Kansas State Agricultural College Bulletin

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SIXTY-SEVENTH SESSION, 1929-'30

ANNOUNCEMENTS FOR 1930-'31

STUDENT LISTS FOR 1929-'30

MANHATTAN, KANSAS

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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THE COLLEGE CALENDAR

SUMMER SCHOOL, 1930

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

FIRST SEMESTER, 1930-'31

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

SECOND SEMESTER, 1930-'31

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

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

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

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

SUMMER SCHOOL, 1931

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

FIRST SEMESTER, 1931-'32

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

REGISTRATION AND ASSIGNMENT SCHEDULE

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

FIRST SEMESTER

MONDAY, SEPTEMBER 8, 1930

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

TUESDAY, SEPTEMBER 9, 1930

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

WEDNESDAY, SEPTEMBER 10, 1930

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

SECOND SEMESTER

TUESDAY, JANUARY 27, 1931

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

WEDNESDAY, JANUARY 28, 1931

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

The State Board of Regents

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

H. R. Rhodes, *Business Manager*
J. E. Brewer, *Assistant Business Manager*

Administrative Officers of the College

President	F. D. Farrell
Vice President, and Dean of the Division of General Science	J. T. Willard
Dean of the Division of Agriculture, and Director of the Agricultural Experiment Station	L. E. Call
Dean of the Division of Engineering, and Director of the Engineering Experiment Station	R. A. Seaton
Dean of the Division of Home Economics	Margaret M. Justin
Dean of the Division of Veterinary Medicine	R. R. Dykstra
Dean of the Division of College Extension	H. J. Umberger
Chairman of the Graduate Council	J. E. Ackert
Dean of Women	Mary P. Van Zile
Dean of the Summer School	E. L. Holton
Registrar	Jessie McD. Machir
Librarian	Arthur B. Smith
Custodian of Buildings and Grounds	G. R. Pauling

Officers of Instruction and Administration

PRESIDENT

FRANCIS DAVID FARRELL, Agr. D., President of the College (1918, 1925).*
B. S., Utah Agricultural College, 1907; Agr. D., University of Nebraska, 1925.
†A 30; President's House, College Campus.

PROFESSORS

JOHN DANIEL WALTERS,[1] M. S., A. D., Professor of Architecture, Emeritus (1877, 1917—Sept. 30, 1929).
M. S., K. S. A. C., 1883; A. D., ibid., 1908.

JULIUS TERRASS WILLARD, M. S., Sc. D., Vice President of the College (1883, 1918); Dean of Division of General Science (1883, 1909); Professor of Chemistry (1883, 1901); Consulting Chemist, Agricultural Experiment Station (1888, 1918).
B. S., K. S. A. C., 1883; M. S., ibid., 1886; Sc. D., ibid., 1908. A 48; 1014 Houston.

BENJAMIN LUCE REMICK, Ph. M., Professor and Head of Department of Mathematics (1900).
Ph. B., Cornell College, 1889; Ph. M., ibid., 1892. E 223; 613 Houston.

ALBERT DICKENS,[2] M. S., Professor and Head of Department of Horticulture (1899, 1902); Horticulturist, Agricultural Experiment Station (1899, 1902).
B. S., K. S. A. C., 1893; M. S., ibid., 1901. H 28; 1230 Fremont.

RALPH RAY PRICE, A. M., Professor and Head of Department of History and Government (1903).
A. B., Baker University, 1896; A. M., University of Kansas, 1898.
F 57; 615 Humboldt.

JULIUS ERNEST KAMMEYER, A. M., LL. D., Professor and Head of Department of Economics (1903, 1904).
A. B., Central Wesleyan College, 1886; A. M., ibid., 1889; LL. D., Kansas City University, 1912. A 52; 1011 Kearney.

JOHN VANZANDT CORTELYOU, Ph. D., Professor and Head of Department of Modern Languages (1904, 1916).
A. B., University of Nebraska, 1897; A. M., ibid., 1901; Ph. D., University of Heidelberg, 1904. A 71; 325 N. 14th.

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

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

A—Anderson Hall (Administration)
Ag—Waters Hall (Agriculture)
Bks—Barracks
C—Denison Hall (Chemistry, Physics)
CH—College Hospital
D—Chemistry Annex No. 2
E—Engineering Hall
F—Fairchild Hall
G—Education Hall
H—Horticulture 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
W—Chemistry Annex No. 1
X—Maintenance Building

1. Deceased.
2. Absent on leave, 1929-1930.

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

Mary Pierce Van Zile, B. S., Dean of Women (1908, 1918).
Diploma, Iowa State College, B. S., 1904; B. S., K. S. A. C., 1929.
A 40; 800 Houston.

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

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

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

Arthur Bourne Smith, Ph. B., B. L. S., College Librarian (1911).
Ph. B., Wesleyan University, 1900; B. L. S., University of Illinois, 1902.
Li 31; 1503 Fairchild.

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

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

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

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

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

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

Charles Moses Siever, Ph. G., M. D., College Physician (1916).
Ph. G., Trinity University, 1903; M. D., ibid., 1903; M. D., University of Kansas, 1907.
A 65; 1719 Laramie.

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

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

Samuel Cecil Salmon, M. S., Professor of Farm Crops (1913, 1917).
B. S., South Dakota Agricultural and Mechanical College, 1907; M. S., K. S. A. C., 1923.
Ag 217; 1648 Leavenworth.

Harry John Charles Umberger,[4] B. S., Dean of Division of College Extension (1911, 1919); Director of College Extension (1911, 1919).
B. S., K. S. A. C., 1905. A 33; 1412 Leavenworth.

Herbert Hiram King, Ph. D., Professor and Head of Department of Chemistry (1906, 1918); Chemist, Agricultural Experiment Station (1918); Chemist, Engineering Experiment Station (1909, 1918).
B. S., Ewing College, 1904; A. M., ibid., 1906; M. S., K. S. A. C., 1915; Ph. D., University of Chicago, 1918. C 30; 1711 Fairchild.

Charles Wilbur McCampbell, D. V. M., Professor and Head of Department of Animal Husbandry (1910, 1918); Animal Husbandman, Agricultural Experiment Station (1910, 1918).
B. S., K. S. A. C., 1906; D. V. M., ibid., 1910; B. S. in Agr., ibid., 1918.
Ag 15; 343 N. 14th.

Ray Iams Throckmorton, M. S., Professor and Head of Department of Agronomy (1911, 1925); Agronomist, Agricultural Experiment Station (1911, 1925).
B. S. in Agr., Pennsylvania State College, 1911; M. S., K. S. A. C., 1922.
Ag 214; 825 Houston.

James Edward Ackert, Ph. D., Professor of Zoölogy (1913, 1918); Parasitologist, Agricultural Experiment Station (1913).
A. B., University of Illinois, 1909; A. M., ibid., 1911; Ph. D., ibid., 1913.
F 27; 1923 Leavenworth.

Alfred Everett White, M. S., Professor of Mathematics (1909, 1918).
B. S., Purdue University, 1904; M. S., ibid., 1909. A 72; 1743 Fairchild.

James Burgess Fitch, B. S., Professor and Head of Department of Dairy Husbandry (1910, 1918); Dairy Husbandman, Agricultural Experiment Station (1910, 1918).
B. S., Purdue University, 1910. Ag 151; 321 N. 16th.

Hallam Walker Davis, A. M., Professor of English (1913, 1918); Head of Department of English (1913, 1921).
A. B., Indiana University, 1909; A. M., Columbia University, 1913.
K 52; 1727 Fairview.

Araminta Holman, B. S., Professor and Head of Department of Art (1913, 1918).
Graduate, New York School of Fine and Applied Art, 1912; B. S., Columbia University, 1922. A 67; 513 N. 16th.

Vivan Lewis Strickland, Ph. D., Professor of Education (1917, 1922).
A. B., University of Nebraska, 1906; A. M., ibid., 1915; Ph. D., ibid., 1925.
G 28; 1512 Leavenworth.

James Park Calderwood, M. E., M. S., Professor and Head of Department of Mechanical Engineering (1918, 1922); Mechanical Engineer, Engineering Experiment Station (1918).
M. E., Ohio State University, 1908; M. S., Pennsylvania State College, 1916.
E 106; 321 N. 14th.

James Henry Burt, D. V. M., Professor and Head of Department of Anatomy and Physiology (1909, 1919).
V. S., Ontario Veterinary College, 1895; D. V. M., Ohio State University, 1905.
V 32; 800 Poyntz.

Leo Edward Melchers, M. S., Professor and Head of Department of Botany and Plant Pathology (1914, 1919); Plant Pathologist, Agricultural Experiment Station (1914).
B. S., Ohio State University, 1912; M. S., ibid., 1913. H 58; 325 N. 17th.

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

EDWIN CYRUS MILLER, Ph. D., Professor of Plant Physiology (1910, 1919).
A. B., Lebanon College, 1906; A. B., Yale University, 1907; Ph. D., ibid., 1910.
H 56; 211 N. 18th.

CYRUS VANCE WILLIAMS, Ph. D., Professor of Vocational Education (1920).
B. Ed., (Peru) Nebraska State Normal School, 1909; A. M., University of Nebraska, 1910; B. S. in Agr., College of Agriculture, ibid., 1919; Ph. D., 1925.
G 29; 1735 Fairview.

WILLIAM HIDDLESTON ANDREWS, Ph. D., LL. D., Professor of Education (1906, 1920).
A. B., University of Chicago, 1900; M. S., K. S. A. C., 1919; Ph. D., University of Chicago, 1923; LL. D., College of Emporia, 1921. G 28; 1704 Fairview.

CHARLES OSCAR SWANSON, M. Agr., Ph. D., Professor and Head of Department of Milling Industry (1906, 1923).
A. B., Carelton College, 1899; M. Agr., University of Minnesota, 1905; Ph. D., Cornell University, 1922. Ag 119; 1640 Fairview.

IVOR VICTOR ILES, A. M., Professor of History and Government (1911, 1920).
A. B., University of Kansas, 1905; A. M., ibid., 1905. F 58; 1725 Fairchild.

JOSIAH SIMSON HUGHES, Ph. D., Professor of Chemistry (1910, 1920).
B. S., Ohio Wesleyan University, 1908; M. S., ibid., 1910; A. M., Ohio State University, 1910; Ph. D., ibid., 1917. C 41; 333 N. 15th.

ROBERT WARREN CONOVER, A. M., Professor of English (1915, 1920).
A. B., Wesleyan University, 1911; A. M., ibid., 1914. K 52; 1729 Fairchild.

JOHN CHRISTIAN PETERSON, Ph. D., Professor of Psychology (1917, 1926).
A. B., University of Utah, 1913; Ph. D., University of Chicago, 1917.
G 33; 1330 Laramie.

HERBERT FREDERICK LIENHARDT, V. M. D., Professor and Head of Department of Pathology (1917, 1920).
V. M. D., University of Pennsylvania, 1916. V 58; 1118 Bertrand.

GEORGE ELLSWORTH RABURN, M. S., Professor of Physics (1910, 1920).
A. B., University of Michigan, 1907; M. S., ibid., 1913. C 34; College Heights.

ROBERT JOHN BARNETT, M. S., Professor of Horticulture (1920); Acting Head of Department of Horticulture (1929-'30).
B. S., K. S. A. C., 1895; M. S., ibid., 1911. H 28; 1203 Thurston.

MARY THERESA HARMAN, Ph. D., Professor of Zoölogy (1912, 1921).
A. B., Indiana University, 1907; A. M., ibid., 1909; Ph. D., ibid., 1912.
F 41; 1430 Poyntz.

FLOYD WAYNE BELL, B. S. A., Professor of Animal Husbandry, in Charge of Advanced Judging (1918, 1921).
B. S., Cornell University, 1911. Ag 5; 1736 Fairview.

EUSTACE VIVIAN FLOYD, B. S., Professor of Physics (1911, 1921).
B. S., Earlham College, 1903. C 34; 1451 Laramie.

WALDO ERNEST GRIMES, Ph. D., Professor and Head of Department of Agricultural Economics (1913, 1921).
B. S., K. S. A. C., 1913; Ph. D., University of Wisconsin, 1923.
Ag 350; 203 N. Delaware.

JOHN HUNTINGTON PARKER, Ph. D., Professor of Crop Improvement (1917, 1921).
B. S. in Agr., University of Minnesota, 1913; M. S. in Agr., Cornell University, 1916; Ph. D., Cambridge University, 1928. Ag 103; 1728 Fairview.

HOWARD TEMPLETON HILL, J. D., Professor and Head of Department of Public Speaking (1920, 1922).
B. S., Iowa State College, 1910; J. D., University of Chicago, 1917. G 55; 1616 Osage.

NOBLE WARREN ROCKEY, A. M., Professor of English (1921).
A. B., Ohio State University, 1905; A. M., ibid., 1916. K 52; 1605 Leavenworth.

EDWARD GUERRANT KELLY, Ph. D., Professor of Entomology, Division of College Extension (1918, 1922).
B. S., University of Kentucky, 1903; M. S., ibid., 1904; Ph. D., Iowa State College, 1927. F 69; 1621 Humboldt.

HOWARD W. BRUBAKER, Ph. D., Professor of Chemistry (1913, 1922).
B. S., Carleton College, 1899; Ph. D., University of Pennsylvania, 1904.
C 12; 1929 Leavenworth.

PERCY LEIGH GAINEY, Ph. D., Professor of Bacteriology (1914, 1922); Soil Bacteriologist, Agricultural Experiment Station (1914).
B. Agr., North Carolina A. and M. College, 1908; M. S., ibid., 1910; A. M., Washington University, 1911; Ph. D., ibid., 1927. V 261; 1123 Houston.

FORREST FAYE FRAZIER, C. E., Professor of Civil Engineering (1911, 1922).
C. E., Ohio State University, 1910. E 123; 1815 Leavenworth.

ROYCE GERALD KLOEFFLER,[5] B. S., Professor and Head of Department of Electrical Engineering (1916, 1927).
B. S. in E. E., University of Michigan, 1913. E 120; 1218 Kearney.

CLINTON ELLIOTT PEARCE, S. B., Professor and Head of Department of Machine Design (1917, 1922).
S. B., Massachusetts Institute of Technology, 1913. E 210; 615 N. 11th.

CHARLES HENRY SCHOLER, B. S., Professor and Head of Department of Applied Mechanics (1920, 1922); Engineer of Tests in the Road Materials Laboratory (1920).
B. S., K. S. A. C., 1914. E 11; 806 Bluemont.

LOYAL FREDERICK PAYNE, M. S., Professor and Head of Department of Poultry Husbandry (1921, 1922); Poultry Husbandman, Agricultural Experiment Station (1921, 1922).
B. S., Oklahoma A. and M. College, 1912; M. S., K. S. A. C., 1925.
Ag 245; 4 College Heights Road.

MARTHA S. PITTMAN,[5] A. M., Professor and Head of Department of Food Economics and Nutrition (1919, 1922).
B. S., K. S. A. C., 1906; B. S., Columbia University, 1916; A. M., ibid., 1918.
L 43; 112 S. 12th.

GEORGE ALBERT GEMMELL,[5] M. S., Professor of Education, in Charge of Department of Home Study Service, Division of College Extension (1918, 1922).
B. S., Kansas State Teachers College, Pittsburg, 1917; B. S., K. S. A. C., 1920; M. S., ibid., 1922. A 5; 411 N. 16th.

WILLIAM TIMOTHY STRATTON,[5] A. M., Professor of Mathematics (1910, 1923).
A. B., Indiana University, 1906; A. M., ibid., 1913. E 223; 511 N. Sunset.

ROY MONROE GREEN,[6] M. S., Professor of Agricultural Economics (1920, 1923).
B. S. in Agr., University of Missouri, 1914; M. S., K. S. A. C., 1922.
Ag 345; 855 Anderson.

MARGARET M. JUSTIN, Ph. D., Dean of Division of Home Economics (1923).
B. S. in H. E., K. S. A. C., 1909; B. S. in Educ., Teachers College, Columbia University, 1915; Ph. D., Yale University, 1923. L 29; 531 N. Manhattan.

AMY KELLY, B. S., Professor, State Home Demonstration Leader, Division of College Extension (1923).
B. S., South Dakota State College, 1908. A 36; Apt. 603, Wareham Hotel.

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

HEMAN LAURITZ IBSEN, Ph. D., Professor of Genetics (1919, 1924).
B. S., University of Wisconsin, 1912; M. S., ibid., 1913; Ph. D., ibid., 1916. Ag 15A; 1031 Thurston.

ELDEN VALORIUS JAMES, A. M., Professor of History and Government (1912, 1924).
A. B., Marietta College, 1901; A. B., University of Michigan, 1905; A. M., Marietta College, 1908. F 62; 1723 Fairview.

PAUL WEIGEL, B. Arch., Professor and Head of Department of Architecture (1921, 1924).
B. Arch., Cornell University, 1912; Architect, University of State of New York, 1920; Graduate, Buffalo Normal School, 1921. E 302; 1918 Leavenworth.

LILIAN CLARA WILLIAMS BAKER, A. M., Professor and Head of Department of Clothing and Textiles (1924).
B. S., K. S. A. C., 1914; A. M., University of Chicago, 1921. L 56; 522 N. 14th.

WALTER GILLING WARD,[5] B. S. Arch., Professor in Charge of Rural Engineering, Division of College Extension (1920, 1925).
B. S. in Arch., K. S. A. C., 1912; Architect, ibid., 1922. E 131; 519 N. Manhattan.

CHARLES ELKINS ROGERS, M. S., Professor and Head of Department of Industrial Journalism (1919, 1926).
A. B., University of Oklahoma, 1914; M. S., K. S. A. C., 1926. K 30; 1740 Fairview.

EDGAR TALBERT KEITH, B. S., Professor of Industrial Journalism and Printing (1912, 1925).
B. S., K. S. A. C., 1912. K 26; 1421 Poyntz.

JAMES WALTER MCCOLLOCH,[1] M. S., Professor of Entomology (1910, 1925-Nov. 11, 1929); Associate Entomologist, Agricultural Experiment Station (1910, 1918-Nov. 11, 1929).
B. S., K. S. A. C., 1912; M. S., ibid, 1923.

CHARLES WILLIAM COLVER, Ph. D., Professor of Organic Chemistry (1919, 1925).
B. S., University of Idaho, 1909; M. S., ibid., 1911; Ph. D., University of Illinois, 1919. C 56; 1635 Fairchild.

CHARLES WALTON MATTHEWS[5] A. M., Professor of English (1920, 1925).
B. S., Kansas State Teachers College, Pittsburg, 1918; A. M., University of Chicago, 1923. K 52; 1745 Anderson.

MARTHA MORRISON KRAMER, Ph. D., Professor of Food Economics and Nutrition (1922, 1925).
B. S., University of Chicago, 1916; A. M., Columbia University, 1920; Ph. D., ibid., 1922. L 43; 1740 Fairview.

JULES HENRY ROBERT, B. S., Professor of Applied Mechanics and Hydraulics (1916, 1925).
B. S., University of Illinois, 1914. E 113; 1729 Fairchild.

JAMES MARSHALL PETTY, Col. Inf., U. S. A., Professor and Head of Department of Military Science and Tactics (1926).
Graduate, Infantry and Cavalry School, Fort Leavenworth, 1903; Graduate, Infantry School, Fort Bennington, 1925; Graduate, Command and General Staff School, Fort Leavenworth, 1926. N 26; Wareham Hotel.

HARRY WINFIELD CAVE, M. S., Professor of Dairy Husbandry (1918, 1926).
B. S. A., Iowa State College, 1914; M. S., K. S. A. C., 1916. Ag 151; 1638 Osage.

LOUIS COLEMAN WILLIAMS, B. S., Professor of Horticulture, Division of College Extension (1915, 1926).
B. S., K. S. A. C., 1912; B. S., ibid., 1922. A 34; 1116 Bluemont.

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1. Deceased.
5. On sabbatical leave, 1929-'30.

Roger Cletus Smith,[2] Ph. D., Professor of Entomology (1920, 1926).
A. B., Miami University, 1911; A. M., Ohio State University, 1915; Ph. D., Cornell University, 1917. F 55; 1605 Leavenworth.

Edwin Jacob Frick, D. V. M., Professor of Medicine (1919, 1926).
D. V. M., Cornell University, 1918. VH 54; 319 N. 16th.

Alfred Evans Aldous, B. S., Professor of Pasture Management (1926).
B. S., Utah Agricultural College, 1910. Ag 216; 200 N. 16th.

Louis Henry Limper, A. M., Professor of Modern Languages (1921, 1926).
A. B., Baldwin Wallace College, 1907; A. M., University of Wisconsin, 1914. A 69; 1324 Laramie.

Henry Arthur Shinn,[12] J. D., Professor of Public Speaking (1923, 1926-May 31, 1930).
A. B., University of Kansas, 1916; J. D., Leland Stanford University, 1926. G 55; 1715 Fairview.

Helen Wheeler Ford, Ph. D., Professor and Head of Department of Child Welfare and Euthenics (1926; July 1, 1928).
B. S., Rhode Island State College, 1914; Ph. D., Yale University, 1925. L 64; 531 N. Manhattan.

William Lindquist, B. M., Professor of Voice and Head of Department of Music (1925, 1927).
B. M., Cosmopolitan School of Music and Dramatic Art, Chicago, 1925. M 33; 202 S. 17th.

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

Beatty Hope Fleenor, M. S., Professor of Education, Home Study Service, Division of College Extension (1923, 1927).
B. S., K. S. A. C., 1919; M. S., ibid., 1923. A 5; 1635 Osage.

Maynard Henry Coe, B. S., Professor, State Club Leader, Division of College Extension (1922, 1927).
B. S., University of Minnesota, 1917. A 35; 336 N. 16th.

Wilmer Esla Davis, A. B., Professor of Plant Physiology (1909, 1927).
Graduate, Ohio Normal University, 1894; A. B., University of Illinois, 1903. H 76; 1123 Thurston.

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

Manford W. Furr, C. E., Professor of Civil Engineering (1917, 1927).
B. S. in C. E., Purdue University, 1913; C. E., ibid., 1925; M. S., K. S. A. C., 1926. E 122; 1426 Humboldt.

Jacob Olin Faulkner, A. M., Professor of English (1922, 1927).
A. B., Washington and Lee University, 1907; A. M., Pennsylvania State College, 1920. K 52; 1720 Fairview.

Herbert Henley Haymaker, Ph. D., Professor of Plant Pathology (1917, 1927).
B. S., K. S. A. C., 1915; M. S., University of Wisconsin, 1916; Ph. D., ibid., 1927. H 54; 315 N. 16th.

Arthur Bradley Sperry, B. S., Professor of Geology (1921, 1927).
B. S., University of Chicago, 1919. F 5; 326 N. 16th.

Albert John Mack, M. E., Professor of Mechanical Engineering (1917, 1928).
B. S., K. S. A. C., 1912; M. E., ibid., 1921. E 109; 1619 Osage.

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2. Absent on leave, 1928-'30.
12. Absent on leave, 1929-'30; resigned.

GABE ALFRED SELLERS, M.S., Professor of Metallurgy and Metallography (1919, 1928).
B. S., K. S. A. C., 1917; M. S., ibid., 1929. S 62; 927 Moro.

WILLARD HUNGATE MARTIN, M.S., Professor of Dairy Husbandry (1925, 1928).
B. S., Purdue University, 1918; M. S., Pennsylvania State College, 1922.
Ag 151; 1615 Osage.

MERRILL AUGUSTUS DURLAND, M.S., M.E., Professor of Machine Design (1919, 1928); Assistant Dean of Division of Engineering (1919, 1926).
B. S., K. S. A. C., 1918; M. E., ibid., 1922; M. S., ibid., 1923.
E 116; 1715 Houston.

FRANK LESLIE DULEY, Ph.D., Professor of Soils (1925, 1928).
B. S., University of Missouri, 1914; A. M., ibid., 1915; Ph. D., University of Wisconsin, 1923. Ag 216; 1814 Laramie.

RUDOLPH HENRY DRIFTMIER, M.S., A.E., Professor of Agricultural Engineering (1920, 1928).
B. S. in A. E., Iowa State College, 1920; M. S., K. S. A. C., 1926; A. E., ibid., 1929.
E 216; 335 N. 15th.

FREDERICK CHARLES FENTON, B.S. in A.E., Professor and Head of Department of Agricultural Engineering (1928).
B. S. in A. E., Iowa State College, 1914. E 214; 401 Denison.

ALVIN NUGENT MCMILLIN, Professor of Physical Education and Head Coach of Athletics (1928).
N 35; 1810 Laramie.

FRANK CALEB GATES, Ph.D., Professor of Plant Taxonomy and Ecology (1919, 1928).
A. B., University of Illinois, 1910; Ph. D., University of Michigan, 1912.
H 77; 1515 Humboldt.

JESSE LAMAR BRENNEMAN, E.E., Professor of Electrical Engineering (1920, 1928); Acting Head of Department of Electrical Engineering (1929, 1930).
B. S., University of Chicago, 1908; E. E., University of Wisconsin, 1913.
E 120; 1017 Thurston.

THOMAS JOEL ANDERSON, Jr.,[5] A.M., Professor of Economics (1922, 1928).
B. S., University of Missouri, 1922; A. M., ibid., 1923. A 74; 1420 Laramie.

MARGARET S. CHANEY, Ph.D., Professor of Food Economics and Nutrition (1926, 1928).
Ph. B. in Ed., University of Chicago, 1914; A. M., University of California, 1923; Ph. D., University of Chicago, 1925. L 47; 1021 Leavenworth.

BESSIE BROOKS WEST, A.M., Professor and Head of Department of Institutional Economics (1928); Manager of Cafeteria (1928).
A. B., University of California, 1924; A. M., ibid., 1928. T 27; 1520 Humboldt.

BERNARD MARTIN ANDERSON, M.S., Professor of Animal Husbandry (1920; July 1, 1929).
B. S. in Agr., K. S. A. C., 1916, 1923; M. S., ibid., 1928. Ag 24; 323 Yuma.

HARRY ERNEST REED, M.S., Professor of Animal Husbandry (1923; July 1, 1929).
B. S. in Agr., University of Missouri, 1914; M. S., K. S. A. C., 1928.
Ag 27; 1119 Laramie.

DON CAMERON WARREN, Ph.D., Professor of Poultry Husbandry (1923; July 1, 1929).
A. B., Indiana University, 1914; A. M., ibid., 1917; Ph. D., Columbia University, 1923.
Ag 249; 1616 Osage.

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5. On sabbatical leave, 1929-'30.

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

ASSOCIATE PROFESSORS

GRACE EMILY DERBY, A. B., Associate Librarian (1911, 1918).
A. B., Western College for Women, 1905. Li 55; 1825 Leavenworth.

INA FOOTE COWLES, B. S., Associate Professor of Clothing and Textiles (1902, 1918).
B. S., K. S. A. C., 1901. L 55; 513 N. 16th.

MALCOLM CAMERON SEWELL, Ph. D., Associate Professor of Soils (1914, 1920).
B. S., K. S. A. C., 1912; M. S., Ohio State University, 1914; Ph. D., University of Chicago, 1922. Ag 213; 315 N. 15th.

WILLIAM HENRY SANDERS, M. E., Associate Professor of Agricultural Engineering (1912, 1920).
B. S., K. S. A. C., 1890; M. E., ibid., 1916. R 28; 1208 Kearney.

CARL G. ELLING, B. S., Associate Professor of Animal Husbandry, Division of College Extension (1918, 1921).
B. S., K. S. A. C., 1904. A 33; R. R. 1.

ALONZO FRANKLIN TURNER,[4] B. S., Associate Professor, Field Agent, Division of College Extension (1917, 1920).
B. S., K. S. A. C., 1905. A 60; 810 Moro.

JAMES WALTER ZAHNLEY, M. S., Associate Professor of Farm Crops (1915, 1921).
B. S., K. S. A. C., 1909; M. S., ibid., 1926. Ag 314; R. R. 8.

HILMER HENRY LAUDE,[6] M. S., Associate Professor of Agronomy (1920, 1921).
B. S., K. S. A. C., 1911; M. S., Texas A. and M. College, 1918. Ag 202; 326 N. 16th.

JOSEPH PRESTWICH SCOTT, D. V. M., Associate Professor of Pathology (1916, 1921).
B. S., Scientific Gymnasium, Lausanne, Switzerland, 1910; D. V. M., Ohio State University, 1914; M. S., K. S. A. C., 1924. V 2; 1114 Bertrand.

WILLIAM MAX MCLEOD, D. V. M., Associate Professor of Anatomy (1919, 1921).
D. V. M., Iowa State College, 1917. V 32; 1114 Bertrand.

ELSIE HARRIET SMITH, Associate Professor of Piano (1917, 1922).
Graduate, Certificate Course, Chicago Musical College, 1909; Postgraduate Diploma, Institute of Musical Art, New York City, 1914. M 58; 1704 Fairview.

EDGAR LEMUEL TAGUE, Ph. D., Associate Professor of Chemistry (1914, 1923); Assistant in Protein Chemistry, Agricultural Experiment Station (1914).
A. B., University of Kansas, 1908; A. M., ibid., 1909; Ph. D., ibid., 1924.
C 3; 321 N. Delaware.

WILLIAM RAYMOND BRACKETT, A. B., Associate Professor of Physics (1919, 1923).
A. B., University of Colorado, 1905. C 38; 1824 Humboldt.

HARRISON BOYD SUMMERS,[5] A. M., Associate Professor of Public Speaking 1923).
A. B., Fairmont College, 1917; A. M., University of Oklahoma, 1921.
G 55; 1645 Laramie.

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4. In coöperation with the U. S. Department of Agriculture.
5. On sabbatical leave, 1929-'30.
6. On sabbatical leave, Nov. 1, 1929, to June 15, 1930.

EARL BOOTH WORKING, Ph. D., Associate Professor of Milling Industry (1923).
A. B., University of Denver, 1917; A. M., ibid., 1919; Ph. D., University of Arizona, 1922.
Ag 120; 918 N. 10th.

ERNEST BLAINE WELLS, M. S., Associate Professor of Soils, Division of College Extension (1920, 1924).
B. S. A., West Virginia University, 1917; M. S., K. S. A. C., 1922.
Ag 202; 1615 Leavenworth.

ALFRED LESTER CLAPP, B. S., Associate Professor of Crops, Division of College Extension (1920, 1928).
B. S., K. S. A. C., 1914. Ag 250; 1109 Kearney.

GEORGE EDWIN JOHNSON, Ph. D., Associate Professor of Zoölogy (1924); Mammalogist, Agricultural Experiment Station (1924).
B. S., Dakota Wesleyan University, 1913; M. S., University of Chicago, 1916; Ph. D. Harvard University, 1923. F 7; 1614 Humboldt.

ALLAN PARK DAVIDSON, M. S., Associate Professor of Vocational Education (1919, 1924).
B. S., K. S. A. C., 1914; M. S., ibid., 1925. G 29; 1600 Humboldt.

IRA NICHOLS CHAPMAN, M. S., Associate Professor of Agricultural Economics, Division of College Extension (1922, 1925).
B. S., K. S. A. C., 1916; M. S., ibid., 1926. Ag 345; 1210 Thurston.

FLOYD ALONZO SMUTZ, B. S., Associate Professor of Engineering Drawing and Descriptive Geometry (1918, 1925).
B. S. in Arch., K. S. A. C., 1914. S 51; 1530 Pierre.

EARLE REED DAWLEY, M. S., Associate Professor of Engineering Materials (1920, 1926); Assistant Engineer of Tests (1920).
B. S., University of Illinois, 1919; M. S., K. S. A. C., 1927. E 14; 1200 Kearney.

MORRIS EVANS, M. S., Associate Professor of Agricultural Economics (1920, 1926).
B. S. in Agr., K. S. A. C., 1920; M. S., ibid., 1925. Ag 348; 1601 Poyntz.

RALPH LANGLEY PARKER, Ph. D., Associate Professor of Apiculture and Entomology (1925, 1926); State Apiarist (1925).
B. S., Rhode Island State College, 1915; Sc. M., Brown University, 1917; M. S., Iowa State College, 1922; Ph. D., Cornell University, 1925. F 82; 1809 Leavenworth.

HELEN ELIZABETH ELCOCK,[5] A. M., Associate Professor of English (1920, 1926).
A. B., College of Emporia, 1907; A. M., University of Chicago, 1921.
A 63A; 513 N. 16th.

EMMA HYDE, A. M., Associate Professor of Mathematics (1920, 1926).
A. B., University of Kansas, 1912; A. M., University of Chicago, 1916.
A 58; 320 N. 15th.

CLARENCE FLAVIUS LEWIS, M. S., Associate Professor of Mathematics (1920, 1926).
A. B., University of Denver, 1913; M. S., K. S. A. C., 1925.
E 223; 1615 Humboldt.

ANNA MARIE STURMER, A. M., Associate Professor of English (1920, 1926).
A. B., University of Nebraska, 1917; A. M., ibid., 1920. A 53; 1636 Fairchild.

CHARLES MECLAIN CORRELL, Ph. M., Associate Professor of History and Government (1922, 1926); Assistant Dean, Division of General Science (1927).
B. S., K. S. A. C., 1900; Ph. B., University of Chicago, 1907; Ph. M., ibid., 1908.
F 64 and A 49; 1621 Fairchild.

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5. On sabbatical leave, 1929-'30.

EUGENE CLAYTON GRAHAM, B. S., Associate Professor of Farm Shop Practice (1922, 1926).
B. S., Carleton College, 1898; B. S. in M. E., University of Minnesota, 1902. S 36; 501 Sunset.

WALDO HIRAM LYONS, A. M., Associate Professor of Mathematics (1924, 1926).
A. B., University of Denver, 1912; A. M., ibid., 1916. E 223; 1126 Laramie.

AUGUSTIN WILBER BREEDEN, A. M., Associate Professor of English (1926).
Ph. B., University of Chicago, 1924; A. M., ibid., 1925. K 52; 1728 Laramie.

FRED ALBERT SHANNON, Ph. D., Associate Professor of History and Government (1926).
A. B., Indiana State Normal School, 1914; A. M., Indiana University, 1918; Ph. D., University of Iowa, 1924. F 60; 1525 Humboldt.

DWIGHT WILLIAMS, A. M., LL. B., Associate Professor of History and Government (1926).
A. B., University of Minnesota, 1916; LL. B., ibid., 1918; A. M., ibid., 1926. F 61; 1204 Fremont.

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

WALTER LEROY LATSHAW, M. S., Associate Professor of Chemistry (1914, 1927).
B. S., Pennsylvania State College, 1912; M. S., K. S. A. C., 1922. C 3; 927 Fremont.

ARTHUR CECIL FAY, M. S., Associate Professor of Bacteriology (1921, 1927).
B. S., University of Missouri, 1920; M. S., University of Wisconsin, 1921. V 28; 1621 Leavenworth.

ADA GRACE BILLINGS, M. S., Associate Professor of History and Government, Home Study Service, Division of College Extension (1921, 1927).
B. S., K. S. A. C., 1916; M. S., ibid., 1927. A 5; 714 Moro.

MARCIA HALL, A. B., Associate Professor of English, Home Study Service, Division of College Extension (1923, 1927).
A. B., University of Wisconsin, 1914. A 5; 1626 Laramie.

JAMES WALTER LINN, B. S., Associate Professor of Dairy Husbandry, Division of College Extension (1923, 1927).
B. S., K. S. A. C., 1915. Ag 147; R. F. D. 1.

EARL MILO LITWILLER, M. S., Associate Professor of Horticulture, Home Study Service, Division of College Extension (1924, 1927).
B. S., K. S. A. C., 1924; M. S., ibid., 1926. A 5; 916 Vattier.

HUGH DURHAM, A. M., Assistant Dean, Division of Agriculture (1915, 1927); Assistant Director, Agricultural Experiment Station (1915, 1927); Associate Professor of Agricultural Education (1927).
Graduate, Kansas State Teachers College, Emporia, 1901; A. B., University of Kansas, 1909; A. M., ibid., 1915. Ag 109; 730 Osage.

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

NORA ELIZABETH DALBEY, A. M., Associate Professor of Botany and Plant Pathology (1918, 1927).
A. B., University of Kansas, 1913; A. M., ibid., 1914. H 54; 1424 Fairchild.

ERNEST BAKER KEITH, Ph. D., Associate Professor of Chemistry (1918, 1927).
B. S., K. S. A. C., 1913; Ph. D., University of Chicago, 1924. W 27; 1719 Fairchild.

RUSSELL MARION KERCHNER, M.S., Associate Professor of Electrical Engineering (1922, 1927).
B. S., University of Illinois, 1922; M. S., K. S. A. C., 1927. E 121; 512 N. Denison.

ARTHUR FREMONT BOWEN, Capt. Inf. U. S. A., Associate Professor of Military Science and Tactics (1925, 1927).
Graduate, U. S. Infantry School, 1924. N 26; 1440 Laramie.

WILSON FORREST BROWN, Ph.D., Associate Professor of Chemistry (1928).
B. Ch. E., Ohio State University, 1916; M. S., ibid., 1926; Ph. D., ibid., 1928. D 8; 1116 Bluemont.

CLIFF ERRETT AUBEL, M.S., Associate Professor of Animal Husbandry (1919, 1928).
B. S., Pennsylvania State College, 1915; M. S., K. S. A. C., 1917. Ag 27; 323 N. 15th.

CHARLES HOWARD KITSELMAN, V.M.D., M.S., Associate Professor Pathology (1919, 1928).
V. M. D., University of Pennsylvania, 1918; M. S., K. S. A. C., 1927. V 55A; 1417 Pierre.

LEON REED QUINLAN, M.L.A., Associate Professor of Horticulture, in Charge of Landscape Gardening (1927, 1928).
B. S., Colorado Agricultural College, 1920; M. L. A., Harvard University, 1925. H 34; 813 Vattier.

FRANK JACOBS CHEEK, Jr., C.E., Associate Professor of Structural Design (1923, 1928).
A. B., Center College, 1914; C. E., Rensselaer Polytechnic Institute, 1919. E 304; 1109 Thurston.

ERIC ROSS LYON, M.S., Associate Professor of Physics (1921, 1928).
A. B., Phillips University, 1911; M. S., ibid., 1923. C 61; 1026 Bertrand.

LOUIS PIERCE WASHBURN, M.P.E., Associate Professor of Physical Education for Men (1926, 1928).
B. S., Carleton College, 1907; B. P. E., Springfield Y. M. C. A. College, 1911; M. P. E., ibid., 1926. N 36; 1641 Laramie.

ETHEL MAY ARNOLD, A.M., Associate Professor of Art (1922, 1928).
B. S., K. S. A. C., 1918; Graduate, French-American School of Costume Design, Los Angeles, 1921; A. M., University of Chicago, 1925. A 68; College Hill.

MARGARET AHLBORN, M.S., Associate Professor of Food Economics and Nutrition (1923, 1928); Assistant Dean of Division of Home Economics (1923; July 1, 1929).
A. B., University of Kansas, 1906; M. S., K. S. A. C., 1924. L 28; 350 N. 15th.

FRED LOUIS PARRISH, A.M., Associate Professor of History and Government (1927, 1928).
A. B., Northwestern University, 1917; B. D., Garrett Biblical Institute, 1920; A. M., Northwestern University, 1922. F 64; 332 N. 15th.

HELEN G. SAUM, B.S., Associate Professor of Physical Education for Women (1928).
Diploma, Battle Creek School for Physical Education, 1919; B. S. in Ed., Ohio State University, 1927. N 1; 315 N. 16th.

LOUISE HELEN EVERHARDY, A.M., Associate Professor of Art (1919; Sept. 1, 1929).
Graduate, New York School of Fine and Applied Art, 1916; B. S., Columbia University, 1925; A. M., ibid., 1926. A 56; 1301 Poyntz.

BOYD BERTRAND BRAINARD, B.S., Associate Professor of Mechanical Engineering (1923; Sept. 1, 1929).
B. S. in M. E., University of Colorado, 1922. E 109; 1209 Vattier.

Cornelia Williams Crittenden, A. M., Associate Professor of Modern Languages (1926; Sept. 1, 1929).
A. B., University of Nebraska, 1918; A. M., ibid., 1926. A 71; 1425 Laramie.

Oscar William Alm, Ph. D., Associate Professor of Psychology (Sept. 1, 1929).
A. B., University of Nebraska, 1917; A. M., Columbia University, 1918; Ph. D., University of Minnesota, 1929. G 33; 804 Moro.

