 104A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..R(0-3)	

Total.....15 or 16

\* 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 they 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 credits, or in courses which extend fields already entered in the required work.

## JUNIOR

## FIRST SEMESTER

Advanced Reporting, Ind. Jour. 163.	3(3-0)
Ind. Feature Writing I, Ind. Jour. 167,	2(2-0)
Prin. of Adv., Ind. Jour. 179.	3(3-0)
American Literature, Engl. 175.	3(3-0)
Current History, Hist. 126.	1(1-0)
Option related to an Industry or to Applied Sc. or Social Science*	3( - )
Industrial Journalism Lecture.	R
Total.	15

## SECOND SEMESTER

Jour. for Women, Ind. Jour. 172.	2(2-0) or
The Rural Press, Ind. Jour. 181.	2(2-0) or
Adv. Practice I, Ind. Jour. 220.	2(2-0)
Copy Reading, Ind. Jour. 254.	2(0-6)
History of English Lit., Engl. 181.	3(3-0)
Extempore Speech I, Pub. Spk. 106.	2(2-0)
Current History, Hist. 126.	1(1-0)
Options and Electives*	5( - )
Industrial Journalism Lecture.	R
Total.	15

## SENIOR

## FIRST SEMESTER

Circ. & Adv. Pro., Ind. Jour. 251A.	2(2-0)
Editorial Practice, Ind. Jour. 257.	2(2-0)
Contem. Thought, Ind. Jour. 255.	3(3-0)
Electives and Options*	8( - )
Industrial Journalism Lecture.	R
Total.	15

## SECOND SEMESTER

Ethics of Journalism, Ind. Jour. 260,	2(2-0)
American Govt., Hist. 151.	3(3-0)
Electives and Options*	10( - )
Industrial Journalism Lecture.	R
Total.	15

*Summary.*—Men: Physical education, two years required; military science, 4 hours; industrial journalism, 30 hours; restricted options, 27 hours; modern language, 9 hours; 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

College Rhetoric I, Engl. 101.	3(3-0)
Harmony I, Mus. 101.	2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105.	2(1-3)
Piano, Mus. 161.	2(1-6)
Voice, Mus. 156.	2(1-6)
Orch. Instruments I, Mus. 151A.	½(1- )
Choral Ensemble, Mus. 194.	¼(0-2)
Psychology B, Educ. 102.	3(3-0)
Infantry I, Mil. Tr. 101A (men).	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) or Phys. Education W, Phys. Ed. 151A, R(0-3)	
Total.	15 or 16

## SECOND SEMESTER

College Rhetoric I, Engl. 104.	3(3-0)
Harmony II, Mus. 102.	2(2-0)
Ear Tr. & Sgt. Singing II, Mus. 106,	2(1-3)
Piano, Mus. 161.	2(1-6)
Voice, Mus. 156.	2(1-6)
Orch. Instruments II, Mus. 151B.	½(1- )
Choral Ensemble, Mus. 194.	¼(0-2)
Phys. or Biol. Science.	3( - )
Infantry II, Mil. Tr. 102A (men).	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2) or Phys. Education W, Phys. Ed. 152A, R(0-3)	
Total.	15 or 16

## SOPHOMORE

## FIRST SEMESTER

Harmony III, Mus. 103.	2(2-0)
Ear Tr. & Sgt. Singing III, Mus. 107,	2(1-3)
Piano, Mus. 161.	1(½-6)
Voice, Mus. 156.	1(½-6)
Orch. Instr. III, Mus. 151C.	½(1- )
Choral Ensemble, Mus. 194.	½(0-2)
School Music I, Mus. 138.	2(2-0)
Conducting I, Mus. 117.	1(1-0)
Phys. or Bio. Science.	5( - )
Infantry III, Mil. Tr. 103A (men).	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2) or Phys. Education W, Phys. Ed. 153, R(0-3)	
Total.	15 or 16

## SECOND SEMESTER

Harmony IV, Mus. 104.	2(2-0)
Ear Tr. & Sgt. Singing IV, Mus. 108,	2(1-3)
Piano, Mus. 161.	1(½-6)
Voice, Mus. 156.	1(½-6)
Orch. Instr. IV, Mus. 151D.	½(1- )
Choral Ensemble, Mus. 194.	½(0-2)
School Music II, Mus. 139.	2(2-0)
English Literature, Engl. 172.	3(3-0)
Non-music elective.	3( - )
Infantry IV, Mil. Tr. 104A (men).	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2) or Phys. Education W, Phys. Ed. 154, R(0-3)	
Total.	15 or 16

\* (See footnote page 177.)

JUNIOR

FIRST SEMESTER

Counterpoint, Mus. 108A.....	2(2-0)
Hist. & Appre. of Mus. I, Mus. 112, 3(3-0)	
Voice or Instrument.....	2(1-6)
Conducting II, Mus. 121.....	1(1-0)
Orch. Instr. V, Mus. 151E.....	½(1- )
Choral Ensemble, Mus. 194.....	½(0-2)
Educational Psychology, Educ. 109.....	3(3-0)
Methods of Teach. Music, Mus. 141, 3(3-0)	

Total..... 15

SECOND SEMESTER

Mus. Form & Analysis, Mus. 111....	1(1-0)
Hist. & Appre. of Mus. II, Mus. 113, 3(3-0)	
Voice or Instrument.....	2(1-6)
School Music III, Mus. 143.....	2(2-0)
Orch. Instr. VI, Mus. 151F.....	½(1- )
Choral Ensemble, Mus. 194.....	½(0-2)
Educ. Admin. A, Educ. 105.....	3(3-0)
American Literature, Engl. 175.....	3(3-0)

Total..... 15

SENIOR

FIRST SEMESTER

Voice or Instrument.....	2(1-6)
Orch. Instr. VII, Mus. 151G.....	½(1- )
Choral Ensemble, Mus. 194.....	½(0-2)
Teach. Partic. in Music I, Mus. 146, 2(2-0)	
Instr. & Orches., Mus. 136.....	3(3-0)
English elective.....	3(3-0)
Non-music electives.....	4( - )

Total..... 15

SECOND SEMESTER

Voice or Instrument.....	2(1-6)
Orch. Instr. VIII, Mus. 151H.....	½(1- )
Choral Ensemble, Mus. 194.....	½(0-2)
Teach. Partic. in Mus. II, Mus. 147, 1(1-0)	
Education elective.....	3(3-0)
Non-music electives.....	8( - )

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

College Rhetoric I, Engl. 101.....	3(3-0)
Music Major.....	4(1-12)
Ear Tr. & Sgt. Sing. I, Mus. 105....	2(1-3)
Harmony I, Mus. 101.....	2(2-0)
Modern Language.....	3(3-0)
Orch. Instr. I, Mus. 151A.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Infantry I, Mil. Tr. 101A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2) <i>or</i>	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total.....15 or 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Music Major.....	4(1-12)
Ear Tr. & Sgt. Sing. II, Mus. 106...	2(1-3)
Harmony II, Mus. 102.....	2(2-0)
Modern Language.....	3(3-0)
Orch. Instr. II, Mus. 151B.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Infantry II, Mil. Tr. 102A (men)....	1(0-3)
Phys. Educ. M, Phys. Ed. 104....R(0-2) <i>or</i>	
Phys. Educ. W, Phys. Ed. 152A....R(0-3)	

Total.....15 or 16

SOPHOMORE

FIRST SEMESTER

Music Major.....	4(1-12)
Music Minor.....	2(1-6)
Harmony III, Mus. 103.....	2(2-0)
Orch. Instr. III, Mus. 151C.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Recital I, Mus. 181A.....	R( - )
Hist. & Appre. of Mus. I, Mus. 112...	3(3-0)
Modern Language.....	3(3-0)
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Educ. M, Phys. Ed. 105.....R(0-2) <i>or</i>	
Phys. Educ. W, Phys. Ed. 153.....R(0-3)	

Total.....15 or 16

SECOND SEMESTER

Music Major.....	4(1-12)
Music Minor.....	2(1-6)
Harmony IV, Mus. 104.....	2(2-0)
Orch. Instr. IV, Mus. 151D.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Recital II, Mus. 181B.....	R( - )
Hist. & Appre. of Mus. II, 113....	3(3-0)
Modern Language.....	3(3-0)
Infantry IV, Mil. Tr. 104A (men)....	1(0-3)
Phys. Educ. M, Phys. Ed. 106....R(0-2) <i>or</i>	
Phys. Educ. W, Phys. Ed. 154.....R(0-3)	

Total.....15 or 16



## JUNIOR

## FIRST SEMESTER

Music Major .....	4(1-12)
Music Minor .....	2(1-6)
Counterpoint, Mus. 108A.....	2(2-0)
Orch. Instr. V, Mus. 151E.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Recital III, Mus. 181C.....	R( - )
Conducting I, Mus. 117.....	1(1-0)
Physics for Musicians, Phys. 158....	5(4-3)

Total..... 15

## SECOND SEMESTER

Music Major .....	4(1-12)
Music Minor .....	2(1-6)
Mus. Form & Analysis, Mus. 111....	1(1-0)
Orch. Instr. VI, Mus. 151F.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Recital IV, Mus. 181D.....	R( - )
Psychology B, Educ. 102.....	3(3-0)
Electives, nonmusic .....	4( - )

Total..... 15

## SENIOR

## FIRST SEMESTER

Music Major .....	4(1-12)
Orch. Instr. VII, Mus. 151G.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Recital V, Mus. 181E.....	R( - )
Methods and Materials for the Studio, Mus. 149.....	1(2-0)
English Literature, Engl. 172.....	3(3-0)
Electives, nonmusic .....	6( - )

Total..... 15

## SECOND SEMESTER

Music Major .....	4(1-12)
Orch. Instr. VIII, Mus. 151H.....	½(1- )
Ensemble, Mus. 183.....	½(0-2)
Recital VI, Mus. 181F.....	R( - )
Instr. and Orches., Mus. 136.....	3(3-0)
Practice Teaching .....	R(1- )
American Literature, Engl. 175.....	3(3-0)
Electives, nonmusic .....	4( - )

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

Gymnastics I, Phys. Ed. 115A.....	2(1-3)
Football I, Phys. Ed. 126A.....	2(1-3)
Basket Ball, Phys. Ed. 130A.....	2(1-3)
College Rhetoric I, Engl. 101.....	3(3-0)
General Chemistry, Chem. 110.....	5(3-6)
Extm. Sp. I, Pub. Spk. 106.....	2(2-0)
Infantry I, Mil. Tr. 101A.....	1(0-3)
Phys. Educ. M, Phys. Ed. 103.....	R(0-2)

Total..... 17

## SECOND SEMESTER

Gymnastics II, Phys. Ed. 117A.....	2(0-6)
Track and Field Sports, Phys. Ed. 140A .....	2(1-3)
General Zoölogy, Zoöl. 105.....	5(3-6)
College Rhetoric II, Engl. 104.....	3(3-0)
El. Org. Chemistry, Chem. 123.....	3(2-3)
Library Methods, Lib. Ec. 101.....	1(1-0)
Infantry II, Mil. Tr. 102A.....	1(0-3)
Phys. Educ. M, Phys. Ed. 104.....	R(0-2)

Total..... 17

## SOPHOMORE

## FIRST SEMESTER

Apparatus, Phys. Ed. 109.....	1(0-3)
Football II, Phys. Ed. 127.....	2(1-3)
Swimming M-I, Phys. Ed. 121.....	1(0-3)
Human Anatomy, Zoöl. 123A.....	5(3-6)
Embryology A, Zoöl. 135.....	3(2-3)
Psychology A, Educ. 101.....	3(3-0)
Current History, Hist. 126.....	1(1-0)
Infantry III, Mil. Tr. 103A.....	1(0-3)
Phys. Educ. M, Phys. Ed. 105.....	R(0-2)

Total..... 17

## SECOND SEMESTER

Wrestling, Phys. Ed. 128.....	1(0-3)
Personal Hygiene, Phys. Ed. 119.....	2(2-0)
Swimming M-II, Phys. Ed. 122.....	1(0-3)
Kinesiology M, Phys. Ed. 141B.....	3(3-0)
Physiology, Zoöl. 130.....	4(3-3)
History and Principles of Phys. Educ., Phys. Ed. 192.....	3(3-0)
Playground Management and Games M, Phys. Ed. 145A.....	2(2-0)
Infantry IV, Mil. Tr. 104A.....	1(0-3)
Phys. Educ. M, Phys. Ed. 106.....	R(0-2)

Total..... 17

JUNIOR

FIRST SEMESTER

Extem. Speech II, Pub. Spk. 108....	2(2-0)
School Hygiene, Phys. Ed. 196.....	3(3-0)
Boxing, Phys. Ed. 132.....	1(0-3)
First Aid and Mas., Phys. Ed. 113A.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)
El. Jour., Ind. Jour. 151.....	2(2-0)
Elective† .....	3( - )
<b>Total.....</b>	<b>17</b>

SECOND SEMESTER

Sociology, Econ. 151.....	3(3-0)
Baseball, Phys. Ed. 133.....	2(1-3)
Psych. Chld. and Adol., Educ. 208....	3(3-0)
Educ. Admin. A, Educ. 105.....	3(3-0)
Prac. Teach. in Phys. Educ. II, Phys. Ed. 136B.....	2(0-6)
Elective† .....	3( - )
<b>Total.....</b>	<b>16</b>

SENIOR

FIRST SEMESTER

Phys. Diagnosis and Prescript., Phys. Ed. 124A.....	3(3-0)
Prac. Teach. in Phys. Educ. III, Phys. Ed. 136C.....	2(0-6)
Educ. Psychology, Educ. 109.....	3(3-0)
Gen. Microbiology, Bact. 101.....	3(1-6)
Elective† .....	4( - )
<b>Total.....</b>	<b>15</b>

SECOND SEMESTER

Physiol. of Exercise, Phys. Ed. 123..	2(2-0)
Teaching Partic. in Phys. Educ., Phys. Ed. 137.....	3( - )
Methods of Teaching B, Educ. 112..	3(3-0)
Public-school Program in Phys. Educ., Phys. Ed. 142.....	2(2-0)
Elective† .....	5( - )
<b>Total.....</b>	<b>15</b>

Summary.—Military science, 4 hours; physical education, 52 hours; professional education, 15 hours; other prescribed subjects, 45 hours; general electives, 15 hours. Total, 131 hours.

Curriculum in Physical Education for Women

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
General Chemistry, Chem. 110.....	5(3-6)
Extem. Speech I, Pub. Spk. 106.....	2(2-0)
Library Methods, Lib. Econ. 101....	1(1-0)
Personal Health, Child Welfare 101..	2(2-0)
Phys. Educ. W, Phys. Ed. 151A....	R(0-3)
Gen. Technic I, Phys. Ed. 157A.....	2(1-3)
<b>Total.....</b>	<b>15</b>

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
El. Org. Chemistry, Chem. 123.....	3(2-3)
Extem. Sp. II, Pub. Spk. 108.....	2(2-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
Phys. Educ. W, Phys. Ed. 152A....	R(0-3)
Gen. Technic II, Phys. Ed. 157B....	2(1-3)
<b>Total.....</b>	<b>15</b>

SOPHOMORE

FIRST SEMESTER

Human Anatomy, Zoöl. 123A.....	5(3-6)
English Literature, Engl. 172.....	3(3-0)
Embryology A, Zoöl. 135.....	3(2-3)
Playground Management and Games W, Phys. Ed. 182A.....	2(1-3)
Phys. Educ. W, Phys. Ed. 153.....	R(0-3)
Gen. Technic III, Phys. Ed. 157C....	2(1-3)
<b>Total.....</b>	<b>15</b>

SECOND SEMESTER

Psychology A, Educ. 101.....	3(3-0)
Kinesiology W, Phys. Ed. 184.....	2(2-0)
Physiology, Zoöl. 130.....	4(3-3)
Hist. and Prin. of Phys. Ed., Phys. Ed. 192.....	3(3-0)
Current History, Hist. 126.....	1(1-0)
Phys. Educ. W, Phys. Ed. 154.....	R(0-3)
Gen. Technic IV, Phys. Ed. 157D....	2(1-3)
<b>Total.....</b>	<b>15</b>

† 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.

JUNIOR

FIRST SEMESTER

School Hygiene, Phys. Ed. 196.....	3(3-0)
General Microbiology, Bact. 101.....	3(1-6)
Phys. Diagnosis W, Phys. Ed. 170....	3(3-0)
Folk Dancing I, Phys. Ed. 160.....	1(0-3)
Phys. Educ. W, Phys. Ed. 151A.....	R(0-3)
Gen Technic V, Phys. Ed. 157E.....	2(1-3)
Elective† .....	3( - )

Total..... 15

SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Educ. Admin. A, Educ. 105.....	3(3-0)
Psych. of Chld. and Adol., Educ. 208.	3(3-0)
Therap. and Mas., Phys. Ed. 173....	3(2-3)
Folk Dancing II, Phys. Ed. 161.....	1(0-3)
Phys. Educ. W, Phys. Ed. 152A.....	R(0-3)
Gen. Technic VI, Phys. Ed. 157F....	2(1-3)

Total..... 15

SENIOR

FIRST SEMESTER

Amer. Hist. Survey, Hist. 104.....	3(3-0)
Educ. Psychology, Educ. 109.....	3(3-0)
Applied Nutrition, Food & Nutr. 121.	2(2-0)
Teach. and Adapt. of Phys. Educ., Phys. Ed. 188.....	3(3-0)
Phys. Educ. W, Phys. Ed. 153.....	R(0-3)
Gen. Technic VII, Phys. Ed. 157G....	2(1-3)
Elective† .....	2( - )

Total..... 15

SECOND SEMESTER

Educ. Sociology, Educ. 284.....	3(3-0)
Organization and Administration of Phys. Educ. W, Phys. Ed. 176.....	2(2-0)
Supervised Teach. in Phys. Educ., Phys. Ed. 186.....	3( - )
Phys. Educ. W, Phys. Ed. 154.....	R(0-3)
Gen. Technic VIII, Phys. Ed. 157H.	2(1-3)
Elective† .....	5( - )

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

College Rhetoric I, Engl. 101.....	3(3-0)
Phys. or Bio. Science*.....	5( - ) or 3( - )
Modern Language* .....	3(3-0)
Current History, Hist. 126.....	1(1-0)
Psychology A, Educ. 101.....	3(3-0)
Extm. Speech I, Pub. Spk. 106....	2(2-0)
Infantry I, Mil. Tr. 101A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)	or
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total.....15 or 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Phys. or Bio. Science*.....	5( - ) or 3( - )
Modern Language* .....	3(3-0)
Current History, Hist. 126.....	1(1-0)
College Algebra,* Math. 104.....	3(3-0)
Infantry II, Mil. Tr. 102A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2)	or
Phys. Education W, Phys. Ed. 152A, R(0-3)	

Total.....15 or 16

SOPHOMORE

FIRST SEMESTER

Com'l Correspondence, Engl. 122....	3(3-0)
Accounting I, Econ. 133.....	3(2-3)
Modern Language .....	3(3-0)
Economic Geography, Econ. 122....	2(2-0)
Am. Ind. History, Hist. 105.....	3(3-0)or
Hist. of Commerce & Ind., Hist. 110.	3(3-0)
Extm. Speech II, Pub. Spk. 108....	2(2-0)
Infantry III, Mil. Tr. 103A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)	or
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total.....16 or 17

SECOND SEMESTER

Writ. & Oral Salesmanship, Engl. 123,	3(3-0)
Accounting II, Econ. 134.....	3(2-3)
English Literature, Engl. 172.....	3(3-0)
Economics, Econ. 101.....	3(3-0)
History Elective* .....	3( - )
Infantry IV, Mil. Tr. 104A (men)....	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2)	or
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total.....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.

† 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 that of physical education.



JUNIOR

FIRST SEMESTER

Elements of Statistics, Math. 126.	3(3-0)or
Math. of Investments, Math. 220.	3(3-0)
Business Management, Econ. 126.	2(2-0)
Money and Banking, Econ. 116.	3(3-0)
Marketing, Econ. 245.	2(2-0)
Special Electives,† minimum.	2 or 3( - )
General Electives	5 or 4( - )

Total..... 17

SECOND SEMESTER

Math. of Investments, Math. 220.	3(3-0)or
Elements of Statistics, Math. 126.	3(3-0)
Business Finance, Econ. 217.	3(3-0)
Amer. Govt., Hist. 151, 152, or 153.	3(3-0)
Sociology, Econ. 151.	3(3-0)
Special Electives,† minimum.	3 or 2( - )
General Electives	2 or 3( - )

Total..... 17

SENIOR

FIRST SEMESTER

Business Law I, Hist. 163.	3(3-0)
Public Finance, Econ. 214.	3(3-0)
Labor Problems, Econ. 233.	2(2-0)
Special Electives,† minimum.	2 or 3( - )
General Electives	6 or 5( - )

Total..... 16

SECOND SEMESTER

Business Law II, Hist. 164.	3(3-0)
Investments, Econ. 221.	2(2-0)
Special Electives,† minimum.	3 or 2( - )
General Electives	8 or 9( - )

Total..... 16

*Summary.*—Men: Physical education, required; military science, 4 hours; commerce courses, 48 hours; other prescribed courses, 47 hours; special and general electives, 31 hours. Total, 131 hours. Women: The same except military science, 4 hours, not required. Total, 127 hours.

Curriculum in Commerce With Special Training in Accounting

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.	3(3-0)
Phys. or Bio. Science*.	5( - ) or 3( - )
Modern Language*	3(3-0)
Current History, Hist. 126.	1(1-0)
Psychology A, Educ. 101.	3(3-0)
Extm. Speech I, Pub. Spk. 106.	2(2-0)
Infantry I, Mil. Tr. 101A (men).	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)or	
Phys. Education W, Phys. Ed. 151A, R(0-3)	

Total..... 15 or 16

SECOND SEMESTER

College Rhetoric II, Engl. 104.	3(3-0)
Phys. or Bio. Science*.	3( - ) or 5( - )
Modern Language*	3(3-0)
Current History, Hist. 126.	1(1-0)
College Algebra,* Math. 104.	3(3-0)
Infantry II, Mil. Tr. 102A (men).	1(0-3)
Phys. Education M, Phys. Ed. 104, R(0-2)or	
Phys. Education W, Phys. Ed. 152A, R(0-3)	

Total..... 15 or 16

SOPHOMORE

FIRST SEMESTER

Accounting I, Econ. 133.	3(2-3)
Modern Language*	3(3-0)
Am. Ind. History, Hist. 105.	3(3-0)or
Hist. of Commerce, Hist. 110.	3(3-0)
Extm. Speech II, Pub. Spk. 108.	2(2-0)
Com'l Correspondence, Engl. 122.	3(3-0)
Economic Geography, Econ. 122.	2(2-0)
Infantry III, Mil. Tr. 103A (men).	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)or	
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total..... 16 or 17

SECOND SEMESTER

Accounting II, Econ. 134.	3(2-3)
Economics, Econ. 101.	3(3-0)
Amer. Govt., Hist. 151, 152, 153.	3(3-0)
English Literature, Engl. 172.	3(3-0)
Writ. & Oral Salesmanship, Engl. 123,	3(3-0)
Infantry IV, Mil. Tr. 104A (men).	1(0-3)
Phys. Education M, Phys. Ed. 106, R(0-2)or	
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total..... 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.

† Special electives recommended for students in this curriculum in commerce are: Economics 229, 242, 244, 248, 251, 280, 282, 283, 284, 285, 287, 289, and 292; Education 170 and 243; English 223; History and Government 260; Industrial Journalism 179.

## JUNIOR

FIRST SEMESTER		SECOND SEMESTER	
Advanced Accounting, Econ. 280.....	3(3-0)	Cost Accounting, Econ. 287.....	3(3-0)
Math. of Investments, Math. 220.....	3(3-0)	Income Tax Accounting, ‡ Econ. 282, 2(2-0) or	
Money and 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)
Special Electives, † minimum.....	2 or 3( - )	Elements of Statistics, Math. 126....	3(3-0)
General Electives .....	4 or 3( - )	Special Electives, † minimum.....	3 or 2( - )
		General Electives .....	3 or 4( - )
Total.....	17	Total.....	17

## SENIOR

FIRST SEMESTER		SECOND SEMESTER	
Auditing, Econ. 285.....	3(3-0)	C. P. A. Problems, Econ. 292.....	3(3-0)
Gov't 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)
Special Electives †, minimum.....	2 or 3( - )	Special Electives, † minimum.....	3 or 2( - )
General Electives .....	3 or 2( - )	General Electives .....	5 or 6( - )
Total.....	16	Total.....	16

*Summary.*—Men: Physical education, required; military science, 4 hours; accounting courses, 24 hours; commerce courses, 28 hours; other prescribed courses, 50 hours; special and general electives, 25 hours. Total, 131 hours. Women: The same except military science, 4 hours, not required. Total, 127 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 which may be general culture, or preparation for teaching, research, or some other profession.

In connection with some of the groups listed below are brief statements giving the order in which the earlier courses in a field should be taken. Department heads should be consulted for additional advice.

† Special electives recommended for this curriculum in commerce are: Economics 221, 229, 233, 244, 245, 248, 251, 280, 282, 283, 284, and 285; Education 170 and 243; English 223; History and Government 260; Industrial Journalism 179.

‡ Offered alternate years.

### 1. English Language

Students majoring in English should elect courses 113 and 116, and twelve to twenty additional hours of English language and literature, under the guidance of the head of the department. Twelve hours of a modern foreign language is strongly recommended.

#### FIRST SEMESTER

Advanced Composition I, Engl. 114..3(3-0)  
 Com'l Correspondence, Engl. 122.....3(3-0)  
 Oral English, Engl. 128.....3(3-0)  
 The Short Story I, Engl. 251.....3(3-0)  
 Engineering English, Engl. 110.....2(2-0)  
 Agricultural English, Engl. 137.....3(3-0)

#### SECOND SEMESTER

Advanced Composition II, Engl. 117..3(3-0)  
 Writ. & Oral Salesmanship, Engl. 123, 3(3-0)  
 Methods of Teaching Engl., Engl. 134, 3(3-0)  
 The Short Story II, Engl. 252.....3(3-0)  
 Technical Writing, Engl. 207.....2(2-0)  
 Adv. Problems in Commercial Cor-  
 respondence, Engl. 223.....3(3-0)

### 2. English Literature

#### FIRST SEMESTER

Chaucer, Engl. 260.....3(3-0)  
 The English Bible, Engl. 271.....3(3-0)  
 Shakespearean Drama I, Engl. 273..3(3-0)  
 Wordsworth, Shelley, and Keats,  
 Engl. 278 .....3(3-0)  
 World Classics I, Engl. 280.....3(3-0)  
 Contemporary Fiction, Engl. 283.....3(3-0)  
 The Novel I, Engl. 286.....3(3-0)  
 English Survey I, Engl. 288.....2(2-0)  
 American Literature, Engl. 175.....3(3-0)  
 The Literature of the Middle West,  
 Engl. 268 .....3(3-0)

#### SECOND SEMESTER

Milton and the Puritan Revolt,  
 Engl. 262 .....3(3-0)  
 American Survey, Engl. 265.....2(2-0)  
 Shakespearean Drama II, Engl. 274..3(3-0)  
 English Essayists of the Eighteenth  
 and Nineteenth Cent., Engl. 276.3(3-0)  
 World Classics II, Engl. 281.....3(3-0)  
 Contemporary Drama, Engl. 284....3(3-0)  
 The Novel II, Engl. 287.....3(3-0)  
 English Survey II, Engl. 290.....2(2-0)  
 Browning and Tennyson, Engl. 293..3(3-0)  
 Contemporary Poetry, Engl. 297....3(3-0)

### 3. German

#### FIRST SEMESTER

German I, Mod. Lang. 101.....3(3-0)  
 German Readings, Mod. Lang. 111..3(3-0)  
 Scientific German, Mod. Lang. 237...4(4-0)  
 German Classics, Mod. Lang. 226...3(3-0)

#### SECOND SEMESTER

German II, Mod. Lang. 102.....3(3-0)  
 Ger. Short Stories, Mod. Lang. 201..3(3-0)  
 German Comedies, Mod. Lang. 206..3(3-0)

### 4. French and Spanish

Students who wish to major in Romance Languages should take such of the following courses as they have not already pursued: In French, courses 151, 152, 161, 251, 256, 261, and, if they expect to teach French, course 270; in Spanish, courses 176, 177, 180, 195A, 272, 275, and 280. In each group the courses should be taken approximately in the order here shown and always in conformity with requirements as to prerequisites.

#### FIRST SEMESTER

French I, Mod. Lang. 151.....3(3-0)  
 French Readings, Mod. Lang. 161...3(3-0)  
 French Drama I, Mod. Lang. 257...3(3-0)  
 Spanish I, Mod. Lang. 176.....3(3-0)  
 Spanish Readings, Mod. Lang. 180...3(3-0)  
 The Spanish Novel, Mod. Lang. 275..3(3-0)  
 Spanish Conv., Mod. Lang. 195A...3(3-0)

#### SECOND SEMESTER

French II, Mod. Lang. 152.....3(3-0)  
 French Sh. Stories, Mod. Lang. 251..3(3-0)  
 French Drama II, Mod. Lang. 258...3(3-0)  
 Fr. Comp. & Conv., Mod. Lang. 261, 3(3-0)  
 Spanish II, Mod. Lang. 177.....3(3-0)  
 Span. Sh. Stories, Mod. Lang. 272...3(3-0)  
 Spanish Drama, Mod. Lang. 280...3(3-0)

### 5. Mathematics

Students continuing work in mathematics beyond trigonometry are advised to take courses in the following order: Math. 110, 205, 206, 122, 201, 210, 213, and 216, and in any event strictly in accordance with the stated prerequisites.

#### FIRST SEMESTER

Plane Anal. Geometry, Math. 110...4(4-0)  
 Calculus II, Math. 206.....3(3-0)  
 Differential Equations, Math. 201...3(3-0)  
 Advanced Calculus II, Math. 213...3(3-0)

#### SECOND SEMESTER

Calculus I, Math. 205.....5(5-0)  
 Methods of Teaching Mathematics,  
 Math. 122 .....3(3-0)  
 Advanced Calculus I, Math. 210....3(3-0)  
 Theory of Equations, Math. 216...3(3-0)



## 6. Inorganic and Physical Chemistry

Students desiring extensive training in Chemistry are advised to take the curriculum in industrial chemistry, supplementing the required work by electives chosen with the advice of the head of the department. Those who wish to prepare for teaching chemistry in high schools, in addition to courses 101 and 102, should elect courses 121 or 218 and 219, and courses 207, 241 and 206. Math. 110, 205 and 206 are very desirable, and Physics 135 and 140, or 145 and 150 are essential.

### FIRST SEMESTER

Adv. Inorg. Chem., Chem. 207.....3(3-0)  
 Industrial Chemistry I, Chem. 203...5(3-6)  
 Physical Chemistry I, Chem. 206...5(3-6)  
 Surface Tension and Related Phenomena,  
 Chem. 209 .....2(2-0)

### SECOND SEMESTER

Ind. Electrochem., Chem. 205.....2(2-0)  
 Industrial Chemistry II, Chem. 204...5(3-6)  
 Physical Chemistry II, Chem. 272...3(3-0)  
 Chemical Statics and Dynamics,  
 Chem. 210 .....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 Inorganic Chem-  
 istry, 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

Organic Chemistry I, Chem. 218...4(2-6)  
 Organic Chemistry HE, Chem. 121...5(3-6)  
 Organic Preparations, Chem. 223...5(0-15)  
 Physiological Chemistry, Chem. 231..5(3-6)  
 Pathological Chemistry, Chem. 235..2(2-0)  
 Biochemical Analysis, Chem. 237....2(0-6)

### SECOND SEMESTER

Organic Chemistry II, Chem. 219...4(2-6)  
 Stereoisomeric and Tautomeric Com-  
 pounds, Chem. 225.....2(2-0)  
 Carbocyclic and Heterocyclic Com-  
 pounds, Chem. 226 .....2(2-0)  
 Qual. Org. Anal., Chem. 224.....2(0-6)  
 Laboratory Technique in Animal  
 Nutrition, Chem. 239.....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

Adv. Qual. Anal., Chem. 240.....3(1-6)  
 Quan. Analysis A, Chem. 250.....3(1-6)

### SECOND SEMESTER

Quan. Analysis, Chem. 241.....5(1-12)  
 Quan. Analysis B, Chem. 251.....3(1-6)

## 9. Physics

Students who expect to teach physics in high schools should complete a course in college physics and at least ten hours additional as advised by the head of the department, followed by course 224. Students who wish to major in physics may, with the advice of the major instructor, choose from courses 250, 220, 230, 233, 252, 254, 256, 258 and 260, preferably in the order given. Math. 110, 205 and 206 are desirable or necessary for the more advanced courses. Physics 120, 133A and 155 are available for commerce and journalism students.

### FIRST SEMESTER

Household Physics, Phys. 101.....4(3-2)  
 Photography, Phys. 120.....2(1-3)  
 Modern Physics, Phys. 249.....3(3-0)  
 Molecular Phys. & Heat, Phys. 220...3(2-3)  
 Wireless Telephony, Phys. 130.....2(1-3)  
 Spectroscopy, Phys. 229.....3(2-3)  
 Radio Measurements, Phys. 245....2(1-3)  
 Advanced Electrical Laboratory,  
 Phys. 252 .....1(0-3) or 2(0-6)  
 Advanced Mechanics Laboratory,  
 Phys. 252 .....1(0-3) or 2(0-6)  
 Experimental Problems in Physics,  
 Phys. 260 .....1(0-3) or 2(0-6)

### SECOND SEMESTER

Harmonics, Phys. 221.....3(3-0)  
 Methods of Teaching Physics,  
 Phys. 223 .....3(3-0)  
 Meteorology, Phys. 133A.....3(3-0)  
 Descriptive Astronomy, Phys. 155...3(3-0)  
 Storage Batteries, Phys. 235.....2(1-3)  
 Electron Theory and Radioactivity,  
 Phys. 233 .....3(3-0)  
 Advanced Light Laboratory,  
 Phys. 258 .....1(0-3) or 2(0-6)  
 Advanced Heat Laboratory,  
 Phys. 254 .....1(0-3) or 2(0-6)  
 Biophysics, Phys. 264.....3(2-3)

## 10. Microbiology

Courses 101, 106 or 121A may be followed in order by 202, 204, 211 and 206.

### FIRST SEMESTER

General Microbiology, Bact. 101.....3(1-6)  
 Agricultural Microbiology, Bact. 106...3(1-6)  
 Hygienic Bacteriology, Bact. 206.....4(2-6)  
 Pathogenic Bacteriology II, Bact. 116.4(2-6)

### SECOND SEMESTER

Household Microbiology, Bact. 121..3(1-6)  
 Soil Microbiology, Bact. 202.....3(3-0)  
 Soil Microbiology Lab., Bact. 204...2(0-6)  
 Pathogenic Bacteriology I, Bact. 111, 4(2-6)  
 Dairy Bacteriology, Bact. 211.....3(1-6)  
 Poultry Bacteriology, Bact. 216.....3(1-6)

## 11. Botany

Courses 101 and 105 are prerequisites to all other courses, following which students specializing in plant diseases should take, in order, courses 205, 202, 240 and 232; those in plant physiology, courses 208, 209 and 232; those in taxonomy and ecology, courses 225, 228 or 234 and 232. For general training, all are available if the prerequisites have been taken.

### FIRST SEMESTER

General Botany I, Bot. 101.....3(1-4, 2)  
 Plant Pathology I, Bot. 205.....3(1-4, 2)  
 Morph. of the Fungi, Bot. 206.....3(1-6)  
 Plant Physiology I, Bot. 208.....3(3-0)  
 Fruit Crop Diseases, Bot. 202.....2(1-2, 1)  
 Botanical Problems, Bot. 232....1 to 5( - )  
 Taxonomic Botany of the Flowering  
 Plants, Bot. 225 .....3(1-4, 2)  
 Literature of Botany, Bot. 266.....2(2-0)

### SECOND SEMESTER

General Botany II, Bot. 105.....3(1-4, 2)  
 Plant Histology, Bot. 216.....3(1-6)  
 Phytography, Bot. 234 .....2(2-0)  
 Plant Physiology II, Bot. 210.....3(1-4, 2)  
 Plant Ecology, Bot. 228.....2(2-0)  
 Field Crop Diseases, Bot. 240....2(1-2, 1)  
 Vegetable Diseases, Bot. 245.....2(1-2, 1)  
 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

Adv. Human Physiology, Zoöl. 235...4(3-3)  
 Cytology, Zoöl. 214.....4(2-6)  
 Parasitology, Zoöl. 208.....3(2-3)  
 Comp. & Human Neur., Zoöl. 250...3(2-3)  
 Taxonomy of Parasites, Zoöl. 240....2(1-3)  
 Field Zoölogy, Zoöl. 205.....3(1-6)  
 Heredity and Eugenics, Zoöl. 216....2(2-0)  
 Zoöl. Problems, Zoöl 203.....1 or 2( - )  
 Genetics Seminar, Zoöl. 227.....1(1-0)  
 Research in Zoölogy, Zoöl. 301....1 to 8 cr.

### SECOND SEMESTER

Comp. Anat. of Vertebrates, Zoöl. 246, 4(2-6)  
 Evol. & Heredity, Zoöl. 217..3(2-3) or 4(2-6)  
 Embryology B, Zoöl. 219A .....4(3-3)  
 Adv. Embryology, Zoöl. 220.....4(2-6)  
 Human Parasitology, Zoöl. 218.....3(3-0)  
 Zoöl. Technic, Zoöl. 206.....1 or 2( - )  
 Zoöl. and Ent. Seminar, Zoöl. 225....1(1-0)  
 Research in Zoöl., Zoöl. 301.....1 to 8 cr.

## 13. Geology

Comprehensive study of geology involves a knowledge of astronomy, chemistry, physics, botany, and zoölogy, but some phases of the field may be studied with profit without acquaintance with all of these sciences.

### FIRST SEMESTER

Engineering Geology, Geol. 102.....4(3-3)  
 Economic Geology, Geol. 207.....4(3-3)  
 Crystallography and Mineralogy,  
 Geol. 209 .....4(2-6)  
 Invert. Paleontology, Geol. 220.....4(3-3)

### SECOND SEMESTER

General Geology, Geol. 103.....3(3-0)  
 Historical Geology, Geol. 203.....4(3-3)  
 Physiographic Geol., Geol. 110.....3(3-0)  
 Structural Geol., Geol. 215.....4(3-3)  
 Vert. Paleontology, Geol. 225.....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

Gen. Economic Entomology, Ent. 203, 3(2-3)  
 External Insect Morphology, Ent. 211, 3(1-6)  
 Internal Insect Morphology, Ent. 212, 3(0-9)  
 Ent. & Zoöl. Literature, Ent. 231....2(2-0)  
 Medical Entomology, Ent. 226.....3(2-3)  
 Advanced Apiculture B, Ent. 228....3(2-3)

### SECOND SEMESTER

Principles of Taxonomy, Ent. 216...1(1-0)  
 Taxonomy of Insects I, Ent. 217....2(0-6)  
 Taxonomy of Insects II, Ent. 218...3(0-9)  
 Adv. Gen. Entomology, Ent. 221....3(3-0)  
 Staple Crop Entomology, Ent. 206...3(2-3)  
 Entomological Problems, Ent. 238, 2 to 4 cr.  
 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

Ancient Civilizations, Hist. 101.....	3(3-0)
English History, Hist. 121.....	3(3-0)
American History I, Hist. 201.....	3(3-0)
American History II, Hist. 202.....	3(3-0)
American Agr'l History, Hist. 204.....	3(3-0)
Modern Europe I, Hist. 115.....	3(3-0)
The Far East, Hist. 229.....	2(2-0)
Hist. of Com. & Ind., Hist. 110.....	3(3-0)
Am. Political Parties, Hist. 206.....	2(2-0)
Immig. & Intern'l Rel., Hist. 228.....	2(2-0)
Am. Government, Hist. 151.....	3(3-0)
Am. Nat'l Government, Hist. 152.....	3(3-0)
Comparative Government, Hist. 252.....	2(2-0)

#### SECOND SEMESTER

Medieval Europe, Hist. 102.....	3(3-0)
Current History, Hist. 126.....	1(1-0)
Am. Indust. History, Hist. 105.....	3(3-0)
American History III, Hist. 203.....	3(3-0)
Latin America, Hist. 207.....	2(2-0)
Modern Europe II, Hist. 223.....	3(3-0)
20th Century Europe, Hist. 224.....	2(2-0)
The British Empire, Hist. 226.....	2(2-0)
History of the Home, Hist. 225.....	3(3-0)
International Law, Hist. 256.....	2(2-0)
Gov't Regulation of Bus., Hist. 260.....	2(2-0)
Am. State Gov't, Hist. 153.....	3(3-0)
History of Religions, Hist. 231.....	2(2-0)

### 16. Law

#### FIRST SEMESTER

Farm Law, Hist. 175.....	2(2-0)
Business Law I, Hist. 163.....	3(3-0)
Land Law, Hist. 276.....	2(2-0)

#### SECOND SEMESTER

Commercial Law, Hist. 160.....	1(1-0)
Business Law II, Hist. 164.....	3(3-0)
International Law, Hist. 256.....	2(2-0)

### 17. Economics, Sociology, and Accounting

Some of the subjects in this list are required in the several curricula of the institution, and the others are available as electives if any prerequisites have been satisfied. Additional work is offered in the department of agricultural economics.

#### FIRST SEMESTER

Economics, Econ. 101.....	3(3-0)
Public Finance, Econ. 214.....	3(3-0)
Labor Problems, Econ. 233.....	2(2-0)
Marketing, Econ. 245.....	2(2-0)
Economic Geography, Econ. 122.....	2(2-0)
Advanced Economics, Econ. 251.....	3(3-0)
Sociology, Econ. 151.....	3(3-0)
Rural Sociology, Econ. 156.....	3(3-0)
Social Problems, Econ. 257.....	2(2-0)
Accounting I, Econ. 133.....	3(2-3)
Adv. Accounting, Econ. 280.....	3(3-0)
Auditing, Econ. 285.....	3(3-0)
Governmental Act, Econ. 289.....	2(2-0)
Property Insurance, Econ. 242.....	2(2-0)

#### SECOND SEMESTER

Money and Banking, Econ. 116.....	3(3-0)
Business Finance, Econ. 217.....	3(3-0)
Transportation Problems, Econ. 229.....	2(2-0)
Business Management, Econ. 126.....	2(2-0)
Economic Problems, Econ. 248.....	( - )
Community Organization, Econ. 267.....	3(3-0)
Advanced Sociology, Econ. 273.....	3( - )
Adv. Rural Sociology, Econ. 270.....	3( - )
Life Insurance, Econ. 244.....	2(2-0)
Accounting II, Econ. 134.....	3(2-3)
Investments, Econ. 221.....	2(2-0)
Accounting Systems, Econ. 283.....	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 course 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**

- Psychol. A, B, or C, Educ. 101-103...3(3-0)
- School Management, Educ. 107.....3(3-0)
- Educational Administration A,  
Educ. 105 .....3(3-0)
- Applied Psychology, Educ. 170.....3(3-0)
- Mental Measurements, Educ. 211....3(3-0)
- Educ'l Measurements, 212 .....3(3-0)
- Technic of Mental Testing, Educ. 235, 3(1-6)
- Introd. to Philosophy, Educ. 180...3(3-0)
- Statistical Methods Applied to Edu-  
cation, Educ. 223.....3(3-0)
- Agric. Educ. B, Educ. 330.....3(3-0)
- Supervised Observation and Teaching  
in Agriculture, Educ. 161.....3(3-0)
- Methods of Teaching Home Eco-  
nomics, Educ. 132 .....3(3-0)

**SECOND SEMESTER**

- Methods of Teaching A, Educ. 111...3(3-0)
- Educl. Psychology, Educ. 109.....3(3-0)
- Methods of Teaching B, Educ. 112...3(3-0)
- Educl. Sociology, Educ. 284.....3(3-0)
- Psychology of Childhood and Ado-  
lescence, Educ. 208.....3(3-0)
- Abnormal Psychology, Educ. 213....3(3-0)
- Advanced Psychology, Educ. 216....3(3-0)
- Philosophy of Education, Educ. 206...3(3-0)
- Rural Life and Educ., Educ. 201....3(3-0)
- Vocational Education, Educ. 288....3(3-0)
- Supervised Teaching in Home Eco-  
nomics, Educ. 160.....3(3-0)
- Methods of Teaching Industrial Arts,  
Educ. 140 .....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**

- El. Journalism, Ind. Jour. 151.....2(2-0)
- Ind. Feature Writ., Ind. Jour. 167...2(2-0)
- Materials of Jour., Ind. Jour. 265...2(2-0)
- History of Jour., Ind. Jour. 274.....2(2-0)

**SECOND SEMESTER**

- Industrial Writing, Ind. Jour. 161...2(2-0)
- Jour. for Women, Ind. Jour. 172....2(2-0)
- Magazine Features, Ind. Jour. 270...2(2-0)
- Jour. Surveys, Ind. Jour. 278.....2(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**

- Harmony I, Mus. 101.....2(2-0)
- Harmony III, Mus. 103.....2(2-0)
- Counterpoint, Mus. 108A .....2(2-0)
- Hist. & Apprec. of Mus. I, Mus. 112...3(3-0)
- School Music I, Mus. 138.....2(2-0)
- Meth. of Teach. Music, Mus. 141...3(3-0)
- Instrn. & Orchestrn., Mus. 136.....3(3-0)

**SECOND SEMESTER**

- Harmony II, Mus. 102.....2(2-0)
- Harmony IV, Mus. 104.....2(2-0)
- Musical Form & Analysis, Mus. 111...1(1-0)
- Hist. & Apprec. of Mus. II, Mus. 113, 3(3-0)
- School Music II, Mus. 139.....2(2-0)
- School Music III, Mus. 143.....2(2-0)

**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**

- Infantry V, Mil. Tr. 109.....3(2-3)
- Infantry VII, Mil. Tr. 111.....3(2-3)

**SECOND SEMESTER**

- Infantry VI, Mil. Tr. 110.....3(2-3)
- Infantry VIII, Mil. Tr. 112.....3(2-3)

## 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

Extempore Speech I, Pub. Spk. 106..2(2-0)  
 Oral Interpretation, Pub. Spk. 101...2(2-0)  
 Parliamentary Proced., Pub. Spk. 126, 1(1-0)  
 Dramatic Produc. I, Pub. Spk. 130...2(2-0)  
 Argumentation and Debate I,  
 Pub. Spk. 121.....2(2-0)  
 Pageantry, Pub. Spk. 205.....3(3-0)

### SECOND SEMESTER

Extempore Speech II, Pub. Spk. 108..2(2-0)  
 Dramatic Reading, Pub. Spk. 102....2(2-0)  
 Lecture Recital, Pub. Spk. 115.....2(2-0)  
 Dramatic Produc. II, Pub. Spk. 135..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

American History I, Hist. 201.....3(3-0)  
 American Government, Hist. 151....3(3-0)*or*  
 Amer. Nat'l Government, Hist. 152...3(3-0)  
 Latin America, Hist. 207.....2(2-0)  
 Agric. Economics, Ag. Ec. 101.....3(3-0)  
 Money and Banking, Econ. 116.....3(3-0)  
 Business Finance, Econ. 217.....3(3-0)  
 Market. of Farm Prod., Ag. Ec. 202..3(3-0)  
 Agric. Land Prob., Ag. Ec. 218.....3(3-0)

### SECOND SEMESTER

American History II or III, Hist.  
 202 or 203 .....3(3-0)  
 Amer. State Govt., Hist. 153 .....3(3-0)  
 Modern Europe I, Hist. 115.....3(3-0)  
 Modern Europe II, Hist. 223.....3(3-0)  
 English History, Hist. 121.....3(3-0)  
 Economics, Econ. 101 .....3(3-0)  
 Public Finance, Econ. 214.....3(3-0)  
 Labor Problems, Econ. 233.....2(2-0)  
 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

General Botany I, Bot. 101.....3(1-4, 2)  
 Plant Pathology I, Bot. 205.....3(1-4, 2)  
 Fruit Crop Diseases, Bot. 202....2(1-2, 1)  
 Farm Forestry, Hort. 114.....3(2-3)  
 Seed Identification and Weed Control,  
 Agron. 105 .....2(1-3)  
 General Zoölogy, Zoöl. 105.....5(3-6)  
 Parasitology, Zoöl. 208 .....3(2-3)  
 Zoöl. and Embryol. (Vet.), Zoöl. 109, 5(3-6)  
 Landscape Gardening I, Hort. 125...3(3-0)  
 Hygienic Bacteriology, Bact. 206....4(2-6)  
 Gen. Economic Ent., Ent. 203.....3(2-3)  
 Hort. Entomology, Ent. 201.....2(2-0)  
 El. Org. Chemistry, Chem. 123.....3(2-3)  
 Dairy Chemistry, Chem. 254.....3(1-6)  
 Economic Geology, Geol. 207.....4(3-3)  
 Human Nutrition, Food & Nut. 112...3(3-0)

### SECOND SEMESTER

General Botany II, Bot. 105.....3(1-4, 2)  
 Field Crop Diseases, Bot. 240....2(1-2, 1)  
 Vegetable Diseases, Bot. 245.....2(1-2, 1)  
 Plant Ecology, Bot. 228.....2(2-0)  
 El. of Horticulture, Hort. 107.....3(2-3)  
 Small Fruits, Hort. 110.....2(2-0)  
 General Microbiology, Bact. 101....3(1-6)  
 Staple Crop Ent., Ent. 206.....3(2-3)  
 General Apiculture, Ent. 208.....3(2-3)  
 Applied Nut., Food & Nut. 121....2(2-0)  
 General Geology, Geol. 103.....3(3-0)  
 Historical Geology, Geol. 203.....4(3-3)  
 Meteorology, Physics 133A .....3(3-0)  
 Household Physics, Physics 101....4(3-3)  
 Photography, Physics 120 .....2(1-3)

## 32. Home Economics

This group is suggestive to young women in the curriculum in industrial journalism. It states the fundamental subjects in the three lines, food, clothing and applied art. The required option related to an industry may be satisfied by fifteen hours in one or more of these lines. Additional subjects in each line are described in the department sections of the catalogue. Prerequisites count on the group requirement.

### FIRST SEMESTER

Household Physics, Physics 101....4(3-3)  
 Organic Chem. (HE), Chem. 121....5(3-6)  
 Foods I, Food & Nutr. 102.....5(3-6)  
 Foods II, Food & Nutr. 107.....3(1-6)  
 Human Nutrit., Food & Nutr. 112...3(3-0)  
 Dietetics, Food & Nutr. 202.....4(3-3)  
 Applied Nutrit., Food & Nutr. 121...2(2-0)  
 Elementary Design I, Art 101A....2(0-6)  
 Intermediate Design, Art 103.....2(0-6)

### SECOND SEMESTER

Household Microbiology, Bact. 121...3(1-6)  
 Clothing for the Individual, Clo.  
 & Text. 102 .....5(2-9)  
 Costume Design I, Art. 130.....2(0-6)  
 Textiles, Clo. & Text. 116.....3(2-3)  
 Interior Decoration I, Art. 113.....2(0-6)  
 Principles of Art I, Art 124.....3(3-0)  
 Advanced Design A, Art 105.....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

General Botany I, Bot. 101.....	3(1-4, 2)
El. of An. Husb., An. Husb. 125.....	3(2-4)
El. of Dairying, Dairy Husb. 101.....	3(2-3)
El. Org. Chemistry, Chem. 123.....	3(2-3)
Plant Pathology I, Bot. 205.....	3(1-4, 2)
Soils, Agron. 130.....	4(3-3)
Farm Poultry Production, Poultry Husb. 101 .....	2(1-2, 1)

#### SECOND SEMESTER

General Botany II, Bot. 105.....	3(1-4, 2)
El. of Horticulture, Hort. 107.....	3(2-3)
Dairy Cattle Judg., Dairy Husb. 104,	1(0-3)
Prin. of Feeding, An. Husb. 152.....	3(3-0)
Field Crop Diseases, Bot. 240.....	2(1-2, 1)
Farm Crops, Agron. 101.....	4(2-6)
Genetics, An. Husb. 221.....	3(3-0)

### 36. Architecture

Students in industrial journalism, with due regard for prerequisites, may elect fifteen hours from this group in order to fulfill the requirement in respect to subjects related to an industry.

#### FIRST SEMESTER

Engr. Drawing, Mach. Des. 101.....	2(0-6)
El. of Arch. I, Arch. 106A.....	3(0-9)
Object Drawing I, Arch. 111.....	2(0-6)
Design I, Arch. 142.....	3(0-9)
Coml. Illustration I, Arch. 165.....	2(0-6)
General Hist. of Arch., Arch. 244.....	3(3-0)
Pencil Rend. & Sketch., Arch. 116.....	2(0-6)
Water Color I, Arch. 118.....	2(0-6)
Still Life Drawing, Arch. 117.....	2(0-6)
Clay Modelling, Arch. 133.....	2(0-6)
Advanced Free-hand Drawing I, Arch. 201 .....	2(0-6)
Etching I, Arch. 217.....	2(0-6)
Oil Painting I, Arch. 230.....	2(0-6)
History of Painting and Sculpture, Arch. 179 .....	3(3-0)

#### SECOND SEMESTER

Descr. Geom., Mach. Des. 106.....	2(0-6)
El. of Arch. II, Arch. 107A.....	3(0-9)
Object Drawing II, Arch. 114.....	2(0-6)
Design II, Arch. 144.....	3(0-9)
Coml. Illustration II, Arch. 170.....	2(0-6)
Domestic Arch., Arch. 124.....	2(2-0)
Pen and Ink Drawing I, Arch. 134.....	2(0-6)
Water Color II, Arch. 119.....	2(0-6)
Life Drawing I, Arch. 121.....	2(0-6)
Life Drawing II, Arch. 123.....	2(0-6)
Advanced Free-hand Drawing II, Arch. 206 .....	2(0-6)
Etching II, Arch. 218.....	2(0-6)
Oil Painting II, Arch. 235.....	2(0-6)
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

Engr. Drawing, Mach. Des. 101.....	2(0-6)
Descr. Geom., Mach. Des. 106.....	2(0-6)
Woodworking for Grammar Grades, Shop 120 .....	2(0-6)
Woodworking II for High Schools, Shop 130 .....	2(0-6)
Forging I, Shop 150.....	1(0-3)
Machine Tool Work I, Shop 170.....	2(0-6)
Machine Tool Work III, Shop 193.....	1(0-3)
Gas Engines and Tractors, Ag. Engr. 130 .....	3(2-3)
Machine Drawing I, Mach. Des. 111.....	2(0-6)
Reed Furn. Constr., Shop 119.....	2(0-6)
Foundry Production, Shop 161.....	1(0-3)
Adv. Shop Practice, Shop 261.....	1 to 5 cr.

#### SECOND SEMESTER

Engr. Woodwork I, Shop 101.....	1(0-3)
Manual Training for Primary Grades, Shop 117 .....	2(0-6)
Woodworking I for High Schools, Shop 125 .....	2(0-6)
Wood Turning, Shop 135.....	2(0-6)
Farm Carpentry I, Shop 147.....	3(1-6)
Machine Tool Work II, Shop 192.....	2(0-6)
Metallurgy, Shop 165 .....	2(2-0)
Farm Buildings, Ag. Engr. 103.....	3(1-6)
Surveying I, Civ. Engr. 102.....	2(0-6)
Farm Shop Methods, Shop 175.....	3(1-6)
Metallography 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

Ad. Composition I, Ind. Jour. 108....	2(0-6)
Ad. Composition III, Ind. Jour. 112....	2(0-6)
Job Composition II, Ind. Jour. 118....	2(0-6)
Press Work I, Ind. Jour. 122.....	2(0-6)

#### SECOND SEMESTER

Ad. Composition II, Ind. Jour. 111....	2(0-6)
Job Composition I, Ind. Jour. 114....	2(0-6)
Job Composition III, Ind. Jour. 120....	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

Milling Practice I, Mill. Ind. 109....	3(1-6)
Wheat and Flour Testing, Mill. Ind. 205 .....	3(0-9)
Advanced Wheat and Flour Testing, Mill. Ind. 210.....	1 to 5( - )
Farm Crops, Agron. 101.....	4(2-6)
Grain Marketing, Ag. Ec. 203.....	3(3-0)
Quantitative Analysis A, Chem. 250..	3(1-6)
El. Org. Chemistry, Chem. 123.....	3(2-3)
Milling Technology I, Mill. Ind. 201..	2(0-6)
Mill. Ind. Problems, Mill. Ind. 214, 1 to 5 cr.	

## SECOND SEMESTER

Prin. of Milling I, Mill. Ind. 104.....	2(1-3)
Prin. of Milling II, Mill. Ind. 106....	1(0-3)
Milling Practice II, Mill. Ind. 111....	3(1-6)
Milling Qualities of Wheat, Mill. Ind. 212.....	3(3-0)
Exptl. Baking, Mill. Ind. 206.....	3(1-6)
Grain Grading and Judging, Agron. 108 .....	2(0-6)
Quant. Analysis B, Chem. 251.....	3(1-6)
The Chemistry of Proteins, Chem. 236A .....	3(2-3)
Milling Technology II, Mill. Ind. 202, 2(0-6)	
Colloidal Chemistry, Chem. 213.....	2(2-0)

## Bacteriology

Professor BUSHNELL  
 Professor GAINNEY  
 Associate Professor FAY†  
 Assistant Professor BRANDLY

Instructor FOLTZ  
 Instructor ATKINS  
 Graduate Assistant SCHWEITER  
 Grad. Research Asst. BRISCOE

The Department of Bacteriology occupies parts of the first and second floors of Veterinary Hall. The space is divided into offices and private laboratories, an experiment station and research laboratory, two large general laboratories, incubator or temperature room, preparation room, and stock room. The laboratories are well lighted and equipped with gas, lockers, ice chests, sterilizers, wall cases, microscopes, and other modern facilities necessary for bacteriological work.

The instruction consists of lectures, recitations, demonstrations, and laboratory practice. Printed synopses of lectures and printed laboratory directions are furnished the students in some of the courses; in others textbooks are required. The department library contains textbooks on bacteriology and allied subjects, also the current files of the important technical periodicals relating to bacteriology. These are at the constant disposal of the students for reference. To those who desire graduate work the department offers excellent facilities.

Bacteriology is presented to the students as a biological science and as a practical factor in everyday life. In this subject only the simplest forms of life, consisting almost invariably of one-celled organisms, are studied. It is now possible to study these microscopical forms with ease and accuracy, thus paving the way for a more complete study and better understanding of cells in the aggregate. The second point of view from which this subject is approached is that of its practical application in agriculture, medicine, domestic science, and sanitation.

This department owns equipment valued at \$23,719.

## 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.

\* 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.

† Absent on leave, year 1931-'32.

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 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 microorganisms to agriculture.

*Laboratory.*—Methods of cultivating and studying bacteria, yeasts, and molds; methods for quantitative and qualitative analysis of water, milk, etc.; methods of sterilization and use of germicidal agents. Deposit, \$10.

111, 116. PATHOGENIC BACTERIOLOGY I and II. 4(2-6) each; II and I respectively. Prerequisite: Chem. 123, El. Org. Chemistry. Dr. Bushnell and Dr. Brandly.

I: Distribution and morphological and biochemical features of microorganisms; factors necessary for the development and cultivation of bacteria; fundamental principles of bacteriology as applied to veterinary medicine. II: Morphology, powers of resistance, pathogenesis, distribution, channels of infection, and means of dissemination of pathogenic bacteria; epizootic and epidemic diseases of unknown etiology; manufacture, standardization, preparation for the market, and use of vaccines, antitoxins, and other biological products related to diagnosis, prevention, and treatment of specific infectious diseases; and various other topics.

*Laboratory.*—I: General laboratory technic; pathogenic microorganisms studied morphologically, culturally, and biochemically; quantitative and qualitative examinations of milk and of water. II: Microscopical and cultural characteristics of pathogenic microorganisms continued; laboratory animal inoculations, autopsy, and diagnosis; prevention and treatment of specific infectious diseases; experimental production of antitoxins, agglutinins, precipitins, and cytolytins, 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 microorganisms; factors necessary for the proper development of bacteria; fundamental principles of the science as applied to household economics.

*Laboratory.*—Practical applications of theories discussed in the classroom, such as bacteriological study of water, milk, and foods; determination of the potability of water; microscopical study of yeasts and molds; methods of food preservation; the germicidal action of various disinfectants, etc. Deposit, \$10.

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 microorganisms; 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 CREDIT

202. SOIL MICROBIOLOGY. 3(3-0); II. Prerequisite: Course 101 or 106. Dr. Gainey.

The influences of depth and character of soil, temperature, moisture, chemical action, aëration, and other factors upon the activities of soil microorganisms; the influence of such phenomena as ammonification, nitrification, denitrification, symbiotic and nonsymbiotic nitrogen fixation upon crop production. Various texts recommended as reference books.

204. SOIL MICROBIOLOGY LABORATORY. 2(0-6); II. Prerequisite: Course 101 or 106. To accompany or follow course 202. Dr. Gainey.

The preparation of various special culture media and reagents necessary to conduct bacteriological analyses of the soil; qualitative and quantitative analysis and the laboratory study of nitrification, denitrification, and nitrogen fixation; plot experiments and field work illustrating the influence of various factors upon the bacterial flora and the inoculation of soil with nitrogen-fixing bacteria. Deposit, \$10.

206. HYGIENIC BACTERIOLOGY. 4(2-6); I. Prerequisite: Course 101, 106, or 121 A. 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 *Bacterium tuberculosis* in sputum; culture of pathogenic anaërobic bacteria; the isolation and identification of pathogenic bacteria; and other practical studies of theories discussed in the classroom. Deposit, \$10.

211. DAIRY BACTERIOLOGY. 3(1-6); II. Prerequisite: Course 101, 106 or 121. Mr. Fay.

Bacterial flora of milk, butter and cheese; infectious diseases conveyed through dairy products; bacterial contaminations of milk by air, water, utensils, etc.; normal and abnormal fermentations in milk, their significance and control.

*Laboratory.*—Preparation of culture media necessary for dairy bacteriological work; bacteriological analysis of milk; microscopical and cultural characters of the types of microorganisms 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 microorganisms pathogenic for poultry; microbial content of eggs and egg preparations handled and produced under various conditions. Deposit, \$10.

217. POULTRY DISEASES. 2(2-0); II. Prerequisites: Courses 111 and 116, and Therapeutics (Surg. and Med. 162). Dr. Brandly.

Anatomy of the fowl; poultry sanitation and hygiene; a complete systematic study of the infectious diseases of all classes of domestic fowl; general diseases of a noninfectious nature; external and internal parasites of domestic fowl; minor surgical operations.

226. BACTERIOLOGICAL PROBLEMS. 1 to 4 credits; I, II and SS. Prerequisite: courses 101, 106, 116 or 121. Dr. Bushnell, Dr. Gainey, Mr. Fay, and Dr. Brandly.

Special problems assigned, credit depending upon amount and quality of work done. Deposit by arrangement with professor in charge.



230. BACTERIOLOGY SEMINAR. 1(1-0); I and II. For prerequisites, consult professor in charge. Dr. Bushnell.

Papers and discussion by members of the department and the more advanced students on all phases of current research work in bacteriology, serology, and related subjects. Graduate students in this department may be assigned to this subject for credit; others interested may visit the meetings at any time.

#### FOR GRADUATE CREDIT

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. Amount of deposit to be arranged with the professor in charge.

## Botany and Plant Pathology

Professor MELCHERS  
 Professor MILLER  
 Professor DAVIS  
 Professor HAYMAKER  
 Professor GATES  
 Associate Professor DALBEY<sup>1</sup>  
 Assistant Professor ELMER  
 Instructor HORN

Instructor NEWCOMB<sup>2</sup>  
 Instructor KINGSLEY  
 Associate Pathologist JOHNSTON\*  
 Associate Pathologist FELLOWS\*  
 Assistant Pathologist BOYLE\*  
 Junior Pathologist FICKE\*  
 Graduate Assistant WISMER  
 Graduate Assistant LORING

The instruction given in the Department of Botany and Plant Pathology has a threefold purpose: To give a training in botany for the general broadening of the student's knowledge; to give a training in the knowledge of plants that will serve as a foundation for the student's further college courses in agricultural subjects; and to instruct and direct those students who desire to investigate such problems in plant life as affect agriculture. Investigations may be undertaken in plant pathology, plant physiology, taxonomy, and ecology of plants.

In the general courses each student is supplied with a compound microscope and with all the other accessories of a modern well-equipped botanical laboratory. The laboratory for advanced study is provided with the general equipment for investigational work, and additional facilities are readily available for those who desire to pursue special lines of research. The department has an excellent herbarium, especially complete for Kansas, and a botanical library containing the usual standard texts and the principal botanical journals. The equipment owned by the department has a value of \$48,687.

### 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, Miss Dalbey, Miss Horn, Miss Newcomb, Miss Kingsley.

I: The principal life functions of plants; response of plants, such as photosynthesis, digestion, respiration, transpiration, and growth; the responses of

\* In cooperation with the U. S. Department of Agriculture.

1. Absent on leave, second semester, year 1931-'32.  
 2. Absent on leave, year 1931-'32.

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 1931-'32 and in alternate years thereafter. Dr. Haymaker.

Diseases affecting fruit crops of all kinds; methods and measures for controlling these diseases; preparation and practical application of standard sprays.

*Laboratory.*—A detailed study of each disease affecting the major fruit crops; a detailed microscopic study of the organism causing the disease. Charge, \$2.

205. PLANT PATHOLOGY I (OR ECONOMIC PLANT DISEASES) 3(1-4, 2) or 3(2-3); I and SS. Prerequisites: Courses 101 and 105. Mr. Melchers, Dr. Haymaker, and Dr. Elmer.