Randall Conrad Hill, Ph. D., Associate Professor of Sociology (Sept. 1, 1929).
B. S., K. S. A. C., 1924; M. S., ibid., 1927; Ph. D., University of Missouri, 1929.
A 74; 1611 Laramie.

William Peter Mortensen, M. S. A., Associate Professor of Agricultural Economics (Sept. 1, 1929).
B. S. A., North Dakota Agricultural College, 1921; M. S. A., ibid., 1923.
Ag 351; 426 N. 17th.

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

Thomas Ogden Humphreys, Major C. A. C., U. S. A., Associate Professor of Military Science and Tactics (Nov. 25, 1929).
Graduate, Command and General Staff School, 1923. N 26; 1420 Humboldt.

ASSISTANT PROFESSORS

Daniel Emmett Lynch, Assistant Professor of Forging (1914, 1920); Foreman of Blacksmith Shop (1914).
S 38; 1528 Pierre.

Edward C. Jones, M. E., Assistant Professor of Machine Tool Work (1916, 1920).
B. M. E., Iowa State College, 1905; M. E., ibid., 1922. S 32; R. F. D. 1.

Elizabeth Hamilton Davis, B. L. L., Reference Librarian (1920).
A. B., Illinois Women's College, 1909; B. L. S., University of Illinois, 1914.
Li 51; 1224A Moro.

Lawrence William Hartel, M. S., Assistant Professor of Physics (1920).
A. B., Central Wesleyan College, 1911; B. S., ibid., 1912; B. S. in Ed., University of Missouri, 1915; M. S., K. S. A. C., 1924. C 57; 1824 Humboldt.

William Francis Pickett, M. S., Assistant Professor of Horticulture (1917, 1921).
B. S., K. S. A. C., 1917; M. S., ibid., 1923 H 33; 1622 Osage.

Charles DeForest Davis, M. S., Assistant Professor of Farm Crops (1921).
B. S., K. S. A. C., 1921; M. S., ibid., 1926. Ag 309; 1013 Laramie.

David Leslie Mackintosh, M. S., Assistant Professor of Animal Husbandry (1921, 1922).
B. S., University of Minnesota, 1920; M. S., K. S. A. C., 1926.
Ag 13; 1425 Humboldt.

William Alexander Van Winkle, Ph. D., Assistant Professor of Chemistry (1922, 1923).
B. S., University of Michigan, 1911; M. S., University of Illinois, 1917; Ph. D., ibid., 1920. D 30; 1110 Thurston.

Joseph Lowe Hall, Ph. D., Assistant Professor of Chemistry (1922, 1923).
B. S., University of Illinois, 1919; M. S., ibid., 1921; Ph. D., ibid., 1922.
C 10; 1131; Kearney.

Charles William Corsaut, Assistant Professor of Physical Education (1923).
Graduate, Y. M. C. A. College, 1917. N 36; 1601 Humboldt.

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

Ira Kaull Landon, B. S. in Agr., Assistant Professor of Agronomy (1923).
B. S. in Agr., K. S. A. C., 1921. Ag 201; 3000 Broadway, Parsons, Kan.

Frank Otto Blecha, M. S., Assistant Professor of Agricultural Extension; District Agricultural Agent, Division of College Extension (1919, 1923).
B. S., K. S. A. C., 1918; M. S., ibid., 1926. A 60; 1507 Leavenworth.

Ruth Hartman, Assistant Professor of Music (1924).
Graduate, Department of Public School Music, Iowa State Teachers College, 1912; Two-year Certificate, Northwestern University, 1923. M 58; 1614 Fairchild.

Walter Buswell Balch, M. S., Assistant Professor of Horticulture (1921, 1924); Greenhouse Foreman (1921).
B. S., Cornell University, 1919; M. S., K. S. A. C., 1925. H 33; 1734 Fairchild.

Edgar McCall Amos, B. S., Assistant Professor of Industrial Journalism and Printing (1920, 1924).
B. S., K. S. A. C., 1902. K 31; 1015 Leavenworth.

Minna Ernestine Jewell,[10] Ph. D., Assistant Professor of Zoölogy (1922, 1924-Jan. 30, 1930).
A. B., Colorado College, 1914; A. M., University of Illinois, 1915; Ph. D., bid., 1918.

Clarice Marie Painter, Assistant Professor of Piano (1924).
Diploma in Piano, Hardin College, 1919; Diploma, New England Conservatory of Music, 1922. M 51; 1601 Fairchild.

Frank Pletcher Root, M. S., Assistant Professor of Physical Education and Athletics (1924).
B. S., K. S. A. C., 1914; M. S., ibid., 1924. N 35; 901 Bertrand.

Alfred Thomas Perkins, Ph. D., Assistant Professor of Chemistry (1925).
B. S., Pennsylvania State College, 1920; M. S., Rutgers College, 1922; Ph. D., ibid., 1923. C 4; 1616 Humboldt.

Harry Workman Aiman, A. B., Assistant Professor of Woodwork (1918, 1925).
A. B., Oskaloosa College, 1921. S 29B; 1200 Bertrand.

Hazley Thomas Groody, M. D., Assistant Physician, Department of Student Health (1925).
B. S., Valparaiso University, 1900; M. D., Chicago College of Medicine and Surgery, 1913. A 59; 514 N. Juliette.

Edwin Donald Sayre, M. B., Assistant Professor of Voice (1925).
A. B., DePauw University, 1923; M. B., School of Music, ibid., 1925. M 54; 1230 Vattier.

Gay Tetley Klein, M. S., Assistant Professor of Poultry Husbandry, Division of College Extension (1925, 1926).
B. S., University of Missouri, 1923; M. S., K. S. A. C., 1926. Ag 245; 1711 Leavenworth.

Julian Adair Hodges, M. S., Assistant Professor of Agricultural Economics (1923, 1926).
B. S. in Agr., University of Kentucky, 1917; M. S. in Agr. Ec., ibid., 1923. Ag 348; 1649 Fairchild.

John Wallace Lumb, D. V. M., Assistant Professor of Veterinary Medicine, Division of College Extension (1924, 1926).
D. V. M., K. S. A. C., 1910. V 31; 1631 Leavenworth.

Francis Eugene Charles, M. S., Assistant Professor of Industrial Journalism (1926).
B. S., K. S. A. C., 1924; M. S., ibid., 1929. K 30A; 1211 Thurston.

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10. Resigned.

MARY FIDELIA TAYLOR, A. M., Assistant Professor of Household Economics (1919, 1928).
B. S., K. S. A. C., 1919; A. M., Teachers College, Columbia University, 1926. T 56; Paddleford Apts.

WILLIAM CHARLES JANES, A. M., Assistant Professor of Mathematics (1922, 1926).
B. S., Northwestern University, 1919; A. M., University of Nebraska, 1922. S 55; 1115 Thurston.

THIRZA ADALINE MOSSMAN,[2] A. M., Assistant Professor of Mathematics (1922, 1926).
A. B., University of Nebraska, 1916; A. M., University of Chicago, 1922. A 62A; 1601 Fairchild.

ERNEST KNIGHT CHAPIN, M. S., Assistant Professor Physics (1923, 1926).
A. B., University of Michigan, 1918; M. S., ibid., 1923. C 57; 1860 Anderson.

RANDOLPH FORNEY GINRICH, M. S., Assistant Professor of Engineering Drawing and Descriptive Geometry (1923, 1926).
B. S. in C. E., University of Nebraska, 1923; M. S., K. S. A. C., 1929. S 51; 1731 Humboldt.

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

JOHN FREDERICK HELM, JR., B. D., Assistant Professor of Free-hand Drawing and Painting (1924, 1926).
B. D., Syracuse University, 1924. E 308; 1508 Humboldt.

LEO SPURRIER, A. M., Assistant Professor of Economics (1924, 1926.)
A. B., University of Kansas, 1923; A. M., ibid., 1924. A 74; 1026 Vattier.

HENRY MILES HEBERER, A. B., Assistant Professor of Public Speaking (1925, 1926).
A. B., University of Illinois, 1922. G 55; 1611 Laramie.

LOUIS MARK JORGENSON, B. S., Assistant Professor of Electrical Engineering (1925, 1926).
B. S., K. S. A. C., 1907. E 24; 730 Laramie.

REGINALD HENRY PAINTER, Ph. D., Assistant Professor of Entomology (1926).
A. B., University of Texas, 1922; A. M., ibid., 1924; Ph. D., Ohio State University, 1926. F 81; 501 Sunset.

RUSSELL SEELEY SINK, M. S., Assistant Professor of Shop Practice (1926).
B. S. in M. E., Purdue University, 1918; M. E., ibid., 1925. S 62; 1634 Laramie.

OTTO HERMAN ELMER, Ph. D., Assistant Professor of Botany and Plant Pathology (1927).
B. S., Oregon Agricultural College, 1911; M. S., ibid., 1916; Ph. D., Iowa State College, 1924. H 56; 1612 Osage.

ALBERT JOHN SCHOTH, B. S., Assistant Professor in Junior Extension, Division of College Extension (1921, 1927).
B. S., Oregon Agricultural College, 1918. A 35; 1116 Bluemont.

GEORGIANA SMURTHWAITE, B. S., Assistant Professor of Food and Nutrition, Division of College Extension (1924, 1927).
B. S., Utah Agricultural College. A 36; 514 N. 17th.

JEPTHA JERRY MOXLEY, B. S., Assistant Professor of Animal Husbandry, Division of College Extension (1925, 1927).
B. S. in Agr., K. S. A. C., 1922. A 34; 1116 Bluemont.

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2. Absent on leave, 1929-'30.

STELLA MAUDE HARRISS, M. S., Assistant Professor of Chemistry (1917, 1927).
Graduate, (Peru) Nebraska State Normal School, 1908; B. S., K. S. A. C., 1917; M. S., ibid., 1919. W 26; 311 Denison.

ANNABEL ALEXANDER GARVEY, A. M., Assistant Professor of English (1920, 1927).
A. B., Wellesley College, 1912; A. M., University of Kansas, 1914. A 55A; 343 N. 14th.

HELEN DOROTHY RUSHFELDT,[5] A. M., Assistant Professor of English (1920, 1927).
A. B., University of Minnesota, 1915; A. M., Columbia University, 1920. A 63A; 513 N. 16th.

ESTHER BRUNER, M. S., Assistant Professor of Clothing and Textiles (1920, 1927).
B. S., K. S. A. C., 1920; M. S., ibid., 1921. L 53; 311 Denison.

INEZ GERTRUDE ALSOP, M. S., Assistant Professor of History and Government (1923, 1927).
B. S., K. S. T. C., Emporia, 1916; M. S., University of Kansas, 1920. F 63; 1601 Fairchild.

JAMES PHILLIP CALLAHAN, A. M., Assistant Professor of English (1924, 1927).
B. S., K. S. T. C., Hays, 1919; A. M., University of Kansas, 1926. K 54; 908 Leavenworth.

HARRIET SHIPLEY PARKER, A. M., Assistant Professor of English (1924, 1927).
A. B., University of Kansas, 1909; A. M., Washington University, 1912. A 53; 1605 Leavenworth.

HAROLD HOWE, M. S., Assistant Professor of Agricultural Economics (1925, 1927).
B. S., K. S. A. C., 1922; M. S., University of Maryland, 1923. Ag 345; 1204 Fremont.

ALICE CLAYPOOL JEFFERSON, B. M., Assistant Professor of Piano (1925, 1927).
Graduate, American Conservatory of Music, 1921; B. M., ibid., 1929. MA 8; 906 Fremont.

MYRTLE ANNICE GUNSELMAN, A. M., Assistant Professor of Household Economics (1926, 1927).
B. S., K. S. A. C., 1919; A. M., University of Chicago, 1926. T 52; 830 Bertrand.

CARL ALFRED BRANDLY, D. V. M., Assistant Professor of Bacteriology (1927).
D. V. M., K. S. A. C., 1923. V 53; 1026 Kearney.

MILDRED CAMP, B. L. S., Head of Circulation Department, College Library (1927).
A. B., Eureka College, 1912; B. L. S., University of Illinois, 1924. Li; 500 Humboldt.

MAURICE ROSE, Capt. Inf., U. S. A., Assistant Professor of Military Science and Tactics (1927).
Graduate, U. S. Infantry School, 1926. N 26; Paddleford Apt. 8.

CHARLES HARRINGTON STEWART,[11] Capt. C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (1927).
Graduate, Coast Artillery School, 1923. N 26; 1819 Leavenworth.

ELDEN EMANUEL LEASURE, D. V. M., Assistant Professor of Pathology (1926, 1928).
D. V. M., K. S. A. C., 1923. V 55; 1531 Leavenworth.

EDWARD RAYMOND FRANK, D. V. M., M. S., Assistant Professor of Surgery and Medicine (1926, 1928).
B. S., K. S. A. C., 1918; D. V. M., ibid., 1924; M. S., ibid., 1929. VH 53; 1114 Fremont.

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5. On sabbatical leave, 1929-'30.
11. On sick leave beginning Nov. 11, 1929.

HAROLD MARTIN SCOTT, M. S., Assistant Professor of Poultry Husbandry (1928).
B. S., Oregon Agricultural College, 1924; M. S., K. S. A. C., 1927.
Ag 252; 918 Ratone.

KATHERINE JANE HESS, M. S., Assistant Professor of Clothing and Textiles (1925, 1928).
B. S., K. S. A. C., 1900; M. S., ibid., 1926. L 53; 601 Fremont.

MARTIN ADKISSON ALEXANDER, M. S., Assistant Professor of Animal Husbandry (1927, 1928).
B. S., Washington State College, 1923; M. S., Colorado Agricultural College, 1924.
Ag 19; 1114 Bluemont.

HOMER JAY HENNEY, M. S., Assistant Professor of Agricultural Economics (1927, 1928).
B. S., K. S. A. C., 1921; M. S., ibid., 1928. Ag 353; 1723 Leavenworth.

MARTINE A. SEATON, B. S., Assistant Professor of Poultry Husbandry, Division of College Extension (1928).
B. S. in Agr., University of Missouri, 1924. Ag 350; 1116 Bluemont.

HENRY EVERT WICHERS, M. S., Assistant Professor of Rural Architecture (1924, 1928).
B. S. in Arch., K. S. A. C., 1924; M. S., ibid., 1925. E 224; 1501 Humboldt.

HARRY STEPHEN BUECHE, E. E., Assistant Professor of Electrical Engineering (1925, 1928).
Graduate, U. S. Naval Academy, 1920; B. S. in E. E., Villanova College, 1922; E E., ibid., 1924. E 19; 1119 Kearney.

HARRY MARTIN STEWART, M. B. A., Assistant Professor of Accounting (1926, 1928).
A. B., University of Kansas, 1920; M. B. A., ibid., 1926. A 74; 915 Fremont.

GEORGE WILLARD MAXWELL, A. M., Assistant Professor of Physics (1927, 1928).
A. M., University of Michigan, 1920. C 38; 1004 Thurston.

DOROTHY BRADFORD PETTIS, A. M., Assistant Professor of Modern Languages (1927, 1928).
A. B., University of Nebraska, 1919; A. M., ibid., 1924. A 70; 1631 Leavenworth.

MADALYN AVERY, B. S., Assistant Professor of Physics (1928).
B. S., K. S. A. C., 1924. C 36; 1601 Fairchild.

LYLE WAYNE DOWNEY, B. M., Assistant Professor of Violin (1928); Director of College Band, and Instructor in Band Instruments (1928; Sept. 1, 1929).
A. B., James Millikin University, 1923; B. M., American Conservatory, 1928.
M 30; 1218 Kearney.

MARY ELIZABETH HOFF, B. S. in L. S., Head of Documents Department, College Library (1928).
A. B., Friends University, 1925; B. S. in L. S., University of Illinois, 1928.
Li 52; 312 N. 15th.

JOHN HARVEY MADISON, First Lieut. C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (1928).
Graduate of Basic Course, Coast Artillery School, 1920; Graduate of Battery Officers Course, ibid., 1927. N 29; 614 N. 11th.

RAY EUGENE MARSHALL, First Lieut. Inf., U. S. A., Assistant Professor of Military Science and Tactics (1928).
B. S., K. S. A. C., 1922; Graduate, U. S. Infantry School, 1928.
N 26; 1741 Laramie.

DONALD ALDEN WILBUR,[7] A. M., Assistant Professor of Entomology (1928).
B. S., Oregon State College, 1925; A. M., Ohio State University, 1927.
F 55; 1002 Houston.

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7. Temporary appointment.

EDWARD JOSEPH WIMMER, Ph. D., Assistant Professor of Zoölogy (1928).
A. B., University of Wisconsin, 1925; A. M., ibid., 1927; Ph. D., ibid., 1928.
F 40; 1116 Bluemont.

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

JOHN JAY FEROE, A. M., Assistant Professor of Physics (1928).
A. B., Des Moines University, 1914; A. M., ibid., 1916. C 39; 1108 Bluemont.

JOHN SNELL GLASS, B. S., Assistant Professor of Rural Engineering, Division of College Extension (1928).
B. S., Iowa State College, 1917. E 131; R. R. 8.

JOHN COCHRANE NISBET, B. S., Assistant Professor of Dairy Husbandry, Division of College Extension (1928).
B. S., University of Wisconsin, 1923. Ag 147; 1505 Humboldt.

CLARENCE ROY JACCARD, B. S., Assistant Professor of Agricultural Extension; District Agricultural Agent, Division of College (1922, 1928).
B. S., K. S. A. C., 1914. A 60; 920 Leavenworth.

HENRY LEWIS LOBENSTEIN, B. S., Assistant Professor of Horticulture, Division of College Extension (1928; Mar. 25, 1929).
B. S., K. S. A. C., 1926. A 34; 1116 Bluemont.

WILLIS LLOYD LESHER, B. S., Assistant Professor of Highway Materials, (Apr. 1, 1929).
B. S., K. S. A. C., 1924. E 17; 1529 Humboldt.

ANNA GRACE SEYLER,[7] M. D., Assistant College Physician (Apr. 7, 1929).
A. B., University of Denver, 1924; M. D., University of Colorado, 1927.
A 64; 1301 Poyntz.

CARRELL HENRY WHITNAH, Ph. D., Assistant Professor of Chemistry and Associate Food Analyst (June 1, 1929).
A. B., University of Nebraska, 1913; M. S., University of Chicago, 1917; Ph. D., University of Nebraska, 1925. D 14; 1719 Anderson.

HARRY RAY BRYSON, M. S., Assistant Professor of Entomology (1924; July 1, 1929).
B. S., K. S. A. C., 1917; M. S., ibid., 1924. F 55; 1821 Leavenworth.

ETHEL JUSTIN MARSHALL,[8] M. S., Assistant Professor of Home Economics, Home Study Service, Division of College Extension (1928; July 1, 1929).
B. S., K. S. A. C., 1910; M. S., ibid., 1926. A 2; 630 Moro.

WILLIAM HUGH RIDDELL, M. S., Assistant Professor of Dairy Husbandry (July 1, 1929).
B. S. A., University of British Columbia, 1922; M. S., University of Minnesota, 1924.
Ag 145; 1631 Humboldt.

CHARLES ALDEN LOGAN, B. S., Assistant Professor of Agricultural Engineering (Aug. 1, 1929).
B. S., K. S. A. C., 1925. E 216; 414 N. Juliette.

FRANCIS LEONARD TIMMONS, B. S., Assistant Professor of Coöperative Experiments, Department of Agronomy (1928; Aug. 15, 1929).
B. S., K. S. A. C., 1928. Ag 202; 1709 Anderson.

INA EMMA HOLROYD, A. M., Assistant Professor of Mathematics (1900; Sept. 1, 1929).
B. S., K. S. A. C., 1915; B. S., Kansas State Teachers College, Emporia, 1916; A. M., Columbia University, 1929. A 62A; 1001 Moro.

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7. Temporary appointment.
8. On half time.

ELIZABETH QUINLAN, M. S., Assistant Professor of Clothing and Textiles (1925; Sept. 1, 1929).
B. S., K. S. A. C., 1917; M. S., Columbia University, 1924. L 53; 1212 Fremont.

GEORGE FRANCIS CORCORAN, M. S., Assistant Professor of Electrical Engineering (1927; Sept. 1, 1929).
B. S., South Dakota State College, 1923; M. S., University of Minnesota, 1926. E 127; 1116 Bluemont.

HAROLD NATHAN BARHAM, Ph. D., Assistant Professor of Chemistry (Sept. 1, 1929).
A. B., Bethany College, 1921; M. S., Ohio State University, 1922; Ph. D., University of Kansas, 1928. C 56; 900 Bluemont.

GENEVIEVE JACKSON BOUGHNER, A. B., Assistant Professor of Industrial Journalism (Sept. 1, 1929).
A. B., University of Minnesota, 1916. K 33A; Wareham Hotel.

MENDEL ELMER LASH, Ph. D., Assistant Professor of Chemistry (Sept. 1, 1929).
A. B., Ohio State University, 1920; M. S., ibid., 1922; Ph. D., ibid., 1928. C 10; 1116 Bluemont.

MAX RULE MARTIN, Assistant Professor of Violin, Viola, and Reed Instruments (Sept. 1, 1929).
Graduate in Violin, William A. Bunzen; Graduate in Orchestra, Sander Harmati; Graduate in Musical Composition, R. Cuscaden. MA 7; 1700 Laramie.

BERNICE LILLIAN PATTERSON, M. S., Assistant Professor of Physical Education for Women (Sept. 1, 1929).
B. S., University of Washington, 1922; M. S. in Phys. Ed., ibid., 1929. N 1; 1613 Fairchild.

HARRY EDWARD VAN TUYL, D. V. M., Capt. V. C., U. S. A., Assistant Professor of Military Science and Tactics (Sept. 1, 1929).
D. V. M., K. S. A. C., 1917; Honor Graduate, U. S. A. Veterinary School, 1923. V 27; 807 Osage.

ELLSWORTH YOUNG, B. S., Capt. C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (Sept. 1, 1929).
B. S., Iowa State College, 1916. N 26; 1100 Kearney.

EDWARD HENRY LEKER, M. S., Assistant Professor of Plant Pathology, Division of College Extension (Oct. 1, 1929).
B. S., University of Missouri, 1917; M. S., K. S. A. C., 1927. H 53; 601 N. 14th.

HERMAN FARLEY, D. V. M., Assistant Professor of Pathology (Oct. 1, 1929).
D. V. M., K. S. A. C., 1926. V ; 1020 Kearney.

HALVOR H. MYRAH, First Lieut., C. A. C., U. S. A., Assistant Professor of Military Science and Tactics (Jan. 24, 1930).
Graduate, U. S. Military Academy, 1918; Graduate, Coast Artillery Battery Officers Course, 1927. N 26; Wareham Hotel.

MURVILLE JENNINGS HARBAUGH, A. B., Assistant Professor of Zoölogy (Sept. 1, 1929; Feb. 1, 1930); Instructor in Zoölogy (Sept. 1, 1929-Jan. 31, 1930).
A. B., University of Montana, 1926. F 78; 1116 Bluemont.

ASSOCIATES

BENJAMIN LEVI SMITS, Ph. D., Associate Food Analyst (1926, 1928).
B. S., Michigan State College, 1924; M. S., ibid., 1925; Ph. D., ibid., 1926. W 29; 1719 Fairchild.

INSTRUCTORS

EDWARD GRANT, Instructor in Foundry (1913); Foreman of Foundry (1913). S 42; 1814 Anderson.

KATHERINE MAXWELL BOWER, A. M., Instructor in English (1918, 1919).
B. S., K. S. A. C., 1915; A. M., University of Kansas, 1924. A 54; 817 Poyntz.

W. Pearl Martin, R. N., Instructor in Home Health and Sanitation, Division of College Extension (1919).
Graduate, Christ's Hospital, Topeka. A 36; 930 Osage.

Marion Coffee, First Sergt. C. A. C., U. S. A., Instructor in Military Science and Tactics (1920).
N 26; 911 Vattier.

Nellie Aberle, M. S., Instructor in English (1921).
B. S., K. S. A. C., 1912; M. S., ibid., 1914. A 63A; 1442 Fairchild.

Ellen Margaret Batchelor, B. S., Instructor and Assistant State Home Demonstration Leader, Division of College Extension (1917, 1921).
B. S., K. S. A. C., 1911. A 36; 1212 Fremont.

Jessie Gulick, Acting Head Cataloguer in Library (1907, 1923).
Li 52; 421 N. 16th.

William Wesley Crawford, M. Di., Instructor in Civil Engineering (1923).
A. B., University of Iowa, 1912; B. S. in C. E., Iowa State College, 1917; M. Di., Iowa State Teachers College, 1908. E 220; 715 Poyntz.

Conie Caroline Foote, B. S., Instructor and Specialist in Foods and Nutrition, Division of College Extension (1924).
B. S., K. S. A. C., 1921. A 36; 513 N. 16th.

Maud Elizabeth Deeley, B. S., Instructor in Clothing and Textiles, Division of College Extension (1923, 1925).
B. S., K. S. A. C., 1923. A 36A; 1000 Kearney.

Francis Dale Pugh, Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1925).
N 26; R. R. No. 8.

Hazel Thompson, Supervisor of Vocational Home Making, Department of Education (1925).

Hubert Whatley Marlow, M. S., Instructor in Chemistry (1925).
B. S., North Texas Teachers College, 1925; M. S., University of Chicago, 1928.
W 31; 113 N. 9th.

George Montgomery,[7] M. S., Instructor in Agricultural Economics, Department of Institutes and Extension Schools, Division of College Extension (1925, 1928).
B. S., K. S. A. C., 1925; M. S., ibid., 1928. Ag 347; 1116 Bluemont.

Arthur Clinton Andrews, M. S., Instructor in Chemistry (1926).
B. S., University of Wisconsin, 1924; M. S., K. S. A. C., 1929. D 30; 428 Humboldt.

Linus Burr Smith, B. S., Instructor in Architecture (1926).
B. S., K. S. A. C., 1926. E 308; 1811 Humboldt.

Edna Minerva Bender, B. S., Assistant State Club Leader, Division of College Extension (1926).
B. S., University of Minnesota, 1923. A 35; 1649 Fairchild.

May Miles,[7] B. S., Instructor and Assistant State Home Demonstration Leader, Division of College Extension (1926, 1928).
B. S., University of Illinois, 1926. A 36; 1649 Fairchild.

Ruth Emma Tucker, M. S., Instructor in Food Economics and Nutrition (1925, 1926).
A. B., University of Illinois, 1923; M. S., ibid., 1925. L 69; 1109 Kearney.

Roy Clinton Langford, M. S., Instructor in Psychology (1925, 1926).
B. S., K. S. A. C., 1925; M. S., ibid., 1926. G 34; 426 N. 17th.

7. Temporary appointment.

HAROLD JEROME BROOKS, M. S., Instructor in Dairy Husbandry (1926).
B. S., University of Missouri, 1924; M. S., South Dakota State College, 1926.
Ag 145; 1130 Bluemont.

IRENE ELDRIDGE, A. M., Instructor in Mathematics (1926).
B. S., Beloit College, 1920; A. M., ibid., 1924. A 62A; 1613 Fairchild.

MAYNARD LEE MCDOWELL, A. M., Instructor in Chemistry (1926).
A. B., Central College, 1924; A. M., University of Missouri, 1926.
W 30; 520 Thurston.

THOMAS ISAAC PORTER, A. B., Instructor in Mathematics (1926).
A. B., University of Missouri, 1925; B. S. in Ed., ibid., 1915. F 1; 615 Humboldt.

MAYBELLE PRITCHARD SMITH, M. S., Instructor in General Chemistry (1926).
A. B., University of Illinois, 1922; M. S., University of Wisconsin, 1926.
W 26; 426 N. 17th.

HOWARD DALE TYNER, M. S., Instructor in General Chemistry (1926).
B. S., Illinois Wesleyan University, 1925; M. S., K. S. A. C., 1929.
W 31; 1014 Vattier.

ALDEN HEBBARD LOOMIS, B. S., Instructor in Manual Training (1926).
B. S., Oklahoma A. and M. College, 1916, 1929. S 28; 900 Humboldt.

JOHN CARL OLSEN, B. S., Instructor in Machine Drawing and Design (1927).
B. S. in M. E., Colorado Agricultural College, 1925. E 209; 1804 El Paso.

MATTHEW JOSEPH CONNOLLY, Sergt. Inf., U. S. A., Instructor in Military Science and Tactics (1927).
N 26; 517 Leavenworth.

ROYCE OWEN PENCE, B. S., Instructor in Milling Industry (1927).
B. S. in F. M. E., K. S. A. C., 1924. Ag 120; 917 Kearney.

LILLIAN JULIETTE SWENSON, A. B., Assistant Reference Librarian (1927).
A. B., Colorado College, 1924; B. S., Simmons College, 1927. Li 51; 1203A Moro.

MARIA MORRIS, M. S., Instructor in Art (1925, 1927).
B. S., K. S. A. C., 1911; Graduate, New York School of Fine and Applied Art, 1924; M. S., K. S. A. C., 1927. A 67; 816 Juliette.

ELSA OTTILIA HORN, M. S., Instructor in Botany and Plant Pathology (1926, 1927).
A. B., University of Minnesota, 1919; M. S., Oregon Agricultural College, 1926.
H 76B; 1531 Leavenworth.

GEORGE FRANCIS BRANIGAN, B. S., Instructor in Engineering Drawing and Descriptive Geometry (1927).
B. S., University of Nebraska, 1927. E 209; 804 Moro.

WILBUR JOHN CAULFIELD, M. S., Instructor in Dairy Husbandry (1927).
B. S., University of Minnesota, 1924; M. S., Pennsylvania State College, 1926.
Ag 147; 1131 Bluemont.

HORATIO MINTER FARRAR, A. B., Instructor in Voice (1927).
A. B., Hastings College, 1927; Voice Diploma, ibid., 1927. MA 12; 1116 Bluemont.

KATHERINE GEYER, B. S., Instructor in Physical Education for Women (1927).
Diploma, Sargent School of Boston University, 1925; B. S., Ohio State University, 1927.
N 1; 514 N. 17th.

HILDA ROSE GROSSMAN, B. M., Instructor in Voice (1927).
B. M., Chicago Musical College, 1925; Illinois State Certificate in Public School Music, ibid., 1927. MA 14; 1109 Kearney.

VIDA AGNES HARRIS, A. M., Instructor in Art (1927).
B. S., K. S. A. C., 1914; A. M., University of Chicago, 1927. A 56; West Anderson.

LORETTA MCELMURRY, B.S., Instructor in Clothing and Textiles, Division of College Extension (1927).
B. S., South Dakota State College, 1901. A 36; 514 N. 17th.

WILLIAM BOWEN SARLES,[2] M.S., Instructor in Bacteriology (1927).
B. S., University of Wisconsin, 1926; M. S., ibid., 1927. V 52; 1127 Kearney.

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

CHARLES WILLIAM STRATTON,[2] B.M., Instructor in Piano (1927).
B. M., K. S. A. C., 1926. MA 4; 511 N. Sunset.

GLADYS ELLEN VAIL, M.S., Instructor in Food Economics and Nutrition (1927).
A. B., Southwestern College, 1924; M. S., University of Chicago, 1927. L 69; 1203 Moro.

PERCY LEROY DE PUY, M.S., Instructor in Animal Husbandry, Home Study Service, Division of College Extension (1928).
B. S., K. S. A. C., 1918; M. S., ibid., 1923. A 5; 1725 Leavenworth.

RUSSELL IRA THACKREY, B.S., Instructor in Industrial Journalism (1928).
B. S., K. S. A. C., 1927. K 30A; 1519 Fairchild.

MARGUERITE VELMA HARPER, B.S., Instructor in Household Management, Division of College Extension (1928).
B. S., K. S. A. C., 1928. A 36; 1408 Laramie.

MARGARET ALICE NEWCOMB, M.S., Instructor in Botany and Plant Pathology (1925, 1928).
B. S., K. S. A. C., 1925; M. S., ibid., 1927. H 76; 1733 Laramie.

GRATIA MARIE BURNS, A.M., Instructor in Modern Languages (1928).
B. S., University of Minnesota, 1926; A. M., ibid., 1928. A 70; 1425 Laramie.

MARTHA REBECCA CULLIPHER, B.S. in L.S., Loan Assistant in Library (1928).
A. B., Indiana University, 1926; B. S. in L. S., University of Illinois, 1928. Li 52; 312 N. 15th.

ARNOLD ROOSEVELT JONES, B.S., Instructor in Accounting (1928).
B. S., University of Kansas, 1927. A 74; 1203 Moro.

MARION HERFORT PELTON, B.S., Instructor in Piano (1928).
B. M., University of Wisconsin, 1927. MA 5; 1425 Laramie.

VELMA MAY TALMADGE, B.S., Instructor in Voice (1928).
B. M., Chicago Musical College, 1923. MA 7; 1704 Fairview.

GLENN LYONAL RUCKER,[7] B.S., Instructor in Mechanical Engineering, Home Study Service, Division of College Extension (1928).
B. S., K. S. A. C., 1924. A 2; 1023 Laramie.

ALPHA CORINNE LATZKE, M.S., Assistant State Home Demonstration Leader, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1919; M. S., ibid., 1928. A 36; 344 N. 15th.

LAWRENCE ORVILLE MOTT, D.V.M., Instructor in Surgery and Medicine (July 1, 1929).
D. V. M., K. S. A. C., 1929. VH 53; VH.

CHARLES GEORGE DOBROVOLNY, A.B., Technician and Instructor in Zoölogy (Aug. 1, 1929).
A. B., University of Montana, 1928. F 31; 1116 Bluemont.

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2. Absent on leave, 1929-'30.
7. Temporary appointment.

Harold Edwin Myers, M. S., Instructor in Soils (Aug. 12, 1929).
B. S., K. S. A. C., 1928; M. S., University of Illinois, 1929. Ag 213; 1116 Bluemont.

Leone Bower Kell, M. S., Instructor in Household Economics (1927; Sept. 1, 1929).
B. S., K. S. A. C., 1923; M. S., ibid., 1928. L 35; 727 Leavenworth.

Vernon Daniel Foltz,[7] M. S., Instructor in Bacteriology (1927; Sept. 1, 1929).
B. S., K. S. A. C., 1927; M. S., ibid., 1929. V 52; 1531 Leavenworth.

Leon Battig,[7] A. M., Instructor in Mathematics (Sept. 1, 1929).
A. B., University of Wisconsin, 1917; A. M., ibid., 1929. E 223; 624 Houston.

Mary Myers Elliott, A. B., Instructor in Public Speaking (Sept. 1, 1929).
A. B., University of Kansas, 1926. G 55; 426 Leavenworth.

Paul Lawrence Evans,[7] A. B., Instructor in Mathematics (Sept. 1, 1929).
A. B., Baker University, 1916. E 223; 1605 Anderson.

Roscoe Orvale Faunce,[7] A. M., Instructor in Public Speaking (Sept. 1, 1929).
A. B., University of Iowa, 1927; A. M., ibid., 1928. G 55; 1611 Laramie.

Edith Agnes Goerwitz, M. B., Instructor in Piano (Sept. 1, 1929).
M. B., Northwestern University, 1929. MA 4; 211 N. 15th.

Arthur Leonard Goodrich, Jr., M. S., Instructor in Zoölogy (Sept. 1, 1929).
B. S., College of Idaho, 1928; M. S., University of Idaho, 1929. F 78; 1212 Fremont.

Ruth Josephine Hlavaty,[7] M. B., Instructor in Piano (Sept. 1, 1929).
M. B., Northwestern University, 1929. M ; 211 N. 15th.

Richard Roslyn Jesson, M. B., Instructor in Piano (Sept. 1, 1929).
M. B., Oberlin College, 1929. MA 13; 1324 Laramie.

Lester Henry Koenitzer, M. S., Instructor in Applied Mechanics (Sept. 1, 1929).
B. S., Iowa State College, 1926; M. S., ibid., 1929. E 17; 1721 Laramie.

Darrel Jay Mase,[7] B. S., Instructor in Public Speaking (Sept. 1, 1929).
B. S., Kansas State Teachers College, Emporia, 1928. G 55; 1624 Osage.

Howard Oren Matson,[7] M. S., Instructor in Architecture, Division of College Extension (Sept. 1, 1929).
A. B., Cotner College, 1924; B. S., University of Nebraska, 1927; M. S., University of California, 1929. E 131; 518 Leavenworth.

Rachel Jean Morrow, A. B., Instructor in Physical Education for Women (Sept. 1, 1929).
A. B., Ohio Wesleyan University, 1928. N 3; 1631 Leavenworth.

Reed Franklin Morse, B. S., Instructor in Civil Engineering (Sept. 1, 1929).
A. B., Cornell College, 1921; B. S., Iowa State College, 1923. E 220; 1021 Kearney.

Gerald Pickett, B. S., Instructor in Applied Mechanics (Sept. 1, 1929).
B. S., Oklahoma A. and M. College, 1927. E 113; 821 Fremont.

Carl Clark Rice,[7] B. S. Instructor in Electrical Engineering (Sept. 1, 1929).
B. S., K. S. A. C., 1929. E 30; 1218 Bertrand.

Helen Carmaleta Sharp, M. D., Instructor in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., University of Kansas, 1927; M. D., ibid., 1928. L 60; 1520 Humboldt.

Victoria Gower Smith, Ph. B., Instructor in Art (Sept. 1, 1929).
Ph. B., University of Chicago, 1927. A 78; 1212 Fremont.

7. Temporary appointment.

Charles Ray Thompson,[7] A. M., Instructor in Economics and Sociology (Sept. 1, 1929).
A. B., University of Kansas, 1927; A. M., ibid., 1928. A 74; 811 Laramie.

Lowell Ray Tucker,[7] M. S., Instructor in Horticulture (Sept. 1, 1929).
B. S., University of Illinois, 1926; M. S., University of New Hampshire, 1928. H 32; 1220 Vattier.

Joseph Thomas Ware, Jr., B. S., Instructor in Architecture (Sept. 1, 1929).
B. S., Georgia School of Technology, 1929. E 308; 1123 Thurston.

Nathan Reed, M. S., Instructor in Chemistry (Sept. 6, 1929).
B. S., Oklahoma A. and M. College, 1922; M. S., University of Oklahoma, 1924. D 30; 325 N. 17th.

Earl Henry Hahn, B. S., Instructor in Machine Drawing and Design (Sept. 21, 1929).
B. S., Iowa State College, 1923. E 209; 825 Bluemont.

Conrad Stephen Moll, B. P. E., Instructor in Physical Education for Men (Sept. 24, 1929).
B. P. E., Y. M. C. A. College, 1925. N 36; 1424 Houston.

Arthur Oran Flinner, B. S., Instructor in Mechanical Engineering (Dec. 1, 1929).
B. S. in M. E., K. S. A. C., 1929. E 109; 1130 Vattier.

Fred Foster Greeley, Instructor in Machine Shop and Welding (1923; Jan. 1, 1930); Assistant in Shop Practice (1923; Dec. 31, 1929).
S 30; 931 Fremont.

Sterling McCollom, Instructor in Shop Practice (Jan. 1, 1930).
S 32; 909 Leavenworth.

Erwin John Benne, B. S., Instructor in Chemistry (Jan. 18, 1930).
B. S., K. S. A. C., 1928. W 30; 917 Osage.

Naomi Zimmerman Crawford,[7] M. S., Instructor in Zoölogy (Feb. 1, 1930-May 31, 1930).
B. S., University of Nebraska, 1919; M. S., ibid., 1922.

ASSISTANTS

Alanson Lola Hallsted,[4] B. S., Assistant in Dry Farming, Fort Hays Branch Agricultural Experiment Station (1910).
B. S., K. S. A. C., 1903. Hays, Kan.

Nellie May, Postmistress (1911).
A 44; 717 Laramie.

Hattie Helen White, Secretary, Business Office (1912).
A 27; 717 Laramie.

Mabel Gertrude Baxter, Assistant in Charge of Continuations, College Library (1916, 1918).
Li 26; 1624 Fairchild.

Elisabeth Perry Harling, Seed Analyst, Department of Agronomy (1912, 1917).
Ag 77; 628 Fremont.

Mary Kimball, B. S., First Assistant to the Registrar (1918).
B. S., K. S. A. C., 1907. A 29; 1311 Laramie.

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

Myrtle Evelyn Zener, Secretary to the Vice President (1918).
A 47; 1104 Vattier.