Causes and symptoms of plant diseases, infection phenomena, control of plant diseases, breeding for resistance, and plant quarantine.

*Laboratory.*—Work in the recognition of all the more common plant diseases of the farm, orchard, and garden; detailed microscopic studies of diseased tissues and identification of the fungus pathogens 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. Haymaker.

Structure of slime molds, mold-like bacteria, and fungi studied to determine taxonomic relationships; especial attention to organisms capable of causing disease in plants.

208. PLANT PHYSIOLOGY I. 3(3-0); I. Prerequisites: Courses 101 and 105, and Chemistry I and II. Dr. Miller.

A detailed study of such subjects as the root systems of plants, absorption, wilting coefficient, resistance to drought, transpiration, water requirement, photosynthesis, respiration, digestion and growth with special stress on the phases pertaining to argiculture.

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.



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 Dalbey.

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. For prerequisites, 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 by the head of the department. Mr. Melchers, Dr. Miller, Mr. Davis, Dr. Haymaker, Dr. Gates, Miss Dalbey, Dr. Elmer, and Miss Horn.

A student wishing to pursue a special field of work not definitely represented by one of the undergraduate elective courses may do so upon consultation with the instructor. Charge, \$2.

234. PHYTOGEOGRAPHY. 2(2-0); II. Prerequisites: Courses 101 and 105. Offered in 1931-'32 and in alternate years thereafter. Dr. Gates.

The distribution and characteristics of vegetation.

240. FIELD-CROP DISEASES. 2(1-2, 1); II. Prerequisite: Course 205. Offered in 1932-'33 and in alternate years thereafter. Mr. Melchers.

The historical development of phytopathology; the various factors entering into the problem of disease resistance in plants; breeding for resistance; the most important literature on the subject.



*Laboratory.*—A detailed microscopic and symptom study of the fungous, bacterial, and nonparasitic plant diseases attacking cereal and forage crops other than those considered in Plant Pathology I. Charge, \$2.

245. VEGETABLE DISEASES. 2(1-2, 1); II. Prerequisite: Course 205. Offered in 1931-'32 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.

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 Dalbey.

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, and Dr. Elmer.

*Plant Physiology.* Mr. Davis and Dr. Miller.

*Taxonomy and Ecology.* Dr. Gates and Miss Horn.

*Histology, Cytology, Morphology and Anatomy.* Miss Dalbey.

## Chemistry

Professor KING  
 Professor HUGHES  
 Professor BRUBAKER  
 Professor COLVER  
 Professor LATSHAW  
 Professor TAGUE  
 Associate Professor KEITH  
 Associate Professor BROWN  
 Associate Professor VAN WINKLE  
 Assistant Professor HALL  
 Assistant Professor PERKINS  
 Assistant Professor HARRISS  
 Assistant Professor WHITNAH

Assistant Professor LASH  
 Assistant Professor BARHAM  
 Instructor MARLOW  
 Instructor ANDREWS  
 Instructor McDOWELL  
 Instructor REED  
 Instructor BENNE  
 Instructor SHENK  
 Instructor NIELSON  
 Graduate Assistant HUBBARD  
 Graduate Assistant HOSTETTER  
 Graduate Assistant DORF  
 Graduate Assistant MCGEHEE

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 \$72,379.

### 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, Mr. McDowell, Dr. Nielson, 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.

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, Mr. Hostetter and Mr. Hubbard.

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. McDowell, Mr. Shenk, Dr. Nielson, Mr. Dorf, and Mr. McGhee.

A general treatment of some of the principal laws and theories of chemistry; preparation, properties, and uses of some of the important metallic and non-metallic substances.

*Laboratory.*—Actual preparation and study of the properties of many of the elements and compounds mentioned in the lectures; applications of some of the laws. Deposit, \$10.

121. ORGANIC CHEMISTRY (HE). 5 (3-6); I and II. Not open to students who have credit in Chem. 122, 218 or 219, and for only two hours to those having credit in Chem. 123. Prerequisite: Chemistry II. Dr. Colver and Dr. Barham.

The more important classes of organic compounds, with special attention to those organic compounds which are used for clothing, fuel, light, antiseptics, disinfectants, anæsthetics, medicinals, solvents, in the commercial manufacture of other important products, as well as to many other compounds which contribute to a fuller understanding of the systematic relations existing among all organic compounds.

*Laboratory.*—Preparation of one or more representative examples of most of the classes of compounds taken up in the classroom; study of their physical properties and of their chemical properties as shown by typical reactions. Deposit, \$10.

122. GENERAL ORGANIC CHEMISTRY. 5(3-6); I and II. Not open to students who have college credit in organic chemistry, except that it may be taken for two hours credit by students who have completed Chem. 123. Prerequisite: Chem. 105 or 110. Dr. Colver, Dr. 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.

An elementary outline dealing with some of the more important hydrocarbons, alcohols, aldehydes, ketones, organic acids, and various esters, waxes, fats, carbohydrates, and proteins, with special emphasis on their toxicological and physiological properties.

*Laboratory.*—Preparation of a few organic compounds and the study of their physical and chemical properties. Deposit, \$7.50.



130. INSPECTION TRIP. No credit hours. Dr. Brown.

A large number of manufacturing plants of chemical and chemical engineering nature are visited. Different types of plants are selected, only one of each type being visited. An effort is made to vary the trip from year to year and to include such manufacturing centers as Kansas City, St. Louis, and Chicago. The cost of the trip varies from about \$30 to not more than \$50, depending on the places visited.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. INORGANIC PREPARATIONS. 1 credit for each 3 hrs. of laboratory; I and II. Prerequisite: Chemistry II. Dr. Brubaker.

Preparation and purification of some typical inorganic compounds, of those of more complex composition, and compounds of the rarer elements. Charge, \$10.

203, 204. INDUSTRIAL CHEMISTRY I AND II. 5(3-6) each; I and II respectively. Prerequisite or concurrent: Physical Chemistry. Dr. Brown.

The fundamental course in industrial chemistry, dealing with the problems of the chemical industries, and placing stress upon the economic questions involved in chemical manufacturing, materials of plant construction, as well as the engineering operations involved in chemical engineering, and the principles underlying the applications of chemistry and engineering to a selected number of chemical industries.

*Laboratory.*—An introduction to industrial chemical research through assigned manufacturing problems, beginning with the general chemical industries. Deposit, \$10.

205. INDUSTRIAL ELECTROCHEMISTRY. 2(2-0); II. Offered in case of sufficient demand. Prerequisites: College courses in general chemistry and physics. Dr. Brown.

The principles of voltameters, electrochemical methods 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.

210. CHEMICAL STATICS AND DYNAMICS. 2(2-0); II, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry and calculus. Dr. King.

Chemical equilibria, velocity of chemical reactions, hydrolysis, catalysis, etc.

211. PAINT OILS AND PIGMENTS. 2(2-0); I, by appointment. Prerequisites: Satisfactory courses in organic chemistry and qualitative analysis. Dr. King.

Extraction, purification, and properties of the oils commonly used in paints; manufacture and properties of paint pigments; the products employed as protective coverings for both wood and metal.

213. COLLOIDAL CHEMISTRY. 2(2-0); II, when requested by a sufficient number. Prerequisite: Chem. 206. Dr. Tague.

Suspensoids and emulsoids, optical and electrical properties of colloids, Brownian movement, action of electrolytes on colloids, adsorption and surface phenomena, and short review of the method for the preparation of colloids.

215. CHEMICAL THERMODYNAMICS. 3(3-0); II, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry and calculus. Dr. Keith.

Those fundamental principles of thermodynamics which are particularly applicable to chemistry, such as the first and second laws of thermodynamics and their application to fusion, evaporation, phase rule, chemical equilibrium, chemical affinity, electromotive force, surface tension and adsorption.

216. THEORETICAL ELECTROCHEMISTRY. 3(3-0); I, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry. Dr. Keith.

The theory of electrolytic cells, the electrochemical series of metals, electrodes, potentials, polarization, overvoltage, and deposition of metals by electrolysis.

217. ELECTROCHEMISTRY LABORATORY. 2(0-6); II. Prerequisite: Physical Chemistry I or equivalent. Dr. Hall.

A laboratory course designed and recommended to accompany or follow Theoretical Electrochemistry. Selected experiments in electrometric titrations, storage battery efficiency, polarization, overvoltage, electrode potentials, and related subjects. Deposit, \$10.

218, 219. ORGANIC CHEMISTRY I AND II. 4(2-6) each; I and II, respectively. Prerequisite: Chemistry II. Dr. Colver.

I: The aliphatic hydrocarbons, alcohols, ethers, aldehydes, ketones, acids, esters, amides, and related compounds considered particularly from the standpoint of structure, methods of laboratory and commercial preparation, reactions and uses; special attention to such topics as structural, geometrical, and optical isomerism, and the use of acetoacetic ester in organic synthesis.

II: Structure, methods of laboratory and commercial preparation, reactions and uses of the aromatic compounds, orientating influence of various groups; structure and reactions of the diazonium compounds; the different classes of dyes, the alkaloids, the terpenes, and a few heterocyclic compounds.

*Laboratory.*—I: Preparation, purification, and reactions of one or more typical examples of most of the groups of compounds studied in the classroom. Deposit, \$10.

II: Various preparations that illustrate the reactions characteristic of aromatic compounds; determination of carbon, hydrogen, and nitrogen in pure unknown organic compounds by the combustion method. Deposit, \$10.

223. ORGANIC PREPARATIONS. 1(0-3) to 5(0-15); I. Prerequisite: Organic Chemistry II. Dr. Colver.

Such compounds prepared as give a thorough knowledge of the fundamental principles of synthetic organic chemistry. Deposit, \$10.

224. QUALITATIVE ORGANIC ANALYSIS. 2(0-6); II, when requested by sufficient number. Prerequisite: Course 219. Dr. Colver.



Characteristic reactions of the various classes of organic compounds; class reactions using known compounds; classification and identification of pure, unknown substances and mixtures. Charge, \$10.

225. STEREOISOMERIC AND TAUTOMERIC COMPOUNDS. 2(2-0); II, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Optical isomerism and methods of determining the configuration of the asymmetric carbon atoms of sugar; geometrical isomerism; and keto-enol tautomerism.

226. CARBOCYLIC AND HETEROCYCLIC COMPOUNDS. 2(2-0); II, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Structure, orientation, methods of synthesis, and reactions of benzene, naphthalene, anthracene and derivatives; furane, pyrrol, thiophene, pyridine, quinoline, isoquinoline, 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.



Preparations of diet and the care of experimental animals used in the study of various nutritional problems. Deposit, \$10.

240. ADVANCED QUALITATIVE ANALYSIS. 3(1-6); I, when requested by a sufficient number. Prerequisite: Chemistry II. Dr. Van Winkle.

A systematic study of the properties of the acid and basic elements and their compounds as shown in a detailed study of systematic analysis; the application of chemistry theory to analytical reactions. Deposit, \$10.

241. QUANTITATIVE ANALYSIS. 5(1-12); II 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. Prerequisite: 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 procedures of gravimetric analysis; chemical theory as applied to quantitative reactions. Deposit, \$10.

Course B: General procedures in volumetric analysis; preparation of standard solutions and their uses. Deposit, \$10.

252A. CHEMISTRY OF SOILS AND FERTILIZERS. 2(0-6); I. Prerequisite: Quantitative Analysis I, or equivalent. Dr. Perkins.

The most important chemical methods used in the analysis and investigations of soils and fertilizers. Deposit, \$10.

253A. CHEMISTRY OF CROPS. 2(0-6); II. Prerequisites: Organic Chemistry and Quantitative Analysis I, or equivalent. Dr. Perkins.

The most important chemical methods used in the analysis and investigations of substances present in plants and plant products. Deposit, \$10.

254. DAIRY CHEMISTRY. 3(1-6); I. Prerequisites: Organic Chemistry and Chem. 250. Dr. Whitnah.

Chemical compounds present in milk, butter, cheese, and other dairy products; chemical changes effected by conditions of handling dairy products; a review of literature relating to recent investigational work in dairy chemistry.

*Laboratory.*—The most important chemical methods used in the analysis and investigation of dairy products. Deposit, \$10.

256. INSECTICIDES AND FUNGICIDES. 2(2-0); given when requested by a sufficient number. Prerequisites: Satisfactory courses in organic chemistry and quantitative analysis. Mr. Latshaw.

The manufacture of spray materials; the chemistry involved in mixing, and the theory of their toxic actions.

257. FOOD ANALYSIS. 3(0-9); II 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.

250. **ADVANCED QUANTITATIVE ANALYSIS.** 1 credit for each 3 hrs. of laboratory; I. Prerequisites: Courses 250 and 251. Dr. Brubaker.

Included here, any kind of quantitative chemical work not otherwise designated; a large opportunity for advanced work afforded by the various research and state laboratories. Deposit, \$10.

270. **CHEMISTRY PROBLEMS.** 1 to 5 credits; I, II, and SS.

Individual problems to fulfill the thesis requirements of students in agricultural chemistry, biochemistry, and industrial curricula.

271. **SELECTED TOPICS IN INORGANIC CHEMISTRY.** 2(2-0); II. Prerequisite: A course in physical chemistry. Dr. Lash.

Material from such topics as thermal analysis, temperature measurements, atomic hydrogen, the hydrides, the halogens, corrosion of metals, and the ammonia system.

272. **PHYSICAL CHEMISTRY II.** 3(3-0); II. Prerequisite: A beginning course in physical chemistry 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 discussion upon topics representing the progress of chemical science, chiefly as found in the current journals. The preparation of subjects for presentation at these meetings may be made a part of the credit work of advanced students.

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 non-ferrous metals; Methods of testing for and preventing corrosion.



## FOR GRADUATE CREDIT

301. **CHEMICAL RESEARCH.** Excellent opportunities are offered students to undertake research work in chemistry. Such work is being constantly conducted in the laboratories of the department in connection with the Agricultural and Engineering Experiment Stations. The State Food Laboratory and the laboratories for analysis of feeds and fertilizers are also accessible to students desiring research along such lines. Much emphasis is placed upon research in the department, and all graduate students whose training is adequate are encouraged to participate. Students working out their master's thesis in the Department of Chemistry are assigned to this course. Work is offered in the following lines:

*Agricultural Chemistry.* Dr. King, Mr. Latshaw, and Dr. Perkins.

*Industrial and Engineering Chemistry.* Dr. Brown and Dr. Van Winkle.

*Analytical Chemistry.* Dr. Brubaker and Mr. Latshaw.

*Organic Chemistry.* Dr. Colver and Dr. Barham.

*Biochemistry.* Dr. Hughes, Dr. Tague, Dr. Whitnah, and Dr. Marlow.

*General and Physical Chemistry.* Dr. King, Dr. Hall, Dr. Keith, 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 \$1,060.

### COURSES IN ECONOMICS

#### FOR UNDERGRADUATE CREDIT.

101. **ECONOMICS.** 3(3-0); I, II, and SS. Not open to students who have credit in Agricultural Economics. Dr. Kammeyer, Mr. 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.

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.



122. ECONOMIC GEOGRAPHY. 2(2-0); I and SS. Dr. Holtz.

The major facts and principles relative to the origin, distribution, and development of the industries and commerce of the world.

126. BUSINESS MANAGEMENT. 2(2-0); I, II, and SS. Prerequisite: Economics, or may be taken concurrently. Dr. Kammeyer.

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.

217. BUSINESS FINANCE. 3(3-0); II. Prerequisite: Money and Banking (Econ. 116). 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.

221. INVESTMENTS. 2(2-0); II and SS. Prerequisite: Money and Banking (Econ. 116). Mr. Stewart.

Financial types of investment securities; investment risks; effect of economic trends upon investment values; functions of investment banks; investment policies suitable for various investment classes.

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 merchantile 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.

245. MARKETING. 2(2-0); 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, Condorcet; 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 reference 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 relating to depreciation, good will, intangibles, funds, reserves, inventories, capital accounts, income and its determination, and other special topics.

282. **INCOME-TAX ACCOUNTING.** 2(2-0); II. Given in 1929-'30 and alternate years thereafter. Prerequisite: Advanced Accounting or Cost Accounting. Mr. 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 elementary accounting principles and their application to the home, cafeteria, lunch and tea rooms, dormitories, clubs, hospitals, 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. 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.

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## 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 MOGGIE†  
 Assistant CHAMBERS  
 Assistant LYNES  
 Assistant HEPLER  
 Assistant QUINLAN  
 Assistant NICKELS

The courses in this department have for their controlling purpose the professional training of teachers. Two types of courses are offered: (1) Courses that give the broad, fundamental principles upon which public education is based, and (2) courses that develop technic and skill in school management and the organization of the subject matter of the curricula. All courses are based upon the fact that education supported by public taxation should function in social and vocational efficiency. The department possesses equipment valued at \$5,018.

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 Supervised Practice Teaching.
    - (2) Three hours elected from the Department of Education, and approved by head of department.

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\* Absent on leave, year 1931-'32.

† Temporary appointment.

- c. Credit obtained in college courses in the teaching of 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 Supervised Practice Teaching.

Not more than fifteen hours in any one department will be accepted on transcripts showing only sixty hours of credit, and not more than fifteen 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, 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, three in Educational Psychology, three in Vocational Education, three in Special Methods in Agriculture, and three in Supervised Observation and Teaching.

(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, including the following:

(1) Thirty-four hours in technical economics, as required in the curriculum in Home Economics, and six hours of electives: viz., three hours in Child Welfare, and three hours in Practice Work in Household Management.

(2) Eighteen hours in the Department of Education: viz., three in Psychology, three in Educational Administration, three in Educational Psychology, three in Vocational Education, three in Special Methods in Home Economics, and three in Supervised Observation and Teaching.

b. Valid for three years and may be renewed for life.

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

Psychology A, B and C are parallel courses in introductory psychology. The content of these courses is fundamentally the same, but emphasis differs according to the preparation and needs of the various groups of students as indicated below. Only one of these three courses may be taken for credit.

101. PSYCHOLOGY A. 3(3-0); I, II, and SS. Not open to juniors or seniors, or to those who have credit in courses 102 or 103. Dr. Alm and Mr. Langford.

An introduction to the fundamental facts and principles of general psychology. The physiological and neural basis of behavior; innate and acquired tendencies to reaction; the nature of the learning process and the methods and conditions which favor rapid and effective learning; individual differences as related to vocational and personal efficiency.

102. PSYCHOLOGY B. 3(3-0); I. Not open to students who have credit in courses 101 and 103. Dr. Peterson.

Based on the same facts and principles as course 101, but draws largely from musical material for illustration and application; includes experimental work in the analysis and measurement of musical talent, and bears directly upon the teaching and learning of vocal and instrumental music.

103. PSYCHOLOGY C. 3(3-0); I, II, and SS. Not open to freshmen or sophomores, nor to students who have credit in courses 101 and 102. Dr. Alm and Mr. Langford.

The same general content as course 101, with some additional materials in the application of psychology; more attention given to the methods by which new facts are discovered and interpreted.

105. 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. Miss Helper.

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 A. 3(3-0); I, II, and SS. Prerequisite: General Psychology. Open to freshmen and sophomores only. Miss Helper.

Problems of general method in classroom procedure in grades and junior high school. Required of candidates for three-year certificate renewable for three-year periods.



112. METHODS OF TEACHING B. 3(3-0); I, II, and SS. Prerequisite: General Psychology. Open to juniors and seniors only. Miss Hepler.

Problems of general method in classroom procedure from the high-school viewpoint.

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. SUPERVISED TEACHING IN PHYSICAL EDUCATION. 3 credits; I.  
(See Department of Physical Education, course 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. SUPERVISED TEACHING 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. SUPERVISED OBSERVATION AND TEACHING IN AGRICULTURE. 3 credits; I and II. Prerequisites: Courses 109 and 136. Mr. Davidson.

Three weeks of observation and practice teaching in vocational agriculture classes in the Manhattan high school and other high schools by arrangement; group study of classroom problems; lesson plans and presentation criticized by the College instructor and the vocational teacher in the practice department.

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. SUPERVISED TEACHING IN ART. 3(3-0); I and II.

(See Department of Art, course 146.)

170. APPLIED PSYCHOLOGY. 3(3-0); I or II. Prerequisite: Psychology. Dr. Peterson.

The psychological conditions of personal, industrial, and business efficiency as determined by observation and experiment in such special fields as advertising, salesmanship, employment, scientific management, etc.; use of psychological tests in employment, vocational guidance, etc.

180. 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.

#### 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.

205. THE JUNIOR COLLEGE. 3(3-0); SS. Prerequisite: Educational Administration. Dr. Andrews and the dean of a junior college.

A study of the historical development of the junior college and its place in the American public school system; its curricula and administration; the present-day trends in its development and extension.

206. PHILOSOPHY OF EDUCATION. 3(3-0); II and SS. 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.



207. PROBLEMS OF THE PRINCIPAL. 3(3-0); SS. Prerequisite: Educational Administration. Visiting city superintendents.

A careful survey of the work of the principals of junior and senior high schools.

208. THE PSYCHOLOGY OF CHILDHOOD AND ADOLESCENCE. 3(3-0); I, 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.

209. CHARACTER EDUCATION. 3 credits; in Extension classes. Prerequisites: Psychology and nine hours in Education. Dr. Holton and Dr. Andrews.

A study of the techniques and methods that have been successfully used in character education; a program of character education for the public schools. (Offered through Department of Home Study, Division of College Extension.)

211. MENTAL MEASUREMENTS. 3(3-0); I. Prerequisite: Psychology. Dr. Peterson.

The methods and devices employed and the more significant results so far obtained in the measurement of mental alertness, special aptitudes, and character traits.

212. EDUCATIONAL MEASUREMENTS 3(3-0); I, II, and SS. Prerequisites: General Psychology and Educational Psychology. Dr. Strickland.

The scientific measurement of achievement as distinguished from intelligence testing.

213. ABNORMAL PSYCHOLOGY 3(3-0); II. Prerequisite: Psychology A, B, or C. Dr. 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.

215. PROBLEMS IN PSYCHOLOGY. 1 to 3 credits; I, II, and SS, by appointment. Prerequisite: Superior performance in one or more courses in psychology and general scholarship standing of B or better. Dr. Peterson, Dr. Alm, and Mr. Langford.

Each student studies an individual problem appropriate to his degree of advancement in the field of psychology. A written report is required. The amount of credit depends upon the work done. Enrollment by recommendation of the instructor not later than mid-semester.

216. ADVANCED PSYCHOLOGY. 3(3-0); I or II. Prerequisite: Psychology. Mr. Langford.

Fundamental problems, methods, and interpretations of general psychology.

217. EXPERIMENTAL PSYCHOLOGY. 3(3-0); I or II. Prerequisite: Psychology, A, B, or C. Dr. Peterson.

A few representative experiments in animal and sensorimotor learning, as an introduction to the types of problems encountered and to the basic methods of procedure essential to the analysis of the thought processes; a survey of the experimental literature on the higher mental processes, with special attention to the more objective studies in the experimental analyses of the thought processes.

219. THE CURRICULUM. 3(3-0); I or II, and 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 curriculum examined for its minimum essentials both in the elementary school and in the high school.



221. **EXTENSION METHODS AND PROBLEMS.** 2(2-0); II. Prerequisites: Educational Administration, and Vocational Education A. Dr. Williams and members of the Division of College Extension.

Origin and development of extension work, its aim and purposes, and its relation to other general educational activities; organization and administration of extension work under the Smith-Lever law and the part taken by colleges and the Department of Agriculture; types of extension work conducted by bankers, railroads, manufacturers, and other agencies; and future problems of extension work.

223. **STATISTICAL METHODS APPLIED TO EDUCATION.** 3(3-0); I, II, and SS. Prerequisites: Six hours in education, and junior standing. Not open to students who have credit in Math. 203. Dr. Andrews.

Aims of the course: To organize material and data of educational experience and research for statistical interpretation; to develop skill and confidence in the use of statistical methods; to provide discussions and interpretations of statistical methods employed in scientific studies in education; and to give experience in the computation of statistical constants and develop the ability of graphical representation and interpretation.

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.

235. **THE TECHNIC OF MENTAL TESTING.** 3(1-6); I or II. Prerequisites or parallels: Courses 211 and 223. Dr. Peterson.

Methods of giving and scoring the Stanford Revision of the Binet Scale, with practice under the observation of the instructor until sufficient reliability is secured; the principal standard group tests of intelligence and special abilities analyzed and finally given and scored under observation; choice of tests for specific purposes; tabulation and interpretation of scores.

237. **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.

238. **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; a review of the better research contributions.

240. **SOCIAL PSYCHOLOGY.** 3(3-0); II. Prerequisite: Psychology A, B, or C. Mr. Langford.

The reactions of individuals to the behavior of their fellow beings; the genesis and motivation of group habits, such as language, money, customs, conventions, fashions, laws, etc., and of group norms of capacity and achievement as they affect the relations of social classes, nationalities, and races.

243. **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 achievement, etc.

245. **THE JUNIOR HIGH SCHOOL.** 3(3-0); SS. Prerequisites: Six semester hours of Psychology and Education. Dr. Andrews.

Educational and social bases of the intermediate school, its method of

teaching, its administration and discipline; the curriculum of the junior high school and its articulation with the elementary school and the senior high school.

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.

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.)

253. ADMINISTRATION AND SUPERVISION OF SECONDARY SCHOOLS. 2(2-0); 2d SS. Prerequisites: Psychology, Educational Administration, and Educational Psychology. Dr. Williams.

Problems of organization, administration, and supervision covering the complete program of an administrative head of a school system in a small city. (Designed for principals of rural high schools and superintendents of small city systems.)

255. THE PROJECT METHOD IN AGRICULTURAL EDUCATION. 2(2-0); 2d SS. Prerequisites: Education 136 and 161. Mr. Davidson.

The project as a teaching device, with intensive treatment of project values, project analysis, project accounting, project supervision, project types, project results, project records, project reports, etc. The course is conducted on the problem basis.

257. ORGANIZATION AND CONDUCT OF CLASS PROJECTS. 2 credits; 2d SS. Prerequisites: Education 106 and 125. Mr. Davidson.

Fundamentals and principles on which productive class projects should be organized. Research and field work in class project study will be undertaken.

258. ADMINISTRATION AND SUPERVISION OF VOCATIONAL EDUCATION. 2(2-0); 2d SS. Prerequisites: Educational Administration, Psychology, and Educational Psychology. Dr. Williams.

Objectives, curriculum organization and content, administrative and supervisory problems from the viewpoint of the city superintendent—leadership needs which must be met in a school system offering vocational education. The problem basis of treatment is used.

262. COMMUNITY PROBLEMS IN VOCATIONAL AGRICULTURE. 2 credits, 2d SS. Prerequisites: Dr. Williams.

Methods, organization, and conduct of club work, junior project work, class projects, and community projects in general—a course conducted on the problem basis and designed specifically for teachers, supervisors, and directors of agricultural work.

263. PROBLEMS IN EVENING SCHOOL CLASSES. Class, 2 hours, daily; 2 credits; 2d SS. Open to college graduates who have taught one year of vocational agriculture. Dr. Williams or Mr. Davidson.

Problems of organization, curriculum, and methods of teaching evening schools and classes sponsored by the national vocational education act. Designed for teachers in service.

264. ORGANIZATION PROBLEMS IN TEACHING FARM MECHANICS. Class, 2 hours, daily; 2 credits; 2d SS. Prerequisites: Educ. 136 and 161. Mr. Bradford.

An analysis of the farm mechanics' course of study; needs and interests of boys, learning difficulties, skills and technical knowledge required. Correlation with agriculture. Application of laws of learning to the teaching process. Determining objectives.

265. PROBLEMS IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 5 credits; I, II, and SS. Prerequisite: Senior or graduate standing. Dr. Justin, dean of the Division of Home Economics, and Mrs. Rust.



This course permits opportunity for study of problems of organization and administration in this field.

268. 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.

271. 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.

274. 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.

277. 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.

280. 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.

284. 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.

288. 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.

#### FOR GRADUATE CREDIT

301, 302. EDUCATIONAL SEMINAR I AND II. 4 credits for both (2-0); I, II, and SS, respectively. Prerequisites: Psychology, Educational Psychology, and Educational Administration. Dr. Holton and other members of the graduate faculty.

A topic for special investigation chosen by each member of the seminar early in the term; preliminary reports, and the final results of the study embodied in a carefully prepared report.



306. EDUCATIONAL ADMINISTRATION C. 3(3-0); I, II, and SS. Prerequisite: Educational Administration A, or 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.

307. HISTORY OF EDUCATION B. 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.

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.

310A. PSYCHOLOGY OF TEACHING AND LEARNING. 3(3-0); I or II. Dr. Peterson.

An analysis of the various forms of learning and of the conditions favorable to the rapid development and effective functioning of knowledge, skills, attitudes, and purposes.

313. RESEARCH IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 10 credits; I, II, and SS. Prerequisite: Graduate standing. Dr. Justin, dean of the Division of Home Economics, and Mrs. Rust.

Individual research problems in phases of organization and administration for home economics. May be chosen as the basis for thesis for the master's degree. The nature of the problem will depend upon the student's major interest.

315. SUPERVISION IN HOME ECONOMICS. 2 credits; I, II, and SS, by appointment. Prerequisites: Psychology, Special Methods in Teaching Home Economics, and experience in teaching home economics. Mrs. Rust.

Problems met by a supervisor or director of home economics in the public schools; standardization of work; relation of supervisor to teacher; modernization of plant and equipment; course of study, etc.

320. RESEARCH IN PSYCHOLOGY. 1 to 10 credits; I and II. Members of Graduate Faculty.

Individual research problems in the field of psychology.

322. RESEARCH IN STATISTICAL METHODS APPLIED TO EDUCATION. 3(3-0); 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 RELIGIOUS EDUCATION

The purpose of courses in religious education is twofold: To train students in the method of establishing social control through the implanting and careful nurture of ideals; and to serve as a basis for preministerial or prereligious vocational training. (Not accepted as part of the requirements in education for a teacher's certificate.)

#### FOR UNDERGRADUATE CREDIT

180. **RELIGIOUS EDUCATION A.** 2(2-0); I. Dr. Holtz.

The origin of the Bible; the Bible as a social inheritance; Old Testament history with special emphasis upon the social message of the prophets; the New Testament with attention given to the social teachings of Christ.

182. **RELIGIOUS EDUCATION B.** 2(2-0); II. Dr. Holtz.

The fundamental instincts; the physiological and psychological characteristics of the various stages of development; and the best methods of moral and religious instruction suited to these stages.

184. **RELIGIOUS EDUCATION C.** 2(2-0); II. Prerequisite: Psychology. Dr. Holtz.

The recognized principles underlying modern religious education; organization of Sunday schools, the subject matter best adapted to each department of the organization, and the application of modern methods of teaching.

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## 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 DUFF  
 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 \$1,851.



## 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. Duff, 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. Duff, 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. (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. BUSINESS ENGLISH 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 written.

128. ORAL ENGLISH. 3(3-0); I, II, and SS. Prerequisite: College Rhetoric I. Mr. Rockey and Mr. Matthews.

The principles of oral composition as applied to conversation and informal discussion; the correction of the grammatical faults of everyday speech; the application of rhetorical principles to informal speech and discussion. Subjects selected from the fields of painting, politics, music, and literature.

134. METHODS OF TEACHING ENGLISH. 3(3-0); II and SS. Prerequisite: College Rhetoric II. Mr. Davis, Miss Rice, and Miss Elcock.

The course of study, the application of English instruction to life needs, and definite methods of motivating English instruction especially considered. (For those called upon to teach English in connection with the applied sciences.)

137. AGRICULTURAL ENGLISH. 3(3-0); I. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Conover, Mr. Matthews, and Mr. Faulkner.

A brief review of the composition essentials, business correspondence, bulletin writing, the organization of short business talks, the principles of farm advertising; and writing the problems that confront the county agent, the high-school teacher of agriculture, and the farm manager.

140. LITERATURE FROM THE READERS. 3(3-0); SS. Miss Bower, Miss Aberle, and Mrs. Parker.

Reading considered both as a fundamental means of acquiring knowledge and as a stepping stone to the appreciation of literature. (Planned to meet the needs of teachers of rural and graded schools.)

143. ADVANCED GRAMMAR. 3(3-0); SS. Miss Bower, Miss Aberle, and Mrs. Parker.

A systematic study of grammar with emphasis on English etymology, inflections, syntax, and modern usage in both England and America. Especially those details of grammar closely related to the use of English as a tool are stressed.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT

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.

251, 252. THE SHORT STORY I AND II. 3(3-0) each; I and II respectively. Prerequisites: For I, English Literature; for II, The Short Story I. Miss Rice.

I: The world's best short stories; practice in writing sketches and short stories; special emphasis on the elements of the story—plot, setting, action, and characterization.

II: Special stress on the preparation of the short story for publication; the short story in America, with special attention to types, characteristics, and tendencies; standards set by the leading magazines; market problems.

## COURSES IN ENGLISH LITERATURE

## FOR UNDERGRADUATE CREDIT

172. ENGLISH LITERATURE. 3(3-0); I, II, and SS. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Miss Sturmer, Miss Elcock, Mr. Breeden, Mr. Callahan, Miss Garvey, Mrs. Duff, 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. Duff, 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

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. Advanced students with acceptable fundamental training may, with the approval of the head of the department, undertake original investigation in some definitely prescribed field of English literature or applied English. Such work must be pursued under the direct supervision of some member of the faculty of the department, and the final results may be used to fulfill the thesis requirements for the master's degree. Students doing research in English will be required to give evidence of approved training in the subject and to have a broad general knowledge of English literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Sturmer, and Miss Elcock.

## FOR GRADUATE CREDIT

Classes in courses listed under the graduate group are organized whenever the demand for them is sufficient. When the demand does not justify the organization of a class, the work may be arranged for by appointment. Special arrangements for work should be made with the head of the department.

301, 302. HISTORY OF THE ENGLISH LANGUAGE I AND II. 2(2-0) each; I and II, respectively. Prerequisite: History of English Literature. Mr. Conover and Miss Sturmer.

I: The origin and development of the English language, with special stress on Old English.

II: A continuation of course 301, with special emphasis on Middle English and Modern English.

304. RESEARCH IN APPLIED ENGLISH. 2(2-0); II. Prerequisite: History of English Literature. Mr. Davis.

Individual assignments in fundamental fields of research in applied English, an original investigation, and an acceptable report thereon being required.

315. RESEARCH IN THE LITERATURE OF INDUSTRY. 2(2-0); I. Prerequisite: History of English Literature. Mr. Davis and Mr. Conover.

This is an investigation and research course based on a careful study of the development of the distinctive literature of industry.

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## 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. An air-conditioning machine in the insectary adds materially to the possibilities for experimental work. A field station with all the necessary equipment provides means for the study of insects under normal field conditions.

The department owns equipment valued at \$31,179.

## COURSES IN ENTOMOLOGY

### FOR UNDERGRADUATE CREDIT

101. GENERAL ENTOMOLOGY. 3(3-0) or 4(3-3); I. Dr. Smith.

The adaptations of insects to their environment; the life histories, habits, classification and relationship of insects to plants and animals. An introductory, basic, and fundamental study of insects from the biological and cultural viewpoint, of especial value to teachers and writers in the field of biology. Students expecting to elect 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, \$1.

116. MILLING ENTOMOLOGY. 1(1-0); I. Offered 1930-'31 and alternate years thereafter. Mr. Dean.

Insect pests of flour mills, elevators, granaries, warehouses, and bakeries and standard methods of dealing with them; inspection trips to flour mills and warehouses.

### FOR GRADUATE AND UNDERGRADUATE CREDIT

201. HORTICULTURAL ENTOMOLOGY. 2(2-0); I. Prerequisite: General Economic Entomology. 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. 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); 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. 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. 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: General Economic Entomology. 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 and SS. 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. Prerequisite: 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 research in economic entomology, Entomology 203, 206, and 207. 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. Byrne.

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 morphology, classification, and identification of invertebrate fossils. 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.

#### 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 \$1,670 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.

103. **AMERICAN HISTORY LECTURES.** 0(2-0); SS. Mr. Price.

A series of lectures on American history; no recitations and no examinations.

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. 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. Intended to supplement course 105 or 204. 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.

207. LATIN AMERICA. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Six credits of college history. Mr. James.

History, government, and industrial and social conditions of Mexico, Central America, and the South American nations; the interrelations of each of these and the United States; particular attention given to contemporary Latin America.

223. MODERN EUROPE II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 115 or equivalent. Mr. Parrish.

Evolution of the modern European nations since 1814, with special attention to political organization, industrial development and colonial expansion; political problems and social and economic adjustments due to the Great War.

224. TWENTIETH CENTURY EUROPE. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 223, 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 role 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, class-room 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. 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. Mr. Iles.

The leading features, especially with regard to administration, of certain European governments such as England, France, and Germany, and a comparison of essential feature with government in the United States. (A supplement to the course in American Government.)

256. INTERNATIONAL LAW. 2(2-0); 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.

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## Industrial Journalism and Printing

Professor ROGERS\*  
 Professor KEITH  
 Associate Professor CHARLES  
 Assistant Professor AMOS

Assistant Professor BOUGHNER §  
 Assistant Professor HOSTETTER †  
 Instructor THACKREY  
 Instructor HEMPHILL

The work in industrial journalism and printing is designed to accomplish two purposes—the preparation of students in other fields to do occasional writing for newspapers and other periodicals on subjects of special interest; and the training of students fundamentally interested in journalism for positions on farm journals, newspapers and other publications, particularly where writing on agriculture and other industrial subjects is in demand. The instruction considers the requirements of newspapers, agricultural papers, trade publications, and general magazines, and the ethical problems of the profession of journalism. *The Kansas Industrialist*, the official paper of the College, is under the editorial and mechanical direction of the department. The office of *The Kansas State Collegian*, the student semiweekly newspaper, is in the department practice room. *The Brown Bull*, a humorous magazine, is published by students in the department. Students write also for general newspapers, farm journals, and magazines.

Attention is given to the mechanical side of the profession in the instruction in printing, which is required of all students taking the curriculum in industrial journalism. Printing has been taught in the institution continuously since 1873—the longest period during which instruction in the subject has been given in any American college.

The equipment for instruction in journalism and printing is that of a practical publishing and printing plant. This department owns equipment valued at \$12,824.

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.

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\* Absent on leave, year 1931-'32. § Resigned January 31, 1932.

† Beginning February 1, 1932.

**COURSES IN PRINTING**

## FOR UNDERGRADUATE CREDIT

101. PRINCIPLES OF TYPOGRAPHY. 3(2-3); I and II. Mr. Amos.

The case, the point system, and the measurement of type and stock; the history of printing; development of the various typographic styles; practice in setting straight matter, with emphasis on accuracy. Type faces and the typography of advertisements and head display; principles of effective make-up. 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, press services and syndicates, trade and business press, agricultural press, women in journalism, the field of advertising, circulation, magazines, free-lance writing, publicity, the printing trades, 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 Hemphill.

Methods of obtaining news of various types, the writing of the lead, and the general styles of the news story. Journalism fee charged.

160. AGRICULTURAL JOURNALISM. 3(2-3); I and II. Mr. Charles.

The course is intended to supply sufficient knowledge of the principles of news writing as applied to agriculture to enable students in agriculture to become occasional contributors to newspapers and farm journals. Much practice given in agricultural writing. Journalism fee charged.



161. INDUSTRIAL WRITING. 2(2-0); I. Prerequisite: Course 151. Mr. Thackrey and Miss Hemphill.

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. Mrs. Boughner.

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. Mrs. Boughner.

A course for women students in news and feature writing for women's pages and women's magazines and consideration of specialized fields for the woman writer. Journalism fee charged.

179. PRINCIPLES OF ADVERTISING. 3(3-0); I and II. Prerequisites: For industrial journalism students, course 161; for commerce students, Written and Oral Salesmanship. Mr. Keith.

Study of the goods to be advertised, analysis of the market, psychology of advertising, preparation of advertising copy, and other important matters; application of the principles involved.

181. THE RURAL PRESS. 2(2-0); I and II. Prerequisite; Course 151. Mr. Charles.

Nature and needs of the community newspaper, with emphasis on its presentation of the agriculture and rural life in its field; actual writing of news stories and items gathered on the campus for publication in Kansas community newspapers. 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

220, 221. ADVERTISING PRACTICE I AND II. 2(2-0) each; II and I respectively. Prerequisites: For I, course 179; for II, course 220. Mrs. Boughner.

I: Practice in advertising writing, with special attention to copy and display problems; practical problems in the advertising of student activities and of local merchants; actual commercial work.

II: Making of layouts and consideration of advertising production methods such as art work, typography, engraving processes.

251A. CIRCULATION AND ADVERTISING PROMOTION. 2(2-0); I. Prerequisite: Course 179 or equivalent. Mr. Keith.

Building up of circulation of periodical publications; soliciting of advertising; premiums and other plans for increasing circulation; the advertising

agency, circulation analysis, and the fixing of advertising rates. Journalism fee charged.

254. COPY READING. 2(0-6); II. Prerequisite: Course 163. Mrs. Boughner, Mr. Thackrey, and Miss Hemphill.

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. Mrs. Boughner.

The writing of editorials suitable for farm papers, trade papers, and newspapers; the shaping of editorial policies. Journalism fee charged.

260. ETHICS OF JOURNALISM. 2(2-0); II. Prerequisite: Course 255. Mr. Thackrey.

The ethics of journalism as exemplified in the use of contributed matter in the work of the reporter or staff writer, in the editorial conduct of the paper, and in the handling of circulation and advertising; federal and state laws relating to periodical publications, to advertising, to libel, and to author's rights.

265. MATERIALS OF JOURNALISM. 2(2-0); I. Mr. 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, Mr. Charles, and Mrs. Boughner.

The matter of the course is varied to suit the needs and desires of the students, emphasis being laid upon such types of magazine writing as members of the class wish to practice. Journalism fee charged.

274. HISTORY OF JOURNALISM. 2(2-0); I. Prerequisite: One semester of college American History. Mrs. Boughner.

The history of journalism from its beginning and the history of printing as far as this is concerned with periodical publications.

278. JOURNALISM SURVEYS. 2(0-6); II. Mr. Rogers and Mrs. Boughner.

Careful investigation of the periodical reading matter of communities; tabulation of information obtained; relation of the reading matter to the industrial, economic, social and moral life of the communities.

282. COLUMN CONDUCTING. 2(2-0); II, when requested by a sufficient number. Mr. Davis, of the Department of English.

The conducting of the so-called column, humorous or semiserious; writing paragraphs, light verse, and similar material, with stress on practice in writing humor.

287. CURRENT PERIODICALS. 3(3-0); II. Mrs. Boughner.

The material contained by current periodicals of various types, and the nature of its appeal to the reader.

#### FOR GRADUATE CREDIT

351. RESEARCH IN INDUSTRIAL JOURNALISM. 2 to 5 credits: I and II. Mr. Rogers.

Several courses embodying creative literary work or detailed research in specialized journalism are arranged to meet the specific needs and desires of the individual graduate students.

## Library Economics

Librarian SMITH  
Associate Librarian DERBY  
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 should tend to increase largely his efficiency in study throughout the entire course.

The books and pamphlets in the library are valued at \$302,750; other equipment has a value of \$59,386.

### 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.

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## Mathematics

Professor REMICK  
Professor WHITE  
Professor STRATTON  
Associate Professor HYDE  
Associate Professor LEWIS  
Associate Professor LYONS\*

Assistant Professor JAMES  
Assistant Professor MOSSMAN  
Assistant Professor HOLROYD  
Instructor OLLIVIER  
Instructor DAUGHERTY  
Assistant KELLEY

In an institution that stands as an exponent of the industrial type of education, mathematics should occupy an important place. Training in this exact science is valuable not only for its own sake but also on account of its manifold applications. On this basis the courses in mathematics are offered primarily with the following ends in view: (1) The attainment of mental power and accuracy in the interest both of general culture and special application; (2) the acquirement of facts and processes that will provide the student with an indispensable tool for further scientific and technical study.

As several of the curricula of the College are formulated on the assumption that a half-year of solid geometry will have been taken in high school, classes in this subject are provided for students who are deficient in this respect. College credit on electives is allowed for this work.

The equipment owned by this department is valued at \$810.

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\* Absent on leave, year 1931-'32.



## 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 Holyroyd, Mr. Janes, Miss Mossman, Mr. Ollivier, Mr. Daugherty, and Mr. Kelley.

Functions of acute right triangles, goniometry, oblique triangles, practical problems.

102. SOLID GEOMETRY. 2(2-0); I, II, and SS. Prerequisites: Plane Geometry and one year of high-school algebra. Mr. Lewis, Mr. Janes, Miss Holroyd, Mr. Ollivier, Mr. Daugherty, and Mr. Kelley.

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, Mr. Ollivier 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 Holyroyd, Mr. Janes, Miss Mossman, Mr. Ollivier, Mr. Daugherty, and Mr. Kelley.

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, Miss Holroyd, and Mr. Ollivier.

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. SPECIAL METHODS IN ARITHMETIC. 2(2-0); SS. Miss Holroyd.

Best methods of presenting the various topics; use of standardized and practice tests; supplementary work; best method of adapting the state test to the minds of the pupils, etc.

126. ELEMENTS OF STATISTICS. 3(3-0); I 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 elementary principles used in analysis of statistical data.

## 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, 216, and 220 are offered each year.

201. DIFFERENTIAL EQUATIONS. 3(3-0); I. Prerequisite: Calculus II. Mr. Remick.

The various standard types of differential equations, with the usual applications.

203. THEORY OF STATISTICS. 3(3-0); II. Prerequisite: Elements of Statistics, or equivalent. Mr. White.

The theory of probability applied to statistical problems; statistical curves, correlation theory, curve fitting, and problems of random sampling; actual practice with data from biology, agronomy, physics, etc.

204. METHOD OF LEAST SQUARES AND THEORY OF MEASUREMENT. 2(2-0); II. Prerequisite: Calculus II. Mr. Remick and Mr. White.

The law of errors based on the theory of probability and the probability curve; adjustment of observations by the method of least squares; development of precision measures; distribution of errors; and Gauss's method of substitution in the solution of normal equation.

205. CALCULUS I. 5(5-0); I, II, and SS. Open for only two hours credit to students who have credit in Math. 119. Prerequisite: Plane Analytical Geometry. Mr. Remick, Mr. White, 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 statement of some of the more common types of differential equations likely to be met in engineering applications.

207. SOLID ANALYTICAL GEOMETRY. 3(3-0); II. Prerequisites: Courses 110 and 206. Mr. White.

Coördinates of points in space and their transformation involving discussion of lines and planes; standard types of quadratic surfaces, their classification and principal properties.

210. ADVANCED CALCULUS I. 3(3-0); I. Prerequisite: Calculus II. Mr. White and Mr. Lyons.

Special topics in integral calculus, including various methods of integrating elementary forms, definite integrals with attention to gamma and beta functions, and applications to lengths and areas.

213. ADVANCED CALCULUS II. 3(3-0); II. Prerequisite: Course 210. Mr. White and Mr. Lyons.

Continuation of course 210, including further application to geometry and mechanics, a treatment of line, surface, and space integrals, and a discussion of elliptic integrals.

216. THEORY OF EQUATIONS. 3(3-0); I. Prerequisite: Calculus II. Mr. Remick.

The elements of the classical theory including the general cubic and quartic equation and the complete solution of numerical equations; discussion of symmetric functions, resultants, and discriminants.

220. 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.

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.

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. **MATHEMATICAL RESEARCH.** Credit and hours of work arranged in consultation with the head of the department; I and II. Required of all candidates for the master's degree whose major work is in the Department of Mathematics.



## Military Science and Tactics

Professor 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 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.  
 Assistant Professor MARSHALL, First Lieut. Inf., U. S. A.  
 Military Property Custodian CLAEREN, Major D. E. O.  
 Instructor COFFEE, First Sergeant C. A. C., U. S. A.  
 Instructor ALLEN, Staff Sergeant D. E. M. L., U. S. A.  
 Instructor PUGH, Sergeant Inf., U. S. A.  
 Instructor WILSON, Sergeant C. A. C., U. S. A.

Since this College is one of the beneficiaries of the act of Congress of 1862, military tactics is required in the College curricula. All male students 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 machanic 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 \$3,154. 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 Lieut. Marshall.

(a) *Practical*. Physical drills, infantry drills (close and extended order).

(b) *Theoretical*. Military courtesy and discipline, national defense policy, infantry drills.

102A. INFANTRY II. 1(0-3); II. Prerequisite, Course 101A. Capt. Swift, Capt. Ryder, and Lieut. Marshall.

(a) *Practical*. Infantry drills (close and extended order), rifle marksmanship.

(b) *Theoretical*. Rifle marksmanship, military courtesy and customs, military hygiene and first aid, scouting and patrolling.

103A. INFANTRY III. 1(0-3); I. Prerequisite: Course 102A. Lieut. Marshall.

(a) *Practical*. Acting as instructors of freshmen in infantry drills.

(b) *Theoretical*. Infantry drills (close and extended order), combat principles (squad), ceremonies.

104A. INFANTRY IV. 1(0-3); II. Prerequisite: Course 103A. Lieut. Marshall.

(a) *Practical*. Automatic rifle firing, musketry problems, scouting and patrolling. Acting as instructors of freshmen in infantry drills.

(b) *Theoretical*. Automatic rifle, scouting and patrolling, musketry.

ADVANCED COURSE, INFANTRY

109. INFANTRY V. 3(2-3); I. Prerequisite: Infantry IV. Captain 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 materiel, 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 materiel, motor transportation, command and leadership, orientation.

(b) *Theoretical*. Military law, motor transportation, orientation.

120. ARTILLERY VIII. 3(2-3); II. Prerequisite: Artillery VII. Maj. Humphreys.

(a) *Practical*. Section (a) of course 119; gunnery.

(b) *Theoretical*. Tactical employment of artillery, field engineering, administration and supply, artillery materiel, military history and policy.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year, and is held normally at 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(0-1); 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 inspection, organization and administration (continued), résumé of entire course.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year, and is held normally at Fort Snelling, Minn.

## Modern Languages

Professor CORTELYOU  
 Professor LIMPER  
 Associate Professor CRITTENDEN

Assistant Professor PETTIS  
 Instructor BURNS  
 Assistant CLAMMER\*

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 \$655.

### 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, Dr. Limper, and Miss Clammer. 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; German conversation based on the text read.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT

201. GERMAN SHORT STORIES. 3(3-0); II, when requested by a sufficient number. 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.

226. GERMAN CLASSICS. 3(3-0); I, when requested by a sufficient number. Dr. Cortelyou.

An introduction to the German classics.

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.

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\* Appointed for the year 1931-'32.



**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, and Racine.

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, and Rostand.

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.

**COURSES IN SPANISH**

## FOR UNDERGRADUATE CREDIT

176, 177. SPANISH I AND II. 3(3-0) each; I, II, and SS, each. Prerequisite: For II, I or one year of high-school Spanish. Miss Crittenden and Miss Burns.

The fundamentals of Spanish grammar, stress on training to understand spoken Spanish.

180. SPANISH READINGS. 3(3-0); I, II, and SS. Prerequisite: Spanish II, or equivalent. Miss Crittenden and Miss Burns.

Readings from such representative Spanish authors as Alarcón, Padre Isla, and Martinez Sierra.

195A. SPANISH CONVERSATION. 3(3-0); I. Prerequisite: Spanish Readings or equivalent. Miss Crittenden and Miss Burns.

Purpose, to develop an ability to speak Spanish and to understand the spoken language.

## FOR GRADUATE AND UNDERGRADUATE CREDIT

272. SPANISH SHORT STORIES. 3(3-0); I and II, by appointment. Prerequisite: Spanish Readings. Miss Crittenden and Miss Burns.

Stories from the most eminent of modern Spanish authors, such as Béquér, 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.

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## 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  
 Instructor GROSSMANN  
 Instructor GOERWITZ

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 \$23,626.

## 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.

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 practical 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 technic 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.

### THEORETICAL COURSES IN MUSIC

The aim of theoretical courses is to give the student an intelligent conception of music through the study of its historical development and scientific construction.

#### FOR UNDERGRADUATE CREDIT

101, 102. HARMONY I AND II. 2(2-0) each; I, II, and SS. Prerequisite: Music Fundamentals or equivalent. Mr. 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. Downey.

Aim of this course: To give definite knowledge of each of the musical periods, the style of music peculiar to each, and musical contact with the great personalities in music.

114. HISTORY AND APPRECIATION OF MUSIC. 3(3-0); SS.

A condensation of courses 112 and 113.

116. MUSIC FUNDAMENTALS. 1(2-0); I, II, and SS. Mr. Stratton.

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. Downey.

Practical training in essentials of good conducting, including the correct method of indicating all forms of rhythm, the seating arrangements of bands, orchestras, and choruses, and a practical illustration of the use of this information in the various ensemble organizations of the College.

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 and Mr. Martin.

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.  $\frac{1}{2}$ (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.

### APPLIED COURSES IN 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 Grossmann.

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.  $\frac{1}{2}$ (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.  $\frac{1}{2}$ (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 Grossmann.

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.  $\frac{1}{2}$ (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.  $\frac{1}{2}$ (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.

FEEES IN MUSIC

COURSE	GRADATION OF TEACHERS							
	1	2	3	4	5	6	7	8
Two lessons each week for a semester:								
Piano.....	..	\$40	\$38	\$36	\$34	\$34*	\$28*	\$24†
Voice.....	\$46	40	38	36	34*	..	28*	24†
Violin.....	..	40	..	..	34*	32	28*	24†
Organ.....	..	40	..	..	..	..	..	..
Other orchestral instruments.....	..	40	..	..	34*	..	28*	24†
One lesson each week for a semester:								
Piano.....	..	22	21	20	19	19*	16*	14†
Voice.....	\$25	22	21	20	19*	..	16*	14†
Violin.....	..	22	..	..	19*	18	16*	14†
Organ.....	..	22	..	..	..	..	..	..
Other orchestral instruments.....	..	22	..	..	19*	..	16*	14†
Piano ensemble—\$2 a semester.								
Orchestral Instruments I to VIII—\$2 a semester.								

Physical Education and Athletics

Professor AHEARN  
 Professor McMILLIN  
 Professor SAUM  
 Professor WASHBURN  
 Assistant Professor CORSAUT  
 Assistant Professor ROOT

Instructor GEYER  
 Instructor HAYLETT  
 Instructor MOLL  
 Assistant MAYTUM  
 Assistant MYERS  
 Mr. 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 \$9,867.

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.

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.

\* Fees for children. † Student assistants' fees.

The work of the department is based largely upon a physical examination given each student when he enters upon the work of the department. All students, whether taking work in the department or not, are entitled to receive a physical examination and advice as to their physical condition.

A diagnosis is made of the vital organs to ascertain their functional condition, and a complete inspection of the whole body is made to detect any weakness or deformity that may exist. Based upon the information thus obtained, advice is given and work assigned to students in accordance with their physical needs, tastes, and capabilities. All candidates for athletic teams are expected to pass a thorough physical examination.

Members of men's varsity and freshman athletic team squads may substitute such athletic work for the regular class work and will receive full semester credit for the work, provided they report regularly and for the full season of such sport.

## COURSES IN PHYSICAL EDUCATION

### FOR UNDERGRADUATE CREDIT—MEN.

103, 104, 105, 106. PHYSICAL EDUCATION M. R(0-2) each semester of freshman and sophomore years. Mr. Washburn, Mr. Corsaut, Mr. Root, and Mr. Moll.

Personal hygiene and social problems; marching, calisthenics, apparatus and games, selected with the object of obtaining the best hygienic, educational and recreative results for the student.

The following activities may be elected by students in place of the gymnasium work: (a) Swimming: Beginning, advanced, and Red Cross life-saving. (Beginning swimming is a prerequisite for advanced swimming and for Red Cross life-saving. Students must pass a preliminary test before entering the Red Cross life-saving class unless they have passed the tests given in the advanced swimming class.) (b) Boxing, (c) Wrestling, and (d) Corrective Gymnastics. Deposit, \$3 each semester.

109. APPARATUS. 1(0-3); I. 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-1. 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. Corsaut.

The rules, technic of basket shooting, foul throwing, catching and passing, dribbling, reverse turn, different styles of play, offense, defense, team work, selection of players, training and equipment. Deposit, \$3.

132. **BOXING.** 1(0-3); 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. Corsaut.

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.

Interpretative 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 Geyer.  
Theory and practice of gymnastics. Deposit, \$2.50.

157B. GENERAL TECHNIC II. 2(1-3); II. Miss Maytum.  
Theory and practice of child rhythms and folk dancing. Deposit, \$2.50.

157C. GENERAL TECHNIC III. 2(1-3); I. Miss Saum and Miss Geyer.  
Theory and practice of hockey, soccer, and volley ball. Deposit, \$2.50.

157D. GENERAL TECHNIC IV. 2(1-3); II. Miss Saum and Miss Geyer.  
Theory and practice of baseball, and field and track. Deposit, \$2.50.

157E. GENERAL TECHNIC V. 2(1-3); I. Miss Patterson.  
Theory and practice of tennis, pyramids, stunts, and tumbling. Deposit, \$2.50.

157F. GENERAL TECHNIC VI. 2(1-3); II. Miss Geyer.  
Methods of teaching basket ball, gymnastics, and archery. Deposit, \$2.50.

157G. GENERAL TECHNIC VII. 2(1-3); I. Miss Saum.  
Methods of teaching swimming. Deposit, \$2.50.

157H. GENERAL TECHNIC VIII. 2(1-3); II. Miss Maytum.  
Methods of teaching natural dancing. Deposit, \$2.50.

160. FOLK DANCING I. 1(0-3); I. Prerequisites: Courses 151A to 154. Miss Patterson.

Singing games for gymnasium, classroom, and playground; selected and graded list of simple folk dances. Material adapted for use in elementary schools. Deposit, \$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. PLAY GROUND 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); I. Prerequisite: Human Anatomy (Zoöl. 123). Miss Geyer.

The mechanics of movement; elemental body movements analyzed and principles involved applied to the teaching of physical education.

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. SUPERVISED TEACHING OF 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  
 Assistant Professor HARTEL

Assistant Professor CHAPIN  
 Assistant Professor MAXWELL  
 Assistant Professor AVERY  
 Assistant Professor HUDIBURG  
 Instructor BRANDHORST

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 \$33,552.

### 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.

Chemical and physical principles involved in photography; practice in making good negatives and prints. Deposit, \$3.

130. WIRELESS TELEPHONY. 2(1-3); I. Mr. Lyon.

The most efficient types of receiving and transmission sets, fundamental principles of electric waves, the most important factors in the erection of a good plant.

*Laboratory.*—Various radio circuits assembled by the student from standard parts and tried out for their transmitting and receiving properties. Charge, \$3

133A. METEOROLOGY. 3(3-0); II. Mr. Hamilton and Mr. Raburn.

Weather phenomena and the underlying principles of weather forecasting; factors that fix the climate of Kansas and of the United States; applications of weather to agriculture and the teaching of general science and physiography.

134. AGRICULTURAL PHYSICS. 3(3-0); I. Mr. Brackett.

Fundamental principles of physics as related to agriculture. (For students in agriculture who enter without high-school physics.)

135, 140. GENERAL PHYSICS I and II. 4(3-3); I and II, 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.

\* Absent on leave, year 1931-'32.



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.

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.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT

203. LABORATORY TECHNIC. 2(0-6); I. Prerequisite: College Physics. Mr. Floyd, Mr. Brackett, and Mr. Hudiburg.

Glass blowing, cutting, grinding, polishing, and cementing; metal filing, soldering, drilling, and brazing; and making a set of punches, reamers, and cold chisels. In certain cases, special problems may be undertaken at a cost covering the raw material. Deposit, \$3.

213. ACOUSTICS. 1(1-0); I. Prerequisite: College Physics II. Mr. Floyd and Mr. Brackett.

Acoustic properties of buildings; architectural defects which give rise to poor acoustics; special methods to avoid such troubles in construction of buildings or to correct them in constructed buildings.

220. MOLECULAR PHYSICS AND HEAT. 3(2-3); I. Prerequisite: One year of college physics. Mr. Floyd, 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. Hamilton and Mr. Floyd.

Lectures, library work, and demonstrations dealing with pitch, loudness, quality and 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. Raburn and Mr. Floyd.

Theory and use of the spectroscope and spectrometer as instruments for identifying elements or their compounds when rendered incandescent, by means of their characteristic spectra or definite wave lengths.

*Laboratory.*—Calibration of prisms and gratings for ready use in chemical laboratories; ample training in measuring wave lengths and in identifying the spectra of many substances.

231. OPTICS. 3(2-3); II. Prerequisite: One year of college physics. Mr. Hamilton, 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. Hamilton and Mr. Raburn.

Nature of the electron and its behavior in electric and magnetic fields; temperature effects and behavior of the electron in cathode tubes using a hot cathode; historical development of methods for determining mass and velocity of electrons; nature and effects of the various rays.

235. STORAGE BATTERIES. 2(1-3); II. Prerequisites: Physics and Chemistry. Mr. Hamilton, Mr. Floyd, and Mr. Maxwell.

History and development of the storage cell, lead and other types of cells; characteristics and behavior of cells on charge and discharge; care and operation of storage batteries, and renewal of sulphated cells.

*Laboratory.*—Testing of batteries for efficiency, rebuilding of broken down cells, rejuvenation of sulphate cells.

237. TEACHERS' COURSE IN ADVANCED ELECTRICITY. 2 credits; SS. Prerequisite: Physics. Mr. Lyon.

Laboratory exercises following or intermixed with lectures; experiments and demonstrations, use of models, properties of alternating current circuits, rectifiers, transformers, transmitting and receiving radio circuits, radio sets suitable for use in high school; construction of these appliances by members of the class under direction of the instructor.

245. RADIO MEASUREMENTS. 2(1-3); I and II. 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); I. 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); II. Prerequisites: College physics (1 yr.) and chemistry (1 yr.). It is recommended but not required that course 248 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: Differential 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.

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 and Mr. Lyon.

A second course in electrical experiments selected according to the needs and interests of each student from topics such as: The magnetometer, hysteresis, types and characteristics of galvanometers, effect of temperature on cells, thermoelectricity, ratio of  $e/m$ , quadrant electrometers, potentiometer, power factor, rectifiers, vacuum tubes, etc.

258. **ADVANCED LIGHT LABORATORY.** 1(0-3) or 2(0-6); II. Prerequisite: One year of college physics. Mr. Raburn and Mr. Maxwell.

A second course in light experiments selected according to the needs and interests of each student from topics such as: Laws of lenses, laws of mirrors, the sextant, interferometer, polarimeter, gratings, total reflection, Brownian movements, Zeeman effect, photometry, calorimetry, etc.

260. **EXPERIMENTAL PROBLEMS IN PHYSICS.** 1(0-3) or 2(0-6); I, II, and SS, by appointment. Prerequisite: College Physics or equivalent. Mr. Hamilton and Mr. Brackett.

Selected problems involving physical phenomena or work preliminary to such investigations. This may count as part of the major requirement for the master's thesis provided the problem selected has the approval of the head of the department in which the major work is taken.

263. **MATHEMATICAL PROBLEMS IN PHYSICS.** 2(2-0). Prerequisites: Physics 135 and 140, or 145 and 150. Mr. Raburn and Mr. Lyon.

Solution of practical mathematical problems based on fundamental principles of physics.

264. **BIOPHYSICS.** 3(2-3); II. Prerequisites: One year each of college physics or household physics, organic chemistry, and zoölogy or botany, or their equivalents. Mr. Floyd.

Some of the more important physical manifestations as related to living matter from the point of view of the organism as a whole and from that of the cell. For students of biology, nutrition, and medicine; lectures, library readings, and quiz; seminar reports on the literature.



## FOR GRADUATE CREDIT

301. RESEARCH IN PHYSICS. 1 to 8 credits; I, II, and SS. Prerequisite: College Physics.

Problems in original investigations; new and important fields investigated.

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## Public Speaking

Professor HILL  
 Professor SUMMERS  
 Associate Professor HEBERER

Associate Professor GIVEN  
 Instructor ELLIOTT\*  
 Assistant KIRKPATRICK†

It is the constant effort of the Department of Public Speaking to relate the training in public speaking to the work of all other departments of the College and to harmonize it with the spirit of the College. With this object in view, students are trained in the presentation and discussion of the valuable ideas acquired in their various fields of study. The method pursued in this training is that of actual practice on the platform before an audience.

The department seeks to place itself at the service of those various organizations of the College which desire or need its assistance, and at the service of the communities of the state. In addition to its regular courses, it aims to make itself available as far as possible for individual rehearsals. It trains the orators of the College, coaches and directs college plays, and prepares inter-collegiate debating teams. Students are urged to ally themselves with the organizations representing those various activities.

The equipment of this department has a value of \$355.

### 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, Mr. 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 by appointment, respectively. Prerequisite: For I, course 106; for II, course 121; or, for both, by arrangement by head of the department. Mr. Summers.

I: Fundamentals of argumentation as applied in debate, with special work on the making of debate outlines, collection and organization of material, structure and style of the debate speech, and methods of refutation; opportunity given to participate in a number of classroom debates for criticism.

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\* Absent on leave, first semester 1931-'32.

† Appointed for the first semester, 1931-'32

II: The more technical phases of contest debating, with special attention to the outstanding problems of debate coaching, debate strategy and generalship, persuasion as used in debate, methods of increasing rebuttal effectiveness, and management of debates; participation in classroom debates; opportunity to gain experience in debate coaching or judging.

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. Mr. Summers.

I: Practical experience in intercollegiate contest debating.

II: Practical experience in intercollegiate debates of the discussion type.

126. PARLIAMENTARY PROCEDURE. 1(1-0); I. Mr. 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). Prerequisites: Course 106 and permission of the head of the department.

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 will be used for laboratory work.

#### FOR GRADUATE AND UNDERGRADUATE CREDIT

201. PHONETICS. 4(-); I. Prerequisites: Extempore Speech I and II and Oral Interpretation.

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.