Chester Willis Oakes, Miller, Department of Milling Industry (1918).
Ag 198A; 1326 Houston.

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

Bruce Bunyan Smith, Assistant in Agricultural Engineering (1918).
Bks. 2; 830 Laramie.

Alice Maude Melton, B. S., Assistant to the Dean, Division of General Science (1900, 1919).
B. S., K. S. A. C., 1898. A 50; 831 Leavenworth.

Edward L. Claeren, Major, D. E. O., Retired, Military Property Custodian, Department of Military Science and Tactics (1910, 1919).
N 29; 900 Pierre.

Grace Ellen Umberger, B. S., R. N., Head Nurse, Department of Student Health (1919).
B. S., K. S. A. C., 1905; R. N., Illinois Training School for Nurses, 1909.
A 65; 1412 Leavenworth.

Arthur Frithiof Swanson, B. S., Assistant in Cereal Investigations, Fort Hays Branch Agricultural Experiment Station (1919).
B. S., K. S. A. C., 1919. Hays, Kan.

Delfa Mary Hazeltine, Assistant to the Dean, Division of College Extension (1920).
Graduate, Lawrence Business College. A 33; 900 Bluemont.

Clarence Osborn Price, Assistant to the President (1920).
A 30; 501 Bluemont.

Joseph Farrington Merrill, B. S., Assistant Chemist, Agricultural Experiment Station (1921).
B. S., University of Maine, 1907. C 3; 318 N. 16th.

Floyd Joseph Hanna, Assistant in Department of Illustrations (1922); Acting Head of Department of Illustrations (July 1, 1929).
I; 1612 Leavenworth.

Clara Magdalene Siem, Financial Secretary, Division of College Extension (1920, 1924).
A 33; 1425 Humboldt.

Florence Lillian Dial,[10] B. S., Class Reserves Assistant in Library (1923-Nov. 30, 1929).
B. S., K. S. A. C., 1919.

William Henry Irwin, Assistant in Shop Practice (1923).
S 29; R. R. 2.

Rebecca Salome Meyer, R. N., Nurse in College Hospital (1923).
Graduate, Mary Thompson Hospital, 1900. College Hospital.

Hazel Elizabeth Taylor Pfuetze, Secretary, Department of Education (1925).
G 28; 1101 Bertrand.

Jeanne Macbride, Housekeeper in College Hospital, Department of Student Health(1925).
College Hospital.

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10. Resigned.

Frank Lewis Myers, B. M., Assistant to the Director of Physical Education (1926).
B. M., K. S. A. C., 1924. N 35; 1527 Humboldt.

Jack Harris Linscott, Assistant in Heat and Power (1927).
E 27; 1030 Houston.

Ernest William Johnson, B. S., Forest Nurseryman, Fort Hays Branch Agricultural Experiment Station (1927).
B. S., Colorado Agricultural College, 1926. Hays, Kan.

Lisle Leslie Longsdorf, M. S., Extension Editor, Division of College Extension (1927).
B. S., University of Wisconsin, 1925; M. S., ibid., 1926. A 3; 816 Leavenworth.

Christopher Henry Ficke,[7] M. S., Assistant Pathologist, Department of Botany and Plant Pathology (1925, 1927-Dec. 31, 1929).
B. S., Iowa State College, 1925; M. S., K. S. A. C., 1927. H 53; 930 Ratone.

Emery Jack Coulson, B. S., Assistant Chemist, Agricultural Experiment Station (1927).
B. S., K. S. A. C., 1927. C 4; 1006 Bertrand.

Glenn Everett Webster, Radio Operator, Division of College Extension (1928).
N 83; 359 N. 15th.

Jane Wilson Barnes, B. S., Secretary to the Dean, Division of Home Economics (1928).
B. S., K. S. A. C., 1912. L 29; 1208 Bluemont.

Rose Louise Child, Assistant to the Dean of Women (1928).
A 40A; 1725 Fairchild.

Clarence Edward Crews, B. S., Assistant in Agronomy (1928); Foreman of Agronomy Farm (1928).
B. S., K. S. A. C., 1928. Agronomy Farm; 1830 Poyntz.

Charlotte Crouch Lamprecht, Assistant to the Dean, Division of Home Economics (1928).
Diploma, Kansas State Teachers College, Emporia, 1903. L 66; 815 Osage.

Karl William Niemann, B. S., Assistant in Veterinary Medicine (1928).
B. S., K. S. A. C., 1926. V 2; 1030 Fremont.

Libbie Ellen Reeves, Assistant to the Superintendent, Fort Hays Branch Agricultural Experiment Station (1928).
Hays, Kan.

Iva Larson, M. S., Assistant in Genetics, Department of Zoölogy (1927, 1928).
A. B., University of South Dakota, 1927; M. S., K. S. A. C., 1929.
Insectary; 918 N. Manhattan.

Laura Belle Baxter, B. S., Assistant in Home Economics Education (1927, 1928).
B. S., K. S. A. C., 1915. G 29; 610 Vattier.

Effie LoVisa Hastings, Second Assistant to the Registrar (1927, 1928).
A 29; 122 S. Manhattan.

Ward Hillman Haylett, A. B., Assistant in Physical Education (1928).
A. B., Doane College, 1926. N 34; 1642 Laramie.

Myra Thelma Potter, B. S., Technician, Department of Food Economics and Nutrition (1928).
B. S., K. S. A. C., 1928. L 18; 1821 Poyntz.

7. Temporary appointment.

Myra Edna Scott,[7] A. M., Assistant in English (1928).
B. S., K. S. A. C., 1921; A. M., Stanford University, 1928. A 63A; 924 Moro.

Mary Lois Williamson,[7] B. S., Critic Teacher, Home Economics Education (1928).
M. H. S.; 1514 Humboldt.

Belle Clarke Howard, R. N., Nurse, Department of Student Health (1928).
R. N., Charlotte Swift Hospital, 1919. College Hospital.

Charles A. Pyle,[7] D. V. M., Animal Pathologist, Department of Veterinary Medicine (1928).
D. V. M., K. S. A. C., 1907. Sedan, Kan.

Harriet May Clark,[7] A. M., Assistant in English (Feb. 1, 1929).
A. B., University of Nebraska, 1923; A. M., ibid., 1928. A 54; 1636 Fairchild.

Ralph Oscar Lewis, B. S., Assistant in Soil Survey, Department of Agronomy (May 13, 1929).
B. S., K. S. A. C., 1929. Ag 216; 1409 Fairchild.

George Hemrod Railsback, B. S., Laboratory Assistant in Applied Mechanics (July 1, 1929).
B. S., K. S. A. C., 1914. E 112; 615 Kearney.

Lawrence Fener Hall, B. S., Assistant in Education (Sept. 1, 1929).
B. S., K. S. A. C., 1923. G 29; 810 Vattier.

William McKinley Stensaas,[7] A. B., Assistant in English (Sept. 1, 1929).
A. B., Bethany College, 1922. K 54; 1728 Laramie.

Florence Harris,[10] M. S., Assistant in Institutional Economics (Sept. 1, 1929-Jan. 20, 1930).
B. S., K. S. A. C., 1925; M. S., ibid., 1929. T 29; 2000 Anderson.

Gladys Matilda Boehm,[7] M. S., Assistant in Food Economics and Nutrition (Sept. 1, 1929).
A. B., Drury College, 1925; M. S., K. S. A. C., 1929. L 47; 1633 Anderson.

Edith Clara Campbell,[7] A. M., Assistant in English (Sept. 1, 1929).
B. S., Kansas State Teachers College, Emporia, 1920; A. M., University of California, 1926. A 63A; 114 S. 8th.

Aldene Scantlin Langford,[7] M. S., Assistant in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., K. S. A. C., 1927; M. S., ibid., 1928. L 40A; 426 N. 17th.

Ruth Kell Noble,[7] M. S., Assistant in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., K. S. A. C., 1925; M. S., ibid., 1927. L 34; 1425 Laramie.

Bella Catherine Robertson, B. S., Assistant in Education (Sept. 1, 1929).
B. S., K. S. A. C., 1926. Jr. H. S.; 431 Humboldt.

Esther Margaret Thomas, B. S., Nurse, Department of Student Health (Sept 1, 1929).
B. S., K. S. A. C., 1927; Graduate, Charlotte Swift Memorial Hospital, 1925. College Hospital.

Lee Rudell St. John, B. S., Laboratory Assistant in Applied Mechanics (Nov. 1, 1929).
B. S. in C. E., K. S. A. C., 1929. E 18; 611 N. 11th.

Anna Neal Muller, B. S., Class Reserves Assistant in Library (Dec. 1, 1929).
B. S., K. S. A. C., 1921. Li 1; 1115 Bluemont.

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7. Temporary appointment.
10. Resigned.

Leona Thurow Hill, M. S., Assistant in Education (Jan. 16, 1930).
A. B., University of Southern California, Feb., 1923; B. S., K. S. A. C., June, 1923; M. S. ibid., 1926. Manhattan High School; 1611 Laramie.

Emily Bennett Kerchner,[7] M. S., Assistant in Food Economics and Nutrition (Feb. 1, 1930-May 31, 1930).
A. B., University of Illinois, 1921; M. S., K. S. A. C., 1924.

Iva Belle Welch,[7] A. B., Assistant in Institutional Economics (Feb. 1, 1930).
A. B., Baker University, 1921. T 29; 1704 Fairview.

SUPERINTENDENTS

Louis C. Aicher, B. S., Superintendent, Fort Hays Branch Agricultural Experiment Station (1921).
B. S. in Agr., K. S. A. C., 1910. Hays, Kan.

Jacob Lund, M. S., Superintendent of Heat and Power, Emeritus (1883, 1925); Custodian of Buildings and Grounds, Emeritus (1883, 1925).
B. S., K. S. A. C., 1883; M. S., ibid., 1886. E 26B; 1414 Fairchild.

Charles Wesley Hobbs, D. V. S., Superintendent of Vaccine Laboratories 1913, 1919).
D. V. S., Western Veterinary College, 1901. V 31; 1328 Fremont.

George Richard Pauling, Superintendent of Maintenance, in Charge of Building and Repairs, Custodian, and Heat and Power Departments (1916, 1925).
PP 28; 1015 Humboldt.

Fay Arthur Wagner, B. S., Superintendent, Garden City Branch Agricultural Experiment Station (1919).
B. S. in Agr., New Mexico Agricultural College, 1916. Garden City, Kan.

Thomas Bruce Stinson, B. S., Superintendent, Tribune Branch Agricultural Experiment Station (1924).
B. S., K. S. A. C., 1924. Tribune, Kan.

Allen Pearson Loomis, Superintendent of Poultry Farm (1926).
Poultry Farm, Route 8.

Embert Harvey Coles, B. S., Superintendent, Colby Branch Agricultural Experiment Station (1922; Apr. 15, 1929).
B. S., K. S. A. C., 1922. Colby, Kan.

AGRICULTURAL AGENTS[4]

Herbert Lynne Hildwein, B. S., Sedgwick County Agricultural Agent, Division of College Extension (1917, 1926).
B. S., K. S. A. C., 1914. Wichita, Kan.

Joe Myron Goodwin, Atchison County Agricultural Agent, Division of College Extension (1919, 1923).
Effingham, Kan.

Charles Elmer Cassel, B. S., Butler County Agricultural Agent, Division of College Extension (1912, 1923).
B. S., K. S. A. C., 1910. Lyndon, Kan.

Albert Barney Kimball,[10] B. S., Smith County Agricultural Agent, Division of College Extension (1918, 1925-Nov. 16, 1929).
B. S., K. S. A. C., 1889. Smith Center, Kan.

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4. In coöperation with the U. S. Department of Agriculture.
7. Temporary appointment.
10. Resigned.

Robert Elliott Curtis, B. S., Ottawa County Agricultural Agent, Division of College Extension (1919, 1924).
B. S., K. S. A. C., 1916. Minneapolis, Kan.

Herman Frederick Tagge, B. S., Jackson County Agricultural Agent, Division of College Extension (1920, 1923).
B. S., K. S. A. C., 1914. Holton, Kan.

John Albert Hendriks, B. S. A., Anderson County Agricultural Agent, Division of College Extension (1920, 1924).
B. S., Iowa State College, 1913. Garnett, Kan.

Ernest Lee McIntosh, B. S., Osage County Agricultural Agent, Division of College Extension (1920, 1923).
B. S., K. S. A. C., 1920. Lyndon, Kan.

Harry Charles Baird, B. S., Lane County Agricultural Agent, Division of College Extension (1920; May 1, 1929).
B. S., K. S. A. C., 1914. Dighton, Kan.

Arthur I. Gilkison, Douglas County Agricultural Agent, Division of College Extension (1920, 1926).
Lawrence, Kan.

Carl Lewis Howard, B. S., Lyon County Agricultural Agent, Division of College Extension (1920, 1926).
B. S., K. S. A. C., 1920. Emporia, Kan.

Roy Elmer Gwin, B. S., Allen County Agricultural Agent, Division of College Extension (1921, 1924).
B. S., K. S. A. C., 1914. Iola, Kan.

John Vern Hepler, B. S., Washington County Agricultural Agent, Division of College Extension (1921).
B. S., K. S. A. C., 1916. Washington, Kan.

Paul Bernard Gwin, B. S., Crawford County Agricultural Agent, Division of College Extension (1921; Feb. 1, 1930).
B. S., K. S. A. C., 1916. Girard, Kan.

William Louis Tayloe,[10] B. S. A., Crawford County Agricultural Agent, Division of College Extension (1921; Dec. 31, 1929).
B. S. A., University of Missouri, 1917. Girard, Kan.

Charles Harold Stinson, B. S., Pawnee County Agricultural Agent, Division of College Extension (1921, 1928).
B. S., K. S. A. C., 1921. Larned, Kan.

Robert E. Williams,[10] B. S., Barton County Agricultural Agent, Division of College Extension (1922-Nov. 16, 1929).
B. S., K. S. A. C., 1907. Great Bend, Kan.

William Herbert Robinson, B. S., Shawnee County Agricultural Agent, Division of College Extension (1923, 1926).
B. S., K. S. A. C., 1916. Topeka, Kan.

Clarence Eugene Agnew, B. S., Wilson County Agricultural Agent, Division of College Extension (1923, 1924).
B. S., K. S. A. C., 1923. Fredonia, Kan.

Louis Meyers Knight, B. S., Sumner County Agricultural Agent, Division of College Extension (1923, 1926).
B. S., K. S. A. C., 1923. Wellington, Kan.

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10. Resigned.

Charles Enoch Lyness, B. S., Doniphan County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. A. C., 1912. Troy, Kan.

Ray Leighton Graves, B. S., Clay County Agricultural Agent, Division of College Extension (1923, 1928).
B. S., K. S. A. C., 1912. Clay Center, Kan.

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

Samuel David Capper, B. S., Riley County Agricultural Agent, Division of College Extension (1923, 1925).
B. S., K. S. A. C., 1921. Manhattan, Kan.

Mott Luther Robinson, B. S., McPherson County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. A. C., 1923. McPherson, Kan.

Junius Warren Farmer, B. S., Greenwood County Agricultural Agent, Division of College Extension (1923).
B. S., K. S. A. C., 1923. Eureka, Kan.

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

Ralph Reuben McFadden, B. S., Harvey County Agricultural Agent, Division of College Extension (1922, 1928).
B. S., K. S. A. C., 1921. Newton, Kan.

Dwight Ellsworth Hull, B. S., Saline County Agricultural Agent, Division of College Extension (1924, 1927).
B. S., K. S. A. C., 1917. Salina, Kan.

Leonard Neff, B. S. A., Cloud County Agricultural Agent, Division of College Extension (1925).
B. S. A., Purdue University, 1922. Concordia, Kan.

Edward Aicher, D. V. S., Cowley County Agricultural Agent, Division of College Extension (1925).
D. V. S., Colorado State College, 1910. Winfield, Kan.

Dewey Zollie McCormick, B. S., Morris County Agricultural Agent, Division of College Extension (1925).
B. S., K. S. A. C., 1921. Council Grove, Kan.

Walter Jones Daly, B. S., Linn County Agricultural Agent, Division of College Extension (1925, 1927).
B. S. in Agr., K. S. A. C., 1925. Mound City, Kan.

Duke Daniel Brown, B. S., Wyandotte County Agricultural Agent, Division of College Extension (1925; April 11, 1929).
B. S. in Agr., K. S. A. C., 1921. Kansas City, Kan.

Glen McKinley Reed, B. S., Nemaha County Agricultural Agent, Division of College Extension (1925, 1928).
B. S., K. S. A. C., 1925. Seneca, Kan.

William Scott Speer, B. S., Kingman County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1925. Kingman, Kan.

Neil Lewis Rucker, B. S., Ellsworth County Agricultural Agent, Division of College Extension (1926; April 1, 1930).
B. S., K. S. A. C., 1913. Ellsworth, Kan.

WALTER HENRY VON TREBRA, B.S., Rice County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1924. Lyons, Kan.

WALTER HENRY ATZENWEILER, B.S., Brown County Agricultural Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1926. Hiawatha, Kan.

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

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

JOHN HERBERT COOLIDGE, B.S., Gray County Agricultural Agent, Division of College Extension (1926).
B. S., Knox College, 1925. Cimarron, Kan.

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

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

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

AMWEL EDWIN JONES, B.S., Dickinson County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1917. Abilene, Kan.

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

CARL MILTON CARLSON,[10] B.S., Reno County Agricultural Agent, Division of College Extension (1927-Sept. 21, 1929).
B. S., K. S. A. C., 1927. Hutchinson, Kan.

EUGENE ARTHUR CLEAVENGER, B.S., Coffey County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1925. Burlington, Kan.

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

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

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

JOHN TANTON WHETZEL, B.S., Miami County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1927. Paola, Kan.

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10. Resigned.

Theodore Franklin Yost, B.S., Bourbon County Agricultural Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1920. Fort Scott, Kan.

Orville Ray Caldwell, B.S., Finney County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Garden City, Kan.

Vance Mather Rucker, B.S., Harper County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Anthony, Kan.

Robert Thomas Patterson, B.S., Cherokee County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1924. Columbus, Kan.

Herman Albert Biskie, B.S., Franklin County Agricultural Agent, Division of College Extension (1928).
B. S., University of Nebraska, 1917. Ottawa, Kan.

Lester Shepard, B.S., Neosho County Agricultural Agent, Division of College Extension (1928).
A. B., University of Iowa, 1913; B. S., Iowa State College, 1916. Erie, Kan.

Lyle Mayfield, B.S., Clark County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Ashland, Kan.

Leonard Beath Harden, B.S., Labette County Agricultural Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1926. Altamont, Kan.

Ragnar Nathaniel Lindburg, B.S., Butler County Club Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1928. El Dorado, Kan.

Edward Albert Stephenson, Jr., B.S., Chase County Agricultural Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1928. Cottonwood Falls, Kan.

Otis Benton Glover, B.S., Jefferson County Agricultural Agent, Division of College Extension (Apr. 15, 1929).
B. S., K. S. A. C., 1915. Oskaloosa, Kan.

Robert Samuel Trumbull, A.M., Ford County Agricultural Agent, Division of College Extension (May 1, 1929).
B. S., Nebraska Wesleyan University, 1907; A. M., University of Nebraska, 1908. Dodge City, Kan.

Ivan Keith Tompkins, B.S., Sheridan County Agricultural Agent, Division of College Extension (May 28, 1929).
B. S., K. S. A. C., 1929. Hoxie, Kan.

Theodore Roosevelt Warren, M.S., Bourbon County Club Agent, Division of College Extension (1927; Jan. 1, 1930).
B. S., University of Idaho, 1927; M. S., K. S. A. C., 1928. Fort Scott, Kan.

Milburne Clinton Axelton, B.S., Woodson County Agricultural Agent, Division of College Extension (June 17, 1929).
B. S., K. S. A. C., 1928. Yates Center, Kan.

Leslie Melvin Wolfe, B.S., Ness County Agricultural Agent, Division of College Extension (June 20, 1929).
B. S., K. S. A. C., 1929. Ness City, Kan.

Earl Hicks Teagarden, B. S., Stafford County Agricultural Agent, Division of College Extension (Jan. 10, 1929; July 1, 1929).
B. S., K. S. A. C., 1920. St. John, Kan.

John Wesley Roussin, B. S., Rawlins County Agricultural Agent, Division of College Extension (July 1, 1929).
B. S., K. S. A. C., 1929. Atwood, Kan.

Bernie William Wright, B. S., Russell County Agricultural Agent, Division of College Extension (July 1, 1929).
B. S., K. S. A. C., 1924. Russell, Kan.

Ray Lewis Remsberg, B. S., Kingman County Club Agent, Division of College Extension (July 15, 1929).
B. S., K. S. A. C., 1929. Kingman, Kan.

Ogden Worley Greene, B. S., Pratt County Agricultural Agent, Division of College Extension (Aug. 28, 1929).
B. S., K. S. A. C., 1929. Pratt, Kan.

Preston Orin Hale, B. S., Leavenworth County Agricultural Agent, Division of College Extension (Oct. 1, 1929).
B. S., K. S. A. C., 1916. Leavenworth, Kan.

George Winfred Hinds, B. S., Reno County Agricultural Agent, Division of College Extension (Oct. 1, 1929).
B. S., K. S. A. C., 1920. Hutchinson, Kan.

Sherman Stanley Hoar, B. S., Barton County Agricultural Agent, Division of College Extension (Jan. 2. 1929; Dec. 5, 1929).
B. S., K. S. A. C., 1928. Great Bend, Kan.

Elmer Oscar Graper, B. S., Smith County Agricultural Agent, Division of College Extension (Dec. 20, 1929).
B. S., K. S. A. C., 1913. Smith Center, Kan.

Harvey J. Stewart, B. S., Cheyenne County Agricultural Agent, Division of College Extension (Dec. 20, 1929).
B. S., K. S. A. C., 1928. St. Francis, Kan.

Jester Bailey Taylor, B. S., Douglas County Club Agent, Division of College Extension (Jan. 18, 1930).
B. S., Oklahoma A. and M. College, 1925. Lawrence, Kan.

HOME DEMONSTRATION AGENTS[4]

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

Florence Dresser Syverud,[10] B. S., Allen County Home Demonstration Agent, Division of College Extension (1925-Dec. 31, 1929).
B. S., K. S. A. C., 1908. Iola, Kan.

Esther Mae Huyck, B. S., Rawlins County Home Demonstration Agent, Division of College Extension (1925).
B. S., South Dakota State College, 1925. Atwood, Kan.

Mabel McComb Carlson, Reno County Home Demonstration Agent, Division of College Extension (1925, 1927).
B. S., K. S. A. C., 1925. Hutchinson, Kan.

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

Ella M. Meyer, B. S., Ford County Home Demonstration Agent, Division of College Extension (1925; Jan. 1, 1930); Franklin County Home Demonstration Agent, Division of College Extension (1925-Dec. 31, 1929).
B. S., K. S. A. C., 1907. Dodge City, Kan.

Elizabeth Randle, B. S., Douglas County Home Demonstration Agent, Division of College Extension (1926).
B. S., K. S. A. C., 1907. Lawrence, Kan.

Charlotte Elizabeth Biester, B. S., Johnson County Home Demonstration Agent, Division of College Extension (1924, 1926).
B. S., University of Illinois, 1921. Olathe, Kan.

Lois Holderbaum, B. S., Shawnee County Home Demonstration Agent, Division of College Extension (1927, 1928).
B. S., K. S. A. C., 1925. Topeka, Kan.

Nora Elizabeth Bare, B. S., Butler County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1925. El Dorado, Kan.

Lucretia Scholer, B. S., Harvey County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1920. Newton, Kan.

Grace Herr, B. S., Bourbon County Home Demonstration Agent, Division of College Extension (1927).
B. S., K. S. A. C., 1922. Fort Scott, Kan.

Sara Jane Patton, Neosho County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1915. Erie, Kan.

Mary Dunlap Ziegler, Pratt County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1916. Pratt, Kan.

Christie Cynthia Hepler, B. S., Labette County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1926. Altamont, Kan.

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

Louella Elizabeth Margaret McCall,[10] M. S., Ford County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1918; M. S., Iowa State College, 1927. Dodge City, Kan.

Ruth Jeanette Peck, B. S., Wyandotte County Home Demonstration Agent, Division of College Extension (1928).
B. S., K. S. A. C., 1928. Kansas City, Kan.

Jessie Campbell, B. S., Rice County Home Demonstration Agent, Division of College Extension (1928; Jan. 1, 1929).
B. S., K. S. A. C., 1925. Lyons, Kan.

Margaret Annabel Koenig, B. S., Clay County Home Demonstration Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1928. Clay Center, Kan.

Alberta Wenkheimer, A. B., Harper County Home Demonstration Agent, Division of College Extension (Jan. 1, 1929).
B. S., K. S. A. C., 1909; A. B., University of Kansas, 1928. Anthony, Kan.

10. Resigned.

Mabel Rachel Smith, B. S., Crawford County Home Demonstration Agent, Division of College Extension (Feb. 1, 1929).
B. S., K. S. A. C., 1926. Girard, Kan.

Ethel Faye Watson, B. S., Greenwood County Home Demonstration Agent, Division of College Extension (Feb. 13, 1929).
B. S., K. S. A. C., 1926. Eureka, Kan.

Gertrude Edna Allen, B. S., Lyon County Home Demonstration Agent, Division of College Extension (May 15, 1929).
B. S., University of Minnesota, 1929. Emporia, Kan.

Iva Luella Holladay, B. S., Leavenworth County Home Demontration Agent, Division of College Extension (July 1, 1929).
B. S., K. S. A. C., 1929. Leavenworth, Kan.

Rachel Markwell, B. S., Morris County Home Demonstration Agent, Division of College Extension (July 1, 1929).
B. S., Oklahoma A. and M. College, 1926. Council Grove, Kan.

Florence Mable Funk, B. S., Cherokee County Home Demonstration Agent, Division of College Extension (July 9, 1929).
B. S., K. S. A. C., 1929. Columbus, Kan.

Linnea Carlson Dennett, B. S., Riley County Home Demonstration Agent, Division of College Extension (July 16, 1929).
B. S., K. S. A. C., 1929. Manhattan, Kan.

Grace Merle Reeder, A. B., Miami County Home Demonstration Agent, Division of College Extension (Aug. 1, 1929).
A. B., Baker University, 1920. Paola, Kan.

Alberta Pauline Sherrod, B. S., Kingman County Home Demonstration Agent, Division of College Extension (Aug. 1, 1929).
B. S., Oklahoma A. and M. College, 1926. Kingman, Kan.

Mary Elsie Border, B. S., Dickinson County Home Demonstration Agent, Division of College Extension (Sept. 16, 1929).
B. S., Ohio State University, 1926. Abilene, Kan.

Grace Mildred Henderson, B. S., Assistant Home Demonstration Agent, Division of College Extension (Jan. 1, 1930).
B. S., University of Nebraska, 1924. Manhattan, Kan.

Edith O'Brien Rosevear, B. S., Allen County Home Demonstration Agent, Division of College Extension (Jan. 1, 1930).
B. S., K. S. A. C., 1911. Iola, Kan.

Eula May Neal, B. S., Franklin County Home Demonstration Agent, Division of College Extension (Jan. 25, 1930).
B. S., State Teachers College, Kirksville, Mo., 1927. Ottawa, Kan.

GRADUATE ASSISTANTS.

Austin Gerald Goth,[10] B. S., Graduate Assistant in Crops, Department of Agronomy (Feb. 1, 1929-Jan. 31, 1930).
B. S., University of Nebraska, 1929. Ag 102; 1725 Fairchild.

Mary Frances White, B. S., Graduate Assistant in Education (July 1, 1929).
B. S., K. S. A. C., 1928. G 33; 1743 Fairchild.

Glenn Allen Aikens, B. S., Graduate Assistant in Bacteriology (Sept. 1, 1929).
B. S., K. S. A. C., 1924. V 53B; 358 N. 15th.

10. Resigned.

William Purvis Albright, B. S., Graduate Assistant in Poultry Husbandry (Sept. 1, 1929).
B. S., North Carolina State College, 1929. Ag 249; 1116 Bluemont.

Forrest Bennett Alspach,[10] B. S., Graduate Assistant in Soils, Department of Agronomy (Sept. 1, 1929-Feb. 15, 1930).
B. S., K. S. A. C., 1929. Ag 296; 1101 Moro.

Ida Anderson, B. S., Graduate Assistant in Clothing and Textiles (Sept. 1, 1929).
B. S., Iowa State College, 1927. L 56; 906 Fremont.

Frederick Bruce Bosley, B. S., Graduate Assistant in Botany and Plant Pathology (Sept. 1, 1929).
B. S., K. S. A. C., 1928. H 77; 1015 Vattier.

Marion Isabell Campbell, B. S., Graduate Assistant in Zoölogy (Sept. 1, 1929).
B. S., Kansas State Teachers College, Pittsburg, 1924. F 38; 1311 Laramie.

Lawrence William Decker, B. S., Graduate Assistant in Animal Husbandry (Sept. 1, 1929).
B. S., Purdue University, 1929. Ag 24; 1116 Bluemont.

Winifred Maude Edwards, B. S., Graduate Assistant in Child Welfare and Euthenics (Sept. 1, 1929).
B. S., K. S. A. C., 1927. L 64; 310 N. 16th.

Helen Ehrhardt, A. B., Graduate Assistant in Food Economics and Nutrition (Sept. 1, 1929).
A. B., Baker University, 1925. L 28; 1031 Thurston.

Bernice Lucile Harper, A. B., Graduate Assistant in Zoölogy (Sept. 1, 1929).
A. B., Kalamazoo College, 1929. F 38; 1509 Humboldt.

Lucretia Maye Hoover, B. S., Graduate Assistant in Institutional Economics (Sept. 1, 1929).
B. S., Kansas State Teachers College, Pittsburg, 1928. L 30; 610 N. Manhattan.

Otho Jay Hopper, B. S., Graduate Assistant in Animal Husbandry (Sept. 1, 1929).
B. S., University of Missouri, 1929. Ag 24; 1016 Vattier.

Merle Raymond Hubbard, A. B., Graduate Assistant in Chemistry (Sept. 1, 1929).
A. B., Southwestern College, 1929. W 30; 1023 Laramie.

Eunice Leola Kingsley, B. S., Graduate Assistant in Botany and Plant Pathology (Sept. 1, 1929).
B. S., North Dakota Agricultural College, 1926. H 76B; 1733 Laramie.

Harold Christian Larsen, B. S., Graduate Assistant in Agricultural Economics (Sept. 1, 1929).
B. S., South Dakota State College, 1929. Ag 363; 1116 Bluemont.

Arthur Meyer, B. S., Graduate Assistant in Horticulture (Sept. 1, 1929).
B. S., Oklahoma A. and M. College, 1929. H 33; 1116 Bluemont.

Merlin Mundell, B. S., Graduate Assistant in Chemistry (Sept. 1, 1929).
B. S., K. S. A. C., 1929. D 30; 353 N. 15th.

Genevieve Alice Nowlin, B. S., Graduate Assistant in Dean's Office, Division of Home Economics (Sept. 1, 1929).
B. S., K. S. A. C., 1914. G 29; 1104 Vattier.

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10. Resigned.

John Henry Shenk, B. S., Graduate Assistant in Chemistry (Sept. 1, 1929).
B. S., K. S. A. C., 1929. D 30; 916 Osage.

Clifford Lovejoy Smith, B. S., Graduate Assistant in Dairy Husbandry (Sept. 1, 1929).
B. S., Oregon State College, 1929. Ag 147; 1116 Bluemont.

Elbert Cecil Tabor, A. B., Graduate Assistant in Chemistry (Sept. 1, 1929).
A. B., Kentucky Wesleyan College, 1929. W 30; 1116 Bluemont.

Ethel Florence Trump, B. S., Graduate Assistant in Institutional Economics (Sept. 1, 1929).
B. S., K. S. A. C., 1929. T 31; 1223 Bluemont.

Mary Woodward, A. B., Graduate Assistant in Zoölogy (Sept. 1, 1929).
A. B., Oklahoma City University, 1929. F 38; 1021 Leavenworth.

Henry Monroe Beachell, B. S., Graduate Assistant in Agronomy (Feb. 1, 1930).
B. S., University of Nebraska, Feb. 1, 1930. Ag 102; ———.

Jessie Sarah Stewart, B. S., Graduate Assistant in Institutional Economics (Jan. 13, 1930).
B. S., K. S. A. C., 1929. T 31; 1613 Fairchild.

GRADUATE RESEARCH ASSISTANTS

Coit Alfred Suneson, B. S., Graduate Research Assistant in Agronomy (1928).
B. S., Montana State College, 1928. Ag 217; 426 Leavenworth.

George Laurin Graham, A. B., Graduate Research Assistant in Parasitology, Department of Zoölogy (Sept. 1, 1928).
A. B., Grand Island College, 1927. F 38; 1116 Bluemont.

Anna Tessie Agan, B. S., Graduate Research Assistant in Food Economics and Nutrition (Sept. 1, 1929).
B. S., University of Nebraska, 1927. L 16; 2000 Anderson.

George Cauthen, A. B., Graduate Research Assistant in Parasitology (Sept. 1, 1929).
A. B., Austin College, Sherman, Texas, 1928. F 38; 1116 Bluemont.

Flora Marie Deal,[10] B. S., Graduate Research Assistant in Institutional Economics (Sept. 1, 1929-Jan. 13, 1930).
B. S., K. S. A. C., 1929. T 31; 1716 Fairchild.

Joy William Dull, B. S., Graduate Research Assistant in Civil Engineering (Sept. 1, 1929).
B. S., Oregon State College, 1925. E 27; 1011 Vattier.

Stella May Heywood, B. S., Graduate Research Assistant in Household Economics (Sept. 1, 1929).
B. S., K. S. A. C., 1927. T 52; 914 Osage.

Ralph Edward Hodgson, B. S., Graduate Research Assistant in Dairy Husbandry (Sept. 1, 1929).
B. S., University of Wisconsin, 1929. W 151; 1116 Bluemont.

Harry Llewellyn Kent, Jr., B. S., Graduate Research Assistant in Mechanical Engineering (Sept. 1, 1929).
B. S., New Mexico A. and M. College, 1929. E 109; 340 N. 16th.

10. Resigned.

ROBERT RUSSELL MURPHY, B. S., Graduate Research Assistant in Poultry Husbandry (Sept. 1, 1929).
B. S., Pennsylvania State College, 1929. Ag 252; 814 Laramie.

PHILIP MYRON NOBLE, B. S., Graduate Research Assistant in Highway Materials (Sept. 1, 1929).
B. S., K. S. A. C., 1926. E 16; 1425 Laramie.

JAMES LEROY POTTER, B. S., Graduate Research Assistant in Electrical Engineering (Sept. 1, 1929).
B. S., K. S. A. C., 1928. E 30; 1423 Fairchild.

LOLIE SMITH, B. S., Graduate Research Assistant in Household Economics (Sept. 1, 1929).
B. S., Texas State College for Women, 1916. T 56; 1613 Fairchild.

JULIA LURENA SOUTHARD, B. S., Graduate Research Assistant in Clothing and Textiles (Sept. 1, 1929).
B. S., University of Missouri, 1926. L 67; 522 N. 14th.

NELSON JOHN WADE, A. B., Graduate Research Assistant in Mammalogy, Department of Zoölogy (Sept. 1, 1929).
A. B., Kalamazoo College, 1929. F 7; 1201 Bluemont.

MINOR DAY,[10] B. S., Graduate Research Assistant in Animal Husbandry (Oct. 1, 1929-Feb. 1, 1930).
B. S., Pennsylvania State College, 1928. Ag 24; 1116 Bluemont.

DWIGHT SEATH, B. S., Graduate Research Assistant in Dairy Husbandry (Oct. 1, 1929).
B. S., Iowa State College, 1926. Ag 155; 1104 Vattier.

RALPH DALE NICHOLS, M. S., Research Assistant in Agricultural Economics (Dec. 2, 1929).
B. S., K. S. A. C., 1920; M. S., ibid., 1923.

FELLOWS

SAMUEL GREENBERRY KELLY, B. S., Industrial Research Fellow of the Commonwealth of Australia, Department of Entomology (June 1, 1929).
B. S., K. S. A. C., 1929. F 67; 1010 Vattier.

DALE FRANKLIN KING,[10] M. S., Ikton Industrial Fellow, Department of Chemistry (June 15, 1929-Jan. 15, 1930).
B. S., Oregon State Agricultural College, 1928; M. S., K. S. A. C., 1929.
C 41; 1219 Poyntz.

HARVEY STAFFORD GERMAN, B. S., Ashgrove Lime and Portland Cement Company Fellow, Department of Applied Mechanics (Sept. 1, 1929).
B. S., K. S. A. C., 1929. E 11; 511 N. Juliette.

FREDERICK EDWARD GOETZ, B. S. A., Kansas C. R. E. A. Fellow, Department of Agricultural Engineering (Sept. 1, 1929).
B. S. A., University of Saskatchewan, 1929. E 217; 1018 Fremont.

ROBERT EARL MCCORMICK, B. S., Association of Operative Millers Fellow, Department of Milling Industry (Sept. 1, 1929).
B. S., K. S. A. C., 1929. Ag 120; 350 N. 15th.

HARRY EDWIN SKOOG, B. S., Crop Protection Institute Fellow, Department of Entomology (Nov. 1, 1929).
B. S., K. S. A. C., 1926. F 66; Veterinary Hospital.

10. Resigned.

OTHER OFFICERS

Jessie McDowell Machir, Registrar (1913).
A 29; 1641 Fairchild.

Kenney Lee Ford, B. S., Alumni Secretary (1928).
B. S., K. S. A. C., 1924. A 38A; 1516 Leavenworth.

Adrian Augustus Holtz, Ph. D., Men's Adviser and Secretary of Young Men's Christian Association (1919); Assistant Professor of Sociology (July 1, 1929).
A. B., Colgate University, 1909; Ph. M., University of Chicago, 1910; B. D., ibid., 1911; Ph. D., ibid., 1914. A; 520 N. Manhattan.

Ruth Mead Fertig, A. B., Secretary of the Young Women's Christian Association (1928).
A. B., Mount Holyoke College, 1925. L 41; 1723 Leavenworth.

Stephen Arnold Geauque, Custodian (1918, 1926).
PP 37; 1014 Laramie.

Lester Henry Drayer, Chief Engineer, Heat and Power Department (1916, 1927).
E 3; 531 Moro.

Standing Committees of the Faculty

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

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

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

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

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

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

Community Chest Executive: F. L. Parrish, H. T. Hill, W. H. Andrews, Mary P. Van Zile, F. D. Farrell, A. A. Holtz, Ruth Fertig.

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

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

Faculty Loan Fund: J. V. Cortelyou, Mary P. Van Zile, R. R. Dykstra, L. E. Call, R. A. Seaton, Jessie McD. Machir.

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

Major Musical and Dramatic Entertainments: J. C. Peterson, H. T. Hill, Carl Kipp, Mrs. C. O. Swanson, Wm. Lindquist.

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

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

Relation With Junior Colleges and Arts Colleges: J. H. Parker, B. H. Fleenor (in place of George Gemmell, on leave), Margaret Chaney, R. R. Dykstra, M. A. Durland, F. L. Parrish.

Schedule of Classes: A. E. White, J. T. Willard, W. T. Stratton, L. E. Conrad, W. E. Grimes, Martha Pittman.

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

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

Student Honors: J. O. Hamilton, R. W. Conover, B. L. Remick, M. W. Furr.