FOR GRADUATE CREDIT

305. CLINICAL PROBLEMS OF DEFECTIVE SPEAKING. 4(-); II. Prerequisites: Extempore Speech I and II, Oral Interpretation, and Phonetics.

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 CYPERT  
 Graduate Assistant GROETSEMA  
 Graduate Assistant SOBROSKY  
 Graduate Research Assistant PORTER  
 Graduate Research Assistant BEACH  
 Graduate Research Assistant COCO

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 technic. The equipment belonging to the department is valued at \$33,996.

## COURSES IN ZOÖLOGY

FOR UNDERGRADUATE CREDIT

105. GENERAL ZOÖLOGY. 5(3-6); I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Mr. Goodrich, and Mr. Harbaugh.

Structures, functions, relations and evolution of types of both invertebrates and vertebrates in the class, laboratory and in nature. Charge, \$3.

109. ZOÖLOGY AND EMBRYOLOGY (VET.). 5(3-6); I. Dr. Johnson and Mr. Harbaugh.

A study of the principles and types of animal life, and of the development of vertebrate embryos. Charge, \$3.

123A. HUMAN ANATOMY. 5(3-6); I. Prerequisite: General Zoölogy or equivalent. Dr. Wimmer.

Special attention to the human skeleton and organs; study of dissectible models, skeletons, and charts. Charge, \$3.

130. PHYSIOLOGY. 4(3-3); I, II, and SS. Prerequisites: Zoöl. 105 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. ZOOLOGICAL PROBLEMS. 1 or 2 credits; I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Wimmer, and Mr. Harbaugh.

Individual problems in heredity, parasitology, physiology, cytology, embryology, and ecology assigned by the instructors in charge.

205. FIELD ZOOLOGY. 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. ZOOLOGICAL TECHNIC. 1(0-3) or 2(0-6); II. Prerequisite: General Zoölogy, or equivalent. Dr. Nabours and Mr. Dobrovlny.

Methods of killing, fixing, imbedding, using microtome, staining, dehydrating, and other processes in preparation of microscopical slides, principles of photomicrography, museum mounting and labeling, and introduction to taxidermy. Charge, \$3.

208. PARASITOLOGY. 3(2-3); I. Prerequisite: Zoöl. 105, or 109. Dr. Ackert.

A study of the biology, pathology, and prophylaxis of the principal external and internal parasites of the domestic animals. Charge, \$2.

212. INVERTEBRATE ZOOLOGY. 4(2-6); I. Prerequisite: Zoöl. 105, or equivalent.

An advanced course covering the main groups of invertebrates. Charge, \$4.

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 109, or equivalent. Dr. Harman.

Further study of the main facts of embryology, with special reference to their bearings upon biological theories, and a comparative study of the physiology of reproduction in mammals, including man. Charge, \$3.

225. ZOOLOGY 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.

235. ADVANCED 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; technic in the teaching of the subjects.

240. TAXONOMY OF PARASITES. 2(1-3); I. Prerequisite: Zoöl. 105 or 109. Dr. Ackert.

Structure of animal parasites; relation of certain animal groups; principles of classification; identification of parasites of man and of domestic animals.

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: Zoöl. 105. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Wimmer, and Mr. Harbaugh.

Individual research problems are assigned in the fields of heredity and experimental evolution, parasitology, cytology, embryology, ecology, physiology, neurology, and endocrinology.

# The Division of Home Economics

MARGARET M. JUSTIN, *Dean*

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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 every day 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 course as outlined below is arranged to meet the needs of the following groups of students: Those who wish to teach, those who wish to enter graduate courses leading to technical or professional work, and those who wish to apply their knowledge to various problems of home life or in fields of industry and social service in which an understanding of home-economics subjects is essential to intelligent action. While emphasis is laid on the material and practical side of life, the training does not stop here. The young women are constantly reminded that life is not drudgery; that technical knowledge and scientific skill even fail to include the full meaning of education in its highest sense. They are taught that any training that fails to develop harmoniously body, mind, and spirit is inadequate and incomplete. They are brought face to face with ideals as well as with actualities, and are made to see that, while skillful labor gives dignity to life, grace, refinement, and self-poise are the highest requisites for true service.

That training given is as varied as it is broad. It includes a knowledge of the laws of health; 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.

## CURRICULA IN HOME ECONOMICS

The training in the four-year curriculum is both general and specific. Since scientific training is fundamental in the intelligent and successful administration of the home, strong courses in the sciences are given as a foundation for the special training in home economics. To the end that well-rounded culture may be attained, courses in English, history, economics, sociology, and psychology receive due prominence. The time of the student is about equally



divided among the purely technical subjects, the fundamental sciences, and studies of general interest. The courses in the related subjects are given in the different departments of the College, while the technical courses are given in the Division of Home Economics. In the junior and senior years opportunity is given for choice of electives, which makes it possible for students to specialize in some chosen line. To this end electives are to be chosen in groups combined logically in courses approved by the faculty or by the student's dean. This choice of electives will be made during the second semester of the sophomore year.

### THE CURRICULUM IN HOME ECONOMICS

The four-year curriculum is recommended for all who desire to teach home economics, or to enter professional fields in which home economics may be applied.

### THE CURRICULUM IN HOME ECONOMICS AND ART

The four-year curriculum offering special training in art is designed to meet the need of students especially interested in this field. The courses give background for professional work in the art field, for teaching of art and for the general culture afforded by art study.

### THE CURRICULUM IN HOME ECONOMICS AND NURSING

The five-year curriculum, offered in affiliation with the Charlotte Swift Hospital of Manhattan, enables the student wishing to take the Bachelor of Science degree and the full professional training in nursing to complete this work in five years. The first two years are spent at the College. The third and fourth years are spent at the Nursing School of the hospital, where both theoretical and practical training in nursing is given. During the fifth year required courses for the Bachelor of Science degree are completed at the College and electives are chosen which will prepare the student for the field of nursing in which she is most interested.

The demand for trained women to fill administrative and teaching positions in schools of nursing and to enter the various branches of public-health nursing is greater than the supply and offers a growing and attractive field of work for the college graduate.

Before entering upon this curriculum the student must report to the superintendent of the hospital for a physical examination, and she must have her plan of study approved by the dean of the Division of Home Economics.

Further information concerning the work at the hospital may be obtained from the director of the Training School for Nurses of the Charlotte Swift Hospital, Manhattan.

The College does not assume the responsibility of insuring employment to graduates, but the latter rarely experience difficulty in obtaining remunerative positions.

### CERTIFICATION FOR TEACHING HOME ECONOMICS

The student who in addition to securing the Bachelor of Science degree is desirous of qualifying for the three-year Kansas state teacher's certificate, renewable for life and valid in any high school or other public school in the state, should elect certain courses in the Department of Education and other technical courses which are deemed essential for vocational home economics and desirable for all teaching of home economics. These courses are as follows:

EDUCATIONAL SUBJECTS	TECHNICAL SUBJECTS
Educ. Psychology, Educ. 109.....3(3-0)	Child Care and Training I, Child
Prin. of Secondary Educ., Educ. 280..3(3-0)	Welf. 201 .....3(1-6)
Vocational Educ., Educ. 288.....3(3-0)	Home Management, Hshld. Econ. 116, 3(1-6)
Methods of Teaching Home Economics,	Adv. Clothing, Clo. and Text. 126...3(1-6)
Educ. 132 .....3(3-0)	
Supervised Teaching in Home Eco-	
nomics, Educ. 160.....3( - )	

Curriculum in Home Economics

FRESHMAN

FIRST SEMESTER

College Rhetoric I, Engl. 101.....	*3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
Elementary Design I, Art 101A.....	2(0-6)
Foods I, Food & Nutr. 102.....	5(3-6) <i>or</i>
Psychology A, Educ. 101.....	3(3-0) <i>and</i>
Personal Health, Child Welf. 101.....	2(2-0) <i>or</i>
H. E. Fr. Lectures, Gen. H. E. 101...	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)

Total..... 15

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Elementary Design II, Art 101B.....	2(0-6)
Psychology A, Educ. 101.....	3(3-0) <i>and</i>
Personal Health, Child Welf. 101....	2(2-0) <i>or</i>
Foods I, Food & Nutr. 102.....	5(3-6)
Phys. Education W, Phys. Ed. 152A,	R(0-3)

Total..... 15

SOPHOMORE

FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
Costume Design I, Art 130.....	2(0-6)
Foods II, Food & Nutr. 107.....	3(1-6)
Economics, Econ. 101 .....	3(3-0)
Phys. Education W, Phys. Ed. 153...	R(0-3)

Total..... 16

SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Embryology B, Zoöl. 219A.....	4(3-3) <i>or</i>
Physiology, Zoöl. 130 .....	4(3-3)
Clothing for the Individ., Clo. & Text. 102 .....	5(2-9)
Household Physics,† Physics 101....	4(3-3)
Phys. Education W, Phys. Ed. 154...	R(0-3)

Total..... 16

JUNIOR

FIRST SEMESTER

German I & II,‡§ Mod. Lang. 101 and 102 .....	6(6-0) <i>or</i>
French I & II, Mod. Lang. 151 and 152 .....	6(6-0)
Human Nutr., Food & Nutr. 112.....	3(3-0)
The House, Hshld. Econ. 107.....	3(2-3)
Current History, Hist. 126.....	1(1-0)
Elective   .....	3( - )

Total..... 16

SECOND SEMESTER

German Readings,§ Mod. Lang. 111,	3(3-0) <i>or</i>
French Readings, Mod. Lang. 161....	3(3-0)
Textiles, Clo. & Text. 116.....	3(2-3)
Hshld. Microb., Bact. 121.....	3(1-6)
American History I,§ Hist. 201.....	3(3-0)
Elective   .....	3( - )

Total..... 15

SENIOR

FIRST SEMESTER

Dietetics, Food & Nutr. 202.....	4(3-3)
The Family, Child Welf. 216.....	2(2-0)
Elective   .....	9( - )

Total..... 15

SECOND SEMESTER

Amer. Govt.,§ Hist. 151, 152, or 153,	3(3-0)
Family Health, Child Welf. 211.....	3(3-0)
Interior Decoration I, Art 113.....	2(0-6)
H. E. Sr. Lectures, Gen. H. E. 151...	R(1-0)
Elective   .....	8( - )

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 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."

## Curriculum in Home Economics With Special Training in Art

## FRESHMAN

## FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
Elementary Design I, Art 101A.....	2(0-6)
Foods I, Food & Nutr. 102.....	5(3-6)or
Psychology A, Educ. 101.....	3(3-0)and
Personal Health, Child Welf. 101.....	2(2-0)
H. E. Fr. Lectures, Gen. H. E. 101..	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)

Total..... 15

## SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Elementary Design II, Art 101B.....	2(0-6)
Psychology A, Educ. 101.....	3(3-0)and
Personal Health, Child Welf. 101..	2(2-0)or
Foods I, Food & Nutr. 102.....	5(3-6)
Phys. Education W, Phys. Ed. 152A..	R(0-3)

Total..... 15

## SOPHOMORE

## FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
General Zoölogy,* Zoöl. 105.....	5(3-6)
Ancient Civilizations, Hist. 101.....	3(3-0)
Intermediate Design, Art 103.....	2(0-6)
Costume Design I, Art 130.....	2(0-6)
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total..... 15

## SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Foods II, Food & Nutr. 107.....	3(1-6)
Clothing for the Individ., Clo. & Text.	
102 .....	5(2-9)
Current History, Hist. 126.....	1(1-0)
Advanced Design A, Art 105.....	2(0-6)
Drawing I, Art 120.....	2(0-6)
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total..... 16

## JUNIOR

## FIRST SEMESTER

German I & II, <sup>1</sup> Mod. Lang. 101 and	
102 .....	6(6-0)or
French I & II, <sup>1</sup> Mod. Lang. 151 and	
152 .....	6(6-0)
Human Nutr., Food & Nutr. 112..	3(3-0)or
Applied Nutr., Food & Nutr. 121..	2(2-0)
Costume Design II, Art 134.....	2(0-6)
Elective .....	5 or 6( - )

Total..... 16

## SECOND SEMESTER

German Readings, <sup>1</sup> Mod. Lang. 111,	3(3-0)or
French Readings, <sup>1</sup> Mod. Lang. 161..	3(3-0)
Hist. & App. of Music II, Music 113..	3(3-0)
Medieval Europe, Hist. 102.....	3(3-0)
Costume Design III, Art 138.....	2(0-6)
Interior Decoration I, Art 113.....	2(0-6)
Elective .....	3( - )

Total..... 16

## SENIOR

## FIRST SEMESTER

Child Care and Training I, Child Welf.	
201 .....	3(1-6)
Extem. Speech I, Pub. Spk. 106.....	2(2-0)
Principles of Art I, Art 124.....	3(3-0)
Interior Decoration II, Art 115.....	2(0-6)
Elective .....	5( - )

Total..... 15

## SECOND SEMESTER

American History I, <sup>1</sup> Hist. 201.....	3(3-0)
Principles of Art II, Art 126.....	3(3-0)
Interior Decoration III, Art 117.....	2(0-6)
H. E. Sr. Lectures, Gen. H. E. 151,	R(1-0)
Elective .....	8( - )

Total..... 16

Number of hours required for graduation, 124.

\* 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

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
Elementary Design I, Art 101A.....	2(0-6)
Foods I, Food & Nutr. 102.....	5(3-6)or
Psychology A, Educ. 101.....	3(3-0)and
Personal Health, Child Welf. 101.....	2(2-0)
H. E. Fr. Lectures, Gen. H. E. 101..	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)
Total.....	15

SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Elementary Design II, Art 101B.....	2(0-6)
Psychology A, Educ. 101.....	3(3-0)and
Personal Health, Child Welf. 101..	2(2-0)or
Foods I, Food & Nutr. 102.....	5(3-6)
Phys. Education W, Phys. Ed. 152A..	R(0-3)
Total.....	15

### SOPHOMORE

FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
Costume Design I, Art 130.....	2(0-6)
Physiological Chem., Chem. 231.....	5(3-6)
Phys. Education W, Phys. Ed. 153..	R(0-3)
Total.....	15

SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Embryology B, Zoöl. 219A.....	4(3-3)or
Physiology, Zoöl. 130.....	4(3-3)
Foods II, Food & Nutr. 107.....	3(1-6)
Clothing for the Individ., Clo. & Text.	
102 .....	5(2-9)
Current History, Hist. 126.....	1(1-0)
Phys. Education W, Phys. Ed. 154..	R(0-3)
Total.....	16

### JUNIOR

FIRST SEMESTER

German I & II,* Mod. Lang. 101 and	
102 .....	6(6-0)or
French I & II,* Mod. Lang. 151 and	
152 .....	6(6-0)
Human Nutr., Food & Nutr. 112.....	3(3-0)
Household Physics,* Physics 101.....	4(3-3)
Institutional Econ. I, Inst. Econ. 201..	3(1-6)
Meats H. E., An. Husb. 176.....	1(0-3)
Total.....	17

SECOND SEMESTER

German Readings,* Mod. Lang. 111,	3(3-0)or
French Readings,* Mod. Lang. 161..	3(3-0)
Hshld. Micro., Bact. 121.....	3(1-6)
Inst. Econ. II, Inst. Econ. 205.....	3(3-0)
Dietetics, Food & Nutr. 202.....	4(3-3)
Economics, Econ. 101 .....	3(3-0)
Total.....	16

### SENIOR

FIRST SEMESTER

American History I,* Hist. 201.....	3(3-0)
Inst. Purchasing, Inst. Econ. 215..	2(2-0)or
Nutr. of Dev., Food & Nutr. 210.....	2(2-0)
Psychol. and Personnel Management,	
Educ. 243 .....	3(3-0)or
Sociology, Econ. 151 .....	3(3-0)or
Child Care and Training I, Child Welf.	
201 .....	3(1-6)
Meth. of Teach. H. E., Educ. 132.....	3(3-0)
Elective .....	4( - )
Total.....	15

SECOND SEMESTER

Diet. for Abn. Conditions, Food &	
Nutr. 205 .....	2(1-3)or
Tea Room Mgmt., Inst. Econ. 225.....	3(0-9)
Fld. Work in Nutr., Food & Nut. 215,	3(2-3)
Inst. Accounting, Econ. 284.....	2(2-0)
Food Ec. & Nutr. Seminar, Food	
& Nutr. 251 .....	2(2-0)
H. E. Sr. Lectures, Gen. H. E. 151..	R(1-0)
Elective .....	5 or 6
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

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
Elementary Design I, Art 101A.....	2(0-6)
Foods I, Food & Nutr. 102.....	5(3-6)or
Psychology A, Educ. 101.....	3(3-0)and
Personal Health, Child Welf. 101.....	2(2-0)
H. E. Fr. Lectures, Gen. H. E. 101..	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)

Total..... 15

#### SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Elementary Design II, Art 101B.....	2(0-6)
Psychology A, Educ. 101.....	3(3-0)and
Personal Health, Child Welf. 101..	2(2-0)or
Foods I, Food & Nutr. 102.....	5(3-6)
Phys. Education W, Phys. Ed. 152A..	R(0-3)

Total..... 15

### SOPHOMORE

#### FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
Costume Design I, Art 130.....	2(0-6)
Foods II, Food & Nutr. 107.....	3(1-6)
El. Journalism, Ind. Jour. 151.....	2(2-0)
Phys. Education W, Phys. Ed. 153..	R(0-3)

Total..... 15

#### SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Embryology B, Zoöl. 219A.....	4(3-3)or
Physiology, Zoöl. 130 .....	4(3-3)
Clothing for the Individ., Clo. & Text.	
102 .....	5(2-9)
Current History, Hist. 126.....	1(1-0)
Jour. for Women, Ind. Jour. 172....	2(2-0)
Phys. Education W, Phys. Ed. 154..	R(0-3)

Total..... 15

### JUNIOR

#### FIRST SEMESTER

German I & II,* Mod. Lang. 101 and	
102 .....	6(6-0)or
French I & II,* Mod. Lang. 151 and	
152 .....	6(6-0)
Human Nutr., Food & Nutr. 112.....	3(3-0)
Household Physics,* Physics 101....	4(3-3)
Ind. Feature Writing, Ind. Jour. 167..	2(2-0)
Elective .....	1( - )

Total..... 16

#### SECOND SEMESTER

German Readings,* Mod. Lang. 111, 3	3(3-0)or
French Readings,* Mod. Lang. 161..	3(3-0)
The House, Hshld. Econ. 107.....	3(2-3)
Adv. Practice I, Ind. Jour. 220.....	2(2-0)
Elective .....	8( - )

Total..... 16

### SENIOR

#### FIRST SEMESTER

Dietetics, Food & Nutr. 202.....	4(3-3)
Child Care and Training I, Child Welf.	
201 .....	3(1-6)
Sociology, Econ. 151.....	3(3-0)
Amer. Govt.,* Hist. 151, 152, or 153..	3(3-0)
Elective .....	3( - )

Total..... 16

#### SECOND SEMESTER

American Hist. I,* Hist. 201.....	3(3-0)
Interior Decoration I, Art 113.....	2(0-6)
The Family, Child Welf. 216.....	2(2-0)
H. E. Sr. Lectures, Gen. H. E. 151..	R(1-0)
Elective .....	9( - )

Total..... 16

Number of hours required for graduation, 124.

## Curriculum in Home Economics and Nursing

### FRESHMAN

#### FIRST SEMESTER

College Rhetoric I, Engl. 101.....	3(3-0)
Gen. Chemistry, Chem. 110.....	5(3-6)
Foods I, Food & Nutr. 102.....	5(3-6)
Psychology A, Educ. 101.....	3(3-0)
H. E. Fr. Lectures, Gen. H. E. 101..	R(1-0)
Phys. Education W, Phys. Ed. 151A..	R(0-3)

Total..... 16

#### SECOND SEMESTER

College Rhetoric II, Engl. 104.....	3(3-0)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
German I & II,* Mod. Lang. 101	
and 102 .....	6(6-0)
Current History, Hist. 126.....	1(1-0)
Phys. Education W, Phys. Ed. 152A..	R(0-3)

Total..... 15

\* See respective footnote under Curriculum in Home Economics.

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 Chem., 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. Govt.,* 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 Hist. 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.

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. 208.....3(3-0)
The Family, Child Welf. 216.....2(2-0)	Child Care and Training II, Child Welf. 206 .....3(3-0)
Fld. Work in Nut., Food & Nut. 215..3(2-3)	Pos. Child Health, Child Welf. 111, 2(2-0)
Heredity & Eugenics, Zoöl. 216.....2(2-0)	Problems in Child Welfare 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	

\* See respective footnote under Curriculum in Home Economics.



**Costuming**

- |   |  |
|---|--|
| Hist. of Costume, Clo. & Text. 225...2(2-0)   | Prin. of Adv., Ind. Jour. 179.....3(3-0)                         |
| 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 Clo. & Text. Industries,<br>Clo. & Text. 220.....1(1-0) |
| Hygiene of Clothing, Clo. & Text. 210, 3(3-0) | Medieval Europe, Hist. 102.....3(3-0)                            |
| Sociology, Econ. 151.....3(3-0)               | Prob. in Clo. & Text., Clo. & Text. 215, 1 to 3                  |
| Costume Design II, Art 134.....2(0-6)         | Modern Europe I, Hist. 115.....3(3-0)                            |
| Intermediate Design, Art 103.....2(0-6)       |  |

**Food and Nutrition**

- |  |   |
|--|---|
| Physical Chemistry I, Chem. 206...5(3-6)                     | College Algebra, Math. 104.....3(3-0)     |
| Microchemical Meth. of Anal., Chem.<br>245 .....1(0-3)       | Plane Trigonometry, Math. 101.....3(3-0)  |
| Adv. Human Physiology, Zoöl. 235...4(3-3)                    | Physiological Chem., Chem. 231.....5(3-6) |
| Hygienic Bacteriology, Bact. 206....4(2-6)                   | Biochem. Prep., Chem. 234.....5(0-15)     |
| Problems in Food Econ. & Nut.,<br>Food & Nut. 248.....1 to 5 | Quantitative Anal., Chem. 241.....5(1-12) |
| Food Econ. & Nut. Seminar, Food<br>& Nut. 251 .....1 to 4    | Food Analysis, Chem. 257.....3(0-9)       |
| Fld. Work in Nut., Food & Nut. 215, 3(2-3)                   | Histology I, Path. 102.....4(2-6)         |
| Bact. Problems, Bact. 226.....1 to 4                         | Human Parasitology, Zoöl. 218.....3(3-0)  |
| Stat. Meth. Applied to Education<br>Educ. 223 .....3(3-0)    | Nut. of Dev., Food & Nut. 210.....2(2-0)  |

**Home Making**

- |   |   |
|---|---|
| Child Care and Training I, Child<br>Welf. 201 .....3(1-6) | Child Care and Training II, Child<br>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 Hshld., Hshld. Econ. 265...2(2-0)                        |
| Community Organization, Econ. 267...3(3-0)                | Adv. Clothing, Clo. & Text. 126.....3(1-6)                        |
| Prob. in Foods, Food & Nut. 243...1 to 3                  | Meats (HE), An. Husb. 176.....1(0-3)                              |
| Home Mngt., Hshld. Econ. 116.....3(1-6)                   | Hist. of Eng. Lit., Engl. 181.....3(3-0)                          |
| World Classics I, Engl. 280.....3(3-0)                    | Psychology of Childhood & Ado-<br>lescence, Educ. 208 .....3(3-0) |
| The Nut. of Dev., Food & Nut. 210...2(2-0)                |   |

**Lecturing and Demonstrating**

- |   |   |
|---|---|
| Oral English, Engl. 128.....3(3-0)          | Dramatic Read., 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)      | Applied Psychology, Educ. 170.....3(3-0)                        |
| Sociology, Econ. 151 .....3(3-0)            | Rural Sociology, Econ. 156.....3(3-0)                           |
| Technical Writing, Engl. 207.....2(2-0)     | Com. Organization, Econ. 267.....3(3-0)                         |
| Meats (HE), An. Husb. 176.....1(0-3)        | Ind. Writing, Ind. Jour. 161.....2(2-0)                         |
| Ind. Feat. Writing, Ind. Jour. 167...2(2-0) | Methods of Ext. Workers in Foods,<br>Food & Nut. 260.....2( - ) |

**Social and Welfare Work**

- |   |   |
|---|---|
| Child Care and Training I, Child<br>Welf. 201 .....3(1-6) | Child Care and Training II, Child<br>Welf. 206 .....3(3-0)            |
| The Family, Child Welf. 216.....2(2-0)                    | Labor Problems, Econ. 233.....2(2-0)                                  |
| Econ. of the Hshld., 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. 207.....2(2-0)                       | Modern Europe II, Hist. 223.....3(3-0)                                |
| Community Org., Econ. 267.....3(3-0)                      | Immi. & Int. Rel., Hist. 228.....2(2-0)                               |
| Fld. Work in Nut., Food & Nut. 215...3(2-3)               | Prob. in Child Welfare and Eu-<br>thenics, 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. Anal., Chem. 224.....2(0-6)                             |
| General Physics II, Physics 140.....4(3-3)    | Prob. in Clothing and Textiles,<br>Clo. & Text. 215.....1 to 3       |
| Plane Trigonometry, Math. 101.....3(3-0)      | Adv. Human Physiology, Zoöl. 235...4(3-3)                            |
| Hygiene of Clothing, Clo. & Text. 210, 3(3-0) | Statistical Methods Applied to Edu-<br>cation, Educ. 223 .....3(3-0) |
| Clothing Economics, Clo. & Text. 201, 3(3-0)  | Bact. Problems, Bact. 226.....1 to 4                                 |
| Experimental Textiles, Clo. & Text. 312...3   | Advanced Textiles, Clo. & Text. 205...3(1-6)                         |

## Art

Associate Professor BARFOOT  
Associate Professor EVERHARDY  
Assistant Professor HARRIS

Instructor MORRIS  
Instructor WEBER  
Instructor \_\_\_\_\_

There is an increasing realization of the need for a usable knowledge of art. The curriculum in art is designed to develop the general culture afforded by art study, to train teachers of art, and to provide a background for professional work.

This department owns equipment valued at \$10,058.

### 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, and Miss Weber.

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 and Miss Weber.

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 in different processes. 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(0-6); II. Prerequisite: Course 101B. Miss Everhardy, and Miss Harris.

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 Everhardy and Miss Harris.

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 Weber, and Miss \_\_\_\_\_.

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 Morris, and Miss Harris.

A continuation of course 113, with attention paid especially to the contribution of the average American home to modern culture and art. Charge, 50 cents; deposit, 25 cents.

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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 required each week. I, II, and SS indicate that the course is given the first semester, second semester, and summer session respectively.

117. INTERIOR DECORATION III. 2(0-6); II. Prerequisite: Course 115. Miss Everhardy and Miss Morris.

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 Weber, and Miss \_\_\_\_\_.

Representative sketching, decorative illustrating, and creative designing in which a variety of mediums and technique is employed. Charge, 50 cents; deposit, 25 cents.

122. DRAWING II. 2(0-6); I and II. Prerequisite: Course 120. Miss Barfoot, Miss Harris, Miss Weber, and Miss \_\_\_\_\_.

A continuation of course 120. Charge, 50 cents; 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 as found in the world's art.

126. PRINCIPLES OF ART II. 3(3-0); II. Prerequisite: Course 124. Miss Barfoot, Miss Harris, and Miss Morris.

A continuation of course 124.

130. COSTUME DESIGN I. 2(0-6); I, II, and SS. Prerequisite: Course 101B. Miss Barfoot, Miss Everhardy, Miss Harris, Miss Morris, Miss Weber, and Miss \_\_\_\_\_.

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 and Miss Harris.

Review of line, form, and proportion in modern costume and in the human figure as the structure upon which costume is built; special problems in historic dress design; the Hambidge Theory of Dynamic Symmetry. Charge, 50 cents; deposit, 25 cents.

138. COSTUME DESIGN III. 2(0-6); I and II. Prerequisite: Course 134. Miss Harris and Miss Morris.

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, 134, Psychology, and junior or senior standing. Miss Everhardy.

The growth of art education in the United States; methods of presenting problems in art, and use of illustrative materials.

146. SUPERVISED TEACHING IN ART. 3 credits; I and II. Prerequisites: Courses 105, 134, 120, Psychology, and junior or senior standing. 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 or permission of instructor. Miss Barfoot, Miss Everhardy, and Miss \_\_\_\_\_.

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 Everhardy, Miss Harris, Miss Weber, and Miss \_\_\_\_\_.

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, and Miss Harris.

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.

235. PROBLEMS IN COSTUME DESIGN. 1 to 3 credits; I, II, and SS. Prerequisites: 8 credits in art or permission of instructor. Miss Harris and Miss Morris.

Problems in costume design planned with the student to meet her particular needs. Charge, 50 cents; deposit, 25 cents.

#### FOR GRADUATE CREDIT

301. ART RESEARCH. 2 to 10 credits; I, II, and SS. For prerequisites, consult instructor. Graduate faculty.

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.

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## Child Welfare and Euthenics

Professor FORD  
Associate Professor TRIPLETT  
Assistant Professor QUINLAN  
Instructor SHARP

Instructor KELL  
Assistant McCLURE  
Graduate Assistant BRILL

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 \$2,239.

## COURSES IN CHILD WELFARE AND EUTHENICS

## FOR UNDERGRADUATE CREDIT

101. PERSONAL HEALTH. 2(2-0); I, II, and SS. No prerequisite. Dr. Sharp. 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. Dr. Sharp.

Public-health aspects of school hygiene, the object of health development in educational systems, organization and administration of health work in public schools, and the teaching of hygiene by practical demonstration and the project method.

## FOR GRADUATE AND UNDERGRADUATE CREDIT

201. CHILD CARE AND TRAINING I. 3(1-6); I, II, and SS. Prerequisites: Embryology or Physiology, Psychology, and Human Nutrition. Dr. Ford, Dr. Triplett, Mrs. Kell, Miss McClure, and Miss Brill.

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, and SS. Prerequisites: Embryology or Physiology, and Household Microbiology. Dr. Sharp and Dr. Triplett.

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

Professor BAKER\*  
Associate Professor LATZKE  
Associate Professor COWLES  
Associate Professor HESS

Assistant Professor BRUNER  
Assistant Professor QUINLAN  
Grad. Research Asst. CORMANY

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 \$9,502.

### 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.

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\* Absent on leave, year 1931-'32.



*Laboratory.*—Design is worked out first in muslin and then in silk or wool. Charge, \$1.50; 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.

210. HYGIENE OF CLOTHING. 3(3-0); II. Prerequisites: Embryology or Physiology, and Microbiology. Miss Latzke.

A study of the body as it may be affected by clothing, and a summary of the factors in textile fibers and fabrics that affect the health of the body. Students are assigned special problems for investigation based on clothing in relation to health and its effect upon anatomical form, muscular development and physiological functions.

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.

312. EXPERIMENTAL TEXTILES. 3 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. Charge, \$5; deposit, 25 cents.

## Food Economics and Nutrition

Professor **PITTMAN**  
 Professor **KRAMER**  
 Associate Professor **AHLBORN**  
 Instructor **TUCKER\***  
 Instructor **VAIL**  
 Instructor **BROWNING**

Instructor **MCMILLAN**  
 Technician **McCAMMON**  
 Assistant **GILLUM†**  
 Graduate Assistant **BREWER**  
 Grad. Research Asst. **GRAMSE**  
 Grad. Research Asst. **LONG**

Food is an important factor in the health of the individual and the family. Selection of wholesome and economical food requires the application of chemistry, physiology, sanitary science, and economics. Preparation and preservation of food involve processes dependent upon physics, chemistry, and bacteriology. In the modern science of nutrition and dietetics, the student learns the chemical and physiological principles involved in the nutrition of the body and applies these to planning of food for the individual and the group.

Advanced courses in this department provide training for teachers of foods, dietitians, demonstrators, extension workers and similar professions.

The equipment belonging to this department is valued at \$21,044.

### COURSES IN FOOD ECONOMICS AND NUTRITION

#### FOR UNDERGRADUATE CREDIT

102. **FOODS I.** 5(3-6); I and II. Miss Vail, Miss Browning, Miss McMillan, and Miss Gillum.

Study of elementary nutrition, food economics and etiquette; practice in various methods of preparing and serving meals. Charge \$5; deposit, 25 cents.

106. **FOODS II.** 5(3-6); I and II. Prerequisites: Organic Chemistry and Foods I or equivalent. Miss Tucker, Miss Vail, Miss McMillan, and Miss Browning.

Classification, composition, occurrence, and general properties of foods; food values in relation to cost; legal and sanitary aspects of food products handled in commerce; place of various foods in diet.

*Laboratory.*—Foods are tested to show chemical composition and reactions. Food preparation is from the experimental standpoint. Recipes are compiled and food products are scored. Charge, \$4.25; deposit, 25 cents.

107. **FOODS II.** 3(1-6); I and II. Prerequisites: Organic Chemistry and Foods I or equivalent.

This course will be offered first in the year 1933-34 to replace course No. 106.

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. A course 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.

\* Absent on leave, year 1931-'32.

† Appointed for the year 1931-'32.

‡ 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.

## FOR GRADUATE AND UNDERGRADUATE CREDIT

202. DIETETICS. 4(3-3); I, II, and SS. Prerequisites: Foods II and Human Nutrition. Dr. Pittman, Miss Ahlborn, Miss Tucker, and Miss Gillum.

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.

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.

243. PROBLEMS IN FOODS. 1 to 3 credits; I, II, and SS. Prerequisites: Foods II and Human Nutrition. Dr. Pittman, Miss Tucker, Miss Vail and Miss McMillan.

Foods problems are assigned for individual study. Charge to be arranged with instructor.

248. PROBLEMS IN FOOD ECONOMICS AND NUTRITION. 1 to 5 credits; I, II, and SS. Prerequisite: Senior and 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 depends on problem chosen.

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.

260. METHODS FOR EXTENSION WORKERS IN FOODS. 2 credits; II. Prerequisite: Dietetics. Dr. Pittman.

Origin and development of the extension field in home economics; food problems of the extension worker and methods suggested for handling them; federal, state and county organizations considered. Some field work required (Not offered in the year 1932-'33.)

## FOR GRADUATE CREDIT

305. RESEARCH IN FOOD ECONOMICS AND NUTRITION. 1 to 10 credits; I, II, and SS. For 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.

## 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. SUPERVISED TEACHING 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.

265. 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.

#### FOR GRADUATE CREDIT

313. RESEARCH IN ORGANIZATION AND PRESENTATION OF HOME ECONOMICS. 1 to 10 credits; I, II, and SS. Prerequisites: Graduate standing and conformation of Division of Home Economics. Dean Justin and Mrs. Rust.

See Department of Education, Division of General Science.

\* 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.

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.

## Household Economics

Dean JUSTIN  
Assistant Professor GUNSELMAN  
Assistant Professor TAYLOR

Instructor AGAN  
Grad. Research Asst. OSBORNE

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 \$2,698.

### COURSES IN HOUSEHOLD ECONOMICS

#### FOR UNDERGRADUATE CREDIT

107. THE HOUSE. 3(2-3); I, II, and SS. Prerequisite: Sophomore standing. 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.

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.

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 CHAMBERS\*

Graduate Assistant CURRY  
Graduate Assistant QUIST  
Grad. Research Asst. LITTLEFORD  
Grad. Research Asst. RYDER

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 \$15,208.

### COURSES IN INSTITUTIONAL ECONOMICS

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. **INSTITUTIONAL ECONOMICS. I.** 3(1-6); I, II, and SS. Prerequisite: Foods II; prerequisite or parallel: Human Nutrition. 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 and Girls' Residence Hall, where food is prepared in large quantities for serving. Charge, \$2.50.

205. **INSTITUTIONAL ECONOMICS II.** 3(3-0); I and II. Prerequisite: Institutional Economics I. Graduate students may parallel Institutional Economics I and II. Miss Wood.

A study of the organization and administration problems of the food and house departments 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: Foods II. Mrs. West.

Study of producing areas, the distribution of food products, and methods of purchasing food in large quantities.

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\* Salary dispersed through the Department of Education.



218. SCHOOL LUNCH ROOM MANAGEMENT. 2(2-0); I and II. 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.

FOR GRADUATE CREDIT

301. RESEARCH IN INSTITUTIONAL ECONOMICS. 2 to 10 credits; I, II, and SS. For prerequisites, consult instructor. Mrs. West.

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## 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*

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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 diph-

theria. There is ample work for all of the thoroughly competent veterinarians that the colleges of the country will train.

The curriculum in veterinary medicine at the Agricultural College was established to give the young men of this state an opportunity to pursue these studies in an agricultural environment, where the facilities offered by other branches of the College would be at their command. While the instruction in this curriculum is largely technical, enough subjects of a general character are included to give a sound education and a broad outlook. Better to fit the veterinarian to deal wisely with the live-stock problems which he has to meet, he is required to take the work in live-stock feeding, breeding and judging, and in milk inspection, zoölogy, and embryology, in addition to his purely professional work.

The diploma from this school is recognized by the United States Department of Agriculture, by the United States Civil Service Commissions, by the American Veterinary Medical Association, and by the various examining boards of the several state 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

### 1. Preveterinary Year<sup>1</sup>

(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 <sup>2</sup> .....	2 semester hours
Optional courses.....	9 to 15 semester hours
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Total.....	30 or 32 semester hours

The optional courses should preferably be selected from a modern language (German or French), physics, and mathematics.

### FRESHMAN

#### FIRST SEMESTER

#### SECOND SEMESTER

Anatomy I, Anat. 104.....	*4(3-3)
Histology I, Path. 102.....	4(2-6)
Gen. Org. Chemistry, Chem. 122.....	5(3-6)
Medical Botany, Bot. 126.....	2(1-3)
Mil. Sci. (Vet.) I, <sup>2</sup> Mil. Tr. 121A.....	1(0-3)
Phys. Education M, <sup>3</sup> Phys. Ed. 103..	R(0-2)
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Total.....	16

Anatomy II, Anat. 110.....	8(4-12)
Histology II, Path. 106.....	3(1-6)
Path. Bact. I, Bact. 111.....	4(2-6)
Mil. Sci. (Vet.) II, <sup>2</sup> Mil. Tr. 122A...	1(0-3)
Phys. Education M, <sup>3</sup> Phys. Ed. 104..	R(0-2)
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Total.....	16

### SOPHOMORE

#### FIRST SEMESTER

#### SECOND SEMESTER

Anatomy III, Anat. 112.....	4(1-9)
Comp. Physiology I, Anat. 222.....	4(3-3)
El. of An. Husb., An. Husb. 125.....	3(2-4)
Path. Bact. II, Bact. 116.....	4(2-6)
Dairy Cattle Judging, Dairy Husb. 104 .....	1(0-3)
Mil. Sci. (Vet.) III, <sup>4</sup> Mil. Tr. 123A...	1(0-3)
Phys. Education M, Phys. Ed. 105..	R(0-2)
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Total.....	16 or 17

Pathology I, Path. 203.....	5(3-6)
Comp. Physiology II, Anat. 227.....	4(3-3)
Farm Poultry Production, Poultr. Husb. 101 .....	2(1-2, 1)
Feeding Live Stock, An. Husb. 172..	3(3-0)
Dairy Inspection II, Dairy Husb. 119, 2(1-3)	
Mil. Sci. (Vet.) IV, <sup>4</sup> Mil. Tr. 124A...	1(0-3)
Phys. Education M, Phys. Ed. 106..	R(0-2)
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Total.....	16 or 17

### JUNIOR

#### FIRST SEMESTER

#### SECOND SEMESTER

Surgery I, Surg. and Med. 102.....	5(5-0)
Materia Medica, Surg. and Med. 158..	4(3-3)
Pathology II, Path. 208.....	4(3-3)
Parasitology, Zoöl. 208 .....	3(2-3)
Clinics I, Surg. and Med. 138.....	2(0-6)
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Total.....	18

Surgery II, Surg. and Med. 107.....	5(5-0)
Dis. of Large Animals I, Surg. and Med. 175 .....	5(5-0)
Pathology III, Path. 211.....	3(2-3)
Therapeutics, Surg. and Med. 163...	3(3-0)
Clinics II, Surg. and Med. 141.....	2(0-6)
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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 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

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. 190 .....	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

Agricultural Economics, Ag. Ec. 101..	3(3-0)
Soils, Agron. 130.....	4(3-3)
College Rhetoric II, Engl. 104.....	3(3-0)
General Zoölogy, Zoöl. 105.....	5(3-6)
Infantry III, Mil. Tr. 103A.....	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)	
Agric. Seminar, Gen. Agric. 103.....	R

Total..... 16

##### SECOND SEMESTER

Feeding Live Stock, An. Husb. 172..	3(3-0)
Farm Crops, Agron. 101.....	4(2-6)
Genetics, An. Husb. 221.....	3(3-0)
Farm Poul. Pro., Poul. Husb. 101, 2(1-2, 1)	
Gen. Economic Entomol., Ent. 203...	3(2-3)
Infantry IV, Mil. Tr. 104A.....	1(0-3)
Phys. Education M, Phys. Ed. 106..	R(0-2)
Agric. Seminar, Gen. Agric. 103.....	R

Total..... 16

### JUNIOR

##### FIRST SEMESTER

Anatomy I, Anat. 104.....	4(3-3)
Histology I, Path. 102.....	4(2-6)
Medical Botany, Bot. 126.....	2(1-3)
Electives .....	6
Agric. Seminar, Gen. Agric. 103.....	R

Total..... 16

##### SECOND SEMESTER

Anatomy II, Anat. 110.....	8(4-12)
Histology II, Path. 106.....	3(1-6)
Path. Bact. I, Bact. 111.....	4(2-6)
Electives .....	1
Agric. Seminar, Gen. Agric. 103.....	R

Total..... 16

### SENIOR

##### FIRST SEMESTER

Anatomy III, Anat. 112.....	4(1-9)
Comp. Physiology I, Anat. 222.....	4(3-3)
Path. Bact. II, Bact. 116.....	4(2-6)
Electives .....	4
Agric. Seminar, Gen. Agric. 103.....	R

Total..... 16

##### SECOND SEMESTER

Pathology I, Path. 203.....	5(3-6)
Comp. Physiology II, Anat. 227.....	4(3-3)
Dairy Inspection II, Dairy Husb. 119, 2(1-3)	
Electives .....	5
Agric. Seminar, Gen. Agric. 103.....	R

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. 102A, 102A.

### SECOND YEAR

#### FIRST SEMESTER

English Literature, Engl. 172.....	3(3-0)
Modern Europe II, Hist. 223.....	3(3-0)
Gen. Physics I, Phys. 135.....	4(3-3)
Gen. Organic Chemistry, Chem. 122..	5(3-6)
Mil. Sci. (Vet.) III, Mil. Tr. 123A..	1(0-3)
Phys. Education M, Phys. Ed. 105..	R(0-2)

Total..... 16

#### SECOND SEMESTER

American Literature, Engl. 175.....	3(3-0)
Economics, Econ. 101 .....	3(3-0)
Gen. Physics II, Phys. 140.....	4(3-3)
General Zoölogy, Zoöl. 105.....	5(3-6)
Mil. Sci. (Vet.) IV, Mil. Tr. 124A..	1(0-3)
Phys. Education M, Phys. Ed. 106..	R(0-2)

Total..... 16

### THIRD YEAR

#### FIRST SEMESTER

Amer. Hist. I, Hist. 201.....	3(3-0)
Amer. Gov., Hist. 151, 152, or 153..	3(3-0)
Medical Botany, Bot. 126.....	2(1-3)
Histology I, Path. 102.....	4(2-6)
Anatomy I, Anat. 104.....	4(3-3)

Total..... 16

#### SECOND SEMESTER

Extem. Speech I, Pub. Spk. 106....	2(2-0)
Path. Bact. I, Bact. 111.....	4(2-6)
Histology II, Path. 106.....	3(1-6)
Anatomy II, Anat. 110.....	8(4-12)

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 \$9,831.

### **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.

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**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 \$15,349.

102. HISTOLOGY I. 2(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 HISTOLOGY

#### FOR UNDERGRADUATE CREDIT

203. PATHOLOGY I. 5(3-6); II. Prerequisites: 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. Dr. Lienhardt.

Special pathology; continuation of Pathology II; also clinical pathology. Deposit, \$3.

214. PATHOLOGY IV. 3(2-3); I. Prerequisite: Path. 211. Dr. Lienhardt.

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 prerequisite, consult Dr. Lienhardt.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of validity of conclusions drawn.

## Surgery and Medicine

Professor DYKSTRA  
Professor FRICK

Assistant Professor FRANK  
Instructor 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 \$6,922.

### COURSES IN SURGERY

FOR UNDERGRADUATE CREDIT

102. SURGERY I. 5(5-0); I. Prerequisite: Junior and senior classification in Veterinary Medicine. Dr. Dykstra.

Lectures, recitation 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.

**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 medicinal 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.

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.

### **COURSE IN JURISPRUDENCE**

#### **FOR UNDERGRADUATE CREDIT**

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**

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.

# 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. The Agricultural College is in full sympathy with this desire and is ambitious not only to give its resident students the best possible training for leadership in life's work but to be of direct service to every community in the state.

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 1931-'32, the following appropriations were available for extension work:

Federal Smith-Lever .....	\$97,696.36
Supplementary Smith-Lever .....	33,663.03
Capper-Ketcham .....	30,652.86
Additional federal coöperative .....	26,500.00
State Smith-Lever .....	*96,841.00
College extension .....	29,400.00
Improvement of radio station.....	25,000.00
County appropriation to support supplementary Smith-Lever, Capper-Ketcham, and additional federal coöperative.....	224,010.32
Total .....	\$563,763.57

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.

\* Because of reduction in valuation and with levy remaining constant, this appropriation was reduced from \$101,841.

Publications covering practical subjects in the field of agriculture, home economics, and rural engineering are issued from time to time by the Division of College Extension as bulletins, circulars and leaflets. The authors of these publications are the extension specialists or the specialists of the departments in the other divisions of the College. The regular publications of the Agricultural Experiment Station are 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 \$26,565.

## Extension Schools

### In Agriculture and Home Economics and the Supervision of Extension Agricultural 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.

JOHN H. COOLIDGE, 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  
 W. H. ATZENWEILER, Marketing  
 I. N. CHAPMAN, 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 \$24,018.

### **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 organized 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 department work in extension schools and institutes during the winter months only, and a portion of this time is devoted to co-operative demonstration work in agriculture and home economics. During the spring, summer and fall, they conduct special campaigns, such as silo building, poultry culling, wheat improvement, grasshopper control, cow testing, better sires, hog-cholera control, and co-operative demonstration work. The latter phase of the work of the extension specialists is being especially met by the organization of co-operative demonstration work in each branch of agriculture in a certain number of counties each year. In much of the co-operative work each specialist has from 10 to 100 or more co-operators in each county. These men and women work under the direction of the specialist and the county agent. They keep records of the work and call demonstration meetings at their farms on each trip of the specialist. The number of visits which the 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 co-operative demonstration work is to show as well as to explain. This line of work is especially appreciated, and the representatives of the department have been able to meet only a fraction of the demands for it.

The extension specialist takes to the farm and farm home the newest research work of the Agricultural Experiment Station and the United States Department of Agriculture in a practical, effective and usable form. He is 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 expense 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 investigative 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  
 R. B. MATHER, Atchison, Doniphan,  
 Leavenworth  
 (Assistant County Agent)  
 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  
 D. N. 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. LYNES, Doniphan  
 J. A. TERRELL, Douglas  
 GEO. W. SIDWELL, Edwards  
 NEIL L. RUCKER, 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  
 CHAS. H. STINSON, Pawnee  
 H. B. HARPER, Pratt  
 R. W. STUMBO, Rawlins  
 GEO. W. HUNDS, Reno  
 M. M. TAYLOR, Rice  
 H. L. HILDWEIN, Riley  
 B. W. WRIGHT, Russell  
 RAY L. GRAVES, Saline  
 J. B. TAYLOR, Saline  
 (Assistant County Agent)  
 J. D. MONTAGUE, Sedgwick  
 W. H. ROBINSON, Shawnee  
 C. E. DUNBAR, Sheridan  
 D. M. HOWARD, Sherman  
 E. O. GRAPER, Smith  
 E. H. TEAGARDEN, Stafford  
 L. M. KNIGHT, Sumner  
 JOHN M. BUOY, Thomas  
 L. F. NEFF, Washington  
 W. C. FARNER, 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, 1931, 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 \$1,470.

## 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 Economics 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 \$1,804.

## 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

MRS. EDITH O'BRIEN ROSEVEAR, Allen  
County  
MISS GLYDE E. ANDERSON, Barton County  
MISS RUTH J. PECK, Bourbon County  
MISS NORA E. BARE, Butler County  
MISS FLORENCE FUNK, Cherokee County  
\_\_\_\_\_, Clay County.  
MISS EHYL DANIELSON, Comanche County  
MISS CHRISTIANA MARIE SHIELDS,  
Crawford County  
MISS EDITH A. PAINTER, Dickinson  
County  
MISS CHRISTIE C. HEPLER, Douglas  
County  
MISS ELLA MEYER, Ford County  
MISS EULA MAY NEAL, Franklin County  
MISS ETHEL WATSON, Greenwood County  
MISS OLIVE BLAND, Harper County  
MISS LUCRETIA SCHOLER, Harvey County  
MISS MARY ELSIE BORDER, Johnson  
County

MISS ALBERTA P. SHERROD, Kingman  
County  
MISS CHRISTINE WIGGINS, Labette County  
MISS IVA HOLLADAY, Leavenworth County  
MISS GERTRUDE ALLEN, Lyon County  
MISS MARY H. WILSON, Marion County  
MISS GRACE REEDER, Miami County  
MISS VERNETTA FAIRBAIRN, Montgomery  
County  
\_\_\_\_\_, Morris County  
MISS SARA JANE PATTON, Neosho County  
MISS RUTH K. HUFF, Pratt County  
MISS CLYTICE ROSS, Rawlins County  
MISS GLADYS MYERS, Reno County  
MISS JESSIE CAMPBELL, Rice County  
MRS. LINNEA C. DENNETT, Riley County  
MRS. LAURA I. WINTER, Sedgwick County  
MRS. MARY D. ZEIGLER, Shawnee County  
MISS MARGARET CRUMBAKER, Smith County  
\_\_\_\_\_, 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 ad-

vantageous 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 thirty-two counties organized with an extension program which includes the work of the home demonstration agent.

The program of work for the home demonstration agent is based on the needs of the communities in the county and is evolved through the community and committee meetings. To-day each county has a county program of work based on the needs of the communities in the county, and this is a part of the state program. The home demonstration agent, in coöperation with the Agricultural College and United States Department of Agriculture, works to carry out the community, county, and state program.

Since July 1, 1921, the counties desiring a home demonstration agent are required to meet the following conditions: 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.

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## 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 Agricultural 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 \$754.

## 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-third 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 35,000 acres of land protected by these demonstration terraces.

In addition to the information furnished through meetings held in the counties, several thousand mail inquiries 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 \$1,235.

## Home-Study Service

### CORRESPONDENCE STUDY

GEORGE GEMMELL, Head of Department  
P. L. DE PUY, Agriculture and Economics  
B. H. FLEENOR, Education  
ADA BILLINGS, History and Government

JESSE M. SCHALL, English  
FLOYD PATTISON, Industrial Subjects  
EARL LITWILLER, Horticulture  
ETHEL J. MARSHALL, Home Economics

NOTE.—The faculty members employed in the Home-study Service devote their entire time to the work of teaching by correspondence. They keep in close touch with the various departments of the College and all credit courses which are offered by correspondence must first meet the requirements of the regular College departments handling the courses in residence.

### THE PURPOSE OF THE HOME-STUDY SERVICE

There are many people in Kansas and elsewhere who for many reasons cannot attend classes on the college campus, or are past the time when this would be advisable, but who can use the facilities of the college to great



advantage. The Home-study Service is a part of the Extension Division of the Kansas State 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 \$1,142.

### 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 re-



ports 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 acquaintance-ship 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 semester credits of high school work, unless work is of a very high character, in which event special arrangements may be made for a limited amount of additional work.

### REGULATIONS

1. Enrollments for correspondence-study work will be received at any time during the year, and students may continue their work uninterruptedly throughout the entire year.

2. Correspondence students will be expected to complete any course for which they are enrolled within twelve months from date of enrollment.

3. Not more than two courses are advised by correspondence at any one time. It is recommended that a student carry but one subject at a time, particularly where only part of the time is given to the work.

4. Each subject listed under the various departments constitutes what is known as a correspondence "course."

5. Students enrolling for correspondence courses must meet the prerequisites the same as if undertaking the work in residence.

6. A student may not be enrolled for correspondence work while in attendance at any institution of learning without special permission from the dean or proper authorities in the institution of which he is a student.

7. No correspondence student shall be permitted to complete a three-hour course in less than three weeks; a two-hour course in less than two weeks; a one-hour course in less than one week.

8. A student enrolled for resident work in College, who enrolls in a subject by correspondence, shall be required to take an examination after each eighth lesson before proceeding with the course; *i. e.*, after the eighth, the sixteenth, and the twenty-fourth lessons, respectively.

9. Where there is evidence of any correspondence student copying any part of the lessons from the papers of another student who has previously taken the course, such student is to be automatically and permanently dropped from the course and a failing grade is to be sent to the registrar's office with notation of cause.

### HIGH-SCHOOL COURSES

(College Entrance Credit Work)

In offering the following work for high-school credit, there is no intention of competing with high schools of the state. It is not the purpose of those who have planned the work to present a full four-year high-school course. Students who have opportunity to attend local high school should by all means take advantage of the opportunity, for in such attendance they will have the benefits to be derived from association with fellow students as well as many other advantages which will be helpful to immature students of high-school age.

These courses are offered as an aid to those who may, by necessity, be temporarily out of high school, who may not find the work which they desire offered locally, or who wish to carry work for high-school credit during vacation periods. It is not to be expected that a student can progress as rapidly by correspondence-study methods as he can by devoting his full time to his work when attending high school. Any student who completes a half year of high-school work in a year by correspondence may feel that he has done exceedingly well.

The high-school courses will be especially advantageous to prospective college students who have entrance deficiencies and to public school teachers who may not have had the opportunity to do this type of work. No effort has been spared to make the work as nearly as possible parallel with the courses offered by the accredited high schools of the state. The same textbooks have been used wherever feasible, and the credits issued by this department are recognized by the colleges and State Board of Education.

#### List of High-school Courses

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

<i>Course No.</i>	ENGLISH	<i>Number of assignments</i>	<i>Unit H. S. credit</i>
PCE 1C.	Grammar and Composition (first year).....	20	1/2
PCE 2L.	Literature (first year) .....	20	1/2
PCE 3C.	Composition (second year) .....	20	1/2
PCE 4L.	Literature (second year) .....	20	1/2
PCE 5C.	Composition (third year) .....	20	1/2
PCE 6L.	Literature (third year) .....	20	1/2
HISTORY AND CIVICS			
PCH 1.	Ancient History I.....	20	1/2
PCH 2.	Ancient History II .....	20	1/2
PCH 3.	Modern History I.....	20	1/2
PCH 4.	Modern History II .....	20	1/2
PCH 5.	American History I.....	20	1/2
PCH 6.	American History II.....	20	1/2
PCH 7.	Community Civics .....	20	1/2
PCH 8.	Constitution of United States.....	20	1/2
PCH 9.	World History I.....	20	1/2
PCH 10.	World History II.....	20	1/2
MATHEMATICS			
PCM 1.	Algebra I .....	20	1/2
PCM 2.	Algebra II .....	20	1/2
PCM 3.	Algebra III .....	20	1/2
PCM 4.	Plane Geometry I.....	20	1/2
PCM 5.	Plane Geometry II.....	20	1/2
PCM 6.	Solid Geometry .....	20	1/2
PCM 7.	Bookkeeping .....	20	1/2
SCIENCE			
PCS 1.	Physical Geography .....	20	1/2
PCS 2.	Botany .....	20	1/2
PCS 4.	Physiology .....	20	1/2
PCS 5.	General Science .....	20	1/2
PCC 1.	Commercial Geography .....	20	1/2
PCC 2.	Elementary Economics .....	20	1/2
PCC 3.	Elementary Sociology .....	20	1/2
HOME ECONOMICS			
PHE 1.	Elementary Nutrition I.....	20	1/2
PHE 2.	Elementary Nutrition II.....	20	1/2
PHE 3.	Clothing and Home Furnishings I.....	20	1/2
PHE 4.	Clothing and Home Furnishings II.....	20	1/2
PHE 5.	Home Management and Family Relationships I.....	20	1/2
PHE 6.	Home Management and Family Relationships II.....	20	1/2
PHE 7.	Family Health and Home Sanitation I.....	20	1/2
PHE 8.	Family Health and Home Sanitation II.....	20	1/2
PHE 9.	Child Care and Development I.....	20	1/2
PHE 10.	Child Care and Development II.....	20	1/2

### College Credit Courses

<i>Course No.</i>	DIVISION OF AGRICULTURE	<i>Semester credits</i>	<i>Assignments</i>
CA 3.	AGRONOMY 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

<i>Course No.</i>	MACHINE DESIGN	<i>Semester credits</i>	<i>Assignments</i>
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
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SHOP PRACTICE

CE 7.	Metallurgy .....	2	16
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AGRICULTURAL ENGINEERING

CE 3.	Gas Engines and Tractors.....	2	16
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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
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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

EDUCATION (PROFESSIONAL)

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

<i>Course No.</i>		<i>Semester credits</i>	<i>Assign- ments</i>
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

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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

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### 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

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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; relation of electricity to processing and handling grain and forage; deterioration of concrete in silos; harvesting and storage of grain crops; volume changes in sand concrete; harvesting and baling hay; circulars on rural electrification; modernizing the home; hydrogenation of Kansas coals; farm lighting plants; farm refrigeration; elastic properties of concrete; natural gas as a fuel for house heating; relation of potential gradient to meteorological elements; tool rooms and storerooms of school shops; wind pressures on farm buildings; designs for Kansas farm homes; electrolytes for storage batteries; insulating materials at high frequencies; tractor fuels; and television apparatus.

The testing laboratories of this Station have been designated by law\* as the testing laboratories for the State Highway Commission and the state highway engineer, and as such have charge of the testing of 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. Twenty-eight such bulletins have been published and are now available until the supply is exhausted. 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.

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\* Sec. 5, ch. 64, Laws of 1917.

## Bureau of Research in Home Economics

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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 cooperation 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.
- \* Factors influencing the growth of children.
- \* Vitamin content of foods relating to human nutrition:
  - a. Fruits.
  - b. Vegetables.
  - c. Cereals.

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 costs of sickness to farm families.

The development of motor abilities of preschool children.

Age factor in the resumption of growth by stunted children.

Factors affecting seasonal variation of the growth of children.

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\* The investigations starred are being supported in part by funds from the Agricultural Experiment Station.



# Special Courses

## Short Courses in Agriculture

### Farmers' Short Course

Kansas State College offers in agriculture primarily a four-year curriculum, which gives the student fundamental training in the sciences relating to agriculture and their application to the production of crops and live stock, and to farming in general. Such a curriculum not only equips a man to become a successful farmer, but makes of him a better citizen, and a leader in the broader duties of life.

Many men who have chosen farming as their vocation, and who are alive to some of the advantages offered by this institution to the farmers of the state, are denied the opportunity of pursuing the College curriculum in agriculture, or even as much as one year's work in that curriculum. For such men the College provides the Farmers' Short Course.

The course requires two years for completion, an eight-week term being given each year. For 1933 the session will begin Monday, January 9, and close Saturday, March 4. Besides the required subjects each student may take one or two elective subjects each year.

#### SUBJECTS IN FARMERS' SHORT COURSE

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

##### FIRST YEAR

###### REQUIRED

Soils and Fertilizers.....	4(4-0)
Live-stock Production I.....	5(3-4)
Dairying I.....	5(3-4)
Grain Crops.....	4(3-2)
Special Lectures.....	1(2-0)

###### ELECTIVE

Poultry Husbandry.....	3(3-0)
Live-stock Sanitation.....	3(3-0)
Farm Management.....	4(3-2)
Farm Marketing.....	3(3-0)
Farm Accounting.....	3(2-2)
Dairying II.....	5(3-4)
Gas Engines and Tractors.....	5(2-6)
Blacksmithing.....	2(0-4)
Carpentry.....	2(0-4)
Auto Mechanics.....	5(2-6)

##### SECOND YEAR

###### REQUIRED

Forage Crops.....	4(3-2)
Live-stock Production II.....	5(3-4)
Farm Buildings and Equipment.....	4(4-0)
Farm Horticulture.....	3(3-2)
Special Lectures.....	1(2-0)

Any of the subjects listed in the elective work of the first year may also be taken as electives during the second year.

For each hour of recitation per week usually at least one hour of outside preparation is required. Laboratory or field work requires little or no outside preparation. Each credit (standard for measuring the quantity of work done) represents not less than two hours' work per week for the entire eight weeks of

the term. A regular full-time assignment consists of not less than twenty credits, and students are usually not encouraged to take more than twenty-four credits.

**CERTIFICATE.** A certificate will be granted to each student completing satisfactorily the thirty-six credit hours of work required and not less than four credit hours of electives.

**REQUIREMENTS FOR ADMISSION.** This course is intended primarily for mature individuals. High-school work in the state is becoming so general and available to all communities that the demand for short-course work for boys of high-school age is being greatly reduced. Young farmers, not in school, are especially urged to consider the advantages of the Farmers' Short Course. Students over seventeen years of age are admitted without examination.

**EXPENSES.** There is no charge for tuition, but each student is required to pay, on enrollment, an incidental fee of \$5, also student-health fee of \$1.50. This latter fee entitles him to free medical attendance by the College physician. In several of the laboratories, laboratory deposits or charges varying from 50 cents to \$1 must be made to cover cost of materials used. In "Gas Engines and Tractors" and "Automobiles" the laboratory charges must necessarily be higher, being \$3 and \$2.50, respectively.

**SELF-SUPPORT.** The subjects of this course are primarily practical. They bring the student into actual contact with farm conditions and products. Besides the classroom work, many hours each week are spent in the stock-judging pavilion, laboratory, shop, and barn. This leaves the student but little time for outside labor, and students are therefore advised to come provided with as nearly all the necessary funds for the course as possible.

### **BRIEF DESCRIPTION OF THE WORK**

**SOILS AND FERTILIZERS.** (Agron. 3.) Various soil types common in Kansas are studied, especially with reference to their economical management for the production of profitable crops and the maintenance of fertility.

**LIVE-STOCK PRODUCTION I.** (An. Husb. 6.) A study of the principles and practices of feeding and management of life stock. The laboratory time is devoted to judging market live stock.

**DAIRYING I.** (Dairy Husb. 1.) Farm dairying, including the composition and properties of milk, the feeding of the dairy cow, the selecting and breeding of the dairy herd, and dairy sanitation. The laboratory provides practical work with the Babcock tester, in the use of the farm separator, and in butter making. Deposit, \$1.

**GRAIN CROPS.** (Agron. 1.) A practical study of grain-crop production. Laboratory exercises are given for the identification of different kinds of threshed grain and the determination of damage and market classes and grades. Charge, 50 cents.

**SPECIAL LECTURES.** One credit is given each year for attending these lectures. Among the speakers provided are members of the College Faculty, including the president of the College, and some outside, well-known agricultural leaders.

**FORAGE CROPS.** (Agron. 2.) A study of the distribution and production of important forage crops, especially for Kansas conditions. Practical exercises in identification are given in the laboratory. Charge, 50 cents.

**LIVE-STOCK PRODUCTION II.** (An. Husb. 8.) A study of the principles and practices in breeding, history of the development of the different breeds, and the pedigrees of noted individuals. Some time is given to the matter of fitting live stock for show and sale. The laboratory work consists of judging breeding live stock and butchering and handling meats.

**FARM BUILDINGS AND EQUIPMENT.** (Ag. Engr. 2.) A study of the fundamental principles of farm building arrangement and construction, including barns, houses, hog houses, poultry houses, machine sheds, silos, cribs, and granaries. Particular attention is given to farm equipment, such as tillage, seeding, and harvesting machinery, both horse-drawn and power. Some time is devoted to concrete construction, farm water systems, sanitation, heating, lighting, and ventilation.

**FARM HORTICULTURE.** (Hort. 1.) A study of the possibilities of the art of horticulture in creating better living conditions and better homes. Planning of the farmstead; the planting of ornamentals, wind-breaks, and forest trees; and the care of garden, small fruits, and the home orchard. Incidentally an attempt is made to suggest the possibilities of commercial horticulture in localities adapted to special crops.

**POULTRY HUSBANDRY.** (Poult. Husb. 1.) The practical phases of poultry management, including feeding, breeding, housing, incubation, and brooding.

**LIVE-STOCK SANITATION.** (Vet. Med. 1.) A study of diseases that are communicable from animal to animal or from animal to man. The causes, symptoms and methods that are employed to prevent and to combat the spread of diseases, and the drugs that are commonly used as disinfectants, for washes, dips, etc., are given full consideration. The uses of serums, vaccines, etc., for the prevention of diseases is considered. Methods of disposal of sick and dead animals as well as the means employed to clean and to disinfect the premises so as to prevent a recurrence of diseases are considered.

**FARM MANAGEMENT.** (Ag. Ec. 1.) In this class the work in the various agricultural subjects is correlated and placed on a practical workable basis. The principles of farm accounting, distribution of capital, laying out of fields, planning rotations, etc., are given first consideration. Charge, 50 cents.

**FARM MARKETING.** (Ag. Ec. 2.) A study of marketing functions and services and means of improving the methods of marketing farm products. Considerable attention is given to coöperation as a means of improving the marketing of farm products.