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

Agricultural Experiment Station

OFFICERS OF THE STATION

F. D. Farrell, President of the College

ADMINISTRATION—

L. E. Call, Director
H. R. Rhodes, Business Manager
Hugh Durham, Assistant to Director

AGRICULTURAL ECONOMICS—

W. E. Grimes, Farm Organization, in Charge
Harold Howe, Land Economics
R. M. Green, Marketing (on sabbatical leave)
W. P. Mortenson, Marketing
Morris Evans, Farm Organization
J. A. Hodges, Farm Organization
Homer J. Henney, Marketing Live Stock
H. C. Larsen, Graduate Assistant

AGRICULTURAL ENGINEERING—

F. C. Fenton, in Charge
R. H. Driftmier, Farm Machinery
C. A. Logan, General Investigations

AGRONOMY—

R. I. Throckmorton, in Charge
S. C. Salmon, Crops
J. H. Parker, Plant Breeding[4]
A. E. Aldous, Pasture Management
F. L. Duley, Soils
M. C. Sewell, Soils
A. M. Brunson, Corn Breeding[4]
J. W. Zahnley, Crops
H. H. Laude, Coöperative Experiments (on sabbatical leave)
H. E. Myers, Soils
F. L. Timmons, Coöperative Experiments
C. O. Grandfield, Alfalfa Investigations[4]
I. K. Landon, Southeastern Kansas Experimental Felds
R. O. Lewis, Soil Survey
C. W. Bower, Field Agent, Corn Breeding[4]
C. E. Crews, Farm Superintendent
Elisabeth Harling, Seed Analyst
Harland Stevens, Nursery Foreman[4]
A. G. Goth, Graduate Assistant
F. B. Alspach, Graduate Assistant
C. A. Suneson, Graduate Research Assistant

ANIMAL HUSBANDRY—

C. W. McCampbell, in Charge
H. L. Ibsen, Animal Genetics
B. M. Anderson, Cattle Investigations
H. E. Reed, Sheep Investigations
D. L. Mackintosh, Horse Investigations
C. E. Aubel, Swine Investigations
M. A. Alexander, Live Stock

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

O. J. Hopper, Graduate Assistant
L. W. Decker, Graduate Assistant
Minor Day, Graduate Research Assistant

BACTERIOLOGY—

L. D. Bushnell, in Charge
A. C. Fay, Dairy Bacteriology
P. L. Gainey, Soil Bacteriology
C. A. Brandly, Poultry Disease Investigations

BOTANY—

L. E. Melchers, Plant Pathology, in Charge[4]
E. C. Miller, Plant Physiology
O. H. Elmer, Plant Pathology
C. O. Johnston, Cereal Disease Investigations[4]
Hurley Fellows, Cereal Disease Investigations[4]
Eunice Kingsley, Graduate Assistant
F. B. Bosley, Graduate Research Assistant

CHEMISTRY—

H. H. King, in Charge
J. T. Willard, Consulting Chemist
W. L. Latshaw, in Charge Analytical Laboratory
E. L. Tague, Protein Investigations
J. S. Hughes, Animal Nutrition
C. J. Whitnah, Feeding Stuffs Analysis
J. F. Merrill, Fertilizer Analysis
A. T. Perkins, Soil Investigations

DAIRY HUSBANDRY—

J. B. Fitch, in Charge
H. W. Cave, Dairy Production
W. H. Martin, Dairy Manufactures
H. J. Brooks, Official Testing
W. H. Riddell, Dairy Production
W. J. Caulfield, Dairy Manufactures
C. L. Smith, Graduate Assistant
D. M. Seath, Graduate Research Assistant
R. E. Hodgson, Graduate Research Assistant

ENTOMOLOGY—

G. A. Dean, in Charge
Ralph L. Parker, Apiculture, Fruit Insects
Roger C. Smith, Staple Crop Insect Investigations (on leave)
R. H. Painter, Staple Crop Insect Investigations
H. R. Bryson, Staple Crop Insect Investigations
Donald A. Wilbur, Staple Crop Insect Investigations

HOME ECONOMICS—

Margaret M. Justin, in Charge
Martha Kramer, Food Economics and Nutrition
Margaret Chaney, Food Economics and Nutrition
Esther Bruner, Clothing and Textiles
Katherine Hess, Clothing and Textiles
Mary F. Taylor, Home Management
Tessie Agan, Graduate Research Assistant
Julia Southard, Graduate Research Assistant
Lolie Smith, Graduate Research Assistant

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

HORTICULTURE—

Albert Dickens, in Charge (on leave)
R. J. Barnett, Pomology
W. F. Pickett, Orchard Investigations
L. R. Quinlan, Landscape Gardening
W. B. Balch, Floriculture and Vegetable Gardening
Arthur Meyer, Graduate Assistant

MILLING INDUSTRY—

C. O. Swanson, in Charge
Earl B. Working, Wheat and Flour Investigations
R. O. Pence, Milling Technology
C. W. Oakes, Milling
Robert E. McCormick, Graduate Research Assistant

POULTRY HUSBANDRY—

L. F. Payne, in Charge
D. C. Warren, Genetics
H. M. Scott, Poultry Production
A. P. Loomis, Superintendent of Poultry Plant
Wm. P. Albright, Graduate Assistant
R. R. Murphy, Graduate Research Assistant

VETERINARY MEDICINE—

R. R. Dykstra, in Charge
C. W. Hobbs, Field Veterinarian
H. F. Lienhardt, Pathology
J. P. Scott, Blackleg Investigations
C. H. Kitselman, Abortion Disease Investigations
Herman Farley, Shipping Fever Investigations

ZOÖLOGY—

R. K. Nabours, in Charge (on sabbatical leave)
J. E. Ackert, Parasitology
Iva Larson, Genetics
G. E. Johnson, Injurious Mammals
Charles G. Dobrovolny, Technician
George L. Graham, Graduate Research Assistant
George E. Cauthen, Graduate Research Assistant
Nelson J. Wade, Graduate Research Assistant

BRANCH EXPERIMENT STATIONS

FORT HAYS—

L. C. Aicher, Superintendent
E. W. Johnson, Forest Nurseryman
A. L. Hallsted, Dry-land Agriculture Investigations[4]

D. A. Savage, Forage Crop Investigations[4]
A. F. Swanson, Cereal Crop Investigations[4]

GARDEN CITY—

F. A. Wagner, Superintendent
R. L. von Trebra, Dry-land Agriculture Investigations[4]

COLBY—

E. H. Coles, Superintendent[4]
J. B. Kuska, Dry-land Agriculture Investigations[4]

TRIBUNE—

T. B. Stinson, Superintndent

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

Engineering Experiment Station

OFFICERS OF THE STATION

F. D. Farrell, President of the College

ADMINISTRATION—
- R. A. Seaton, Director
- Louise Schwenson, Secretary
- M. A. Durland, Bulletin Editor

AGRICULTURAL ENGINEERING—
- F. C. Fenton, in Charge
- R. H. Driftmier, Farm Machinery
- W. H. Sanders, Tractors
- C. A. Logan, General Investigations
- Frederick Goetz, Rural Electrification

APPLIED MECHANICS—
- C. H. Scholer, in Charge.
- E. R. Dawley, Materials of Construction
- W. L. Lesher, Road Materials
- L. H. Koenitzer, Road Materials
- G. H. Railsback, Road Materials
- L. R. St. John, Road Materials
- P. M. Noble, Road Materials
- S. H. German, Road Materials

CHEMICAL ENGINEERING—
- H. H. King, in Charge
- W. F. Brown, General Investigations

CIVIL ENGINEERING—
- L. E. Conrad, in Charge
- J. W. Dull, General Investigations

ELECTRICAL ENGINEERING—
- R. G. Kloeffler, in Charge (on leave)
- J. L. Brenneman, Acting in Charge
- J. L. Potter, General Investigations

MACHINE DESIGN—
- C. E. Pearce, in Charge.
- M. A. Durland, General Investigations
- G. T. Brannigan, General Investigations
- E. H. Hahn, General Investigations

MECHANICAL ENGINEERING—
- J. P. Calderwood, in Charge
- A. J. Mack, General Investigations
- A. O. Flinner, General Investigations
- H. L. Kent, Jr., General Investigations

PHYSICS—
- J. O. Hamilton, in Charge
- G. E. Raburn, General Investigations

SHOP PRACTICE—

W. W. Carlson, in Charge
G. A. Sellers, General Investigations
E. C. Graham, Farm Shop Problems
R. S. Sink, Automotive Engineering
E. C. Jones, Machine Tools
Edward Grant, Foundry Practice

Bureau of Research in Home Economics

OFFICERS OF THE BUREAU

F. D. Farrell, President of the College
Margaret M. Justin, Director

CHILD WELFARE AND EUTHENICS—
Helen Wheeler Ford, in Charge
Helen Sharp, Public Health

CLOTHING AND TEXTILES—
Lilian Baker, in Charge
Katherine Hess, Physics of Textiles
Esther Bruner, Chemistry of Textiles
Julia Southard, Assistant

FOOD ECONOMICS AND NUTRITION—
Martha S. Pittman, in Charge
Martha Kramer, Nutrition
Margaret Chaney, Applied Nutrition
Myra Potter, Food and Nutrition
Tessie Agan, Assistant

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

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

The Kansas State Agricultural College

HISTORY AND LOCATION

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

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

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

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

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

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

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

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

AIMS AND PURPOSES

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

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

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

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

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

Buildings and Grounds

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Horticulture Hall. Erected, 1907; cost, $50.000; dimensions, 72 x 116 feet; two stories and basement. This building is used by the departments of Botany and Plant Pathology, and Horticulture. Its classrooms, laboratories, museums, and equipment are modern and ample.

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

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

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

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

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

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

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

President's Residence. Erected, 1924; cost, $31.000; three stories and basement; built from funds bequeathed by Mehitable Calef Copenhagen Wilson in memory of her husband, Davies Wilson.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Serum Plant. Erected, 1914; cost, $7,000; constructed of brick; dimensions, 20 x 60 feet; two stories.

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

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

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

The College Library

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

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

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

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

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

Student Health Service

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

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

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

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

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

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

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

The department owns equipment valued at $9,413.

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

Requirements for Admission

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

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

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

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

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

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

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

GROUP I—English	Three or four units
GROUP II Foreign Languages	Latin, one, two, three, or four units Greek, one, two, three, or four units German, one, two, three, or four units French, one, two, three, or four units Spanish, one, two, three, or four units
GROUP III Mathematics	Elementary algebra, one or one and one-half units Plane geometry, one unit Solid geometry, one-half unit Plane trigonometry, one-half unit Advanced algebra, one-half unit
GROUP IV Natural Sciences	Physical geography, one-half or one unit *Physics, one unit *Chemistry, one unit *Botany, one-half or one unit *Zoölogy, one-half or one unit *Physiology, one-half or one unit *General biology, one-half or one unit *General Science, one-half or one unit
GROUP V History and Social Sciences	Greek and Roman history, one unit Medieval and modern history, one unit English history, one unit American history, one unit Economics, one-half or one unit Sociology, one-half unit Civics, one-half or one unit Constitution, one-half unit
GROUP VI Normal Training Subjects	Psychology, one-half unit Methods and management, one-half unit Higher arithmetic, one-half unit Reviews Grammar, geography, and reading, twelve weeks each, *or* } one unit Two of these, eighteen weeks each } one unit *Music, one unit
GROUP VII Industrial Subjects	*Agriculture, one-half, one, two, three, or four units *Drawing, one-half or one unit *Woodwork, one-half, one, or two units *Forging, one-half or one unit *Printing, one-half, one, or two units *Domestic science, one-half, one, or two units *Domestic art, one-half, one, or two units
GROUP VIII Commercial Subjects	Commercial law, one-half unit Commercial geography, one-half unit Bookkeeping, one-half or one unit *Stenography and typewriting, one-half or one unit each

DEFICIENCIES

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

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

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

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

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

ADVANCED CREDIT

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

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

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

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

ADMISSION

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

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

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

LATE ASSIGNMENT

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

SPECIAL STUDENTS

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

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

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

KANSAS HIGH SCHOOLS AND ACADEMIES IN ACCREDITED RELATIONS WITH THE COLLEGE

(Candidates admitted without examination)

Abbyville
Abilene
Ada
Adams
Admire
Agenda
Agra
Alden
Alexander
Allen
Alma
Almena
Altamont
  Labette Co. Com.
Alta Vista
Alton
Altoona
Americus
Andale
Andover
Anthony
  Anthony, H. S.
  Spring Twp.
Antrim
  St. John P. O.
Appanoose
  Pomona P. O.
Arcadia
Argonia
Arkansas City
Arlington
Arma
Arnold
Asherville
Ashland
Assaria
Atchison
  Atchison H. S.
  St. Benedict's College Academy
  Mt. St. Scholastica Academy
Athens
  Glen Elder P. O.
Athol
Atlanta
Attica
Atwood
Auburn
Augusta
Aurora
Axtell
  Axtell H. S.
  St. Michael's H. S.
Baldwin
Bancroft
Barclay
Barnard
Barnes
Basehor
Bavaria
Baxter Springs
Bazine
Beattie
Beeler
Bellefont
  Windthorst H. S.
Belle Plaine
Belleville
Belmont
Beloit
  Beloit H. S.
  St. John's H. S.
Belpre
Belvue
Bendena
Benedict
Bennington
Bentley
Benton
Bern
Berryton
Beverly
Bird City
Bison
Blaine
Bloom
Blue Mound
Blue Rapids
Bluff City
Bogue
Bonner Springs
Brewster
  Brewster H. S.
  Brownville Con. H. S.
Bronson
Brookville
Brownell
Brownville
  Brewster P. O.
Bucklin
Bucyrus
  Bucyrus H. S.
  Wea H. S.
Buffalo
Buhler
Bunkerhill
Burden
Burdett
Burdick
  Diamond Valley H. S.
Burlingame
Burlington
Burns
Burr Oak
Burrton
Bushong
Bushton
Byers
Caldwell
Cambridge
Caneiro
Caney
Canton
Carbondale
Cassoday
Castleton
Cawker City
Cedar
Cedar Point
Cedarvale
Centerview
Centralia
Chanute
Chapman
  Dickinson Co. Com.
Chase
Chautauqua
Cheney
Cherokee
  Crawford Co. Com.
Cherryvale
Chetopa
Cimarron
Circleville
Claflin
Clay Center
Clayton
Clearwater
Cleburne
Clements
Clifton
Climax
Clyde
Coats
Cockerill
  Mulberry P. O.
Codell
Coffeyville
Colby
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. Marys of the Plains Academy
Doniphan
Dorrance
Douglass
Dover
Downs
Dresden
Dunlap
Durham
Dwight
Easton
Edgerton
Edmond
Edna
Edson
Edwardsville
Effingham
  Atchison Co. Com.
El Dorado
Elgin
Elk City
Elk Falls
Elkhart
Ellinwood
Ellis
Ellsworth
Elmdale
Elsmore
Elwood
Emmett
Emporia
Englewood
Ensign
Enterprise
Erie
Esbon
Eskridge
Eudora
Eureka
Everest
Fairview
Fall River
Falun
Fellsburg
Florence
Fontana
  Osage Twp.
Ford
Formoso
Fort Scott
Fostoria
Fowler
Frankfort
Franklin
Fredonia
Frontenac
Fulton
Galena
Galesburg
Galva
Garden City
Garden Plain
Gardner
Garfield
Garnett
Garrison
Gaylord
Gem
Geneseo
Geneva
Geuda Springs
Girard
Glasco
Glendale
  Brookville P. O.
Glen Elder
Goddard
Goessel
Goff
Goodland
  Sherman Co. Com.
Gorham
  Gorham H. S.
  St. Mary's H. S.
Gove
Grainfield
Great Bend
  Great Bend H. S.
  Immaculate Conception
Greeley
Green
Greenleaf
Greensburg
Grenola
Gridley
Grinnell
Gypsum
Haddam
Halstead
Hamilton
Hamlin
Hanover
Hanston
Hardtner
Harlan
Harper
Hartford
Harveyville
Havana
Haven
Havensville
Haviland
  Haviland R. H. S.
  Friends' Academy
Hays
  Hays H. S.
  Girls Catholic H. S.
  Catholic College Academy
Hazelton
Healy
Hepler
Herington
Herndon
Hesston
  Hesston College Academy
Hiawatha
Highland
Highland Park
  Topeka P. O.
Hill City
Hillsboro
  Hillsboro H. S.
  Tabor College Academy
Hoisington
Holcomb
Hollenberg
Holton
Holyrood
Hope
Horton
  Horton H. S.
  St. Leo's H. S.
Howard
Hoxie
  Sheridan Co. Com.
Hoyt
Hudson
Hugoton
  Stevens Co. Com.
Humboldt
Hunter
Hutchinson
  Hutchinson H. S.
  Bressee College Academy
  St. Teresa Academy
Independence
Ingalls
Inman
Iola
Ionia
Irving
Isabel
Jamestown
Jarbalo
Jennings
Jetmore
Jewell City
Johnson
  Stanton Co. Com.
Junction City
  Junction City H. S.
  St. Xavier's H. S.
Kackley
Kanopolis
Kanorado
Kansas City
  Argentine H. S.
  Catholic H. S.
  K. C. Univ. Academy
  Pembroke School
  Rosedale
  State School for Blind
  Sumner H. S.
  Welborn H. S.
  Western Univ. Academy
  Wyandotte H. S.
Keats
Kensington
Kincaid
Kingman
Kingsdown
Kinsley
Kiowa
Kipp
Kirwin
Kismet
La Crosse
La Cygne
Lafontaine
La Harpe
Lake City
Lakin
Lane

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

St. John
  St. John H. S.
  Antrim R. H. S.
St. Marys
  St. Mary's 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.
  Marymount Academy
Satanta
Savonburg
Sawyer
Scandia
Schoenchen
Scott City
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
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 R. H. S.
Toronto
Towanda
Tribune
  Greeley Co. Com.
Trousdale
Troy
Turner
Turon
Tyro
Udall
Ulysses
  Grant Co. Com.
Uniontown
Utica
Valley Center
Valley Falls
Vermillion
Vernon
Vesper
Victoria
  St. Fidelis H. S.
Vilas
Vinland
Viola
Virgil
Wakeeney
  Trego Co. Com.
Wakefield
Waldo
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
Whitewater
Whiting
Wichita
  Wichita H. S.
  American Indian Institute
  Cathedral H. S.
  Mt. Carmel Academy
  St. Johns Academy
Wilburton
Williamsburg
Willis
Wilmore
Wilsey
Wilson
Winchester
Windom
Winfield
Winona
Woodbine
Woodruff
Woodston
Yates Center
Zenda
Zook
  Larned P. O.

JUNIOR COLLEGES

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

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

Kansas Junior Colleges in Fully Accredited Relations with the College

PUBLIC

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

PRIVATE

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

Undergraduate Degrees and Certificates

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

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

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

DEGREES

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

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

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

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

CERTIFICATES

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

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

Graduate Study

James Edward Ackert, *Chairman of Graduate Council*

THE ADMINISTRATION OF GRADUATE COURSES

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

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

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

ADMISSION

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

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

REGISTRATION

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

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

DEGREES

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

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 students in College curricula. This fee is not charged Summer School students, short-course students, or students in trade courses, but is payable by special students in the College.

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

Student-health Fee. Graduate students are excused from payment of the student-health fee.

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

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

Late Assignment Fee. For assignment after the close of the regular registration period the student is charged $5. There is no exception to this rule.

Commencement Fee. On graduation students pay a commencement fee of $10 to cover the cost of the diploma and other commencement expenses.

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

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

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

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

CANDIDACY FOR MASTER'S DEGREE

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

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

Language Requirements. A reading knowledge of two modern languages is highly desirable.

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

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

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

PROGRAM OF STUDY

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

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

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

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

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

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

VACATION CREDIT

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

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

GRADUATE WORK IN ABSENTIA

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

GRADUATE ASSISTANTSHIPS

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

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

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

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

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

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

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

GRADUATE FELLOWSHIP

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

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

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

SENIORS AND GRADUATE STUDY

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

GRADUATE WORK IN THE SUMMER SESSIONS

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

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

CANDIDACY FOR PROFESSIONAL DEGREES

ENGINEERING AND ARCHITECTURE

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

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

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

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

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

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

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

THE GRADUATE CLUB

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

General Information

DUTIES AND PRIVILEGES

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

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

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

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

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

EXPENSES

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

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

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

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

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

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

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

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

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

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

FOR RESIDENTS OF KANSAS

	Old students	*New students*
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

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

FOR ALL SHORT-COURSE STUDENTS

	2 weeks	*8 weeks*
Incidental	$3.00	$5.00
Student-health	None.	1.50
Totals	$3.00	$6.50

Late Assignment Fee. For assignment after the close of the regular registration period the student is charged $5. *There is no exception to this rule.*

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

Commencement Fee. On graduation students pay a commencement fee of $10 to cover the cost of the diploma and other commencement expenses.

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

Fees for Graduate Students. Fees to be paid by graduate students are listed fully in the section headed "Graduate Study."

Fee Receipts Are to be Saved. Receipts for fees must be shown to the assigner at the beginning of each semester before a student is permitted to take out his assignment.

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

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

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

Refund is made on the unused portion of laboratory fees.

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

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

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

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

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

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

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

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

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

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

BOARDING AND ROOMING HOUSES

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

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

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

SELF-SUPPORT

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

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

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

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

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

STUDENT LOAN FUNDS

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

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

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

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

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

The 4-H Club Loan Fund. The Collegiate 4-H Club of the College has created a loan fund of approximately $1,000 to be loaned to deserving students who were former successful 4-H club members. This fund is loaned in units of $50, drawing interest at 6 per cent per annum. The fund has been created by the efforts of the members of the Collegiate 4-H Club in editing and publishing the "Who's 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. A. 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 Agricultural College are beneficiaries of the State Federation of Women's Clubs through the administration of its liberal Young Women's Student Loan Fund. Information regarding this fund can be obtained by addressing Dean Mary P. Van Zile, Manhattan, Kan.

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

The Social Club Loan Fund. This is a fund loaned by the K. S. A. C. Social Club and is administered by the Waters Loan Fund Committee.

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

The Women's Pan-Hellenic Loan Fund. The Alumnæ Pan-Hellenic Fund is loaned to women students. Applications should be made to the president, City Pan-Hellenic, through Dean Mary P. Van Zile.

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

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

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

PRIZES AND MEDALS

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

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

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

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

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

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

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

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

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

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

Short-story Writing. The Quill Club offers anually a gold medal to the

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

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

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

First prize, gold medal and $25.
Second prize, silver medal and $15.
Third prize, bronze medal and $10.

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

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

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

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

SCHOLARSHIPS

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

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

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

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

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

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

GRADUATE FELLOWSHIP

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

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

GRADUATE ASSISTANTSHIPS

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

BUSINESS DIRECTIONS

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

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

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

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

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

STUDENT ASSEMBLY

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

COLLEGE PUBLICATIONS

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

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

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

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

COLLEGE POST OFFICE

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

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

ASSIGNMENTS

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

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

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

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

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

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

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

CHANGES IN ASSIGNMENTS

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

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

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

SCHOLARSHIP DEFICIENCIES

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

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

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

ABSENCE AND TARDINESS

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

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

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

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

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

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

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

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

EXAMINATIONS

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

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

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

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

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

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

GRADES

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

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

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

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

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

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

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

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

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

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

REPORTS OF GRADES

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

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

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

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

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

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

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

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

THE POINT SYSTEM

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

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

CREDITS FOR EXTRA WORK

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

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

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

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

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

BIBLE STUDY

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

COURSE NUMBERS

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

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

CLASSES

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

Freshmen or sophomores	12
Juniors or seniors	7

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

THE STUDENT GOVERNING ASSOCIATION

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

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

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

THE CHRISTIAN ASSOCIATIONS

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

THE YOUNG MEN'S CHRISTIAN ASSOCIATION

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

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

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION

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

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

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

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

THE NEWMAN CLUB

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

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

LITERARY SOCIETIES

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

SCIENCE CLUB

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

AGRICULTURAL SOCIETIES

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

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

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

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

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

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

ENGINEERING SOCIETIES

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

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

GENERAL SCIENCE SOCIETIES

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

HOME ECONOMICS SOCIETIES

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

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

HONORS

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

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

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

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

HONOR SOCIETIES

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

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

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

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

HONORARY AND PROFESSIONAL ORGANIZATIONS

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

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

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

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

THE COLLEGE BAND

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

THE COLLEGE ORCHESTRA

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

ATHLETIC ORGANIZATIONS

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

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

The Division of Agriculture

Leland Everett Call, *Dean*

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

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

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

EQUIPMENT

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

CURRICULA IN AGRICULTURE

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

A four-year curriculum in agriculture.

A four-year curriculum in agricultural administration.

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

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

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

DEGREES

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

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

CHOOSING A CURRICULUM

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

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

THE CURRICULUM IN AGRICULTURE

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

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

ANALYSIS OF THE CURRICULUM IN AGRICULTURE

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

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

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

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

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

THE CURRICULUM IN AGRICULTURAL ADMINISTRATION

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

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

ANALYSIS OF CURRICULUM IN AGRICULTURAL ADMINISTRATION

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

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

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

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

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

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

STATE TEACHER'S CERTIFICATE

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

STATE CERTIFICATE FOR TEACHERS OF VOCATIONAL AGRICULTURE

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

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

THE CURRICULUM IN LANDSCAPE GARDENING

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

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

THE CURRICULUM IN ANIMAL HUSBANDRY AND VETERINARY MEDICINE

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

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

Curriculum in Agriculture

FRESHMAN

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

SOPHOMORE

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

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

1. Four meetings each semester.

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

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

JUNIOR

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

SENIOR

First Semester		Second Semester	
		Agric. Relationships, Gen. Agric. 105,	R(1-0)
Electives	16	Electives	16
Agric. Seminar,[1] Gen. Agric. 103	R	Agric. Seminar,[1] Gen. Agric. 103	R
Total	16	Total	16

Number of semester hours required for graduation, 128.

Electives

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

	Semester credits
MAJOR ELECTIVES	12

These electives may be taken in any one of the departments of the Division of Agriculture. In certain cases also a science department outside of the division may be selected for a major department; *e. g.*, Chemistry, Entomology, Bacteriology.

MINOR AGRICULTURAL ELECTIVES	9

These electives may be taken from one or more departments but must directly strengthen the student's preparation in agriculture.

MINOR NONAGRICULTURAL ELECTIVES	6

These electives must be chosen from one or more of the following departments: Education, Economics and Sociology, History and Government, Mathematics, Modern Languages.

GENERAL ELECTIVES	19

These electives are expected to be chosen because they are adapted to meet individual needs and to round out the preparation provided by the rest of the student's curriculum. All students not offering one unit of high-school physics for entrance are required to include three credit hours of general physics in their electives.

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

SUBSTITUTIONS TO MEET CERTAIN OBJECTIVES

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

Curriculum in Agricultural Administration

FRESHMAN

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

* Four meetings each semester.

SOPHOMORE

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

JUNIOR

First Semester		Second Semester	
Agric. Journalism, Ind. Jour.	3(2-3)		
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Electives	13	Electives	16
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Agric. Seminar,* Gen. Agric. 103	R	Agric. Relationships, Gen. Agric. 105	R(1-0)
Electives	16	Agric. Seminar,* Gen. Agric. 103	R
		Electives	16
Total	16	Total	16

Number of semester hours required for graduation, 128.

Electives

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

SEMESTER CREDITS OF ELECTIVES REQUIRED FOR VARIOUS FIELDS

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

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

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

Adaptation of Curriculum in Agricultural Administration for Class of 1931

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

Number of semester credits required for graduation, 134.

* Four meetings each semester.

Curriculum in Agriculture, with Special Training in Landscape Gardening

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	Gen. Geology, Geol. 103	3(3-0)
Gen. Botany I, Bot. 101	3(1-4, 2)	Gen. Botany II, Bot. 105	3(1-4, 2)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Org. Chemistry, Chem. 122	5(3-6)
Engr. Draw., Mach. Des. 101	2(0-6)	Extempore Speech I, Pub. Spk. 106	2(2-0)
Library Methods, Lib. Ec. 101	1(1-0)	Domestic Arch., Arch. 124	2(2-0)
Freshman Lect., Gen. Agric. 102	1(2-0)		
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103,	R(0-2) *or*	Phys. Education M, Phys. Ed. 104,	R(0-2) *or*
Phys. Education W, Phys. Ed. 151A,	R(0-3)	Phys. Education W, Phys. Ed. 152A,	R(0-3)
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total men	16	Total men	16
Total women	15	Total women	15

SOPHOMORE

First Semester		Second Semester	
Object Draw., Arch. 111	2(0-6)	Object Draw. II, Arch. 114	2(0-6)
Agric. Economics, Agric. Ec. 101	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
Plant Physiology I, Bot. 208	3(3-0)	General Zoölogy, Zoöl. 105	5(3-6)
Soils, Agron. 130	4(3-3)	El. of Horticulture, Hort. 107	3(2-3)
Landscape Gardening I, Hort. 125	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105,	R(0-2) *or*	Phys. Education M, Phys. Ed. 106,	R(0-2) *or*
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys, Ed. 154	R(0-3)
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total men	16	Total men	16
Total women	15	Total women	15

JUNIOR

First Semester		Second Semester	
Plant Materials I, Hort. 224	3(2-3)	General Entomology, Ent. 203	3(2-3)
Plant Pathology I, Bot. 205	3(1-4, 2)	Agric. Journalism, Ind. Jour. 160	3(2-3)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying II, Civ. Engr. 111	2(0-6)
Theory of Lands. Design, Hort. 243	2(2-0)	Plant Materials II, Hort. 226A	3(2-3)
Greenhouse Con. & Man., Hort. 128	3(3-0)	Plant Ecology, Bot. 228	2(2-0)
Taxo. Bot. of Fl. Plants, Bot. 225	3(1-4, 2)	Floriculture Problems, Hort. 220	2(-)
		Electives[1]	1
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Landscape Gardening II, Hort. 238	3(1-6)	Agric. Relationships, Gen. Agric. 105,	R(1-0)
Dendrology, Hort. 117	3(2-3)	Silviculture, Hort. 119	3(2-3)
Spraying, Hort. 207	3(2-3)	Landscape Gardening III, Hort. 246,	3(1-6)
Pencil Rend. & Sketch., Arch 116	2(0-6)	Water Color I, Arch. 118	2(0-6)
Landscape Constr., Hort. 227	3(2-3)	Civic Art, Hort. 223	3(1-6)
		Landscape Gard. Prob., Hort. 240	4(-)
Electives[1]	2	Electives	1
Agric. Seminar,* Gen. Agric. 103	R	Agric. Seminar,* Gen. Agric. 103	R
Total	16	Total	16

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

Electives in Industrial Journalism

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

* Four meetings each semester.

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

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

Electives for Students of Agriculture Majoring in Industrial Journalism

First Semester		Second Semester	
Principles of Advertising	3(3-0)	Industrial Writing	2(2-0)
Industrial Feature Writing	2(2-0)	Editorial Practice	2(2-0)
Copy Reading	2(0-6)	Ethics of Journalism	2(2-0)
The Rural Press	2(2-0)	Journalism Surveys	2(0-6)

Agricultural Economics

Professor Grimes
Professor Green
Associate Professor Evans
Associate Professor Mortenson
Assistant Professor Hodges
Assistant Professor Howe
Assistant Professor Henney
Graduate Assistant Larsen

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

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

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

COURSES IN AGRICULTURAL ECONOMICS

FOR UNDERGRADUATE CREDIT

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

Economic principles as they relate to agriculture.

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

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

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

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

‡ Absent on leave year of 1929-'30.

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

112. Farm Cost Accounting. 3(2-3); I and II. Prerequisite: Ag. Ec. 101. Mr. Evans and Mr. Hodges.
Various systems of farm records and accounts. In the laboratory, problems from actual farms. Cost of producing farm products; analysis and utilization of cost of production data. Charge, $1.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Marketing of Farm Products. 3(3-0); I and II. Prerequisite: Ag Ec. 101. Mr. Green, Mr. Mortenson, and Mr. Henney.
Price problems affecting time of buying and selling; buyers' and sellers' relations; marketing organizations and the control of marketing, and the adaptability of products to market demands and preferences.

203. Grain Marketing. 3(3-0); I. Prerequisite: Ag. Ec. 202. Mr. Green.
Price influences and price relationships, buying and selling problems; domestic and export trade in grain; grain trade organization; regulation and control of the trade.

204. Transportation of Farm Products. 3(3-0); I. Prerequisite: Ag. Ec. 101. Mr. Henney.
Rate making and other transportation problems having an important influence on the marketing of farm products.

206A. Advanced Farm Organization. 3(2-3); II. Prerequisite: Ag. Ec. 106. Dr. Grimes and Mr. Evans.
Factors affecting the successful organization and operation of the farm business; effects of external factors. A number of the better and more profitable farms are visited.

212. Conservation of Agricultural Resources. 2(2-0); II. Prerequisites: Ag. Ec. 101; junior standing. Mr. Howe.
The world's agricultural resources, the economics of their utilization, and their present and future relationship to human well-being.

218. Agricultural Land Problems. 3(3-0); I. Prerequisite: Ag. Ec. 101. Mr. Howe.
A study of the relation of population to land supply and the conditions affecting tenure, ownership, and valuation of land.

219. Taxation and Land Ownership. 3(3-0); II. Prerequisite: Ag. Ec. 101, or consult instructor. Mr. Howe.
Analysis of public expenditures and revenues, public credit, and fiscal administration with special emphasis upon the effects of each upon agriculture.

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

221. Agricultural Finance. 2(2-0); II. Prerequisite: Ag. Ec. 101. Mr. Howe.
Sources and kinds of credit for purchasing farm land and financing farm operations.

227. Farmer Movements. 3(3-0); I. Prerequisite: Ag. Ec. 101. Dr. Grimes.
Farmers' efforts to improve economic status through organization. Principles underlying successful organization of farmers.

231. Agricultural Economics Seminar. 1(1-0); I and II. Prerequisites: Ag. Ec. 101. Dr. Grimes, Mr. Green, Mr. Mortenson, Mr. Evans, Mr. Howe, Mr. Hodges, and Mr. Henney.
Current questions in agricultural economics reviewed and discussed; topics prepared and presented by students.

235. Live-stock Marketing. 3(3-0); II. Prerequisite: Ag. Ec. 202. Mr. Henney.
The economics of live-stock marketing and factors affecting live-stock prices.

240. Principles of Coöperation. 3(3-0); II. Prerequisite: Ag. Ec. 101. Dr. Grimes.

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

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

FOR GRADUATE CREDIT

301. Research in Agricultural Economics. 1 to 5 credits; I, II and SS. Prerequisites: Consult instructors. Dr. Grimes, Mr. Green, Mr. Mortenson, Mr. Evans, Mr. Hodges, Mr. Howe, and Mr. Henney.

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

305. Advanced Agricultural Economics. 3(3-0); I. For prerequisites, consult instructor. Mr. Green and Mr. Mortenson.

The basic principles of economics, a strengthened foundation in fundamentals; planned readings in the works of leading economists, and discussion of principles and their application to problems confronting specialists in agricultural economics.

310. History of Agricultural Economic Thought. 3(3-0); II. Prerequisites: Consult instructor. Dr. Grimes.

Development of agricultural economics and relation of agricultural economic doctrines to conditions existing when they were formulated.

Agronomy

Professor Throckmorton
Professor Salmon
Professor Parker
Professor Aldous
Professor Duley
Associate Professor Sewell
Associate Professor Zahnley
Associate Professor Laude
Assistant Professor Davis
Assistant Professor Timmons
Instructor Myers
Assistant Lewis
Assistant Harling
Farm Superintendent Crews
Graduate Research Assistant Suneson
Graduate Assistant Goth
Graduate Assistant Alspach

The College farm used by the Department of Agronomy comprises 320 acres of medium rolling upland soil, well suited to experimental and demonstration work. It is well equipped with all kinds of farm machinery necessary in crop production. The general fields and experimental plots used for the breeding and testing of farm crops, and for conducting experiments in soil fertility and methods of culture, afford the student excellent opportunities for study and investigation.

Large and well equipped laboratories for soil and crop work are maintained for the regular use of students. Material is provided for the study of the grain and forage crops best adapted to different purposes and most suitable for growing in the state. Ample greenhouse space is provided for problems and research work in crops and soils.

The Department of Agronomy offers courses in cereal and forage crop production and improvement, in pasture management, in soils, soil fertility, soil survey, and dry land farming.

This department owns equipment valued at $28,869.

COURSES IN FARM CROPS

FOR UNDERGRADUATE CREDIT

101. Farm Crops. 4(2-6); I and II. Prerequisite: Bot. 101. Mr. Davis.

The distribution, relative importance, value, and production of the more important grain and forage crops. Deposit, $5.

105. Seed Identification and Weed Control. 2(1-3); I. Prerequisite: Agron. 101. Mr. Zahnley and Mrs. Harling.

Methods of propagation, control, and eradication of weeds.

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

108. Grain Grading and Judging. 2(0-6); II. Prerequisite: Agron. 101. Mr. Zahnley.

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

114. Advanced Grain Judging. 2(0-6); I. Prerequisite: Agron. 108. Mr. Zahnley.

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

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Crop Improvement. 3(2-3) or 4(2-6); II. Prerequisites: Agron. 101. and An. Husb. 221. Dr. Parker.

Principles of plant breeding reviewed and applied to the principal groups of field crops; methods of selection, hybridization, and breeding for special qualities.

Laboratory.—A study of heritable characters in crop plants and of laboratory, greenhouse, and field methods of plant breeding. Charge, $2.50.

203. Advanced Forage Crops. 2(1-3); I. Prerequisite: Agron. 101. Mr. Zahnley.

Results of the most recent investigations in forage crops here and abroad; a more intensive study of the sorghums, alfalfa, sweet clover, soybeans, and other important or promising forage crops.

Laboratory.—The growth habits of crops considered in the lecture, especially as related to the production and improvement of these crops, storing, market grading, and marketing of hay. Charge, $1.

205B. Principles of Agronomic Experimentation. 3(2-3); I. Prerequisites: Agron. 101 and 130. Mr. Salmon.

The principles of experimentation in general, and their application to agronomic problems; important contributions to agronomic science studied from the historical and statistical viewpoint. Charge, $2.50.

206. Agronomy Seminar. 1(1-0); II. Prerequisites: Agron. 101 and 130. Mr. Throckmorton.

Students review before the class timely articles appearing in bulletins and current journals.

207A. Pasture Improvement. 3(2-3); II. Prerequisites: Bot. 102 and Agron. 101. Mr. Aldous.

Native forage plants, their distribution, value, life history and habits, and their management; management of pastures and ranges, including determination of their carrying capacity, character of stock best suited to a range or pasture, and proper methods of handling areas for maintenance or increase of forage cover.

208. Plant Genetics. 3(3-0); I. Prerequisite: An. Husb. 221. Dr. Parker.

An advanced course for students interested in plant breeding and principles of genetics. Offered in 1928-'29 and alternate years thereafter.

209. Genetics Seminar. 1 credit; the year. Prerequisite: Consult instructors. Dr. Nabours, Dr. Parker, Dr. Warren, Dr. Ibsen, and Dr. Brunson.

Study and criticism of genetic experiments in plants and animals, of the biological and mathematical methods employed, and of the validity of conclusions drawn.

210. Crop Problems. 1(0-3) to 4(0-12); I, II and SS. Prerequisite: Agron. 203. Mr. Salmon, Dr. Parker, Mr. Aldous, and Mr. Zahnley.
Special problems chosen or assigned; written reports upon completion of problems; credit varies with amount and quality of work done. Deposit, $5.

211. Crop Ecology. 2(2-0); II. Prerequisite: Agron. 101. Mr. Salmon.
Distribution of farm crops with special reference to the climatic, edaphic, economic, and social factors primarily responsible for the concentration of crop production in certain countries; possibilities of further increases in crop-producing areas and probable nature and direction of such increases.

212. Origin and Classification of Crop Plants. 3(1½-4½); I. Prerequisite: Agron. 101. Offered in 1929-'30 and alternate years thereafter. Dr. Parker, Mr. Zahnley, and Mr. Laude.
Geographical and botanical origin of crop plants; characters used in identification of varieties of crop plants and related wild forms. Charge, $2.50.

213. Special Crops. 2(2-0); II. Prerequisite: Agron. 101. Mr. Zahnley.
Distribution, climatic and soil requirements, relative importance, and production of sugar beets, cotton, flax, hemp, tobacco, and other minor crops.

FOR GRADUATE CREDIT

301. Crop Research. 1 to 10 credits; I, II, and SS. Prerequisite: Agron. 203. Mr. Salmon, Dr. Parker, Mr. Aldous, and Mr. Zahnley.
Special problems chosen or assigned, resulting data being available for master's thesis. Charge, $5.

302. Pasture Improvement Research. 1 to 5 credits; I, II, and SS. Prerequisites: Agron. 207, Civ. Engr. 111, and Bot. 225. Mr. Aldous.
Special problems chosen or assigned; investigations may furnish data for master's thesis.

303. Plant Breeding Literature. 1(0-3); I, II, and SS. Prerequisite: An. Husb. 221. Dr. Parker.
An opportunity is offered to familiarize students with current literature in genetics and plant breeding.

COURSES IN SOILS

FOR UNDERGRADUATE CREDIT

130. Soils. 4(3-3); I and II. Prerequisites: Chem. 110 and Geol. 103. Mr. Throckmorton, Dr. Sewell, and Mr. Myers.
Fundamental principles underlying the management of soils. Charge, $3.50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

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

232A. Advanced Soil Fertility. 3(2-3); I. Prerequisite: Agron. 130. Dr. Duley.
Physical, chemical, and biological factors which influence the fertility of the soil and practical use of manure, fertilizer, lime, and legumes. Charge, $5.

233. Soil Survey. 2(1-3); II. Prerequisite: Agron. 130. Mr. Myers and Mr. Lewis.
Types of soils of the United States and methods of mapping soil areas; special attention to study of Kansas soils in the field. Charge, $1.

235. Advanced Soils Laboratory. 1(0-3) to 4(0-12); I, II, or the year. Prerequisite: Agron. 130. Dr. Duley, Dr. Sewell, and Mr. Myers.
The more advanced problems of soil physics and fertility, the making of mechanical analyses; determination of moisture equivalent; specific heat; pot work with soils in the greenhouse. Charge, $2.50.

236. Soil Problems. 1(0-3) to 4(0-12); I, II, and SS. Prerequisites depend on problem assigned. Mr. Throckmorton, Dr. Sewell, and Dr. Duley.
Special problems in soils, chosen or assigned. Deposit, $5.

243. Soil and Crop Management. 3(2-3); II. Prerequisites: Agron. 101 and 130. Dr. Duley.
Discussion and investigation of practical management of soils and crops.

247. Interrelations of Soils and Crop Plants. 3(3-0); II. Prerequisites: Agron. 130 and Bot. 208. Dr. Sewell.
Chemical laws, plant physiology, and ecological factors applied to soil problems in relation to crop production.

FOR GRADUATE CREDIT

331. Soil Research. 1 to 10 credits; I, II, and SS. Prerequisites: Agron. 130 and Chem. 250. Mr. Throckmorton, Dr. Duley, and Dr. Sewell.
Special soil problems, which may extend throughout the year and furnish data for a master's thesis. Charge, $5.

Animal Husbandry

Professor McCampbell
Professor Bell
Professor Ibsen
Professor Reed
Professor Anderson
Associate Professor Aubel
Assistant Professor Mackintosh
Assistant Professor Alexander
Graduate Assistant Hopper
Graduate Assistant Decker
Graduate Research Assistant Day

The courses of study in this department are arranged to give the student special instruction in the selection, breeding, feeding, marketing, and management of all classes of live stock.

The department devotes 624 acres of land to the maintenance of herds and flocks of pure-bred horses, cattle, sheep, and hogs. The College live stock has attained a national reputation among breeders and feeders on account of the many prize-winning animals produced.

This department feeds experimentally from 750 to 1,000 animals each year. This affords excellent opportunity to study feeding animals and problems in feeding.

The feed yards and barns are well arranged for experimental feeding and the maintenance of the herds. The laboratory of the animal husbandry student is the feed lot and the judging pavilion. He studies the animal from the standpoint of the breeder and the feeder. He learns to combine the needs of each and to find those qualities in the animal best suited to meet these needs.

The department owns equipment valued at $38,545. This includes live stock having a value of $26,796.

COURSES IN ANIMAL HUSBANDRY

FOR UNDERGRADUATE CREDIT

125. Elements of Animal Husbandry. 3(2-4); I and II. Mr. Bell, Mr. Mackintosh, and Mr. Alexander.
A general survey of the field of animal husbandry with special emphasis on the relation of live stock to agriculture in general. Type, conformation, quality, character, and breed characteristics in animals are stressed in the laboratory. Charge, 50 cents.

140. Advanced Stock Judging I. 2(0-6); I. Prerequisite: An. Husb. 125. Mr. Bell.
The judging of market animals and of different breeds of pure-bred stock, four to six animals in a group as is customary at county and state fairs. Charge, 50 cents.

143. Advanced Stock Judging II. 2(0-6); II. Prerequisite: An. Husb. 140. Mr. Bell.

Continuation of An. Husb. 140; occasional trips to the best live-stock farms of the state, where the management of herds and flocks as handled by the most successful stockmen of the state are judged and observed. Charge, 50 cents.

146. Form and Function in Live Stock. 2(0-6); I. Prerequisites: An. Husb. 143 and 180. Mr. Bell.

A detailed and specific study of animal form and type, and influence of type upon function; relation of form, type and condition to growth and development; comparative measurements of growing and fattening animals, speed and draft horses, mutton and wool sheep, and lard and bacon types of hogs; special training in presenting orally the relative merits of animals of all breeds. Charge, 50 cents.

152. Principles of Feeding. 3(3-0); II. Prerequisites: Anat. 131 and Chem. 122. Mr. Anderson.

The digestive system and processes of nutrition; the origin, chemical analysis, grades, and feeding values of different feeds; the theory of practical economy of rations for the maintenance and for the fattening of all classes of farm animals.

155. Beef-cattle Production. 3(2-3); II. Prerequisites: An. Husb. 120, 180, and 152. Dr. McCampbell and Mr. Anderson.

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

158. Swine Production. 3(2-3); II. Prerequisites: An. Husb. 120, 180, and 152. Mr. Aubel.

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

161. Sheep Production. 3(2-3); I. Prerequisites: An. Husb. 120, 180, and 152. Mr. Reed.

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

164. Horse Production. 3(2-3); I. Prerequisites: An. Husb. 120, 180, and 152. Mr. Mackintosh.

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

167. Meats. 2(1-3); II. Prerequisites: An. Husb. 120 and 152. Mr. Mackintosh.

Killing and dressing, cutting, and curing meats. Charge, $1.

171. Live-stock Production. 3(3-0); II and SS. Prerequisite: An. Husb. 152 or 172. Open only to juniors and seniors not majoring in animal husbandry. Mr. Bell.

Practical insight into the production of beef cattle, horses, swine, and sheep.

172. Feeding Live Stock. 3(3-0); II. Open only to students in agricultural administration and agricultural engineering. Mr. Alexander.

The processes of digestion and assimilation, the food requirements of different animals, methods of calculating rations, and the relative feeding value of different feeds.

176. Meats HE. 1(0-3); II. For juniors and seniors in home economics. Prerequisite: Food and Nut. 106. Mr. Mackintosh.

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

181. Breeds of Live Stock. 3(3-0); I. Prerequisite: An. Husb. 120. Mr. Mackintosh.

A study of the origin, development, adaptability, families, strains, noted sires, and noted breeders of the leading breeds of farm live stock other than dairy cattle.

182. Meat Studies HE. 1(0-3); I. For juniors and seniors in home economics. Prerequisite: Food and Nut. 106. Mr. Mackintosh.
Lectures and demonstrations illustrating wholesale and retail cuts of meat and their utilization; also the factors determining quality and palatability in meat. Not accepted as a prerequisite for Advanced Meats.

FOR GRADUATE AND UNDERGRADUATE CREDIT

221. Genetics. 3(3-0); I, II, and SS. Prerequisites: Zoöl. 105 and Bot. 105. Dr. Ibsen.
A general study of variation, Mendelian inheritance, and related subjects.

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

225. Advanced Genetics. 4(3-3); II. Prerequisite: An. Husb. 221. Dr. Ibsen.
Genetics studied in greater detail than in An. Husb. 221; particular attention to the relation of chromosomes to heredity.

227. Genetics Seminar. 1 credit; the year. Prerequisites: Consult instructors. Dr. Nabours, Dr. Ibsen, Dr. Parker, and Dr. Warren.
Genetic experiments in plants and animals, the biological and mathematical methods employed, and validity of conclusions drawn.

229. Research in Genetics. 1 to 10 credits; I and II. Prerequisite: An. Husb. 225. Dr. Ibsen.
A two-semester course offering opportunity for individual study of problems in which small mammals are used as the experimental animals.

231. Advanced Studies in Pedigrees. 3(1-6); II. Prerequisite: An. Husb. 181. Mr. Mackintosh.
Pedigrees and prepotency of individuals representing the more important strains and families of beef cattle, horses, sheep, and swine.

233. Advanced Feeding. 2(2-0); I. Prerequisite: An. Husb. 152. Mr. Anderson.
A survey of the experimental feeding of horses, cattle, sheep, and hogs; fundamental and practical feeding problems of the various sections of the country; results obtained in experimental investigation of these problems.

244. Animal Husbandry Seminar. (1-0); II. Open only to seniors and graduate students majoring in animal husbandry. Prerequisite: An. Husb. 152. Mr. Reed.

245. Animal Husbandry Problems. 1 to 5 credits; I, II, and SS. Prerequisites: An. Husb. 152 and other courses; consult instructor. Dr. McCampbell.

250. Pure-bred Live-stock Production. 2(2-0); II. Prerequisite: An. Husb. 181 and 223; senior or graduate standing. Mr. Reed.
The real function of pure-bred live stock; the many factors upon which the successful production of pure-bred live stock depends; and possibilities in pure-bred live-stock production.

260. The American Live-stock and Meat Industry. 3(3-0); II. Prerequisites: An. Husb. 120 and 152. Dr. McCampbell.
An advanced study of the live-stock and meat industry; its organization, operation, and development; and the relation of its diversified activities to each other and to the public. Lectures, assigned readings, and reports.

268. Live-stock Experimental Methods. 2(2-0); II. Prerequisites: An. Husb. 152 and 221. Dr. McCampbell and Dr. Ibsen.

How to plan, conduct, and interpret experiments involving the use of animals.

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

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

274. Advanced Meats. 1 to 4 credits; II. Prerequisite: An. Husb. 167. Mr. Mackintosh.

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

290. Problems in Training Agricultural Judging Teams. Class 2 hours daily; 2 credits. 2d SS. Prerequisites: An. Husb. 125, Agron. 101, Poult. Husb. 101, Dairy Husb. 101, one year's teaching experience. Mr. Bell in charge, 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 credit; the year. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Leinhardt, Dr. Burt, Dr. Kramer, Mr. Payne, and Mr. Fitch.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of the validity of conclusions drawn.

311. The Wool Industry. 3(2-3); II. Prerequisite: An. Husb. 161. Mr. Reed.

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

Dairy Husbandry

Professor Fitch
Professor Cave
Professor Martin
Assistant Professor Riddell
Instructor Brooks
Instructor Caulfield
Graduate Assistant Smith
Graduate Research Assistant Hodgson
Graduate Research Assistant Seath

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

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

and 442 pounds of butter fat; for the Holsteins 13,925 pounds of milk and 492 pounds of butter fat; and for Jerseys 6,897 pounds of milk and 400 pounds of butter fat.

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

Students who have specialized in dairying are now among the leading dairy-cattle breeders of the state. Others who were interested in the manufacturing side of dairying are in responsible positions with creameries and milk companies or in business for themselves. The dairy industry is expanding in Kansas, and this is bringing a greater demand for men with experience and knowledge of dairying.

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

This department owns equipment valued at $51,516. This figure includes live stock to the value of $26,365.

COURSES IN DAIRY HUSBANDRY

FOR UNDERGRADUATE CREDIT

101. Elements of Dairying. 3(2-3); I and II. Mr. Cave, Mr. Caulfield. Mr. Brooks, Mr. Smith, and Mr. Hodgson.

The secretion, composition, and properties of milk; factors influencing the quantity and quality of milk; care of milk and cream on the farm; different methods of creaming; construction and operation of farm separators; principles and application of the Babcock test; use of the lactometer; and butter making on the farm.

Laboratory.—Practice in making the Babcock test, in use of the lactometer, in separation of milk, and in farm butter making. Charge, $2.

104. Dairy Judging. 1(0-3); I and II. Mr. Brooks.

Judging dairy stock from the standpoint of economical production and breed type.

106. Dairy Inspection I. 2(1-3); I. Prerequisites: Bact. 106 and Dairy Husb. 101. Mr. Caulfield.

Advanced work in the testing of dairy products and testing for adulterations; practice in use of score cards for inspecting and grading milk plants, farm dairies, and creameries; outlining of state and city ordinances governing the handling and public sale of dairy products; training in duties of city, state, and government inspectors. Charge, $3.

108. Milk Production. 3(3-0); II. Prerequisites: Dairy Husb. 101 and An. Husb. 152 or 172. Mr. Fitch.

Economical production of milk and the most approved method of handling the dairy herd; construction of dairy barns and buildings; other subjects relating to the dairy farmer.

109. Butter Making I. 3(2-3); I. Prerequisites: Dairy Husb. 101 and Bact. 211. Mr. Martin.

Principles of creamery butter making; construction and care of creameries and their appliances; methods of sampling and grading cream; pasteurization; starter making; cream ripening; and creamery accounting.

Laboratory.—Practice in the sampling and grading of milk and cream, etc.; the making of salt, fat, and moisture determinations of the finished product; judging and scoring butter. Charge, $3.

111. Butter Making II. 4(2-6); I. Prerequisites: Dairy Husb. 101 and Bact. 211. Mr. Martin.

Similar to course 109; for students specializing in dairy manufacturing. Charge, $3.

116A. Market Milk. 3(2-3); II. Prerequisites: Dairy Husb. 101 and Bact. 211. Mr. Martin.

Classes of market milk; equipment and methods for clean milk production; relation of clean milk to producer, dealer, and consumer; systems of milk inspection, score cards, and milk and cream contests; milk plants, including their methods and equipment.

Laboratory.—Actual practice in all the steps in the production of market milk and cream in the College milk plant. Charge, $3.

118. Dairy Inspection II. (Vet.) 1(0-3); II. Mr. Caulfield.

The testing of dairy products; the inspection and scoring of dairies and milk depots; the testing for adulterants in dairy products. Charge, $3.

120. Advanced Dairy Judging. 1(0-3); II. Mr. Cave.

Continuation of Dairy Husb. 104; visits to the best farms of the state; opportunity to judge and handle stock kept by the most successful breeders.

127. Condensed and Powdered Milk. 2(1-3); I. Prerequisites: Dairy Husb. 116 and Bact. 211. Mr. Martin.

The history of milk condensing, methods of manufacture, condensing machinery, and the powdered-milk industry.

Laboratory.—Condensing milk in the college plant. Charge, $3.

130. Ice Cream Making. 3(2-3); II. Prerequisites: Dairy Husb. 106 and 116. Mr. Martin and Mr. Caulfield.

A thorough study of the science and practice of the commercial manufacture of ice cream and ices.

Laboratory.—Practice in all phases of the manufacture of ice cream and ices in the college plant. Charge, $3.

135A. Cheese Making. 2(1-3); II. Prerequisites: Dairy Husb. 106 and Bact. 211. Mr. Caulfield.

Manufacture of American cheddar cheese, soft cheeses, and the most important foreign varieties.

Laboratory.—Actual manufacture of the various types of cheese. Charge, $3.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Dairy Seminar. 1(1-0); II. Prerequisites: Dairy Husb. 101, 106, and 108. Mr. Fitch.

A study and review of dairy periodicals and experiment station bulletins, books, and other dairy literature.

207. Feeding and Management of Dairy Cattle. 3(2-3); II. Prerequisites: Dairy Husb. 108 and An. Husb. 152. Mr. Cave.

An advanced course in feeding as it applies to dairy cattle under ordinary conditions and to cows on advanced registry test; general management problems and the fitting of animals for show and sale. Charge, $1.

211. Dairy Breeds and Pedigrees. 2(1-3); I. Prerequisite: Dairy Husb. 108. Mr. Brooks.

The history and development of the different breeds of dairy cattle.

Laboratory.—Study of the herdbooks of the dairy breeds and study of the pedigrees of some of the prominent animals of each breed. Charge, $1.

216. Dairy Production Problems. 1 to 5 credits; I and II. Prerequisites: Dairy Husb. 101, 104, and 108, and An. Husb. 152. Mr. Fitch and Mr. Cave.

An investigation pertaining to dairy production problems, plans for said investigation to be so formulated that the study may be continued for more than one semester, if necessary.

221. Dairy Manufacturing Problems. 1 to 5 credits; I and II. Prerequisites: Dairy Husb. 101, 106, 108, 111, and 114. Mr. Martin.

An investigation pertaining to dairy manufacturing problems, plans for said investigation to be so formulated that, if necessary, the study may be continued for more than one semester.

226. Creamery Management. 2(2-0); II. Prerequisite: Dairy Husb. 111. Mr. Martin.

An advanced course in creamery management for students specializing in dairy manufacturing.

FOR GRADUATE CREDIT

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

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

305. Animal Nutrition Seminar. 1 credit; the year. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Leinhardt, Dr. Burt, Dr. Kramer, Mr. Payne, and Mr. Fitch.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of the validity of conclusions drawn.

General Agriculture

Dean Call

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

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

103. Agricultural Seminar. R(four meetings each semester).

Discussion of general agricultural questions and of agricultural student affairs; programs presented by students, members of the faculty, and invited speakers from outside.

105. Agricultural Relationships. R(1-0); II.

Agricultural graduates and their duties, responsibilities, and opportunities for service as citizens of the agricultural community and as specialists in various phases of agricultural activity.

Horticulture

Professor Dickens*
Professor Barnett†
Associate Professor Quinlan
Assistant Professor Pickett
Assistant Professor Balch
Instructor Tucker
Graduate Assistant Meyer

Instruction offered in the Department of Horticulture covers pomology, vegetable gardening, greenhouse practice, forestry, and all phases of landscape gardening.

The horticultural farm consists of eighty acres of land devoted exclusively to horticultural and forestry work. A full equipment of garden tools, spraying

* Absent on leave, year 1929-'30.
† Acting head, year 1929-'30.

machinery and accessories, pruning tools, and special apparatus for floriculture is available at all times for the use of students. The College grounds furnish one of the finest and most complete laboratories in the state for the study of landscape gardening and on them are located the vegetable gardens.

Instruction in landscape gardening is planned to meet the requirements of two classes of students: (1) Students who wish a general knowledge of the principles underlying landscape gardening; (2) students who wish to specialize in landscape gardening. A complete curriculum, with the coöperation of the Departments of Civil Engineering and Architecture, is offered the latter students. (See "Curriculum in Agriculture With Special Training in Landscape Gardening.")

The value of the equipment belonging to this department is $7,142.

COURSES IN HORTICULTURE

FOR UNDERGRADUATE CREDIT

105. Systematic Pomology. 4(2-6); I. Prerequisite: Hort. 107. Mr. Barnett and Mr. Pickett.

Technical study of fruit varieties, including varietal relationships; principles underlying pomological nomenclature, variety description, and artificial and natural systems of variety classifications.

Laboratory.—Study of actual fruits, from many parts of the United States; description, identification, judging and preparation of fruit displays. Charge, $1.

107. Elements of Horticulture. 3(2-3); I and II. Prerequisite: Bot. 105. Mr. Barnett, Mr. Pickett and Mr. Tucker.

The relation of the more important subdivisions of horticulture to general agriculture and to advanced courses in pomology and olericulture; practices necessary for success in orcharding and gardening and the principles on which these practices are based.

Laboratory.—Study of fruit-bearing habits, propagation, pruning, spraying, transplanting, cover crops, fruit varieties, etc. Charge, $1.

110. Small Fruits. 2(2-0); II and SS. Prerequisite: Bot. 105. Mr. Pickett.

Culture, harvesting and marketing small fruits; management of home and commercial plantations.

114. Farm Forestry. 3(2-3); I. Prerequisite: Bot. 105. Mr. Pickett.

The needs of Kansas farms for windbreaks and wood lots for post and fuel production; forest conservation and methods of handling timber; the growing of trees in locations better suited for timber than for other crops; composition of windbreaks and their value as protection to home orchards and fields.

Laboratory.—Identification of species, methods of forming windbreaks, nursery work in transplanting trees of various sizes, determination of rate of growth of trees under various conditions.

117. Dendrology. 3(2-3); I. Prerequisite: Bot. 105. Mr. Pickett.

Classification and identification of forest trees; forest ecology and taxonomy; classification of commercial species; relative importance of timber species; the life history and requirements of trees.

Laboratory.—Studies in the College arboretum and excursions to near-by wood lots; becoming acquainted with trees that do well in Kansas.

119. Silviculture. 3(2-3); II. Prerequisite: Hort. 114 or 116. Mr. Pickett.

The business of tree growing for economic purposes; requirements of species, their range and requirements as to soils, climate and the various factors that determine their reproduction and rate of growth; protection of forests from fires and insects; and the applications of various systems of silviculture.

125. Landscape Gardening I. 3(3-0); I and SS. Mr. Quinlan.

An introductory course in the fundamental principles of landscape gardening.

128. Greenhouse Construction and Management. 3(3-0); I. Mr. Balch.
The more important points of greenhouse construction and the proper methods of greenhouse management; the commercial standpoint and private conservatories.

129. Floral Arrangement. 2(1-3); I. Mr. Balch.
The use of flowers and floral pieces for the home and the store.

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

130. School Gardening. 2(2-0); SS. Mr. Balch.
A general study of soils, insects, diseases, and machinery as related to vegetable crops and their culture.

133. Elements of Vegetable Gardening. 3(2-3); II. Mr. Balch.
The practices necessary for success in vegetable gardening — the fundamentals for the student who becomes a teacher, a county agricultural agent or a vegetable grower, and a foundation for advanced courses in vegetable production. Charge, $1.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Practical Pomology. 3(2-3); II. Prerequisite: Hort. 105. Mr. Barnett and Mr. Pickett.
Fruit geography, orchard locations, financing the orchard, orchard equipment, orchard economics, fruit manufactured products, and fruit marketing. Lectures and recitations.

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

202. Subtropical Pomology. 2(2-0); II. Prerequisite: Hort. 105. Mr. Barnett.
The geography and methods of production of the principal subtropical fruits grown in the United States. Lectures and assigned readings.

205. Advanced Pomology. 3(2-3); I. Prerequisite: Hort. 105. Mr. Barnett and Mr. Pickett.
A course on the fundamentals of orcharding.

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

207. Spraying. 3(2-3); I. Prerequisite: Chem. 110. Mr. Pickett.
Spray machinery and accessories; chemical properties, manufacture and use of the important insecticides and fungicides; determination of spray dates.

Laboratory.—Preparation and testing of spray materials; special study of spray machinery and accessories. Charge, $1.

209. Orchard Problems. 1 to 5 credits; I, II, and SS. Prerequisites: Hort. 105, and senior or graduate standing. Mr. Barnett and Mr. Pickett.
Problems related to commercial orcharding, such as orchard surveys, production costs, root-stock adaptations, pruning tests, and studies of fruit in common storage. A charge may be made.

210. Market Gardening. 3(2-3); II. Prerequisites: Agron. 130 and Hort. 133. Mr. Balch.
The business side of market gardening; preparation of seed orders; estimates of cost per acre of growing various garden crops; harvesting, storing, and marketing vegetables.

Laboratory.—Each student is assigned a plot of ground to plant and care for during the semester. Careful records of cultural operations and of yields; disease and insect control. Charge, $1.

218. Market-gardening Problems. 1 to 5 credits; I and II. Prerequisite: Hort. 210. Mr. Balch.
The important methods of production of standard vegetables of both garden and greenhouse: problems of marketing, storage, and shipping.

220. Floricultural Problems. 1 to 5 credits; I, II, and SS. Prerequisite: Hort. 128. Mr. Balch.
Propagation and culture of floricultural crops under glass or in the garden.

223. Civic Art. 3(1-6); II. Prerequisite: Hort. 243. Mr. Quinlan.
A study of the growth and development of cities and towns. Emphasis is laid on the design of community and civic centers, parks, land subdivisions, etc.

224. Plant Materials I. 3(2-3); I. Prerequisite: Bot. 105. Mr. Quinlan.
Study and identification of perennials and annuals for general ornamental planting; planting plans.

226A. Plant Materials II. 3(2-3); II. Prerequisite: Hort. 224. Mr. Quinlan.
Study and identification of trees, shrubs, and vines for general ornamental planting. Planting plans, sketches, and written reports are required.

227. Landscape Construction. 3(2-3); I. Prerequisite: Civil Engr. 111. Mr. Quinlan.
Interpretation of topographic maps, preparation of grading plans; structures in relation to the topography, sewage, water supply, lighting, and drainage on the private estate.

235. Horticulture Seminar. 1(1-0); I and II. Prerequisites: Hort. 105, 133 or 128. Mr. Barnett.
A study and critical discussion of recent horticultural publications and of experimental and research projects now under way in this and other agricultural experiment stations.

238. Landscape Gardening II. 3(1-6); I. Preerquisites: Hort. 125 and 226. Mr. Quinlan.
An elementary course in the designing of the home grounds, the country estate, special gardens, and playgrounds. Several sketch problems will be given during the course. Charge, $1.

240. Landscape Gardening Problems. 1 to 5 credits. Prerequisites: Hort. 238 and 243. Mr. Quinlan.
In this course the student solves original advanced problems in landscape design, construction, maintenance, and materials for landscape gardening. The course may extend through the school year.

243. Theory of Landscape Design. 2(2-0); I. Prerequisite: Hort. 125. Mr. Quinlan.
The economic and æsthetic theory of design; taste, character, historic styles, composition; natural elements in design; and planting design.

246. Landscape Gardening III. 3(1-6); II and SS. Prerequisites: Hort. 226, 243, and 238. Mr. Quinlan.
Advanced course in designing of large parks, cemeteries, golf courses, educational groups, and high-class land subdivisions; construction details; contracts and specifications. Several sketch problems will be given during the course. Charge, $1.

FOR GRADUATE CREDIT

301. Horticultural Research. 1 to 10 credits; I, II, and SS. Prerequisites: Consult instructor. Mr. Dickens, Mr. Barnett, Mr. Balch, and Mr. Quinlan.
Any feasible problem relating to the student's major line of graduate study —pomology, olericulture, forestry, or landscape gardening. Data collected may form basis for a master's thesis.

Milling Industry

Professor Swanson
Associate Professor Working
Instructor Pence
Miller Oakes
Research Fellow McCormick

The milling of wheat and other cereals is one of the leading manufacturing industries of the United States, and milling products constitute over one-third of the total food materials produced in the United States. An industry of such magnitude calls for technically trained men. Kansas is the center of the hard-winter-wheat belt, and flour milling is the second manufacturing industry in the state.

The department has a well-equipped flour mill, consisting of six double stand rolls with necessary wheat-cleaning machinery, sifters, purifiers, and dust collectors. The equipment is equal to that found in the commercial mills of the same capacity.

The baking laboratory is equipped with dough mixer, proofing closet, baking oven, and other necessary apparatus. The chemical laboratory contains the apparatus needed for flour and wheat testing. For advanced work there are available a hydrogen-ion potentiometer, and apparatus for making conductivity measurements and viscosity tests.

The department owns equipment valued at $40,238.

COURSES IN MILLING INDUSTRY

FOR UNDERGRADUATE CREDIT

104. Principles of Milling I. 2(1-3); I. Dr. Swanson and Mr. Oakes.
The theory and principles of flour-milling operations; practice work on an experimental mill. Charge, $2.

106. Principles of Milling II. 1(0-3); II. Mr. Pence and Mr. Oakes.
Wheat conditioning and the study of the course of different products through the mill with the aid of a flow-sheet. Charge, $2.

109. Milling Practice I. 3(1-6); I. Prerequisite: Mill. Ind. 106. Mr. Pence and Mr. Oakes.
A study of the operation of wheat-cleaning machines, tempering controls, grinders, sifters, and purifiers. Charge, $2.

111. Milling Practice II. 3(1-6); II. Prerequisite: Mil. Ind. 109. Mr. Pence and Mr. Oakes.
Relation of roll and bolting surfaces, flour blending, redressing, principles of bleaching, belt management, lubrication, spout construction, methods of checking mill operation. Charge, $2.

115. Thesis. 1 to 5 credits; I and II. Dr. Swanson, Dr. Working, and Mr. Pence.
Experimental work on problems connected with flour milling or the testing of wheat and flour, the subject of investigation to be selected in consultation with the head of the department at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Milling Technology I. 2(0-6); I. Prerequisite: Mill. Ind. 111. Mr. Pence.
Problems related to management of flour-mill operations, variation in wheat conditioning, corrugation, roll spiral, roll surfaces, purifiers, and bolters. Charge, $2.

202. Milling Technology II. 2(0-6); II. Prerequisite: Mill. Ind. 201. Mr. Pence.
Study of the influence of external conditions on flour-mill operations, management of air control, exhaust, dust collectors, flour bleachers, determining the flow of mill streams. Charge, $2.

205. Wheat and Flour Testing. 3(0-9); I. Prerequisites: Mill. Ind. 212 and Chem. 123 and 251 or 260. Dr. Working.
Special quantitative tests applied to cereals and their products; methods of analysis and interpretation of results. Deposit, $7.50.

206. Experimental Baking. 3(1-6); II. Prerequisite: Mill. Ind. 205. Dr. Working.
Practice in baking tests; comparison of methods, formulas, and flours; interpretation of results. Charge, $4.

210. Advanced Wheat and Flour Testing. 1 to 5 credits; I and II. Prerequisites: Mill. Ind. 205 and other courses; consult instructors. Dr. Swanson and Dr. Working.
Physiochemical and other methods used in testing wheat and flour. Deposit, $2.50 per credit.

212. Milling Qualities of Wheat. 3(3-0); II. Prerequisite: Chem. 123. Dr. Swanson.
Factors which affect the milling qualities of wheat and the quality of flour, such as moisture, respiration, enzymes, harvesting, storage, climate, and soil.

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

FOR GRADUATE CREDIT

301. Milling Industry Research. 1 to 10 credits; I, II, and SS. Prerequisite: Mill Ind. 205 and 206, and other courses required by the problem selected. Dr. Swanson, Dr. Working, and Mr. Pence.
A definite line of investigation which may, if sufficient as to quality and quantity, be used as a basis for a thesis presented in partial fulfillment of the requirements for the degree of Master of Science.

Poultry Husbandry

Professor Payne
Professor Warren
Assistant Professor Scott
Graduate Assistant Albright
Graduate Research Assistant Murphy
Superintendent Loomis.

The poultry plant, occupying twenty-four acres and situated just north of the northeast corner of the College campus, is devoted to the breeding and rearing of the stock used for class and experimental work. It is equipped with various types of houses, runs, incubators and brooders, and with flocks of the leading breeds of fowls.
There is in the government and state experiment stations and in schools and colleges an increasing demand for men with experience and systematic training in handling poultry. There is likewise a growing demand for men to enter poultry-packing houses and for men capable of managing poultry-farming enterprises of considerable proportions.
The department owns equipment valued at $13,517.

COURSES IN POULTRY HUSBANDRY.

FOR UNDERGRADUATE CREDIT

101. Farm Poultry Production. 2(1-3); I and II. Mr. Payne and Mr. Scott.
Problems of poultry management on the general farm. Charge, $2.

104. Practice in Poultry Feeding. 1(3 times a day, 7 days a week, for 3 weeks, at hours outside the regular schedules); II. Prerequisite: Poult. Husb. 101. Mr. Scott.

A flock of fowls cared for under supervision of an instructor; careful records kept of feeds consumed and eggs produced; survey of recent literature on poultry feeding. Charge, $2.

109. Poultry Judging. 3(1-6); I. Prerequisite: Poult. Husb. 101. Mr. Scott.
A historical study of the various breeds commonly found on the Kansas farm; particular attention to production characteristics and tracing evolution of present breed types.

Laboratory.—Judging the standard breeds and varieties by score card and by comparison; judging hens for egg production on the basis of their trap-nest records. Charge, $3.

116. Market Poultry and Eggs. 4(2-6); I. Prerequisite: Poult. Husb. 101. Mr. Payne.
Methods of handling market eggs and live and dressed poultry.

Laboratory.—Candling and grading eggs; crate-feeding, killing, dressing, grading, and packing market poultry. Charge, $3.

120. Artificial Incubation and Brooding. 3(1-6) (laboratory 3 times a day, 7 days a week for not less than 8 weeks, at hours outside the regular schedule); II. Prerequisite: Poult. Husb. 101. Mr. Scott and Mr. Albright.
Survey of the literature upon incubation and brooding; actual care of an incubator throughout the incubation period; bringing off the hatch; care of chicks in brooder for three weeks. Charge, $3.

125. Advanced Incubation. 1 credit (3 times a day, 7 days a week, for not less than three weeks, at hours outside the regular schedule); II. Prerequisites: Poult. Husb. 101 and 120. Mr. Payne and Mr. Albright.
Study of the baby chick industry; operation of a Mammoth incubator; packing and shipping of baby chicks. Charge $2.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Poultry Breeding. 2(2-0); II. Prerequisite: An. Husb. 221. Dr. Warren.
Experimental work on inheritance in poultry is reviewed.

Poultry Farm Organization. See Advanced Farm Organization (Ag. Ec. 206A).

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

Poultry Anatomy. See Special Anatomy (Anat. 202).

206. Poultry Problems. 1 to 5 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, and such other courses as required. Mr. Payne.
A definite investigation covering some phase of poultry work, to be continued into the next semester if necessary.

210. Genetics Seminar. 1 credit; the year. Prerequisites: Consult instructors. Dr. Nabours, Dr. Ibsen, Dr. Warren, and Dr. Parker.
Genetic experiments in plants and animals, the biological and mathematical methods employed, and validity of conclusions drawn.

215. Poultry Management. 2(2-0); II and SS. Prerequisites: Poult. Husb. 101; senior or graduate standing. Mr. Payne and Mr. Scott.
A detailed study of all phases of farm and commercial flocks, including cost of production.

220. Poultry Seminar. 1(1-0); I. Prerequisite: Poult. Husb. 101. Required of all graduate students and of both juniors and seniors majoring in poultry husbandry. Dr. Warren.
A review of current literature appearing in periodicals and bulletins and reports on research projects and topics of special interest.

FOR GRADUATE CREDIT

301. Poultry Research. 1 to 10 credits; I, II, and SS. Prerequisites: Poult. Husb. 101, 104, 109, 116, 120, or their equivalent, and such other courses as required. Mr. Payne and Dr. Warren.

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

305. Animal Nutrition Seminar. 1 credit; the year. Prerequisite: Consult instructors. Dr. Hughes, Dr. McCampbell, Dr. Leinhardt, Dr. Burt, Dr. Kramer, Mr. Payne, and Mr. Fitch.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of the validity of conclusions drawn.

Agriculture in the Summer School

Teachers in the high schools and grade schools of Kansas appreciate the value of the work offered in the Summer School of Kansas State Agricultural College. Besides first-class professional courses in education and other regular standard courses of college grade, courses in agriculture and agricultural engineering furnish unusual opportunities to teachers preparing for large usefulness in Kansas communities. Basic college courses are offered in most of the departments in the Division of Agriculture, and opportunity for graduate work is being broadened each year. This is especially true as regards graduate work provided for high school teachers of vocational agriculture. Brief information regarding many of these courses offered in the Summer School may be found in the department descriptions of courses in this catalogue. Further information may be secured by addressing a request to Dean of the Summer School, Kansas State Agricultural College, Manhattan, Kan.

SPECIAL COURSES IN AGRICULTURE

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

The Division of Engineering

Roy Andrew Seaton, *Dean*

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

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

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

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

Besides the four-year professional curricula, the Division of Engineering offers one- or two-year courses in auto mechanics and machine shop work.

STATE TEACHER'S CERTIFICATE

By substituting nine specified credit hours of work in the Department of Education a four-year curirculum in engineering may lead not only to the degree of Bachelor of Science in Engineering, but at the same time qualify the student for a three-year Kansas state teachers' certificate, renewable for three-year periods. By taking nine additional credit hours of work in the Department of Education, graduates in engineering are qualified for the three-year Kansas state teachers' certificate, renewable for life and valid in any high school or any other public school in the state. A student desiring to qualify for teaching should begin his professional preparation by electing psychology in his junior year.

CURRICULUM IN AGRICULTURAL ENGINEERING

The curriculum in agricultural engineering is designed to qualify men for engineering work in the science of agriculture; for positions in the farm-machinery and farm-motor industry; for the management of farms where drainage, irrigation, or power-farming methods are prevalent; and for the positions as advisers, consulting engineers, or architects in connection with agricultural development.

The work of the first year is similar to the other engineering curricula. During the last three years about one-fourth of the time is devoted to agricultural subjects, in order to familarize the students with the modern methods of scientific agriculture and to enable them to apply engineering principles to agricultural problems. Considerable time is devoted to farm machinery, farm motors, rural architecture, highway engineering, irrigation, drainage, and concrete construction.

CURRICULUM IN ARCHITECTURAL ENGINEERING

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

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

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

CURRICULUM IN ARCHITECTURE

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

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

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

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

CURRICULUM IN CHEMICAL ENGINEERING

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

pirically developed include those concerned with the manufacture of paints and varnishes, soaps, glass, leather, rubber, and ceramic materials. Industrial products which are the direct result of chemical research include dyes, synthetic essential oils, drugs, food products, and all electrochemical and electrothermal products, such as calcium carbide, carborundum, graphite, caustic soda, chlorine, chlorates, aluminum and other metals, and atmospheric nitrates. Still further improvements are possible in the present processes and a vast number of entirely new industries are waiting to be developed.

The training offered in the chemical engineering curriculum gives the student knowledge of the theoretical phases of chemistry and engineering which are fundamental to further development in many lines of industrial work. It is intended to fit him to enter the professional field of chemical engineering. In addition to sound training in chemical laws and processes, considerable work is given in the mathematical and physical sciences, drawing, economics, and engineering methods and operations.

CURRICULUM IN CIVIL ENGINEERING

The aim of the curriculum in civil engineering, as outlined in this catalogue, is to give the young men taking the work the best possible preparation for entering upon the active practice of the profession under present conditions. It will be noted that the first and second years are devoted largely to general cultural studies and the sciences, including mathematics. This follows the arrangement generally found in the engineering curricula of American colleges, and it finds its justification in the well-nigh universally accepted idea that any engineering education worthy of consideration must be grounded upon ample preliminary education in the allied sciences. An introduction to the technical work is given in these years through courses in drawing, shopwork, surveying, and the elementary phases of engineering.

The last two years are devoted largely to technical work. In recognition of the mechanical trend of the age, liberal provision is made for class and laboratory work in mechanical and electrical engineering. In view of the growing importance of municipal problems, such as paving, sewerage, and water supply, the curriculum in civil engineering includes required courses in these subjects.

Advanced elective courses in railway, highway, and irrigation and drainage engineering are offered in the second semester of the senior year.

CURRICULUM IN ELECTRICAL ENGINEERING

The curriculum in electrical engineering aims to prepare the student for leadership in the field of his chosen profession. The graduate may enter upon one of several divisions in the field of electrical engineering, such as electrical design, application, commercial, or operation in either the electric power or the electric communication industry.

In order to qualify for the various division of the profession, the student should have a thorough grounding in mathematics and the sciences; practice and theoretical training in drawing, surveying, and shop practice; and a liberal training in the cultural subjects of English, history and economics. Such a broad foundation serves as the basis for the more technical training in electrical engineering. This technical training begins with a course during the first year in College, is followed by another course during the second year and is completed by several courses extending through the junior and senior years. The curriculum provides, in addition, for approximately one semester of elective work, giving the student ample opportunity for the selection of extra work along cultural, economic or technical lines.

Instruction is provided by lecture, recitation, and laboratory methods, with particular stress on the deductions and reports of laboratory experiments.

An opportunity for contact with the field of electrical engineering is offered by special lectures and by inspection trips. The student is aided in securing professional experience during the summer vacation periods.

CURRICULUM IN FLOUR-MILL ENGINEERING

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

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

CURRICULUM IN LANDSCAPE ARCHITECTURE

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

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

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

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

CURRICULUM IN MECHANICAL ENGINEERING

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

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

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

Optional and elective courses are available in the senior year and give the

student an opportunity for instruction in the more specialized branches of mechanical engineering, including factory engineering, power production, and aëronautical engineering.