**FARM ACCOUNTING.** (Ag. Ec. 3.) Records which the farmer should keep, methods of keeping these records; and ways of utilizing the information given by the records. Laboratory exercises deal with inventory, crop, live stock, labor, and other accounts, using figures obtained from Kansas farms. The practice work shows methods of keeping accounts and analyzing their results. Accounting forms and supplies for laboratory use are furnished the student. Charge, 50 cents.

**DAIRYING II.** (Dairy Husb. 3.) Keeping records and accounts of dairy-farm business; building up the dairy herd; dairy buildings and equipment; silos and silage; the dairy business and soil fertility; cow-testing associations; coöperative ownership of dairy sires; and detailed plans for the management of the dairy farm. Laboratory work consists of judging dairy cattle from the standpoint of economical production and breed type.

**GAS ENGINES AND TRACTORS.** (Ag. Engr. 3.) A practical study of the principles and applications of the stationary gas engine and the tractor for farm use. Class work includes a study of tractor construction, operation, and repair, and of carburetion, ignition, lubrication, and cooling systems. A study is made of the repair jobs the tractor operator should be able to do himself. Charge, \$3.

**BLACKSMITHING.** A series of graded exercises or problems in blacksmithing closely related to farm work is given. Charge, \$1.50.

**CARPENTRY.** The work begins with a few preliminary problems especially adapted to teaching the proper use of woodworking tools. This is followed by actual experience in the various phases of building construction. Charge, 75 cents.



**AUTO MECHANICS.** This subject consists of lectures, discussions, and laboratory practice in the operation and care of automobiles from the standpoint of the owner. Instruction and practice are provided in adjusting bearings and ignition points, timing valves and spark, grinding valves, cleaning carbon, etc. Charge, \$2.50.

## Dairy Manufacturing Short Courses

Four dairy manufacturing short courses, each lasting two weeks, will be offered January 9 to March 4, 1933. The first course (January 9 to 21, inclusive) will be a general one devoted principally to the testing of milk, cream, and other dairy products. The course for the second two weeks (January 23 to February 4, inclusive) will be devoted to a study of market milk and cheese making. The third period (February 6 to 18, inclusive) will consist of intensive study and practice in butter making. The fourth and last two-week course (February 20 to March 4, inclusive) will be one in ice-cream making.

The work is so arranged that students can take one or more of the four courses, the full eight weeks of work making an intensive and practical commercial creamery short course. While, as a rule, it will be recommended that students take the entire course, the plan makes it possible for students in certain cases to take just the work that interests them most.

**ADMISSION.** Any one not less than 17 years of age may enroll in any of these courses.

**EXPENSES.** An incidental fee of \$5, a student-health fee of \$1.50, and a laboratory fee of \$2 will be charged all students enrolling for the eight weeks of work. For students enrolling for less than the entire course, an incidental fee of \$3 will be charged and an additional laboratory fee of \$2 for each two-week course taken.

**CERTIFICATES.** Students who complete the entire eight weeks of required work as here outlined, and who show satisfactory evidence that they have had six months successful creamery experience, will be granted certificates.

## OUTLINES OF THE COURSES

### General Course in Milk and Cream Testing

JANUARY 9 TO 21, 1933

#### LECTURES

Scope of Dairy Industry.  
 Testing Milk  
 Milk Secretion, Composition, and Properties  
 Factors Affecting Composition  
 Sampling Milk and Cream  
 Cream Testing  
 Cream Separation and Farm Separators  
 Standardization of Milk and Cream  
 Testing Milk for Solids—the Lactometer and Its Uses  
 Bacteriology of Milk  
 Counting Bacteria in Milk  
 Keeping Milk and Butter-fat Records  
 The Butter Industry  
 Application of Babcock Test to Other Products  
 Acidity and Its Relation to Dairy Products  
 Kansas Dairy Laws  
 Clean Milk Production  
 Dairy Breeds  
 The Ice-cream Industry  
 Food Value of Milk and Its Products  
 The Market Milk Industry  
 Cheese and Condensed-milk Industry  
 Examinations

#### LABORATORY WORK

Milk Testing—the Babcock Test  
 Testing Milk of Different Breeds  
 Testing Skim Milk, Buttermilk, and Whey  
 Testing Frozen, Sour, and Churned Milk  
 Testing Cream  
 Study of Farm Separators  
 Standardization of Milk and Cream  
 Testing Milk for Solids and Adulterations  
 Separation of Milk  
 Plating Milk for Bacterial Counts  
 Farm Butter Making and Creamery Butter-making Demonstration  
 Testing Butter and Cheese for Fat  
 Testing Powdered Milk, Ice Cream, and Condensed Milk for Fat  
 Dairy Arithmetic  
 Testing Milk and Cream for Acidity  
 Dairy Farm and Plant Inspection  
 Demonstration in Freezing Ice Cream  
 Demonstration in Market Milk Handling  
 Demonstration in Cheese Making and Milk Condensing

**A Course in Market Milk and Cheese Making**

JANUARY 23 TO FEBRUARY 4, 1933

## LECTURES

History and Development of Market Milk  
 Industry  
 Milk as a Food  
 Grades of Milk  
 Bacteriology as Applied to Market Milk  
 How to Produce Low-count Milk  
 Pasteurization of Milk  
 Cream Line Studies  
 Cultured Buttermilk  
 Chocolate Milk  
 Cottage Cheese and Soft Cheese  
 Milk Plant Equipment  
 Cheddar Cheese  
 Milk Ordinances  
 Condensed Milk and Milk Powders  
 Milk By-products  
 Types of Milk Plants  
 Milk Distribution  
 Adulteration in Milk  
 Cost of Milk Production  
 Examinations

## LABORATORY WORK

Standardization of Milk and Cream  
 Receiving, Clarification, Pasteurization  
 Bottling Milk  
 Determination of Food Value by Fat and  
 Solids Test  
 Determination of Cleanliness and Keeping  
 Quality by Acid and Sediment Test  
 Plating Milk for Bacteria  
 Methylene Blue Test  
 Cream Line Studies  
 Making Starters and Cultured Buttermilk  
 Making Chocolate Syrup and Chocolate Milk  
 Making Cottage Cheese  
 Making Cheddar Cheese  
 Detection of Adulterations  
 Designing Milk Ordinances  
 Making Condensed Milk

**A Two-week Course in Butter Making**

FEBRUARY 6 TO 18, 1933

## LECTURES

History of the Butter Industry  
 Neutralization of Cream  
 Pasteurization of Cream  
 Churning Cream  
 Composition of Butter  
 Overrun in Butter  
 Cream Procurement  
 Cream Grading  
 Starter Making  
 Cream Ripening  
 Cream Station Operation  
 Market Grades of Butter  
 Butter Defects  
 Cream Separation  
 Bacteria and Their Relation to Butter  
 Making  
 Yeast and Mold in Butter  
 Sweet-cream Butter  
 Factory Losses  
 Food Value of Butter  
 Marketing Butter  
 Examinations

## LABORATORY WORK

Pasteurization of Cream  
 Analysis of Butter  
 Cream Grading and Testing  
 Preparation of Starters  
 Printed Butter  
 Churning  
 Cream Station Inspection  
 Judging Butter  
 Yeast, Mold, and Bacteria Counts  
 Receiving, Weighing and Sampling Cream  
 Condensing Buttermilk  
 Flash Pasteurization  
 Sweet-cream Butter

**A Two-week Course in Ice-Cream Making**

FEBRUARY 20 TO MARCH 4, 1933

## LECTURES

History and Development  
 Composition and Properties of Milk  
 Testing Milk and Cream  
 Testing Ice-cream Mix  
 Standardization of Milk and Cream  
 Acid Test  
 Ingredients Used in Ice Cream  
 Composition of Ice Cream  
 Calculation of the Mix and Standardization  
 Processing the Mix  
 Freezing the Mix  
 Bacteria and Their Relation to Ice Cream  
 Ices and Sherbets  
 Fruit and Fancy Ice Cream  
 Refrigeration  
 Storage of Ice Cream  
 Gelatin and Egg in Ice Cream  
 Flavoring Materials  
 Food Value of Ice Cream  
 Defects of Ice Cream  
 Examinations

## LABORATORY WORK

Standardization of Milk and Cream  
 Preparation of Simple Mix  
 Testing Mix for Fat  
 Freezing Simple Mix  
 Preparation and Freezing of Mixes with Vary-  
 ing Per Cent of Fat  
 Preparation and Freezing of Mixes with Vary-  
 ing Per Cent of Serum Solids  
 Preparation and Freezing of Mixes with Vary-  
 ing Per Cent of Sugar  
 Preparation and Freezing of Mixes with Vary-  
 ing Per Cent of Gelatin and Egg Yolk  
 Use of Improvers  
 Preparation and Freezing of Ices and Sherbets  
 Mojonner Testing  
 Preparation of Mixes in Vacuum Pan  
 Bricks and Fancy Molds  
 Preparation of Mixes from Butter and Powder  
 Judging Ice Cream  
 Study of Refrigeration Machinery

# Degrees and Certificates Conferred

In the Year 1931

## Sixty-eighth Annual Commencement

May 28, 1931

### DEGREES CONFERRED

#### HONORARY DEGREES

##### DOCTOR OF LAWS

Birger Sandzen, A. M., Bethany College; Litt. D., Midland College; D. F. A., University of Nebraska; Lindsborg, Kan.  
Harry Llewellyn Kent, A. B., Kansas State Teachers College, Emporia, 1912; B. S., Kansas State College, 1913; M. S., Kansas State College, 1920; State College, N. Mex.

##### DOCTOR OF SCIENCE

Philip Fox, B. S., Kansas State College, 1897; M. S., Kansas State College, 1901; B. S., Dartmouth College, 1902; Chicago, Ill.

#### GRADUATE COURSES

##### MASTER OF SCIENCE

Glenn Allen Aikens, B. S., Kansas State College, 1924, Valley Falls  
Elsa Brown Bate, B. S., Kansas State College, 1921, Manhattan.  
Erwin John Benne, B. S., Kansas State College, 1928, Manhattan.  
Armin Ervin Brandhorst, A. B., Central Wesleyan College, 1929, Manhattan  
Horace Lester Caler, B. S., University of Maine, 1930, Addison, Me.  
George Edward Cauthen, A. B., Austin College, 1928, Manhattan  
De La Harpe De Villiers, B. S., University of South Africa, 1928, Flicksburg, South Africa  
Wilbur Henry Hanson, B. S., Kansas State College, 1925, Concordia  
George M. Kautz, B. S., Friends University, 1930, Wichita  
Eunice Leola Kingsley, B. S., North Dakota Agricultural College, 1926, Tolley, N. Dak.  
Anne Helen Klassen, B. S., Kansas State College, 1930, Inman  
\*Arthur William Lindquist, B. S., Bethany College, 1926, Uvalde, Tex.  
Jack Steward McCorkle, B. S., New Mexico A. and M. College, 1930, Las Cruces, N. Mex.  
Clyde McKee, B. S., Kansas State College, 1910, Bozeman, Mont.  
James Foster Martin, B. S., Oregon State College, 1927, Corvallis, Ore.  
Florence Irene Mirick, B. S., Kansas State College, 1920, Halstead  
Maurice Charles Moggie, B. S., Kansas State College, 1929, Manhattan  
Julia Annette Nelson, B. S., University of Minnesota, 1914, Evansville, Minn.  
John Carl Olsen, B. S., Colorado Agricultural College, 1925, Manhattan  
Lawrence Howard Peterson, A. B., Friends University, 1930, Wichita  
Gerald Pickett, B. S., Oklahoma A. and M. College, 1927, Manhattan  
Marjorie Prickett, B. S., Kansas State College, 1929, Wamego  
Sara Jane Reed, B. S., Colorado Agricultural College, 1925, Fort Collins, Colo.  
John Alfred Shellenberger, B. S., University of Washington, 1930, Seattle, Wash.  
Ralph Abraham Shenk, B. S., Kansas State College, 1930, Silver Lake  
Elsie Leah Shippy, B. S., Kansas State Teachers College, Emporia, 1923, Chapman  
\*Glenn Sanborn Smith, B. S., North Dakota Agricultural College, 1929, Langdon, N. Dak.  
Flora Helena Ross Spangler, B. S., Kansas State College, 1930, Manhattan  
Iva Belle Welch, A. B., Baker University, 1921, Pittsburg  
Homer Bryan Willis, B. S., Kansas State College, 1920, Manhattan  
\*Temple Faye Winburn, B. S., Kansas State College, 1929, DeKalb, Mo.  
Mary Woodward, A. B., Oklahoma City University, 1929, Oklahoma City, Okla.

\* In absentia.



**PROFESSIONAL DEGREES IN ENGINEERING****ARCHITECT**

Charles Leroy Marshall, B. S., Kansas State College, 1927, Albany, N. Y.

**CIVIL ENGINEER**

Ezra Edison Howard, B. S., Kansas State College, 1925, Kansas City, Mo.  
Roy Gaylon Porter, B. S., Kansas State College, 1928, Hiawatha

**ELECTRICAL ENGINEER**

Herbert Melvin Low, B. S., Kansas State College, 1924, Topeka

**MECHANICAL ENGINEER**

Earl Vern Farrar, B. S., Kansas State College, 1926, Bloomfield, N. J.  
Augustus Wilkes Gudge, B. S., Kansas State College, 1923, Newark, N. J.  
Lawrence Dewey McDonald, B. S., Kansas State College, 1923, Kansas City, Mo.  
William Sartorius, B. S., Kansas State College, 1928, Kansas City

**UNDERGRADUATE CURRICULA****Division of Agriculture****BACHELOR OF SCIENCE IN AGRICULTURE**

Andre Audant, Port au Prince, Haiti	William Jessee Lynn, Centralia
Kimball Lincoln Backus, Olathe	William Don Lyon, Faulkner
Nadim Abdul Hamid Barudi, Damascus, Syria	Don Frederick McClelland, Maplehill
John Shaum Boyer, El Dorado	Robert Stewart McCoy, Cedarvale
William Jacob Braun, Council Grove	Wilmer Abele Meyle, Holton
George Shelton Brookover, Eureka	Loyal J. Miller, Lebanon
Marvin Oliver Castle, Mayetta	Fay Albert Mueller, Sawyer
William Chapman, Wichita	William Granville Nicholson, Eureka
Arnold Ervin Chase, Abilene	Lawrence Harold Norton, Cimarron
Carl Wesley Clair, Mendon, Ill.	George David Oberle, Carbondale
Clarence Benedict Cunningham, Manhattan	Laurence Adolph Peck, Soldier
Dick Albert Dodge, Manhattan	Oscar Earl Reece, Hopewell
Lester Alfred Eastwood, Summerfield	Alva Marion Schlehuber, Durham
Kermit Vernon Engle, Abilene	Fred C. Schopp, Abilene
Howard Roland Fisher, Manhattan	Elmer Philip Schrag, Moundridge
Harold Earl Frank, Manhattan	Harlan Bennett Stephenson, Iola
Howard Leroy Fry, Hope	*Harland Stevens, Valencia
Vernon Eugene Frye, Quenemo	Hugh Leonard Stewart, Vermillion
Miles Wiley George, Wichita	Esra Ervin Stockebrand, Yates Center
Ralph Friedley Germann, Fairview	Bruce Ross Taylor, Alma
Henry Wilbur Gilbert, Manhattan	Lot Forman Taylor, Ashland
Vernon Leslie Hahn, Muncie	Earl La Verne Wier, Blue Mound
George Risley Hanson, Kansas City, Mo.	John Lincoln Wilson, Geneva
Orville Ira Haury, Halstead	Richard Maxwell Wilson, Geneva
Harvey Edward Hoch, Alta Vista	Adrian Edouard Winkler, Paxico
Clarence Athel Hollingsworth, Perry	James J. Yeager, Bazaar
Martin Murvin Kiger, Washington	Frank Zitnik, Scammon
Alonzo Lambertson, Fairview	

**Division of Engineering****BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING**

Harry Pliny Coberly, Hutchinson	Olney Merle Mohny, Sawyer
Clarence Emmett Ghormley, Hutchinson	George Raymond Shier, Gypsum
Elbert Elvin Karns, Bucklin	Martin Gust Sundgren, Manhattan
Louis Joseph Kovar, Rossville	Floyd Gerald Winters, Oswego

**BACHELOR OF SCIENCE IN ARCHITECTURE**

Donald Conlee Baldwin, Manhattan	Ruel Scott Walker, Galena
Howard Eugene Martin, Eskridge	Everett Robert Wallerstedt, Manhattan
Clarence Adam Rinard, Salina	

**BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING**

Frank Merle Hartman, Dodge City	Glen Ervan Meredith, Junction City
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\* In absentia.

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Marion John Caldwell, El Dorado  
 Walter Newton Epler, Scott City  
 Charles Richard Gerardy, Clay Center  
 James Gerard Koch, Manhattan

William Gottlieb Munz, Hudson  
 Harold Guy Owen, Douglass  
 Earl Milton Regier, McPherson  
 Earl Duane Tefertiller, Wellington

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

William John Arndt, Windom  
 William Richard Chalmers, Burlingame  
 Howard Allen Coleman, Denison  
 Kenneth Willis Comfort, Topeka  
 Harold Richard Corle, Caney  
 W. Russell Downs, Wellington  
 William Gurley Evans, Barnard  
 \*Theodore Roosevelt Gingrich, Garden City  
 \*Clarence Edmund Harness, Liberal  
 Vernon Eugene Harvey, Selma  
 Robert Baker Hedrick, Florence  
 Leroy Francis Kempley, Chanute  
 Leslie R. King, Manhattan  
 Willis Francis Kipper, Belleville

C. Walter Koerner, Wellington  
 Joseph Alphonsus Kuffler, Parsons  
 Clemont C. Parrish, Radium  
 Charles A. Pine, Coffeyville  
 \*Herbert Cecil Riepe, Dighton  
 William Emil Steps, Halstead  
 Clarence Walter Stewart, Coldwater  
 Bennett Thorne Stryker, Waterville  
 Zabel Herman Tessendorf, Onaga  
 John Gordon Towner, Dwight  
 Otis Harold Walker, Junction City  
 Vernon Reed Weathers, Great Bend  
 Verne Elbridge Wesley, Independence

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Loren Norton Allison, Falls City, Neb.  
 Theodore Alois Appl, Bison  
 Elmer James Branham, Edna  
 Norval Odell Butler, Manhattan  
 Ferro Castellani, Frontenac  
 Lloyd Harold Compton, Larned  
 Byron Irvin Cousins, Manhattan  
 Donald Wherry Cowan, Valley Falls  
 Marion Asa Cowles, Jr., Sharon Springs  
 Jay James Cress, Manhattan  
 Herbert Andrew Dimmitt, Roswell, N. Mex.  
 Lloyd Everett Fritzingler, Manhattan  
 Herschel Royer Geiman, Larned  
 Lee Gemmell, Manhattan  
 Charles Eugene Glasco, Emporia  
 Spencer William Graham, Beattie  
 Kenneth D. Grimes, Topeka  
 Kenneth D. Hall, Wichita  
 Adolph Helm, Jr., Chanute  
 Gayle Revere Hosack, Holton  
 Martin Simon Klotzbach, Humboldt  
 John Eugene Ley, Sharon Springs

Arthur Jesse McCleery, Esbon  
 Cecil James Wilson McMullen, Norton  
 Cloris Rexford Molineux, Goff  
 Charles Wilbur Naylor, Burr Oak  
 Clyde Newman, Holton  
 Marvin Geo. Ott, Madison  
 Robert Joseph Pafford, Salina  
 \*Frederick Earl Roehrman, White City  
 Karl Shaver, Cedarvale  
 Joe H. Shepek, Wayne  
 Mary Fidelia Taylor, Newton  
 Elmer Howard Thom, Oakley  
 Clyde Francis Thudin, Mulvane  
 Howard Phil Thudin, Mulvane  
 Harold Everett Trezell, Belle Plaine  
 John Robert Warner, Whiting  
 Rodney Otto Warner, Manhattan  
 Frank Loy Westerman, Manhattan  
 \*Jess Willard Wilhite, Manhattan  
 Herbert Lee Winston, Stilwell  
 Clifford Richard Yardley, Hutchinson

BACHELOR OF SCIENCE IN FLOUR MILL ENGINEERING

Darcy Dayton Dial, El Dorado

Charles Leonard Gunn, Great Bend

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Leslie Linnaeus Aspelin, Dwight  
 Paul Edwin Brookover, Scott City  
 Richard Joseph Campbell, Herington  
 Frank Robert Condell, El Dorado  
 Chester Arthur Culham, Junction City  
 William McAvoy Fitzgerald, Goodland  
 Eugene John August Holmberg, Kansas City  
 William Bart Jackson, Holton  
 \*Julius William Kloepper, Monrovia

Robert Lengquist, Manhattan  
 Arthur Sidney McIntire, Burlingame  
 Roy H. McKibben, Pittsburg  
 Harold Spencer Miller, Kansas City  
 \*Bruce Pratt, Herington  
 James Colman Roe, Manhattan  
 Leo Charles Short, Norton  
 Andrew Bernard Walsh, Osage City

\* In absentia.

## Division of General Science

## BACHELOR OF SCIENCE

Lydia Elizabeth Andres, Alta Vista	Clark Gardner Porter, Alton, Ill.
Josephine Louise Barry, Manhattan	Anna Reed, Kanopolis
Faith Winifred Briscoe, Cambridge	John Hogue Reed, Manhattan
Edwin George Brychta, Blue Rapids	Thelma Gladys Rickey, Phillipsburg
Bernice Louise Cousins, Manhattan	Steven Samuel Roehrman, White City
Frances Marian Covey, Miltonvale	Walter Dale Sandford, Kansas City
Margaret Hodges Darden, Manhattan	Hildred Renetta Schweiter, Wichita
Nina Edelblute, Keats	Mildred Elaine Sederlin, Scandia
Roy Leslie Fox, Perth	Nelle Virginia Seybold, Atchison
Harry Orwin Frazier, Clay Center	Estella Bernice Shenkel, Geneseo
Letha Alice Goheen, Oak Hill	Nina Sherwood, Concordia
Stella Baker Hinshaw, Saint Albans, N. Y.	Marymarie Elizabeth Sperling, Woodward, Okla.
Dale Vincent Jones, Junction City	Marguerite Marie Stullken, Bazine
Millard Paul Knock, Independence	John George Taylor, Parsons
Henry Herman Knouft, Circleville	Howard Everett Tempero, Broughton
Edna May Lawhead, La Cygne	Alice Tribble, Circleville
Arla Amelia McBurney, Manhattan	Lucille Adella Uhrig, Belvue
Sarah Katherine McClintock, Wichita	Juanita Kathryn Walker, Valley Falls
Mayme V. J. McCrann, Manhattan	Aline Wegert, Rice
Dorothy LaVern Magee, Pretty Prairie	Margaret Wegert, Rice.
Olive Elfa Morgan, Hugoton	Ruth Alice Widestrand, Topeka
Ida Elizabeth Osborne, Clifton	Ada Caroline Wiese, Manhattan
*Raymond Patterson, Morrowville	
Mary Aleta Peck, Council Grove	

## BACHELOR OF SCIENCE IN COMMERCE

James Patrick Bonfield, Elmo	Walter Ford Mitchell, Concordia
Fletcher Gist Booth, Olathe	Dorothy Esther Norris, Raymond
James Willard Caughron, Manhattan	Delmas Eugene Price, Wakefield
George Mather Grafel, Herndon	Edris William Rector, Manhattan
George Alexander Graham, Manhattan	Vernal Charles Rowe, Dighton
Chester Walton Haas, Winfield	Donald Frederick Schafer, Fort Scott
*Daniel Noel League, Wetmore	Elbert Wendell Smith, Russell
Marshall S. McCulloh, Shawnee	Dale Smith Snider, Abilene
John Conway McLeavy, Dwight	Jay Humphrey Thomson, Emporia

## BACHELOR OF SCIENCE IN INDUSTRIAL CHEMISTRY

Jesse Benjamin Boehner, Downs	Hiram Temple McGehee, Manhattan
Frank Edward Edlin, Herington	*Marvin Francis Naylor, Kansas City
Dorothea Elizabeth Klein, Topeka	Dale Harold Sieling, Hays

## BACHELOR OF SCIENCE IN INDUSTRIAL JOURNALISM

Quentin Victor Brewer, Manhattan	Esther Joanne Rockey, Manhattan
Mary Naomi Cook, Linn	Maxine Sophia Schorer, Denver, Colo.
Hilah Eileen Crocker, Manhattan	Helen Louise Sloan, Hutchinson
Sidney Lanier Falin, Cleburne	Harold Everett Taylor, Clay Center
Elsie Louise Flinner, Wichita	Vera Isabelle Walker, Wakeeney
Catherine Marie Halstead, Manhattan	Vesta Estell Walker, Wakeeney
Clare Harner, Howard	Paul Charles Westerman, Wamego
Ruth Wilhelmina Helstrom, McPherson	

## BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Vada Burson, Manhattan	Helen Lorine Magee, Pretty Prairie
Owen Lovejoy Cochrane, Manhattan	Ruby Eva Nelson, Jamestown
Helen Laura Dodge, Manhattan	Mildred Emily Purcell, Manhattan
Ladek Charles Fiser, Mahaska	Pauline Willa Samuel, Manhattan
Wallace Albin Forsberg, Lindsborg	Elvon Gilbert Skeen, Eskridge
Maxine Erma Hawley, Manhattan	Helen Louise Van Pelt, Beloit
Geraldine Joan Johnston, Manhattan	

## BACHELOR OF MUSIC

Elna Ruth Andrick, Wheaton	Lesta Lolita Lawrence, Abilene
Lillian Boyer Daugherty, Manhattan	Leona Irene Maas, Alma
Dorothy Loreen Dexter, Manhattan	Frances Edna Potter, Natoma
Edna Elizabeth Findley, Manhattan	Matilda Amelia Saxton, Fort Scott
Velma Irene Hahn, Idana	Olive Elsie Van Pelt, Beloit

\* In absentia.



**Division of Home Economics**

**BACHELOR OF SCIENCE IN HOME ECONOMICS**

<p>Alice Virginia Adams, Leavenworth                  Edna Fay Allen, Burlington                  Mahala Talbott Arganbright, Wamego                  Gladys Benson, Clay Center                  Opal Eleanor Birt, Beloit                  Mildred Freda Bohnenblust, Leonardville                  Margaret Irene Boys, Linwood                  Grace Dorothy Brill, Westmoreland                  Neva Laverne Burt, Greensburg                  Marguerite Virginia Chaffin, Caldwell                  Vernie Irene Clausen, Alton                  Bernice Veneta Davidson, Manhattan                  Florence Matilda Diehl, Chapman                  Nellie Ruth Dilsaver, Kensington                  Martha Lois Dunlap, Reece                  Miriam Genie Eads, Cullison                  Katrina Eskeldson, Ramona                  Katherine Idell Fullinwider, El Dorado                  Ruth Starkweather Garrison, Chanute                  Helen Iola Gates, Iola                  Trilla Bell Goheen, Manhattan                  Ruth Elinor Graham, Manhattan                  Edna May Harland, Frankfort                  Ethel Maude Harland, Frankfort                  Opal Lorene Hoard, Kingsdown                  Florence Elizabeth James, New England,                  N. Dak.                  Norma Evelyn Koons, Sharon Springs                  Eugenia Leighton, West Helena, Ark.</p>	<p>Harriet Elizabeth McConnell, Cherryvale                  Daisy Ferne McMullen, Norton                  Marjorie Eleanor Moulton, Saint George                  Dorothy Lydia Obrecht, Topeka                  Nina Dorothea Paulsen, Onaga                  Mary Irene Piper, Garden City                  Helen Dorine Porter, Stafford                  Opal Mae Porter, Stafford                  Doris Estelle Prentice, Manhattan                  Esther Virginia Ratliff, Manhattan                  Alice Rhea, Larned                  Pauline Roedel, Iola                  Mabel Elsa Roepke, Manhattan                  Marjorie Evon Root, Medicine Lodge                  Iva Salinda Rust, Junction City                  Mabel Verbina Ruthi, Bloomington                  Flossie Evelyn Sawyer, Kensington                  Lela May Segrist, Manhattan                  Gertrude Louise Seyb, Pretty Prairie                  Laurene Bertha Sheetz, Wichita                  Juanita Lee Shuck, Kansas City, Mo.                  Margaret Lucille Titus, Council Grove                  Esther Rozella Toburen, Cleburne                  Mabel D. Weir, Newton                  Ruth Weisser, Paxico                  Bernice Elizabeth Weygandt, Keats                  Beatrice Woodworth, Corning                  Grace Irene Zeller, Manhattan</p>
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**BACHELOR OF SCIENCE IN HOME ECONOMICS AND NURSING**

<p>Ellen Valera Blackwood, Manhattan</p>	<p>Marie Insley, Manhattan</p>
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**Division of Veterinary Medicine**

**DOCTOR OF VETERINARY MEDICINE**

<p>John Bertram Cheshire, Hopkins, Mo.                  Walter Geurkink, Baldwin, Wis.                  Robert Bruce Helming, Waukon, Iowa                  Elmer David Johnston, Pomona                  Wayne Otho Kester, Cambridge, Neb.                  Forrest Coniver Love, Chelsea, Okla.                  Andrew Lafayette McBride, Manhattan</p>	<p>Carl Jacob Majerus, Falls City, Neb.                  Clayton John Price, Osage City                  Willet Jesse Price, Liberty                  Don Harvey Spangler, Stanton, Neb.                  Dale Suplee, Council Grove                  Elliott Rodney Trull, Padonia</p>
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**COMMISSIONS AWARDED**

**SECOND LIEUTENANT, OFFICERS RESERVE CORPS**

<p>Loren Norton Allison, Falls City, Neb.                  Edwin Lee Andrick, Wheaton                  Gordon Ingraham Blair, Junction City                  Howard Taft Blanchard, Garden City                  Raymond Usher Brooks, Hutchinson                  Alpheus Darrel Buckmaster, Manhattan                  James Willard Caughron, Manhattan                  William Richard Chalmers, Burlingame                  Arnold Ervin Chase, Abilene                  Kenneth Deorace Cornell, Kansas City                  Jay James Cress, Manhattan                  Eli Egbert Daman, Manhattan                  Frank Edward Edlin, Herington                  Kale Max Fones, Kansas City, Mo.                  Charles Eugene Glasco, Emporia                  Vernon Eugene Harvey, Selma                  Elmer David Johnston, Pomona                  Dale Vincent Jones, Junction City                  Lawrence Wilford Kilbourne, Manhattan                  Herbert Henry Kirby, Toronto</p>	<p>Forrest Coniver Love, Chelsea, Okla.                  Cloris Rexford Molineux, Goff                  *Leon Fred Nixon, Manhattan                  Clement C. Parrish, Radium                  Clayton John Price, Osage City                  Delmas Eugene Price, Wakefield                  Willet Jesse Price, Liberty                  Claude Marion Rhoades, Newton                  Harold Duane Richardson, Long Island                  Mart Benjamin Sanders, Marion                  Joe H. Shepek, Wayne                  Don Harvey Spangler, Stanton, Neb.                  Dale Suplee, Council Grove                  Wayne Tolley, Delphos                  John Gordon Towner, Dwight                  Harold Everett Trekle, Belle Plaine                  Elliott Rodney Trull, Padonia                  Paul Charles Westerman, Wamego                  Clair M. Worthy, Wetmore                  Frank Zitnik, Scammon</p>
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\* In absentia.

**CERTIFICATES AWARDED****FARMERS' SHORT COURSE**

Roy Benjamin Bozarth, Lenora  
Ray Arthur Buchanan, Richland  
Dwight Dalbey Fulkerson, Bucklin  
Frank Newton Holliday, Soldier  
Gerald Leroy Rose, Agra

Lawrence John Sack, Hays  
William Bernard Shaffer, Dighton  
Lyle Clifford Trapp, Waldo  
George Vander Giesen, Cawker City  
Hugh Scott Wilson, Council Grove

**DAIRY MANUFACTURING SHORT COURSE**

Earle David Allen, Hutchinson  
A. Adolf Duerksen, Hillsboro

Pete Mai, Garden City

## Seventh Annual Summer School Commencement

July 29, 1931

## DEGREES CONFERRED

## MASTER OF SCIENCE

- Harry Enoch Adell, B. S., Kansas State Teachers College, Emporia, 1920, Manhattan  
 Ethlyn Marie Alsop, B. S., Kansas State Teachers College, Emporia, 1920, Wakefield  
 \*John Albion Andrew, Jr., B. S., Massachusetts Agricultural College, 1930, Manhattan  
 \*Andre Audant, B. S., Kansas State College of Agriculture and Applied Science, 1931, Port au Prince, Haiti  
 Frederick Bruce Bosley, B. S., Kansas State College of Agriculture and Applied Science, 1929, Manhattan  
 Herman Charles Cowdery, B. S., Kansas State College of Agriculture and Applied Science, 1930, Lyons  
 Orville Robinson Cragun, B. S., Kansas State College of Agriculture and Applied Science, 1923, Milford  
 Russel Clay Derbyshire, B. S., Kansas State College of Agriculture and Applied Science, 1930, Omaha, Neb.  
 Delbert Frederick Emery, B. S., Kansas State College of Agriculture and Applied Science, 1925, Parsons  
 Elizabeth Ann Fee, B. S., Colorado Agricultural College, 1926, Fort Collins, Colo.  
 Mark Anthony Foster, A. B., Louisiana State Normal College, 1928, Manhattan  
 Orval C. French, B. S., Kansas State College of Agriculture and Applied Science, 1930, Manhattan  
 Rhea Gibson, A. B., University of Utah, 1929, Salt Lake City, Utah  
 \*Clement Davis Gordon, B. S., Rutgers University, 1930, Glen Gardner, N. J.  
 William Pliny Harriss, B. S., Ewing College, 1909, Kansas City  
 George Robert Henderson, B. S., University of Wisconsin, 1930, Mukwonago, Wis.  
 Alice Evangeline Henley, B. S., Fort Hays Kansas State Teachers College, 1926, Ness City  
 Elizabeth Spears Hepler, A. B., University of Nebraska, 1924, Columbus  
 Myrna Nellie Holman, B. S., Stephen F. Austin State Teachers College, 1929, Tenaha, Tex.  
 Bert Lewis Hostinsky, B. M., Kansas State College of Agriculture and Applied Science, 1929, Manhattan  
 Cecile Mae Jackson, B. S., University of Illinois, 1928, Kress, Tex.  
 \*Clarence Oliver Jacobson, B. S., Kansas State College of Agriculture and Applied Science, 1928, Fayetteville, Ark.  
 Lois Bennett Jarrott, A. B., Campbell College, 1911, Hutchinson  
 Lillian Harriet Johnson, A. B., University of California, 1928, Hollister, Cal.  
 Russell John Juono, B. S., University of Idaho, 1930, Manhattan  
 Louise Beatrice La Fleur, B. S., Southwestern Louisiana Institute, 1927, Eunice, La.  
 Paul Griffith Lamerson, B. S., Kansas State College of Agriculture and Applied Science, 1927, Manhattan  
 Golda Charlene La Shelle, A. B., University of Nebraska, 1929, Manhattan  
 Richard Riley Marsh, A. B., Baker University, 1927, Pittsburg  
 Claire Arnot Martin, B. S., Kansas State College of Agriculture and Applied Science, 1930, Abilene  
 Earl Harrison Martin, B. S., Kansas State College of Agriculture and Applied Science, 1912, Pratt  
 Howard Willis Mathews, B. S., Iowa State College, 1928, Danville, Iowa  
 Marita Monroe, B. S., Iowa State College, 1924, Knoxville, Iowa  
 Prudence Martha Morgan, B. S., Fort Hays Kansas State College, 1921, Hays  
 Mary Rose Moss, B. S., Kansas State College of Agriculture and Applied Science, 1916, Eureka  
 Merlin Mundell, B. S., Kansas State College of Agriculture and Applied Science, 1929, Nickerson  
 Olive Phyllis Neff, B. S., Fort Hays State College, 1930, Wakeeney  
 Alice Bernice Newbill, A. B., State College of Washington, 1927, Walla Walla, Wash.  
 John F. Nienstedt, A. B., College of Emporia, 1929, Hartford  
 Richard Raymond Oehmcke, B. S., Michigan State College, 1929, Wauwatosa, Wis.  
 Lita Mae Paine, A. B., University of Kansas, 1921, Admire  
 Bella Catherine Robertson, B. S., Kansas State College of Agriculture and Applied Science, 1926, Los Angeles, Cal.  
 Dorothy Saville, B. S., University of Missouri, 1929, Grant City, Mo.  
 John Henry Shenk, B. S., Kansas State College of Agriculture and Applied Science, 1929, Manhattan

\* In absentia.



Georgiana Hope Smurthwaite, B. S., Utah State Agricultural College, 1911, Manhattan  
 Stanley Livingstone Soper, A. B., University of Illinois, 1898, Manhattan  
 Herbert Norman Stapleton, B. S., Kansas State College of Agriculture and Applied Science,  
 1930, Jewell  
 Ivan Cecil Townsden, B. S., Fort Hays Kansas State College, 1924, Hugoton

## UNDERGRADUATE CURRICULA

### Division of Agriculture

#### BACHELOR OF SCIENCE IN AGRICULTURE

Fulton George Ackerman, Lincoln	Paul Ruddick Morris, Paxico
Baha Edin El-Bakri, Damascus, Syria	*Willard Virgil Redding, Coffeyville
Clair Eber Dunbar, Columbus	Chester Aaron Wismer, Pomona
George Miser Fletcher, Pawnee City, Neb.	

### Division of Engineering

#### BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Miles Corrington Leverett, Bartlesville, Okla.

#### BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Arthur Edward Everett, Hutchinson	Victor Harold Meseke, Manhattan
Raymond Percy Hunsberger, Mount Hope	

#### BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Alex Joseph Barneck, Jr., Salina	Eugene Forrest Peterson, Yates Center
Chester Lee Brown, Herington	Lyle Cheadle Read, Clay Center
Lawrence Wilford Kilbourne, Manhattan	Gerald George Smith, Topeka
*Kenneth Orval Peters, Utica	

#### BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Lowell Jacob Burghart, Chanute	*Eugene Francis Harmison, Great Bend
Marvin Neel Elder, Manhattan	

### Division of General Science

#### BACHELOR OF SCIENCE

*Edwin Lee Andrick, Wheaton	Laurene Elizabeth Orton, Alta Vista
Augustin Younse Breeden, Manhattan	*Walden Richard Peterson, Topeka
Louie Elizabeth Britt, Manchester	Dorothy Raburn, Manhattan
Ruth Clency, Manhattan	Ayleen Hartzell Shenk, Manhattan
Eleanor Fern Drummond, Frankfort	Norman Courtland Smith, Manhattan
Elizabeth Anne Lorimer, Kansas City, Mo.	Vera Charlotte Thackrey, Greensburg
Mary Vivien Nickels, Manhattan	

#### BACHELOR OF SCIENCE IN COMMERCE

*Eli Egbert Daman, Fort Riley	Charles Lawrence Shepherd, Harveyville
*Winston King Grigg, Abilene	Richard Kenneth Stahl, Kansas City
Roscoe Townley Nichols, Jr., Manhattan	James William Taylor, Manhattan
Paul Eugene Pearson, Concordia	Richard George Vogel, Stuttgart

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DOCTOR OF VETERINARY MEDICINE

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# List of Students

## Students Pursuing Graduate Work

June 1, 1931, to June 1, 1932

### GRADUATE STUDENTS

Harold Quantic Abell; Riley  
Ivar M. Abrahamson; Manhattan  
Fulton G. Ackerman; Lincoln  
Frank Milton Adair; Manhattan  
George Howard Adams; Manhattan  
Jasper Dorman Adams; Garden City  
Harry Enoch Adell; Manhattan  
Anna Tessie Agan; St. Edward, Neb.  
Edward Henry Aicher; Winfield  
Glenn Allen Aikins; Manhattan  
Alfred Evan Aldous; Manhattan  
Alvin Ray Aller; Johnson  
Ethlyn Marie Alsop; Junction City  
Malcolm L. Alsop; Wamego  
Edith Evelyn Ames; Wichita  
Hazel Lillian Anderson; Bronson  
Arthur Clinton Andrews; Manhattan  
John Albion Andrew; Manhattan  
Leslie Linnaeus Aspelin; Dwight  
Walter Henry Atzenweiler; Manhattan  
André Audant; Port au Prince, Haiti  
Clement Henry Ault; Moscow, Idaho  
Rhoda Anna Austin; Emporia  
Ellis Buchanan Babbit; Willis  
Guy N. Baker; Grinnell  
Dorothy Barfoot; Decorah, Iowa  
Edgar Lee Barger; Manhattan  
Jane Wilson Barnes; Manhattan  
Robert Claude Barnett; Osborne  
Fern Doris Barr; Manhattan  
Elsa Brown Bate; Manhattan  
Ted DeVine Beach; Manhattan  
Dietrick D. Becker; Webster  
Gladyne Baumgartner Becker; Webster  
Floyd Wayne Bell; Manhattan  
Bernice Eleanor Bender; Holton  
Erwin John Benne; Washington  
Kenneth Dean Benne; Washington  
Mildred Holmgren Bennion; Manhattan  
Noel Bennion; Manhattan  
Gladys Benson; Clay Center  
John Conrad Benson; Formoso  
Silas S. Bergsma; Hill City  
Howard Bertsch; Corvallis, Ore.  
Ada Grace Billings; Manhattan  
John Alexander Bird; Manhattan  
Helen Ann Blair; Mulvane  
Mintie Clementine Blount; Nacogdoches, Tex.  
Rozelle Adelbert Blowey; Anthony  
Mildred Freda Bohnenblust; Leonardville  
Chris Ray Bradley; Manhattan  
Armin Ervin Brandhorst; Manhattan  
George Francis Branigan; Manhattan  
Lyman Jacob Bratzler; Manhattan  
Augustin Younse Breeden; Manhattan  
Helen Virginia Brewer; Peabody  
Alice Katherine Brill; Westmoreland  
Grace D. Brill; Westmoreland  
Faith Winifred Briscoe; Cambridge  
Frank Brokesh; Munden  
Gertrude Elizabeth Brookens; Westmoreland  
George Shelton Brookover; Eureka  
Arthur Senseny Brown; Chambersburg, Pa.  
Frances Langdon Brown; Tucson, Ariz.  
Chester Lee Brown; Herington  
Hale H. Brown; Washington  
Helen Correll Browne; Norton  
John M. Browne; St. Marys  
Albert J. Brubaker; Ellsworth  
Jasper Leland Brubaker; Manhattan  
Esther Bruner; Manhattan  
Harry Ray Bryson; Manhattan  
William Roy Burgin; Manhattan  
Maurine Burson; Manhattan  
Lucile Beatrice Burt; Manhattan  
Elgin Roy Button; Meriden  
Harold Robert Callahan; Junction City  
James Phillip Callahan; Manhattan  
Gladys Griffin Calvert; Manhattan  
Ernest David Campbell; McPherson  
Mary Isabelle Carter; Wichita  
Sherman Harold Carter; Le Roy  
Sylvester Ulric Case; Oskaloosa  
Robert Bell Casey; Anderson, S. C.  
Elisha Joseph Castello; Independence  
Raymond D. Caughron; Manhattan  
Virginia Chambers; Grandfield  
Arnold Ervin Chase; Abilene  
Ernest Iden Chilcott; Jewell  
Robert Frederick Childs; Manhattan  
Carl W. Clair; Manhattan  
Alfred Lester Clapp; Manhattan  
Floyd Alfred Clayton; El Dorado  
Roy Engle Clegg; Burlington  
Orem Richard Clency; Manhattan  
Russell Mark Coco; Bordelonville, La.  
Clarence Ralph Collins; Manhattan  
William Eugene Connell; Manhattan  
Pansy Bartlett Coolbaugh; Stockton  
John Herbert Coolidge; Emporia  
Esther Margaret Cormany; Junction City  
Helen Van Zandt Cortelyou; Manhattan  
Herman Charles Cowdery; Lyons  
Orville Robinson Cragun; Milford  
Ray Crail; Wichita  
Naomi Crawford; Manhattan  
William Wesley Crawford; Manhattan  
Jay James Cress; Manhattan  
Blaine Crow; Silver Lake  
Clarence Benedict Cunningham; Manhattan  
Nelle LaVerne Curry; Winchester  
Eugene Cypert; Manhattan  
Charles Otto Dailey; Manhattan  
Ruth Glaphry Dana; Pocatello, Idaho  
Carrie Elvard Davis; Delavan  
Dorothy Mae Davis; Delavan  
Marion Bradford Davis; Manhattan  
Earle Reed Dawley; Manhattan  
Florence Day; Holcomb  
Linnea Carlson Dennett; Manhattan  
Perey Leroy DePuy; Manhattan  
Herbert Andrew Dimmitt; Manhattan  
Harindar Singh Dinsa; Broderick, Cal.  
James Roy Dinwiddie; Manhattan

## GRADUATE STUDENTS—Continued

- Charles George Dobrovolny; Manhattan  
 Marjorie Prickett Dobrovolny; Manhattan  
 Dick Albert Dodge; Manhattan  
 Carl Alfred Dorf; Lindsborg  
 Lyle Wayne Downey; Oak Park, Ill.  
 Opal Dougherty; Manhattan  
 Charles Dubois; Manhattan  
 Walter A. Duffy; Superior, Wis.  
 Linn Edmund Eberwein; Lawrence  
 Philip Joseph Edwards; Athol  
 Wallace O. Elkins; Manhattan  
 Leonard Paul Elliott; Manhattan  
 Mary Myers Elliott; Manhattan  
 Delbert Frederick Emery; Parsons  
 Martha Vera Engle; Abilene  
 Helen Frances Evers; Winfield  
 Elizabeth Fairbank; Topeka  
 Thomas C. Faris; Arkansas City  
 Vern Oren Farnsworth; N. Topeka  
 Arthur Cecil Fay; Manhattan  
 Elizabeth Ann Fee; Manhattan  
 Arlene Zelda Finch; Oketo  
 Arthur Oran Finner; Manhattan  
 Vernon Daniel Foltz; Manhattan  
 Kenney Lee Ford; Manhattan  
 Agnes Forman; Manhattan  
 Wallace Albin Forsberg; Lindsborg  
 Margaret Lansden Foster; Manhattan  
 Mark Anthony Foster; Manhattan  
 Sina Faye Fowler; Mendota, Mo.  
 Harold Earl Frank; Manhattan  
 Ralph Wilson Frank; Manhattan  
 Orval C. French; Geneseo  
 Edith Martha Fritz; Manhattan  
 Edith Fultz; Wichita  
 Dorothy Isabel Gallemore; Arkansas City  
 Margaret Deborah Garrison; Chanute  
 Annabel Alexander Garvey; Topeka  
 Leola Maud Harris Gaston; Manhattan  
 Lee Gemmill; Manhattan  
 Richard W. Gerdes; Nelson, Neb.  
 Clarence Emmett Ghormley; Hutchinson  
 Rhea Gibson; Manhattan  
 Virginia Noah Gibson; Manhattan  
 William Everett Gibson; Manhattan  
 Henry Wilbur Gilbert; Manhattan  
 Pat Gill; Enid, Okla.  
 Willard LeRoy Gilmore; St. Francis  
 Malaeska Milton Ginter; Manhattan  
 John S. Glass; Manhattan  
 Bonnie Virginia Goodman; Troup, Tex.  
 Arthur Leonard Goodrich; Manhattan  
 Clement Davis Gordon; Manhattan  
 Gladys D'Vonne Gould; Clarksville, Ark.  
 George A. Graham; Manhattan  
 Max Leyland Graham; Manhattan  
 Lucille Alma Gramse; Perry  
 William Herbert Gray; Bogue  
 Helen J. Greene; Beverly  
 Kenneth Duree Grimes; Topeka  
 Frederic Groetsema; Manhattan  
 Myrtle Annice Gungelman; Manhattan  
 Golda Pearle Haas; Winfield  
 Alten R. Hammett; Gallatin, Mo.  
 Lee Elmor Hammond; Osborne  
 Mulville Jennings Harbaugh; Manhattan  
 Marguerite Velma Harper; Ponca City Ok'a.  
 Minnie Alberta Wenkheimer Harris; Manhattan  
 Vida Agnes Harris; Manhattan  
 William Pliny Harriss; Kansas City  
 Orville Elton Hays; Manhattan  
 Lenora Heckert; Tescott  
 Carl Heinrich; Americus  
 George Robert Henderson; Manhattan  
 George Elwin Hendrix; Lane  
 Alice Evangeline Henley; Ness City  
 Homer Jay Henney; Manhattan  
 Gerald G. Hensley; Mankato  
 Alta Sarah Hepler; Manhattan  
 Elizabeth Spears Hepler; Columbus  
 Austin Theodore Heywood; Neodesha  
 Harold H. Higginbottom; Manhattan  
 Arlie William Higgins; Seneca  
 Herbert Lynn Hildwein; Manhattan  
 Mabel Louise Hirt; Bucklin  
 Harvey Edward Hoch; Alta Vista  
 Julian Adair Hodges; Manhattan  
 Hosea Samuel Hollingsworth; Wichita  
 Myrna Nellie Holman; Manhattan  
 John Lester Hooper; Robinson  
 Elsa Ottilia Horn; Manhattan  
 Harper Delmar Horton; Roxbury  
 Abram E. Hostetter; Hope  
 Bert Lewis Hostinsky; Manhattan  
 Ethel Margaret Hotte; Manhattan  
 Arthur J. Howard; Manhattan  
 Robert Ormsby Howard; Rossville  
 Sherman H. Howard; Oberlin  
 Harold Howe; Manhattan  
 David Elbert Howery; Brewster  
 Paul Richard Hoyt; Wichita  
 Merle Raymond Hubbard; Kingman  
 Verda E. Hudson; Manhattan  
 Ollie Hulse; Manhattan  
 Elza Oscar Humphrey; Joplin, Mo.  
 Wilbur William Humphrey; Pleasanton  
 Catherine Huxtable; Wichita  
 Claude Albert Huyek; Kansas City  
 Maud Smith Irving; Manhattan  
 Cecile Mae Jackson; Kress, Tex.  
 Laura Jean James; Kansas City  
 Russell Everett James; Wetmore  
 William Charles Janes; Manhattan  
 Lois Bennett Jarrott; Hutchinson  
 Alice Marie Jennings; Manhattan  
 William Edwin Jennings; Cohoes, N. Y.  
 Ingrid K. Jernburg; Lindsborg  
 Margaret Louise Jordon; Salina  
 Arline Johnson; Frankfort  
 Edna Stewart Johnson; Manhattan  
 Ernest William Johnson; Manhattan  
 George William Johnson; Reamsville  
 Julian Almon Johnson; Kiowa  
 Lillian Harriet Johnson; Manhattan  
 Faith Eleanor Johnston; Oakley  
 Edward C. Jones; Manhattan  
 George Clair Jordon; Jewell  
 Caleb Lee Jorgensen; Manhattan  
 Russell Jouno; Manhattan  
 Elbert Elvin Karns; Bucklin  
 Henry D. Karns; Plainville  
 Vernice Eva Keach; Chanute  
 George Clifford Kelley; Fort Scott  
 Amy Kelly; Manhattan  
 John Humphrey Kerr; Miltonvale  
 Josephine Thorn Ketcham; Beattie  
 Bruce Alvin Kindig; Medicine Lodge  
 Carmen G. Kingsley; Manhattan  
 Eunice Leola Kingsley; Tolley, N. Dak.  
 Laurel L. Kingsley; Manhattan  
 Marian Gibbonny Kirkpatrick; Manhattan  
 Dorothea Elizabeth Klein; Topeka  
 George E. Knisel; Solomon  
 Lester Henry Koenitzer; Manhattan  
 Louis J. Kovar; Rossville  
 Elta Margaret Kuper; Nelson, Neb.  
 Louise Beatrice LaFleur; Manhattan  
 Ernest Lester Lahr; Abilene  
 Paul Griffith Lamerson; Manhattan  
 Charles Herbert Lantz, Jr.; Manhattan  
 Golda Charlene LaShelle; Manhattan  
 Wyatt P. Laughlin; Riverton  
 Lily Lee; Honkong, China.  
 Ingovar Leighton; Manhattan  
 Angela Regina Leonard; Junction City  
 Clarence F. Lewis; Manhattan  
 Ralph Oscar Lewis; Parsons  
 John E. Ley; Sharon Springs  
 John Frederick Lindquist; Delphos  
 Clarence Henry Little; Manhattan  
 Clara Littleford; Salt Lake City, Utah  
 Earl Milo Litwiller; Manhattan



## GRADUATE STUDENTS—Continued

- Robert Ivan Lockard; Norton  
 Charles Alden Logan; Manhattan  
 Zeldabeth Long; Manhattan  
 Alden Hebbard Loomis; Manhattan  
 Lindsay Baily Loring; Seattle, Wash.  
 Herbert Melvin Low; Topeka  
 Dona Wells Lower; Belleville  
 Henry Wilbert Loy, Jr.; Manhattan  
 G. Ernest Lyness; Blue Rapids  
 Hazel Alma Lyness; Walnut  
 Jeanne Lyon; Manhattan  
 Laura Elizabeth McAdams; Salina  
 Verl E. McAdams; Clyde  
 T. Lucille McCall; Winfield  
 Ruth Beryl McCammon; Manhattan  
 Thelma Fern McClure; Hutchinson  
 Maude Nonamaker McColloch; Manhattan  
 Lenore McCormick; Cedarvale  
 Iris McGee; Waynoka, Okla.  
 Hiram Temple McGehee; Manhattan  
 John William McInnes; Phoenix, Ariz.  
 Ray John McMillin; Manhattan  
 Edith A. McMullen; Pratt  
 Lelia Ruth McMurry; Hutchinson  
 David Leslie Mackintosh; Manhattan  
 Thelma Faye Mall; Manhattan  
 Charles Mantz; Spearville  
 Dale C. Marcoux; Havensville  
 Marceline Markle; Lyons  
 Vivian Anna Marley; Manhattan  
 Richard Riley Marsh; Pittsburg  
 Ethel Justin Marshall; Manhattan  
 Claire Arnot Martin; Abilene  
 Earl Harrison Martin; Pratt  
 Howard Willis Mathews; Manhattan  
 Helen Sawtell Mauck; Junction City  
 Ezra Perle Mauk; Mulvane  
 Armine John Maxwell; Chetopa  
 LeRoy E. Melia; St. George  
 George A. Merkey; Gaylord  
 Thomas Nelson Meroney; Manhattan  
 Amelia Pauline Meyer; Girard  
 Clara Grace Miller; Manhattan  
 Florence Rowles Miller; Wamego  
 Otto Martin Miller; McPherson  
 Ruth Christine Miller; Palco  
 Walter Ford Mitchell; Manhattan  
 Walter Rankin Mitchell; Salina  
 Paul LeRoy Mize; Bonner Springs  
 Marita Monroe; Manhattan  
 Merna Myrtha Monroe; Manhattan  
 George Montgomery; Manhattan  
 Prudence Martha Morgan; Hays  
 Katherine Dyllys Morris; Manhattan  
 Merle Dallas Morris; Riley  
 Reed Franklin Morse; Manhattan  
 Mary Rose Moss; Eureka  
 Thirza Mossman; Manhattan  
 John R. Moyer; Hiawatha  
 Dalton H. Muck; Glen Elder  
 Stella Constance Munger; Manhattan  
 Donald Dudley Murphy; Manhattan  
 Pearl F. Musgrave; Hillsdale  
 Harry Albert Myers; Wamego  
 Harold Edwin Myers; Manhattan  
 Charles Wilbur Naylor; Burr Oak  
 Olive Phyllis Neff; Wakeeney  
 Alice Bernice Newbill; Manhattan  
 Alma Dale Newell; Durham  
 Clyde Newman; Holton  
 Ralph Dale Nichols; Manhattan  
 William Granville Nicholson; Eureka  
 Mary Vivien Nickels; Manhattan  
 Isabelle Chesney Nixon; San Antonio, Tex.  
 Linus A. Noll; Keats  
 Dorothy Esther Norris; Raymond  
 Onie Lindsey Norton; Altamont  
 Richard Raymond Oehmecke; Manhattan  
 Opal Frances Osborne; Partridge  
 Carol Lee Owsley; Manhattan  
 Ruthetta Owsley; Manhattan  
 Wallace E. Parsons; Scottsville  
 LeRoy Clay Paslay; Manhattan  
 Noble Wayne Patterson; Junction City  
 Lawrence Adolph Peek; Soldier  
 Eugene Forrest Peterson; Yates Center  
 Helen Mills Peterson; Vermillion Grove, Ill.  
 Gerald Pickett; Manhattan  
 Leonard Milton Pike; Milford  
 Dale Albert Porter; Manhattan  
 Opal Mae Porter; Stafford  
 Mildred Emily Purcell; Manhattan  
 Dryden Marie Quist; Manhattan  
 Dorothy Raburn; Manhattan  
 George Hemrod Railsback; Manhattan  
 Ernest Lee Raines; Mound City  
 Kathryn Elizabeth Randle; Riley  
 Betty Ruth Ransom; Manhattan  
 Edris W. Rector; Manhattan  
 Willard Virgil Redding; Coffeyville  
 Burleigh Reed; Topeka  
 Ethel Edna Reed; Manhattan  
 G. Nathan Reed; Manhattan  
 Ruth Anna Reed; Stockton  
 Fred Thomas Rees; Beloit  
 George M. Refle; Johnston; Iowa  
 Roger Eli Regnier; Fairview  
 Alma Margaret Richhart; Nickerson  
 Hugh K. Richwine; Holcomb  
 Harold Barrows Riley; Kansas City  
 Dora A. Ringer; Plainville  
 Theodore Roosevelt Robb; McPherson  
 Mary Eileen Roberts; Manhattan  
 Sarah Helen Roberts; Manhattan  
 Bella Catherine Robertson; Manhattan  
 Esther Joanne Rockey; Manhattan  
 Frederick Earl Roehrman; White City  
 Pearl Elzora Rorabaugh; Lebanon  
 Clyde F. Rowe; Tucson, Ariz.  
 Vance Mather Rucker; Manhattan  
 Paul Wilfred Russell; Mankato  
 Ralph William Russell; Manhattan  
 Maud Grace Ryder; Huntington, W. Va.  
 Curtis Williams Sabrosky; Manhattan  
 Olga Barbara Saffry; Alma  
 Myron L. Sallee; Manhattan  
 Dorothy Saville; Manhattan  
 Norma Harriet Sayre; Ingalls  
 Ira Ferdinand Schindler; Jewell  
 Henry William Schmutz; Manhattan  
 Fred Schopp; Abilene  
 Galen E. Schwandt; Manhattan  
 Hildred Renetta Schweiter; Wichita  
 Eugene Saxton Scott; Le Roy  
 Harold Martin Scott; Manhattan  
 Mamie May Harreld Searles; Kansas City  
 Dwight M. Seath; Manhattan  
 Morrel Seeds; Olin, Iowa  
 Robert Edwin Sellers; Wichita  
 Petrus Johannes Serfontein; Trompsburg, S. Africa  
 William Elias Sheffer; Manhattan  
 John Henry Shenk; Manhattan  
 Lee Edward Shirley; Lucas  
 Sophia M. Shirley; Osage City  
 Dale Harold Sieling; Hays  
 David Loyd Signor; Effingham  
 Lonnie Joseph Simmons; Argonia  
 Sister M. Domitilla Arnoldy; Concordia  
 Earl LeRoy Sitz; Manhattan  
 Florence Myrtle Sitz; Manhattan  
 Deal Six; Protection  
 Carroll H. Smith; El Dorado  
 Melvin Ernest Smith; Ames  
 Georgiana Hope Smurthwaite; Manhattan  
 Ralph Owen Sneling; Manhattan  
 Ida Elizabeth Snyder; Effingham  
 Stanley Livingstone Soper; Manhattan  
 Dale Edward Springer; Garrison  
 William Emil Steps; Halstead



GRADUATE STUDENTS—*Concluded*

H. Arlo Stewart; Topeka	Walter Henry von Trebra; Manhattan
Herbert Norma Stapleton; Jewell	John Robert Warner; Whiting
Warren Edward Stone; Bazine	Emory Newton Watkins; Kingsdown
Gladys Juanita Stoops; Bellaire	Joseph Ardrey Watson; Howard
Charles William Stratton; Manhattan	Winifred Ruth Weaver; Wichita
Wallace Sullivan; Manhattan	Arthur D. Weber; Manhattan
Ida Walker Summers; Manhattan	Ray Edward Weide; Leona
Esther Holmberg Swanson; Manhattan	Bessie Brooks West; Manhattan
Bruce Ross Taylor; Alma	Paul Charles Westerman; Manhattan
Delos Clifton Taylor; Manhattan	Donald Alden Wilbur; Manhattan
John George Taylor; Parsons	Katherine Manly Williams; Manhattan
Mary Fidelia Taylor; Newton	Louis Coleman Williams; Manhattan
Donald McCrea Telford; Manhattan	Homer Bryan Willis; Manhattan
Howard Everett Tempero; Broughton	Luther Earle Willoughby; Manhattan
Edgar Arnold Templeton; Wakeeney	Claude Leonard Wilson; Ottawa
Russell Ira Thackrey; Manhattan	Mary Helene Wilson; Council Grove
Elmer Howard Thom; Oakley	Herbert L. Winston; Stilwell
Marcia Edythe Tillman; Manhattan	Chester A. Wismer; Pomona
Alberta Edelblute Timmons; Manhattan	Floyd Byron Wolberg; Iola, Wis.
Francis Leonard Timmons; Manhattan	Homer Carlton Wood; Reading
Wayne Tolley; Delphos	Jay Roy Wood; Trusdale
Frederick Walter Toomey; Neodesha	LeVelle Wood; Manhattan
Harold Everett Tower; Polson, Mont.	Claude Newton Yapple; Rago
Dorothy Triplett; Manhattan	Clifford Richard Yardley; Hutchinson
Selma Elin Turner; Manhattan	Marian Irene Young; Cedar Point
Loren Francis Ungeheuer; Paxico	Iscah Marian Zahm; Topeka
Lois Castle Vance; Kiowa	James Walter Zahnley; Manhattan
Richard George Vogel; Stuttgart	Frank J. Zink; Manhattan

## GRADUATE STUDENTS PURSUING WORK IN ABSENTIA

Clarence Joseph Becker; Topeka	Burleigh Reed; Topeka
John Herbert Coolidge; Emporia	Sarah Helen Roberts; St. Francis
Alma Dale Newell; Durham	Mott Luther Robinson; McPherson
Linus A. Noll; Keats	Pearl Elzora Rorabaugh; Lebanon
Winifred Daisy Beeby Norman; Randolph	

## SENIOR STUDENTS PURSUING GRADUATE WORK

Vivian Forestine Albright; Netawaka	Rachel Joye Lamprecht; Manhattan
Dallas Dale Alsup; Pittsburg	Robert Francis Lang; Denver, Colo.
Roy Herbert Armstrong; Leocompton	Maurine Theresa Lewis; Manhattan
Ralph David Barnhart; Manhattan	Wilbur McDaniel; Michigan Valley
John Gregory Bell; Atchison	Zula Gladys McDonald; Severy
Raymond Usher Brooks; Hutchinson	William Loy McMullen; Oberlin
Carl William Brown; Mildred	Fred Elmo McVey; Oak Hill
Margaret Iola Buck; Derby	Martin Nicholas Mayrath; Dodge City
Merl Leroy Burgin; Coats	Mildred Elnora Mellinger; Milford
Kenneth Elwyn Converse; Hays	Vera Jane Miles; Jewell
John Trumbull Correll; Manhattan	Clark Carlyle Milligan; Boyle
James Romayne Cribbett; Parsons	Grace Selina Morehouse; Irving
Ola Antoinette Curtis; Lincoln	Lawrence Dale Morgan; Manhattan
Duane Huber Daly; Manhattan	Clair Winfield Munger; Hoisington
Loua Marjorie Dean; Manhattan	Charles William Nauheim; Hoyt
Tom David Dicken; Winfield	Loren Terry Palmer; Parsons
Omeda Mae Dickison; Riley	Paul Clutter Perry; Little River
Howard Carl Edinborough; Tescott	Kenneth Dale Phelps; Pratt
Carl Emmert Elling; Manhattan	Albert Leonard Reed; Cassoday
Beulah Ellis; Coldwater	A. Louise Reed; Manhattan
David Franklin Engle; Abilene	Thelma Reed; Kanopolis
Forrest Malcolm Faulconer; Clay Center	Niles Franklin Resch; Independence, Mo.
Hayden Adelbert Fleck; Maplehill	Lyla Roepke; Manhattan
Eolia Eunice Gilson; Manhattan	Fred Madison Root; Medicine Lodge
Charles Tomas Hall; New Albany	Ebur Samuel Schultz; Miller
Helen Margaret Halstead; Manhattan	Clyde Shade, Jr.; Ottawa
Edwin Louis Hullah; Wilson	Oliver Wendell Shoup; Udall
Kermit Roosevelt Huyck; Morrowville	Curtis Daniel Sides; Manhattan
Jennie Mae Karns; Circleville	Leland Milton Sloan; Leavenworth
George Raymond Kent; Wakefield	Daphyne Vivian Smith; Manhattan
Claude Lewis King; Olsburg	Maynard Harold Solt; Manhattan
Norbert Julius Klinge; Topeka	Chester Gordon Thompson; Randolph
Edgar Colbert Laird; Wichita	Vera Wasson; Neosho, Mo.
Malcolm Laman; Concordia	Leroy Albert Wilhelm; Arkansas City
Russell Laman; Concordia	

## Undergraduate Students

The following lists include seniors, juniors, sophomores, freshmen and special students in College. For students in the Summer Schools and in special courses see lists following these.

Abbreviations here used denote curricula as follows: AA, agricultural administration; Ag, agriculture; AE, agricultural engineering; AH&V, animal husbandry and veterinary medicine; Acct, commerce and accounting; Art, home economics and art; 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&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, music; ME, mechanical engineering; PE, physical education; VM, veterinary medicine.

### SENIORS

- Cirilo Lagmay Adam (Ag); Sison, P. I.  
 Donald Adair Adell (CE); Manhattan  
 \*Harriett Aletha Aikins (GS); Ozawkie  
 \*Chilton Albright (ME); St. Joseph, Mo.  
 †Vivian Forestine Albright (HE); Netawaka  
 Henry Wright Allard (IJ); Topeka  
 Clarence John Allen (CE); Liberty  
 Merle Walter Allen (GS); Manhattan  
 Clare Kenneth Alspach (C); Wilsey  
 †Dallas Dale Alsup (Ag); Pittsburg  
 Mabel Caroline Amthauer (HE); Dwight  
 John Edmond Anderson (IC); Belvue  
 Joye Ansdell (IJ); Jamestown  
 Frieda Opal Antener (HE); Independence  
 Paul Warren Archer (AA); Hutchinson  
 Clifford Elroy Armstrong (EE); Pittsburg  
 †Roy Herbert Armstrong (GS); Leocompton  
 Millicent Charlotte Aspelin (GS); Dwight  
 Elden LeRoy Aufer (PE); Norcatur  
 Lois Louise Avis (HE); Fostoria  
 James Lister Baird (Ag); Wellsville  
 Dorothy Gertrude Barlow (HE);  
 Manhattan  
 †Ralph David Barnhart (Ag); Manhattan  
 Bertha Gesine Barre (HE); Tampa  
 Vernon C. Bates (ArE); Garden City  
 Mary Alta Beach (GS); Edwardsville  
 Mildred Eleanor Beil (HE); Bavaria  
 †John Gregory Bell (Ag); Atchison  
 Jay Russell Bentley (Ag); Ford  
 \*Johan Albert Berg von Linde (ME);  
 Manhattan  
 Dalys Lewis Berry (VM); Wilsey  
 †John Alexander Bird (IJ-1; Grad-2);  
 Manhattan  
 Katherine Taylor Bird (HE); Manhattan  
 Elmer Carson Black (PE); Utica  
 Gordon Ingraham Blair (C); Junction City  
 Robert Overall Blair (AG); Manhattan  
 Howard T. Blanchard (AR); Garden City  
 Maxine Blankenship (HE); Downs  
 Harvey Gerald Bobst (CE); Almena  
 Loyd Edwin Boley (VM); Topeka  
 George Illingworth Boone (C); Manhattan  
 Margaret Jewell Bortorf (HE); Formoso  
 Vera Theresa Bowersox (Ar); Great Bend  
 Fred Virgil Bowles (Ag); Walnut  
 Mildred Bowles (HE); Walnut  
 Albert Henry Boyer (EE); Welda  
 Oliver Karl Brandon (ME); Ash Valley  
 Clarence Eckhart Brehm (Ar); Wichita  
 Donald Parker Brenz (ME); Arkansas City  
 †Alice Katherine Brill (GS-1; Grad-2);  
 Westmoreland  
 John Eberth Brink (Ar); Manhattan  
 Lyle Clark Brisbin (CE); Girard  
 Helen Sproul Brittain (M); Manhattan  
 Mary Esther Brittain (HE); Atchison  
 Stanley Hyde Brockway (Che); Topeka  
 †Raymond Usher Brooks (ArE); Hutchinson  
 †Carl William Brown (EE); Mildred  
 Barbara Brubaker (GS); Manhattan  
 John Arthur Bryan (C); Leoti  
 Maurine Marguerite Bryan (Art); Delia  
 Leslie Matthew Bryson (ChE); Abilene  
 †Margaret Iola Buck (HE); Derby  
 Herman Charles Bunte (EE); Manhattan  
 Clark Wayne Burch (GS); Manhattan  
 Vance L. Burch (C); Manhattan  
 †Merl Leroy Burgin (EE); Coats  
 John V. Burke (ArE); Glasco  
 Elizabeth Doris Butrum (HE); Holton  
 Gerald Edwin Cain (EE); Pomona  
 Marian Isabel Campbell (HE&N);  
 Manhattan  
 Clifford Beamer Carlson (ME); Utica  
 Hugo Homer Carlson (CE); Lindsborg  
 Mary Latta Carney (C); Manhattan  
 John Clarence Carter (Ag); Bradford  
 Alfred Louis Casey (AE); Corning  
 Boyd Ralph Cathcart (Ag); Winchester  
 Victor Clare Cavin (ME); La Crosse  
 Louise Helen Chalfont (GS); Wichita  
 Margaret Brooks Chaney (GS); Manhattan  
 James Percy Chapman (IJ); Manhattan  
 Edwin Roy Chesney (IJ); Wichita  
 Emerson Dwight Chilcott (AA); Jewell  
 Ida Margaret Chitwood (HE); Meriden  
 Erick R. Claassen (ME); Newton  
 Elmer Field Clark (AE); Jewell  
 Mary Henrietta Clark (GS); Kansas City  
 Olive Josephine Clark (Art); Leavenworth  
 Virgil Howard Clark (VM); Webber  
 Alice Mae Clema (M); Frankfort  
 George R. Collier (EE); Colwich  
 †Clarence Ralph Collins (GS-1; Grad-2);  
 Manhattan  
 Elery Lowe Collins (AA); Fontana  
 Margaret Louise Colver (M); Manhattan  
 Gilbert Underwood Combs (EE);  
 Manhattan  
 Carl Clarence Conger (Ag); Manhattan  
 Ruby Roberta Connell (GS); Manhattan  
 William Joseph Conover (AA); Elkhart

\* Matriculated 1931-'32.

† Also pursuing graduate study.



## SENIORS—Continued

- †Kenneth Elwyn Converse (EE); Hays  
Helen Josephine Cook (HE); Oakley  
Oliver Hazard Perry Cook (GS);  
Cawker City  
Ernest Samuel Cooke (Ar); Emporia  
Lloyd Manion Copenhafer (LG);  
Manhattan  
Wilber Abram Copenhafer (LG);  
Manhattan  
Kenneth Deorace Cornell (EE);  
Kansas City  
†John Trumbull Correll (IC); Manhattan  
Lucile Maude Correll (M); Manhattan  
Mary Josephine Cortelyou (GS);  
Manhattan  
Luis Alfredo Cortes Silva (Ar);  
Bogota, Columbia, S. A.  
Grant Fuller Cottrell (VM); Andover  
Cecil Clyde Crane (CE); Severy  
Dale Everett Crangle (CE); Mankato  
\*Harold Wakelin Crawford (GS);  
Brooklyn, N. Y.  
Ruth Esther Crawford (HE); Burns  
†James Romayne Cribbett (IC); Parsons  
Grace Marie Crik (HE&N); Ashton  
Marian Hazel Crocker (IJ); Manhattan  
Henry Oliver Cronkite (PE); Belle Plaine  
Alvin Warren Crooke (IJ); Great Bend  
Leonard E. Croy (AA); Norcatur  
Robert William Cunningham (CE);  
Emporia  
Burdell E. Curl (GS); Bartlett  
\*Ira Vernon Curtis (EE); Asbury, Mo.  
†Ola Antoinette Curtis (HE); Lincoln  
Faigh Daigh (Art); Ashland  
Ward Edmond Dale (ME); Topeka  
†Duane Huber Daly (Ag); Manhattan  
Richard Perry Daniels (EE); Topeka  
Roy Emanuel Danielson (EE); Topeka  
Hilma Ruth Davis (HE); Manhattan  
Louise Davis (Art); Nashville, Tenn.  
†Marion Bradford Davis (VM-1; Grad-2);  
Manhattan  
Edward Glenn Dawson (Ag); Manhattan  
Ben Harrison Dean (VM); Manhattan  
†Loua Marjorie Dean (GS); Manhattan  
Ray Spencer DeLaMater (CE); Wichita  
Salvador Baldonado Della (AA);  
Manhattan  
Harold Mead Denison (EE); Topeka  
Robert Cooper Dial (CE); Manhattan  
†Tom David Dicken (Ag); Winfield  
Charles Eugene Dimon (VM); Manhattan  
Paul Lawrence Dittmore (IJ); Manhattan  
Helen Dobson (M); Solomon  
Gerald Michael Donahue (EE); Ogden  
Avis A. Downey (GS); Manhattan  
William Lawrence Doyle (GS); Douglass  
Truman Ben Drury (EE); Burden  
Blanche Margaret Duguid (GS); Olathe  
Helen Gertrude Durham (M); Manhattan  
Keith Barber Dusenbury (Ag); Anthony  
Max Leon Eaton (ChE); Colby  
Ethel Amelia Eberhart (Ar); Topeka  
Virginia Lee Edelblute (PE); Manhattan  
†Howard Carl Edinborough (LG); Tescott  
Mildred Rae Edlin (HE); Herington  
Milton Ehrlich (C); Marion  
†Carl Emmert Elling (Ag); Manhattan  
†Beulah Ellis (GS); Coldwater  
Glenn Leslie Ellithorpe (AE); Russell  
Howard Andrew Elwell (EE); Hutchinson  
Ruth Mary Emrich (HE); Tyronza, Ark.  
†David Franklin Engle (VM); Abilene  
John W. Enns (EE); Newton  
Verna Mae Eveleigh (PE); Boyd  
Myron Wayne Ewing (AA); Beloit  
Verona Anna Fark (GS); Greensburg  
James Henry Farmer (EE); Pratt  
†Forrest Malcolm Faulconer (IC);  
Clay Center  
Gerold Emerson Feldhausen (AE);  
Frankfort  
Joseph Charles Fickel (ME); Manhattan  
Eva Merle Filson (HE); Scott City  
Bernadine Eathel Finch (HE); Oketo  
Alice Louise Fincham (IJ); Pratt  
\*Maynard Hincok Finley (EE); Emporia  
†Hayden Adelbert Fleck (EE); Maplehill  
Lois Maxine Fleming (HE); Iola  
Wyona Florence (IJ); Manhattan  
Robert Sheldon Florer (CE); Marion  
Oliver Elroy Flory (VM); Great Bend  
Kale Max Fones (AE); Kansas City, Mo.  
Anthony Dominic Fornelli (CE); Cherokee  
Virginia Forrester (IJ); Manhattan  
Alva Leo Frashier (EE); Manhattan  
Ferne Aileen Frashier (M); Manhattan  
Chester Barton Freeman (Ar); Junction City  
Frank Ryder Freeman (Ag); Kirwin  
Keith Gerald Friel (C); Manhattan  
†Edith Martha Fritz (HE-1; Grad-2);  
Manhattan  
Ervil Scott Fry (Ag); Manhattan  
Charles Elmore Funk (EE); Iola  
Edgar Daniel Furse (EE); Pleasanton  
Elizabeth Gaston (IJ); Manhattan  
Nathan Bartlett Geer (AE); Wakarusa  
John Lester George (VM); Mulberry  
George Adamson Gillespie (Ag); Welda  
Virginia Louise Gibson (HE); Potwin  
†Eolia Eunice Gilson (HE); Manhattan  
Ed Cephas Glover (EE); Manhattan  
Ferne Acille Glover (HE); Burr Oak  
Grace Gould (GS); Beloit  
Lois Alta Graham (HE); Peabody  
Spencer William Graham (ME);  
Summerfield  
Henry Howard Gregory (CE); Ellsworth  
\*Marion Winn Griffin (ChE); Merriam  
Melvin Arthur Griffith (CE); Osage City  
Hilda R. Grossmann (M); Waverly, Iowa  
Alberta Maude Gurtler (IE&D); Topeka  
Paul Anton Haas (EE); Kansas City  
Lester Theodore Hagadorn (CE);  
Manhattan  
Robert LeRoy Hahn (CE); Arkansas City  
Dale Evart Halbert (Ag); Abilene  
†Charles Tomas Hall (AA); New Albany  
Lyman Monroe Hall (C); Manhattan  
Thomas E. Hall (Ag); Manhattan  
William Hall (ME); Lindsborg  
†Helen Margaret Halstead (GS); Manhattan  
John Hamon (Ag); Valley Falls  
Frances Pearle Hampshire (HE);  
Manhattan  
Virgiline Wilma Hanes (HE); Augusta  
John Bonar Hanna (Ag); Clay Center  
Oscar Miles Hardtarfer (AA); Lawrence  
Reba Mildred Harman (HE); Manhattan  
Harold Byron Harper (A); Manhattan  
Kermit M. Harris (EE); Peabody  
Glen Russell Harsh (C); Oil Hill  
Harold Percy Hartzell (VM); Manhattan  
Ralph Carroll Hay (AE); Parker  
Merle Preston Raymond (IC); Burdett  
Ivalee Beryl Hedge (HE); Manhattan  
Violet Alvina Heer (HE); Manhattan  
Alfred Helm (Ag); Chanute  
Willard Sandman Hemker (EE);  
Great Bend  
Frances Ada Hester (Art); Medicine Lodge  
Lynn Bandy Hicks (ME); Oil Hill  
Inez Mildred Hill (HE); Topeka  
Harry Wilson Hincley (M); Barnard

\* Matriculated 1931-'32.

† Also pursuing graduate study.



## SENIORS—Continued

- Walter Clarence Hinkle (AE); Lucerne  
 Carolyn Alvenia Hirt (HE); Bucklin  
 Esther Elzena Hobson (PE); Kingman  
 Melvin Eugene Hodgson (VM); Hutchinson  
 Robert Lee Hodshire (ME); Coffeyville  
 Raymond Kenneth Hoefener (ArE);  
 Leavenworth  
 Loretta Alberta Hofman (HE); St. George  
 Carl Edward Holliday (C); Kansas City  
 Will Sydney Hornsby, Jr. (VM);  
 Manhattan  
 Lynn Arthur Horwege (IJ); Belleville  
 James William Howard (IJ); Douglass  
 Adolph Rudolph Hraba (FME);  
 East St. Louis, Ill.  
 Serena Louise Huey (HE); Ogden  
 William Huey (GS); Ogden  
 Helen Mary Hughes (GS); Manhattan  
 †Edwin Louis Hulland (ME); Wilson  
 Lloyd Wendling Hurlbot (AE);  
 Sylvan Grove  
 James Lawrence Hurley (CE); Glasco  
 Adelaide Hutter (Acct); Neodesha  
 †Kermit Roosevelt Huyck (AA); Morrowville  
 Alice Mary Irwin (M); Manhattan  
 Luther Arthur Jacobson (Ag); Horton  
 Leila Grace James (HE); Manhattan  
 †Russell Everett James (ME-1; Grad-2);  
 Wetmore  
 Josephine Fisk Jelinek (GS); Manhattan  
 Ruth E. Jenkins (GS); Jewell  
 Elmer Roy Jensen (EE); Herington  
 John Jay Jewett (CE); Halstead  
 Earl H. Johnson (AA); Norton  
 Joseph Claude Johnson (C); Russell  
 Naomi Marie Johnson (HE); Oskaloosa  
 Vern Waldo Johnson (ArE); Salina  
 Winifred L. Johnson (HE); Frankfort  
 John Hoffman Johntz (C); Abilene  
 Glenn Vivian Joines (CE); Manhattan  
 Florence Nevada Jones (Art); El Dorado  
 Hugh Jones (Ar); Horton  
 John Willis Jordan (Ag); Clafin  
 John Ralph Justice (Ag); Manhattan  
 †Jennie Mae Karns (GS); Circleville  
 John Howard Kelly (C); Mayetta  
 Lonnie Worth Kemper (EE); Augusta  
 Floyd N. Kennedy (ArE); Anthony  
 †George Raymond Kent (Ag); Wakefield  
 Clifford Wayne Kewley (ME); Stockton  
 Walter Elwood Keyser (EE); Maplehill  
 Tom Russell Kimball (GS); Manhattan  
 †Claude Lewis King (Ag); Olsburg  
 Howard LeVasson Kipfer (CE); Manhattan  
 Herbert Henry Kirby (EE); Toronto  
 Louis Dunham Kleiss (ChE); Coffeyville  
 †Norbert Julius Klinge (EE); Topeka  
 Fritz Gustave Knorr (PE); Manhattan  
 Otho Merton Koontz (C); Jetmore  
 Al Joseph Koster (ME); Manhattan  
 Edwin Kotapish (GS); Blue Rapids  
 Alden Glen Krider (Ar); Newton  
 Fred Short Kruger (Ag); Holton  
 Dorothea Annette LaFollette (IJ); Utica  
 †Edgar Colberg Laird (CE); Wichita  
 †Malcolm Laman (GS); Manhattan  
 †Russell Laman (GS); Concordia  
 †Rachel Joy Lamprecht (IJ); Manhattan  
 †Robert Francis Lang (PE); Denver, Colo.  
 †Charles Herbert Lantz, Jr. (GS-1; Grad-2);  
 Manhattan  
 Thelma Lois Large (PE); Protection  
 Edith Goddard Lauck (HE); Maplehill  
 Philip Ott Lautz (EE); Ja Junta, Colo.  
 Howard Kenneth Learned (IC); Plevna  
 Freda Nixon Leasure (GS); Manhattan  
 Mildred Woodcock Leker (HE); Manhattan  
 †Maurine Theresa Lewis (HE); Manhattan  
 Velma Liles (HE); Kingsdown  
 \*Elizabeth Lill (IJ); Mount Hope  
 Madge Louise Limes (HE); La Harpe  
 Eugene Clifford Livingston (ME);  
 Hutchinson  
 Elizabeth Maris Lloyd (GS); Leavenworth  
 Virginia Louise Lovitt (M); Great Bend  
 Alvin Ernest Lowe (Ag); Argonia  
 Ruth Mildred Lowrey (HE); Selden  
 William Harold Lundry (ME); Arlington  
 Marjorie Nelson Lyles (PE); Saffordville  
 Summer V. Lyons (GS); Lucas  
 Gail McAninch (M); Stockdale  
 Francis Dean McCammon (AA); Manhattan  
 Ted Roosevelt McCandless (AA); St. John  
 Edith Louise McCauley (Art); Coldwater  
 Mary Alice McCreight (HE); Soldier  
 †Wilbur McDaniel (GS); Michigan Valley  
 Geneva McDaniels (HE); Scottsville  
 †Zula Gladys McDonald (HE); Severy  
 R. Harold McElroy (CE); Randall  
 †Ray John McMillin (PE-1; Grad-2);  
 Manhattan  
 Mildred M. McMullen (IJ); Norton  
 †William Loy McMullen (AA); Oberlin  
 Georgia Anne McNickle (C); Ashland  
 †Fred Elmo McVey (AA); Oak Hill  
 Murt Francis Makins (Ar); Abilene  
 Helen Charlotte Mangelsdorf (HE);  
 Atchison  
 Merle Mark (HE); Abilene  
 Benjamin Eber Markley (M); Bennington  
 Frank Stephen Martin (ChE); Manhattan  
 James William Martin (EE); Sabetha  
 Vera Isabell Martin (HE); Hastings, Neb.  
 Carl Jesus Martinez (EE); Manhattan  
 Laurence Norbert Marx (GS); Manhattan  
 Jewel Warren Massey (EE); Manhattan  
 Jess Roland Mathias (CE); Manhattan  
 Murray Edgar Matter (AE); Jewell  
 Edna Estella Maxwell (HE); Manhattan  
 †Martin Nicholas Mayrath (C); Dodge City  
 Ella Jane Meiller (HE); Minneapolis  
 †Mildred Elnora Mellinger (GS); Milford  
 Joseph William Menzie (C); Manhattan  
 Alvin Dietrick Meyer (ME); Haven  
 †Vera Jane Miles (GS); Jewell  
 Edith Elaine Miller (PE); Salina  
 Grant Gould Miller (EE); Offerle  
 Harry Earl Miller (GS); Manhattan  
 Joyce W. Miller (AA); Sycamore  
 Marion Francis Miller (ME); Norton  
 Merna Beatrice Miller (HE); Kansas City  
 Robert Wilson Miller (ME); Manhattan  
 Sarah Elizabeth Miller (HE); Centerville  
 †Clark Carlyle Milligan (Ag); Boyle  
 †Walter Rankin Mitchell (EE-1; Grad-2);  
 Salina  
 \*Hiroshi Miyata (EE); Honolulu, T. H.  
 Carol Elizabeth Moore (M); Ashland  
 Hugh Isaac Moore (AA); Wakarusa  
 †Grace Selina Morehouse (GS); Irving  
 Clark Leroy Morford (GS); Olsburg  
 Esther Elizabeth Morgan (IJ); Hutchinson  
 †Lawrence Dale Morgan (Ag); Manhattan  
 Thomas Daniel Morgan (CE); Manhattan  
 Marjorie Morrow (HE); Parsons  
 Elizabeth Mountain (GS); Wichita  
 Stuart Redington Mudge (EE); Salina  
 †Clair Winfield Munger (Ag); Hoisington  
 Ralph Conrad Munson (Ag); Junction City  
 Daniel Ronald Musser (GS); Jewell  
 Ansel J. Myers (CE); Lyons  
 Will Martin Myers (Ag); Bancroft  
 †Charles William Nauheim (Ag); Hoyt  
 James Lisle Neville (CE); Coffeyville  
 Alex Nigro (C); Kansas City

\* Matriculated 1931-'32.

† Also pursuing graduate study.

## SENIORS—Continued

- Julia Anna Noell (GS); Syracuse  
 Harold LeRoy Nonamaker (Ag); Osborne  
 Dale Leora Norris (EE); Raymond  
 Earl Conley North (EE); Marlow, Okla.  
 Carl Gerhardt Ossman (ArE); Concordia  
 Harold Weekley Overbey (Ag); Winfield  
 †Carol Lee Owsley (GS-1; Grad-2);  
 Manhattan  
 Chester Anson Paige (VM); Manhattan  
 †Loren Terry Palmer (EE); Parsons  
 Clifford Arthur Palmquist (EE); Concordia  
 Ralph Berchard Parker (IC); Broughton  
 Luella Gertrude Parrott (HE); Manhattan  
 Franklin Leonard Parsons (AA); Ruleton  
 Pauline Patchin (GS); Parsons  
 Carl Edward Pate (ChE); Parsons  
 Lloyd Everett Patterson (EE); St. John  
 Glen Frank Patton (VM); Cawker City  
 Albert Arnold Pease (Ag); Fort Scott  
 Marian Herfort Pelton (M); Manhattan  
 Helen Jane Pembleton (HE); Ness City  
 Lewis Sylvanus Perkins (Ag); Argonia  
 †Paul Clutter Perry (CE); Little River  
 Robert Bruce Perry (IC); Manhattan  
 Irving Everett Peterson (AA); Haddam  
 Vera Linnea Petersen (Art); Gypsum  
 †Kenneth Dale Phelps (ME); Pratt  
 Lawrence Bryan Pilcher (PE); Glasco  
 D. Donald Plumb (M); Manhattan  
 Dale Franklin Pocock (Acet); Le Roy  
 Mildred Aileen Porter (HE); Mount Hope  
 Charles Edwin Powell (LG); Frankfort  
 Frederick Gerald Powell (EE); Frankfort  
 Laurence Allen Pratt (C); Manhattan  
 Frank B. Prentup (PE); Fort Riley  
 Garland Newton Purcell (ME); El Dorado  
 Esther Clarabel Quencer (HE); Bazine  
 Esther Erma Rairdon (GS); Havensville  
 Emma Evelyn Rathbone (GS); Manhattan  
 James Chalmers Rayburn (CE); Newton  
 †Albert Leonard Reed (ArE); Cassoday  
 †A. Louise Reed (GS); Manhattan  
 †Thelma Reed (HE&N); Kanopolis  
 Leonard Abbott Rees (Ag); Abilene  
 Earl Hubert Regnier (LG); Spearville  
 Charlotte Louise Remick (PE); Manhattan  
 †Niles Franklin Resch (Ar); Independence, Mo.  
 Sylvester John Rever (EE); Parsons  
 Mildred Rewert (HE); Leoti  
 Claude Marion Rhoades (ArE); Newton  
 Harlan Cromer Rhodes (C); Manhattan  
 John Alvin Richardson (CE); Douglass  
 Helen Sophia Richt (VM); Omaha, Neb.  
 Clark Rife (CE); Anthony  
 Tillie Helen Rife (HE); Anthony  
 Marian Riordan (C); Solomon  
 June Roberts (AE); Ford  
 Ralph Edwin Roderick (CE); Manhattan  
 Gladys Maxine Roe (M); Manhattan  
 †Lyla Roepka (HE); Manhattan  
 \*Ernest Hermon Rogalsky (GS); McPherson  
 Roland Cribner Rogler (AA); Manhattan  
 Raymond Carl Rohrdanz (ChE); Manhattan  
 †Fred Madison Root (Ar); Medicine Lodge  
 Richard McHenry Roper (EE); Manhattan  
 Theodore Joseph Rostocil (EE); Zurich  
 Henry Ruff (ME); Newton  
 \*Orville Abraham Runkle (ME); Hiattville  
 John Howard Rust (VM); Manhattan  
 Robert Jacob Rychel (EE); Downs  
 Milton Ernest Saffry (AA); Alma  
 Mart Benjamin Sanders (EE); Marion  
 Harry Clinton Sawin (EE); Waterville  
 Loretta Maye Sawin (HE); Waterville  
 Mary Elizabeth Sayre (HE); Manhattan  
 †Norma Harriet Sayre (HE-1; Grad-2);  
 Ingalls  
 Karl Marion Scanlan (ME); Manhattan  
 John Seaton Schafer (ME); Manhattan  
 Frederick Ferdinand Schmidt (VM);  
 Junction City  
 Leon Virgil Schmutz (ME); Chanute  
 Robert Allen Schober (Ar); Manhattan  
 Forrest Leroy Schooley (C); Hutchinson  
 Eunice Alvina Schroeter (HE); Ellinwood  
 LeVelle Robert Schruben (EE); Dresden  
 Luke Michael Schruben (AA); Dresden  
 †Ebur Samuel Schultz (Ag); Miller  
 Henry John Schwartz (CE); Hanover  
 \*Jennie Faye Schweiter (HE); Wichita  
 Roy Nelson Selby (AE); Manhattan  
 Oliver John Selfridge (C); St. John  
 \*Robert Moss Sensintaffer (EE); Manhattan  
 Ralph William Sexton (EE); Neodesha  
 Floyd Henry Seyb (AA); Pretty Prairie  
 George Audrian Shafer (EE); Manhattan  
 David Marion Shannon (C); Iola  
 Kenneth Leroy Shay (CE); Miltonvale  
 Emma Frances Shepek (HE); Narka  
 \*Byron LeRoy Shepherd (GS); Harveyville  
 †Oliver Wendell Shoup (AA); Udall  
 Mercedes Virginia Shute (HE); Manhattan  
 †Curtis Daniel Sides (EE); Manhattan  
 Virgil William Siebert (ME); Pretty Prairie  
 Francisco Antonio Sierra de Soto (GS);  
 Manhattan  
 Galvesta May Siever (PE); Manhattan  
 Ruth Elizabeth Silkensen (PE);  
 Dell Rapids, S. Dak.  
 Loula Marie Simmons (HE); Manhattan  
 Josephine Nell Skinner (HE); Topeka  
 †Leland Milton Sloan (Ag); Leavenworth  
 Joseph Daniel Smerchek (Ag); Garnett  
 Libbie Ann Smerchek (HE); Garnett  
 Charles Francis Smith (ArE); Manhattan  
 †Daphne Vivian Smith (HE); Manhattan  
 Francis Glenn Smith (C); Potwin  
 Frank Lynn Smith (IC); Manhattan  
 Harold Larken Smith (ChE); Parsons  
 Hobart Muir Smith (GS); Manhattan  
 †Melvin Ernest Smith (EE-1; Grad-2);  
 Ames  
 Ruth Irene Smith (Art); Lawrence  
 †Ralph Owen Snelling (Ag-1; Grad-2);  
 Manhattan  
 Paul Francis Snyder (EE); Elkhart  
 Pearl Fay Snyder (GS); Osborne  
 Edna Mae Socolofsky (C); Tampa  
 †Maynard Harold Solt (IC); Manhattan  
 Kathryn Elizabeth Songster (HE);  
 Wellington  
 Raymond Guy Spence (C); Salina  
 \*Paul William Spens (GS); Arlington  
 Lee Otis Stafford (ArE); Republic  
 Elizabeth Caroline Steele (HE&N);  
 Manhattan  
 Mable Anna Steiner (HE); Moundridge  
 Alvin Howard Stephenson (Ag); Clements  
 \*John Ransom Stone, Jr. (EE); Leavenworth  
 Mona Valeria Stoops (GS); Bellaire  
 Fred Storz (VM); Kansas City  
 Ione Strickland (GS); Manhattan  
 Esther Clara Stuewe (M); Alma  
 Karl Jarolin Svaty (CE); Ellsworth  
 Lewis Whitney Teall (CE); Larned  
 John D. Tedrow (C); Medicine Lodge  
 Helen Theodora Teichgraeber (HE);  
 Marquette  
 George Baldrige Telford (C); Manhattan  
 Robert Eldon Teter (GS); El Dorado  
 Howard Irwin Thaller (VM); Manhattan  
 Dale Alfred Thomas (IJ); Ellsworth  
 †Chester Gordon Thompson (Ag); Randolph

\* Matriculated 1931-'32.

† Also pursuing graduate study.



SENIORS—*Concluded*

- Eve Aileen Thompson (IJ); Partridge  
 Edith Catherine Thummel (IC);  
 Washington, D. C.  
 Obed Lee Toadvine (AA); Dighton  
 Irene Lillice Todd (HE); Topeka  
 Corabelle Tolin (GS); Havensville  
 †Wayne Tolley (EE-1; Grad-2); Delphos  
 William Norton Tomlinson (ChE); Garfield  
 John Melville Turner (Ar); Holton  
 †Selma Elin Turner (GS-1; Grad-2);  
 Manhattan  
 Ernest Julius Underwood (CE); Winfield  
 Clea Maurine Van Meter (Art); Ada  
 Arthur Fredrick Van Meveren (VM);  
 Manhattan  
 Helene Hahn Varney (GS); Manhattan  
 Christine Eloise Vaughan (HE); Scott City  
 Beatrice Petrinella Vaught (HE); Plains  
 William Dale Vawter (ME); Liberty  
 Ralph Francis Vohs (PE); Osawatomie  
 Lloyd Loomis Vrooman (ME);  
 Independence  
 Ralph Richard Wagner (Ar); Emporia  
 Charles Fayette Ward (GS); Pratt  
 George Washington (Ag); Manhattan  
 †Vera Wasson (HE); Neosho, Mo.  
 Joseph N. Weaver (GS); Harper  
 Ethel Sue Wells (GS); Winona  
 Eugene L. Wells (EE); Meriden  
 Dick Estes West (EE); Hartford  
 Sydney Francis Weybrew (EE); Wamego  
 Kenneth Paul White (GS); Kingsdown  
 Fay Allen Whiteside (Ar); Manhattan  
 Delta Nadine Whitmore (Art); Manhattan  
 Maxine Wickham (PE); Manhattan  
 George Samuel Wiggins (PE); Lyons  
 Gertrude H. Wilbur (PE); Belleville  
 Ernest Sherman Wild (PE); Wilsey  
 George Frank Wiley (ME); Chanute  
 †Leroy Albert Wilhelm (Ag); Arkansas City  
 Carl Williams (AA); Dodge City  
 Martha Alice Wilson (C); Blue Rapids  
 Robert Jerome Wilson (C); Manhattan  
 Estelle Winters (GS); Onaga  
 Jo Marie Wise (M); Manhattan  
 Clair M. Worthy (CE); Wetmore  
 Zint Elwin Wyant (CE); Topeka  
 Mary Irene Yoder (GS); Manhattan  
 Elmo Erville Young (ArE); Hutchinson  
 Ernestine Henrietta Young (PE);  
 Arkansas City  
 Russell P. Young (GS); Kansas City  
 Milton Chris Zimmerman (CE); Osborne  
 Catharine Eva Zink (HE); Lincoln

## JUNIORS

- Erwin Abmeyer (Ag); Grantville  
 \*Imogene Snyder Adams (M); Manhattan  
 Leonard Rusco Adler (EE); Goddard  
 Charles Leonard Alberding (ArE); Kiowa  
 Lee Harold Albin (Ag); Norcatur  
 Clifford Lankford Alcorn (EE); Carbondale  
 \*Lenden Moore Alcorn (VM); Adair, Iowa  
 Robert Joseph Alexander (ArE);  
 Independence, Mo.  
 Gayle Derwood Allen (VM); Manhattan  
 Juliana Amos (M); Manhattan  
 Clarence Hobert Anderson (AA); Richland  
 Harold Lee Anderson (IC); Manhattan  
 Olin Alvin Anderson (VM); Manhattan  
 William Joseph Angerer (VM); Manhattan  
 \*Mildred Caroline Aspelin (GS); Dwight  
 LaFau Astle (IJ); Hutchinson  
 Omo Arthur Attwood (IC); Manhattan  
 Herbert Willard Avery (VM); Wakefield  
 \*Nathan Lee Axten (EE); El Dorado  
 Mark J. Babb (C); Lebanon  
 Lewis Harold Bacon (Ag); Sylvan Grove  
 Margaret May Bacon (Ar); Manhattan  
 Albert Kilian Bader (ArE); Junction City  
 Dorothy Baldwin (GS); Manhattan  
 Dale Evertt Barkalow (EE); Burden  
 Everett Chlelen Barnett (CE); Towanda  
 Arthur Paul Baxter (PE); Little River  
 Mildred Evelyn Beard (M); McPherson  
 Raymond William Bebermeyer (AA);  
 Abilene  
 William Alexander Bechtel (C);  
 Garden City  
 Crawford Beeson (IC); Wamego  
 Frances Elaine Bell (HE); Marysville  
 Grace Anna Bell (M); Beverly  
 Kenneth Urbon Benjamin (EE); Deerfield  
 \*Jewell Robert Benson (ME); Topeka  
 Lynn Nathan Berry (CE); Manhattan  
 J. Ralph Bert (LA); Abilene  
 Robert Charles Besler (ME); Manhattan  
 \*Roy Wilson Best (ME); Manhattan  
 Robert Allen Biekel (ChE);  
 Kansas City Mo.  
 Max William Bickford (GS); Phillipsburg  
 John Milan Biddison (EE); Manhattan  
 Dean Francis Bishop (ME); Kendall  
 Loren Cleatus Blackburn (VM); Manhattan  
 John T. Blasdel (AA); Sylvia  
 Douglass Arthur Bly (EE); Pierceville  
 \*Nelle May Boellner (C); El Dorado  
 \*Victor Wayne Boellner (C); El Dorado  
 Ernest Verle Bogle (CE); Pittsburg  
 Thomas Leonard Bond (VM); Manhattan  
 Donald Houts Bowman (Ag); Manhattan  
 George William Boys (EE); Linwood  
 Alice Marguerite Bozarth (M); Lenora  
 Ferrell McClellan Bozarth (AE); Lenora  
 \*Helen Bradley (HE); Sedan  
 \*J. Cleo Bradley (EE); El Dorado  
 Virgil Edward Bradley (CE); Belle Plaine  
 Fred Ewing Brady (EE); Topeka  
 Frank R. Brandenburg (AA); Riley  
 Paul Jacob Brandy (VM); Manhattan  
 Mabel Rebecca Brasche (HE); Volland  
 Emmett Newton Breen (PE); El Dorado  
 Justina Veronica Brening (HE); Burns  
 Veva May Brewer (IJ); Wichita  
 Harriet Elizabeth Briggs (HE); Hutchinson  
 Joseph Emil Brinkman (EE); Americus  
 \*Mary Vashti Brookshier (HE); Osborne  
 \*Edith Alice Brown (HE); Partridge  
 Edna Brown (Art); Manhattan  
 Lawrence Edwin Brown (IC); Fall River  
 \*Louisa Marie Brown (Art); Hutchinson  
 Beryl Edith Brummett (GS); Wellington  
 Allen Vincent Brunke (VM); Manhattan  
 \*Thomas Maxwell Buck (IC); Abilene  
 Burnill Howard Buikstra (GS);  
 Cawker City  
 Gladys Ruth Buikstra (HE); Manhattan  
 \*Virginia Rosenerants Burch (GS);  
 El Dorado  
 \*Lloyd Richard Burdge (ME); Parsons  
 Kenneth Charles Burgert (EE); El Dorado  
 Marcine Dorothea Campbell (PE); Hollis  
 \*Wayne Wiat Cantral (CE); Omaha, Neb.  
 Velma Lorence Capper (GS); Manhattan  
 John E. Carr (Ar); Salina  
 Nelda Marian Carson (IJ); Morganville  
 Merrill Livern Carter (ChE); Smith Center  
 \*Marjorie Henrietta Casper (HE); Clifton  
 Francis Willard Castello (Ag); McCune  
 Mildred Castleman (HE); Junction City  
 Willard Martin Cheney (EE); Abilene  
 Lester Raymond Chilson (Ag); Oberlin



## JUNIORS—Continued

- Blanch Lucille Christensen (HE); Bushong  
Donald Christy (AE); Scott City  
\*Willa Christine Church (HE);  
Kansas City, Mo.  
Mary Lou Clark (PE); Burr Oak  
\*Miriam Clark (GS); Iola  
Herbert William Clutter (Ag); Larned  
Raymond Joseph Cohorst (Ag); Marysville  
Winsom Samme Coles (PE); Galena  
Ward Colwell (IJ); Onaga  
William Vaughn Combs (AA); Linn  
Robin Dale Compton (EE); Manhattan  
\*Earl Eugene Comstock (CE); Wichita  
Grace Caroline Conger (M); Ionia  
Wilmer I. Conger (VM); Ionia  
Ralph Martin Conrad (IC); Manhattan  
Joseph Brady Cook (GS); Cawker City  
Morris Jackson Coolbaugh (EE); Stockton  
Martin Luther Cooley, Jr. (CE);  
Tulsa, Okla.  
Geraldine Cornwell (PE); Topeka  
James Delos Corrigan (C); Holyrood  
Sam Prentis Cory (CE); Hutchinson  
\*Delbert James Jay Costa (GS); Hutchinson  
Earl Clark Coulter (Ag); Willis  
\*William David Cowan (PE); Manhattan  
Gertrude Alice Cowdery (GS); Lyons  
Waite Ellis Crabb (LA); Lebanon  
Robert Norman Craft (AA); Latham  
Audrey Louvina Cramer (HE); Webber  
Mary Elizabeth Crawford (HE); Madison  
Edward Everett Criner (C); Wichita  
Ralph Howard Crouch (GS); Herington  
Richard Jerome Crowley (Ar); Manhattan  
Isabel Clara Cunningham (IJ); Manhattan  
Ray Curry (VM); Blue Mound  
Harold Amos Daily (Ag); Waverly  
\*William Dale (ME); Liberal  
James Chester Dalgarn (CE); Manhattan  
Lloyd Henry Dalton (C); Garnett  
Laurence Robert Daniels (Ag); St. Francis  
Floyd Ewing Davidson (Ag); Madison  
Helen Louise Davis (Art); Topeka  
William DeOzro Davis, Jr. (ME);  
Manhattan  
Milbern Harry Davison (CE); Manhattan  
Phares Decker (Ag); Holton  
Myron Winterstein DeGeer (EE);  
Lake City  
Vaughn Eugene DeGeer (AE); Lake City  
Frank Adolph De La Mater (EE);  
McAlester, Okla.  
\*Stephen DeLadio (EE); Frontenac  
Orville Frederick Denton (Ag); Denton  
Bertus Johannes Deters (IC); Cawker City  
Mary Eliza Dillon (IJ); Topeka  
Dale D. Dixon (GS); Norcatour  
Edith Marie Dobson (IJ); Manhattan  
Louis Elmer Dobson (LA); Manhattan  
\*Harvey Philip Donnell (EE); Sterling  
Esther Ota Dorgan (GS); Alta Vista  
Calvin Elmer Dornberger (Ag); Talmage  
Dorothea Helen Doty (HE); Cunningham  
Joseph Alfred Doubrava (CE); Lorraine  
Elmer Douglas (EE); Caldwell  
\*Roberta Josephine Downie (GS);  
Garden City  
James Drew (EE); Rolla  
Wallace Watson Dudley (EE); Goodland  
Maurice Leland DuMars (IJ); Agra  
George Wallace Duncan (Ar); Topeka  
Florence Durham (HE); Randall  
Rudolph Eugene Eberle (CE); Emporia  
Eugenia May Ebling (IJ); Lindsborg  
\*Sarah Elnora Echord (GS); La Cygne  
Richard Laurence Edwards (ME); Meade  
Kenneth Joseph Ekdahl (C); Manhattan  
Oscar Sievert Ekdahl (Ar); Manhattan  
\*George Harold Ellinger (EE); Abbyville  
Loren Wesley Elliott (C); Clay Center  
Gene Ellis (CE); Council Grove  
Louis Garner Elser (CE); Fort Riley  
Andrew Charles Elson (LG); Kansas City  
Oscar S. Emrich (EE); Wakefield  
\*Roy Wayland Engler (ChE); Topeka  
Andrew Brian Erhart (Ag); Timken  
Alvie William Etzel (ChE); Topeka  
Charles William Evans, Jr. (EE);  
Washington  
Robert August Evers (GS); Quincy, Ill.  
Robert Clifton Eychner (ChE); Jewell  
Paul Eugene Fairbank (PE); Topeka  
Glenn David Ferguson (EE); Warsaw, Mo.  
John Moses Ferguson (AE); Bazine  
Elmer Fred Finke (VM); Manhattan  
\*Loretta Maxine Finnigan (IJ); Logan  
Lendall Kiple Firth (VM); Manhattan  
Charles Emil Fisher (Ag); Cuba  
Leonice Marie Fisher (HE); Fort Scott  
Ronald W. Fleck (ME); Beloit  
Richard Winston Fleming (C); Manhattan  
Frances Ann Fockele (M); Le Roy  
Max Frank Fockele (C); Ottawa  
Maxine Elizabeth Fones (Art);  
Kansas City, Mo.  
Glenn Sylvester Fox (Ag); Rozel  
Sidney Lorenz Franz (AA); Soldier  
Marian Frances Freedlund (ArE); Chanute  
Marvin William Freeland (EE); Effingham  
Geraldine Mabel Freeman (HE); Hamilton  
Harry Frederick Freeman (ChE);  
Kansas City  
Homer Lyle French (ME); Pretty Prairie  
Beulah M. Frey (HE); Elmdale  
Harry Winston Ganstrom (Ar); Hollis  
Leonard Elvin Garrison (GS); Manchester  
Jack Glen Garver (AA); Abilene  
Marion Gaumer (CE); Oberlin  
Glen Erwin Ghormley (GS); Manhattan  
\*Margaret Elizabeth Ghormley (HE);  
Hutchinson  
Harold Gibson (EE); Altoona  
Nadine Alice Gibson (HE); Emporia  
Neil Fought Gibson (CE); Ottawa  
\*Don Clinton Gillmore (Ag); Hutchinson  
Harriet Cordilla Gilson (GS); Manhattan  
William Phillip Glunt (AA); Garrison  
Jack Going (ME); Topeka  
\*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  
Fred Foster Greeley (ME); Manhattan  
Albert Benjamin Green (IC); Dallas, Tex.  
Orrin F. Grover (IC); Manhattan  
Robert Henry Gump (VM); Carlton  
\*Gersilda Guthrie (HE); Jetmore  
Dorothy Hadsell (IJ); Manhattan  
Charles Adrian Hageman (AA);  
White Cloud  
Mabel Lillian Hall (GS); Kensington  
Bernard Eugene Hammond (EE); Salina  
Marvin Harvey Hammond (C); Great Bend  
Raymond Thomas Harper (Ag); Manhattan  
Clark Hartman (ChE); Lyons  
Mary Elizabeth Harvey (C); Harveyville  
Harry L. Hasler (PE); Junction City  
James Wilbur Haupt (ME); Newton  
Raymond William Hayes (VM);  
Bonner Springs  
Achille Charles Hebert (EE);  
Langston, Okla.  
Harold Ray Heckendorn (EE); Cedar Point  
Wilber Gould Heer (ME); Manhattan  
\*Betty Lucile Heffelfinger (IJ); Newton

\* Matriculated 1931-'32.

## JUNIORS—Continued

- Hubert Raymond Hein (Ag); Washington  
 \*Marie Antoinette Henney (IJ); Hutchinson  
 Marybelle Henning (GS); Salina  
 Keith Harry Hinchsliff (Ar); Manhattan  
 Thomas Clark Hinkle (Ag); Carbondale  
 Newton Lowell Hinkson (CE); Halstead  
 \*Eugene Harry Hobson (Ag); Atchison  
 Lucyalice Hodgson (GS); Little River  
 Mabel Virginia Hodgson (HE); Little River  
 Lawrence Chester Hoerner (ME); Preston  
 Helen Lucille Hoffman (HE); Haddam  
 Ruth Greene Hofmann (IJ); Manhattan  
 Glen Arnold Hohlund (ChE); Miler  
 Alfred Arnold Holmquist (CE); Manhattan  
 Harvey Collins Holm (AA); Dwight  
 Mary Holton (HE); Manhattan  
 George Leslie Honstead (C); Waterville  
 Zadock Wayne Hook (GS); Manhattan  
 Seward Ellis Horner (GS); Abilene  
 Otis Fearing Hornish (GS); Bucklin  
 Alvin Albert Hostetler (C); Hutchinson  
 Mary Caroline Houser (IJ); Wooster, Ohio  
 Clair Louis Howard (CE); Clyde  
 Claude Hudson (VM); Manhattan  
 Harlow Kenyon Hudson (VM); Manhattan  
 Raymond Hickman Hughes (GS);  
 Manhattan  
 Imogene Hugunin (C); Manhattan  
 \*Walter Clair Halburt (AE); Wichita  
 James William Hunter (AG); Manhattan  
 Julius Godfrey Immer (IC); Hudson  
 Winter Haven, Fla.  
 Sue Washington Irons (HE);  
 George Raleigh Irvine (AE); Stafford  
 William Francis Irwin (VM); Wilsey  
 Percy Jennings Isaacson (PE); Walsburg  
 Conley Gordon Isenberg (VM); Manhattan  
 Frances Marie Jack (M); Russell  
 Roberta Amelia Jack (Art); Russell  
 Frank Jacobs (GS-1; ME-2); Quenemo  
 Hazel Marie James (Art); Manhattan  
 Olive Catharine James (HE); Wetmore  
 Paul William Jenicek (AE); Bushton  
 Mark Edwin Jennings (AA); Eskridge  
 Rex Mortimer Jennings (C); Hoyt  
 \*Ruth Inez Jessup (M); Hutchinson  
 Arvid Theodore Johnson (Ag); Kansas City  
 Genevieve Alberteen Johnson (C);  
 Manhattan  
 Helen Sylvia Johnson (HE); Greensburg  
 Irving Mauritz Johnson (EE); Smolan  
 James Tobin Johnson (C); Solomon  
 Myrtle Heena Johnson (GS); Concordia  
 \*Rowena Myra Johnson (GS); Fort Scott  
 Lenore Elizabeth Jones (PE); Chanute  
 Taylor L. Jones (Ag); Garden City  
 William Laurie Jones (VM); Manhattan  
 Richard Hulett Jurden (VM); Manhattan  
 Manuel Charles Kastner (VM); Manhattan  
 \*Martin Fred Keck (GS-1; Ag-2);  
 Manhattan  
 Sylvester Harwood Keller (AE); Newton  
 Mary Margaret Kelley (HE); Winfield  
 \*Vera Arnetta Kellogg (HE); Herington  
 Earle Lewis Kent (EE); Manhattan  
 Russell Anthony Kern (GS); Manhattan  
 Joel Platt Kesley (EE); Overbrook  
 \*Glenn Monroe Kilmer (ME); McPherson  
 Yum Sur Kim (Ag); Shanghai, China  
 William Goodman Kirby (CE); Toronto  
 Ruth Vera Kistler (HE); Kingman  
 Clovis LeRoy Knecht (GS); Leona  
 Margaret Marie Knerr (Ag); Manhattan  
 James Raymond Knox (CE); El Dorado  
 Ada Leah Krause (GS); Marysville  
 Edith Emma Krause (GS); Marysville  
 Lilly Anna Krause (GS); Marysville  
 Waldo Ottive Kretzmeier (Ar); Manhattan  
 Gulven M. Kreutziger (EE); Manhattan  
 Harold LeRoy 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, Jr. (LA); Salina  
 Ernest Ira Largent (C); Oak Hill  
 Frances Katheryn Marie Larson (HE);  
 Smolan  
 \*Lura Eleanor Larson (GS); Wichita  
 \*Marjorie O. LaShelle (C); Manhattan  
 Loyt Leland Lathrop (EE); Burlington  
 Pete Henry Leendertes (GS); Oatville  
 \*Helen Louise Leisz (IJ); Salina  
 \*Marjorie Iris Lemon (M); Woodbine  
 Carolyn A. Leonard (HE); Coolidge  
 Beulah Bowen Leshner (HE); Manhattan  
 Murray Leshner (Ar); Manhattan  
 \*Allen Valentine Lester (AA); Manhattan  
 \*Albert Edgar Letts (EE); El Dorado  
 Clyde Lewis (PE); Topeka  
 \*James Anderson Lewis (C); Hutchinson  
 William Hautecoyne Lindley (VM);  
 Vicksburg, Miss.  
 Dorothy Edna Linge (HE); Topeka  
 Eva Elizabeth Lisk (HE); Manhattan  
 Edward Wallace Lohman (IJ); Clay Center  
 John Royer Long (ChE); Abilene  
 Harold Clyde Love (Ag); Wilsey  
 \*James Elbert Loveless (AA); Denton, Tex.  
 \*Verla Jessie Lovell (HE); Topeka  
 Gerald Lowell (IC); Hollis  
 \*Glenn Elmer Lowell (C); Kansas City  
 Hugo Frederick Lucas (EE); Manhattan  
 Robert Wagoner Lukens (Ag); Beloit  
 Virgil Ferdmand Lundberg (EE); Falun  
 \*W. Edwin Lydick (CE); Winfield  
 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  
 A. Lucile McClaskey (GS); Manhattan  
 Hal H. McCord, Jr. (ArE); Manhattan  
 Ethel LuVina McCormick (C);  
 Arkansas City  
 Frank Clemens McCurdy (GS);  
 Leavenworth  
 Ivan Earnest McDougal (EE); Atwood  
 Willard Lawrence McFillen (AE);  
 Manhattan  
 Edna Ferne McGill (GS); Moscow  
 \*Helen M. McGill (M); Moscow  
 Clifford Ladell McGinnis (VM);  
 Valley Falls  
 Ruth Maxine Babbitt McGinnis (HE);  
 Miltonvale  
 Selma Mae McGinnis (HE); Ord, Neb.  
 \*Thomas Patrick McGinnis (EE); Topeka  
 Velmer Wayne McGinnis (VM); Manhattan  
 \*Ruth Alice McInay (HE); Wichita  
 Emily Mae McKenzie (PE); Plainville  
 Robert Tulloss McLean (VM);  
 El Cajon, Cal.  
 \*Thurmul Francis McMahon (CE); Beattie  
 Everett John McNay (Ag); Clay Center  
 Harry Victor Maddux (CE); Wichita  
 Alice Marie Maixner (HE); Wilson  
 Arvid Irwin Mall (C); Manhattan  
 Dorothy Lorraine Maltby (PE); Canton  
 Thomas Ellsworth Martin (AE);  
 Manhattan  
 Everett Raymond Mason (EE); Wakefield  
 Carolyn Mather (GS); Burdett  
 Roy H. Mears (EE); Manhattan  
 Norris R. Meek (EE); Elkhart  
 Florence Ruth Melchert (Art); Ottawa  
 \*Norman John Millies (EE); Manhattan



## JUNIORS—Continued

- John R. Meredith (CE); Auburn  
 Everil Dwain Merkley (VM); Manhattan  
 Arch Earl Miller (AA); Cottonwood Falls  
 John Ivan Miller (Ag); Prescott  
 Mildred Miller (M); Manhattan  
 James Martin Mills (CE); Kansas City  
 John George Mogge (C); Goodland  
 Charles Talmott Monteith (C); Hoxie  
 Gilbert Carlyle Moore (Ag); Manhattan  
 Neal Francis Morehouse (GS); Manhattan  
 Alvin Morgan (Ag); Manhattan  
 Lee T. Morgan (AA); Emporia  
 Earl Frederick Morrison (PE); Colby  
 Esther Laura Mundell (HE); Nickerson  
 Harold Hawley Munger (CE); Manhattan  
 Gaylord Russell Munson (Ag);  
 Junction City
- \*James Byron Nash (ChE); Parsons  
 Shelby Merle Neelly (PE); Hopewell  
 Isabel Elizabeth Nelson (C); Delphos  
 Lucille Velma Nelson (PE); Jamestown  
 \*Norris William Nelson (Ag); McPherson  
 Ralph Redmond New (EE); Norcatur  
 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  
 Orvel Arthur Noell (EE); Manhattan  
 Sidney Bertrand North (C); Clinton, Okla.  
 Harriette Jeanita Norton (IJ); Kalvesta  
 Orville Philip Nuffer (C); Leonardville  
 Evelyn Jean Nuzman (IJ); Manhattan  
 \*Ivor Ernest Ollivier (LG); Albia, Iowa  
 Carmy Gross Page (AA); Norton  
 William Newell Page (AA); Detroit  
 Arlie Edward Paige (EE); Minneapolis  
 Leona Pauline Parken (HE); Dwight  
 \*Margaret Virginia Patterson (HE);  
 Kansas City, Mo.  
 Merle Raye Patterson (HE); Manhattan  
 Leonard William Patton (Ag); Manhattan  
 Doris Ina Paulson (PE); El Dorado  
 Marion Wesley Pearce (AA); Miltonvale  
 Lornor Allen Pearman (C); Holton  
 Eugene W. Peck (VM); Falls City, Neb.  
 Frederick Adams Peery (IJ); Manhattan  
 Eugene J. Peltier (CE); Concordia  
 Francis Joseph Perrier (ME); Olpe  
 Roland Winfield Peterson (GS); Riley  
 Virginia Janette Peterson (GS); Manhattan  
 Elmer Petsch (ME); Waterville  
 \*Howard Bratton Pettibon (C); Hutchinson  
 Charles Deets Pickett (VM); Manhattan  
 Benjamin David Pile (EE); Ottawa  
 Mila Margaret Pishney (HE); Cleburne  
 \*Lawrence Almon Platt (ME); Junction City  
 Alvin George Ploger (Ag); Kinsley  
 \*Hal Walter Poole (EE); Wichita  
 Nancy Elizabeth Poole (GS);  
 Kansas City, Mo.  
 \*Harrel Elise Porter (HE); Parsons  
 Walter Grizzell Praeger (EE); Clafin  
 Charles Joseph Prchal (VM); Manhattan  
 Marjorie McDonald Pyle (GS); Manhattan  
 \*Ruth Nettie Quick (LG); Redfield  
 Guilford Ross Railsback (IJ); Langdon  
 Edith LeVerne Ramey (HE); Manhattan  
 Marjorie Elizabeth Ramey (HE);  
 Manhattan  
 Elsie Ruth Rand (M); Kansas City  
 John Milton Raven (AA); Morrowville  
 Glenn Joseph Rawlin (ME); Gypsum  
 Pearl M. Rayback (Ar); Goodland  
 Paul Beck Rayburn (C); Newton  
 Donald Reber (EE); Wetmore  
 Albert Lawrence Reed (Ag); Manhattan  
 Ernest Harold Reed (GS); Norton  
 Eunice Reed (Ar); Kanopolis  
 Arthur Abraham Regier (EE); Elbing  
 Adelaine Reid (HE); Iola  
 James K. Reid (ME); Manhattan  
 Jake Louis Reineccius (VM); Manhattan  
 John Henry Reinecke (IJ); Great Bend  
 Wilma Elizabeth Reinhardt (HE); Bison  
 George Phillip Rhoades (ME); Ashland  
 \*Ann Louise Rhodes (HE); Council Grove  
 Laurence Walter Rice (CE); Parsons  
 Wayne C. Richards (EE); Manhattan  
 John Bissell Roberts (AA); Manhattan  
 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  
 Bruce Bailey Romf (GS); McPherson  
 John Newby Romine (ME);  
 Mt. Clemens, Mich.  
 Elizabeth Roniger (HE); Hymer  
 Maxine Jan Roper (HE); Manhattan  
 Merle Marguerite Ross (GS); Dover  
 Edward Charley Rostocil (C); Zurich  
 William Hugh Roth (CE); Ness City  
 Esther May Row (GS); Larned  
 Harold Thomas Rowland (GS); Clay Center  
 Merritt Roscoe Royer (CE); Manhattan  
 Arthur Warewick Rucker (EE); Americus  
 Emily Rumold (M); Herington  
 Edna Marie Runciman (M); Culver  
 Aileen Rundle (HE); Clay Center  
 \*Carl H. Rupp (Ag); Moundridge  
 Loyal Luther Rush (VM); Erie  
 Olin Sandlin (Ag); Palco  
 Carl Herman Sartorius (IC); Lake City  
 \*Jean Willard Scheel (IJ); Emporia  
 Louise Martha Scheu (PE); Manhattan  
 \*Lorena Amelia Schlemmer (HE);  
 Kansas City, Mo.  
 J. Clifford Schmidt (CE); Syracuse  
 Mary Alice Schnacke (IJ); La Crosse  
 Grace Leona Scholz (HE); Manhattan  
 Jonah Schreiner (CE); Tampa  
 Maurice Elmer Schruben (M); Dresden  
 Louis Charles Schwanke (EE); Alma  
 Ephraim Oren Schwab (AE); Gridley  
 Arthur Merl Scott (ArE); Pittsburg  
 \*Clifford LaRoy Scott (GS); Norway  
 Ethel Seitz (Art); Salina  
 Thelma May Selby (HE); Colby  
 Ben Alfred Sellers (CE); Lyons  
 Gardner Charles Sellers (EE); Downs  
 William Arthur Seils (EE); Effingham  
 Frederic Raymond Senti (ChE);  
 Cawker City  
 \*Laurence C. Seyb (GS); Pretty Prairie  
 Ralph Franklin Shaner (VM); Topeka  
 Leona Edythe Shara (HE); Narka  
 LeNora Marie Shara (C); Narka  
 James Leroy Sharp (C); Newton  
 Marvin Riederer Shaw (FME); Denison  
 Genevieve Marie Shellhaas (GS);  
 Junction City  
 Josephine Clara Shellhaas (GS);  
 Junction City  
 Margaret Elizabeth Shewell (HE);  
 Neosho Falls  
 Elwyn Space Shonyo (IC); Bushton  
 \*Mary Lovicy Shreve (GS); Augusta  
 \*Earl Lee Simms (PE); Republic  
 Gerald Simpson (Ag); Milton  
 Donald Theodore Skinner (C); Manhattan  
 Sadie Sklar (Ar); Manhattan  
 Kelso Wilton Slaughter (C); Manhattan



## JUNIORS—Concluded

- Joseph Charles Slechta (GS);  
East St. Louis, Ill.
- Lisle LeRoy Smelser (CE); Manhattan  
Helen Elsie Smerchek (HE); Garnett  
Esther Smiley (Art); Manhattan  
Leland Max Smiley (GS); El Dorado  
Hubert Leslie Smith (VM); Manhattan  
Louis Jasper Smith (CE); Neodesha  
Pansy Smith (HE); Moran  
Pauline Jessie Mimick Smith (HE);  
Talmage
- Russell B. Smith (ME); Manhattan  
Walter Bruce Smith (ME); Hoisington  
William Richard Smith (Ag); Manhattan  
William Berchard Snodgrass (VM);  
Manhattan
- \*Adrian Sorrells (IJ); Kansas City  
Roy Harvard Stark (Ar); Oronogo, Mo.  
Charles Guy Steele, Jr. (AA); Barnes  
V. Maurine Steele (HE); Manhattan  
Earl Raymond Stegman (ME); Plains  
James Byron Stephenson (CE); Sedan  
Marjorie Marks Stevenson (IJ); Oberlin  
W. Russell Stewart (EE); Leavenworth  
Marion R. Stiles (IC); Jewell  
Ruth Vernetta Stiles (IJ); Kansas City  
Homer John Stockwell (AE); Meriden
- \*Thomas Benjamin Stone (CE);  
Leavenworth  
Elden G. Stoskopf (ME); Baxter Springs  
Edith Elizabeth Streeter (GS); Wakefield  
Ruth Evangeline Strickland (GS);  
Manhattan
- Charles Watson Stull (EE); Osborne  
Geneva Mae Sutter (HE); Effingham  
Dorothy Eleanor Sutton (IJ); Kingman  
Edward Henry Tabb (CE); Oil Hill  
Hughel Kamlage Tatum (ME); Larned  
Elmer Alexander Taylor (AE); Solomon  
Helen Marie Tedman (HE); Mount Hope  
Floyd Leonard Tempero (CE); Broughton  
John Franklin Thackrey (IJ); Manhattan  
Florence Mae Thompson (HE); Harper  
Penn Thompson (AA); Manhattan  
Thomas Marvin Thompson (VM);  
Mulberry
- Arthur Chase Thompson (Ag); McCune
- \*Richard Fred Thonen (ME); Whiting  
Lois Coreine Tineher (GS); Hutchinson  
Mayme Thelma Toburen (Art); Cleburne  
Blanche Louise Tomson (HE); Dover
- \*Harlan Toothaker (CE); Hays  
Harold Arthur Totten (EE); Clifton
- \*Eva Madeline Townsend (HE);  
Phillipsburg  
William True (CE); Topeka  
Richard Duncan Turk (VM); Manhattan  
Charles Frederic Turner (Acet); Hartford  
Roland F. Turner (GS); Manhattan
- \*John B. Underwood (IJ); Manhattan  
Virgil Arvid Unruh (AA); Pawnee Rock  
Ralph Arthur Van Camp (IJ);  
Council Grove  
Lyle Raymond Van Doren (ME);  
Manhattan
- \*Irene Bessie Van Riper (HE); Penalosa  
Fred Lewis Van Scoyoc (ME); Oak Hill  
Robert V. Vaupel (C); New Cambria  
Marvin Eugene Vautravvers (Ag); Centralia  
\*Edwin August Veeh (GS); Stuttgart  
Stephen Vesecky (AA); Kansas City  
Ruth Leanore Voshell (PE); Bucklin  
Lawrence Dawson Wadsworth (ArE);  
Wamego  
Raymond Beaty Wagner (Ag); Richmond  
Betty Jane Wagstaff (PE); Topeka  
Wilbur Wahl (LG); Wheaton  
Fred Henry Walker, Jr. (Ag); Manhattan  
Sam Cyril Walker (CE); Junction City  
Pearl Arthur Walters (CE); Norwich  
\*Eugene Aubrey Ward (Ag); Lawrence  
\*Jerrold Jay Wardell (Ag); Plattsville, Colo.  
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.  
James Wesley Wells (ChE); Winona  
Ivan Lee Welty (CE); Hill City  
\*Robert Lloyd Wentz (EE); Wichita  
Frank Fowler West (ME); Arkansas City  
Helen Frances Weygandt (HE); Keats  
Elbert Eden Wheatley (CE); Gypsum  
Dorothy Grace White (GS); Burlington  
\*Mabel Louise Whitford (IJ); Hutchinson  
Max Allen Wickham (C); Manhattan  
Esther Irene Wiedower (IJ); Spearville  
\*Donald Manly Williams (GS); Manhattan  
\*Bessie Ann Wilson (HE); Kansas City  
\*Grace Nellie Wilson (GS); Kansas City  
Florence Lillian Wiltse (GS);  
River Falls, Ill.  
Lois Emily Windiate (HE); Nickerson  
Florence Thelma Wineinger (HE); Norwich  
\*Ralph Waldo Winget (ME); Garden City  
Jim Alfred Wolfe (GS); Manhattan  
Agnes Anna Wolkenstorfer (HE); Herndon  
Joe Edgar Woodford (ME); Salina  
Clifford Jay Woodley (ME); Tecumseh  
\*Gene Neill Woodruff (Ag-1; IC-2);  
Kansas City  
John Dewey Woodruff (CE); Dodge City  
Sheldon Edgar Woods (IC); Delphos  
(deceased).  
Rex Valentine Woodward (EE);  
Medicine Lodge  
John Preston Woolcott (FME); Manhattan  
Alfred Eugene Wooster (EE); Erie  
Eleanor Emily Wright (IJ); Concordia  
Estel Lee Wright (Ag); Blue Mound  
Harold Wright (ChE); Topeka  
Donald Wilson Wyatt (IJ); Stockton  
Evelyn Hannah Young (PE); Arkansas City  
Everett Fairbanks Yoxall (AA); Woodston  
Robert Allen Zebold (AA);  
Little Rock, Ark.  
Walter William Zeckser (AA); Alma  
Mark Joseph Zoeller (C); Manhattan