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

Curriculum in Agricultural Engineering

FRESHMAN

First Semester		Second Semester	
Chemistry E-I, Chem. 107	*4(3-3)	Chemistry E-II, Chem. 108	4(3-3)
College Algebra,† Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Engr. Draw., Mach. Design 101	2(0-6)	Descriptive Geom. Mach. Des. 106	2(0-6)
Agric. Mach. & Con., Agr. Engr. 122	2(1-3)	Feeding Livestock, An. Husb. 172	3(3-0)
Extempore Speech I, Pub. Spk. 106	2(2-0)	Forging I, Shop 150	1(0-3)
Artillery I, Mil. Tr. 113A	1(0-3)	Artillery II, Mil. Tr. 114A	1(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	16	Total	17

SOPHOMORE

First Semester		Second Semester	
Engr. Physics I, Phys. 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Plane Analytical Geom. Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
American Industrial Hist., Hist. 105	3(3-0)	General Geology, Geol. 103	3(3-0)
Mechanism, Mach. Design 121	3(3-0)	Mach. Draw. I, Mach. Design 111	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying II, Civ. Engr. 111	2(0-6)
Artillery III, Mil. Tr. 115A	1(0-3)	Artillery IV, Mil. Tr. 116A	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	18	Total	18

JUNIOR

First Semester		Second Semester	
Applied Mechanics, Ap. Mech. 202	4(4-0)	Str. of Mat., Ap. Mech., 211, 220	6(5-3)
Calculus II, Math. 206	3(3-0)	Livestk. Production, An. Husb. 171	3(3-0)
Soils, Agronomy 130	4(3-3)	Farm Crops, Agronomy 101	4(2-6)
Fld. & Power Mach., Agr. Engr. 111	4(2-6)	Farm Motors, Ag. Engr., 125, 127	4(2-6)
Carpentry, Shop 149	2(0-6)	Foundry Production, Shop 161	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	17	Total	18

SENIOR §

First Semester		Second Semester	
Economics, Econ. 101	3(3-0)	Farm Organization, Ag. Econ. 106	3(2-3)
Farm Structures, Ag. Engr. 105	4(2-6)	Land Reclamation, Ag. Engr. 150	3(2-3)
Highway Engineering I, Civ. Engr. 231	2(2-0)	Electrical Engineering C, Elect. Engr., 160, 165	3(2-2, 1)
Hydraulics, Ap. Mech. 230, 235	4(3-3)	Heating & Ventilation A, Mech. Engr., 135	3(3-0)
Highway Materials Lab., Ap. Mech. 250	1(0-3)	Modern Farm and Home Equipment, Ag. Engr. 115	3(2-3)
Machine Tool Work I, Shop 170	2(0-6)	Elective‡	2(-)
Law for Engineers, Hist. 167	2(2-0)	Seminar, Gen. Engr. 105	R
Seminar, Gen. Engr. 105	R		
Total	18	Total	17

Number of hours required for graduation, 140.

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

† Students who offer but one unit of algebra for admission take a five-hour course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

‡ Electives are to be chosen with the advice and approval of the head of the department and the dean.

§ Optional subjects are offered during the senior year for those wishing to specialize in rural electrification.

Curriculum in Architectural Engineering

FRESHMAN

First Semester		Second Semester	
Chemistry E-I, Chem. 107	4(3-3)	Chemistry E-II, Chem. 108	4(3-3)
College Algebra,* Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Descr. Geom. A, Mach. Design 107	3(0-9)	Shades and Shadows, and Perspective, Mach. Design 108	3(0-9)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Architecture II, Arch. 107A	3(0-9)
Artillery I, Mil. Tr. 113A	1(0-3)	Artillery II, Mil. Tr. 114A	1(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	17	Total	17

SOPHOMORE

First Semester		Second Semester	
Engr. Physics I, Phys. 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Hist. of Arch. I, Arch. 154A	2(2-0)	Hist. of Arch. II, Arch. 157A	2(2-0)
Plane Analytical Geom. Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Object Drawing I, Arch. 111	2(0-6)	Object Drawing II, Arch. 114	2(0-6)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Electrical Machinery and Construction, Elec. Engr. 170	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Artillery IV, Mil. Tr. 116A	1(0-3)
Artillery III, Mil. Tr. 115A	1(0-3)	Seminar, Gen. Engr. 105	R
Seminar, Gen. Engr. 105	R	Phys. Education M, Phys. Ed. 106	R(0-2)
Phys. Education M., Phys. Ed. 105	R(0-2)		
Total	18	Total	17

JUNIOR

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

SENIOR

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

Number of semester hours required for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Architecture

FRESHMAN

First Semester		Second Semester	
College Algebra,* Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
Hist. of Arch. I, Arch. 154A	2(2-0)	Hist. of Arch. II, Arch. 157A	2(2-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Desc. Geom. A, Mach. Des. 107	3(3-9)	Sh. & Shad. & Per., Mach. Des. 108	3(0-9)
Object Drawing I, Arch 111	2(0-6)	Object Drawing II, Arch. 114	2(0-6)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Arch. II, Arch. 107A	3(0-9)
Artillery I, Mil. Tr. 113A (men)	1(0-3)	Artillery II, Mil. Tr. 114A (men)	1(3-0)
Phys. Education M, Phys. Ed. 103, *or*	R(0-2)	Phys. Education M. Phys. Ed. 104, *or*	R(0-2)
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A,	R(0-3)
Engr. Lectures, Gen. 101	R	Engr. Lectures, Gen. Engr. 101	R
Total, men	17	Total, men	17
Total, women	16	Total, women	16

SOPHOMORE

First Semester		Second Semester	
Gen. Physics I, Phys. 135	4(3-3)	General Physics II, Phys. 140	4(3-3)
Hist. of Arch. III, Arch. 158A	2(2-0)	Hist. of Arch. IV, Arch. 160A	2(2-0)
Bld. Mat. & Con., Arch. 187A	3(3-0)	Work. Draw. & Spec., Arch. 191	3(0-9)
Pencil. Rend. & Sketch., Arch. 116	2(0-6)	Water Color I, Arch. 118	2(0-6)
Design I, Arch. 142	3(0-9)	Design II, Arch. 144	3(0-9)
French I, Mod. Lang. 151	3(3-0)	French II, Mod. Lang. 152	3(3-0)
Artillery III, Mil. Tr., 115A (men)	1(0-3)	Artillery IV, Mil. Tr. 116A (men)	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. education M, Phys. Ed. 105, *or*	R(0-2)	Phys. Education M, Phys. Ed. 106, *or*	R(0-2)
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total, men	18	Total, men	18
Total, women	17	Total, women	17

JUNIOR

First Semester		Second Semester	
Ap. Mech. A, Ap. Mech. 102	3(3-0)	Str. of Mat. A, Ap. Mech. 116, 121,	4(3-3)
Still-life Drawing, Arch. 117	2(0-6)	Life Drawing I, Arch. 121	2(0-6)
Design III, Arch. 145	5(0-15)	Design IV, Arch 147	5(0-15)
Rural Architecture, Arch. 153	2(0-6)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Economics, Econ. 101	3(3-0)	Law for Engineers, Hist. 167	2(2-0)
Hist. of Civ. & Art I, Arch 178	2(3-0)	Hist. of Civ. & Art II, Arch. 182	2(3-0)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Interior Design, Arch. 120	2(0-6)	Life Drawing II, Arch. 123	2(0-6)
Design V, Arch. 253	8(0-24)	Design VI, Arch. 256	8(0-24)
Theory of Struc. I, Arch. 192	4(2-6)	Theory of Struc. II, Arch. 194A	5(3-6)
Elective†	4(-)	Elective†	2(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Arch. 199	R
Total	18	Total	17

Number of semester hours required for graduation: Men, 139; Women, 135.

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* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum for Chemical Engineering

FRESHMAN

First Semester		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)
Cryst. and Min., Geol. 209	4(2-6)	Metallurgy, Shops 165	2(2-0)
Artillery III, Mil. Tr. 115A	1(0-3)	Artillery IV, Mil. Tr. 116A	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	17	Total	18

JUNIOR

First Semester		Second Semester	
Calculus II, Math. 206	3(3-0)	Str. of Mat. E, Ap. Mech. 216, 220	4(3-3)
Ap. Mech., Ap. Mech. 202	4(4-0)	Steam and Gas Engr. II, Mech. Engr. 204, 205	4(3-3)
Steam and Gas Engr. I, Mech. Engr. 201, 202	5(4-3)	Organic Chem. II, Chem. 219	4(2-6)
Organic Chemistry I, Chem. 218	4(2-6)	Elec. Engr. C, Elec. Engr. 160, 165	3(2-2, 1)
Mach. Drawing I, Mach. Des. 111	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(2-3)	Chemical Engr. Prin., Chem. 281	2(2-0)
Phys. Chem. I, Chem. 206	5(3-6)	Chemical Problems, Chem. 270	3(0-9)
Mechanism, Mach. Des. 121	3(3-0)	Physical Chemistry II, Chem. 272	3(3-0)
Fire Assaying, Chem. 242	2(0-6)	Electives†	4(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Chem. 130	R
Total	18	Total	17

Number of semester hours required for graduation, 140.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Civil Engineering

FRESHMAN

First Semester		Second Semester	
Chemistry E-I, Chem. 107	4(3-3)	Chemistry E-II, Chem. 108	4(3-3)
Plane Trigonometry,* Math. 101	3(3-0)	College Algebra,* Math. 104	3(3-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Engr. Drawing, Mach. Des. 101	2(0-6)	Des. Geometry, Mach. Des. 106	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying II, Civ. Engr. 111	1(0-6)
Extem. Speech I, Pub. Spk. 106	2(0-2)	Engr. Woodwork I, Shop 101	1(0-3)
		Forging I, Shop 150	1(0-3)
Artillery I, Mil. Tr. 113A	1(0-3)	Artillery II, Mil. Tr. 114A	1(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Phys. Education M, Phys. Ed. 102	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	17	Total	17

SOPHOMORE

First Semester		Second Semester	
Engr. Physics I, Phys. 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Plane Analytical Geom. Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Amer. Industrial Hist., Hist. 105	3(3-0)	Metallurgy, Shop 165	2(2-0)
Surveying III, Civ. Engr. 151, 155	3(2-3)	Surveying IV, Civ. Engr. 156, 157	3(2-3)
Mach. Drawing I, Mach. Des. 111	2(0-6)	C. E. Drawing I, Civ. Engr. 125	2(0-6)
Artillery III, Mil. Tr. 115A	1(0-3)	Artillery IV, Mil. Tr. 116A	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	18	Total	18

JUNIOR

First Semester		Second Semester	
Applied Mech., Ap. Mech. 202	4(4-0)	Str. of Mat., Ap. Mech. 211, 220	6(5-3)
Calculus II, Math. 206	3(3-0)	Hydraulics, Ap. Mech. 230, 235	4(3-3)
Highway Engr. I, Civ. Engr. 231	2(2-0)	Ry. Engr. I, Civ. Engr. 145	2(2-0)
Engr. Geology, Geol. 102	4(3-3)	Drain. & Irrig. I, Civ. Engr. 161	2(2-0)
Masonry & Found., Civ. Engr. 120	2(2-0)	Steam & Gas Engr. C, Mech. Engr. 120, 125	3(2-3)
Law for Engineers, Hist. 167	2(2-0)	Seminar, Gen. Engr. 105	R
Seminar, Gen. Engr. 105	R		
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Str. in Fr. Struc., Civ. Engr. 201	4(4-0)	Des. of Fr. Struc., Civ. Engr. 246	3(0-9)
C. E. Drawing II, Civ. Engr. 205	2(0-6)	Elec. Engr. C, Elec. Engr. 160, 165	3(2-2, 1)
Astr. & Geod., Civ. Engr. 211, 216	4(2-6)	Engr. English, Engl. 110	2(2-0)
Water Supply, Civ. Engr. 220	2(2-0)	Business Management, Econ. 126	2(2-0)
Sewerage, Civ. Engr. 225	2(2-0)	Con. Design, Civ. Engr. 250, 255	3(2-3)
Highway Materials Lab., Ap. Mech. 250	1(0-3)	Ry. Engr. II, Civ. Engr. 260, 265	4(2-6)
Economics, Econ. 101	3(3-0)	Hy. Engr. II, Civ. Engr. 270, 275	4(2-6) *or*
		Drain. & Irrig. II, Civ. Engr. 280, 285	4(2-6)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Civ. Engr. 180	R
Total	18	Total	17

Number of semester hours for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Plane Trigonometry and two hours of other work until the second semester.

Curriculum in Electrical Engineering

FRESHMAN

First Semester		Second Semester	
Chemistry E-I, Chem. 107	4(3-3)	Chemistry E-II, Chem. 108	4(3-3)
Plane Trigonometry,* Math. 101	3(3-0)	College Algebra,* Math. 104	3(3-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Engr. Drawing, Mach. Des. 101	2(0-6)	Desc. Geom., Mach. Des. 106	2(0-6)
Engr. Woodwork I, Shop 101	1(0-3)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Forging I, Shop 150	1(0-3)		
Elec. Mach. & Con., Elect. Engr. 170	2(0-6) *or*	Elect. Mach. & Con., Elect. Engr. 170	2(0-6) *or*
Surveying I, Civ. Engr. 102	2,0-6)	Surveying I, Civ. Engr. 102	2(0-6)
Artillery I, Mil. Tr. 113A	1(0-3)	Artillery II, Mil. Tr. 114A	1(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	17	Total	17

SOPHOMORE

First Semester		Second Semester	
Engr. Physics I, Phys. 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Plane Analytical Geom. Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Mechanism, Mach. Des. 121	3(3-0)	Amer. Indus. History., Hist. 105	3(3-0)
Mach. Draw. 1, Mach. Des. 111	2(0-6)	Mach. Draw. E-II, Mach. Des. 117	2(0-6)
Metallurgy, Shop 165	2(2-0) *or*		
Prin. of Elec. Engr., Elect. Engr. 179	2(2-0)	Prin. Elect. Engr., Elect. Engr. 179	2(2-0) *or*
Foundry Production, Shop 161	1(0-3)	Metallurgy, Shop 165	2(2-0)
Artillery III, Mil. Tr. 115A	1(0-3)	Artillery IV, Mil. Tr. 116A	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	18	Total	18

JUNIOR

First Semester		Second Semester	
Steam & Gas Engr. I, Mech. Engr. 201, 202	5(4-3)	Steam & Gas Engr. II, Mech. Engr. 204, 205	4(3-3)
Calculus II, Math. 206	3(3-0)	Applied Mech., Ap. Mech. 202	4(4-0)
Direct-current Mach. I, Elect. Engr. 203, 204	4(3-2, 1)	Direct-current Mach. II, Elect. Engr. 206, 207	3(2-2, 1)
Elect. Meas., Elect. Engr. 227, 228	3(2-3)	Alternating-current Mach. I, Elect. Engr. 209, 211	5(4-2, 1)
Economics, Econ. 101	3(3-0)	Elect. Mach. Des. I, Elect. Engr. 270	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	17

SENIOR

First Semester		Second Semester	
Str. of Mat. E, Ap. Mech. 216, 220	4(3-3)	Machine Tool Work I, Shop 170	2(0-6)
Hydraulics, Ap. Mech. 230, 235	4(3-3)	Alternating-current Mach. III, Elect. Engr. 224, 225	5(3-3)
Alternating-current Mach. II, Elect. Engr. 214, 216	4(3-3)	Nontechnical elective	6(-)
Electrical Communication I, Elect. Engr. 217, 218	3(2-2, 1)	Elective†	4(-)
Elective†	2(-)	Seminar, Gen. Engr. 105	R
Seminar, Gen. Engr. 105	R		
Inspection Trip, Elect. Engr. 190	R		
Total	17	Total	17

Number of semester hours required for graduation, 139.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Plane Trigonometry and two hours of other work until the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Flour-mill Engineering

FRESHMAN

First Semester		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)
Prin. of Milling I, Mill. Ind. 104	2(1-3)		
Engr. Drawing, Mach. Des. 101	2(0-6)	Des. Geom., Mach. Des. 106	2(0-6)
Engr. Woodwork I, Shop 101	1(0-3)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Forging I, Shop 150	1(0-3)	Surveying I, Civ. Engr. 102	2(0-6)
Artillery I, Mil. Tr. 113A	1(0-3)	Artillery II, Mil. Tr. 114A	1(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	17	Total	17

SOPHOMORE

First Semester		Second Semester	
Engr. Physics I, Phys. 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Plane Analyt. Geom., Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Elem. Organic Chem., Chem. 123	3(2-3)	Mechanism, Mach. Des. 121	3(3-0)
Mach. Draw. I, Mach. Des. 111	2(0-6)	Mach. Draw. II, Mach. Des. 116	3(0-9)
Quantitative Analysis A, Chem. 250	3(1-6)	Prin. of Mill. II, Mill. Ind. 106	1(0-3)
Artillery III, Mil. Tr. 115A	1(0-3)	Artillery IV, Mil. Tr. 116A	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	18	Total	18

JUNIOR

First Semester		Second Semester	
Applied Mechanics, Ap. Mech. 202	4(4-0)	Str. of Mat. E, Ap. Mech. 216, 220	4(3-3)
Calculus II, Math. 206	3(3-0)	Economics, Econ. 101	4(3-0)
Ad. Quantitative Anal., Chem. 260	1(0-3)	Grain Grad. and Judg., Agron. 108	2(0-6)
American Ind. Hist., Hist. 105	3(3-0)	Mill. Qual. of Wheat, Mill. Ind. 212	3(3-0)
Farm Crops Laboratory, Agron. 101	2(0-6)		
Milling Practice I, Mill. Ind. 109	3(1-6)	Milling Practice II, Mill. Ind. 111	3(1-6)
Milling Entomology, Ent. 116	1(1-0)	Machine Tool Work I, Shop 170	2(0-6)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Wheat and Flr. Test., Mill. Ind. 205	3(0-9)	Exper. Baking, Mill. Ind. 206	3(1-6)
Grain Marketing, Ag. Ec. 203	3(3-0)	Elec. Engr. C., Elec. Engr. 160, 165	3(2-2, 1)
Flow Sheet Design, Mach. Des. 214	2(0-6)	Flour-mill Design, Mach. Des. 215	2(0-6)
Mill. Tech. I, Mill. Ind. 201	2(0-6)	Mill. Tech. II, Mill. Ind. 202	2(0-6)
Steam and Gas Engr. I, Mech. Engr. 201, 202	5(4-3)	Steam and Gas. Engr. II, Mech. Engr. 204, 205	4(3-3)
Elective†	3(-)	Elective†	4(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	18

Number of semester hours required for graduation, 140.

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* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Landscape Architecture

FRESHMAN

First Semester		Second Semester	
Plane Trigonometry,* Math. 101	3(3-0)	College Algebra,* Math. 104	3(3-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
General Botany I, Bot. 101	3(1-4, 2)	Gen. Botany II, Bot. 105	3(1-4, 2)
Des. Geom. A, Mach. Des. 107	3(0-9)	Sh. & Shad., & Per., Mach. Des. 108	3(0-9)
Object Drawing I, Arch. 111	2(0-6)	Object Drawing II, Arch 114	2(0-6)
Surveying I, Civ. Engr. 102	2(0-6)	Surveying II, Civ. Engr. 111	2(0-6)
Artillery I, Mil. Tr. 113A (men)	1(0-3)*and*	Artillery II, Mil. Tr. 114A, (men)	1(0-3)*and*
Phys. Education M, Phys. Ed. 103	R(0-2)*or*	Phys. Education M, Phys. Ed. 104	R(0-2)*or*
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Total, men	17	Total, men	17
Total, women	16	Total, women	16

SOPHOMORE

First Semester		Second Semester	
Hist. of Arch. I, Arch 154A	2(2-0)	Hist. of Arch. II, Arch. 157A	2(2-0)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Arch. II, Arch. 107A	3(0-9)
Surveying III, Civ. Engr. 151, 155	3(2-3)	Water Color I, Arch. 118	2(0-6)
General Chem., Chem. 110	5(3-6)	Plant Ecology, Bot. 228	2(2-0)
Land. Gardening I, Hort. 125	3(3-0)	El. of Hort., Hort. 107	3(2-3)
		General Geology, Geol. 103	3(3-0)
Artillery III, Mil. Tr. 115A (men)	1(0-3)*and*	Artillery IV, Mil. Tr. 116A, (men)	1(0-3)*and*
Phys. Education M, Phys. Ed. 105	R(0-2)*or*	Phys. Education M, Phys. Ed. 106	R(0-2)*or*
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys.Ed. 154	R(0-3)
		Elective†	1(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total, men	17	Total, men	17
Total, women	16	Total, women	16

JUNIOR

First Semester		Second Semester	
Hist. of Arch III, Arch. 158A	2(2-0)	Hist. of Arch. IV, Arch. 160A	2(2-0)
Pen. Rend. and Sketch., Arch 116	2(0-6)	Silviculture, Hort. 119	3(2-3)
Design I, Arch. 142	3(0-9)	Design II, Arch. 144	3(0-9)
Bldg. Mat. & Con., Arch. 187A	3(3-0)	Plant Materials II, Hort. 226A	3(2-3)
Theory of Land. Des., Hort. 243	2(2-0)	Work. Draw. & Spec., Arch. 191	3(0-9)
Plant Materials I, Hort. 224	3(2-3)	Soils, Agron. 130	4(3-3)
Plant Physiology I, Bot. 208	3(3-0)		
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	18	Total	18

SENIOR

First Semester		Second Semester	
Landscape Construct., Hort. 227	3(2-3)	Civic Art, Hort. 223	3(1-6)
Greenhouse Const. & Mngt., Hort. 128	3(3-0)	Land. Gard. III, Hort. 246	3(1-6)
Highway Engr. I, Civ. Engr. 231	2(2-0)	City Planning, Arch. 249	3(0-9)
Highway Materials Lab., Ap. Mech. 250	1(0-3)	Economics, Econ. 101	3(3-0)
Rural Architecture, Arch. 153	2(0-6)	Inspection Trip, Arch. 199	R
Land. Gard. II, Hort. 238	3(1-6)	Seminar, Gen. Engr. 105	R
Plant Pathology I, Bot. 205	3(1-4, 2)	Elective†	6(-)
Seminar, Gen. Engr. 105	R		
Total	17	Total	18

Number of semester hours required for graduation: Men, 139; women, 135.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing Plane Trigonometry and two hours of other work until the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Mechanical Engineering

FRESHMAN

First Semester		Second Semester	
Chemistry E-I, Chem. 107	4(3-3)	Chemistry E-II, Chem. 108	4(3-3)
College Algebra,* Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Engr. Draw., Mach. Des. 101	2(0-6)	Des. Geom., Mach. Des. 106	2(0-6)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Surveying I, Civ. Engr. 102	2(0-6)
{ Engr. Woodwork I, Shop 101	1(0-3) }	Elements of Steam and Gas Power, Mech. Engr. 130	2(0-6) *or*
{ Forging I, Shop 150	1(0-3) } *or*	{ Engr. Woodwork I, Shop 101	1(0-3) }
Elements of Steam and Gas Power, Mech. Engr. 130	2(0-6)	{ Forging I, Shop 150	1(0-3) }
Artillery I, Mil. Tr. 113A	1(0-3)	Artillery II, Mil. Tr. 114A	1(0-3)
Engr. Lectures, Gen. Engr. 101	R	Engr. Lectures, Gen. Engr. 101	R
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	17	Total	17

SOPHOMORE

First Semester		Second Semester	
Engr. Physics I, Phys. 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Plane Analytical Geom. Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Mechanism, Mach. Design 121	3(3-0)	American Indus. Hist., Hist. 105	3(3-0)
Mach. Drawing I, Mach. Des. 111	2(0-6)	Mach. Drawing II, Mach. Des. 116	3(0-9)
Metallurgy, Shop 165	2(2-0)		
Metallography, Shop 167	1(0-3)	Foundry Production, Shop 161	1(0-3)
Artillery III, Mil. Tr. 115A	1(0-3)	Artillery IV, Mil. Tr. 116A	1(0-3)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Phys. Education M., Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	18	Total	18

JUNIOR

First Semester		Second Semester	
Ap. Mech., Ap. Mech. 202	4(4-0)	Str. of Mat., Ap. Mech. 211, 220	6(5-3)
Calculus II, Math. 206	3(3-0)	Graphic Statics, Ap. Mech. 225	1(0-3)
Steam and Gas Engr. I, Mech. Engr. 201, 202	5(4-3)	Steam and Gas Engr. II, Mech. Engr. 204, 205	4(3-3)
Machine Tool Work I, Shop 170	2(0-6)	Machine Tool Work II, Shop 192	2(0-6)
Economics, Econ. 101	3(3-0)	Nontechnical Elective†	4(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Electrical Engr. M-I, Elect. Engr. 230, 231	4(3-2, 1)	Electrical Engr. M-II, Elect. Engr. 242, 243	4(3-2, 1)
Power Plant Engr., Mech. Engr. 206	3(0-9)	Refrig., Heat. and Vent., Mech. Engr. 210, 215	3(2-3)
Mach. Design I, Mach. Des. 204, 205	5(3-6)	Machine Design II, Mach. Des. 210	2(0-6)
Hydraulics, Ap. Mech. 230, 235	4(3-3)	Commercial Engr., Elect. Engr. 250	2(2-0)
Factory Option:		*Factory Option:*	
Factory Engr., Shop 245A	2(2-0)	Factory Design, Shop 255	2(0-6)
		Machine Tool Work III, Shop 193,	1(0-3)
		Elective†	3(-)
Power Option:		*Power Option:*	
Ad. Thermody., Mech. Engr. 230	2(2-0)	Steam Turb., Mech. Engr. 235	2(2-0)
		Elective†	4(-)
Seminar, Gen. Engr. 105	R	Seminar, Gen. Engr. 105	R
		Inspection Trip, Mech. Engr. 180	R
Total	18	Total	17

Number of semester hours required for graduation, 139.

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* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, the first semester, postponing two hours of other work.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Agricultural Engineering

Professor Fenton
Professor Driftmier
Associate Professor Sanders
Assistant Professor Logan
Assistant Smith

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

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

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

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

The department possesses equipment valued at $10,110.

COURSES IN AGRICULTURAL ENGINEERING

FOR UNDERGRADUATE CREDIT

103. Farm Buildings. 3(1-6)*; II. Mr. Driftmier and assistants.

Requirements, details of arrangements, and materials of construction for barns, storage, and work buildings for the farm; preparation of specifications, bills of material, and estimates of costs.

105. Farm Structures. 4(2-6); I. Prerequisite: Applied Mechanics (Ap. Mech. 202). Mr. Fenton and assistants.

Design of farm structures, details and materials of construction; specifications and estimates.

108. Field and Power Machinery C. 3(2-3); I. Mr. Driftmier and assistants.

Construction, operation and use of tillage, seeding, harvesting and miscellaneous farm machinery operated by animal and mechanical power. Charge, $2

111. Field and Power Machinery. 4(2-6); I. Prerequisites: Mechanism (Mach. Des. 121), Engineering Physics II (Phys. 150). Mr. Driftmier and assistants.

Development, design, and utilization of tillage, seeding, and harvesting machinery for all forms of farm power. Charge, $2.

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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. Fenton and Mr. Driftmier.
Water supply, sewage disposal, lighting, heating, and ventilation of farm buildings; refrigeration; and rural electrification. Charge, $1.

122. Agricultural Machines and Construction. 2(1-3); II. Mr. Driftmier and assistants.
Introductory principles of mechanics and physics as applied to agricultural equipment. Charge, $1.

123, 124.† Farm Equipment. 3(2-3); II and SS. Mr. Driftmier and assistants.
Basic principles of mechanics, farm construction methods, farm surveying, lighting, water, and sewage disposal systems. Charge, $1.

125, 127. Farm Motors. 4(2-6); II. Prerequisites: Engineering Physics II (Phys. 150) and Calculus I (Math. 205). Mr. Sanders and assistants.
Theory, principles of construction, operation and adjustment, and the application of tractors, trucks, and other internal combustion engines to agricultural uses. Charge, $3.

130. Gas Engines and Tractors. 3(2-3); I, II, and SS. Mr. Sanders and assistants.
Principles and application of the internal combustion engine, engine mechanisms, carburetion, valve timing, cooling, lubrication, and ignition. Charge, $2.

140, 145. Elements of Irrigation and Drainage. 3(2-3); I. Prerequisite: Soils (Agron. 133). Mr. Fenton and Mr. Driftmier.
The fundamental principles of land reclamation by drainage and irrigation, with special reference to agricultural development. Charge, $1.

150. Land Reclamation. 3(2-3); II. Prerequisites: Hydraulics (Ap. Mech. 230, 235) and Soils (Agron. 133). Mr. Fenton and assistants.
Principles and methods of bringing waste lands into production by drainage, irrigation, terracing, and land clearing. Charge, $1.

FOR GRADUATE AND UNDERGRADUATE CREDIT

205. Farm Machinery Research. 2(0-6) to 5(0-15); II. Prerequisites: Field and Power Machinery (Ag. Engr. 111), such other courses as required, and permission of instructors. Mr. Fenton and Mr. Driftmier.
Original investigations along the lines of draft requirements, power consumption, or operation of farm machinery.

215. Tractor Research. 2(0-6) to 5(0-15); I. Prerequisite: Farm Motors (Ag. Engr. 125, 127) or its equivalent. Mr. Driftmier and Mr. Sanders.
Research studies relating to tractor construction and operation.

FOR GRADUATE CREDIT

301. Agricultural Engineering Research. 1 to 10 credits; I and II. Prerequisites: Soils (Agron. 133), and Engineering Physics II (Physics 150) or equivalent. Mr. Fenton and Mr. Driftmier.
The laboratories of the College are available for research in the design, use, and application of machinery and equipment in the development of agriculture. The results of such investigations, if suitable, may be incorporated in bulletins of the Engineering Experiment Station, or the work may furnish material for the master's thesis.

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† In the case of many of the engineering courses, one course number is used for the recitation and another for the laboratory part of the course.

Applied Mechanics

Professor Scholer
Professor Robert
Associate Professor Dawley
Assistant Professor Cheek
Assistant Professor Lesher
Instructor Koenitzer
Instructor Pickett
Assistant Railsback
Graduate Research Assistant Noble
Research Fellow German

The aim of the course in applied mechanics is to give to the engineering student a practical working knowledge of those fundamental principles of mechanics upon which his future work in structural and machine design may be based.

The materials-testing laboratory is well equipped with machines and apparatus for making physical tests of materials of construction, such as tension, compression, flexure, shear, torsion, hardness, and impact tests, and tests under repeated load. Some of the machines are of sufficient capacity to test full size structural and machine members to destruction, among them being a universal machine of 200,000 pounds capacity, with extension members for testing long beams and columns. Facilities are provided for making, curing, and testing concrete and reinforced concrete test specimens.

The materials-testing laboratory also has complete equipment for the testing of highway materials, and has been designated as the official laboratory of the Kansas Highway Commission.

The hydraulics laboratory has facilities for furnishing water under a considerable range of pressures and volumes. It contains devices for measuring and recording the flow of water, including measuring pits, water meters, weirs, nozzles, pitometer, and a Venturi meter. It is also provided with pumps, a standpipe, water motors, and a turbine water wheel for testing purposes, and a supply of pressure gauges, weighing scales, and other auxiliary apparatus. The equipment belonging to the department is valued at $33,755.

COURSES IN APPLIED MECHANICS

FOR UNDERGRADUATE CREDIT

102. Applied Mechanics A. 3(3-0); I. Prerequisites: Plane Trigonometry and Engineering Physics I. Mr. Robert and Mr. Cheek.

A study of statics, with applications to stresses in structures; center of gravity; and moment of inertia.

116. Strength of Materials A Recitation. 3(3-0); II. Prerequisite: Applied Mechanics A. Mr. Robert and Mr. Cheek.

Behavior of materials subjected to tension, compression, and shear; strength and stiffness of simple beams; moment and shear in flexure of beams, with diagrams; designs of beams of wood, steel and reinforced concrete, and design and investigation of columns.

121. Strength of Material A Laboratory. 1(0-3); II. Prerequisite: Applied Mechanics A. Mr. Robert and Mr. Cheek.

A study of various testing machines; tension, compression, shear, and bending tests on iron, steel, wood, and concrete; tests on cement and on the fine and coarse aggregates for concrete. Charge, $2.

150. Thesis. 1(0-3), I; and 2(0-6), II. Mr. Scholer and Mr. Robert.

An excellent opportunity for experimental work in strength of materials, road materials, concrete and hydraulics, suitable for thesis projects in any branch of engineering; subject of investigation to be selected in consultation with the head of the department at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Applied Mechanics. 4(4-0); I, II, and SS. Prerequisites: Calculus I and Engineering Physics II. Mr. Scholer, Mr. Robert and Mr. Pickett.

Composition, resolution, and conditions of equilibrium of concurrent and nonconcurrent forces; center of gravity; friction; laws of rectilinear and curvilinear motion of material points; moments of inertia; relations between

forces acting on rigid bodies and the resulting motions; and of work, energy, and power.

211. Strength of Materials Recitation. 5(5-0); I, II, and SS. Prerequisite: Applied Mechanics. Mr. Scholer, Mr. Robert and Mr. Koenitzer.
Behavior of materials subjected to tension, compression, and shear; riveted joints; torsion; shafts, and the transmission of power; strength and stiffness of simple and continuous beams; bending moments and shear forces in beams; design of beams; stresses in columns and hooks; and the design of columns.

216. Strength of Materials E Recitation. 3(3-0); I, II, and SS. Prerequisite: Applied Mechanics. Mr. Robert, Mr. Dawley, and Mr. Pickett. Similar to course 211, but much less time given to study of continuous girders and of reinforced concrete.

220. Strength of Materials Laboratory. 1(0-3); I, II, and SS. Must accompany or follow course 211 or 216. Mr. Robert, Mr. Dawley, and Mr. Pickett.
Tension, compression, shear, and bending tests on specimens of iron, steel, wood and concrete; torsion tests on steel shafting; standard tests on fine and coarse aggregates for concrete. Charge, $2.

225. Graphic Statics. 1(0-3); II. Must accompany or follow course 102 or 202. Mr. Robert.
Graphical solutions of the stresses existing in a number of typical trusses, under a variety of loadings.

230. Hydraulics Recitation. 3(3-0); I, II, and SS. Prerequisite: Applied Mechanics. Mr. Robert, Mr. Dawley, and Mr. Pickett.
Fluid pressures, center of pressure, immersion and flotation; Bernoulli's theorem; orifices, weirs, short and long pipes; flow of water in open channels, and its measurement; elements of water power, impulse wheels, reaction turbines, and centrifugal pumps.

235. Hydraulics Laboratory. 1(0-3). I, II, and SS. Prerequisite: Applied Mechanics. Mr. Robert, Mr. Dawley, and Mr. Pickett.
Tests to determine the coefficients of weirs and orifices, loss of head in pipes, water wheels, water turbines, rams, and pumps, also use and calibration of water meters. Charge, $1.

250. Highway Materials Laboratory. 1(0-3); I. Prerequisite: Strength of Materials Laboratory. Mr. Scholer, Mr. Lesher, and Mr. Koenitzer.
A comprehensive course in the examination and testing of road materials. Charge, $1.50.

260. Advanced Applied Kinetics. 2(2-0); II. Prerequisite: Strength of Materials or Strength of Materials E. Mr. Robert.
Advanced problems in kinetics with special attention to kinetics of rigid bodies.

265. Advanced Mechanics of Materials. 2(2-0); I. Prerequisite: Strength of Materials. Mr. Scholer.
Theory of elasticity and its applications; advanced problems in continuous girders involving general three-moment equations.

270. Hydraulic Machinery. 2(2-0); I. Prerequisite: Hydraulics. Mr. Robert.
Characteristics and applications of water wheels, turbines, pumps, and other hydraulic machinery.

275. Advanced Highway Materials. 2(1-3); II. Prerequisite: Highway Materials I Laboratory. Mr. Scholer.
An advanced course in the properties and testing of the various materials used in road construction.

280. Mechanics of Reinforced Concrete. 2(2-0); I. No credit for students who have had Strength of Materials. Prerequisite: Strength of Materials E. Mr. Scholer.

The behavior of reinforced concrete structural elements, including slabs, rectangular beams, T-beams, columns, and special floor systems under load.

FOR GRADUATE CREDIT

301. Research in Materials of Construction. 1 to 10 credits; I or II. Mr. Scholer, Mr. Robert, and Mr. Dawley.

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

Architecture

Professor Weigel
Associate Professor Cheek
Assistant Professor Helm
Assistant Professor Wichers
Instructor Smith
Instructor Ware

The courses in architecture are offered not only to provide for the fundamental training necessary for the practice of architecture, but also to give the student a facility and working knowledge which will be of immediate value to him upon graduation. The foundation which the student acquires in college should be supplemented by continual professional study, especially during those years immediately following graduation, when it is desirable that he should acquire practical experience in the employ and under the guidance of capable and experienced members of the profession. Students are most urgently advised to acquire practical experience in an architect's office during the summer vacations of their college course.

Throughout the course the instruction by lectures, recitations and drafting-room practice is fully amplified and expanded by a free use of the equipment of the Department of Architecture. Within the department is housed a good working library of the standard architectural works and leading professional magazines, together with the collections of lantern slides and photographs, to all of which the student has free access. Placed about the amply lighted and well-equipped rooms of the department is a generous collection of plaster casts, including important examples of architectural fragments and ornaments from historical monuments. On the walls of the drafting rooms, where they are constantly before the student, are hung selected examples from the department's collection of original drawings, including specimens of both academic and current professional work. From time to time this exhibit is changed.

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

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

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

The department owns equipment valued at $15,151.

COURSES IN ARCHITECTURE

FOR UNDERGRADUATE CREDIT

106A. Elements of Architecture I. 3(0-9); I and SS. Mr. Wichers and Mr. Ware.
A thorough treatment of the orders and fundamental elements of architectural forms; special attention to the development of a high standard of lettering and draftsmanship. Charge, $1.

107A. Elements of Architecture II. 3(0-9); II and SS. Prerequisite: Elements of Architectuure I. Mr. Wichers and Mr. Ware.
Simple application of the forms studied in course 106A; simple architectural rendering. Charge, $1.

111. Object Drawing I. 2(0-6); I, II, and SS. Mr. Helm and Mr. Wichers.
The drawing of simple geometric objects; studies from fragments of antique architectural ornament.

114. Object Drawing II. 2(0-6); II, and SS. Prerequisite: Object Drawing I. Mr. Helm and Mr. Wichers.
An application and expansion of the principles taught in Object Drawing I.

116. Pencil Rendering and Sketching. 2(0-6); I, and SS. Prerequisite: Object Drawing II. Mr. Helm and Mr. Wichers.
The drawing of architectural ornament, architectural fragments, and pencil sketches from nature.

117. Still Life Drawing. 2(0-6); I, and SS. Prerequisite: Water Color I (Arch. 118). Mr. Helm.
Advanced studies from full-length plaster casts in charcoal; pen and ink rendering.

118. Water Color I. 2(0-6); II, and SS. Prerequisite: Arch. 116 or approval of instructor. Mr. Helm.
Exercises in the handling of the medium and of the translation of color; theory of color.

119. Water Color II. 2(0-6); I, II, and SS. Prerequisite: Arch. 118. Mr. Helm.
Advanced study in the technique of the medium. Includes both studio work and out-of-door sketching.

120. Interior Design. 2(0-6); I, and SS. Prerequisites: Arch. 118, 145, and 244. Mr. Helm.
The principles of interior architecture with special attention to period design.

121. Life Drawing I. 2(0-6); II. Prerequisite: Arch. 118. Mr. Helm.
Drawing from the living model in charcoal. Deposit, $5.

123. Life Drawing II. 2(0-6); II. Prerequisite: Arch 121. Mr. Helm.
A continuation of Life Drawing I. Deposit, $5.

124. Domestic Architecture. 2(2-0); I and II. Mr. Wichers.
The course is designed to help the student understand home building problems. A detailed study is made of home designing and planning with the help of lantern slides.

133. Clay Modeling. 2(0-6); I. Prerequisite: Arch. 117. Mr. Weigel and Mr. Helm.
The making of clay models, plaster casts of simple decorative fragments and anatomical forms; and construction of relief maps. Charge, $1.

134. Pen and Ink Drawing I. 2(0-6); I, II, and SS. Prerequisite: Arch. 116 or approval of instructor. Mr. Helm.

A study of the technique and drawing of fragments, casts, still-life, etc., in this medium, also outdoor sketching.

142, 144. Design I and II. 3(0-9) each; I and II respectively. Prerequisites: For I, Arch. 107A and 114; for II, Arch. 142. Mr. Weigel and Mr. Smith.
An analysis of architectural composition and rendering. Charge, $1 for each course.