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## SOPHOMORES

- \*Zelda Laurraine Ackenhausen (GS);  
Manhattan
- Joe Shirley Adams (Ag); Leoti
- \*Helen Lucille Aich (HE); Manhattan
- Genevieve Lucille Ailstock (IJ); Wellington
- Pauline Aker (C); South Haven
- John Henry Allen (EE); Seneca
- Mary Elizabeth Allman (HE); Manhattan
- Carolyn Louise Blim Amis (M);  
Manhattan
- Robert Louis Anderes (VM); Kansas City
- Delight Kathryn Anderson (C); Newton
- Elizabeth Anna Anderson (GS);  
Kansas City, Mo.
- Verna Lucile Anderson (PE); Topeka
- Myrtle Louise Andres (PE); Alto Vista
- Jessie Yahn Andrews (GS); Manhattan
- \*Pauline Andrews (Art); Sycamore, Ill.
- Homer Derrington Anshutz (EE);  
Manhattan
- Lawrence Alfred Antenen (C); Bazine
- \*Georgia Ruth Anton (HE&N); Satanta
- Ethel Marie Antrim (HE); Spivey
- Cecil Frances Arens (EE); Topeka
- Clement Ott Aspegren (EE); McPherson
- Clarence William Ater (AA); Fort Scott
- Donald Maurice Atkins (Ag); Manhattan
- Thomas Burt Avery (Ag); Coldwater
- Helen Evelyn Axelton (HE&N); Manhattan
- James Richard Ayers (C); Greenleaf
- \*Howard Frederick Babb (ChE);  
Manhattan
- Buford Dean Baker (CE); Chanute
- Josephine Alice Baker (M); Miltonvale
- Russel Raymond Ballou (Ag-1; GS-2);  
Glasco
- Monroe Balton (VM); Kansas City
- Raymond Halph Barr (EE); Manhattan
- Wilma Mildred Barr (GS); Manhattan
- Viola Frances Barron (Art); Kensington
- Mary Emily Baum (Art); Junction City
- Charles Benjamin Bayles (CE); Manhattan
- \*J. Clyde Beardin (GS); Manhattan
- Edith Irene Beathard (HE&J); Whiting
- Kenneth Gordon Behrends (ME); Randall
- Wayne Beitler (AA); Coldwater
- Corinne Bell (GS); Potter
- George Rowan Bell (ME); New Cambria
- Hayden Ellwood Bemis (CE); McPherson
- Margaret Clarice Bennett (GS); Garfield
- Newton Lee Bennett (CE); Norton
- Kermit Herbert Benninghoven (EE-1;  
GS-2); Strong City
- Henry D. Bentrup (EE); Deerfield
- Virgil Loraine Bergman (C); Manhattan
- Marcus Lorenzo Bergsten (VM); Cleburne
- John Stephen Bidnick (ME); Kansas City
- \*Jack Edward Bieber (C); Osborne
- Margaret Doreen Bierman (HE);  
Kensington
- James Kenneth Bigford (Ag); Manhattan
- Wayne G. Billings (AA); Jetmore
- Oma Louise Bishop (IJ); Abilene
- Dorothy Velma Blackman (GS);  
Manhattan
- Dan W. Blaine (PE); El Dorado
- Addison Blair (VM); Manhattan
- Ellen Grace Blair (HE); Williamsburg
- Gertrude Elizabeth Blair (IJ);  
Junction City
- Hazle Florence Bland (HE); Garden City
- Howard Bohnenblust (EE); Leonardville
- \*Helen Elizabeth Boler (HE); Dover
- Zelma Maude Bolinger (GS); Kansas City
- Elsie Anna Borek (C); Blue Rapids
- \*Opal O. Bowers (HE); Morrill
- Francis Woodrow Boyd (IJ); Phillipsburg
- Evelyn Marie Braden (HE); Wichita
- Harry Bernard Brandon (C); Osawatomie
- Clarence Neil Brigham (ME); Belleville
- Beulah Josephine Britt (Art); Wellington
- Edward Louis Broghamer (ME);  
Wilkes-Barre, Pa.
- Earl C. Brookover (CE); Scott City
- Hazel Louise Brooks (GS); Brewster
- \*Berniece Beatrice Brown (HE); Toronto
- Edward Lee Brown (ChE); Seneca
- \*H. Leo Brown (GS); Sylvan Grove
- Henry McLauren Brown (Ag); Fall River
- Pauline Alice Brown (Art); Greensburg
- Richard Carlton Brown (ArE); Hill City
- Robert Vernon Brown (EE); Manhattan
- Eva Brownell (PE); Wichita
- Alice Guyneth Buckmaster (PE);  
Manhattan
- Wayne Burbank (AA); Benton
- Douglas Harold Burbridge (LG); Troy
- \*Wilson Burbridge (PE); Troy
- \*Elmer Crowell Burch (AE);  
Mills College, Cal.
- Vernon Edward Burnet (Ag);  
Manchester, Okla.
- Chester Lacartus Burr (CE); Galena
- John Bruce Burrows (ME); Chetopa
- Frank Sherman Burson, Jr. (AA);  
Monument
- Jeanne Durand Burt (IJ); Manhattan
- Marvin James Busby (VM);  
Wakefield, Neb.
- Ulrich William Busch (Ar); Manhattan
- \*Emma Caroline Bushell (GS); Broughton
- Everett Leslie Byers (Ag); Hepler
- \*Duane LeRoy Cady (VM); Arlington, Neb.
- Olyn Danford Calhoon (AA); Manhattan
- Floyd William Caldwell (CE); Parsons
- \*Ethel Irene Call (HE); Mound Valey
- John Floyd Campbell (GS); McCracken
- Richard Henry Campbell (Ag); Grenola
- Cyril Anthony Carberry (VM); Manhattan
- Cesar Bandelio Cardenas (ME);  
Agas, Mexico
- Leonard Arlo Carmichael (C); Manhattan
- Anna Grace Caughron (HE); Manhattan
- Samuel Marshall Caughron (C); Manhattan
- Cornelius Donald Chalmers (CE); Seranton
- Merle Elizabeth Chapin (HE); Glasco
- Vilgil Theodore Chapman (CE); Manhattan
- \*Marian Doretta Childs (C); Hoisington
- Harley Chilson (Ag); Oberlin
- Paul Edward Chleboun (VM); Manhattan
- Loraine Chrisman (C); Hutchinson
- Arnold Joseph Churchill (ME);  
Junction City
- Mary Jane Frances Clark (HE);  
Junction City
- Myron Grover Clausen (AA); Alton
- Thelma Mae Cless (C); Rossville
- Ione Clothier (IJ); Holton
- Bradbury Bedell Coale (VM); Manhattan
- Harry Wyant Coberly (Ag); Gove
- Wesley Samuel Coblentz (Ag); Grent Bend
- Charles E. Cole (EE); Everest
- Donald Warlick Collins (CE);  
Junction City
- Ruth Elizabeth Collins (HE); Ottawa
- Donald Emery Compton (C); Manhattan
- Albert Clayton Comstock (CE); Manhattan
- Ida Emma Comstock (C); Fort Scott
- Melvin A. Conner (EE); Manhattan
- Marcia Noyes Conrad (GS); Manhattan
- Ned Dennis Conrow (Ag); Manhattan
- Bertha Lena Cook (HE); Effingham



## SOPHOMORES—Continued

- Helen Beulah Cook (GS); Bucklin  
Ruth Martha Cook (HE); Larned  
\*Joseph Frank Cooley (Ar); Russell  
Clarence Carl Cooper (ME); Neodesha  
Edgar Alexander Cooper (EE); Stafford  
Virgil Arthur Cowan (C); Valley Falls  
Forrest Oliver Cox (VM); Blue Rapids  
Lucile Elizabeth Cox (C); Havensville  
Chester Russell Crain (EE); Paola  
\*Merle Levon Cranston (EE); Langdon  
Pauline Violet Crawford (HE); Luray  
Wade Overton Crawford (ArE); Pratt  
Wilbur Oliver Creighton (ArE); Denison  
Wayne Russell Criswell (ME); Manhattan  
\*Ralph William Crouch (Acct); Everest  
Gerald Lloyd Cubbison (CE); Gardner  
Ralph Roy Daggett (IJ); Reading  
Virginia Griggs Daniels (C); Pratt  
Lois Eleanor Darche (C); Topeka  
Lawrence Aldon Darnell (GS); Osborne  
Doreen Davies (IJ); Clay Center  
Cecil Roy Davis (ChE); Junction City  
\*Edwin Paul Davis (C); Winfield  
Kenneth S. Davis (Ag); Manhattan  
Norman Knowles Davis (CE); Miltonvale  
William Barry Davis (CE); Burr Oak  
Harold Oscar Dendurant (IJ); Goodland  
\*Mary Falwell Dexter (HE); Columbus, Ga.  
Walter Edward Dicke (VM); Louisburg  
Delta Grace Dix (HE); Manhattan  
James Phillips Dodge (GS); Manhattan  
Merle Alfred Dodge (IC); Manhattan  
Raymond Joseph Doll (AA); Ellinwood  
Woodrow Billy Dolphin (EE); Boley, Okla.  
\*Lawrence Burr Donaldson (EE);  
Kansas City, Mo.  
John Joseph Donnelly (ME); Manhattan  
\*Mary Lena Dorgan (C); Alta Vista  
Orva Harrison Douglas, Jr. (ME);  
Courtland  
Dorothy Winifred Dugan (C); Manhattan  
\*Alley Hugh Duncan (EE); Andover  
\*John Leroy Duncan (LG); Kansas City, Mo.  
Doradean Dunn (PE); Phillipsburg  
Jean Lois Durland (M); Irving  
Glenn Wayne Durrill (ME);  
Bartlesville, Okla.  
Harry Alfred Duvanel (Ar-1; Ag-2);  
Benton  
\*Margaret Laura Easterday (IJ);  
Greeley, Colo.  
Dale Henry Edelblute (Ag); Keats  
Olin Orlando Ediger (CE); Newton  
Louise Ruth Eggenberger (HE); Ottawa  
Margaret Virginia Eiler (C); Oberlin  
\*Lavone A. Eilerts (Ar); Wichita  
Loren Omer Elliott (Ag); Valley Center  
Vorras Alexander Elliott (ME); McPherson  
\*Robert Raymond Ellis (C); Trenton, Mo.  
Vera May Ellithorpe (Ar); Russell  
Edson Arthur Elser (ME); Fort Riley  
Gerald Franklin Ely (ME); Spivey  
Raymond Wilson Ely (CE); Ashland  
James Russell Epperson (C); Manhattan  
Gordon Richardson Ewing (EE); Topeka  
Ethel Belle Fairbanks (IJ); Manhattan  
Myra Burdean Falen (HE); Stafford  
\*Fern Opal Falkenburgh (IE&D); Manhattan  
\*Eugene Patrick Farrell (EE); St. Marys  
\*Phillip Ward Felton (ME); Great Bend  
\*Virginia Faye Flanders (M); Salina  
John Leo Flentie (ME); Centralia  
Nathan Fligstein (IJ); Manhattan  
Bernard Eugene Foote (VM); Manhattan  
Blair Chester Forbes (ME); Leavenworth  
Mildred Viola Forrester (PE); Wamego  
\*Frank Sharon Foster (CE); Ellsworth  
Richard George Fowler (IJ); Holton  
Donald Fox (IC); Longford  
Thomas Benner Franklin (Ar);  
Kansas City, Mo.  
George Columbus Freeman (Ag); Salina  
Archie French (EE); Augusta  
Edna Henrietta Fritz (Art); Manhattan  
Lawrence Charles Froelick (C); Abilene  
Frank Harold Fulker (Ag); Culver  
Muriel Marietta Fulton (GS); Wichita  
\*Alice June Gage (GS); Minneapolis  
Aurel Louise Gage (C); Hoisington  
William Morris Gale (LG);  
Pond Creek, Okla.  
Jeanette Sevier Gamble (HE); Coffeyville  
Edwin John Gantenbein (AA); Elmo  
\*Margaret Adelle Gard (GS);  
Kansas City, Mo.  
\*Clara Bess Garrison (HE); Lincolnville  
Robert Elmer Garvin (AA); Ogden  
Clarence Henry Gatch (Acct); Woodbine  
Paul Carl Geilenfeldt (VM); Algona, Iowa  
Donald George Gentry (CE); Manhattan  
\*Richard Dale Gentry (EE); Garden City  
\*Madge Kent Gibbs (HE&J); Quinter  
Clarence Lee Gish (Ag.) Abilene  
Louise Madge Glass (GS); Manhattan  
Steve Walter Golem (IC); Olathe  
Frank Donald Gomez (VM); Davis, Cal.  
Frances Mae Gordon (HE); De Soto  
Geraldine Louise Gourley (IJ); Nickerson  
Ralph Melvin Graham (PE); El Dorado  
Harlan Lavaris Graves (ME); Greensburg  
\*Albert Curtis Green (EE); Natoma  
Vesta Virginia Green (C); Jamestown  
Henry L. Greene (ChE); Topeka  
Howard Homer Greene, Jr. (ME); Topeka  
Mayrie Anne Griffith (IJ); Topeka  
Harold Ebert Grogger (Ag); Solomon  
William U. Guerrant (C); Manhattan  
James Herbert Gumm (CE); Manhattan  
Maurice Lee Gunn (Ag-1; C-2);  
Great Bend  
Virginia Kay Haggart (IJ); Topeka  
George Van Andale Hahn (EE);  
Manhattan  
Ralph Leon Hahn (LG); Clay Center  
John Lowell Hahl (VM); Manhattan  
Wilburn Hale (ME); Manhattan  
Avis Charlotte Hall (HE); Manhattan  
Carmen Elizabeth Hall (HE);  
Junction City  
Francis Mitchell Hall (Ag); Manhattan  
Robert Vance Hall (EE); New Cambria  
\*Gladys Celestine Hamilton (M); Wichita  
Bruce Walter Hamler (ME); Manhattan  
Max Arthur Hammel (GS); Clay Center  
John Howard Hancox (EE); Muskogee  
Daniel Robert Haney (AH&V); Manhattan  
Mary Aileen Hanley (HE); Topeka  
Floyd Joe Hanna (Ag); Manhattan  
Hugh John Hannifan (EE); Moline  
Helen May Hanson (HE); Clay Center  
Homer Peter Hanson (PE); Riley  
Louis Benton Hanson (Ag); Jamestown  
Hal Charles Harned (GS); Herington  
Harold F. Harper (CE); Topeka  
Harold Hall Harris (EE); Grinnell  
\*Helen Ethel Harris (HE); Kansas City  
\*Kenneth Warden Harris (ME);  
Kansas City, Mo.  
Willabeth E. Harris (IJ); Moran  
Kenneth Wilson Harter (IJ); El Dorado  
\*John Lefel Hartman (ME); Omaha, Neb.  
Edna May Hartzell (C); Rossville  
Richard Otto Hashagen (EE); Leavenworth

\* Matriculated 1931-'32.



## SOPHOMORES—Continued

- Irving Bennett Hawk (AA); Effingham  
Lorraine Hawley (HE); Belpre  
Louis E. Hay (EE); Clay Center.  
Frederick William Hayer (EE); Syracuse  
David Armond Hays (IJ); Manhattan  
\*Robert Leroy Heinsolm (EE); Newton  
\*John Elgar Held (EE); Ottawa  
\*George Anthony Hellmer (ME); Olpe  
Karl Miller Hemker (EE); Great Bend  
Ralph G. Hendrickson (EE); Manhattan  
Harvey Jerome Hensley (AA); Osborne  
John Herbert Hensley (VM); Manhattan  
May Beth Herndon (HE); Amy  
Richard Leo Herzig (ArE-1; M-2);  
Salina  
John Edward Hester (AA); Hoisington  
Harold Crutchfield Hibbs (ArE); Osborne  
\*Salome O. Hiebert (HE-1; G-2); Hillsboro  
Ursula Edith Hiller (M); Manhattan  
Everett A. Hinz (ME); Abilene  
Lester John Hoffman (AE); Haddam  
Harold Charles Hofmann (IJ); Manhattan  
Maxine Hofmann (HE); Manhattan  
\*Ralph LeRoy Hollis (ArE); Salina  
Eugen Honeycutt (PE); Blue Rapids  
\*Ruth Geneva Hopkins (GS); Garden City  
Otis Horchem (C); Ransom  
Karl Frederick Horn (ChE); Russell  
Pius H. Hostetler (Ag); Harper  
Kenneth Rives Hougland (Ag); Olathe  
Clarence Everett Hughes (EE); Stockton  
Anita Ann Humbert (HE); Harper  
\*Donald Curtis Hutchinson (ChE);  
Hutchinson  
George Lyons Huyett (EE); Berryton  
Edris Lillian Jackson (C); Minneapolis  
Thelma Irene Jacobs (C); Concordia  
Wayne Worley Jacobs (AA); Harper  
Doris Jaedicke (Acct); Hanover  
Ray Christian Jensen (VM); Herington  
Marie Karoline Jernark (HE); Delphos  
Ernest Mason Joerg (ArE); Randall  
Edward Groh Johnson (EE); Emporia  
Harry Clarence Johnson (ChE); Marquette  
Jay Bernard Johnson (C); Olsburg  
Mabel Ines Johnson (GS); Manhattan  
Marie Johnson (Art); Columbus  
Samuel Garland Johnson (AA); Floral  
Tom Robert Johnson (C); Topeka  
Donald Robert Johnston (C); Elkhart  
Louise Hamilton Johnston (C); Elkhart  
Louise Emma Jones (GS); Manhattan  
Roger Wallace Jones (GS); Kansas City  
\*Mary Irene Jordan (Art); Beloit  
Helen Shell Joseph (HE); Kirwin  
William Gottlieb Kaeser (C); Manhattan  
De Vere Kay (M); Manhattan  
\*Wesley Orville Keefer (VM);  
Ramsay, Mont.  
Mary Elizabeth Keegan (GS); Great Bend  
Clarence Eugene Keith (AA); Ottawa  
Edward Guerrant Kelly (ChE); Manhattan  
Lawrence Lincoln Kelly (LG);  
Seymour, Mo.  
Louis Arthur Kelly (Ag); Seymour, Mo.  
Elva Ralph Kennedy (VM); Chase  
\*Gladys Carol Kennedy (GS); Dodge City  
\*Ronald A. Kennedy (VM); Manhattan  
Daniel Oscar Kent (GS); Ogden  
Wilbur Warren Kent (AA); Beloit  
Howard Luther Kester (VM);  
Cottonwood Falls  
John Ambrose Kev (ChE); Kansas City  
William Richard Kilmer (ME); Kirwin  
\*Michael John Kilroy (ME);  
Kansas City, Mo.  
Alice Day Kimball (GS); Manhattan  
Howard Maxwell Kindsvater (IC); Wichita  
Clara Bess King (HE); Delphos  
Donovan Wilton King (Ag); Manhattan  
Carl Lawrence Kirk (C); Newton  
Lawrence Dee Kirkman (C); Manhattan  
Frank Edward Kiser (CE); El Dorado  
\*Doris De Ette Kline (GS); Miltonvale  
Wendell Francis Knabe (ME); Edgerton  
\*Alton Sawyer Knechtel (ArE); Larned  
Zora Lee Knox (HE); Emporia  
Clark F. Kostner (C); Murdock  
Edwin John Krasny (AA); Topeka  
\*Louise Kinney Krehbiel (HE); Newton  
Amelia Kroft (IE&D); Wilson  
Elsie Della Kruger (GS); Holton  
William Carroll Lacy (EE); Everest  
\*Walter Ben LaMaster (CE); Perryton, Tex.  
Clauda Maurine Lamb (HE); Scott City  
Donald Clell Landon (IC); Topeka  
\*Ruth Elizabeth Langenwalter (Ar);  
Wichita  
\*Olga Christene Larsen (HE); Vesper  
Helen Katherine Latta (HE); Holton  
John Russell Latta (Ag); Holton  
Ida Margaret Laughlin (HE); Turon  
Barbara Lautz (Art) La Junta, Colo.  
Wayne Howard Lee (CE); Junction City  
Beulah Mae Leach (HE); Bird City  
\*James Buchanan LeClere (PE); Coffeyville  
\*Max Leek (IJ); Great Bend  
Roger Lee Leffler (CE); Fort Scott  
Wilbur Max Lehman (Ag); Wathena  
\*Virgie Ethel LeMarr (GS); Vici, Okla.  
Guy Hussey Lemon (IC); Manhattan  
\*Joseph Dean Lerew (ME); Portis  
Lois Isabell Lewellen (HE); Newton  
\*Grace M. Light (C); Liberal  
Leora Bernice Light (PE); Liberal  
Lorene Mary Loban (C); Manhattan  
\*Charles Howard Lockhart (ChE);  
Junction City  
Gordon Florio Londeen (CE); Abilene  
Elmer Ira Long (VM); Manhattan  
Lola Fay Loomis (GS); Jewell  
\*Ada Grace Lorimer (HE); Olathe  
Madeline Marie Lowe (IJ); Manhattan  
Jack Algernon Lowell (PE); Glen Elder  
Otto Walter Ludloff (VM);  
Honolulu, T. H.  
Henry Norbert Luebeck (AE); Marysville  
Arthur Conrad Lundgren (EE); Osage City  
DeNelson Lynch (C); Hoisington  
Carrie Ann McAninch (M); Stockdale  
Lester LaVerne McBride (VM); Manhattan  
Max Elton McCluggage (FME); Manhattan  
\*Anna Evelyn McClung (IE&D); Harper  
\*George L. McColm (Ag); Emporia  
Dick B. McCord (C); Manhattan  
Edmund Burke McCormick (GS-1; VM-2);  
Manhattan  
Allan Walter McCulloch (CE); Manhattan  
Alvin Rutti McDonald (VM); Bremen  
Esther Almira McFillen (M); Manhattan  
Robert Carlyle McIntire (CE); Belleville  
Dale George McKee (ArE); Offerle  
Donald King McKenzie (Ag); Solomon  
Florence E. McKinney (HE);  
Bartlesville, Okla.  
Katheryn Ann McKinney (PE);  
Bartlesville, Okla.  
\*Lorraine Mable McMullen (GS);  
Hutchinson  
Tillman Henry McNary (ChE); Manhattan  
Charles Dean McNeal (Ag); Boyle  
Robert Fred McNitt (AA); Washington  
\*Margaret Alice Madaus (IE&D);  
Hutchinson  
Emma Louise Manchester (HE); Paola

## SOPHOMORES—Continued

- \*Katherine Amelia Manker (HE);  
Vernal, Utah  
Clarence L. Mann (C); Dodge City  
Edna Leona Mann (HE); Quinter  
Robert Franklin Mann (Ag); Manhattan
- \*Ralph Edwin Mariner (ME); Fredonia  
Clara Jean Martin (M); Manhattan  
James Milton Mason (ME); Manhattan  
Josephine Mason (GS); Manhattan  
Earl Henry Massengill (C); Caldwell  
James Warren Mather (AA); Grinnell  
Madge Maupin (M); Iola  
Phyllis Maust (C); Garden City  
Irl McClellan Mayden (GS); Manhattan  
Floyd James Mayer (CE); Wetmore
- \*Nicholas Harry Mayrath (C); Dodge City  
Ruth Marie Mears (HE); Beloit
- \*Clayton Sinclair Meek (CE); Wichita  
Gladys Edra Mellinger (HE); Milford  
Clarence Charles Merriman (VM);  
Manhattan  
Ernestine Marcia Merritt (HE); Haven  
Elmer Louis Metcalf (VM); Manhattan
- \*Alfreda Meyer (GS); Frankfort  
John Wesley Meyers (C); Merriam  
Lloyd William Michael (VM); Eudora
- \*Marvin Lowell Michael (ME); Larned  
Cecil M. Miller (C); Lyons  
Clement Lambert Miller (VM);  
Clarkson, Neb.  
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); Minneapolis  
Reba Clare Miller (C); Haviland  
Kenneth Byron Milliken (CE); Tecumseh  
Arnold Arthur Mills (PE); Russell  
Catherine Beatrice Mitchell (C);  
Concordia  
Ralph Emen Mitchell (Ar); Manhattan  
Louis Gary Montre (ME); Topeka  
Orville Bertrand Moody (Ag); Ogdan
- \*Carlton LaVergne Moore (C); Concordia  
Virgil Stanton Moore (ChE); Oltونا  
Raymond Benjamin Moorman (IJ);  
Manhattan  
Maxine Emma Morehead (HE);  
Baltimore, Ohio  
Helen Kathryn Morgan (PE); Newton  
Mary Kathryn Morgan (HE); Manhattan  
Muriel Frances Morgan (HE); Manhattan  
Irene Morris (HE); Paxico  
J. Atwood Morrison (GS); Hutchinson  
John Rex Morrison (EE); Great Bend
- \*J. Howard Morse (ME); La Crosse  
Dorothea Jeanette Moser (GS);  
Blue Rapids  
Bernice Naomi Mosser (C); Larned  
George Frederick Mueller (AA); Hanover  
Arthur Raymond Munns (ArE);  
Kansas City  
Joseph Patrick Murphy (C);  
Schenectady, N. Y.
- \*Leslie Eugene Murphy (ME); Galena  
\*William Wallace Murray (C); Hutchinson  
Bessie Elizabeth Mydland (HE); Oakley  
Haldor Thomas Mydland (VM); Horton  
Obad Edmund Myrah (Ag); Manhattan
- \*Clayton Henry Nagel (Ag); Wichita  
(deceased)  
Lucile Marie Nagel (HE); Wichita  
Joseph P. Neill (Ag); Miltonvale  
Harold Milton Nellans (ME); Potwin  
Nevlyn Richard Nelson (AA); Belle Plaine  
Norman August Nelson (C); Jennings
- \*Russell Carl Nelson (Ag); Falun
- \*Tillman Harvey Nelson (VM);  
Holmen, Wis.  
Hampton Nett (Ag); Edwardsville  
Paul A. Neuschwanger (EE); Bloomington  
Mildred Violet New (HE); Leavenworth  
Clifford Franklin Newell (EE); Abilene  
H. Vedder Nichols (CE-1; C-2);  
Manhattan  
James Nichols (VM); Manhattan  
Herbert Truman Niles (AA); Olivet  
Charlotte Celestine Nix (HE);  
Kansas City, Mo.  
Mollie Berthel Nix (HE); Kansas City Mo.  
Merwin Edgar Nixon (Ag); Manhattan  
Gilbert George Noble (CE); Lyons  
Vera Marie Noble (GS); Republic  
Elwin Lawrence Noffsinger (EE); Harper  
James Carr North (Ag); Kansas City, Mo.  
Duane Northup (C); Quinter  
Clayton Omar Obenland (IC); Manhattan  
Ruth Obenland (GS); Manhattan  
Milo Claire Oberhelman (GS); Randolph
- \*Roberta Delane Ode (Art); Manhattan  
Celoia May Oleson (HE); Speed  
Cora Maurine Oliphant (PE); Offerle  
Morton Dennison Olmsted (GS);  
Manhattan  
Wayne Edward Olson (EE); Junction City  
Edwin George Orrick (CE); Topeka
- \*Audrey Evelyn Osborn (Art);  
Lawton, Okla.  
Carl Meredith Osborne (EE);  
Council Grove  
Lena Ruth Osborne (HE); Partridge  
Henry John Osterholtz (VM); Manhattan  
Richard Reese Owen (ArE-1; GS-2);  
Fort Riley  
Robert Franklin Owen (GS); Fort Riley  
Betty Ozment (HE); Manhattan  
Mina Opal Paddack (Art); Lakin
- \*Gene Pakozdi (EE); New York, N. Y.  
Clair Norman Palmer (EE); Kincaid  
Karl Axell Palmer (ME); Kincaid  
Clifton Walter Pangburn (GS); Luray  
Edith Corene Parke (IJ); Manhattan  
Robert Scott Parker (Ar); Manhattan  
Louis Smith Parsons (EE); Wamego  
Maple Buddy Patterson (PE); Manhattan  
John Roland Patton (AA); Columbus  
Miriam Peck (GS); Jewell  
Kathryn Ruth Pelton (GS); Manhattan  
Charlie Payton Penfield (C); Sedan  
Hester Marie Perry (IC); Manhattan  
Milfred John Peters (IJ); Halstead  
Robert Emmett Phillips, Jr. (Ag);  
Manhattan  
Jeanne Pickard (IJ); Kansas City  
Helen Mae Pickrell (HE); Minneapolis  
Wilfred Harold Pine (Ag); Lawrence  
Floy Volney Pinnick (Ag); Ulysses  
Lucile May Piper (HE); Goodland  
Irene Poague (C); Westmoreland  
Isabelle Lee Porter (PE); Stafford  
Ralph Pratt (CE-1; GS-2); Herington
- \*Orville Frederick Preuss (VM);  
Bancroft, Neb.  
\*Betty Hoyt Purecell (IJ); Manhattan  
Kenneth Webb Putney (CE); Manhattan  
Frank Bruce Rabb (CE); Turner  
\*John Stook Rader (CE); Smith Center  
Paul Francis Ragland (IJ); Manhattan  
James Frederick Ransom (ME); Homewood
- \*Mary Elizabeth Ransopher (IJ); Clyde  
Harlan Edwin Rathbun (Ar); Manhattan  
Margaret Belle Ratts (M); Atlanta  
Evelyn Elleen Reber (HE); Morrill



## SOPHOMORES—Continued

- Everell Eugene Reed (ArE); Smith Center  
 Harriet M. Reed (GS); Holton  
 Helen Marjorie Reed (GS); Circleville  
 Katherine Reid (GS); Manhattan  
 Henry Clay Reppert (IJ); Harris  
 Nelson Stanley Reppert (IJ); Harris  
 \*Ralph E. Retter (CE); Topeka  
 James Cornelius Richards, Jr. (ChE);  
 Manhattan  
 \*Frances Richey (GS); Chevy Chase, Md.  
 John Curtis Ridgeway (ChE); Manhattan  
 Jerald Kenyon Riggs (CE); Marion  
 \*William Lemual Riggsby (ME); Moline  
 Culver Willis Rippetoe (VM); Meriden  
 Joseph A. Ritchie (Ag); McLouth  
 \*Howard Elliott Rivers (Ar); Dodge City  
 \*Hubert Maxwell Rivers (ChE); Dodge City  
 \*Geneva Lee Roberts (HE); Furley  
 Stanley Irving Roberts (ME); Chanute  
 Clayton Eugene Robertson (AE);  
 Hutchinson  
 Helen Ring Robinson (GS); Newton  
 \*Herbert Louis Robinson (ChE); Cimarron  
 Sidney Alfred Robinson (C); Parsons  
 Wilmer Manbeck Robrock (GS);  
 Manhattan  
 Eugene Curtis Roe (Ag); Manhattan  
 Ross Earl Rogers (AE); Glasco  
 Paul John Rohm (EE-1; C-2); Topeka  
 Robert Talbot Romine, Jr. (LG);  
 Mt. Clemens, Mich.  
 Harry Edward Rooney (C); Haddam  
 Leland Jay Rose (EE); Council Grove  
 Dorothy Rosecrans (GS); Manhattan  
 Arthur George Rosenkrans (ME);  
 Dorsey, Neb.  
 Leonard Anthony Rosner (VM); Bucyrus  
 \*Sara Frances Rosser (Art); Pratt  
 Myra May Roth (HE); Ness City  
 Harold Albert Rothgeb (EE); New Albany  
 Helen Lavina Row (M); Larned  
 Woodrow Wilson Rufener (CE-1; AA-2);  
 Strong  
 Earl Leo Ruff (EE); Manhattan  
 \*Dougal Russell, Jr. (PE); McDonald, Pa.  
 Mabel Esther Russel (M); Manhattan  
 Verle E. Ruth (Ar); Greensburg  
 \*Raymond Eugene Saindon (C); Concordia  
 Robert Newton Salkeld (CE); Lincoln  
 Mary Katherine Samuel (HE); Manhattan  
 William Ned Samuel (ME); Manhattan  
 \*Frank Alfred Samuelson (EE); Hutchinson  
 Frank Santo (EE); Manhattan  
 \*Noel Thomas Sawhill (IJ); Glasco  
 Lova May Schlatter (HE); McPherson  
 Lawrence Ralph Schmutz (C); Chanute  
 Carl William Schultz (VM);  
 Independence, Mo.  
 \*Florence Etta Schwendener (HE); Abilene  
 Beverly Horace Scott (CE); Atwood  
 Elizabeth Scott (IJ); Manhattan  
 \*James Herndon Scott (EE);  
 Kansas City, Mo.  
 Lois Mae Scripser (HE); Herington  
 Margaret Seaton (IJ); Fredonia  
 Richard Melvin Seaton (IJ); Manhattan  
 Martin Gerhard Seibel (CE); Ellis  
 Elsie Fern Selby (HE); Manhattan  
 Joe Lease Sellers (ME); Manhattan  
 \*Helen Sherwood Selwyn (C); Topeka  
 Hollis Lee Sexson (HE); Goodland  
 Denelda Ether Shafer (IJ); Manhattan  
 Mildred Faye Shawver (Art); Kincaid  
 Helen Georgia Shedd (HE); Tribune  
 Lester Shirck (Ag); Waterville  
 \*Kenneth Edward Shreeve (IC);  
 Kansas City, Mo.  
 \*Melvin William Shroeder (EE);  
 Grandview, Mo.  
 Herbert Franklin Sibert (VM); Manhattan  
 \*Velma Alice Siddens (GS); Westmoreland  
 \*Robert William Sidwell (CE); Winfield  
 Albert Earnie Siler (EE); Garden City  
 Valentine W. Silkett (Ag); Downs  
 Jack Theodore Silverwood (C); Ellsworth  
 \*Millard Herman Sinnicht (Med);  
 Mellen, Wis.  
 William Philip Simpson (CE); Saline  
 Alice Arvilla Singley (HE); Plains  
 \*Revis Everett Sisney (IJ); Eskridge  
 \*Mildred Marie Sitterley (HE); Manhattan  
 Charles Scott Skinner (CE); Tyro  
 Gladys Naomi Skinner (C); Topeka  
 \*Loren Courtland Skinner (ChE); Tyro  
 Louise Sklar (VM); Manhattan  
 Andrew Skradski (C); Kansas City  
 Lois Zella Sloop (HE); Lyndon  
 \*Edna Loretta Small (GS); Beattie  
 Helen Lugene Smith (Art); Lyndon  
 Roscoe George Smith (GS); Sabetha  
 Walter S. Smith (C); Cottonwood Falls  
 Raymond I. Sneed (AE); Haviland  
 Norman John Sollenberger (CE);  
 Manhattan  
 Ted Sommers (GS); Leoti  
 \*Herbert Eugene Somerville (C); Manhattan  
 Frederick Wilbur Songer (Ag); Olathe  
 William Ward Sourk (Ag); Goff  
 Ralph Westly Spears (CE); Mulvane  
 Kenneth Ross Speed (Ar-1; GS-2); Holton  
 Elsie Virginia Speer (IJ); Manhattan  
 Robert William Spiker (Acet); Manhattan  
 Raymond Spilman (IJ); Manhattan  
 \*Mary Ellen Springer (C); Manhattan  
 Curtis Montie Steele (C); Oberlin  
 \*Lauren Winton Steetle (C); Herington  
 Jennie Pauline Steiner (HE); Topeka  
 Mabel Sophie Stener (IJ); Courtland  
 Ethel Edna Stewart (C); Riley  
 Lois D. Stingley (PE); Manhattan  
 Jewel Stockdale (HE); Kansas City  
 Ed Stone (CE-1; Acet-2); Ottawa  
 \*Aaron Cecil Stoner (C); Wichita  
 Emma Anne Storer (IJ); Muncie  
 \*James Dean Stout (LA); Independence  
 Doris Catherine Streeter (HE); Wakefield  
 Ray Stremel (EE); Garden City  
 Lovan Glenn Stukey (EE);  
 Steamboat Springs, Colo.  
 Harold Leroy Sturdevant (CE); Chanute  
 Edward Stephen Sullivan (Ag); Mercier  
 William Herman Sunderland (EE);  
 Fairview  
 Aurelia Etta Sutcliffe (HE); Grainfield  
 \*Geneva Harriet Swan (HE); Washington  
 Helen Louise Swan (C); Topeka  
 \*Jane Allen Swenson (PE); Phoenix, Ariz.  
 \*Dean Edwin Swift (CE); Olathe  
 \*Melvin Paul Tack (EE); Gaylord  
 Charles Henry Talbot (EE); Manhattan  
 \*William A. Talbot (GS); Wichita  
 Avis Tatlow (PE); White City  
 Homer Otis Taylor (C); Topeka  
 Robert Ray Teagarden (Ag); La Cynge  
 George Teichgraber (AA); Marquette  
 Victor Preston Terrell (Ar); Syracuse  
 Arthur R. Thiele (VM); Bremen, Mo.  
 \*Margaret Alice Thomas (GS);  
 Clay Center  
 Marian Thompson (Art); Manhattan  
 Maurice Hoch Thompson (GS);  
 Dodge City  
 \*Walter Theodore Thompson (ME);  
 Osage City  
 Lloyd Thomas Thorp (CE); Longford

\* Matriculated 1931-'32.



SOPHOMORES—*Concluded*

- \*Wilbur Griggs Thorpe (Ar); Topeka  
 Leona Zoe Tibbetts (HE); Westmoreland  
 Olin Trotter (EE); Anthony  
 Linford L. Truax (AA); Peabody  
 Charles William Turner (EE); Saffordville  
 \*Thelma Lucile Twidwell (HE); Frankfort  
 Ernest John Ubelaker (GS); Willis  
 Grace Kolek Umberger (Ar); Manhattan  
 \*Lillian Marie Vail (HE); Marysville  
 Harrison Van Aken, Jr. (C); Lyons  
 James Paul Vandergriff (GS); Douglass  
 \*Edna Greever Van Tuyl (IJ); Manhattan  
 Edith May Varner (GS); Chanute  
 Francis Arthur Vaughn (CE); Hartford  
 Paul Burton Vautravers (GS); Centralia  
 John Emery Veatch (AE); Manhattan  
 Carl Norton Vickburg (ChE); Talmage  
 Frank Joseph Volek (EE); Ringo  
 Harold Parker Walker (GS-1; Ag-2);  
 Bucklin  
 Joseph Lee Walker (EE); Junction City  
 \*Camilla Jane Wallace (GS); Ness City  
 Esther Loretta Walters (HE); Manhattan  
 Freda Pauline Walters (GS); Edmond  
 William Theodore Walters (CE);  
 Manhattan  
 Grace Bernice Waltie (HE); Peabody  
 Laura Lillian Ward (HE);  
 St. Joseph, Mo.  
 Eugene Decatur Warner (ArE); Ottawa  
 Charles Grandville Watson (Ag); Osborne  
 Harold Clinton Weathers (CE); Haviland  
 \*Virgil Leland Weaver (EE); Garden City  
 Russell Wayne Webb (CE-1; C-2);  
 Hardtner  
 Marvin Arthur Weibe (Ar); Bushton  
 Frederick Charles Weingarth (C);  
 Leavenworth  
 Wesley Charles Weishaar (GS); Scott City  
 Cleo Belle Welch (HE); Paxico  
 Nellamarie Wells (C); Horton  
 Ovitt Melvin Wells (EE); Syracuse  
 Melvon Hadson Wertzberger (AA); Alma  
 \*Shelby Cooper West (EE);  
 Kansas City, Mo.  
 Neil Joseph Weybrew (Ag); Wamego  
 Warren Campbell Whaley (ME);  
 Canvon, Tex.  
 Loren Edgar Whipps (VM-1; Ag-2);  
 Belleville  
 Robert G. White (AE); Norborne, Mo.  
 Paul C. Wilber (ME); Belleville  
 Jane Gibbons Wilcox (Art); Fort Riley  
 Ross Wilcox (ChE); Dodge City  
 Waldo Millard Wilcox (CE); Wichita  
 Leroy Albert Wilkinson (ArE); Manhattan  
 Thelma Laura Williams (M); Caldwell  
 Waldo Wayne Wilmore (GS); Halstead  
 Alma Wilsey (GS); Washington  
 D. Alice Wilsey (PE); Washington  
 Albert Bentley Wilson (Ag); Manhattan  
 \*Allen Rea Wilson (C); Rochester, Mich.  
 Lewis Alfred Wilson (CE); Valley Center  
 Paul Henry Wilson (AA); Washington  
 Harley Alvin Witt (IJ); Partridge  
 Donald Henry Woodman (LG); Manhattan  
 Abram Dwight Woodruff (VM);  
 Manhattan  
 Kenneth Daniel Worley (IJ); Randall  
 Amos Alexander Wright (C); Concordia  
 Maurice Ivan Wychoff (Ag); Waldo  
 Ada Theodore Yonally (HE); Miltonvale  
 Wayne Winkleman Young (C); Alexander  
 \*Burl Zimmerman (ArE); Manhattan

## FRESHMEN

- \*Helen Marie Abbott (PE); Manhattan  
 \*Lyman Emmett Abbott (PE); Gretna  
 Orval Jack Abel (GS); Manhattan  
 \*Carson Hugh Adams (EE); Sterling  
 \*Charles Edward Adams (EE); Garden City  
 \*Robert Francis Adams (CE); Wellington  
 \*Virginia May Adams (HE); Oak Mills  
 \*Benjamin Aloy Adamson (Ag); Lincoln  
 \*Grace Maria Ahlstrom (HE&N);  
 Kansas City, Mo.  
 \*Louis Carlyle Aicher, Jr. (EE); Hays  
 Robert Hackney Algie (GS); Clay Center  
 \*Burton Smith Allard (GS); Kensington  
 Bartlett Vernattie Allen (GS); Manhattan  
 \*Hattie Mabel Allen (HE); Jamestown  
 \*John Jones Allen (CE); Langston, Okla.  
 \*Ira Monroe Alton (PE); Little River  
 Benjamin Clark Anderson (AE); Moline  
 \*David Anderson (Acct); Hiawatha  
 \*Donald Bruce Anderson (ME); Chanute  
 Earl Preston Anderson (Ag);  
 Waynesville, Mo.  
 \*Herbert G. Anderson (ME); Lyons  
 \*Mildred Berdyne Anderson (GS);  
 Manhattan  
 \*Raymond Jacob Anderson (EE); Le Roy  
 Robert Thomas Anderson (ME); Omeda  
 \*Violet Velesta Arensman (HE&N);  
 Copeland  
 \*Ralph Armstrong (CE); Manhattan  
 \*Richard Elliott Armstrong (PE); Riley  
 \*Mervin Francis Arnett (CE); Broughton  
 Julio Perez Arrojo (AE); Manhattan  
 \*Stephen Greve Asbill (VM); Dixon, Cal.  
 \*Kathryn Quette Atkins (C); Hoisington  
 \*Harold William Atkinson (EE); Plains  
 \*Alan Maurice Atwater (VM); Netawaka  
 \*Charles Warren Avery (GS); Ashland  
 \*Orville Weber Bachman (EE); Halstead  
 \*Opal Enma Bunton Baecht (GS);  
 Manhattan  
 Albert Louis Baker (EE); Topeka  
 \*Charlien Alyce Baker (PE); Greensburg  
 Allan Lloyd Ballard (ME); Greenleaf  
 \*LaVergene Eugene Bank (C); Salina  
 \*Alton Ackerman Bantz (AA); Howard  
 \*John Virgil Baptist (EE); Uniontown  
 \*Albert Grant Barber (Ag); Osawatomie  
 \*Max Monroe Barber (GS); Council Grove  
 \*Gerald Leonard Barksdale (CE); Manhattan  
 \*Alice Loy Barrier (IC); Topeka  
 \*Fay Allen Bass (C); Pratt  
 \*Mildred Louise Baughman (PE); Howard  
 \*Frederick E. Baxter (CE); Salina  
 \*Richard Obil Beach (Ag); Havensville  
 \*Buell Wesley Beadle (IC); Effingham  
 \*Charles Ludwig Beal (Ar); Avoca, N. Y.  
 Robert Charles Beattie (IJ); Manhattan  
 \*Hazel Arlene Bebermeyer (HE); Enterprise  
 Clyde Harry Beckman (GS); Randolph  
 \*Julia Corinne Bedard (PE); Tribune  
 \*Woodrow Wilson Bell (EE); Marysville  
 \*Walter Mark Bellairs (CE); Salina  
 \*Mentana Vera Benda (HE); Manhattan  
 \*Donald Joseph Benefiel (PE); Coffeyville  
 \*James Dale Bennett (GS); Manhattan  
 \*Fred Jacob Benson (CE); Grainfield  
 William Edmund Bentley (GS); Manhattan  
 \*Bernard Enmons Benton (CE); Robinson  
 \*Geneva Bergsten (IJ); Cleburne

\* Matriculated 1931-'32.

## FRESHMEN—Continued

- \*Elmer Clarence Betz (Ag); Enterprise  
Ralph Orville Bigford (IJ); Manhattan  
\*Stanley Upton Biggs (C); Barnard  
\*Harlan Francis Birch (PE); Lawrence  
\*Byron Woodrow Black (IJ); Utica  
\*Paul Everett Blackwood (GS); Talmo  
Blanche Louise Blair (HE); Manhattan  
\*Charles Medley Blair (GS); Manhattan  
\*Artie Ward Blake (HE&J); Manhattan  
\*Warren Leonard Blauer (EE); Leonardville  
Clarence Augustus Boam (IJ); Eskridge  
\*Arthur August Boeka (Ag); Colby  
\*Albert Henry Boggs (CE); Emporia  
\*Herman Lavern Bonine (VM); Erie  
\*Norman Allan Booth (EE); Topeka  
\*Fred Ernest Bothe (VM); Manhattan  
\*Mary Allison Bower (M); Eureka  
\*Willard Earl Bowly (Ag); Goff  
\*Gayle Boyd (IJ); Kensington  
\*Stanley Jones Boyd (GS); Furley  
\*Glen Herbert Boyles (Ag); Manhattan  
\*Robert Alonzo Braddock (C); Girard  
Clyde Taylor Brady (C); Concordia  
\*William Raymond Brady (AA); Vermillion  
\*Joseph Easton Bragg (AE); Dodge City  
\*Ben Edward Brandesky (EE); Severy  
Bernita Iola Brann (HE); Tescott  
\*Eulah Flose Bratton (HE&N); Waldo  
\*Gladys Lorraine Bratton (HE); Waldo  
\*Elizabeth Wilba Breeden (M); Manhattan  
Reuben Vern Breese (PE); Leonardville  
\*Francis Eastham Brenner (EE); Waterville  
\*Wilma Dee Brewer (GS); Riley  
\*John M. Bright (AH&V); Lawrence  
\*Wesley Herman Brinchman (C);  
Manhattan  
\*George Ralph Brindle (ME); Fredonia  
\*Barbara Gene Brown (Art); Sylvan Grove  
\*Helen Newell Brown (PE); Manhattan  
Robert Henry Brown (C); Manhattan  
\*Robert Orris Brown (GS); St. Marys  
\*William Everett Brown (EE); Junction City  
\*Kenneth Lee Brubaker (C); Hugoton  
\*Stanley Franklin Brubaker (EE); Aliceville  
Vernon Clare Brubaker (C); Abilene  
\*Oral Francis Brunk (AA); Norcatar  
\*Helen Alberta Brunker (IJ); Manhattan  
\*Virginia Jeanne Bryan (IJ); Delia  
Hilda Winnifred Bryant (VM); Manhattan  
\*John Ross Bryant (Ag); Wichita  
\*Thomas LeRoy Buchman (Ag); Paola  
\*Charlotte Lela Buchmann (IJ); Clay Center  
\*Paul Herman Buenning (GS); Salina  
\*Mark Hardin Buford (GS-1; Ag-2);  
Kansas City  
\*Alverson Gerald Dean Bull (IJ);  
Marysville  
\*Alberta Mary Burdette (HE); Kansas City  
\*Max Lewis Burk (IJ); Manhattan  
Thomas Bateman Bushby (PE); Belleville  
Earle Conrad Byers (ME); Manhattan  
\*Marvin Eugene Byers (ChE-1; GS-2);  
Oketo  
\*Wilma Lois Byers (GS); Hepler  
Ceil LeRoy Cain (CE); Manhattan  
\*Edwin Schuster Cain (IJ); Belle Plaine  
Franklin Alfred Cain (PE); Chanute  
\*Marjorie Willis Call (IJ); Manhattan  
\*Gilbert Carmon Campbell (GS); McCracken  
\*Mildred Ailene Canfield (HE&N); Burr Oak  
\*Loren David Carbiener (C); Lucas  
Lyle J. Carmichael (C); Manhattan  
\*Leonard Willis Carrel (EE); Topeka  
\*William Joseph Carroll (C); Abilene  
\*Raymond Walter Cassell (C);  
Baxter Springs  
\*Robert Steele Cassell (ArE); Salina  
\*James Edward Castleman (C);  
Junction City  
\*Frank Marion Chambers (VM);  
Kansas City  
\*Mildred Lucille Chambers (HE); Milford  
\*Robert Niles Chambers (ChE); Hutchinson  
\*Charles Elbert Cheney (EE); Abilene  
\*Calvin Leroy Chestnut (Ag); Quinter  
\*Helbrand David Chilen (LG); Miltonvale  
\*Esther Irene Chitwood (GS); Meriden  
\*Ralph Durland Churchill (GS);  
Junction City  
\*Alvin Joseph Clark (ME); Pratt  
\*Theodore Stanley Clarke (C); Penokee  
\*William D. Clarke (C); Paola  
\*Carl Windfield Clausen (LG);  
Kansas City, Mo.  
\*Elda Ione Clausen (HE); Alton  
Mary Ellen Clem (C); Pratt  
\*Mary Elizabeth Cline (HE); Cummings  
\*Louis Dale Close (C); Belleville  
\*Ralston Clouse (EE); Preston  
John Grover Coe (ME); Council Grove  
\*James Pratt Coffman (EE); Sedgwick  
\*Thelma Louise Coffman (GS); Manhattan  
\*Joe Woodward Colburn (LG-1; IC-2);  
Manhattan  
\*Curtis Preston Coleman (IJ); Topeka  
\*Louise Lenore Coleman (HE); Wichita  
\*Carl Cass Collins (Ag); Fredonia  
\*Floyd Merle Collins (VM); Tilden, Neb.  
\*Edward Conklin Colson, Jr. (PE);  
Hutchinson  
\*Catharine Helen Colver (M); Manhattan  
\*Wilbur Eugene Combs (ME);  
Bartlesville, Okla.  
\*John Edwin Comer (GS); Manhattan  
\*Pauline Elizabeth Compton (C); Manhattan  
\*Lenore Vinneal Converse (HE); Harveyville  
\*Ivan Bernard Conwell (ME-1; GS-2);  
Manhattan  
\*Leland Wilbur Cook (Ag); Cawker City  
Olga Elizabeth Cook (HE); Leavenworth  
\*Orlena Rusha Cook (GS); Effingham  
\*Wilma Faye Cook (PE); Ash Valley  
\*William Calvin Cooper (IC); Caney  
\*Donald Risdon Cornelius (Ag); Wheaton  
\*Dorothy Margaret Cortelyou (GS);  
Manhattan  
\*Edna Irene Counter (GS); Oberlin  
\*Bernice Eileen Covey (M); Miltonvale  
\*William Christie Covington (C);  
Wellington  
\*Wilma Marian Cowdery (Art); Lyons  
\*Beatrice Craley (HE); Abilene  
\*Chevalier Francis Crandell (EE);  
Falls City, Neb.  
\*Lena Eloise Crawford (GS-1; HE-2);  
Burns  
\*Joseph Franklin Creed (PE);  
Bartlesville, Okla.  
\*David Scott Crippen (EE); Council Grove  
\*Roy Doubt Crist (AE); Brewster  
\*Maxine Goulla Crouch (HE); Kansas City  
\*Julia Ellen Crow (M); Silver Lake  
\*Wilbur Russell Crowley (Ag); Burden  
\*Dale Rush Curtis (EE); Manhattan  
Frank Chapman Curtis (EE); Marion  
\*Philip Burdette Dale (IC); Topeka  
\*Arthur Henry Daman (VM); Salina  
\*William Henry Daniels (ME); Manhattan  
\*Stephen P. Das (Ag); Baugalove, S. India  
\*Sam Lyle Daugherty (GS); Waterville  
\*Carl Edward Davey (Ag); Huron  
\*Sara Jane Davidson (GS); Junction City  
\*Anna Marie Davis (HE); Manhattan  
\*Caldwell Davis, Jr. (AA); Bronson  
\*Ella Rae Davis (IE&D); Manhattan  
\*Evan Lloyd Davis (Ar); Topeka  
\*Helen Louise Davis (M); Manhattan  
\*Julia Marie Davis (HE);  
Nebraska City, Neb.



## FRESHMEN—Continued

- \*Jessie Gertrude Dean (IJ); Princeton  
 \*K. Ruth DeBaum (IJ); Topeka  
 \*Elizabeth Jeanette Dedrick (C);  
 Kansas City  
 \*Willem Jacobus Dekker (VM); Manhattan  
 \*Robert Franklin Delashmitt (C);  
 Manhattan  
 \*Narciso Baldonido Della (C);  
 Sta. Maria, P. I.  
 \*John Wesley DeMand (GS); Lincolnville  
 \*Floyd Otto Denton (ME); Denton  
 \*Jean McDougal Dexter (Art);  
 Columbus, Ga.  
 \*John Raymond Dicken (Ag); Winfield  
 \*John LaVerne Dickey (EE); Liberal  
 \*Ralph Charles Dikeman (ME); Preston  
 \*Ralph Everett Dobbins (EE); Marysville  
 \*Ernest Dobravolny (GS); Manhattan  
 \*Cecil W. Dockhorn (C); Goodland  
 \*Laurence Charles Donat (VM);  
 Verdigie, Neb.  
 \*Carroll Reece Donley (AA); Oxford  
 \*Josephine Berniece Donnelly (C);  
 Phillipsburg  
 \*Hal Hollingsworth Doolittle (EE);  
 Kansas City, Mo.  
 \*Donald Downing (PE); Mankato  
 \*Albert Owen Doyle (CE); Douglass  
 \*Kimber Kenneth Doyle (IJ); Wamego  
 \*Homer Eugene Dreier (ArE); Kansas City  
 \*Laura Ellen Drew (Art); Rolla  
 \*Alice Louise Droz (IE&D); Humboldt  
 \*Wendell Dubbs (EE); Ransom  
 \*Albert Richard Duree (EE); Perry  
 \*Edward Albert Dyck (GS); Halstead  
 \*Walter Roy Dyck (IJ); Moundridge  
 \*Belmont Burbage Dykes (EE); Esbon  
 \*Carl D. Eagan (C); Goodland  
 \*Harold Francis Eddington (CE);  
 Dodge City  
 \*Helen Virginia Ehrlich (Art); Marion  
 \*Alicen Joan Eiler (IE&D); Oberlin  
 \*John Godfrey Eldridge (ChE);  
 San Antonio, Tex.  
 Lino Elefante (ChE); Fort Riley  
 \*Lucy Elizabeth Elkins (HE); Wakefield  
 \*Albert Roland Elliott (IJ); Stafford  
 \*Lewis Emmert Elliott (Ag); Willmot  
 \*Ellurena Pauline Emery (HE);  
 Kansas City  
 \*Florence Murial Emery (GS); Tescott  
 \*Everett Hoffman Engle (Ag); Abilene  
 \*James Courtney English (GS); Cimarron  
 \*Eugene Valda Enlow (EE); Topeka  
 \*Litah Welcome Erbentraut (C);  
 Minneapolis  
 \*Roland Bruce Erwin (ArE); Topeka  
 \*Delbert Eugene Eshbaugh (Ag); Manhattan  
 \*Elbert Lee Eshbaugh (Ag); Manhattan  
 \*Lewis Saxton Evans (Ag); Washington  
 \*Robert Lyle Evans (EE); Sabetha  
 Charles Vern Everett (ME); Racine, Wis.  
 \*Evelyn Pauline Ezell (HE); Pratt  
 \*Wilson Blaine Fagerberg (GS); Olsburg  
 \*William Adolphus Fair (ME); Hutchinson  
 \*Denzil Marlur Fallis (GS); Luray  
 \*John Robert Farmer (ME); Pratt  
 \*Herbert Henry Fechner (VM); Stanton  
 \*Paul Franklin Feleay (CE); Manhattan  
 \*Louise Agnes Fenner (C); Jewell  
 \*Harold LeRoy Fetterolf (EE); Wichita  
 \*Paul Laverne Fickel (VM); Chanute  
 \*Charles Ozas Files (EE); Overland Park  
 \*Panice Verla Finch (IJ); Oketo  
 \*Frank Albert Finger (EE); Kansas City  
 \*Eldgar Seaman Finley (ArE);  
 Cottonwood Falls  
 \*Rex Bird Finley (CE); Elk Falls  
 \*Oscar Frederick Fischer (VM);  
 Junction City  
 \*Gwendolin Predetta Fisher (M); Marion  
 \*Marlin Jayne Fisher (GS); Wichita  
 \*Doyle Harold Fisk (VM); Marshfield, Mo.  
 \*Loyal Harrell Fisk (VM); Manhattan  
 \*William David Fitch (M); Manhattan  
 \*Charles Morton Fitzmorris (CE); Fredonia  
 \*Robert Wade Flick (PE); Manhattan  
 \*Lloyd Vincent Flint (EE); Chapman  
 \*Leona Follett (GS); Manhattan  
 \*John Bob Fornelli (C); Cherokee  
 \*Belle Amanda Forney (HE); Goodland  
 \*Ray Edwin Foster (AA); Courtland  
 \*Hazel Mary Foust (C); Leona  
 \*Ella Louise Fouts (IJ); McPherson  
 \*Marie Marcella Fox (HE); Junction City  
 \*William Arthur Fox (C); Junction City  
 \*Edward Frahm (VM); Manning, Idaho  
 \*James Roderick Frank (EE); Manhattan  
 \*John Warren Frazier (CE); Manhattan  
 \*Lane Harold Frederickson (EE); Concordia  
 \*Pauline Freedlund (GS); Chanute  
 \*James Raymond Freeland (C);  
 Trenton, Mo.  
 \*Velma Mary French (IJ); Jamestown  
 \*Lenus Joseph Frevert (ME); Holyrood  
 William Robert Friend (ArE); Randall  
 Wilbur Clyde Frisbie (C); Bonner Springs  
 \*Wanita Lorain Fry (HE); Brewster  
 \*Don Bernard Fullmer (CE); Elkhart  
 \*Dale Franklin Gamber (C); Culver  
 \*George Junior Garrison (Ag); Goodland  
 \*Hilda Maurine Gates (HE); Smith Center  
 Charles William Gentz (AA); Herington  
 \*Katherine Mary George (GS);  
 Buffalo, Okla.  
 \*George Willis Geiber (AA); Oneida  
 \*Hugh Cecil Getty (ChE); Winchester  
 Walter Coleridge Gill (VM); Manhattan  
 \*Lloyd Gillett (EE); Peabody  
 \*Dwight Ivan Gillidett (ArE); Plains  
 \*William David Gilligen (PE);  
 Schenectady, N. Y.  
 \*Merle Nelson Gilliland (GS); Agra  
 Orville Roy Ginn (ArE); Corbin  
 \*Maurice Dayton Goodwin (ME); Abilene  
 \*John Herbert Gordon (EE); Waverly  
 \*Emmett Donald Goss (PE); Manhattan  
 \*John Richard Gossett (C); Topeka  
 \*Mary Elizabeth Grady (C); Augusta  
 \*Celestine C. Graham (Ag); Stockton  
 Erle H. Graham (C); Miltonvale  
 William Don Grammer (EE); Junction City  
 \*Harry White Grass III (LG); La Crosse  
 \*Simioh Gray (VM); Kansas City  
 \*Roland George Grebner (CE);  
 Denver, Colo.  
 \*Raymond Robert Green (C); Eureka  
 \*Harold Stacy Greve (EE); Anthony  
 \*Percy Thomas Griffin (Ag); Colby  
 \*John Milton Griffiths (EE); Abilene  
 \*John Merliss Griswold (Ag); Marysville  
 \*George Earl Groberg (ChE-1; PE-2);  
 Clifton  
 \*Ernest Joseph Grossardt (Ag); Claffin  
 \*Frank Richard Groves (Ag); Atchison  
 \*Frederic Arnold Grutzmacher (GS);  
 Westmoreland  
 Charles Edward Guggell (EE); Edmond  
 Richard Joseph Gunn (C); Great Bend  
 \*Grace Mary Gustafson (Ar); Marysville  
 \*Guy Strattan Guthrie (CE); Walton  
 \*Howard James Haas (ChE); Almena  
 \*William Phillip Hackney (GS-1; Ag-2);  
 Wellington  
 \*Phil Creager Haggman (GS); Scandia  
 \*Frank Frederick Hamilton (EE); Norton



## FRESHMEN—Continued

- \*Richard Howard Hamilton (EE);  
Washington
- \*Carroll Evelyn Hamler (IJ); Manhattan
- \*Francis Harrison Hammett (Ag); Marysville
- \*Mary Louise Hampshire (HE); Manhattan
- \*Quenten James Hannawald (ArE); Pratt
- \*Hugh Edwin Hanna (EE); Bucklin
- \*John Franklin Hanson (PE); Concordia
- \*Laird Allen Hanson (C); Dodge City
- \*Marjorie Caroline Hanson (GS);  
Morganville
- \*Mildred Betty Hanson (Art); Topeka
- \*Virginia Maxine Harding (Art); Wakefield
- \*James Byrd Hardy (Ag); Greensburg
- \*Laurence George Harmon (Ag);  
Mountain Grove, Mo.
- \*Myron Lawrence Harris (C); Cimarron
- \*Myrl Gladys Harriss (GS); Diller, Neb.
- \*J. Bertrand Harrop (C); Manhattan
- \*Howard Lee Hartman (ME); Hoisington
- \*Leo Jacob Hartzler (C); Esbon
- \*Leland Taylor Harvey (CE); Council Grove
- \*Jacquelyn Elodie Haskell (Ar);  
Garden City
- \*J. Parks Hasler (C); Oklahoma City, Okla.
- \*Clarence Evan Haughawant (IJ); Onaga
- \*John Winston Hayes (FME);  
Sherman, Tex.
- \*Clarence William Hayward (EE);  
Manhattan
- \*George Martin Hayward (Ag); Valley Falls
- \*Harriet Glenn Healey (IJ); Manhattan
- \*Claudia Marguerite Heavner (C);  
Kansas City, Mo.
- \*Dale Burdette Heberly (ME); Junction City
- \*Marson Belmer Heckendorn (EE);  
Cedar Point
- \*Richard Lyle Heinz (EE-1; PE12);  
Grainfield
- \*Arthur Charles Helman, Jr. (C); Norton
- \*Hilda Frieda Hempler (PE); Almaena
- \*John Lyman Henderson (VM);  
Manhattan
- \*Martin Lee Henderson (Ag); Topeka
- \*William Gerald Hendricks (CE); Girard
- \*Elbert Chauncey Henry (ME); Belleville
- \*Paul Wilson Hensleigh (IC); Winchester
- \*Earle Claude Henry (ME); Wichita
- \*Lucille Evangeline Herndon (M); Amy
- \*Harold Horner Hersh (AA); Manhattan
- \*Edward William Herskowitz (ChE);  
Goodfellow, Mo.
- \*William Hugh Hervey (VM);  
Nebraska City, Neb.
- \*Leonard Wilbur Hibbs (VM); Upland, Cal.
- \*Paul Myron Hicks (EE); Norcatur
- \*Margaret Gloria Higdon (M); South Haven
- \*Frederick William Hill (ME);  
Huntington, N. Y.
- \*Eddie Shelly Hiner (GS); Atchison
- \*Paul Nelson Hines (AE); Ashland
- \*Rolland Theodore Hinkle (ME);  
Carbondale
- \*Elmer Ernest Hinton (EE); Hamlin
- \*Homer Orello Hoch (EE); Riley
- \*Mildred Leone Hoch (HE); Emporia
- \*Arthur Jacob Hochuli (ChE); Holton
- \*Ambrose Mathew Hoffman (Ar); Dresden
- \*William Henry Hoffman (C); Caney
- \*Garland Clarence Hoglund (GS); Miller
- \*Ervin Wellington Hollingsworth (Ag);  
Manhattan
- \*Agnes Lucille Holm (HE); Dwight
- \*Rosema Louise Holman (HE); Manhattan
- \*Mona Elizabeth Holmes (M); Zeandale
- \*Tom Holmes (EE); Emporia
- \*George Winfield Hommon (CE);  
Smith Center
- \*Crosby Johnson Hook (VM); Brayner, Mo.
- \*Ella Maxine Hooper (IJ); Abilene
- \*Victor Hopeman (AE); Independence
- \*Ralph E. Horchem (PE); Ransom
- \*Harold Charles Horn (ChE); Humboldt
- \*Esther Stubbs Horton (GS); Plevna
- \*William Cary Hossack (EE); Girard
- \*Sewalt Arthur Hottman (CE); Whiting
- \*Edwin Meyer Houghton (C); Manhattan
- \*Jack Wesley Householder (C); Clay Center
- \*Junior H. Howard (EE); Oberlin
- \*Morna Evelena Howe (GS); Stockdale
- \*Margaret Roberta Hoyt (HE); Lyons
- \*Leora Belle Hubbell (IC); Fredonia
- \*Howard Busby Hudiburg (ChE);  
Independence
- \*Rolland Lawrence Huggins (ArE); Burdick
- \*Lawrence Earl Hughes (ME); Stockton
- \*Margaret Hughes (C); Manhattan
- \*Morris Cleland Humes (Ag); Glen Elder
- \*Louis Julian Hunter (CE); Topeka
- \*Mary Frances Hurley (HE); Paola
- \*Margaret Naomi Huscher (Art); Concordia
- \*Emmett Hutton (C); Hutchinson
- \*Rebecca Stevens Hyde (M); Reading
- \*Virginia Marie Jobe (PE); Topeka
- \*Patricia Deverlaux Irwin (M); Manhattan
- \*Donald Frederick Isaacson (Ag); Topeka
- \*Leonard Barelay Izard (EE); Carthage, Mo.
- \*Frances Marian Jacks (IJ); Harper
- \*Shirley Maxine Jacobs (M); Lenora
- \*Frank Edwin Jacobson (C); Manhattan
- \*Homer Jameson (LG); Garrison
- \*Glenn James Jarnagin (ME-1; Ag-2);  
Kingsdown
- \*John William Jarvis (C); Manhattan
- \*Dolores Marie Jehlik (HE); Cuba
- \*Frances Marie Jessee (C-1; HE-2);  
Centralia
- \*Charles Wesley Jobes, Jr. (ChE);  
Pretty Prairie
- \*Dorothy Etna Jobling (HE-1; GS-2);  
Caldwell
- \*George Loomis Jobling (ChE); Caldwell
- \*Carl Johnson (GS-1; Ag-2); Greeley
- \*Dale Louise Johnson (ChE); Oberlin
- \*Esther Elizabeth Johnson (HE); Ottawa
- \*Genevieve Rachel Johnson (C); Topeka
- \*Geneva John (HE&J); Frankfort
- \*Lois Lucille Johnson (HE); Randolph
- \*Ruth Caroline Johnson (HE); Be'veue
- \*Sanford Edwin Johnson (VM);  
Omaha, Neb.
- \*Stella Lillian Johnson (HE); Savonburg
- \*Vinton Gustaf Johnson (EE); Manhattan
- \*Charles Wright Johnston (GS);  
Leonardville
- \*Jonathan Ivar Johnston (AA);  
Stonington, Colo.
- \*Robert Compton Johnston (ME);  
Junction City
- \*Katherine Jane Jones (C); Great Bend
- \*Lottie A. Jones (HE); Overbrook
- \*Ruth Elizabeth Jorgenson (HE); Manhattan
- \*William Wade Justus, Jr. (CE-1; IJ-2);  
Hill City
- \*William Henry Juzi (Ag); Florence
- \*Jane Kahl (C); Topeka
- \*William Augustin Kaiser (Ag); Paola
- \*Virgie Lucile Kalbfleisch (HE); Harlan
- \*William Howard Kallenbach (Ag);  
Hill City
- \*Enid Kay (M); Moreland
- \*Eugene Rex Ke'l (LG); Manhattan
- \*Walter Clifton Kellen (C); Henderson, Ky.

## FRESHMEN—Continued

- \*Warren Ferdinand Keller (EE);  
Great Bend
- \*Donald Clifford Kelley (VM); Great Bend
- \*Samuel Kelsall III (VM); Lawrence
- \*George Philip Kent (CE); Merriman, Neb.
- \*Kenneth Paul Kern (PE); Manhattan
- \*George Miller Kerr (VM);  
Hyattsville, Md.
- \*James Randle Ketchersid (AH&V); Hope
- \*Joe Kibler (CE); Sedan
- \*Henry Adams Kilian (EE); Chapman  
Jay Grant Kimball (IJ); Manhattan
- \*Ned William Kimball (GS); Manhattan
- \*Leslie Waterman King (FME); Wichita
- \*Vernon Russell King (PE); Manhattan
- \*Walter Henry King, Jr. (GS); Manhattan
- \*Laura Loreen Kingsbury (HE); Topeka
- \*Robert Wayne Kipp (EE); Dodge City
- \*Henry Charles Kirk (GS); Scott City
- \*Floyd Ernest Kirkland (ChE);  
Junction City
- \*Ruth Annette Kirkpatrick (HE&N);  
Valley Center
- \*Irwin Henry Klassen (EE-1; C-2);  
Whitewater
- \*Zelda Mary Kleven (HE); Superior, Neb.
- \*Marian Desmond Kline (HE); Pratt
- \*Joseph Frank Knappenberger (Ag-1;  
VM-2); Penaloza
- \*Elizabeth Rachel Knechtel (PE); Larned
- \*Kathryn Marie Knechtel (HE); Larned
- \*Verla Ruth Koelling (HE); Larned
- \*James Kral (VM); Omaha, Neb.
- \*Jesse Krasny (PE); Topeka
- \*Duane Eldon Kratzer (Acct); Salina
- \*Dorothy Orlene Krig (HE); Manhattan
- \*Justina Susie Kroeker (HE); Hutchinson
- \*Eleanor Lee Kubin (IJ); McPherson
- \*Grace Ellen Kuhn (GS); Belleville
- \*Stefanya Mary Kurent (HE&N); Mulberry
- \*Edwin Rector Lamb (Ag); Mendon, Mo.
- \*Elizabeth Lamprecht (HE); Manhattan
- \*Leslie Kummer Lancaster (Acct);  
Junction City
- Mary Ruth Langvardt (HE); Dwight
- \*Ronald Paul Lantz (ChE); Madison
- Everett Watson Larkin (Ag); Haviland
- Warren Donald Larson (C); Manhattan
- \*Bernice Dawn Lathrop (IJ); Smith Center
- \*James Sylvester Latucky (EE);  
Westbury, N. Y.
- \*John D. Lawson, Jr. (ME); Manhattan
- \*Arleen Stella Leece (M); Formoso
- \*Leonard Charles Leece (EE); Lovewell
- \*Jessie Logan Leland (LA); Wichita
- \*Lucille Catherine Lemley (IJ); Alton
- \*Reeves Rankin Lewis (GS); Valley Center
- \*Walter Morris Lewis (Ag); Larned
- \*Lois Regina Lindsey (GS); Frankfort
- \*Jack Junior Lix (ChE); Norton
- \*Ralph Lee Locke (EE); Erie
- \*Wayne J. Londeen (FME); Abilene  
Clark Henderson Long (ME); Haddam
- \*Russell Keith Long (ME); Manhattan
- \*William Yew Look (ME); Denver, Colo.
- \*John William Loth (EE); Buffalo, N. Y.
- \*Ernest Dennison Luder (C); Caldwell
- \*Edith Allene Luke (GS); Scott City
- \*Lois Anne Lumb (HE); Wakefield
- \*Chauncey Karl Lundberg (ME); Manhattan
- \*Gilbert Gordon Lundgren (C); Clyde
- \*Ralph Fillmore McAtee (GS);  
Council Grove
- \*Vera McBratney (HE); Wichita
- Truman Nathaniel McCartney (VM);  
Red Bluff, Cal.
- \*Myrna Amelia McClure (GS); Manhattan
- \*Mary Lucile McConathy (HE);  
Roodhouse, Ill.
- \*Daniel Maxey McCormick (ChE);  
Manhattan
- Ralph Ewing McCormick (EE);  
Arkansas City
- \*Neil Arthur McCormick (ChE); Oatville
- \*Hollis Joseph McCoy (IJ); Eskridge
- \*Lloyd Everett McDaniel (GS);  
Michigan Valley
- \*Vida Edith McDaniel (HE); Edson
- \*Glenn Melvin McFadden (VM); Natoma
- \*David William McGee (Ag); Liberal
- \*Edward Nash McGrew (VM); Lawrence
- \*James Lawrence McIntire (ME);  
Burlingame
- \*Inez Louise McMahan (M); Attica
- \*Daniel Ellsworth McMullen (GS); Norton
- \*Mary Roberta McMullen (HE&N); Oberlin
- \*Thomas Dale McMullen (GS); Phillipsburg
- \*Wilda Lucille McNally (IJ); Oathe
- \*Joe Kenneth McNay (PE); Manhattan
- \*Ray Olan McNeill (PE); Manhattan
- \*Ida Margaret McRae (IJ); Leecompton
- \*Don Lee Mace (VM); Dixon, Cal.
- \*George Woodrow Maddox (GS);  
Manhattan
- \*Lehman Dedrick Madsen (EE); Corbin
- \*Harry Earl Malone (AA); Bonner Springs
- \*Joe David Manges (VM); Courtland
- Merrideth Marian Manion (IJ); Goodland
- \*Ralph William Manly (ME); Manhattan
- \*William Thomas Marcy (AA); Milford
- \*Wilma Nina Marsh (HE); Chanute
- \*Arlene Marshall (HE); Herington
- \*Joseph Ralph Marshall (PE); Kansas City
- \*Ernest Leo Martin (EE); Grainfield
- \*Wallace Bayless Martin (AE); Wichita
- \*Elva Coreen Marty (HE); Courtland
- Phil Sheridan Mason (IC); Manhattan
- \*Thurman Lowell Mathias (GS);  
Manhattan
- Dale Winter Maxwell (CE); Columbus
- William Albert Maxwell (C); Manhattan
- \*James Daniel Mayden (EE); Junction City
- \*Harriet Katharine Mayer (M); Alta Vista
- Allen Edward Mayhew (ChE); Belpre
- \*Bessie Louise Meador (GS); Olathe
- \*Carrol Crandall Meador (ME); Kansas City
- \*Verna Florence Melchert (IE&D); Lorraine
- \*Joe Glen Metzger (C); Girard
- \*David Francis Mickey (CE); Junction City
- \*John Max Milam (ME); Bartlesville, Okla.
- \*Joe Beryl Millard (C); Parker
- \*Edwin William Millenbruck (VM);  
Herkimer
- \*Edgar Louis Millenbruck (VM);  
Herkimer
- \*Donald Wesley Miller (GS); Cambridge,  
Neb.
- \*Roy Forest Miller (VM); Atlantic, Iowa
- \*Velma Margaret Miller (GS); Chapman
- Jerrold Raymond Mills (IJ); Waterville
- \*Claire Esdon Minis (HE); Manhattan
- \*Dorothy Helen Modine (HE); Olsburg
- \*Lester Lee Moehle (EE); Clay Center
- \*Milton Hiram Mohn (ChE); Ellinwood
- \*George Eugene Monroe (IJ); Lyons
- \*Edward Fox Moody (Ag); Greeley
- \*Charles Calvin Moore (Acct); Manhattan
- \*John Ewing Moore (ME); Muscotah
- Orven Donald Moore (GS); Byers
- \*Howard Anthony Moreen (Ag); Salina
- \*Emory Lavern Morgan (Ag); Ottawa
- \*Myrtle Mae Morris (HE); Paxico
- \*Opal Emma Morris (GS); Riley
- \*Irene Margaret Morrissey (C);  
Staunton, Ill.



## FRESHMEN—Continued

- \*James Orville Morse (C); Wichita  
 \*Joe Scudder Morton (Ag); Altoona  
 \*Frances Emma Moss (HE); Lincoln  
 \*Robert Judge Moss (GS); Hoxie  
 \*Kenneth Benjamin Mosser (CE); Larned  
 \*Lillian Kelly Mosshart (C); Manhattan  
 \*John Englin Bertus Mouw (VM); Edgerton, Minn.  
 \*Bethe Muhlheim (IJ); Ellis  
 \*Roland A. Munsell (Ag); Sedgwick  
 \*Charles Cornelius Murphy (IC); Clyde  
 \*Charles Ernest Murphy (Ag); Leoti  
 \*Robert Dean Murphey (ChE); Tulsa, Okla.  
 \*George Erwin Murphy (EE); Lincoln  
 \*Harriet Mildred Murray (GS); Valley Falls  
 \*Leland Murray (Ar); Topeka  
 \*Williamette Navarre (HE); Rossville  
 \*James Rollin Naylor (EE); Topeka  
 \*Delbert Fredrick Neff (EE); Abilene  
 \*Harold Neubauer (C); Kansas City  
 \*Chapin Smith Newell (IJ); Holton  
 \*Herman Elby Nicholas (EE); Johnson  
 \*Hilmer Arthur Nichols (EE); Manhattan  
 \*Thelma B. Nichols (IJ); Manhattan  
 \*Helen Marie Niemeier (HE); Manhattan  
 \*Harvey Max Nixon (Ag); Manhattan  
 \*John Bruce Nixon (ArE-1; C-2); Downs  
 \*Marion Burns Noland (Ag); Falls City, Neb.  
 \*Margaret May Nonamaker (Art); Osborne  
 \*Claire Nulton (GS); Manhattan  
 \*Neil Marlin Nuzman (GS); Soldier  
 \*Max Carhill O'Brien (C); Burr Oak  
 \*Wamoth Denais Odle (GS); Manhattan  
 \*Kenneth Bernard Olson (ME); Junction City  
 \*Maxine Josephine Osbourne (HE); Manhattan  
 \*Wilbert Edwin Osterholtz (VM); Manhattan  
 \*Richard Charles Othberg (EE); Scandia  
 \*Arthur August Ott (Ar); Owensville, Mo.  
 \*Alvin Henry Otte (Ag); Great Bend  
 \*Isabel Jane Overman (HE); Manhattan  
 \*Joenetta Orlena Owens (Art); Manhattan  
 \*Max Elton Packard (EE); N. Topeka  
 \*Thelma Loretta Page (C); Medicine Lodge  
 \*Robert Alden Paige (AA); Manhattan  
 \*R. L. Parker (AA); Kansas City  
 \*Frank George Parsons (Ag); Winfield  
 \*William Wilson Pattison (PE); Topeka  
 \*Gladys Elsa Paulsen (M); Onaga  
 \*Junia Elizabeth Pearce (C); Burlington  
 \*Lyle Edward Peck (C); Grainfield  
 \*William Miller Peck (EE); Sterling  
 \*Charlotte Penny (IJ); Manhattan  
 \*E. A. Perez Herrera (VM); Panama  
 \*Harold Allen Perkins (Ag); Kansas City  
 \*Martha Lou Perkins (HE); Lawrence  
 \*Edwin Hugo Peterson (ME); St. Marys  
 \*Lois Maurine Peterson (Art); Garrison  
 \*Melvin George Peterson (EE); Marysville  
 \*Raymond Charles Peterson (AA); Wilsey  
 \*Harold Russell Pettit (C); Lvous  
 \*Edwin Lounsbury Pfuetze (GS); Manhattan  
 \*Henry Rav Phelps (C); Miltonvale  
 \*Kenneth James Phelps (CE); Manhattan  
 \*Mary Edna Phelps (HE); Delavan  
 \*William Hadden Phillips (C); Salina  
 \*George C. Pierce (Ag); Belleville  
 \*Edward Wilson Pitman (AA); Scott City  
 \*F'oye Poague (C); Havensville  
 \*William Elby Polk (ME); Augusta  
 \*Ira Ivor Pool (PE); Hiawatha  
 \*Larry Joseph Porter (C); Jewell  
 \*Charles Frank Prehal (VM); Omaha, Neb.  
 \*William Hardy Prentice (EE); Clay Center  
 \*Lois Agnes Price (GS); Manhattan  
 \*Thomas General Pride (ME); Paxico  
 \*Leland John Propp (C); Marion  
 \*John Edward Punshon (GS); Osawatimie  
 \*Arnold William Purtzer (CE); Netawaka  
 \*Ernestine Putnam (HE); Salina  
 \*Julia Elizabeth Rader (IJ); Manhattan  
 \*Ernest Shelton Ramsey (Ag); House, N. Mex.  
 \*Louise Ratliff (IJ); Manhattan  
 \*John Ravese (ChE); Topeka  
 \*Edwin Essick Reed (ME); Kanopolis  
 \*Frances Lillian Reed (HE); Pomona  
 \*David Mason Reid (CE); Lebo  
 \*Clarence Reising (EE); Hutchinson  
 \*Rowland Herman Renwanz (CE); Enterprise  
 \*Paul Burton Retter (CE-1; GS-2); Detroit  
 \*William Mansfield Rice (EE); Carthage, Mo.  
 \*Juanita Florence Rich (IJ); Wichita  
 \*Roy Elliot Richard (Ag); Madison  
 \*Cordell Richardson (Ag); Oswego  
 \*Harold George Richardson (Ag); Belleville  
 \*Wayne Scholer Richardson (CE); Barnard  
 \*Bennison Haskell Riddell (EE); Youngstown, N. Y.  
 \*Emmon LaVer Robbins (Ag); Goodland  
 \*Mateel Leona Roberts (IJ); Mankato  
 \*Mildred Audrey Roberts (IJ); Mankato  
 \*Rachel Edith Roberts (Art); Morrill  
 \*Norman Eull Roberts (GS); Manhattan  
 \*William Henry Rockey, Jr. (VM); Ontario, Cal.  
 \*Gretel Mildred Roderick (HE); Manhattan  
 \*Clinton Gerald Roehman (PE); White City  
 \*George Albert Rogler (Ag); Matfield Green  
 \*Lyle Edward Roney (ME); Benedict  
 \*Katheryn B. Roper (HE); Manhattan  
 \*Ernest Raymond Rose (CE); Agra  
 \*Lois Rosencrans (PE); Manhattan  
 \*Harold Eugene Ross (C); Wamego  
 \*Paul Daniel Ross (VM); Otterville, Mo.  
 \*Jessie Marguerite Rowland (HE); Clay Center  
 \*Robert Homer Rossell (GS); Auburn  
 \*Paul Wesley Rust (Ag); Junction City  
 \*John McPherson Rutherford (ChE); Fort Riley  
 \*Mary Catherine Ryan (HE); Manhattan  
 \*Kenneth Earl Sadler (VM); Wagner, S. Dak.  
 \*Vera Marie Sager (PE); Brewster  
 \*Jay Leo Salisbury (Ar); Manhattan  
 \*Edwin Charley Sample (Ag); White City  
 \*Mildred Bernice Sands (GS); Wichita  
 \*Wendell Eli Sapp (EE); Hepler  
 \*Esther Viola Sayre (M); Manhattan  
 \*Arthur Eugene Schafer (CE); Jewell  
 \*Floyd K. Schafer (EE); Sterling  
 \*Lyle Leon Schlaefli (CE); Cawker City  
 \*Erma Ann Schmedemann (GS); Manhattan  
 \*Clarence Schmidt (VM); Rock Rapids, Iowa  
 \*Richard Monroe Schnackenberg (C); Valley Center  
 \*Theodore Eliot Schoeni (C); Kensington  
 \*Olive Elizabeth Schroeder (GS-1; LG-2); Frederick  
 \*Doris Frieda Marie Schwanke (HE&N); Alma  
 \*Leon Lee Schwindt (CE); Bison  
 \*Lloyd Joy Sconce (Ag); Halstead  
 \*Charben Benjamin Franklin Scott (Ag); Manhattan



## FRESHMEN—Continued

- \*Dean Doctor Scott (AA); Bonner Springs  
 \*Lawrence Eugene Seaman (CE);  
   Dodge City  
 \*Iva Mildred Sell (HE&N); Stockton  
 \*Betty Anne Shackelford (M); Manhattan  
 \*Helen Bernice Shackelford (HE);  
   Manhattan  
 \*John B. Shaffer (AA); Meriden  
   Leland Knoy Shaffer (C); Minneola  
 \*Allen Rudd Shank (GS-1; EE-2);  
   Woodbine  
 \*Roberta LaVone Shannon (GS); Geneseo  
 \*George Woodrow Shaw (CE); Moscow  
   Howard Joseph Shaw (LA); Denison  
   LaGrande Clarence Shaw (VM);  
   Manhattan  
 \*Elizabeth Frances Shearer (GS); Abilene  
   Samuel LeRoy Sheetz, Jr. (C); Manhattan  
 \*Edward Temple Sheldon (C); Topeka  
 \*Marie Shelton (IJ); Palestine, Tex.  
 \*Eugenia Faye Sherow (PE); Langdon  
 \*Harry Hunter Short, Jr. (Ar); Concordia  
 \*Harriet Elizabeth Shrack (C); Pratt  
 \*Ward Haynes Shurtz (GS-1; EE-2);  
   Manhattan  
 \*Althea Lenora Siddens (HE); Blaine  
 \*Virgil Edwin Siddens (Ar); Manhattan  
 \*Walter Henry Simpson (ChE); Manhattan  
 \*Eugene Schisler Sims (CE); LeRoy  
 \*Harry Grant Sitler (Ag); Lake City  
 \*Marian Alice Skaggs (C); Salina  
 \*John Robert Skillen, Jr. (C); Dodge City  
 \*Ruth Elizabeth Skinner (GS); Manhattan  
 \*Rose Martha Skradski (HE); Kansas City  
   Robert Maurice Slansky (EE); Plainville  
 \*Richmond Ray Slater (VM);  
   Carrollton, Mo.  
 \*Robert Fred Sloan (Ag); Leavenworth  
 \*Earl J. Small (C); Neodesha  
 \*Carl Gust Smith (Ar); Great Bend  
 \*Flora Belle Smith (GS); Clyde  
 \*Frances Arlene Smith (PE); Topeka  
 \*Sylvia Faye Smith (HE); Maplehill  
 \*Lola Helena Somers (HE); Canton  
 \*Wesley Edward Souder (Ag); Minneapolis  
 \*Karl Henry Speed (EE); Holton  
   Melvin Lloyd Spitze (GS); Kinsley  
 \*Lawrence Eric Spong (GS); Enterprise  
 \*Jacob Emil Spring (VM); Pittsburg  
 \*Calvin Richard Springer (Ag); Belleville  
 \*Anselm Ignatius Spramek (EE); Atwood  
   Earl Louis Stadel (AE); Manhattan  
 \*Arnett Louise Stafford (GS); Fort Riley  
 \*Charles Dougherty Stafford (VM);  
   Oakley, Cal.  
 \*Roy Rovelle Stalons (ChE); Topeka  
 \*Irma Nyle Stanbery (GS); Jewell  
 \*Geneva Grace Stanton (M); Burr Oak  
 \*Clarence Melvin Stay (VM); Reedley, Cal.  
 \*Harold Wilson Steele (ME); Grigston  
 \*Otto Helem Stelzner (GS); Wamego  
 \*Blanche Juliaetta Stephenson (GS); Alton  
 \*Robert Louis Stephenson (IJ); Holton  
   Frank Eugene Sterba (VM); Cuba  
 \*Ardis Minerva Stewart (Art); Eskridge  
 \*Gerald Arthur Stewart (EE-1; GS-2);  
   Marysville  
   Harley Allen Stewart (EE); Ozawkie  
 \*John Gilbert Stewart (CE); Abilene  
   Edward James Stoklasa (VM);  
   Clarkson, Neb.  
 \*Oren Paul Stoner (PE); Sabetha  
 \*Corinna Marguerite Stoops (GS);  
   Bellaire  
 \*Paul Ellsworth Stoskopf (EE);  
   Baxter Springs  
 \*Lyle Wesley Streets (Ar); Altoona  
 \*Dorothy Elizabeth Streiner (HE); Wamego  
 \*Roberta Louise Strowig (Art); Paxico  
 \*Francis William Summers (GS); Waterville  
 \*Eugene Everett Sundgren (Ag); Falun  
 \*Conrad Mels Svaren (VM); Sinai, S. Dak.  
 \*Edna Lucy Swank (GS); Hill City  
 \*Richard William Swart (GS); Manhattan  
   Leonard Leo Sweeney (VM); Manhattan  
 \*Donald Dexter Swenson (CE); Clay Center  
 \*Guy Burchard Swink (ChE); Hugoton  
   Loren E. Tackwell (C); Manhattan  
 \*Robert Frank Taggart (CE); Goodland  
 \*Joseph Burton Taley (EE); Manhattan  
   Ferne Ethlyn Tannahill (HE); Manhattan  
 \*Maurice Costello Taylor (ChE); Salina  
 \*Charlie Bailey Team (Ag); Wichita  
 \*Lloyd Campbell Teas (CE); Manhattan  
 \*Helen B. Teter (C); El Dorado  
 \*Louise Nazel Le Thibus (Ar); Topeka  
 \*Fred Daniel Thomas (Ar); Ulysses  
 \*Lewis Ivan Thomas (ME); Garden City  
 \*Doris Jenelle Thompson (HE); Marion  
 \*James Otis Thompson (GS); Dodge City  
 \*Albert Adam Thornbrough (Ag); Lakin  
 \*Wallace William Thurston (EE); Elmdale  
 \*Ansel Walter Tobias (AE); Lyons  
 \*Marian Agnes Todd (HE); Leavenworth  
 \*James Madsen Towner (CE); Dwight  
 \*Wayne Alvert Trickler (Ag); Altoona  
 \*Cleo Chester Trowbridge (ME); Grainfield  
 \*Robert Long Trower (PE); Concordia  
 \*Orrin Lewis Truman (VM);  
   Bryant, S. Dak.  
 \*Vera A. Trusler (M); Junction City  
 \*Gerald Emery Tunison (EE);  
   Wheaton (deceased)  
 \*Trena Evelyn Turner (Art); Manhattan  
 \*William Martin Turner (ME); St. Marys  
 \*Dorothy Lois Tyler (PE); Fairview  
 \*John David Umberger (CE); Manhattan  
 \*Pauline Vail (HE); Plains  
 \*Alice Clare Van Meter (HE); Ada  
 \*Margaret Van Orsdol (HE); Silver Lake  
 \*Aurel Olive Van Scoyoc (GS); Oak Hill  
   Albert Vesecky (EE); Kansas City  
 \*Ferne Vesecky (IJ); Kansas City  
 \*Bernita Cleo Vice (HE); Stafford  
 \*Helen Louise Vicksburg (GS); Talmage  
 \*Clarence Campbell Vierling (VM);  
   Winterset, Iowa  
 \*Gladys Ione Vinson (GS); Manhattan  
 \*William Fennando Waddell (VM);  
   St. Joseph, Mo.  
 \*Kenneth Wade (Acct); Norcatur  
 \*Aloys Paul Wadham (GS); Marysville  
 \*Mark Wadick (EE); Chapman  
 \*Marian Josephine Wait (IE&D);  
   Superior, Neb.  
 \*Walter Carl Wakelin (VM);  
   Los Angeles, Cal.  
 \*Elizabeth Daniel Walbert (Art); Columbus  
 \*Edwin Leslie Walker (AE); Junction City  
 \*LaVelle K. Walker (ME-1; C-2);  
   Valley Falls  
 \*Robert Elston Wallerstedt (EE);  
   Manhattan  
 \*Joe Harrison Walsler (ChE); Manhattan  
 \*Vera Velma Wangerin (IJ); Kensington  
 \*Melvin Orville Ward (EE-1; C-2);  
   Egbert, Wyo.  
 \*William Lindsay Ward (EE);  
   Kansas City, Mo.  
 \*Glenn Ivan Wardin (PE); Hiawatha  
 \*Glen Rudolph Warner (ME); Manhattan  
 \*William Barnes Warner (EE); Wellington  
 \*Dorothy Gertrude Washington (HE);  
   Manhattan  
 \*Clement Earl Watson (VM);  
   Lexington, Mo.

FRESHMEN—*Concluded*

- George William Watson (Ag-1; PE-2);  
Vining
- \*James Howard Watson (Ag); Merriam
- \*Retta Verdetta Watts (Art);  
Kansas City, Mo.
- \*Burton V. Weber (ChE); Clifton
- \*Lillis Raphael Wempe (VM); Seneca
- Carl Edward Wendell (VM); Mulberry
- \*John Leslie West (VM); Lockwood, Mo.
- \*Winston Douglas Wetlaufer (PE);  
Waterville
- \*Agnes Hulda Wayant (C); Abilene
- \*Ida May Weygandt (HE); Keats
- Maurice Latimer Wheeler (Ag); Seneca
- Alfred Emmett White, Jr. (VM);  
Manhattan
- \*Alice Elinor White (C); Jewell
- \*Bertha May White (C); Jewell
- \*Elouise Arlie White (C); Dalhart, Tex.
- \*Geneva Barbara White (Art); Ada
- \*James Howell White (ME); Tyler, Tex.
- Paul R. Whitmore (Ag); Salina
- \*LuCortes Orville Whitted (VM);  
Long Island
- \*Keith Wickham (ME); Manhattan
- \*Harold Wierenga (GS); Cawker City
- \*Donald Sidney Wiggins (ME); Oberlin
- \*Vernon Cornelius Wiksten (GS); Topeka
- \*Arminta Wilcox (IJ); Dodge City
- \*Eva Sarah Wild (IJ); Wilsey
- Howard Wildman (Ag); Manhattan
- \*Eleanor May Wilkinson (HE);  
Humboldt, Neb.
- \*Eunice Carolyn Williams (HE); Osage City
- \*Theodore Shields Williams (VM);  
Kansas City
- \*Wayne Clifford Williams (GS-1; Ag-2);  
Broughton
- \*Frances Meredith Williamson (HE);  
Blue Springs, Mo.
- \*LeRoy Dwight Williamson (VM);  
Barada, Neb.
- \*William Welton Williamson (VM);  
Barada, Neb.
- \*Luke Avery Wilper (CE); Harris
- \*Anona Margaret Wilson (Art); Manhattan
- Gerald Grant Wilson (C); Alida
- \*Marie Alphonsine Wilson (HE); Manhattan
- \*Ruby Alice Wilson (IE&D); Council Grove
- \*Richard Gordon Wiltse (CE); Altoona
- \*David E. Wing (MF); Manhattan
- \*Casper Charles Winter (Ar); Dresden
- \*Fred Wiruth (CE); Alma
- \*Dorothy Marian Wise (IJ); Fort Riley
- \*Edwin Strand Wiseman (VM); Delphos
- \*William Alexander Wishart (Ag);  
Manhattan
- \*Wilbur Harold Wiswell (VM);  
Gresham, Neb.
- \*Sarah Glee Witham (HE); Manhattan
- \*Roland Alfred Wittwer (ChE-1; C-2);  
Manhattan
- \*Winifred Wolf (IJ); Ottawa
- \*Billy Addison Woodburn (CE); Ottawa
- \*Cooper Thomas Word (CE); Kanopolis
- \*Edwin Steve Wreath (PE); Manhattan
- \*Leslie Linn Wulfemeyer (EE); Moscow
- \*Velda Pauline Wunder (HE&N);  
Valley Falls
- \*Lois Hattie Wyatt (IJ); Valley Falls
- \*Fremont Andrew Wylie (ME); Manhattan
- \*Claude Clayton Young (EE); Utica
- Glenn Mayer Young (EE); Kansas City
- Golda Erma Young (HE); Manhattan
- \*Harold Louis Younger (GS);  
Kansas City, Mo.
- \*Herman Wilson Zabel (ChE); Westmoreland
- \*Lester Allen Zerbe (Ag); Salina
- \*Leonard Albert Zerul (EE); Ellis
- \*Samuel Frederic Zickfoose (VM); Rossville
- \*Virginia Ruth Zerkle (HE); Jamestown

## SPECIAL STUDENTS

- \*Rufus Travis Amis (CE); Great Bend
- Herbert Charles Ansit (Ar); Wichita
- \*Roger Ashe (ME); White City
- Sue Elizabeth Bates (GS); Manhattan
- Glen Gerald Beal (Ag); Eureka
- \*Ervin William Bevlin (Ag); Manhattan
- \*Shirley W. Boyer (GS); Levant
- Harold P. Boyle (GS); Manhattan
- \*Ulah Luella Brady (GS); Penasola
- \*Douglas Mylchrust Cain (Ag); El Dorado
- \*Stella Cady Clapp (Art); Manhattan
- John Russell Clark (GS); Manhattan
- Helen Louise Conley (GS); Kingman
- \*Helena Wilhelmina Cott (GS); Milford
- Harvey Ellis Davidson (ME); Manhattan
- \*Frank Henry Duffy (VM); Junction City
- Mahmond Effat (Ag); Manhattan
- \*Hal Field Eier (CE); Atwood
- \*Esther Novotny Flinger (GS);  
Manhattan
- \*Patricia Hickey Fluker (GS);  
Junction City
- David George Griffiths (GS); Manhattan
- Virginia Marie Gross (GS); Russell
- \*Charles D. Houghton (GS); Wichita
- Ruth Vivian Houghton (HE&N);  
Jamestown
- \*Viola Hunt (Ag); Topeka
- Arthur Henry Knost (GS); Manhattan
- Sterling Alfred McCollum (ME);  
Manhattan
- Dean Owen McIntyre (GS); Herington
- \*Mary Martha McNinch (HE); Arnold
- Charles Sherwood Manley (GS);  
Junction City
- \*Ann Eliza Martin (GS); Eskridge
- \*Armando Chaves Martins (Ag);  
Rio de Janeiro, Brazil
- Josephine E. Merryman (GS); Topeka
- Elda L. Meyer (HE); Manhattan
- \*Furman Magnus Miller (VM); Manhattan
- Harold Baldwin Miller (GS); Manhattan
- \*Ethel M. Noland (GS); Keats
- Marigold Laura Peterson (GS); Manhattan
- \*Margaret K. Pierce (GS); Fort Riley
- Lewida Corinne Richards (GS); Manhattan
- \*Alfred Fred Rinne (GS); Junction City
- \*Jean Sellards (GS); Solomon
- \*Fontella Katherine Shepherd (HE); Wa'do
- David Ray Stewart (Ag); Wamego
- \*Nancy Pauline Stone (GS); Lyons
- Helen Stonebraker (GS); Wakeeney
- \*Elizabeth Irene Sullivan (GS); Manhattan
- Cecil K. Thomas (GS); Ulysses
- \*Verla Vesecky (HE); Manhattan
- John G. Wadham (GS); Marysville
- Hallie Elizabeth Whitney (GS); Clyde
- Ruth Wilkerson (GS); Manhattan
- Armand Elmore Wilson (GS); Manhattan
- Wa'lace Robert Womer (GS); Manhattan

\* Matriculated 1931-'32.

## Students in Special Courses

The abbreviations following the names of students have the following significations: DMSC, dairy manufacturing short courses; FSC, farmers' short courses.

Floyd Draper Armstrong (FSC); Atchison	Henry John Lane, Jr (FSC); Lyndon
David E. Bailey (FSC); Rush Center	Edgar Lewis Lowry (FSC); Logan
Erwin Larrel Bigham (FSC); Blue Rapids	John Henry Mann (FSC); Toronto
Leonard Earle Bigham (FSC); Blue Rapids	John David Markley (DMSC); Mound City
Evert Wayne Bratton (FSC); Luray	James Renwich Matthews (FSC); Sterling
Elsworth Orville Brown (FSC); Wichita	Harold Ralph Missimer (DMSC); Manhattan
Edward Ernest Cilek (FSC); Jennings	Evan B. Nicholas (DMSC); Concordia
Arnold J. Duerksen (FSC); Hillsboro	Andrew Olson (FSC); White City
Earl Eakins (DMSC); Sedalia, Mo.	Robert Johnson Oman (FSC); Leonardville
Absel Black Ellis (FSC); Lyons	Lloyd Perry Osborne (FSC); Elk Falls
Charles Earl Finney (FSC); El Dorado	Merle Anthony Ramsour (DMSC); Junction City
Roy Elsworth Freer (FSC); Topeka	Walter Ernest Raymond (FSC); Leavenworth
Howard Edwin Hanson (FSC); Topeka	Roy Thomas Rinehart (FSC); Greensburg
C. Herbert Harness (DMSC); Mankato	Robert Claypool Roberts (DMSC); Vernon
Clarence Samuel Hedstrom (FSC); Burdick	Martin W. Rothe; (FSC); Ness City
William Vernon Hicks (DMSC); Taylor, Tex.	George Harvey Smith (FSC); Highland
Cecil Horfield (DMSC); Paris, Tex.	Gerard A. Still (FSC); Atchison
Whittier H. Kennedy (FSC); Bison, Okla.	Paul Dallas Taggart (FSC); Emporia
Herman Frank Kley (FSC); Atchison	George Lester Webb (DMSC); Hastings, Neb.
William A. Krowland DMSC); Kansas City	Carl Edgar Wright (DMSC); Pratt
Howard Wilbur Krum (FSC); Lawrence	



## Summer School Students

### Nine-week Session

Harold Quantie Abell; Riley  
 Fulton G. Ackerman; Lincoln  
 Genitha Bernice Adams; Frankfort  
 Donald Adair Adell; Manhattan  
 Harry Enoch Adell; Manhattan  
 Leonard Rusco Adler; Goddard  
 Howard Henry Aicher; Winfield  
 Glenn Allen Aikins; Manhattan  
 Harriett Aletha Aikins; Ozawkie  
 Esther Akens; Portis  
 Charles Leonard Alberding; Kiowa  
 Lee Harold Albin; Norcatour  
 Henry Wright Allard; Topeka  
 Hazel Evelyn Allen; Louisville  
 Ethlyn Marie Alsop; Junction City  
 Malcolm L. Alsop; Wamego  
 Clare Kenneth Alspach; Wilsey  
 Dallas Dale Alsup; Pittsburg  
 Edith Evelyn Ames; Wichita  
 Harold Lee Anderson; Manhattan  
 John Edmond Anderson; Belvue  
 Louisa Martha Anderson; Atchison  
 Jessie Yahn Andrews; Manhattan  
 John Albin Andrew; Manhattan  
 Edwin Lee Andrick; Manhattan  
 William Joseph Angerer; Manhattan  
 Ethel Marie Antrim; Spivey  
 Paul Warren Archer; Hutchinson  
 Clifford Elroy Armstrong; Pittsburg  
 Bessie Louise Arnold; Blue Rapids  
 Clarisa Emeline Arnold; Frankfort  
 Katherine Maurine Arnold; Raymore, Mo.  
 Julio Perez Arrojo; Havana, Cuba  
 André Audant; Port au Prince, Haiti  
 Elden LeRoy Auker; Norcatour  
 Emma Jane Ausherman; Abilene  
 Herbert Willard Avery; Wakefield  
 James Richard Ayres; Greenleaf  
 Mark J. Babb; Lebanon  
 Ellis Buchanan Babbit; Willis  
 Ruth Maxine Babbitt; Miltonvale  
 Carl Wesley Baker; Larned  
 Josephine Alice Baker; Miltonvale  
 Baha El-Bakri; Damascus, Syria  
 Ellen Isabel Barker; Beloit  
 E. Myrtle Baker; Junction City  
 Dorothy Gertrude Barlow; Manhattan  
 Alex Joseph Barneck; Salina  
 Robert Claude Barnett; Osborne  
 Ralph David Barnhart; Sterling, Colo.  
 Fern Doris Barr; Manhattan  
 Sadie Barr; Manhattan  
 Roxie Louise Barrett; Greenleaf  
 Elsa Brown Bate; Manhattan  
 Dietrich D. Becker; Webster  
 Gladys Baumgartner Becker; Webster  
 Ethel Mac Bellis; Ottawa  
 Bernice Eleanor Bender; Holton  
 Erwin John Benne; Washington  
 Kenneth Dean Benne; Washington  
 Lawrence Charles Benne; Washington  
 Margaret Clarice Bennett; Great Bend  
 Gladys Benson; Clay Center  
 John Conrad Benson; Formoso  
 Esther Kathleen Bergmeier; Wakefield  
 Minnie Louise Bergsma; Lucas  
 Lynn N. Berry; Manhattan  
 Robert Charles Besler; Manhattan  
 Rosa Catherine Best; Manhattan  
 Ethel Marie Billups; Arrington  
 Ellen G. Blair; Williamsburg  
 Gordon Ingraham Blair; Junction City  
 Helen Ann Blair; Mulvane  
 Dorothy Ann Blomgren; Randolph  
 Rozelle Adelbert Blowery; Anthony  
 Rose Helene Bochow; Sylvan Grove  
 Mildred Freda Bohnenblust; Leonardville  
 Verna Wilhelmina Bohnenblust; Leonardville  
 Helen Elizabeth Boler; Dover  
 Margaret Jewell Bottorf; Formoso  
 Mary Helen Bowes; Alma  
 Augustin Younse Breeden; Manhattan  
 Helen Virginia Brewer; Peabody  
 Alice Katherine Brill; Westmoreland  
 John Ebert Brink; Leavenworth  
 Joseph Emil Brinkman; Americus  
 Lyle Clark Brisbin; Girard  
 Louie Elizabeth Britt; Manchester  
 Mary Esther Brittain; Atchison  
 Majorie Boween Broadbent; Beloit  
 Frank Brokesh; Munden  
 Gertrude Elizabeth Brookens; Westmoreland  
 Earl C. Brookover; Scott City  
 Mildred Mae Brooks; Clyde  
 Raymond Usher Brooks; Hutchinson  
 Chester Lee Brown; Herington  
 Dorothy E. Brown; Hutchinson  
 Frances Langdon Brown; Tucson, Ariz.  
 Maxine Brown; Manhattan  
 Nevada Ruth Brown; Lebanon  
 Alice Elizabeth Browne; Vermillion  
 Helen Correll Browne; Norton  
 John M. Browne; St. Marys  
 Edna Ida Bruenger; Broughton  
 Leona Emily Bruenger; Broughton  
 Ray James Bryan; Woodbine  
 Vergil Richard Bryan; Woodbine  
 Lillian Josephine Brychta; Blue Rapids  
 Alpheus Darrel Buckmaster; Manhattan  
 Alvernon Gerald Dean Bull; Marysville  
 John Buller; Larned  
 Herman Charles Bunte; Manhattan  
 Elizabeth Alice Bunton; Waverly  
 Lowell Jacob Burghart; Chanute  
 Max Lewis Burk; Manhattan  
 David Richard Burke; Horton  
 Maurine Burson; Manhattan  
 Jeanne Durand Burt; Manhattan  
 Lucile Beatrice Burt; Manhattan  
 Frances Colleen Burton; Haddam  
 Ivan Clifford Burton; Haddam  
 Ulrich William Buseh; Manhattan  
 Emma Caroline Bushell; Broughton  
 Belva Jane Butters; Rossville  
 Lucille Edith Byarlay; Green  
 Hazel Caldwell; Clay Center  
 Harold Robert Callahan; Junction City  
 Marion Isabell Campbell; Manhattan  
 Velma Lorence Capper; Manhattan  
 Helene Zabei Carswell; Manhattan  
 Oma Belle Carter; Manhattan  
 Elisha Joseph Castello; Independence  
 Raymond D. Caughron; Manhattan  
 Ardath G. Champlin; Lindsay, Okla.  
 Edna Neetta Chapin; Westphalia  
 James Percy Chapman; Manhattan  
 Merle Vernon Chase; Abilene  
 Nettie Evelyn Chavez; Clyde  
 Thelma Elizabeth Child; Manhattan  
 Robert Frederick Childs; Manhattan  
 Vivian Winifred Chitwood; Garnett  
 Blanch Lucille Christensen; Bushong  
 Bertha Mae Clark; Alta Vista  
 Julia Madge Clayton; Council Grove  
 Alice Mae Clena; Frankfort  
 Ruth Margaret Cloner; Jewell

## SUMMER SCHOOL—Continued

Vera Grace Clymer; Miltonvale  
 James Wendel Coate; Miltonvale  
 Thelma Louise Coffman; Manhattan  
 Dorothy Mary Coleman; Sylvia  
 Elery Lowe Collins; Fontana  
 Ward Colwell; Onaga  
 Don Emery Compton; Manhattan  
 Pauline Elizabeth Compton; Manhattan  
 Harold Rees Condit; El Dorado  
 Helen Louise Conley; Kingman  
 Ruby Stover Connel; Manhattan  
 Melvin A. Conner; Manhattan  
 Marcia Noyes Conrad; Manhattan  
 Ralph Martin Conrad; Manhattan  
 Bertha Lena Cook; Effingham  
 Orlena Rusha Cook; Effingham  
 Pansy Bartlett Coolbaugh; Stockton  
 John Herbert Coolidge; Manhattan  
 Esther Margaret Cormany; Junction City  
 Helen Van Zandt Cortelyou; Manhattan  
 Mary Josephine Cortelyou; Manhattan  
 Herman Charles Cowdery; Lyons  
 Inez Mildred Crabb; Colby  
 Orville Robinson Cragun; Milford  
 Ray Craik; Wichita  
 William Wesley Crawford; Manhattan  
 Wayne Russel Criswell; Manhattan  
 Marian Hazel Crocker; Manhattan  
 Allen B. Crow; Harper  
 Leonard E. Croy; Norcatour  
 Naomi Ruth Croy; Norcatour  
 Clarence Benedict Cunningham; Manhattan  
 Roy Cupp; Montrose  
 Burdell E. Curl; Independence  
 Nelle LaVerne Curry; Winchester  
 Mary Ellen Cusick; Ottawa  
 Inga Mae Dahl; Belleville  
 Ward Edmond Dale; Topeka  
 James Chester Dalgarn; Manhattan  
 Ruth Glaphry Dana; Pocatello, Idaho  
 Grace Louise Dart; Washington  
 Carrie Elvard Davis; Delavan  
 Dorothy Mae Davis; Delavan  
 William DeOzro Davis; Manhattan  
 Edward Glenn Dawson; Manhattan  
 Florence Pyle Day; Halcombe  
 Emma Mildred Dean; Nickerson  
 Hazel Jean Deibler; Manhattan  
 Frank Spencer DeLaMater; McAlester, Okla.  
 Salvador Baldonado Della; Ste. Maria, P. I.  
 Laura Caroline Denk; Agenda  
 Irene Evelyn Deschner; Beloit  
 Eunice Jean Deveny; Onaga  
 Deda Harriett DeYoung; Prairie View  
 Laurence E. Dial; Formoso  
 Martha J. Dial; Manhattan  
 Robert Cooper Dial; Manhattan  
 Richard Kimball Dickens; Manhattan  
 Omeda Mae Dickison; Riley  
 Mary Beatrice Dickson; Washington  
 Lydia Von Diepenbrock; Herington  
 James Roy Dinwiddie; Manhattan  
 Josephine Arlene Dixon; Phillipsburg  
 Edith Marie Dobson; Manhattan  
 Dick Albert Dodge; Manhattan  
 Frances Lorine Doornbos; El Dorado  
 Carl A. Dorf; Lindsborg  
 Esther Ita Dorgan; Alta Vista  
 Mary Lena Dorgan; Alta Vista  
 Dorothea Doty; Cunningham  
 Agatha Marie Dougan; Council Grove  
 Myrtle Dougherty; Manhattan  
 Opal Dougherty; Manhattan  
 Abbie Kay Downey; Manhattan  
 Avis A. Downey; Manhattan  
 Lyle Wayne Downey; Manhattan  
 Deda Louise Drake; Manhattan  
 Eleanor Fern Drummond; Frankfort  
 Alice Elizabeth Duston; Washington  
 Alma May Duttan; Benden  
 Dale Henry Edelblute; Keats  
 Howard Carl Edinborough; Tescott  
 Margaret Virginia Eiler; Oberlin  
 Oscar S. Ekdahl; Manhattan  
 Marvin Neel Elder; Manhattan  
 Lino Elefante; Fort Riley  
 Leonard Paul Elliott; Manhattan  
 Lucile Emily Elliott; Republic  
 Beulah Ellis; Coldwater  
 Delbert Frederick Emery; Parsons  
 Mildred M. Emery; Hutchinson  
 John W. Enns; Newton  
 James Russell Epperson; Manhattan  
 Mildred Berniece Esslinger; Bala  
 Ruth Elizabeth Esslinger; Bala  
 Martha Harrop Evans; Manhattan  
 Arthur Edward Everett; Hutchinson  
 Cleora Mary Ewalt; Herington  
 Wilson Blaine Fagerberg; Olsburg  
 Paul Eugene Fairbank; Topeka  
 Margery Imogene Farnham; Manhattan  
 Edna Elva Farren; Garnett  
 Forrest Malcolm Faulconer; Clay Center  
 Arthur Cecil Fay; Manhattan  
 Elwin E. Feather; Minneapolis  
 Elizabeth Ann Fee; Manhattan  
 Joe C. Fickel; Chanute  
 Arlene Zelda Finch; Oketo  
 Rex Bird Finley; Elk Falls  
 Clella Lula Fisher; Fellsburg  
 Leonice Marie Fisher; Manhattan  
 William David Fitch; Manhattan  
 Lois Maxine Fleming; Iola  
 George Miser Fletcher; Pawnee City, Neb.  
 Marjorie Forbes; Columbus  
 Kenney Lee Ford; Manhattan  
 Agnes Forman; Manhattan  
 Cora Helen Forney; Minneapolis  
 Wallace Albin Forsberg; Lindsborg  
 Leta Orvillene Foster; Penasola  
 Margaret Lansden Foster; Manhattan  
 Mark Anthony Foster; Manhattan  
 Harold Earl Frank; Manhattan  
 Edith Fern Frankenbery; Altoona  
 John Warren Frazier; Manhattan  
 Orval C. French; Geneseo  
 Opal Marie Frisby; El Dorado  
 Edith Martha Fritz; Manhattan  
 Henry H. Fritz; Paxico  
 Ervil Scott Fry; Manhattan  
 Edith Fultz; Wichita  
 Edgar Daniel Furse; Pleasanton  
 Clara Ann Gantenbein; Dillon  
 Clara Bess Garrison; Lincolnville  
 Margaret Deborah Garrison; Chanute  
 Valma Lucille Gates; Beloit  
 Paul C. Geilenfeldt; Manhattan  
 Deneige E. Gelino; Clyde  
 Lee Gemmell; Manhattan  
 Richard W. Gerdes; Nelson, Neb.  
 Verda Verene German; Glen Elder  
 Lois Getty; Winchester  
 Robert Clyde Getty; Winchester  
 Frances Isabelle Gibson; Benton  
 Lois Emery Gibson; Manhattan  
 Rhea Gibson; Manhattan  
 Virginia Louise Gibson; Potwin  
 Pat Gill; Enid, Okla.  
 Bernice Grace Gillette; Oberlin  
 Willard LeRoy Gillmore; St. Francis  
 Olive Marie Gillum; Gypsum  
 Rowena Goldie Ginn; Washington  
 Malaeska Milton Ginter; Manhattan  
 John S. Glass; Manhattan  
 Jetta Elnora Glenn; Holton



## SUMMER SCHOOL—Continued

- Ruth Glick; Junction City  
 Ferne Acille Glover; Burr Oak  
 Oletha Goheen; Portis  
 Margaret Rose Goodyear; Wichita  
 Clement Davis Gordon; Manhattan  
 Esther Isabelle Gould; Manhattan  
 Gladys D'Vonne Gould; Clarksville, Ark.  
 Genevieve Graham; Webber  
 William Donald Grammer; Junction City  
 Lucille Alma Gramse; Perry  
 William Herbert Gray; Bogue  
 Fred Foster Greeley; Manhattan  
 Helen J. Greene; Beverly  
 Ruth M. Greene; Beverly  
 Ralph Harold Greenough; Abilene  
 Dorothy Helen Greeson; Partridge  
 Arvilla Jane Griffing; Manhattan  
 Melvin Arthur Griffith; Osage City  
 David G. Griffiths; Manhattan  
 Norma LaVern Grob; Randolph  
 Arthur Groesbeck, Jr.; Manhattan  
 Hilda Rose Grossman; Waverly, Iowa  
 Orrin F. Grover; Manhattan  
 Grace Mary Gustafson; Marysville  
 Pearle Haas; Winfield  
 Mary Sue Haas; Arrington  
 Lucille Marguerite Haegert; Mankato  
 Lester Theodore Hagadorn; Manhattan  
 Bernice Mildred Hageman; Leonardville  
 John Lowell Hakl; Manhattan  
 Wilburn Hale; Manhattan  
 Helen M. Halloran; Delia  
 Helen Margaret Halstead; Manhattan  
 Alten R. Hammett; Gallatin, Mo.  
 Lee Elmor Hammond; Osborne  
 Daniel Ross Haney; Manhattan  
 Irene J. Hank; Holton  
 John William Hanna; Manhattan  
 Bernice Irene Hanson; Assaria  
 Edith Neola Harbes; Riley  
 Elizabeth Edna Harlow; North Branch  
 Harold F. Harper; Topeka  
 Louis Harold Harper; Tecscott  
 Minnie Alberta Wenkheimer Harris;  
 Manhattan  
 Vida Agnes Harris; Manhattan  
 William Pliny Harriss; Kansas City  
 Harold Percy Hartzell; Manhattan  
 Roy Hastings; Goodland  
 Lucille Lenore Hauschel; Morrowville  
 Ralph Carroll Hay; Parker  
 Alunda M. Hayes; Onaga  
 Hal Thomas Heath; Enterprise  
 Harold Ray Heckendorn; Cedar Point  
 Lenora Heckert; Tecscott  
 Hazel Ruth Heikes; Wakefield  
 George Robert Henderson; Manhattan  
 Theodore Hendrickson; Kildare, Okla.  
 Alice Evangeline Henley; Ness City  
 Ruth Naomi Henry; Clay Center  
 Gerald George Hensley; Mankato  
 Alta Sarah Hepler; Manhattan  
 Elizabeth Spears Hepler; Columbus  
 Arlie William Higgins; Seneca  
 Clayton William Hildebrand; Manhattan  
 Inez Mildred Hill; Topeka  
 Alice B. Hilton; Irving  
 Dorothy Priscilla Hinman; Plevna  
 Corabelle Hitchings; Osage City  
 Zelma E. Hockett; Manhattan  
 Meryle Hammett Hodges; Winfield  
 Grace Ellen Hodgson; Hutchinson  
 Robert Lee Hodshire; Coffeyville  
 Ambrose M. Hoffman; Oberlin  
 Harold Charles Hofmann; Manhattan  
 Maxine Hofmann; Manhattan  
 Glen Arnold Hoglund; Miller  
 Hosea Samuel Hollingsworth; Wichita  
 Myrna Nellie Holman; Manhattan  
 Alfred Arnold Holmquist; Manhattan  
 John Lester Hooper; Robinson  
 Elsa O. Horn; Manhattan  
 Esther Stubbs Horton; Roxbury  
 Harper Delmar Horton; Roxbury  
 Alvin Albert Hostetler; Hutehinson  
 Bert Lewis Hostinsky; Manhattan  
 Ethel Margaret Hotte; Manhattan  
 Arthur J. Howard; Manhattan  
 Clair L. Howard; Clyde  
 James William Howard; Douglas  
 Lester Carlton Howard; Worden, Mont.  
 Lois Elda Howard; Worden, Mont.  
 Mildred Howe; Beloit  
 David Elbert Howery; Brewster  
 Adolph R. Hraba; East St. Louis, Ill.  
 Lela Ethel Huber; Manhattan  
 Verda E. Hudson; Manhattan  
 Robert Huey; Ogden  
 S. Louise Huey; Ogden  
 William Huey; Ogden  
 Clarence Everett Hughes; Stockton  
 Sibyl Maud Humbert; Danville  
 Ezra Oscar Humphrey; Joplin, Mo.  
 Agnes Monica Huminghake; Frankfort  
 Raymond P. Hunsberger; Mount Hope  
 Esther B. Huntsinger; Council Grove  
 Velma Good Huston; Lebanon  
 Catherine Huxtable; Wichita  
 Claude Albert Huyek; Kansas City  
 Kermit Roosevelt Huyek; Morrowville  
 Virginia Abigail Hylton; Manhattan  
 Claude Brindley Iles; Topeka  
 Helen F. Ingalls; Lyons  
 Maud Smith Irving; Manhattan  
 Sue Mary Irwin; Abilene  
 William Francis Irwin; Wilsey  
 Edna Victoria Isaacson; Randolph  
 Cecile Mae Jackson; Manhattan  
 Edris Lillian Jackson; Minneapolis  
 Edgar William Jackson; Eureka  
 Ruth Margaret Jackson; Sabetha  
 Nellie Bernice Jacobs; Manhattan  
 Laura Jean James; Kansas City  
 Leila Grace James; Wichita  
 Lois Bennett Jarrott; Hutchinson  
 Paul William Jenicek; Bushlon  
 Elmer Roy Jensen; Herington  
 Arline Johnson; Frankfort  
 Edna Steuart Johnson; Manhattan  
 George William Johnson; Reamsville  
 James Tobin Johnson; Solomon  
 Lillian Harriet Johnson; Manhattan  
 Paul Eugene Johnson; Garnett  
 Raymond Arthur Johnson; Cedarvale  
 Tom Robert Johnson; Topeka  
 Donald R. Johnston; Elkhart  
 Catherine Vivian Johntz; Abilene  
 John Hoffman Johntz; Abilene  
 Lenore Elizabeth Jones; Chanute  
 Mary A. Jones; Alta Vista  
 William Laurie Jones; Manhattan  
 G. Clair Jordan; Jewell  
 Mary Irene Jordan; Beloit  
 Caleb Lee Jorgensen; Manhattan  
 Helen Shell Joseph; Kirwin  
 Russell Jouno; Manhattan  
 William Gottlieb Kaeser; Manhattan  
 Henry D. Karns; Plainville  
 Mabel Alberta Kaump; Riley  
 Vernice Eva Keach; Chanute  
 Vera Arnetta Kellogg; Herington  
 Amy Kelly; Manhattan  
 Edward Guerrant Kelly; Manhattan  
 Genevieve Kelly; Effingham  
 Dorothy Marie Kerr; Miltonvale  
 John Humphrey Kerr; Miltonvale  
 Zelma May Kester; Cottonwood Falls  
 Josephine Thorn Ketcham; Beattie  
 Lawrence Wilford Kilbourne; Manhattan  
 Jay Grant Kimball; Manhattan  
 Bruce Alvin Kindig; Medicine Lodge



## SUMMER SCHOOL—Continued

Cornie Louise King; Delphos  
 Edith Virginia King; Beattie  
 Frances Winifred King; Barnard  
 Nellie Maud King; Beattie  
 Eunice Velma Kinner; White City  
 Arthur Elliott Kirby; Chanute  
 Herbert Henry Kirby; Toronto  
 Kathryn E. Kirch; Marysville  
 Mary Kirk; Axtell  
 Marion Gibbonney Kirkpatrick; Manhattan  
 Opal Irene Kirkpatrick; Haddam  
 Grace Kisby; Clifton  
 Ruth Vera Kistler; Kingman  
 Alice Marie Kjellin; Garrison  
 Doris DeEtte Kline; Miltonvale  
 James Raymond Knox; El Dorado  
 Lester Henry Koenitzer; Manhattan  
 Otho Merton Koontz; Jetmore  
 Grace Esma Kottwitz; Peabody  
 Louis J. Kovar; Rossville  
 James Arthur Kraushaar; St. George  
 Elsie Della Kruger; Holton  
 Grace Ellen Kuhn; Belleville  
 Elta Margaret Kuper; Nelson, Neb.  
 Louise Beatrice LaFleur; Manhattan  
 Ernest Lester Lahr; Abilene  
 Malcolm Laman; Manhattan  
 Russell Laman; Rice  
 Ruth Laman; Manhattan  
 Paul Griffith Lamerson; Manhattan  
 Fern Aileen Larabee; Haddam  
 Olga Christene Larsen; Denmark  
 Eveline Juliet Larson; Leonardville  
 Gladys Gertrude Larson; Dillon  
 Marie E. Larson; Randolph  
 Warren Donald Larson; Manhattan  
 Golda Charlene LaShelle; Manhattan  
 Cheryl Delphine Lasse; Miltonvale  
 Phyllis Elizabeth Latimer; Industry  
 Raymond Price Latimer; Manhattan  
 Helen E. Lauck; Maplehill  
 Wyatt P. Laughlin; Riverton  
 William Grant Lay; Topeka  
 Louise Frances Layman; Arlington  
 Olin Z. Leasure; La Cygne  
 Ena Florence Lefebure; Onaga  
 Ingovar Leighton; Manhattan  
 Mildred Woodcock Leker; Manhattan  
 Angela Regina Leonard; Junction City  
 Miles C. Leverett; Bartlesville, Okla.  
 Lawrence Lewis; Hays  
 Louise Lewis; Gove  
 Maryann Lewis; Gove  
 Maurine Theresa Lewis; Manhattan  
 Vivian Ruth Light; Manhattan  
 LaVonne Mildred Lind; Leonardville  
 Eva Elizabeth Lisk; Manhattan  
 Glenn Orville Lloyd; Oak Hill  
 Twila Ellen Lloyd; Oak Hill  
 Esther Emma Lobenstein; Edwardsville  
 Maude Maxine Lober; Keats  
 Robert Ivan Lockard; Norton  
 Charles Alden Logan; Manhattan  
 Edward Wallace Lohman; Clay Center  
 John Royer Long; Abilene  
 Helen Loofbourrow; Rydal  
 Alden Hebbard Loomis; Manhattan  
 Harold Clyde Love; Wilsey  
 Hubert Melvin Low; Topeka  
 Gerald Lowell; Hollis  
 Dona Wells Lower; Belleville  
 Henry Norbert Luebke; Marysville  
 Harold Frederick Luffel; Manhattan  
 Mark Robert Lumb; Manhattan  
 Alice Lucile Lund; Manhattan  
 Elnera M. Lundine; Hope  
 Edith E. Lyness; Walnut  
 Hazel Alma Lyness; Walnut  
 Evalyn Laura Lyon; Clifton  
 Sumner V. Lyons; Lucas  
 Thelma Faye Lyons; Burr Oak  
 Laura Elizabeth McAdams; Salina  
 Isaiah C. McAlister; Jefferson, Tex.  
 Lester LaVerne McBride Manhattan  
 Florence Minette McCall; Salina  
 Francis Dean McCammon; Manhattan  
 Ruth Beryl McCammon; Manhattan  
 Ted Roosevelt McCandless; St. John  
 Anna Evelyn McClung; Attica  
 Hal McCord; Manhattan  
 Max McCord; Manhattan  
 Lenore McCormick; Cedarvale  
 Mary Alice McCreight; Soldier  
 Mary Elizabeth McCroskey; Junction City  
 Frank Clemens McCurdy; Leavenworth  
 Zada Gayle McCutcheon; Kingman  
 Willard Lawrence McFillen; Manhattan  
 Iris McGee; Waynoka, Okla.  
 Hiram Temple McGehee; Manhattan  
 Elizabeth Warren McGeorge; Wellington  
 Mary McGinnis; Holyrood  
 Selma Mae McGinnis; Ord, Neb.  
 Cedric Earle McIlvain; Smith Center  
 Robert Carlyle McIntire; Belleville  
 Dean Owen McIntyre; Herington  
 Robert Tulloss McLean; El Cajon, Cal.  
 Mary Martha McMichael; Council Grove  
 Ruby Rebecca McMichael; Almena  
 Edith A. McMullen; Pratt  
 Lelia Ruth McMurry; Hutchinson  
 Everett John McNay; Clay Center  
 Fred Elmo McVey; Oak Hill  
 J. J. MacDaniels; Junction City  
 David Leslie Mackintosh; Manhattan  
 Ethel Amanda Maier; Portis  
 Thelma Faye Mall; Manhattan  
 Emma Louise Manchester; Paola  
 Gladys Thersa Mann; Scottsville  
 Grace Sadie Mann; White City  
 Juanita Mercedes Manning; Herington  
 Dale C. Marcoux; Havensville  
 Marceline Markle; Lyons  
 Margaret Mary Marks; Ogden  
 Richard Riley Marsh; Pittsburg  
 Reva Merle Martin; Wamego  
 Claire Arnot Martin; Abilene  
 Florence Merle Martin; Cuba  
 Helen Meryl Martin; Admire  
 Thomas Ellsworth Martin; Manhattan  
 Josephine Mason; Manhattan  
 Jewel Warren Massey; Manhattan  
 Paul Erastus Massey; Yates Center  
 Howard Willis Mathews; Manhattan  
 Jess Roland Mathias; Manhattan  
 Esther Carol Mathies; Alma  
 Helen Sawtell Mauck; Junction City  
 Edna Estella Maxwell; Manhattan  
 Martin Nicholas Mayrath; Dodge City  
 Cecilia Matilda Meisner; Sabetha  
 Joseph William Menzie; Manhattan  
 Frances E. Mergenmeier; Seneca  
 George A. Merkey; Gaylord  
 Thomas N. Meroney; Garden City  
 Alfreda Meyer; Lillis  
 Beatrice Meyer; Lillis  
 Marcella Rita Meyer; Lillis  
 Edgar William Millenbruck; Herkimer  
 Edwin Louis Millenbruck; Herkimer  
 Clara Grace Miller; Manhattan  
 Edith Elaine Miller; Manhattan  
 Elsie Lee Miller; Manhattan  
 Florence Rowles Miller; Wamego  
 Harry Earl Miller; Manhattan  
 Jacob Bernard Miller; Manhattan  
 Otto Martin Miller; McPherson  
 Ruth Marie Miller; Minneapolis