145, 147. Design III and IV. 5(0-15) each; I and II respectively. Prerequisites: For III, Arch. 117 and 144; for IV, Arch. 145. Mr. Weigel and Mr. Smith.
Continuation of Design II; time problems and rapid design sketches required, at frequent intervals. Charge, $1 for each course.

153. Rural Architecture. 2(0-6); I. Prerequisites: Arch. 144 and 191. Mr. Wichers.
A detailed study of the small home and the architectural needs of rural communities.

154A, 157A. History of Architecture I and II. 2(2-0) each; I and II respectively. Mr. Smith.
The history of architecture from the dawn of civilization to the end of the Roman Empire, in I; II covers the Gothic period, to 1400.

158A, 160A. History of Architecture III and IV. 2(2-0) each; I and II respectively. Prerequisites: Arch. 114 and 157A. Mr. Smith.
Continuation of Arch 157A; finishes the history of architecture to modern times.

163, 164. Historic Ornament I and II. 2(1-3) each; I and II respectively. Prerequisites: Arch. 118 and Arch. 160A. Mr. Helm.
The study and analysis of historic ornament and its application to architectural and decorative design. Charge, $1 for each course.

165, 170. Commercial Illustration I and II. 2(0-6) each; I and II respectively. Mr. Helm.
The principles of advertising arrangements; making various types of advertising designs, such as newspaper advertisements, lettering, and posters; making cover designs for magazines, books, and trade catalogues; for headings, tail pieces, and decorative page arrangements; drawings carried out in black and white and in one or more colors.

178, 182. History of Civilization and Art I and II. 2(3-0) each; I and II respectively. Mr. Smith.
In course 178, a study of development of painting, sculpture, furniture and the minor arts to the fifteenth century. In course 182, continuation to the beginning of the twentieth century.

187A. Building Materials and Construction. 3(3-0); I. Prerequisite: Elements of Architecture II (Arch. 107A). Mr. Cheek.
An introduction to the properties and uses of the materials of construction; also plumbing, heating, and lighting systems; occasional visits to buildings under construction.

191. Working Drawings and Specifications. 3(0-9); II. Prerequisites: Arch. 142 and 187A. Mr. Weigel and Mr. Wichers.
Preparing working drawings and specifications for suburban residences; drawing complete details for buildings, working out heating, plumbing, and structural problems.

192. Theory of Structures I. 4(2-6); I. Prerequisites: Arch. 191, Applied Mechanics A (Ap. Mech. 102), and Strength of Materials A (Ap. Mech. 116, 121). Mr. Cheek.
Mathematical and graphical solutions of stresses in framed structures under static loading; practical problems in the design of wood construction; occasional inspection trips to buildings under construction.

194A. Theory of Structures II. 5(3-6); II. Prerequisite: Arch. 1792. Mr. Cheek.

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

196, 198. Structural Design I and II. 3(1-6) each; I and II, respectively Prerequisite: Theory of Structures II (Arch. 194A). Mr. Cheek.

Application of the principles covered under Theory of Structures to the coordinated, grouped design of an entire structure with complete working drawings and details; preferably a problem simultaneously under consideration in an architectural design course.

199. Inspection Trip. R; II. Prerequisite: Senior classification. Mr. Weigel and assistants.

An inspection trip is made to one of the larger cities of the Middle West by the senior students in Architectural Engineering, Architecture, and Landscape Architecture. The inspection party is under the charge of one or more faculty members of the Department of Architecture. Time allotted to the trip is from three days to one week. Cost to each student for trip, including meals, lodging and transportation, approximately $50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201, 206. Advanced Free-hand Drawing I and II. 2(0-6) each; I and II, respectively. Prerequisites: Arch. 117 and 118. Mr. Helm.

Study of the human figure and exercises in original composition of architectural ornament, various mediums being employed.

208. Furniture Design. 3(1-6); I. Prerequisites: Arch. 120 and Arch. 160A. Mr. Helm.

A study of the history of furniture design and its relationship to architectural development.

211, 216. Advanced History of Civilization and Art I and II. 2(2-0) each; I and II respectively. Prerequisite: Arch. 182. Mr. Weigel.

In course 211, a detailed study of civilization from the Babylonian and Assyrian empires to the fifteenth century, tracing the artistic development of each epoch; in course 216, a continuation of course 211.

217, 218. Etching I and II. 2(0-6) each; I and II respectively. Prerequisites: Arch. 117 and Arch. 134. Mr. Helm.

Instruction is given in the technical principles of etching on copper and zinc plate.

221. Problems in Architectural Development. 1 to 5 credits; I and II. Mr. Weigel.

Under direct supervision of some member of the departmental staff, study of historic problems in architectural development.

230, 235. Oil Painting I and II. 2(0-6) each; I and II, respectively and SS. Prerequisite: Water Color I (Arch. 118) or approval by instructor. Mr. Helm.

Rudiments of painting in oil; sketching of simple objects and drapes. In course 235, painting of larger still-life groups and out-door sketching.

244. General History of Architecture. 3(3-0); I and II. Prerequisite: Object Drawing II (Arch. 114) or Design A (Ap. Art. 106). Mr. Weigel.

The historic architectural styles of the world studied and analyzed; written papers, with sketches, required of each student.

249. City Planning. 3(0-9); II. Prerequisites: Arch. 144, Hort. 223, and Hort. 245. Mr. Weigel.

A detailed study of city planning, including transportation and street systems, parks and recreation facilities, public buildings and civic centers, subdivisions of land, restrictions and zoning.

253, 256. Design V and VI. 8(0-24) each; I and II respectively. Prerequisites: For V, Arch. 118 and 147; for VI, Arch. 253. Mr. Weigel and Mr. Smith.

Continuation of Design IV; special training in interior design and decoration. Charge, $1 for each course.

FOR GRADUATE CREDIT

301, 304. Advanced Design I and II. 3(0-9) to 10 (0-30) each; I and II respectively. Mr. Weigel.

A study of the planning of important buildings and groups of buildings. Course 304, a continuation of 301, may furnish material for the master's thesis.

324. Research in Architecture. 1 to 10 credits; I and II.

The study of a research problem in architecture, determined by conferences between Mr. Weigel and the student and approved by the Graduate Council. This course may furnish material for the master's thesis.

Civil Engineering

Professor Conrad
Professor Frazier
Professor Furr
Associate Professor White
Instructor Crawford
Instructor Morse
Graduate Research Assistant Dull

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

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

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

The department owns equipment valued at $19,739.

COURSES IN CIVIL ENGINEERING

FOR UNDERGRADUATE CREDIT

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

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

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

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

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

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

145. Railway Engineering I. 2(2-0); II. Prerequisites: Surveying IV and C. E. Drawing I (Civ. Engr. 125, 156, and 157). Mr. Frazier.
Railway engineering based on Wellington's economic theory; study of track construction and maintenance; design of yards and terminals.

151, 155. Surveying III. 3(2-3); I. Prerequisite: Surveying II. Mr. Furr and Mr. White.
Topographic, hydrographic, city, and mine surveying.
Laboratory.—Topographic surveying and topographic mapping.

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

161. Drainage and Irrigation I. 2(2-0); II and SS. Prerequisite and parallel: Hydraulics (Ap. Mech. 230, 235). Mr. Conrad and Mr. White.
Design and construction of drainage and irrigation works.

170. Thesis. 1(0-3), I; and 2(0-6), II respectively. Mr. Conrad.
A report on a proposed design, and original investigation, or a library research. With approval of Mr. Conrad, thesis work may be taken in some other department, the thesis subject to be selected and approved by the department head before the October first next preceding the student's graduation. An equivalent amount of work in an elective subject approved by the dean of this division may be substituted for thesis.

180. Inspection Trip. R; II. Prerequisite: Senior classification. Mr. Conrad and assistants.
A trip of three to four days to Kansas City and other near-by industrial centers for the purpose of inspecting industrial plants and projects of special interest to civil engineers. The plants inspected are carefully selected to exemplify various engineering applications in practice. Cost to each student, including meals, lodging and transportation, approximately $25.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Stresses in Framed Structures. 4(4-0); I and SS. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Conrad.
Computation of stresses in bridges and buildings.

205. Civil Engineering Drawing II. 2(0-6); I and SS. Prerequisite: Strength of Materials Rec. (App. Mech. 211). Mr. Conrad.
Graphic statics and design of simple roof trusses in timber and steel.

211, 216. Astronomy and Geodesy. 4(2-6); I. Prerequisites: Surveying III (Civ. Engr. 151, 155) and Calculus II (Math. 206). Mr. Frazier.
The elements of practical astronomy; precise methods of surveying and leveling.
Laboratory.—Astronomical observations, principally for determining true meridian and latitude; base-line measurements and triangulation work.

220. Water Supply. 2(2-0); I. Prerequisite: Hydraulics (Ap. Mech. 230, 235). Mr. Frazier.
Water supply from the standpoint of consumption, collection, storage, distribution and purification.

225. Sewerage. 2(2-0); I. Prerequisite: Hydraulics (Ap. Mech. 230). Mr. Frazier.
Design and construction of sewer systems and disposal plants.

230. Highway Engineering I Recitation. 2(2-0); I. Prerequisite: Surveying II (Civ. Engr. 111). Mr. Furr.
Location, construction, and maintenance of roads and pavements.

246. Design of Framed Structures. 3(0-9); II and SS. Prerequisite: Stresses in Framed Structures (Civ. Engr. 201). Mr. Conrad.

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

250, 255. Concrete Design. 3(2-3); II. Prerequisite: Strength of Materials (Ap. Mech. 211). Mr. Conrad.
Design of reënforced buildings, retaining walls, dams and bridges.

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

256. Reënforced Concrete Arches. 3(3-0); II. Prerequisite: Concrete Design (Civ. Engr. 250, 255). Mr. Conrad.
Various types of reënforced concrete arches adapted for use in bridges, buildings, and dams; computation of stresses; arrangement of details.

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

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

270, 275. Highway Engineering II. 4(2-6); II. Prerequisite: Highway Engineering I (Civ. Engr. 230). Mr. Furr.
Highway laws, highway administration, and highway economics.

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

276. Highway Economics. 3(3-0); I. Prerequisite: Highway Engineering II. Mr. Furr.
Highway transport and construction problems as affected by recent findings of research agencies.

280, 285. Drainage and Irrigation II. 4(2-6); II. Prerequisite: Drainage and Irrigation I (Civ. Engr. 161). Mr. Conrad.
Design of irrigation structures and management of irrigation projects.

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

FOR GRADUATE CREDIT

301. Advanced Bridge Stresses. 3(3-0); I. Prerequisite: Stresses in Framed Structures (Civ. Engr. 201). Mr. Conrad.
A study of deflections; stresses in continuous, movable, cantilever, suspension, and steel arch bridges; and secondary stresses.

304. Civil Engineering Research. 3 to 10 credits; I, II, and SS. Prerequisites depend on subject of research. Mr. Conrad, Mr. Frazier, or Mr. Furr.
Original investigation or advanced study in some field relating to the practice of civil engineering.

316. Railroad Transportation. 3(3-0); II. Prerequisite: Railway Engineering I (Civ. Engr. 146). Mr. Frazier.
A study of the function of the railway system; its relation to industrial development and its correlation with other methods of transportation.

Electrical Engineering

Professor Kloeffler*
Professor Brenneman†
Associate Professor Kerchner
Assistant Professor Hunt
Assistant Professor Jorgenson
Assistant Professor Bueche
Assistant Professor Corcoran
Instructor Sitz
Instructor Rice
Graduate Research Assistant Potter

Instruction in the Department of Electrical Engineering is planned to give the student a thorough training in the underlying principles of electrical phenomena, direct and alternating current, and in the application of electrical theory to the solution of the practical problems in the many fields of the industry. The textbook, lectures and classroom instruction is accompanied by extended courses in the laboratories.

The main dynamo laboratory contains examples of many types of electrical machinery and control apparatus, including more than 50 direct and alternating-current generators and motors ranging from 1 to 15 kilowatts capacity. The instrument room in connection contains more than 140 instruments for the measurement of current, voltage, power, frequency and other electrical quantities. The dynamo laboratory also includes a complete electric-railway test set, consisting of two modern railway motors, geared to a load and operated by a modern pneumatic type of control equipment. Supplementary to this laboratory is another dynamo laboratory fitted with direct-current motor-generator sets and accessory equipment for the first-year course in electric-machine construction and operation.

An electrical measurement laboratory is equipped with standards of resistance, electromotive force, self-induction and capacity and many types of bridges and apparatus for the measurement of magnetic and electric quantities. The main electrical measurement laboratory is supplemented by a standardizing laboratory which contains all the necessary precision instruments, sine wave generating equipment and control apparatus for calibrating voltmeters, ammeters, wattmeters, watt-hour meters, and rotating standards.

There are two communication laboratories: The wire communication laboratory contains several demonstration panels and switchboards for magneto, common battery (manual) and automatic telephone systems, and oscillators, bridges, and artificial telephone lines for making measurements at the various frequencies encountered in telephone practice. The radio communication laboratory is supplied with equipment for high frequency measurements and the study of radio phenomena.

An illumination laboratory is equipped with bar, spherical and portable photometers and accessory equipment such as lamps, reflectors and luminaires.

The wiring laboratory for the freshman course contains sixteen booths or rooms, in imitation of buildings both finished and in process of construction, and a complete stock of supplies for concealed knob and tube, conduit, and conduit construction which provides students with actual practice in wiring buildings.

The equipment belonging to the department is valued at $50,971.

COURSES IN ELECTRICAL ENGINEERING

FOR UNDERGRADUATE CREDIT

160, 165. Electrical Engineering C. 3(2-2, 1); II. Prerequisite: Engineering Physics II (Physics 150). Mr. Jorgenson.

The fundamental principles of direct-current and alternating-current electricity, with emphasis upon proper installation and operation of different classes of machines.

Laboratory.—Practice to give a knowledge of the most important commercial tests; proper use of electrical instruments; a written report of each test. Charge, $1.50.

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* On sabbatical leave, year 1929-'30. † Acting head, year 1929-'30.

170. Electrical Machinery and Construction. 2(0-6); I and II. Prerequisite: High-school Physics. Mr. Hunt, Mr. Jorgenson and Mr. Sitz.

An introductory course in applied electricity; various modern methods of interior wiring, and installation, care, operation and repair of electrical machinery. Charge, $3.

179. Principles of Electrical Engineering. 2(2-0); I and II. Prerequisites: Electrical Machinery and Construction (Elec. Engr. 170) and Trigonometry (Math. 101). Mr. Kloeffler and Mr. Jorgenson.

The fundamental principles of electrical circuits; an introduction to later courses in direct and alternating-current machines.

190. Inspection Trip. R; I. Prerequisite: Senior classification. Mr. 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. Cost to each student, aproximately $45.

195. Thesis. 1(0-3), I; and 2(0-6), II. Mr. Kloeffler, Mr. Brenneman, Mr. Kerchner, Mr. Hunt, Mr. Bueche and Mr. Corcoran.

Subject for thesis work selected in consultation with the department head at the beginning of the senior year; every opportunity given to work out original ideas as to design and operation of electrical apparatus and machinery.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203, 204. Direct-current Machines I. 4(3-2, 1); I, II, and SS. Prerequisites: Calculus I (Math. 205) and Engineering Physics II (Physics 150). Mr. Brenneman, Mr. Sitz and Mr. Rice.

A detailed study of the fundamental principles of magnetic and electric circuits and their application to the various types of direct-current machines.

Laboratory.—A series of experiments designed to show the fundamental principles and characteristics of direct-current machines. Charge, $1.75.

206, 207. Direct-current Machines II. 3(2-2, 1); I, II, and SS. Prerequisites: Direct-current Machines I. Mr. Brenneman, Mr. Hunt, Mr. Jorgenson, Mr. Sitz and Mr. Rice.

A detailed study of special types of direct-current machinery, dynamo losses, and commutation.

Laboratory.—Special attention to the different methods of determining generator and motor efficiencies and to proper tabulation and interpretation of results. Charge, $1.50.

209, 211. Alternating-current Machines I. 5(4-2, 1); I. II, and SS. Prerequisites: Calculus II (Math. 206) and Direct-current Machines I (Elec. Engr. 203, 204). Mr. Kerchner, Mr. Hunt, Mr. Jorgenson, and Mr. Corcoran.

A mathematical treatment of alternating-current phenomena.

Laboratory.—A series of experiments illustrating the theoretical work; practice in accurate measurement of capacity and inductance, and the effect of each upon the circuit; study of polyphase circuits. Charge, $1.75.

214, 216. Alternating-current Machines II. 4(3-3); I, II, and SS. Prerequisite: Alternating-current Machines I. Mr. Kerchner, Mr. Hunt, and Mr. Corcoran.

Principles of design, construction and operation of transformers and alternating-current generators.

Laboratory.—A series of experiments involving commercial and special tests of transformers and alternators. Charge, $1.50.

217, 218. Electrical Communication I. 3(2-2, 1); I. Prerequisite: Alternating-current Machines I (Elec. Engr. 209, 211). Mr. Kloeffler, Mr. Bueche, and Mr. Rice.

The principles of telephone communications as applied to the apparatus and circuits used on magneto, common battery (manual), Strowger automatic, and machine switching systems; toll telephone practice, involving the use of line loading, repeaters, and carrier currents.

Laboratory.—Study of telephone apparatus and circuits on magneto, common battery, and automatic systems; measurements made on artificial telephone lines. Charge, $1.50.

219, 223. Radio Communication. 3(2-3); II. Prerequisite: Alternating-current Machines I (Elec. Engr. 209, 211). Mr. Kloeffler and Mr. Bueche.

The production, measurement, and control of high-frequency alternating currents and electro-magnetic waves, and their application to radio telegraphy and telephony and carrier current transmission; principles of operation of thermionic vacuum tubes and a proper consideration of these principles in their application to the generation, modulation, amplification, and detection of continuous waves.

Laboratory.—Characteristics of vacuum tubes; high frequency measurements. Charge, $1.50.

224, 225. Alternating-current Machines III. 5(3-3, 3); I, II, and SS. Prerequisite: Alternating-current Machines II. Mr. Kerchner, Mr. Hunt, Mr. Jorgenson, and Mr. Corcoran.

Continuation of Alternating-current Machines II (E. E. 214), including synchronous motors, parallel operation of alternators, converters, induction and commutator alternating-current motors, rectifiers, alternating-current instruments, and accessory apparatus.

Laboratory.—Continuation of Alternating-current II Laboratory. (Elect. Engr. 216.) Tests on machines listed in Elect. Engr. 224. Charge, $2.

227, 228. Electrical Measurements. 3(2-3); I and II. Prerequisites: Calculus I (Math. 205) and Engineering Physics II (Physics 150). Mr. Kloeffler and Mr. Bueche.

Methods for electric and magnetic measurements; resistance, quantity, current, electromotive force, capacity, inductance.

Laboratory.—Applications of fundamental principles studied in the class room. Charge, $2.

230, 231. Electrical Engineering M-I. 4(3-2, 1); I. Prerequisites: Calculus I and Engineering Physics II. Mr. Hunt and Mr. Rice.

Direct-current machines with reference to the fundamental laws of the electric circuit, the principles of direct-current machinery, and the more important commercial tests; an introduction to alternating-current circuits.

Laboratory.—A series of experiments covering the fundamental principles and characteristics of direct-current machines. Charge, $1.50.

232, 233. Electrical Communication II. 3(2-3); II. Prerequisite: Electrical Communication I. Mr. Kloeffler and Mr. Bueche.

Transmission problems, telephonic efficiencies, telephone repeaters, wave filters, and carrier currents.

Laboratory.—High frequency measurements as applied to wire communication. Charge, $1.50.

235, 236. Illuminating Engineering. 3(2-3); I. Prerequisites: Calculus I and Engineering Physics II. Mr. Kloeffler and Mr. Hunt.

Photometry, light standards, principles of illumination and illumination design.

Laboratory.—Photometric measurements of light intensity, luminous flux, brightness, and illumination; the determination of light distribution about various illuminants and luminaries. Charge, $1.50.

238, 239. Electrical Instruments and Meters. 3(2-3); II. Prerequisite: Alternating-current Machines I. Mr. Kloeffler and Mr. Bueche.

The operation, construction and testing of indicating instruments, watt-hour meters, instrument transformers, and relays.

Laboratory.—Various methods of testing and calibrating electrical instruments and meters. Should accompany the class work. Charge, $1.50.

240. Electric Railways. 2(2-0); II. Prerequisite: Alternating-current Machines II. Mr. Kerchner and Mr. Sitz.

The development of electric traction; conditions and train schedules; speed-time curves; power generation and distribution for electric railway signal systems; types of cars and locomotives in use; various control systems; and adaptability of electric traction to steam railroads.

242, 243. Electrical Engineering M-II. 4(3-2, 1); II. Prerequisite: Electrical Engineering M-I (Elec. Engr. 230, 231). Mr. Hunt.

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

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

246. Storage Battery Engineering. 2(2-0); I. Prerequisites: Chemistry E-I (Chem. 108) and Engineering Physics II (Physics 150). Mr. Brenneman.

Process of manufacture, molecular and chemical theory of operation, behavior on charge and discharge, rating, life, and applications of a storage battery.

250. Commercial Engineering. 2(2-0); II. Prerequisite: Economics (Econ. 101). Mr. Kloeffler and Mr. Jorgenson.

The relation of the engineer to commercial life; salesmanship.

270, 271. Electrical Machine Design I and II. 1(0-3) and 2(0-6), I and II, respectively. Prerequisite: Direct-current Machines I (Elec. Eng. 203). Mr. Brenneman and Mr. Hunt.

In I, the principles of electrical design, each student makes calculation for electromagnets and a direct-current motor. In II, study of the principles of alternating-current design, each student makes the necessary design calculation for a transformer and an alternator.

275. Advanced Calculations in Alternating-current Circuits. 2(2-0); I. Prerequisite: Alternating-current Machines I (Elec. Engr. 209). Mr. Kerchner.

Use of the vector methods in solving alternating-current problems; solving of single-phase, balanced or unbalanced three-phase problems in networks; computations of real and reactive power or the reverse handled by symbolic notation.

280. Generation, Transmission, and Distribution of Electrical Energy. 3(3-0); II. Prerequisite: Elec. Engr. 213. Mr. Brenneman.

Transmission line design, economic and technical features; and properties of cables and insulators.

284. Transient Electrical Phenomena. 3(3-0); II. Prerequisites: Alternating-current Machines I and II, and Differential Equations (Math. 201). Mr. Brenneman.

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

286. Advanced Illumination. 2(2-0); II. Prerequisite: Illuminating Engineering (Elec. Engr. 235). Mr. Kloeffler and Mr. Hunt.

Continuation of the work of Illuminating Engineering I with special emphasis upon problems on the illumination of stores, offices, drafting rooms, machine shops, railway shops, hospitals, and city streets.

FOR GRADUATE CREDIT

336. Electrical Engineering Research. 1 to 10 credits; I or II. Prerequisite: Alternating-current Machines II (Elec. Eng. 214). Mr. Kloeffler, Mr. Brenneman, Mr. Kerchner, and Mr. Corcoran.

An introduction to more elaborate work of special investigation; adapted to meet the needs and attainments of individual students; particular problems which must be studied by reference to existing literature and by experimental work, and on which completed reports must be submitted.

General Engineering

Dean Seaton — Assistant Dean Durland

101. Engineering Lectures. R(1-0); entire freshman year. Dean Seaton, other members of the engineering faculty, and visiting practicing engineers.

Designed to acquaint freshmen engineers and architects with fundamental principles of their profession and to give a general survey of the field. Charge, 75 cents.

105. Seminar. R(1-0); sophomore, junior and senior years. Members of the engineering faculty.

Presentation by students of abstracts and reviews of articles appearing in the journals of their respective societies or in the technical press of their profession, and as far as possible is conducted by the student branches of the professional engineering societies. Occasionally these individual groups unite in the General Engineering Society, under whose auspices lectures are given by practicing engineers and by members of the engineering and college faculty on topics of general interest to engineering students. Charge, 75 cents.

Machine Design

Professor Pearce
Professor Durland
Associate Professor Smutz
Assistant Professor Gingrich
Instructor Olsen
Instructor Branigan
Instructor Hahn

The courses in engineering drawing and machine drawing deal principally with the training of the freshman and sophomore students in visualization, and the application of graphical language to engineering problems, with particular reference to commercial drafting-room methods. The object of these courses is primarily to develop this graphical language as a tool to be used in all future engineering work.

The courses in machine design deal with the mechanical transmission of power, the analysis of the action of machine parts, and the design of machine elements and of complete machines with regard to strength, stiffness and general operating efficiency. In this group may be included also the courses in flour-mill design, which deal with the layout of flow sheets and the selection and arrangement of milling machinery.

The department owns equipment valued at $8,207.

COURSES IN DRAWING AND MACHINE DESIGN

FOR UNDERGRADUATE CREDIT

101. Engineering Drawing. 2(0-6); I, II, and SS. Mr. Smutz, Mr. Gingrich and Mr. Hahn.

The selection and use of drawing instruments, construction of geometrical figures, lettering, orthographic projections and sections, and pictorial methods of representation.

106. Descriptive Geometry. 2(0-6); I, II, and SS. Prerequisites: Course 101, and Solid Geometry. Mr. Smutz. Mr. Gingrich, and Mr. Branigan.

More advanced problems than in Engineering Drawing, involving the point, line, and plane; the intersection and development of the surfaces of geometric solids; practical applications of the principles involved; emphasis on developing the student's ability to visualize drawings in the third angle.

107. Descriptive Geometry A. 3(0-9); I. Mr. Gingrich and Mr. Branigan.
This course is primarily for architectural students, and its problems are all related to their work.

108. Shades and Shadows, and Perspective. 3(0-9); II. Prerequisites: Descriptive Geometry A, and Elements of Architecture I (Arch. 106A). Mr. Smutz and Mr. Gingrich.
Conventional shades and shadows of common geometrical solids, solids of revolution, and simple architectural members; the theory of perspective as applied to the same simple solids and to problems from architectural practice. Charge, $1.50.

111. Machine Drawing I. 2(0-6); I, II, and SS. Prerequisite: Engineering Drawing (Mach. Design 101). Mr. Durland, Mr. Olsen, Mr. Branigan, and Mr. Hahn.
Conventional representations, working drawings, modern drafting-room systems, and the reproduction of drawings; special emphasis given to proper selection of views to present the necessary information in convenient forms, dimensioning, checking for errors, and the subject matter and arrangement of titles and notes.

116. Machine Drawing II. 3(0-9); I, II, and SS. Prerequisite: Machine Drawing I (Course 111). Mechanism (Course 121) must precede or accompany this course. Mr. Durland, Mr. Olsen, and Mr. Hahn.
The making of free-hand sketches of simple machine parts and complete working drawings from these sketches without further reference to the objects; kinematic problems, including belting, cams, linkages, and gears to fulfill specified conditions.

117. Machine Drawing E-II. 2(0-6); I, II, and SS. Prerequisite: Machine Drawing I. Mr. Pearce, Mr. Olsen, and Mr. Hahn.
Machine sketching from parts of actual machines; complete working and assembly drawings. Practice is given in tracing and blue printing.

121. Mechanism. 3(3-0); I, II, and SS. Prerequisites: Plane Trigonometry (Math. 101) and Descriptive Geometry (Mach. Design 106). Mr. Pearce, Mr. Olsen, and Mr. Hahn.
A careful study of the fundamental elements of machinery with reference to the transmission of motion and force, and to their forms and arrangements in actual machines; the solution of a large number of graphical and mathematical problems is required.

126. Thesis. 1(0-3), I, and 2(0-6), II, respectively. Mr. Pearce and Mr. Durland.
Excellent material for thesis study furnished by projects in machine design or flour-mill design; subject of the investigation selected in consultation with the head of the department at the beginning of the senior year.

FOR GRADUATE AND UNDERGRADUATE CREDIT

204, 205. Machine Design I. 5(3-6); I. Prerequisites: Strength of Materials (Ap. Mech. 211), Machine Drawing II (Mach. Design 116), and Steam and Gas Engineering II. Mr. Pearce and Mr. Durland.
The straining actions in machine elements; frictions and lubrication; the action of reciprocating parts in engines; problems arising in the transmisson of power and in the design of high-speed machinery.

Laboratory.—Riveted joints of a steam boiler designed in strict conformity to the A. S. M. E. Boiler Code; calculations for a number of simple machines and machine parts, paralleling the recitation class assignments.

210. Machine Design II. 2(0-6); II. Prerequisite: Courses 204, 205. Mr. Pearce and Mr. Durland.
Design of a small power shear; calculations made for all parts; a graphical analysis made of the stress in the shaft; working drawings made; and the rotative effect diagram of a steam engine.

214. Flow Sheet Design. 2(0-6); I. Prerequisites: Machine Drawing II (Mach. Design 116) and (Mill. Ind. 110). Mr. Pearce.
The construction of complete flow sheets for medium capacity flour mills.

215. Flour-mill Design. 2(0-6); II. Prerequisites: Strength of Materials E (Ap. Mech. 216) and Milling Practice I (Mill. Ind. 109). Mr. Pearce.
The making of a design for a medium capacity flour mill, including the construction of a complete flow sheet, and the selection and planning of the arrangement of the machinery.

225. Graphics of Engineering Formulas. 2(2-0); II. Prerequisite: Plane Analytical Geometry (Math. 110). Mr. Pearce.
Design of empirical equations according to the methods of selected points, averages, or least squares, and a consideration of general methods of plotting; the diagramming of formulas; construction of nomographic or alignment charts, in which all the variables of a formula are along any straight transversal cutting the lines of the diagram.

250. Aërodynamics. 4(3-3); I. Prerequisite: Applied Mechanics (App. Mech. 202). Mr. Pearce and Mr. Durland.
A general introduction into aërodynamics, particularly as regards the action of air foils, the effects of parasite drag, the prediction of performance, and the analysis of stability and control.

255. Airplane Design. 2(0-6); II. Prerequisites: Aërodynamics, and Strength of Materials (App. Mech. 211 and 220). Mr. Pearce and Mr. Durland.
A general presentation of the problems involved in the design and stress analysis of an airplane structure, particularly as regards the requirements of the United States Department of Commerce.

FOR GRADUATE CREDIT

301. Advanced Machine Design. 1 to 10 credits; I or II. Mr. Pearce and Mr. Durland.
At the option of the student this course may include either the design of a machine or a study of the advanced dynamics of machinery, with special reference to inertia effects, torque characteristics, fly-wheel design, and balancing of multiple cylinder engines and compressors, the design of turbine drums and disks, the critical speed of rotating parts, and gyroscopic action. The course may furnish material for the master's thesis.

Mechanical Engineering

Professor Calderwood
Professor Mack
Associate Professor Brainard
Instructor Flinner
Graduate Research Assistant Kent

The object of the instruction in this department is to give to the student the fundamental principles underlying the design, construction, selection, operation and testing of steam boilers; steam engines and steam turbines; gas producers; gas and petroleum engines; compressed-air and refrigerating machinery; condensers and evaporators. These subjects are developed by courses in engineering thermodynamics and in steam and gas engineering, and are followed in the fourth year by courses in power-plant engineering, in refrigeration, and in heating and ventilation. The classroom instruction of every course consists of lectures and recitations, which are paralleled by work in the drafting room and laboratory, and supplemented by numerous practical problems, trade catalogues, notes, and inspection trips requiring written reports.

The mechanical-engineering laboratories are well equipped for the testing of boilers, steam engines, gas engines, refrigeration machinery, fuels, lubricants, airplane motors, and other equipment and materials met with in the practice

of mechanical engineering. In addition to the equipment installed especially for experimental purposes, all the heating, power, ventilating, and pumping equipment of the College subserves the further purpose of experimental work.

The equipment belonging to this department is valued at $28,776.

COURSES IN MECHANICAL ENGINEERING

FOR UNDERGRADUATE CREDIT

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

Steam boilers, steam engines, steam turbines, gas and oil engines, including the various auxiliaries.

Laboratory.—Study and calibration of steam gauges, indicators, and planimeters; calorimeters; evaporative tests of steam boilers; determination of the heating value of liquid and gaseous fuels; tests of steam engines; operation and testing of refrigerating machines. Charge, $1.50.

130. ELEMENTS OF STEAM AND GAS POWER. 2(0-6); I and II. Mr. Brainard and Mr. Flinner.

An elementary study of steam engines, steam turbines, steam boilers, steam power-plant auxiliaries, gas and oil engines, natural and manufactured gas, gas power-plant auxiliaries, and the elements of automotive engineering.

135. HEATING AND VENTILATION A. 3(3-0); II. Prerequisite: Engineering Physics II. Mr. Mack.

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

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

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

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

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

A trip of three to four days to Kansas City and other nearby industrial centers for the purpose of inspecting industrial plants of special interest to mechanical engineering students. The plants inspected are carefully selected to exemplify various engineering applications in practice. Cost to each student, including meals, lodging and transportation, approximately $25.

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

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

FOR GRADUATE AND UNDERGRADUATE CREDIT

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

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

Laboratory.—Study and calibration of steam gauges, indicators, and planimeters; valve-setting and steam-engine operation; study of calorimeters, flow meters, and feed-water heaters; determination of the indicated and brake horsepower, mechanical efficiency and the steam consumption of high-speed

automatic cut-off, Corliss, simple and compound engines; tests of DeLaval, Kerr and Terry steam turbines. Charge, $1.50.

204, 205. Steam and Gas Engineering II. 4(3-3); I, and II. Prerequisite: Course 201. Mr. Calderwood, Mr. Mack, Mr. Brainard, and Mr. Flinner.

A detailed study of steam engines, steam boilers, steam turbines, internal-combustion engines, fuels and combustion, gas producers, and other power-plant equipment.

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

206. Power-plant Engineering. 3(0-9); I. Prerequisite: Mech. Eng. 204. Mr. Mack, Mr. Brainard, and Mr. Flinner.

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

210, 215. Refrigeration, Heating and Ventilation. 3(2-3); II. Prerequisite: Mech. Eng. 204. Mr. Mack.

Fundamental principles of refrigerating systems; the application of refrigeration to ice making, cold storage, and the cooling of air, liquids, and solids; fundamental principles of heating and ventilation.

Laboratory.—Tests of refrigerating machinery and of the thermal conductivity of insulating materials; tests of fans and blowers, radiators and house-heating boilers; the design of heating and ventilating systems for buildings. Charge, $1.

221. Refrigeration. 2(2-0); II. Prerequisite: Mech. Eng. 201. Mr. Mack.

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

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

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

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

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

240. Airplane Motors. 2(2-0); II. Prerequisite: Mech. Eng. 204. Mr Calderwood.

General principles, cycles of operation, efficiency, engine requirements, fuels, altitude performance, reliability, and types of airplane engines.

FOR GRADUATE CREDIT

305. Engineering Research. 1 to 10 credits; I or II. Mr. Calderwood and Mr. Mack.

The laboratory work is correlated with the work of the Engineering Experiment Station. Investigations on lubricants, fuels, combustion, internal-combustion engines, steam engines, steam turbines, steam boilers, gas producers, refrigeration, heat-insulating materials, heating and ventilation, compressed air, and similar subjects are carried on. Data secured in this course may be used as the basis for a master's thesis.

Shop Practice

Professor Carlson
Professor Sellers
Associate Professor Graham
Assistant Professor Jones
Assistant Professor Lynch
Assistant Professor Aiman
Assistant Professor Sink
Instructor Grant
Instructor Loomis
Assistant Greeley
Assistant Irwin

The work in the shops is planned to meet the needs of three classes of students: (1) those in the special courses related to engineering and agriculture who expect to make use of the knowledge gained in their subsequent work in the shops and on the farm; (2) those who are training themselves for teaching and need a general knowledge of the principles underlying shop work, together with sufficient skill in the performance of various operations to be able to instruct others; and (3) those in the courses in engineering whose need is to secure a thorough knowledge of the methods of performing various kinds of shop work, of the machines best suited for the different purposes, of the amount of work that may be expected of the different machines and of the workman under different conditions.

The shop building is a series of connected structures. The woodworking shop consists of two rooms, 40 by 90 and 35 by 42 feet, respectively. The wood machinery room is 45 by 81 feet and contains an excellent assortment of machines used in exemplifying commercial woodworking methods. The farm shop, 65 by 75 feet, is equipped for handling farm shop projects. The machine shop, 40 by 170 feet, is one of the best equipped shops of its kind in the country. The blacksmith shop is 50 by 100 feet and is equipped with thirty modern down-draft forges, oxyacetylene welding outfits and other important equipment. The iron and brass foundries, 27 by 100 and 24 by 34 feet, respectively, are modern in every respect.

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

The value of equipment belonging to the department is $44,221.

COURSES IN SHOP PRACTICE

FOR UNDERGRADUATE CREDIT

101. Engineering Woodwork I. 1(0-3); I and II. Mr. Aiman and Mr. Irwin.

Importance of the use of methods, machinery, and men in connection with an industrial woodworking plant; forest conditions, wastage, the structural growth of wood, and the kiln drying of lumber.

117. Manual Training for Primary Grades. 2(0-6); SS. Mr. Aiman.

Exercises suitable for pupils from the primary to the eighth grade; selection of suitable problems, material and equipment; special instruction in methods of teaching this work. Charge, $2.50.

119. Reed Furniture Construction. 2(0-6); I, II, and SS. Prerequisite: Shop 125. Mr. Loomis.

Exercises with reed and art fiber in constructing commercial articles; special instruction in methods of teaching this work. Charge, $2.50.

120. Woodworking for Grammar Grades. 2(0-6); I, II, and SS. Mr. Loomis.

Elementary manual training for those who are preparing to teach problems suitable for grammar grades. Charge, $2.50.

125. Woodworking I for High Schools. 2(0-6); I, II, and SS. Prerequisite: Shop 120. Mr. Loomis.

Continuation of course 120; problems suitable for high-school students; special attention to the study of woods, methods of finishing, and use and care of tools. Charge, $2.50.

130. Woodworking II for High Schools. 2(0-6); I, II, and SS. Prerequisite: Shop 125. Mr. Loomis.

Advanced work in cabinet construction by the use of woodworking machinery, and such bench work as is necessary; both quantity and quality are emphasized, in order that proper use be made of time; the use, care, and selection of machines for a manual training shop. Charge, $2.50.

135. Wood Turning. 2(0-6); I, II, and SS. Prerequisite: Shop 130. Mr. Irwin.

Practice in handling the lathe and turning tools. Charge, $2.50.

140. Advanced Woodwork. 2(0-6); I, II, and SS. Prerequisite: Shop 130. Mr. Loomis.

An opportunity to specialize in wood finishing, cabinet work, or some other work of special interest to the student. Charge, $2.50.

142, 143. Automobiles I and II. 2(2-0), I, and 3(1-6), II; respectively. Prerequisite: High School Physics. Mr. Sink.

In I, the general principles of construction and operations of the automobile; in II, a continuation of Automobiles I supplemented by laboratory practice. Charge (for II), $5.

147. Farm Carpentry I. 3(1-6); I and SS. Mr. Graham.

Rafter cutting and erection, studding and siding work, making window and door frames, hanging doors, and similar operations on full-size construction work; making out bill of material; care and upkeep of tools; designed for training of teachers who must solve problems in connection with carpentry work on the farm. Charge, $2.50.

149. Carpentry. 2(0-6); I. Mr. Graham.

Discussions, demonstrations and practice in connection with tools and materials used in carpenter work on the farm. For students in agricultural engineering. Charge $2.50.

150. Forging I. 1(0-3); I and II. Mr. Lynch and Mr. Sink.

Practice, demonstrations and discussions covering: (*a*) forging of iron and steel; (*b*) production equipment as used in the commercial forge shop; (*c*) operation of gas, oil and electric furnaces, heat-treating steel and oxyacetylene and electric welding. Charge, $2.50.

157, 158. Farm Blacksmithing I and II. 1(0-3) each; I and SS, and II and SS, respectively. Mr. Lynch.

In I, preliminary work same as in Shop 150; exercises closely related to work on the farm; designed to train teachers for work in rural communities. Charge, $2.50.

In II, more advanced instruction in the working of iron and steel, and in the annealing, hardening, and tempering of tools. Charge, $2.50.

161. Foundry Production. 1(0-3); I and II. Mr. Grant and Mr. Sink.

(*a*) Bench, floor and pit molding, use of molding and core machines, operating nonferrous furnaces and the cupola; (*b*) study of commercial foundry equipment and the operation and control of the foundry. Charge, $1.