## SUMMER SCHOOL—Continued

Sarah Elizabeth Miller; Centerville  
 Clark Carlyle Milligan; Winchester  
 James Martin Mills; Kansas City  
 Walter R. Mitchell; Salina  
 Walter Ford Mitchell; Manhattan  
 Aldie Ann Moline; Randolph  
 Marita Monroe; Manhattan  
 Tom Allen Montgomery; Hill City  
 Earl Atlas Moody; Kansas City  
 Carol Elizabeth Moore; Ashland  
 Elizabeth Dorothy Moore; White City  
 Blanche Emmeline Moore; Dexter  
 Gilbert Carlyle Moore; Manhattan  
 Ina Agnes Moore; Manhattan  
 M. Matilda Moore; Junction City  
 Virgil Stanton Moore; Altoona  
 Margaret Naida More; Glen Elder  
 Joseph Wade Morey; Narka  
 Virgil Idmire Morey; Narka  
 Jay Fred Morgan; Ottawa  
 Mildred Elaine Morgan; Smith Center  
 Prudence Martha Morgan; Hays  
 Thomas Daniel Morgan; Manhattan  
 Frances Morlan; Courtland  
 Irene Morris; Paxico  
 Marguerite Morris; Paxico  
 Merle Dallas Morris; Riley  
 Paul Ruddick Morris; Paxico  
 John Rex Morrison; Great Bend  
 Mary Rose Moss; Eureka  
 John R. Moyer; Hiawatha  
 Dalton H. Muck; Glen Elder  
 Edna Caroline Mueller; Washington  
 Elizabeth Emma Mueller; Washington  
 Stella Constance Munger; Manhattan  
 Harold Edwin Myers; Manhattan  
 Charles William Nauheim; Hoyt  
 Wilbur S. Nay; Manhattan  
 Alice Naylor; Burr Oak  
 Olive Phyllis Neff; Wakeeney  
 Benjamin A. Neill; Miltonvale  
 Margaret Marie Nelson; Belleville  
 James L. Neville; Coffeyville  
 Alice Bernice Newbill; Manhattan  
 Alma Dale Newell; Durham  
 Edwin Mahlon Newman; La Crosse  
 Roscoe Townley Nichols, Jr.; Manhattan  
 Mary Vivien Nickels; Manhattan  
 Isabelle Chesney Nixon; San Antonio, Tex.  
 Linus A. Noll; Louisville  
 Irene W. Nordstrom; Randolph  
 Dorothy Bertha Norlund; Wayne  
 Dorothy Esther Norris; Raymond  
 George R. Norton; Mulvane  
 Don L. Nutter; Republic  
 Elizabeth Foss O'Donnell; Junction City  
 Kathleen Foss O'Donnell; Junction City  
 Richard Raymond Oehmcke; Manhattan  
 Harold Ollhoff; Herington  
 John Melvin O'Neill; Clifton  
 Laurene Elizabeth Orton; Alta Vista  
 Opal Frances Osborne; Patridge  
 Robert Franklin Owen; Fort Riley  
 Carol Lee Owsley; Manhattan  
 Ruthetta Owsley; Manhattan  
 Leone E. Pacey; Manhattan  
 Edith Alice Painter; Meade  
 Udelle Roberta Palmer; Randolph  
 Ruth Evelyn Parcels; Hiawatha  
 Ralph Berthard Parker; Broughton  
 Mildred Cleo Parli; Axtell  
 Augustus Stanley Parr; Rossville  
 Muriel Rebecca Parrack; Mahaska  
 Luella Gertrude Parrott; Manhattan  
 Jennie Maud Perry; Riley  
 Franklin Leonard Parsons; Ruleton  
 Wallace E. Parsons; Scottsville  
 Florence Virginia Patterson; Glen Elder  
 Lloyd Everett Patterson; St. John  
 Noble Wayne Patterson; Junction City  
 Ruth C. Paulsen; Onaga  
 Burnice Irene Pearson; Jamestown  
 Paul Eugene Pearson; Concordia  
 Frederick Adams Peery; Manhattan  
 Charles Payton Penfield; Sedan  
 Charlotte Penny; Manhattan  
 Alice Elizabeth Peppiatt; Ellsworth  
 Alice Peterson; Assaria  
 Effie Ane Peterson; Clifton  
 Eugene Forrest Peterson; Yates Center  
 Helen Mills Peterson; Vermilion Grove, Ill.  
 Irving Everett Peterson; Haddam  
 Mary Katherine Peterson; Riley  
 Vera Linnea Peterson; Gypsum  
 Virginia Janette Peterson; Manhattan  
 Walden Richard Peterson; Topeka  
 Hazel Mae Pickard; Haddam  
 Charles Deets Pickett; Manhattan  
 Leonard Milton Pike; Milford  
 Lawrence Bryan Pilcher; Glasco  
 Lawrence Platt; Junction City  
 Wilfred Emerson Platt; Manhattan  
 D. Donald Plumb; Clay Center  
 Irene Poague; Westmoreland  
 Marlin Hatfield Poindexter, Jr.; Topeka  
 Henry A. Poppen; Woodston  
 Ralph Pratt; Herington  
 Frank B. Prentup; Fort Riley  
 Lois Price; Manhattan  
 Harley Austin Princhard; Republic  
 Alberta Lounell Pullins; Council Grove  
 Elizabeth Hoyt Purcell; Manhattan  
 Garland Newton Purcell; El Dorado  
 Mildred Emily Purcell; Manhattan  
 Dorothy Raburn; Manhattan  
 Julia Elizabeth Rader; Manhattan  
 Marjorie Elizabeth Ramey; Manhattan  
 Ruth Pauline Ramsay; Beloit  
 Ruby Fern Randall; Mankato  
 Kathryn Elizabeth Randle; Riley  
 Mary Josephine Ratliff; Manhattan  
 Lyle Cheadle Read; Clay Center  
 H. Lenore Reder; Blue Rapids  
 Burleigh Reed; Topeka  
 Ethel Edna Reed; Joplin, Mo.  
 Hazel Mary Reed; Clay Center  
 G. Nathan Reed; Manhattan  
 A. Louise Reed; Manhattan  
 Earl Hubert Regnier; Spearville  
 James K. Reid; Manhattan  
 Anna Hilkea Remmers; Riley  
 Henry Clay Reppert; Harris  
 Niles Franklin Resch; Manhattan  
 Hattie Elizabeth Reynolds; Rockford, Ill.  
 Anne Louise Rhodes; Council Grove  
 Theodore Roosevelt Rice; Sapulpa, Okla.  
 Jennie F. Richards; Keats  
 Nell G. Richards; Keats  
 Alma Margaret Richhart; Nickerson  
 Tillie Helen Rife; Anthony  
 Ewalt Arnold Rindt; Herington  
 Marian Riordan; Solomon  
 Neva Merle Ritter; Esbon  
 Theodore Roosevelt Robb; McPherson  
 Violet May Robb; Wamego  
 Arthur Vernon Roberts; Vernon  
 Mary Eileen Roberts; Manhattan  
 Sarah Helen Roberts; Manhattan  
 Stanley Irving Roberts; Chanute  
 Alex Stephen Robertson; Manhattan  
 Bella Catherine Robertson; Manhattan  
 Harvie Allen Roe; Webber  
 Lyla Sophia Roepke; Manhattan  
 Raymond Rollin Roepke; Manhattan  
 Jane Edith Roether; Junction City  
 Ovilla Faye Rogge; Muscotah  
 Roland Cribner Rogler; Manhattan  
 Raymond Carl Rohrdanz; Manhattan  
 Hazel May Roney; Pratt  
 Maxine Garr Roper; Manhattan  
 Pearl Elzora Rorabaugh; Lebanon  
 Lois Rosencrans; Manhattan



## SUMMER SCHOOL—Continued

Clara Irene Rosenow; Clay Center  
 Edna Ross; Clay Center  
 Everette Laurence Ross; Ashland  
 Mae Pearl Roth; Bern  
 Clyde F. Rowe; Tucson, Ariz.  
 Lorraine Royer; Newton  
 Vance Mather Rucker; Manhattan  
 Opal Cleona Runbeck; Council Grove  
 Loyal Luther Rush; Erie  
 Louise Rust; Manhattan  
 Olga Barbara Saffry; Alma  
 Myron L. Sallee; Manhattan  
 Gladys Carolyn Samuelson Beattie  
 Dorothy Winona Sandy; Covert  
 Dorothy Saville; Manhattan  
 Harry Clinton Sawin; Waterville  
 Norina Harriet Sayre; Ingalls  
 Venita Grace Schade; Manhattan  
 Louise Scheu; Clay Center  
 Ira Ferdinand Schindler; Jewell  
 Lova May Schlatter; McPherson  
 Erna Schmedemann; Manhattan  
 Eunice Marie Schmedeman; Dwight  
 Fred Schopp; Abilene  
 Loretta Margaret Schroll; Greenleaf  
 Maurice Elmer Schruben; Hoxie  
 Nancy Leona Schultz; Manhattan  
 Doris F. M. Schwanke; Alma  
 Edmund H. Schwanke; Alma  
 Louis Charles Schwanke; Alma  
 Henry John Schwartz; Hanover  
 Florence Etta Schwendener; Abilene  
 Agnes Mabel Scott; Westmoreland  
 Harold J. Scott; Altoona  
 Marjorie Marie Scott; Altoona  
 Marlin Elmor Scott; Junction City  
 Lois Mae Scriptor; Herington  
 Jessie Louise Seglem; Towanda  
 Oliver John Selfridge; St. John  
 Robert Edwin Sellers; Wichita  
 Clyde Shade, Jr.; Ottawa  
 George Audrain Shafer; Manhattan  
 Maxine M. Shaffer; Beloit  
 LeNora Marie Shara; Narka  
 Vivian Berniece Shaw; Louisville  
 Vivian Alice Shawn; Wamego  
 Frances Alene Shay; Miltonvale  
 Cecelia M. Shea; Morrowville  
 James Frederick Shea; Wamego  
 Ayleen Hartzell Shenk; Manhattan  
 Nina Mae Sherman; Grinnell  
 Hana Pearl Shipley; Wilburton  
 Pauline Juriah Shipp; Alma  
 Lee Edward Shirley; Lucas  
 Pauline Helen Shoebrook; Horton  
 Mercedes Virginia Shute; Manhattan  
 Althea Lenora Siddens; Blaine  
 Velma Alice Siddens; Westmoreland  
 Loula Marie Simmons; Manhattan  
 Dorothy Lois Simpson; Leonardville  
 Hazel Belle Simpson; Bala  
 Walter Henry Simpson; Manhattan  
 Sister M. Domitilla Arnoldy; Concordia  
 Sister M. Lorena Heidrick; Concordia  
 Sister Frances de Sales Scritchfield; Concordia  
 Mildred Marie Sitterley; Lincoln  
 Earl LeRoy Sitz; Manhattan  
 Florence Myrtle Sitz; Manhattan  
 Andrew Skradski; Kansas City  
 Beulah Gladys Slate; Beloit  
 Joseph Charles Slechts; East St. Louis, Ill.  
 Edna Loretta Small; Beattie  
 Lisle LeRoy Smelser; Manhattan  
 Carroll H. Smith; El Dorado  
 Daphne Vivian Smith; Manhattan  
 Frank Lynn Smith; Manhattan  
 Hazel Anna Smith; Agenda  
 Norman Courtland Smith; Manhattan  
 Roy Blanchett Smith; Herington  
 Ruth Irene Smith; Bartlesville, Okla.  
 Sylvia Faye Smith; Maplehill  
 Georgiana Hope Smurthwaite; Manhattan  
 Evelyn E. Smutz; Leoti  
 Ida Elizabeth Snyder; Effingham  
 Stanley Livingstone Soper; Manhattan  
 Bessie Loretta Sparks; Kingman  
 Ida Alice Specht; Washington  
 Grace Catherine Spence; Morrowville  
 Ira H. Spencer; Elmdale  
 Melinda Ina Sprecher; Bala  
 Margaret E. Springer; Stockdale  
 Herbert Norman Stapleton; Jewell  
 Quentin Jerome Stein; Parsons  
 Alice Evelyn Stenstrom; White City  
 Elsie Mildred Stevens; Manhattan  
 Ruth Vernetta Stiles; Kansas City  
 Vera A. Stockwell; Kansas City  
 John Ransom Stone; Leavenworth  
 Mona Valeria Stoops; Bellaire  
 Charles William Stratton; Manhattan  
 Ida Walker Summers; Manhattan  
 Geneva Mae Sutter; Manhattan  
 Mabel Bertha Sutter; Manhattan  
 Delphia Christine Swanberg; Clay Center  
 Helen Elizabeth Swartz; Everest  
 Cleon Oreal Tackwell; Manhattan  
 Birdye Princess Tafiaferro; Frankfort  
 Bertella Mary Taylor; Lillis  
 Delos Clifton Taylor; Manhattan  
 James William Taylor; Manhattan  
 John George Taylor; Parsons  
 Sylvia E. Teasley; Scottsville  
 Donald McVrea Telford; Manhattan  
 Esie May Tempero; Clay Center  
 Howard Everett Tempero; Broughton  
 Mary Hazel Temple; Clifton  
 Madeen Pauline Terrass; Alma  
 Robert Eldon Teter; El Dorado  
 Vera Charlotte Thackrey; Greensburg  
 Margaret Alice Thomas; Clay Center  
 E. Aileen Thompson; Partridge  
 Penn Thompson; Manhattan  
 Walter Theodore Thompson; Osage City  
 Blanche Marie Tillery; Fowler  
 Marcia Edythe Tillman; Manhattan  
 Mary Alice Tilton; Beloit  
 Alberta Edelblute Timmons; Manhattan  
 F. Leonard Timmons; Manhattan  
 Marjorie Nora Tippen; Morganville  
 Grace Anna Toburen; Barnes  
 Velma Elizabeth Todd; Clay Center  
 Dorothy Helena Toler; Minneapolis  
 Frederick Walter Toomey; Neodesha  
 Dorothy Triplett; Emporia  
 Ray Eimer Troat; Chiloco, Okla.  
 Christine Elizabeth Troutwine; Iola  
 Edgel Nadean Trusler; Junction City  
 Opal Pearl Tucker; Linn  
 Roland F. Turner; Manhattan  
 Thelma Lucile Twidwell; Frankfort  
 Dorothy Ann Underwood; Valley Falls  
 William Ernest Upson; Hutchinson  
 Margaret Ruth Urquhart; Wamego  
 Lois Castle Vance; Kiowa  
 Leonard Charles Van Nortwick; Republic  
 Lorna Blanche Vanous; Belleville  
 Beatrice Petrinella Vaught; Plains  
 Mamie DeVault Vincent; Kansas City  
 Richard George Vogel; Stuttgart  
 Nina Maude Vogelsberg; Home  
 Walter Henry von Trebra; Manhattan  
 Georgia Frances Voshell; Bucklin  
 Dorothy Blanche Walker; Hardy, Neb.  
 Mary Catherine Walker; Manhattan  
 Sam Cyril Walker; Junction City  
 Forrest Vincent Waller; Manhattan  
 James Kenneth Walters; Randolph



## SUMMER SCHOOL—Concluded

Charles Fayette Ward; Pratt	Arthur Owen Williams; Belleville
Etta E. Warner; Glasco	Esther Williams; Broughton
Anne Elizabeth Washington; Manhattan	Albert Bentley Wilson; Manhattan
Dorothy Gertrude Washington; Manhattan	Anna Marian Wilson; Manhattan
Mary Virginia Washington; Manhattan	Claude Leonard Wilson; Ottawa
Irene M. Wassmer; Garnett	Edward William Wilson; Manhattan
Thelma Irene Waterman; Morrowville	Jo Marie Wise; Manhattan
Emory Newton Watkins; Kingsdown	Chester Aaron Wismer; Pomona
Bessie Leona Watson; Leonardville	Hilma L. Wolgast; Alta Vista
Joseph N. Weaver; Harper	Agnes Anna Wolkenstorfer; Herndon
Winifred Ruth Weaver; Wichita	Catherine Louise Wood; Wakefield
Harvey Russell Webb; Sedan	Etha King Wood; Reading
Ray Edward Weide; Leona	Althea May Wright; Zeandale
Helen Clarice Weinhold; Washington	Harold Wright; Zeandale
Otto Ernest Wellman; Hoxie	Marvel Harriet Wright; Beattie
Ethel Sue Wells; Winona	Donald Wilson Wyatt; Stockton
Margaret Jo Westemeier; Colby	Letha Marie Yardley; Hutchinson
Opal Agusta Westhausen; Belleville	Evelyn Ruth Yarrow; Wakefield
Helen Frances Weygandt; Keats	Hulda Bertha Yenni; Ogden
Julia Alberta White; Clay Center	Iva Marie Young; Council Grove
Ruth Mather Whitehead; Twin Falls, Idaho	Josephine Young; Junction City
Fay Allen Whiteside; Neodesha	Mariam Irene Young; Cedar Point
Ruth Vivian Wild; Barnard	Iscah Marian Zahm; Topeka
George Frank Wiley; Chanute	Robert Allen Zebold; Pine Bluff, Ark.
Leroy Albert Wilhelm; Arkansas City	Margaret L. Zener; Kansas City, Mo.
Ruth Wilkerson; Manhattan	Milton Chris Zimmerman; Osborne
Leroy Albert Wilkinson; Alton, Ill.	

## Four-week Session

Jasper Dorman Adams; Garden City	Ezra Perle Mauk; Mulvane
Walter Henry Atzenweiler; Manhattan	LeRoy E. Melia; St. George
Guy N. Baker; Grinnell	Paul LeRoy Mize; Bonner Springs
Floyd Wayne Bell; Manhattan	George Montgomery; Manhattan
Silas S. Bergsma; Hill City	Harry Albert Myers; Wamego
Chris Roy Bradley; Delphos	Ralph Dale Nichols; Manhattan
George Shelton Brookover; Eureka	William Granville Nicholson; Eureka
Hale H. Brown; Washington	Onie Lindsey Norton; Altamont
Elgin Roy Button; Meriden	Lawrence Adolph Peck; Soldier
Sylvester Ulric Case; Oskaloosa	E. Lee Raines; Mound City
Emerson Dwight Chilcott; Jewell	Willard Virgil Redding; Coffeyville
Ernest Iden Chilcott; Jewell	Fred Thomas Rees; Beloit
Carl W. Clair; Manhattan	George M. Refe; Johnston, Iowa
Roy Engle Clegg; Burlington	Roger E. Regnier; Fairview
Blaine Crow; Silver Lake	Hugh K. Richwine; Holcomb
Walter A. Duffy; Superior, Wis.	Paul Wilfred Russell; Mankato
Thomas C. Faris; Arkansas City	Ralph William Russell; Manhattan
Vern Oren Farnsworth; Topeka	Henry William Schmitz; Manhattan
Carl Heinrich; Americus	Dwight M. Seath; Manhattan
George Elwin Hendrix; Lane	Morrell Seeds; Olin, Iowa
Homer J. Henney; Manhattan	Charles Lawrence Shepherd; Harveyville
Austin Theodore Heywood; Neodesha	David Loyd Signor; Effingham
Harvey Edward Hoch; Alta Vista	Lonnie Joseph Simmons; Argonia
Julian Adair Hodges; Manhattan	Deal Six; Protection
Sherman H. Howard; Oberlin	Hamilton Arlo Stewart; Topeka
Harold Howe; Manhattan	Warren Edward Stone; Bazine
Wilbur William Humphrey; Pleasanton	Edgar Arnold Templeton; Wakeeney
Julian Almon Johnson; Kiowa	Loren Francis Ungeheuer; Paxico
John Frederick Lindquist; Delphos	Joseph Ardrey Watson; Howard
G. Ernest Lyness; Blue Rapids	Bessie Brooks West; Manhattan
Verl E. McAdams; Clyde	Homer Bryan Willis; Manhattan
T. Lucille McCall; Winfield	Homer Carlton Wood; Reading
John William McInnes; Phoenix, Ariz.	Jay Roy Wood; Truesdale
Charles Mantz; Spearville	Claude Newton Yaple; Rago
Earl Harrison Martin; Pratt	

## August Period (in Absentia)

Lyle Wayne Downey; Manhattan	Henry Wilber Loy; Chanute
Arthur Cecil Fay; Manhattan	Hazel Alma Lyness; Walnut

## Home Study Service Students

(Instruction by Correspondence)

For the year January 1, 1931, to January 1, 1932, those who took credit courses numbered 855, and those who enrolled in vocational courses numbered 16.

In the following list, those taking college credit courses are indicated by (c), those taking high-school courses by (p) and those taking vocational courses by (v).

Where enrollments are from Kansas the name of the state is omitted. It is given in all other cases.

Ralph Abram (p); Beloit	Ellen Blair (c); Williamsburg
Earl G. Achenbach (c); Naperville, Ill.	Anne Blecha (p); Munden
Corinne Adams (p); Pomona, Cal.	Ralph R. Bone (p); Herndon
Robert E. Aelmore (p); Galva	Esther I. Book (p); Hope
Harriett Aikins (c); Manhattan	Gladys L. Boone (c); Quincy
Pauline Aker (c); South Haven	Richard F. Boone (p); Kansas City
Pearl M. Alexander (c); Norcatour	Beatrice E. Boswell (c); Opelousas, La.
Robert H. Algie (c); Clay Center	Lois Boulton (c); Howard
Clarence Allen (c); Liberty	Donald H. Bowman (c); Manhattan
Elizabeth Allen (c); Galena	Bernice Bowers (p); Cuba
Alvin R. Aller (c); Lindsborg	Lora Boydston (p); El Dorado
Mabel Amthour (c); Dwight	Zella Verne Boyer (c); Meade
Galen Anderson (c); Oneida	Alice Bozarth (c); Lenora
Margaret Anderson (c); Boulder, Colo.	Charles Bradshaw (c); Topeka
Alice May Anderson (c); Hope	Raymond Brady (p); Penaloza
Virginia G. Anderson (c); Needesha	Doris Bramwell (c); Concordia
Lila B. Andrews (p); Ames	Lucy Brandicon (c); Bloomington, Ill.
Joye Ansdell (c); Jamestown	Bernita Brann (c); Tescott
Marie Antrim (c); Spivey	Mrs. Carrie B. Bratcher (c); Tarboro, N. C.
Ruby Arnold (p); Macksville	Kathryn Brewer (c); Wichita
Ruth Archer (c); Hutchinson	John M. Bright (p); Manhattan
Louise Archer (c); Wellington	L. C. Brisbin (c); Manhattan
Violet Arensman (p); Copeland	W. F. Brown (c); Bethel
Mrs. Mahala Arganbright (c); Wamego	Verdis U. Brown (c); Alma
Lawrence Arnett (c); Broughton	Melva Brown (p); Glasco
Julio P. Arrojo (c); Manhattan	Alfred Brown (p); Peru
Vance Auchard (p); Manhattan	Berna G. Brown (c); Perry
Thomas Avery (c); Manhattan	Mary Kathryn Bryan (c); Burns
Ruth E. Bacon (c); Bethany, Mo.	Maurine Bryan (c); Delia
J. L. Baird (c); Wellsville	E. M. Buchanan (p); Peru
Sarah Baker (c); Topeka	Gertrude Buchanan (c); Paola
Charleen Baker (p); Manhattan	Wilma Mae Bucknell (c); Olathe
Dorothy Baldwin (c); Manhattan	Dorothy Lavon Bundy (c); Lisle, Mo.
Virginia Baldwin (p); Beloit	Vance L. Burch (c); Manhattan
Mildred E. Ballard (c); Formoso	Virgil A. Burfield (c); Lyons
Kenneth Banks (c); Gypsum	Phyllis Burgess (c); Kiowa
Carol Baker (c); Beloit	A. N. Burns (p); Manhattan
Mrs. Jane Barnes (c); Manhattan	Hugh S. Burton (c); White City
Kenneth J. Barnett (c); Clayton	Tom Bushby (c); Belleville
Bertha Barre (c); Tampa	Raymond Buskirk (c); Blue Rapids
Sue E. Bates (c); Manhattan	Marie Butler (p); Glasco
Milburn Batson (c); Pratt	Henry R. Byers (c); Hoxie
Edith Beathard (c); Whiting	Marion J. Caldwell (c); El Dorado
Mabel E. Bell (c); Detroit	Melba W. Caldwell (c); Moscow
Cleo Bellis (p); Ottawa	Joseph Callahan (p); Leavenworth
Ethel Bellis (c); Ottawa	Edna D. Campbell (c); Hanover
Arlene Bender (p); Washington	Don Campbell (c); Topeka
Hazel Benedict (p); Phillipsburg	J. E. Canaday, (p); Rice
Clara Benne (c); Washington	Paul A. Cannaday (c); Lawrence
Alma Berndt (p); Herndon	Cyril A. Carberry (p); Manhattan
Thelma E. Berg (c); Chicago, Ill.	Cesar B. Cardenas (c); Manhattan
Elwyn H. Bergsten (p); Randolph	Robert Carr (p); Manhattan
Eulah E. Bergstrom (c); Green	Fairy Casey (c); Manhattan
Evelyn Besack (c); Junction City	Helen Caskey (c); Hutchinson
Cynthia M. Betts (c); Nebraska City, Neb.	Marjorie Casper (c); Clifton
Margaret Bierman (c); Kensington	E. M. Chalk (c); Randolph
Wayne Billings (c); Jetmore	Stanley E. Chapin (c); Chicago
Evelyn I. Billiter (c); Benton Harbor, Mich.	Edna N. Chapin (c); Westphalia
Dorothy L. Bills (C); Lenora	Merle V. Chase (c); Manhattan
Mina Binning (p); Medicine Lodge	Lola Cheesman (p); Norton
Georgia M. Birtman (c); Wilmette, Ill.	Eleanor Cheney (c); Great Bend
Dan Blaine (c); El Dorado	Claude C. Cheney (c); Kanorado

## HOME STUDY STUDENTS—Continued

- Neva Christenson (c); Jewell City  
 Harriet Clark (c); Lincoln, Neb.  
 Cecelia Clarkson (p); Liberal  
 Mary Ellen Clem (p); Manhattan  
 Thelma Cless (c); Rossville  
 Doris Clydesdale (c); Gaylord  
 V. C. Cole (c); Sharon  
 G. F. Collins (c); Henryetta, Okla.  
 Elery L. Collins (c); Fontana  
 Margaret Colver (c); Manhattan  
 Arlyn Conard (c); Timken  
 Lecile M. Confer (c); Chicago, Ill.  
 Richard Conklin (c); Muncie  
 Melvin Conner (c); Manhattan  
 Elva Connes (v); Jetmore  
 Oliver Cook (c); Cawker City  
 Wilma Cook (p); Paola  
 Ernest S. Cook (c); Emporia  
 Mildred Cook (p); Oswego  
 Edgar A. Cooper (c); Stafford  
 Lutie H. Cowles (c); South Haven  
 William H. Cox (c); Elk City  
 Martha Cox (p); Alma  
 James C. Cox (c); Miami, Mo.  
 Beatrice Craley (c); Manhattan  
 Ruth E. Crawford (c); Burns  
 Lawrence Cressler (c); Hoxie  
 Ralph Crissman (p); Kinsley  
 Henry Cronkite (c); Belle Plaine  
 Gwynn O. Crookham (p); Rosalia  
 Lloyd J. Crowl (c); Lane  
 L. E. Croy (c); Manhattan  
 Catherine Cummings (p); Coldwater  
 James Cunliff (c); Chicago, Ill.  
 B. Curl (c); Bartlett  
 Cora Dell Curry (c); Winchester  
 Eli E. Daman (c); Salina  
 Mary Margaret Damett (c); Oxford  
 Mrs. Louise Daneke (p); Topeka  
 Carl Davey (p); Huron  
 George Davidson (c); Kansas City, Mo.  
 Martha M. Davies (c); Bala  
 Anna Marie Davis (c); Manhattan  
 Franklin Davis (p); Reading  
 W. B. Davis (c); Burr Oak  
 Hilma R. Davis (c); Manhattan  
 Julia Marie Davis (c); Nebraska City, Neb.  
 Mrs. India Thos. Davis (c);  
     Mt. Sterling, Ky.  
 Phoebe Day (p); Independence  
 Corinne Dean (c); Okmulgee, Okla.  
 Mary L. Dean (p); Little River  
 Lorene Deay (p); Waverly  
 Frank De La Mater (c); Manhattan  
 F. Sierra De Soto (c); Manhattan  
 Frances Dexter (p); Leonardville  
 Beatrice Dickson (c); Washington  
 Elmer C. Diggs (p); North English, Iowa  
 Ferne Dixon (c); Manhattan  
 Dale Doakes (p); Lawrence  
 Ida Dobson (p); Ogden  
 Irene Dodge (c); Manhattan  
 Joseph L. Dole (c); Manhattan  
 John Donnelly (c); Manhattan  
 Calvin E. Dornberger (c); Yates Center  
 Joseph A. Doubrava (c); Lorraine  
 Agatha Marie Dougan (c); Council Grove  
 Myrtle Dougherty (c); Manhattan  
 A. C. Douglas (c); Courtland  
 Frank Douglas (c); Quindaro  
 Evelyn E. Downey (p); Ellinwood  
 Geraldine Downey (p); Wamego  
 Margaret Driscoll (p); Dorrance  
 Zita Driscoll (c); Salina  
 Wilson Druley (c); Peru  
 Martha E. Dunlap (c); Manhattan  
 Ethel L. Dunn (c); Oskaloosa  
 Glenn Durrill (c); Manhattan  
 Alice Duston (c); Hollenberg  
 Belmont B. Dykes (c); Esbon  
 Louis B. Earle (c); Washington  
 Dale H. Edelblute (c); Manhattan  
 Olin Ediger (c); Newton  
 C. Wesley Edwards (c); Sterling  
 Fern L. Edwards (c); Spearville  
 Milton Ehrlich (c); Marion  
 Kyle M. Elliott (p); Glade  
 Lewis E. Elliott (c); Wilmot  
 Howard Elwell (c); Hutchinson  
 Lyle E. Emmitt (p); Kansas City  
 Oran S. Emrich (c); Wakefield  
 Kermit V. Engle (c); Manhattan  
 J. C. English (p); Manhattan  
 Frances R. Ernest (c); Chicago, Ill.  
 Hurna Estep (c); Belvue  
 Beryl J. Evans (c); Perth  
 Robert A. Evers (c); Quincy, Ill.  
 Leigh C. Fairbank (p); Fort Leavenworth  
 Paul E. Fairbank (c); Manhattan  
 Verona Fark (c); Greensburg  
 Frances Farrell (p); Manhattan  
 Henrietta Faulkner (p); Viola  
 Louise Fenner (c); Jewell City  
 Helen Fenton (p); Newton  
 Mrs. Helen Fields (p); Zeandale  
 Mrs. Esther Filing (c); Manhattan  
 Wm. I. Finley (c); Hutchinson  
 Dwight Finney (p); Beloit  
 Louise Fitzgerald (c); Waterville  
 Hazel Dee Fix (c); Bird City  
 Lois M. Fleming (c); Iola  
 Lucy Fletcher (c); Salina  
 Geo. M. Fletcher (c); Manhattan  
 Wayne Floberg (p); Randolph  
 Jean Foote (p); Hutchinson  
 Virginia Forrester (c); Manhattan  
 Mildred Forrester (c); Manhattan  
 Gerald Fountain (p); Langdon  
 Glenn Fouts (p); Oswego  
 Mrs. Ruth Tredway Freeman (c);  
     Kansas City, Mo.  
 Eilene M. Freund (c); Andale  
 Wilbur C. Frisbie (c); Bonner Springs  
 Edith Fritz (c); Manhattan  
 Edgar D. Furce (c); Manhattan  
 Joseph C. Gallaugh (p); Peru  
 Jaunita C. Gaut (c); Spearville  
 Dorothy Gavin (p); Garden City  
 Lee Gemmell (c); Manhattan  
 Miles W. George (c); Wichita  
 Lois Getty (c); Winchester  
 Nathan G. Gibson (p); Independence  
 Donald Gibson (p); Galva  
 Vivian Giles (p); Waterville  
 Walter Gill (c); Manhattan  
 Mrs. W. S. Gillespie (v); Volland  
 Merle N. Gilliland (c); Manhattan  
 Clarence L. Gish (c); Abilene  
 Herbert H. Glancy (c); Parkerville  
 Margaret Glass (p); Manhattan  
 Muriel Glasson (c); Alma  
 Margaret Goodyear (c); Manhattan  
 Helen Gordon (c); Trinidad, Colo.  
 Alvin F. Goss (p); Manhattan  
 Sam W. Gossen (c); Hillsboro  
 Gladys Gold (c); Spearville  
 Francis Gould (p); Manhattan  
 Lois Graham (c); Newton  
 Margaret Graham (p); Pittsburg  
 Florence Green (c); Greenleaf  
 V. Lyle Green (c); Williamstown  
 Hazel Greep (c); Longford  
 Freda Leila Greer (c); Marion  
 Robert W. Grieve (c); Wamego  
 John Griffiths (p); Abilene  
 W. K. Grigg (c); Abilene  
 Neva Blair Grigsby (p); Williamsburg  
 Etta I. Grimes (c); Momence, Ill.  
 Harley Gram (p); Ames  
 Robert M. Groesbeck (c); Manhattan



## HOME STUDY STUDENTS—Continued

- George T. Guernsey (p); Independence  
 Maurice L. Gunn (c); Great Bend  
 Richard J. Gunn (c); Great Bend  
 F. S. Gustafson (c); Cleburne  
 R. F. Guthman (p); Lincoln, Neb.  
 Carroll Hadley (c); Oklahoma City, Okla.  
 Dorothea Hadsell (c); Manhattan  
 Ralph L. Hahn (c); Clay Center  
 Robert Le Roy Hahn (c); Arkansas City  
 Forrest Haines (c); Winfield  
 Robert B. Hall (c); New Cambria  
 Virginia Hall (c); Reserve  
 Lucille L. Hamill (c); Grenola  
 Evelyn G. Hamilton (p); Junction City  
 Hubert Hammond (p); Junction City  
 Proctor Hamm (p); Irving  
 Hugh John Hannifan (c); Moline  
 Maxine Harding (c); Wakefield  
 O. M. Hardtarfer (c); Lawrence  
 D. B. Hardy (p); Liberal  
 Mary Harland (c); Frankfort  
 Marian Harlin (c); Quenemo  
 Elizabeth Harlow (c); North Branch  
 Dena Mae Harmon (c); Topeka  
 Kermit M. Harris (c); Peabody  
 Myrl Harriss (c); Diller, Neb.  
 Roy Hastings (c); Goodland  
 Alunda Hays (c); Onaga  
 Etta Grant Haywood (c); Speed, N. C.  
 Hal Thomas Heath (c); Enterprise  
 Harriet Hebert (c); Chicago, Ill.  
 Frederik Hedstrom (c); Manhattan  
 Hazel Ruth Heikes (c); Wakefield  
 Arnold Heiman (p); Beloit  
 Hubert Hein (c); Washington  
 Lillian Heitman (c); Blue Island, Ill.  
 Alfred Helm (c); Chanute  
 Georgia Hemphill (c); Clay Center  
 Earl C. Henry (c); Manhattan  
 Ethel Henry (p); Long Island  
 Harold Hersh (p); Manhattan  
 Frances Hester (c); Ely, Nev.  
 O. W. High (c); McPherson  
 Elmer Hildenbrand (c); Clay Center  
 Inez M. Hill (c); Manhattan  
 Waunita Murl Hines (c); Independence  
 Harry Hinckley (c); Manhattan  
 Carolyn Hirt (c); Bucklin  
 Mary Hitch (c); Guymon, Okla.  
 Mrs. Meryle Hodges (c); Winfield  
 Albert Hoglund (c); McPherson  
 Alecia B. Holmes (c); Okmulgee, Okla.  
 Alfred A. Holmquist (c); Manhattan  
 Arliss Honstead (p); Waterville  
 Mildred E. Hood (p); Junction City  
 Maxine Hooper (p); Manhattan  
 Mildred Horn (p); Winfield  
 Eleanor Horn (p); Bendena  
 Seward E. Horner (c); Abilene  
 A. A. Hostetler (c); Hutchinson  
 Ethel M. Hotte (c); Eskridge  
 Lura Houghton Horton (c); Topeka  
 Mary C. Houser (c); Manhattan  
 Mary Alice Howard (c); Garnett  
 L. C. Howard (c); Manhattan  
 James W. Howard (c); Humboldt  
 John T. Hoyne (c); Salina  
 Henrietta Helen Hoyt (c); Chicago, Ill.  
 Merle R. Hubbard (c); Manhattan  
 Marjorie Hubler (p); Independence  
 Elmer Huckstep (p); Centerview  
 William Huey (c); Ogden  
 Helen Hughes (c); Manhattan  
 Robert A. Hunter (c); Hays  
 Raymond E. Hurley (p); Kanopolis  
 George Huyett (c); Berryton  
 Marjorie Immenschuh (p); Westmoreland  
 Orville Isern (p); Ellinwood  
 Mary Ruth Jacobson (c); Formoso  
 Carroll G. James (p); Peru  
 Arthur James (c); Macon, Mo.  
 Mrs. George Jelinek (c); Manhattan  
 Marie Jermarck (c); Delphos  
 Charles Jobes (c); Pretty Prairie  
 Lillian Johaneck (c); Esbon  
 Rowena Johnson (c); Fort Scott  
 R. A. Johnson (c); Manhattan  
 Naomi M. Johnson (c); Oskaloosa  
 Esther E. Johnson (c); Ottawa  
 Marie Johnson (c); Columbus  
 Dale Johnson (c); Oberlin  
 Alice Johnson (p); Wamego  
 Roland Johnson (c); Marysville  
 Virgie E. Johnston (c); Monument  
 C. W. Johnston (c); Manhattan  
 Dorothy I. Jones (c); Howard  
 Lucine E. Jones (c); Mishawaka, Ind.  
 J. Willis Jordan (c); Clafin  
 Gotthilf Jorgensen (c); Minneapolis, Minn.  
 Viola Mae Joss (c); Midian  
 J. R. Justice (c); Manhattan  
 Wm. G. Kaeser (c); Manhattan  
 Esther Kalous (v); Waterville  
 Jennie Mae Karns (c); Circleville  
 Elizabeth Keegan (c); Great Bend  
 Frankie Keller (p); Penalosa  
 Charles Kelly (c); Mayetta  
 Roselyn Kemp (c); Oak Grove, La.  
 Minnie E. Kerr (p); Leavenworth  
 Pauline Kersey (c); Garden City  
 Lawrence W. Kilbourne (c); Manhattan  
 Wanetta Killinger (p); Almena  
 Paul A. Kindsvater (c); Beatington  
 Claude L. King (c); Woodward, Okla.  
 D. W. King (c); Manhattan  
 Edith V. King (c); Beattie  
 Eunice Kinner (c); White City  
 James T. Kintz (p); Wellington  
 Wm. G. Kirby (c); Manhattan  
 R. A. Klein (p); Junction City  
 Doris Kline (c); Miltonvale  
 Joe Knappenberger (c); Penalosa  
 Elizabeth Knechtel (p); Manhattan  
 Alton Knechtel (c); Alma  
 Mary Alice Kneeland (c); Brookfield, Mo.  
 Max Knolls (p); Independence  
 Leota Koegenboehn (c); Herington  
 Laura Koepp (c); Home  
 Margaret Kohl (c); Furley  
 Ben C. Kohrs (c); Manhattan  
 Norman Komarek (p); Ellinwood  
 Velma Koontz (c); Jetmore  
 Otho M. Kootz (c); Jetmore  
 Grace Kottwitz (c); Peabody  
 Dorothy Krause (c); Manhattan  
 Morgan Kreek (c); Fairbury, Neb.  
 Dorothy Krehbiel (c); Bentley  
 Justina Kroeker (p); Hutchinson  
 Amelia Kroft (c); Wilson  
 Bertram Kropf (c); Wamego  
 Clemford Kulp (c); Hays  
 Dorothea La Follette (c); Utica  
 Hallie Laird (p); Manhattan  
 Russell Laman (c); Rice  
 Malcolm Laman (c); Manhattan  
 Velma Lambotte (c); Rossville  
 Geneva Lanenburg (p); Paola  
 Leora Lang (c); Cuba  
 Mary Langvardt (c); Dwight  
 Cheryl Lassey (c); Miltonvale  
 Harry E. Lattin (c); Gypsum  
 Mildred Laurie (p); Norwich  
 Mrs. Ted R. Layton (c); Ottawa  
 Howard K. Learned (c); Plevna  
 Olin Z. Leasure (c); Boicourt  
 Chester L. Lee (c); Stafford  
 Edgar Letts (p); El Dorado  
 Lawrence Lewis (c); Hays  
 Louise Lewis (c); Gove  
 Maryann Lewis (c); Gove

## HOME STUDY STUDENTS—Continued

Elizabeth Lill (c); Mount Hope  
 Edith E. Line (c); Enterprise  
 Lola Maxine Lindley (p); Independence  
 Gilbert Lindgren (c); Manhattan  
 Amos Lingard (p); Princeton  
 Harold Lipper (c); Sterling  
 Viola L. Loder (p); Marquette  
 Hortense Lowe (p); Argonia  
 Gerald Lowell (c); Hollis  
 Ruth Lowrey (c); Selden  
 Mildred Loy (c); Aurora, Mo.  
 Wallace E. Lumb (c); Wakefield  
 Virgil F. Lundberg (c); Falun  
 A. C. Lundgren (c); Manhattan  
 Margaret Lynch (c); Hutchinson  
 Joan Lytle (c); Manhattan  
 Ethel A. Maier (c); Osborne  
 Alice Maixner (c); Wilson  
 F. B. Majors (c); Elmo  
 Beulah Mann (p); Hiawatha  
 Eleanor Marshall (p); Manhattan  
 F. K. Marston (c); Junction City  
 James M. Mason (c); Manhattan  
 J. W. Massey (c); Manhattan  
 John Mark Martin (c); Topeka  
 Clara Jean Martin (c); Manhattan  
 Elva Marty (p); Manhattan  
 Lawrence N. Marx (c); Wayne, Neb.  
 A. E. Mayhew (c); Manhattan  
 Mollie B. McBride (c); Atwood  
 Mrs. Lois C. McCall (c); Palisade, Colo.  
 F. Dean McCammon (c); Manhattan  
 Ted R. McCandless (c); St. John  
 Helen McCauley (c); Coldwater  
 Truman McCartney (c); Red Bluff, Cal.  
 James I. McCausland (p); Quenemo  
 Ralph E. McCormick (c); Manhattan  
 Lenore McCormick (c); Cedarvale  
 Vinton McCormick (p); Manhattan  
 Cecil McCoy (p); Manhattan  
 Mrs. Lucy McCue (v); Norcatur  
 Neva Norene McCullough (c); Garden City  
 Frank C. McCurdy (c); Leavenworth  
 Dee McDonald (p); Wakefield  
 Irene McGann (c); Manhattan  
 Cedric McIlvain (c); Hanover  
 R. C. McIntire (c); Belleville  
 Dean McIntyre (c); Manhattan  
 Velma McKee (c); Offerle  
 Lula McKim (p); Benton  
 May McClelland (c); Kansas City  
 Ruby McMichael (c); Alma  
 Daniel E. McMullen (p); Manhattan  
 Mildred McMullen (c); Norton  
 Henry C. McNally (p); Fort Leavenworth  
 Georgia McNickle (c); Ashland  
 R. F. McNitt (c); Washington  
 Ruth Mears (c); Manhattan  
 Ella Jane Meiller (c); Minneapolis  
 Mildred Mellinger (c); Milford  
 E. Faye Mercer (c); Dwight  
 G. A. Merkey (c); Gaylord  
 Stanley Merrill (c); Abilene  
 Victor H. Meseke (c); Manhattan  
 Velma Meserve (c); Ellis  
 Marcella Meyer (c); Centralia  
 John W. Meyers (c); Merriam  
 Beatrice Meyer (c); Lillis  
 L. W. Michael (c); Lawrence  
 Joe B. Millard (c); Parker  
 Pernita E. Miller (c); Manhattan  
 Condra Miller (p); Sycamore  
 Virginia Miller (c); Chicago, Ill.  
 Verna Miller (c); Milford  
 Truman M. Miller (p); Manhattan  
 Grant G. Miller (c); Offerle  
 John E. Miller (p); Cincinnati, Ohio  
 Clark Miligan (c); Manhattan  
 James M. Mills (c); Manhattan  
 C. W. Minnis (v); Arkansas City  
 Roy Misegades (c); Peru  
 Hattie Mitchell (c); Millbrook, N. Y.  
 Marian Mitchener (v); Lees Summit, Mo.  
 L. K. Mock (c); Manhattan  
 Raymond F. Montgomery (p); Topeka  
 Sarah F. Moody (p); Leavenworth  
 Earl A. Moody (c); Manhattan  
 Grace Alice Moore (c); Little River  
 Eula N. Moore (p); Manhattan  
 Ruth E. More (c); Glen Elder  
 Margaret More (c); Glen Elder  
 James H. Moyer (c); Manhattan  
 Virgil I. Morey (c); Gypsum  
 Olive Morgan (c); Hugoton  
 Esther Morgan (c); Manhattan  
 Alvin Morgan (c); Garden City  
 Archie L. Morgan (c); Emporia  
 Melvin Morrisette (p); Clyde  
 Irene Morse (p); Alma  
 Buard L. Motes (c); Scottsville  
 R. E. Moulthrop (p); Kansas City Mo.  
 John R. Moyer (c); Manhattan  
 Elizabeth Mueller (c); Washington  
 Geo. F. Mueller (c); Hanover  
 Gaylord Munson (c); Junction City  
 Don Murphy (p); Manhattan  
 Vera Murphy (c); Detroit  
 Hanson N. Murray (c); Oregon, Mo.  
 Otilia Musil (p); Waterville  
 Ansel J. Myers (c); Lyons  
 Louise J. Myler (c); Topeka  
 Roland Nash (c); Alma  
 Mary Naylor (c); Elmdale  
 Erma Neely (c); Hopewell  
 Leonard G. Nehring (c); Harveyville  
 Frances Maude Neill (c); Clay Center  
 Joe P. Neill (c); Miltonvale  
 Benjamin Neill (c); Miltonvale  
 Paul H. Nelson (c); Manhattan  
 Leonard Neimoller (p); Wakefield  
 E. N. Newman (c); La Crosse  
 Vivien Nickels (c); Manhattan  
 Frances Noah (c); La Cygne  
 Julia Noell (c); Syracuse  
 Lucinda O'Dette (p); Garden City  
 W. N. Offley (c); Fort Riley  
 Richard Olney (p); St. Joseph, Mo.  
 Harold Olsen (p); Clyde  
 Marvin O'Neill (p); Clifton  
 Helen Auline Opie (c); Great Bend  
 W. B. Opocensky (v); Cuba  
 Roberta Oursler (c); Circleville  
 Joseph O'Toole (c); Axtell  
 Mrs. Walter Overman (c); Sedgwick  
 Audine Owen (c); Douglass  
 Leone Pacey (c); Onaga  
 Max Packard (c); North Topeka  
 Lita M. Paine (c); Admire  
 Edith Painter (c); Meade  
 Leslie E. Paramore (c); Delphos  
 Kathryn Page (p); Independence  
 Ruth E. Parcels (c); Morrill  
 Leona Parken (c); Dwight  
 Ralph Parker (c); Manhattan  
 Pauline Parker (c); Phillipsburg  
 Eulalie E. Parks (c); Tulsa, Okla.  
 E. M. Parrish (c); Dalton, Mo.  
 Pauline Patchin (c); Parsons  
 Donald Patrick (c); Waverly  
 Mayme Patterson (p); Independence  
 Maple Patterson (c); Manhattan  
 Lloyd E. Patterson (c); St. John  
 William Pattison (c); Topeka  
 Emily Paul (c); Chicago, Ill.  
 Gladys Paulsen (c); Onaga  
 Doris Paulson (c); El Dorado  
 Clara M. Pearson (v); Windom  
 Aleta Peck (c); Council Grove  
 Alice Peppiatt (c); Ellsworth  
 Eva L. Perkins (c); Wendell, N. C.  
 Paul C. Perry (c); Little River



HOME STUDY STUDENTS—*Continued*

- J. C. Perry (c); Manhattan  
 Paul C. Perry (c); Manhattan  
 Mrs. Helen M. Peterson (c);  
     Vermilion Grove, Ill.  
 Roland W. Peterson (c); Riley  
 Katherine Peterson (c); Riley  
 J. A. Petraborg (v); Aikin  
 Mrs. Edna Pfeffer (c); Leonardville  
 Robert Phipps (p); Independence  
 Norman Pickett (p); Ft. Leavenworth  
 Virginia Dean Pierpoint (c); Preston  
 Oscar Pike (c); Hopewell  
 Lawrence B. Pilcher (c); Glasco  
 B. D. Pile (c); Manhattan  
 Harold H. Platt (c); Manhattan  
 Lester R. Pincomb (p); Overland Park  
 Mila M. Pishney (c); Cleburne  
 James Nolan Proffitt (p); Pottersville, Mo.  
 Harold W. Poort (c); Salina  
 Floyd E. Pope (c); Wichita  
 Paul Porter (c); Curryville, Mo.  
 Leota Porterfield (c); Holton  
 Bess Portwood (c); Greenwood, Mo.  
 Hugh J. Poure (c); Chicago, Ill.  
 Chas F. Prather (c); Valley Center  
 Clyde Priddle (c); Kansas City  
 Charles S. Prince (c); Washington, D. C.  
 Iona Pruett (p); Macksville  
 Zoe Alice Pruett (p); Salina  
 Alberta Pullins (c); Council Grove  
 K. W. Putney (c); Manhattan  
 E. Glenn Rader (c); Wilmore  
 Glen B. Ralisback (c); Hutchinson  
 Marie Rairdon (c); Havensville  
 Everett Rairdon (c); Havensville  
 J. Earl Rankin (c); Almena  
 Effie Rasher (c); Manhattan  
 Emma Rathbone (c); Washington  
 Lyle C. Reed (c); Clay Center  
 Willard V. Redding (c); Manhattan  
 Eunice Reed (c); Kanopolis  
 Frances Lillian Reed (c); Pomona  
 Harley E. Reed (c); Valley Center  
 Jesse W. Reeve (v); Wichita  
 Linda M. Regier (p); Elbing  
 Walter Reid (c); Topeka  
 Jas. H. Rexroad (c); Partridge  
 Nellia Irene Reynolds (p); Washington  
 Clarence A. Reynolds (p); Wilder  
 Amos Rice (p); Hardy  
 Alex Richards (c); Waldo  
 Hazen L. Richardson (c); Stafford  
 H. D. Richardson (c); Long Island  
 J. C. Ridgeway (c); Kansas City  
 Tillie Rife (c); Manhattan  
 Tracy M. Roberds (c); Coffeyville  
 W. R. Roberts (c); Manhattan  
 Dorothy Roberts (p); Independence  
 Arthur V. Roberts (c); Carlton  
 Roscoe J. Robinson (p); Ada  
 Ralph Roderick (c); Manhattan  
 Ruth Hill Roe (c); Manhattan  
 Frederick E. Roehrman (c); White City  
 Leonard S. Rohrer (c); Omaha, Neb.  
 Marjorie E. Root (c); Manhattan  
 Richard M. Roper (c); Manhattan  
 Merle Ross (c); Dover  
 Haney D. Ross (c); Manhattan  
 Everett L. Ross (c); Manhattan  
 James Routt (p); Paola  
 Hugh Herbert Roy (c); El Paso, Tex.  
 Dorothy B. Rude (c); Great Bend  
 Ira John Russell (c); St. John  
 Clarence Saathoff (p); Bird City  
 Joe Saip (p); Belleville  
 Lloyd Sauliner (p); Clyde  
 Noel T. Sawhill (c); Glasco  
 Harry C. Sawin (c); Waterville  
 Marjorie Sawyer (c); Washington  
 Flossie Sawyer (c); Kensington  
 Faith E. Schaber (c); Chicago, Ill.  
 Amanda T. Schall (c); Manhattan  
 John Scheibe (p); Waterville  
 Norma H. Schields (c); Bird City  
 Aria Schields (c); Bird City  
 Mildred Schirmer (p); Holton  
 Lova Schlatter (c); McPherson  
 Harold E. Schlosser (p); Bethel  
 A. B. Schmidt (c); Newton  
 Donnie K. Schnedler (p); Peru  
 F. L. Schooley (c); Hutchinson  
 Wilma Schroll (p); Whitewater  
 Loretta Schroll (c); Greenleaf  
 Donald Schwab (p); Bendena  
 A. V. Schwartz (p); Manhattan  
 Henry J. Schwartz (c); Hanover  
 Lloyd Sconce (p); Manhattan  
 Bernice A. Scott (c); Manhattan  
 Charden Scott (p); Manhattan  
 Dorothy B. Scott (c); Greenleaf  
 Beverly H. Scott (c); Brewster  
 Ruth E. Scott (c); Neodesha  
 Lois Scriptor (c); Herington  
 Alma Seematter (c); Kansas City, Mo.  
 Ben Sellers (c); Lyons  
 Joe Seybold (p); Peru  
 Betty Shackelford (p); Manhattan  
 Geo. A. Shafer (c); Manhattan  
 Edna May Shannon (p); Manhattan  
 Ernest Sharon (p); Winfield  
 Kenneth Shay (c); Elsworth  
 Garnet Shehi (c); Topeka  
 B. L. Shepherd (c); Colby  
 Pauline Sheppard (p); Fort Riley  
 Florence W. Sherer (v); Kansas City  
 May Sherman (c); Gypsum  
 Wayne D. Shier (c); Gypsum  
 Raymon Shobe (c); Waverly  
 Mercedes Shute (c); Manhattan  
 Mrs. Lydia H. Sidener (c); Ada  
 Curtis D. Sides (c); Manhattan  
 Ruth E. Silkens (c); Dell Rapids, S. Dak.  
 Millard Simmecht (c); Manhattan  
 Helen Simmons (c); Chicago, Ill.  
 Loula Simmons (c); Manhattan  
 Charles Skinner (c); Manhattan  
 Adria Slabach (c); Conway  
 G. H. Slimpert (c); Chicago, Ill.  
 Ruth M. Sloan (c); Manhattan  
 Lois Sloop (c); Lyndon  
 Edna Small (c); Beattie  
 Helen E. Smerchek (c); Garnett  
 Lloyd C. Smity (c); Waverly  
 Mildred Smith (c); Manhattan  
 Josephine Smith (c); Howard  
 Robert M. Smith (p); Beloit  
 Alfred M. Smith (c); Bucklin  
 Frances L. Smith (c); Paola  
 Pansy Smith (c); Manhattan  
 Walter Bruce Smith (c); Hoisington  
 Mrs. Grace B. Smith (c); San Marcos, Tex.  
 Marjorie Smith (p); Winona  
 Pauline M. Smith (c); Talmage  
 Leah M. Smock (c); Sanborn, Iowa  
 Pearl Snyder (c); Osborne  
 Elizabeth L. Soechtig (c);  
     Fort Madison, Iowa  
 Charles R. Socolofosky (c); Tampa  
 Wilma Soeken (p); Ellinwood  
 Marian Sommer (p); Potwin  
 Norman Sondergard (c); Ramona  
 Ellsworth Speakman (p); Liberal  
 Mack C. Spears (c); Kansas City  
 Fred Spence (c); Lakin  
 Frances Alison Spence (c); Chicago, Ill.  
 Mrs. R. W. Spencer (c); Douglas, Ariz.  
 Grace Sperry (p); Waterville  
 Merwin Squires (c); Holton  
 Grover Steele (c); Barnes  
 Jennie Pauline Steiner (c); Topeka



HOME STUDY STUDENTS—*Concluded.*

- Blanche Stephenson (c); Manhattan  
 Nolan S. Stevens (c); Goliad, Tex.  
 Wilma C. Steward (c); Muscotah  
 Fred D. Stiles (c); Freeport, Ill.  
 Edward J. Stoklass (c); Clarkson, Neb.  
 J. R. Stratford (v); Wichita  
 Edith E. Streeter (c); Wakefield  
 B. T. Stryker (c); Wichita  
 Loran Stunz (p); Hiawatha  
 Byron G. Swain (c); McPherson  
 Mrs. P. K. Symms (v); Atchison  
 Mary Talley (c); Council Grove  
 Dorothy Tatman (c); Chicago, Ill.  
 Mary Eloise Taylor (c); Manchester  
 Gertrude Taylor (p); Independence  
 Kenneth A. Taylor (c); Woodson  
 Helen Tedman (c); Mount Hope  
 F. L. Tempero (c); Manhattan  
 Elsie Tempero (c); Clay Center  
 Dale Thomas (c); Manhattan  
 Helen Thomas (v); Waterville  
 Ruth Thomas (c); Baxter Springs  
 Maurine Thomas (c); Osage City  
 Margaret E. Thompson (c); Westphalia  
 Maurice Thompson (c); Dodge City  
 Lloyd Thorp (c); Longford  
 Fay Timmons (c); Lyons  
 Ellen E. Tinney (p); Norton  
 Hazel Toburen (c); Cleburne  
 Donald W. Todd (p); Oak Hill  
 Sister M. Martha Todd (c); Leavenworth  
 Gladys Tonn (c); Haven  
 F. W. Toomey (c); Neodesha  
 Bessie Torgeson (c); White City  
 Valice Townsend (p); Junction City  
 Mrs. F. D. Tracy (c); Kansas City  
 Ada Frances Troutman (p); Independence  
 William Ira Turner (c); Holly, Colo.  
 Mrs. Cecile Tuttle (v); Sitka  
 Don Twidwell (p); Frankfort  
 Ernest Ubelaker (c); Willis  
 J. P. Vandergriff (c); Douglass  
 Irene Van Riper (c); Penalosa  
 Helen H. Varney (c); Manhattan  
 John L. Vaupel (c); Delevan  
 Marvin E. Vautravers (c); Centralia  
 John E. Veatch (c); Manhattan  
 Ernest L. Verschelden (p); St. Marys  
 Albert Vesecky (c); Kansas City  
 Clarence J. Vesper (p); Jetmore  
 M. Belle Viers (c); Manhattan  
 Sister Viator (c); Beaverville, Ill.  
 Carolyn Vollmer (p); Bronson  
 Lloyd L. Vrooman (c); Independence  
 William Waddell (p); St. Joseph, Mo.  
 R. R. Wagner (c); Emporia  
 J. M. Wainwright (p); Fort Riley  
 Mrs. Jno. C. Walker (c); Leavenworth  
 Sam. C. Walker (c); Junction City  
 Dorothy Walker (c); Hardy, Neb.  
 James Wall (p); Russell  
 Rosalind Wallach (c); Chicago, Ill.  
 Forrest Waller (c); Faucett, Mo.  
 Joseph D. Ward (c); Peabody  
 Walter H. Warstler (c); Columbus  
 Ralph E. Waterhouse (c); Blue Island, Ill.  
 Charles Watson (c); Osborne  
 Mrs. Ellen Webb (c); Wellington  
 Elsie Weik (p); Manhattan  
 Eva Noerr Welsh (c); Kansas City  
 Lloyd Weinheimer (p); Harper  
 Frances Wentz (c); Ames  
 Wm. W. West (c); Fort Riley  
 Neil J. Weybrew (c); Wamego  
 Sydney Weybrew (c); Wamego  
 Vida Whitney (p); Rossville  
 Margaret Wichers (c); Downs  
 Esther I. Wiedower (c); Spearville  
 George Wiggins (c); Lyons  
 Mrs. W. H. Wilke (v); Troy  
 Alma Wilsey (c); Washington  
 Mrs. Katherine H. Wilson (c); Turner  
 Ruth M. Wimer (c); South Haven  
 Olive Wimmer (c); Manhattan  
 Florence Wineinger (c); Manhattan  
 Estelle Winters (c); Onaga  
 Agnes H. Weyant (p); Manhattan  
 Eleanor Womer (c); Agra  
 Mrs. Etha King Wood (c); Reading  
 Mrs. C. S. Wood (c); Pratt  
 Richard Woodring (p); Phillipsburg  
 J. D. Woodruff (c); Miltonvale  
 John D. Woodruff (c); Dodge City  
 Rex Woodward (c); Medicine Lodge  
 Max Wrench (p); Beloit  
 Leona Wright (c); Louisville  
 Helen K. Wyant (c); Manhattan  
 Mrs. Blanche Yeaton (c); Manhattan  
 Hattie Mae Yehle (c); South Haven  
 Mildred Yenni (p); Glasco  
 Elmo Yenser (p); Delphos  
 Mary Yoder (c); Manhattan  
 Josephine Young (c); Junction City  
 Myrtle A. Young (c); Kansas City  
 Orville Young (c); Clifton  
 Winifred M. Young (c); Wakefield  
 Verlester Young (c); Manhattan  
 Ruth Wanda Zeigler (p); Winfield  
 Olga Zwermann (c); Urbana, Ill.

Students by States, Foreign Countries, and Kansas

STATES

Arizona .....	4	Louisiana .....	1	Oklahoma .....	32
Arkansas .....	3	Maryland .....	1	Oregon .....	1
California .....	12	Michigan .....	3	Pennsylvania .....	3
Colorado .....	9	Minnesota .....	1	South Dakota .....	5
District of Columbia .....	1	Mississippi .....	1	Tennessee .....	1
Florida .....	1	Missouri .....	67	Texas .....	16
Georgia .....	2	Montana .....	4	Utah .....	2
Idaho .....	3	Nebraska .....	37	West Virginia .....	1
Illinois .....	10	New Mexico .....	1	Wisconsin .....	5
Iowa .....	11	New York .....	11	Wyoming .....	1
Kansas .....	3,660	North Dakota .....	1		
Kentucky .....	1	Ohio .....	2	Total .....	3,914

FOREIGN COUNTRIES

Brazil .....	1	Mexico .....	1	Syria .....	1
China .....	1	Panama .....	1		
Haiti .....	1	Philippine Islands .....	2	Total .....	14
Hawaii .....	2	South Africa .....	1		
India .....	1	South America .....	1	Grand total .....	3,928

KANSAS COUNTIES

Allen .....	14	Greenwood .....	17	Pawnee .....	24
Anderson .....	19	Hamilton .....	7	Phillips .....	22
Atchison .....	28	Harper .....	18	Pottawatomie .....	71
Barber .....	14	Harvey .....	33	Pratt .....	24
Barton .....	37	Haskell .....	1	Rawlins .....	6
Bourbon .....	12	Hodgeman .....	3	Reno .....	80
Brown .....	29	Jackson .....	45	Republic .....	53
Butler .....	55	Jefferson .....	31	Rice .....	38
Chase .....	18	Jewell .....	67	Riley .....	935
Chautauqua .....	7	Johnson .....	20	Rooks .....	20
Cherokee .....	15	Kearny .....	4	Rush .....	13
Cheyenne .....	4	Kingman .....	18	Russell .....	20
Clark .....	8	Kiowa .....	13	Saline .....	52
Clay .....	72	Labette .....	24	Scott .....	11
Cloud .....	69	Lane .....	3	Sedgwick .....	77
Coffey .....	17	Leavenworth .....	18	Seward .....	4
Comanche .....	6	Lincoln .....	21	Shawnee .....	123
Cowley .....	32	Linn .....	14	Sheridan .....	8
Crawford .....	26	Logan .....	7	Sherman .....	16
Decatur .....	25	Lyon .....	33	Smith .....	30
Dickinson .....	98	McPherson .....	29	Stafford .....	11
Doniphan .....	12	Marion .....	28	Stanton .....	1
Douglas .....	16	Marshall .....	85	Stevens .....	6
Edwards .....	9	Meade .....	9	Sumner .....	33
Elk .....	9	Miami .....	13	Thomas .....	13
Ellis .....	9	Mitchell .....	29	Trego .....	4
Ellsworth .....	21	Montgomery .....	21	Wabaunsee .....	51
Finney .....	22	Morris .....	50	Wallace .....	1
Ford .....	38	Morton .....	10	Washington .....	57
Franklin .....	28	Nemaha .....	29	Wichita .....	6
Geary .....	89	Neosho .....	26	Wilson .....	25
Gove .....	17	Ness .....	19	Woodson .....	10
Graham .....	11	Norton .....	25	Wyandotte .....	66
Grant .....	4	Osage .....	19		
Gray .....	5	Osborne .....	30	Total .....	3,650
Greeley .....	2	Ottawa .....	33		

*Colombia 1 more  
Cuba 1*

## College Enrollment, 1931-1932

THE DIVISION.	Men.	Women.	Total.
<b>The Division of Agriculture</b> .....	<b>493</b>	<b>5</b>	<b>498</b>
Graduate students.....	69	1	70
Seniors.....	82	.....	82
Juniors.....	83	2	85
Sophomores.....	98	.....	98
Freshmen.....	114	1	115
Special students.....	6	1	7
Short-course students.....	41	.....	41
<b>The Division of Veterinary Medicine</b> .....	<b>174</b>	<b>3</b>	<b>177</b>
Graduate students.....	3	.....	3
Seniors.....	20	1	21
Juniors.....	39	.....	39
Sophomores.....	42	1	43
Freshmen.....	68	1	69
Special students.....	2	.....	2
<b>The Division of General Science</b> .....	<b>640</b>	<b>540</b>	<b>1,180</b>
Graduate students.....	85	46	131
Seniors.....	91	89	180
Juniors.....	107	103	210
Sophomores.....	133	137	270
Freshmen.....	211	145	356
Special students.....	13	20	33
<b>The Division of Home Economics</b> .....	.....	<b>519</b>	<b>519</b>
Graduate students.....	.....	69	69
Seniors.....	.....	100	100
Juniors.....	.....	91	91
Sophomores.....	.....	120	120
Freshmen.....	.....	133	133
Special students.....	.....	6	6
<b>The Division of Engineering</b> .....	<b>978</b>	<b>16</b>	<b>994</b>
Graduate students.....	62	2	64
Seniors.....	186	3	189
Juniors.....	207	4	211
Sophomores.....	235	4	239
Freshmen.....	282	3	285
Special students.....	6	.....	6
Totals.....	2,285	1,083	3,368
Counted twice.....	98	30	128
Net totals.....	<b>2,187</b>	<b>1,053</b>	<b>3,240</b>
<b>The Summer School (1931)</b> .....	<b>485</b>	<b>574</b>	<b>1,059</b>
Totals.....	2,672	1,627	4,299
Counted twice.....	233	138	371
Net grand totals.....	<b>2,439</b>	<b>1,489</b>	<b>3,928</b>
<b>Students Pursuing Graduate Work</b> .....	<b>354</b>	<b>215</b>	<b>579</b>
Graduate students in regular session.....	171	99	270
Graduate students in summer session (excluding duplicates).....	140	93	233
Graduate students in absentia.....	5	4	9
Undergraduates carrying graduate work.....	48	19	67
Totals.....	364	215	579
Counted twice.....	4	3	7
Net totals.....	<b>360</b>	<b>212</b>	<b>572</b>



Record of Enrollment and Degrees Conferred, 1863-1932

YEAR.	Summer school.....	Household's 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...							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	222	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		48	144	511		411	269	149	133	24	88	1,937	119	5
1907-08...	29	188		26	173	Engineering short courses	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		364			533	412	288	248	34	59	2,407	204	2
1911-12...	94	160	14		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			560		575	368	383	321	50	200	3,091	223	6
1915-16...	536	85	17		207	188			484		605	454	305	401	76	219	3,314	342	17
1916-17...	586	103	14		228	191			422		693	471	378	282	68	277	3,340	197	13
1917-18...	481	92	8		119	135			231		483	349	294	239	36	190	2,406	215	17
1918-19...	519	25	5		160	400			216		810	322	254	201	34	144	2,991	167	7
1919-20...	415	57	3	6	117	354			224		894	401	300	269	43	167	3,352	260	11
1920-21...	604	30	10		96	278			280		878	602	318	273	42	294	3,395	249	14
1921-22...	820	19	10		59	173			221		931	628	422	296	125	813	3,560	271	28
1922-23...	884	19	8		55	83			220		1,004	656	460	401	118	457	3,626	341	31
1923-24...	978	12	7		43	57			167		1,160	657	458	413	171	475	3,812	342	42
1924-25...	1120	14	14		55	54			47		1,391	679	467	347	185	486	4,031	335	52
1925-26...	947	12	11		41	29					1,494	725	512	344	182	384	4,019	341	51
1926-27...	959		18		52				19		1,311	854	509	411	179	365	4,083	357	77
1927-28...	966		20		57				7		1,039	819	584	500	167	418	3,878	428	70
1928-29...	920		18		51				9		1,084	743	584	537	197	321	3,879	461	84
1929-30...	902		13		59				9		1,128	787	581	554	†432	548	3,987	469	91
1930-31...	995		24		52				7		1,077	790	605	528	506	589	4,045	424	91
1931-32...	1059		12		50						933	752	633	572	572	688	3,928		

\* Estimated. † Figures above this in this column include neither graduate students nor undergraduate students pursuing graduate work.

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