165. Metallurgy. 2(2-0); I, II, and SS. Prerequisites: Chemistry E-I and E-II; or may be taken with Chemistry E-II. Mr. Sellers.

Manufacture and use of iron, steel, copper, and their alloys; proper selection and use of these in the manufacturing industries.

167. Metallography. 1(0-3); I and II. Prerequisites: Shop 150 and 165, or may be taken with the latter. Mr. Sellers and Mr. Greeley.

The microscopic constituents of the different grades of iron, steel, and the more common nonferrous alloys; changes in the structure and properties of the metals as produced by heat treatment, mechanical working, and composition. Charge, $2.50.

168. Airplane Fabrication. 1(0-3); I and II. Prerequisites: Shop 150 and 167. Mr. Greeley.

Demonstrations, discussions and practice in the construction and testing of airplane parts. Consideration is also given to equipment used in the construction of the airplanes. Charge, $2.50.

170. Machine Tool Work I. 2(0-6); I, II, and SS. Prerequisite: Shop 161. Mr. Jones.

Practice in chipping, filing, shaper and planer work; scraping, drilling, and turning on the lathe. Charge, $5.

175. Farm Shop Methods. 3(1-6); I and SS. Prerequisites: Shop 147 and 157. Mr. Graham.

Babbitting, soldering, drilling, and drill grinding, thread cutting with dies and taps, tool sharpening, belt lacing, repair of machinery, and other practical operations; designed to train teachers in farm-shop work. Charge, $2.50.

186. Shop Practice Teaching. 1 to 6 credits; I, II, and SS. For prerequisites consult instructor. Mr. Carlson and assistants.

Actual laboratory teaching experience under the supervision of an instructor. Work covers the outlining, preparation and presentation of assignments and the supervision of the work; procurement of materials and equipment, shop layouts and upkeep, and general considerations. In so far as possible the course is adapted to the particular needs of the student.

192, 193. Machine Tool Work II and III. 2(0-6) and 1(0-3), respectively; I, II, and SS. Prerequisite: Shop 170. Mr. Jones.

In II, progressive problems in turning, calipering, boring, reaming, taper turning, threading on the lathe, in chucking, use of forming tools, gear cutting; study of cutting edges and tool adjustments best suited to the different metals, cutting speeds and feeds. Charge, $5.

In III, work on the turret lathe, boring mill, hand and automatic screw machines, and grinder; practical work with jigs and fixtures and a study of rapid production of duplicate parts. Charge, $2.50.

195. Thesis. 1(0-3); I, and 2(0-6), II, respectively. Mr. Carlson and Mr. Sellers.

The student works out problems of interest and value to himself under his own initiative, but subject to the supervision of his instructors. Ample facilities are available for carrying on work of a constructive or investigative nature.

FOR GRADUATE AND UNDERGRADUATE CREDIT

245A. Factory Engineering. 2(2-0); I and II. Prerequisites: Shop 170 and Ap. Mech. 211. Mr. Carlson.

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

255. Factory Design. 2(0-6); II. Prerequisite: Shop 245. Mr. Carlson.

Knowledge gained in shops and laboratories and in Factory Engineering (Shop 245A) is used in the design of a factory.

260. Advanced Shop Practice. 1 to 5 credits; I, II, and SS. Mr. Carlson and assistants.

Continuation of courses Shop 101, 135, 140, 143, 147, 150, 158, 161, 167, 175, 193, 255 or 275. Opportunity is also offered to specialize to a limited degree along certain lines of shop practice, such as heat treatment of steel, oxyacetylene and electric welding, jig fixture and die work, patternmaking and any shop work that may be of special interest to the student. All assignments must be approved by the head of the Department of Shop Practice. Charge varies with subject matter.

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

The design and operation of the various parts of the automobile. A course adapted to the needs of those who expect to follow some phase of automobile work or to take up employment in automobile factories. Charge, $2.50.

FOR GRADUATE CREDIT

301. Shop Practice Research. 1 to 10 credits; I, II, and SS. Mr. Carlson, Mr. Sellers and assistants.

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

Engineering in the Summer School

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

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

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

Special Course Related to Engineering

Special one- and two-year courses in trades related to engineering dealing with automobile repair and machine shop work are grouped with other special courses in another part of this catalogue, and are there described in detail. Reference should be made to the general index in the back of this book.

The Division of General Science

JULIUS TERRASS WILLARD, *Dean*

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

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

CURRICULUM IN GENERAL SCIENCE

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

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

While the curriculum in general science offers a wide choice of electives,

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

The curriculum in general science is thus many in one. Such various combinations of groups are possible that it is not practicable to print all of them in extended form. There are, therefore, formally presented here the required subjects of the curriculum in their specified order by years and semesters, and on later pages a considerable number of groups of electives. Most of these groups may be considerably extended by including other acceptable subjects.

CURRICULUM IN INDUSTRIAL JOURNALISM

Knowledge is power only as it comes into the possession of those who can use it; it gives pleasure in direct proportion to the extent of its diffusion. A discovery is of little value as long as the discoverer is the only one who knows of its existence, and the printed page is by far the most effective means of extending knowledge concerning it. Magazines and newspapers never sleep, nor do they take vacations, and their power to elevate mankind is incalculable. But printed knowledge becomes effective only as it is read, and to be widely read in this day it must stand out from the great mass of other matter and gain the attention and hold the interest of the reader. To do this its points must be sharp and easily seen, and the style must be attractive. On the other hand, if the presentation is not essentially true, the more attractive it is the worse it is, and the greater the harm that follows wide reading of it.

The curriculum in industrial journalism endeavors to give young men and women training which will enable them to write both truthfully and effectively, particularly upon industrial subjects. To such subjects the modern newspaper and the general magazine are giving constantly more attention while there are also 500 agricultural publications and a greater number of class and trade publications which are largely or exclusively concerned with matters relating to industrial life. The training given by the College has enabled a goodly number of alumni to do successful work upon these publications.

The aim of the curriculum is to present such subjects as will enable the writer to see his work in proper perspective, to obtain authoritative knowledge of some field of industrial activity, and to write acceptably. The curriculum consequently offers, in the first place, fundamental studies of literary, social, and scientific character. Because of the materials with which journalism deals, it is highly desirable that the student obtain a clear knowledge of the social sciences and be able to read at least one current foreign language. In the second place, the student is required to elect subjects in agriculture, mechanic arts, applied science, or home economics, depending on the portion of the field of industrial journalism which he desires to enter, it being expected that every student graduated from the curriculum shall have special knowledge of some prominent line of industry. In the third place, the theory and practice of journalism are presented in a series of courses extending throughout the sophomore, junior, and senior years, and opportunity is offered for taking additional electives in journalism simultaneously with the required courses.

The College thus affords preparation for work in a wide and inviting field. Our unprecedented industrial achievements have been made by the application of discoveries in physical and biological science. Much of discovery and much of application are yet to come, and one who can write truthfully and attractively of that which is, and of that which comes, will find ample reward.

CURRICULUM IN INDUSTRIAL CHEMISTRY

The facilities for instruction in chemistry are ample, and the demand of students for a curriculum planned especially to give chemical training is such that a formulation has been made to meet the needs of those desiring to specialize in industrial chemistry. A curriculum in chemical engineering is also offered in the Division of Engineering. The instruction facilities of the Department of Chemistry, reinforced by opportunities for practical work in connection with the researches of the experiment stations, are such as to provide amply for this specialized training.

CURRICULA IN MUSIC

A knowledge of music contributes to the satisfaction in life of practically all cultivated people. This College throughout its history has maintained a department of music for the purpose of affording culture in this art to any of its students. In recent years the excellence of the instruction offered has created a demand for curricula in music.

Four-year curricula are offered in voice, piano, and violin, and the last may be adapted to the needs of students who adopt some other major instrument. Curricula are also offered in public-school music, with specialization in either voice or instrument, and in public-school band and orchestra. Students completing one of these four-year curricula are awarded the degree of Bachelor of Music, and are eligible to receive a three-year state certificate, renewable for life.

The curriculum in public-school band and orchestra is designed to train the student in the practical problems of amateur and semiprofessional bands and orchestras. The curriculum is comprehensive in that it provides for sixty-five hours of general college work in addition to the general courses in the theory of music, and also specific preparation in the organizing, managing and conducting of bands and orchestras. The courses in dramatic production should prepare the student to produce and direct operettas.

CURRICULA IN PHYSICAL EDUCATION

Within recent years a great awakening has taken place in respect to physical development. The prevalence of bodily conditions and defects that systematic and intelligently directed exercise would have corrected has been found to be serious. Since the situation has been recognized there has been in schools of all grades a great increase in the provision for physical education and training. Success in teaching this work requires vigorous health, a normal condition of the hands, feet, joints, muscles and internal organs, and eyes that do not require glasses. The curricula offered at this institution are designed to prepare teachers of physical education who are fundamentally trained. This is a much broader field than mere coaching of athletics. At the same time it is fully recognized that the impulse to play is instinctive, and that wisely chosen games, conducted under adequate supervision, constitute attractive and effective agencies for physical development. The theoretical and practical instruction given in these curricula amply prepares students for coaching athletic games. The curricula are also so planned as to enable the student to get the work in professional education necessary for a state certificate, and to elect work in English, mathematics, history or some other subject which one may teach in connection with physical education in the smaller schools.

CURRICULUM IN COMMERCE

The curriculum in commerce was established chiefly because of the relationship of this College to the business activities of the state and nation that directly involve agriculture and rural affairs. The commercial prosperity of Kansas depends primarily upon the business success of its farming population. The success of the farmer is determined to a large extent by his relations

with those who handle its products or furnish him with goods and service. The towns of the state and the strictly rural districts about them constitute an economic unit, the members of which are mutually dependent. A knowledge of the economic, financial, social, and business principles affecting the country and the towns, in themselves and in their interrelations, is of the greatest importance. The curriculum in commerce is designed primarily to train men and women for citizenship and business service in these communities, but the information acquired, and the general principles involved are applicable everywhere and in all lines of business.

The completion of this curriculum should not only enable one to conduct his own business more successfully, but give him an insight into the problems of others in their occupations. A general diffusion of such knowledge promotes tolerance, consideration for the general public with which each deals, and social unity.

Choice of electives is rather free in this curriculum, and any agricultural, industrial, commercial or social subjects of study will be approved if they are chosen in such relationships as to give promise of usefulness.

SIX-YEAR CURRICULUM IN GENERAL SCIENCE AND VETERINARY MEDICINE

A six-year curriculum has been formulated which combines many of the advantages of a course of general scientific study with preparation for the profession of veterinary medicine. During the first four years science work of a general character is combined with subjects fundamental in veterinary medicine, and on completion of these four years the degree of Bachelor of Science is conferred. The last two years are given almost exclusively to professional veterinary subjects, and complete the requirements for the degree of Doctor of Veterinary Medicine.

SPECIAL COURSES FOR TEACHERS

At the present time teaching of vocational subjects in the public schools is undergoing great development. Many schools are introducing manual training, agriculture, food and nutrition, and clothing and textiles, and many others are extending the work hitherto given. The state law requiring the teaching of agriculture in the rural schools is also creating a strong movement in the same direction. There is an active demand for teachers who can handle such work successfully.

The college offers to graduates of other institutions, and indeed to all who have studied such subjects as may be prerequisite, unexcelled facilities for securing training in the industrial subjects indicated. Courses extending over one or two years may be arranged by means of which the student who is already prepared in English, mathematics, and to a certain extent in the sciences, may prepare himself to enter a broader and, frequently, a more remunerative field.

Nos. 31, 32, 35 and 36 of the groups of electives illustrate the possibilities in work of this character, and other arrangements may be made. Those taking such courses will be cared for in the regular classes provided for other students, and no limitation is imposed except that the prerequisites for any subject must have been taken previously, here or elsewhere. These prerequisites are stated in this catalogue in connection with the description of each subject. The catalogue also shows the semester in which a subject is regularly given.

The conditions and requirements for the different classes of state certificates are stated in the introductory paragraphs for the Department of Education.

The course for persons who wish to prepare for teaching vocational agriculture under the Smith-Hughes law is outlined under the Division of Agriculture, and the course for those wishing to qualify as teachers of vocational home economics, under the same law, is given under the Division of Home Economics.

Curriculum in General Science

In effect September, 1929, for class of 1933 and later classes.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	*3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Chemistry I, Chem. 101	5(3-6)	Chemistry II, Chem. 102	5(3-6)
College Algebra,† Math. 104	3(3-0)	Plane Trigonometry,† Math. 101	3(3-0)
General Botany I, Bot. 101	3(1-4, 2)	General Botany II, Bot. 105	3(1-4, 2)
Library Methods, Lib. Ec. 101	1(1-0)	Current History, Hist. 126	1(1-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)*or*		Phys. Education M, Phys. Ed. 104, R(0-2)*or*	
Phys. Education W, Phys. Ed. 151A, R(0-3)		Phys. Education W, Phys. Ed. 152A, R(0-3)	
Total	15 or 16	Total	15 or 16

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
English History, Hist. 121	3(3-0)	Modern Europe II, Hist. 223	3(3-0)
General Physics I, Physics 135	4(3-3)	General Physics II, Physics 140	4(3-3)
General Zoölogy, Zoöl. 105	5(3-6)	Psychology A, Educ. 101	3(3-0)
		Elective‡	2(-)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)*or*		Phys. Education M, Phys. Ed. 106, R(0-2)*or*	
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	15 or 16	Total	15 or 16

JUNIOR

First Semester		Second Semester	
Hist. of Engl. Literature, Engl. 181	3(3-0)	American History I, Hist. 201	3(3-0)
Amer. Govt., Hist. 151, 152 or 153	3(3-0)	Economics, Econ. 101	3(3-0)
Current History, Hist. 126	1(1-0)	Gen. Microbiology, Bact. 101	3(1-6)
Extem. Speech I, Publ. Spk. 106	2(2-0)		
Elective‡	6(-)	Elective‡	6(-)
Total	15	Total	15

SENIOR

First Semester		Second Semester	
Elective‡	15(-)	Elective‡	15(-)

Summary.—Men: Physical education, two years, required; military science, 4 hours; other prescribed subjects, 76 hours; elective 44 hours; total 124 semester hours. Women: The same, except no military science. Total, 120 semester hours.

Adaptation, Classes of 1931 and 1932

The required subjects are the same for these classes as for the class of 1933. The elective hours are: Class of 1931, fifty; class of 1932, forty-seven.

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

† Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107. The additional credits are applied against electives.

‡ Electives are to be chosen, with the advice and approval of the dean, in groups of not less than eight semester credits, or in courses which extend fields already entered in the required work.

Curriculum in Industrial Chemistry

Effective September 1, 1929, for class of 1933 and later years.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Chemistry I, Chem. 101	5(3-6)	Chemistry II, Chem. 102	5(3-6)
College Algebra, Math. 104	3(3-0)	Plane Trigonometry, Math. 101	3(3-0)
Engr. Drawing, Mach. Des. 101	2(0-6)	Des. Geometry, Mach. Des. 106	2(0-6)
General Geology, Geol. 103	3(3-0)	Machine Drawing I, Mach. Des. 111	2(0-6)
		Library Methods, Lib. Ec. 101	1(1-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)*or*		Phys. Education M, Phys. Ed. 104, R(0-2)*or*	
Phys. Education W, Phys. Ed. 151A, R(0-3)		Phys. Education W, Phys. Ed. 152A, R(0-3)	
Total	16 or 17	Total	16 or 17

SOPHOMORE

First Semester		Second Semester	
Inorg. Preparations, Chem. 202	2(0-6)	Quant. Analysis, Chem. 241	5(1-12)
Plane Anal. Geometry, Math. 110	4(4-0)	Calculus I, Math. 205	5(5-0)
Engr. Physics I, Physics 145	5(4-3)	Engr. Physics II, Phys. 150	5(4-3)
Adv. Inorg. Chemistry, Chem. 207	3(3-0)		
Commercial Law, Hist. 160	1(1-0)		
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)*or*		Phys. Education M, Phys. Ed. 106, R(0-2)*or*	
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	15 or 16	Total	15 or 16

JUNIOR

First Semester		Second Semester	
German I, Mod. Lang. 101	3(3-0)	German II, Mod. Lang. 102	3(3-0)
Organic Chemistry I, Chem. 218	4(2-6)	Organic Chemistry II, Chem. 219	4(2-6)
Physical Chemistry I, Chem. 206	5(3-6)	Physical Chemistry II, Chem. 272	3(3-0)
Calculus II, Math. 206	3(3-0)	Elec. Engr. C, Elec. Engr. 160, 165,	3(2-2, 1)
Fire Assaying, Chem. 242	2(0-6)	History of Chemistry, Chem. 208	1(1-0)
		Electives†	3(-)
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Amer. Govt., Hist. 151, 152, or 153	3(3-0)	Economics, Econ. 101	3(3-0)
Indust. Chemistry I, Chem. 203	5(3-6)	Indust. Chemistry II, Chem. 204	5(3-6)
Scientific German, Mod. Lang. 237	4(4-0)	Chemistry Problems, Chem. 270	3(0-9)
		Inspection Trip, Chem. 130	R
Electives†	5(-)	Electives†	5(-)
Total	17	Total	16

Summary.—Men: Physical education, required; military science, 4 hours; chemistry, 52 hours; engineering, 9 hours; other prescribed subjects, 55 hours; elective, 13 hours. Total, 133 semester hours. Women: The same, except no military science. Total, 129 semester hours.

Adaptation, Classes of 1931 and 1932

Members of these classes should take the subjects provided for the class of 1933, arranging for them by appropriate substitutions made in the dean's office, or as electives.

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† Electives are to be chosen, with the advice and approval of the dean, in groups of not less than eight semester credits, or in courses which extend fields already entered in the required work.

Curriculum in Industrial Journalism

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
General Chemistry, Chem. 110	5(3-6)	General Geology, Geol. 103	3(3-0)
French I, Mod. Lang. 151	3(3-0)*or*	Modern Language, continued	3(3-0)
Spanish I, Mod. Lang. 176	3(3-0)*or*		
German I, Mod. Lang. 101	3(3-0)		
Pre-Journalism Lec. I, Ind. Jour. 141	1(1-0)	Pre-Journalism Lec. II, Ind. Jour. 142	1(1-0)
Option related to an Industry or to Applied Science*	3(-)	Option related to an Industry or to Applied Science*	4(-)
		Library Methods, Lib. Ec. 101	1(1-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103, R(0-2)*or*		Phys. Education M, Phys. Ed. 104, R(0-2)*or*	
Phys. Education W, Phys. Ed. 151A, R(0-3)		Phys. Education W, Phys. Ed. 152A, R(0-3)	
Total	15 or 16	Total	15 or 16

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

First Semester		Second Semester	
El. Journalism, Ind. Jour. 151	2(2-0)	Industrial Writing, Ind. Jour. 161	2(2-0)
Prin. of Typography, Ind. Jour. 101	3(2-3)	English Literature, Engl. 172	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)*or*	General Botany II, Bot. 105	3(1-4, 2)*or*
General Botany I, Bot. 101	3(1-4, 2)	General Microbiology, Bot. 101	3(1-6)*if*
Modern Language Readings	3(3-0)	General Botany I is chosen the first semester.	
		Psychology A, Educ. 101	3(3-0)
Option related to an Industry or to Applied Science*	2 or 4(-)	Option related to an Industry or to Appld. Sc. or Social Science*	7 or 4(-)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105, R(0-2)*or*		Phys. Education M, Phys. Ed. 106, R(0-2)*or*	
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	15 or 16	Total	15 or 16

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

First Semester		Second Semester	
Advanced Reporting, Ind. Jour. 163	3(3-0)	Jour. for Women, Ind. Jour. 172	2(2-0)*or*
Ind. Feature Writing I, Ind. Jour. 167,	2(2-0)	The Rural Press, Ind. Jour. 181	2(2-0)*or*
Prin. of Adv., Ind. Jour. 179	3(3-0)	Adv. Practice I, Ind. Jour. 220	2(2-0)
		Copy Reading, Ind. Jour. 254	2(0-6)
American Literature, Engl. 175	3(3-0)	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)	Current History, Hist. 126	1(1-0)
Option related to an Industry or to Appld. Sc. or Social Science*	3 -)	Options and Electives*	5(-)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
Total	15	Total	15

SENIOR

Effective September 1, 1930, for class of 1931 and later classes.

First Semester		Second Semester	
Circ. & Adv. Pro., Ind. Jour. 251A	2(2-0)	Ethics of Journalism, Ind. Jour. 260,	2(2-0)
Editorial Practice, Ind. Jour. 257	2(2-0)	American Govt., Hist. 151	3(3-0)
Contem. Thought, Ind. Jour. 255	3(3-0)		
Electives and Options*	8(-)	Electives and Options*	10(-)
Industrial Journalism Lecture	R	Industrial Journalism Lecture	R
Total	15	Total	15

Summary.—Men: Physical education, two years required; military science, 4 hours; industrial journalism, 30 hours; restricted options, 27 hours; modern language, 9 hours; other prescribed subjects, 39 or 40 hours; general electives, 14 or 15 hours; total, 124 semester hours. Women: The same, excepting no military science, total 120 semester hours.

* The options and electives are chosen with the advice and approval of the dean. The options are in two general groups: (1) fifteen semester hours in courses related to an indus-

Curriculum in Piano

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

First Semester		Second Semester	
Piano I, Mus. 170A	4(1-12)	Piano II, Mus. 170B	4(1-12)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105	2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106	2(2-0)
Ensemble I, Mus. 190A, 193A, or 196A	R(1-0)	Ensemble II, Mus. 190B, 193B, or 196B	R)1-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Hist. & Apprec. of Mus. I, Mus. 112	3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113	3(3-0)
Current History, Hist. 126	1(1-0)	Current History, Hist. 126	1(1-0)
		Library Methods, Lib. Ec. 101	1(1-0)
Piano Ensemble I, Mus. 176A	R(1-0)	Piano Ensemble II, Mus. 176B	R(1-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103, *or*	R(0-2)	Phys. Education M, Phys. Ed. 104, *or*	R(0-2)
Phys. Education W, Phys. Ed. 151A,	R(0-3)	Phys. Education W, Phys. Ed. 152A,	R(0-3)
Total	15 or 16	Total	16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

First Semester		Second Semester	
Piano III, Mus. 170C	4(1-12)	Piano IV, Mus. 170D	4(1-12)
Voice B-I, Mus. 164A	2(1-6)	Voice B-II, Mus. 164B	2(1-6)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Ensemble III, Mus. 190C, 193C, or 196C	R(1-0)	Ensemble IV, Mus. 190D, 193D, or 196D	R(1-0)
Recital I, Mus. 184A	R(-)	Recital II, Mus. 184B	R(-)
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Psychology B, Educ. 102	3(3-0)	Harmonics, Physics 222	2(2-0)
Piano Ensemble III, Mus. 176C	R(1-0)	Piano Ensemble IV, Mus. 176D	R(1-0)
Elective, nonmusic	2(-)	Elective, nonmusic	3(-)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105, *or*	R(0-2)	Phys. Education M, Phys. Ed. 106, *or*	R(0-2)
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	16 or 17	Total	16 or 17

JUNIOR

First Semester		Second Semester	
Piano V, Mus. 170E	4(1-12)	Piano VI, Mus. 170F	4(1-12)
Counterpoint, Mus. 108A	2(2-0)	Musical Form and Anal., Mus. 109	2(2-0)
Ensemble V, Mus. 190E, 193E, or 196E	R(1-0)	Ensemble VI, Mus. 190F, 193F, or 196F	R(1-0)
Recital III, Mus. 184C	R(-)	Recital IV, Mus. 184D	2(2-0)
German I, Mod. Lang. 101	3(3-0)	German II, Mod. Lang. 102	3(3-0)
Normal Piano Methods, Mus. 140	2(2-0)	Practice Teaching of Mus., Mus. 188	2(-)
Piano Ensemble V, Mus. 176E	R(1-0)	Piano Ensemble VI, Mus. 176F	R(1 0)
Conducting I, Mus. 117	1(1-0)		
Elective, nonmusic	5(-)	Elective, nonmusic	3(-)
Total	17	Total	16

try or to applied science, and (2) twelve semester hours in courses in political or social history, government, economics or sociology. The options taken in the freshman year, and a large part of those in the sophomore year, must be those related to an industry or applied science. In the tabulated presentation of electives for students in the Division of General Science, groups may be found that will be accepted as the required options and electives. These are printed immediately following the presentation of the curricula. Group 31 (applied science), group 32 (home economics), group 35 (agriculture), group 36 (architecture), or group 37 (manual training), may be chosen in satisfaction of the fifteen hours required related to an industry or applied science. From group 30, twelve hours are to be chosen in satisfaction of the social science option.

The electives are to be chosen in groups of usually not fewer than eight semester credits, unless they are courses which extend fields already entered through the required subjects or the options.

SENIOR

First Semester		Second Semester	
Piano VII, Mus. 170G	4(1-12)	Piano VIII, Mus. 170H	4(1-12)
Instrumentation, Mus. 130	2(2-0)	Orchestration, Mus. 133	2(2-0)
Ensemble VII, Mus. 190G, 193G, or 196G	R(1-0)	Ensemble VIII, Mus. 190H, 193H, or 196H	R(1-0)
Recital V, Mus. 184E	R(-)	Recital VI, Mus. 184F	2(2-0)
Educational Psychology, Educ. 109	3(3-0)		
French I, Mod. Lang. 151	3(3-0)	French II, Mod. Lang. 152	3(3-0)
Piano Ensemble VII, Mus. 176G	R(1-0)	Piano Ensemble VIII, Mus. 176H	R(1-0)
Elective, nonmusic	5(-)	Elective, nonmusic	6(-)
Total	17	Total	17

Summary.—Women: Physical education, required; music, 71 hours; education, 6 hours; other prescribed subjects, 29 hours; elective, 24 hours. Total, 130 semester hours. Men: The same, except that military science, 4 hours, is also required. Total, 134 semester credits.

Curriculum in Public-school Band and Orchestra

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

First Semester		Second Semester	
Instrument I, Mus. 137A	3(1-9)	Instrument II, Mus. 137B	3(1-9)
Piano D-I, Mus. 177A	1(½-6)	Piano D-II, Mus. 177B	2(1-6)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105	2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106	2(2-0)
Ensemble I (Band or Orchestra), Mus. 193A or 196A	R(1-0)	Ensemble II (Band or Orchestra), Mus. 193B or 196B	R(1-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Psychology B, Educ. 102	3(3-0)	Surv. of Pub.-Sch. Mus., Mus. 110	2(2-0)
Elective, nonmusic	1(1-0)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103, *or*	R(0-2)	Phys. Education M, Phys. Ed. 104, *or*	R(0-2)
Phys. Education W, Phys. Ed. 151A,	R(0-3)	Phys. Education W, Phys. Ed. 152A,	R(0-3)
Total	15 or 16	Total	16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

First Semester		Second Semester	
Instrument III, Mus. 137C	3(1-9)	Instrument IV, Mus. 137D	3(1-9)
Piano D-III, Mus. 177C	1(½-6)	Piano D-IV, Mus. 177D	2(1-6)
Orch. Instruments I, Mus. 142A	1(½-6)	Orch. Instruments II, Mus. 142B	1(½-6)
Ensemble III (Band or Orchestra), Mus. 193C or 196C	R(1-0)	Ensemble IV (Band or Orchestra), Mus. 193D or 196D	R(1-0)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Ear Tr. & Sgt. Singing III, Mus. 107	2(2-0)	Ear Tr. & Sgt. Singing IV, Mus. 108	2(2-0)
Hist. & Apprec. of Music I, Mus. 112	3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113	3(3-0)
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Conducting I, Mus. 117	1(1-0)		
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105, *or*	R(0-2)	Phys. Education M, Phys. Ed. 106, *or*	R(0-2)
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	16 or 17	Total	16 or 17

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

First Semester		Second Semester	
Instrument V, Mus. 137E	3(1-9)	Instrument VI, Mus. 137F	2(1-6)
Counterpoint, Mus. 108A	2(2-0)	Musical Form & Anal., Mus. 109	2(2-0)
Instrumentation, Mus. 130	2(2-0)		
Ensemble V (Orchestra), Mus. 193E,	1(1-0)	Ensemble VI (Orchestra), Mus. 193F,	1(1-0)
Conducting II, Mus. 128	1(1-0)		
Dramatic Pro. I, Pub. Spk. 130	2(2-0)	Dramatic Pro. II, Pub. Spk. 135	2(2-0)
Mod. Lang. I (French or German), Mod. Lang. 101 or 151	3(3-0)	Modern Language II, Mod. Lang. 102 or 152	3(3-0)
Educational Adm. A, Educ. 105	3(3-0)	Educational Psychology, Educ. 109	3(3-0)
		Elective, nonmusic	5(5-0)
Total	17	Total	18

SENIOR

Effective September 1, 1930, for class of 1931 and later classes.

First Semester		Second Semester	
Instrument VII, Mus. 137G	2(1-6)	Instrument VIII, Mus. 137H	1(½-6)
Orchestration, Mus. 133	2(2-0)	Harmonics, Physics 222	2(2-0)
Practice Conducting, Mus. 135	1(½-2)		
Ensemble VII (Orchestra), Mus. 193G	1(1-0)	Ensemble VIII (Orchestra), Mus. 193H	1(1-0)
Chorus, Mus. 190	R(1-0)	Prac. Teaching of Mus., Mus. 188A	1(-)
Modern Language (continued)	3(3-0)	Modern Language (continued)	3(3-0)
Elective in Education	3(3-0)	Elective in Education	6(6-0)
Elective, nonmusic	3(3-0)	Elective, nonmusic	3(3-0)
Total	15	Total	17

Summary.—Men: Physical education, required; military science, 4 hours; music, 68 hours; education, 18 hours; other prescribed subjects, 32 hours; nonmusic electives, 12 hours. Total, 134 semester hours. Women: The same, except no military science. Total, 130 semester hours.

Curriculum in Public-school Music

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

First Semester		Second Semester	
Public-school Music I, Mus. 120	2(2-0)	Public-school Music II, Mus. 121	2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105	2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106	2(2-0)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Piano A-I,* Mus. 171A	1(½-6)	Piano A-II, Mus. 171B	2(1-6)
Voice A-I,* Mus. 162A	2(1-6)	Voice A-II, Mus. 162B	1(½-6)
		Conducting I, Mus. 117	1(1-0)
Chorus I, Mus. 190A	R(1-0)	Chorus II, Mus. 190B	R(1-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Psychology B, Educ. 102	3(3-0)	Extem. Speech I, Pub. Spk. 106	2(2-0)
Phys. Ed. W, Phys. Ed. 151A	R(0-3)*or*	Phys. Ed. W, Phys. Ed. 152A	R(0-3)*or*
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Ed. M., Phys. Ed. 104	R(0-2)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Total	15 or 16	Total	15 or 16

SOPHOMORE

First Semester		Second Semester	
Public-school Music III, Mus. 122	2(2-0)	Public-school Music IV, Mus. 123	2(2-0)
Ear Tr. & Sgt. Singing III, Mus. 107	2(2-0)	Ear Tr. & Sgt. Singing IV, Mus. 108	2(2-0)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Piano A-III, Mus. 171C	1(½-6)	Piano A-IV, Mus. 171D	2(1-6)
Voice A-III, Mus. 162C	2(1-6)	Voice A-IV, Mus. 162D	1(½-6)
Orch. Instruments I, Mus. 142A	1(½-6)	Orch. Instruments II, Mus. 142B	1(½-6)
Chorus III, Mus. 190C	R(1-0)	Chorus IV, Mus. 190D	R(1-0)
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Hist. & Apprec. of Mus. I, Mus. 112	3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113	3(3-0)
Phys. Education W, Phys, Ed. 153	R(0-3)*or*	Phys. Education W, Phys. Ed. 154	R(0-3)*or*
Phys. Education M, Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Total	16 or 17	Total	16 or 17

JUNIOR

First Semester		Second Semester	
Public-school Music V, Mus. 124	2(2-0)	Public-school Music VI, Mus. 125	2(2-0)
Counterpoint, Mus. 108A	2(2-0)	Musical Form and Anal., Mus. 109	2(2-0)
Voice or Instrument, Mus	2(1-6)	Voice or Instrument, Mus	2(1-6)
		Methods of Teach. Mus., Mus. 145	1(-)
Chorus V, Mus. 190E	R(1-0)	Chorus VI, Mus. 190F	R(1-0)
A Modern Language	3(3-0)	Modern Language (continued)	3(3-0)
Elective in English	3(3-0)		
Elective in Education	3(3-0)	Elective in Education	3(3-0)
Elective, nonmusic	2(-)	Elective, nonmusic	5(-)
Total	17	Total	18

* The relative amounts of vocal and instrumental study in the several years are subject to change on recommendation of the head of the Department of Music on a request for substitution blank, the total being three semester hours each semester the first two years, and two semester hours each semester of the last two years.

SENIOR

Effective September 1, 1930, for class of 1931 and later classes.

First Semester		Second Semester	
Public-school Music VII, Mus. 126	2(2-0)	Public-school Music VIII, Mus. 127	2(2-0)
Instrumentation, Mus. 130	2(2-0)	Orchestration, Mus. 133	2(2-0)
Voice or Instrument, Mus	2(1-6)	Voice or Instrument, Mus	2(1-6)
Practice Teach. of Mus., Mus. 188A	1(-)		
Chorus VII, Mus. 190G	R(1-0)	Chorus VIII, Mus. 190H	R(1-0)
Modern Language (continued)	3(3-0)	Modern Language (continued)	3(3-0)
Elective in Education	3(3-0)	Elective in Education	6(6-0)
Elective, nonmusic	3(-)	Elective, nonmusic	3(-)
Total	16	Total	18

Summary.—Women: Physical education, required; music, 71 hours; other prescribed subjects, 17 hours; electives in education, 15 hours; electives in one modern language, 12 hours; general electives, 16 hours; total, 131 hours. Men: The same, except that military scence, 4 hours, is also required. Total, 135 semester hours.

Curriculum in Violin

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

First Semester		Second Semester	
Violin I, Mus. 165A	4(1-12)	Violin II, Mus. 165B	4(1-12)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Hist. & Apprec. of Mus. I, Mus. 112	3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113	3(3-0)
Current History, Hist. 126	1(1-0)	Current History, Hist. 126	1(1-0)
		Library Methods, Lib. Ec. 101	1(1-0)
Ear Tr. & Sgt. Singing I, Mus. 105	2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106	2(2-0)
Ensemble I, Mus. 190A, 193A, or 196A	R(1-0)	Ensemble II, Mus. 190B, 193B, or 196B	R(1-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103	R(0-2) *or*	Phys. Education M, Phys. Ed. 104	R(0-2) *or*
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	15 or 16	Total	16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

First Semester		Second Semester	
Violin III, Mus. 165C	4(1-12)	Violin IV, Mus. 165D	4(1-12)
Piano B-I, Mus. 173A	2(1-6)	Piano B-II, Mus. 173B	2(1-6)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Ensemble III, Mus. 190C, 193C, or 196C	R(1-0)	Ensemble IV, Mus. 190D, 193D, or 196D	R(1-0)
Recital I, Mus. 184A	R(-)	Recital II, Mus. 184B	R(-)
English Literature, Engl. 172	3(3-0)	Harmonics, Physics 222	2(2-0)
Psychology B, Educ. 102	3(3-0)	American Literature, Engl. 175	3(3-0)
Elective, nonmusic	3(-)	Elective, nonmusic	3(-)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105	R(0-2) *or*	Phys. Education M, Phys. Ed. 106	R(0-2) *or*
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	17 or 18	Total	16 or 17

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

First Semester		Second Semester	
Violin V, Mus. 165E	6(1-24)	Violin VI, Mus. 165F	6(1-24)
Counterpoint, Mus. 108A	2(2-0)	Mus. Form and Anal., Mus. 109	2(2-0)
Ensemble V, Mus. 190E, 193E, or 196E	R(1-0)	Ensemble VI, Mus. 190F, 193F, or 196F	R(1-0)
Recital III, Mus. 184C	R(-)	Recital IV, Mus. 184D	2(2-0)
Piano B-III, Mus. 173C	2(1-6)	Piano B-IV, Mus. 173D	2(1-6)
German I, Mod. Lang. 101	3(3-0)	German II, Mod. Lang. 102	3(3-0)
Methods of Teach. Mus., Mus. 145	1(-)	Prac. Teach. of Mus. A, Mus. 188A	1 -)
Conducting I, Mus. 117	1(1-0)		
Elective, nonmusic	3(-)	Elective, nonmusic	1(-)
Total	18	Total	17

SENIOR

First Semester		Second Semester	
Violin VII, Mus. 165G	6(1-24)	Violin VIII, Mus. 165H	6(1-24)
Instrumentation, Mus. 130	2(2-0)	Orchestration, Mus. 133	2(2-0)
Ensemble VII, Mus. 190G, 193G, or 196G	R(1-0)	Ensemble VIII, Mus. 190H, 193H, or 196H	R(1-0)
Recital V, Mus. 184E	R(-)	Recital VI, Mus. 184F	2(2-0)
French I, Mod. Lang. 151	3(3-0)	French II, Mod. Lang. 152	3(3-0)
Educational Psychology, Educ. 109	3(3-0)		
Elective, nonmusic	3(-)	Elective, nonmusic	3(3-0)
Total	17	Total	16

Summary.—Women: Physical education, required; music, 81 hours; education, 6 hours; other prescribed subjects, 29 hours; elective, 16 hours. Total, 132 semester hours. Men: the same, except that military science, 4 hours, is also required. Total, 136 semester hours.

Curriculum in Voice

FRESHMAN

First Semester		Second Semester	
Voice I, Mus. 160A	4(1-12)	Voice II, Mus. 160B	4(1-12)
Hist. & Apprec. of Mus. I, Mus. 112,	3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113,	3(3-0)
Current History, Hist. 126	1(1-0)	Current History, Hist. 126	1(1-0)
		Library Methods, Lib. Ec. 101	1(1-0)
Harmony I, Mus. 101	2(2-0)	Harmony II, Mus. 102	2(2-0)
Ear Tr. & Sgt. Singing I, Mus. 105,	2(2-0)	Ear Tr. & Sgt. Singing II, Mus. 106,	2(2-0)
Choral Ensemble I, Mus. 192A	R(1-0)	Choral Ensemble II, Mus. 192B	R(1-0)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103,	R(0-2)*or*	Phys. Education M, Phys. Ed. 104,	R(0-2)*or*
Phys. Education W, Phys. Ed. 151A,	R(0-3)	Phys. Education W, Phys. Ed. 152A,	R(0-3)
Total	15 or 16	Total	16 or 17

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

First Semester		Second Semester	
Voice III, Mus. 160C	4(1-12)	Voice IV, Mus. 160D	4(1-12)
Piano B-I, Mus. 173A	2(1-6)	Piano B-II, Mus. 173B	2(1-6)
Harmony III, Mus. 103	2(2-0)	Harmony IV, Mus. 104	2(2-0)
Choral Ensemble III, Mus. 192C	R(1-0)	Choral Ensemble IV, Mus. 192D	R(1-0)
Recital I, Mus. 184A	R(-)	Recital II, Mus. 184B	R(-)
English Literature, Engl. 172	3(3-0)	Harmonics, Physics 222	2(2 0)
Psychology B, Educ. 102	3(3-0)	American Literature, Engl. 175	3(3-0)
Elective, nonmusic	3(-)	Elective, nonmusic	3(-)
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105,	R(0-2)*or*	Phys. Education M, Phys. Ed. 106,	R(0-2)*or*
Phys. Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Total	17 or 18	Total	16 or 17

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

First Semester		Second Semester	
Voice V, Mus. 160E	4(1-12)	Voice VI, Mus. 160F	4(1-12)
Methods of Teach. Mus., Mus. 145,	1(-)	Prac. Teach. of Mus. A, Mus. 188A,	1(-)
Counterpoint, Mus. 108A	2(2-0)	Mus. Form and Anal., Mus. 109	2(2-0)
Choral Ensemble V, Mus. 192E	R(1-0)	Choral Ensemble VI, Mus. 192F	R(1-0)
Recital III, Mus. 184C	R(-)	Recital IV, Mus. 184D	2(2-0)
Piano B-III, Mus. 173C	2(1-6)	Piano B-IV, Mus. 173D	2(1-6)
German I, Mod. Lang. 101	3(3-0)	German I, Mod. Lang. 102	3(3-0)
Conducting I, Mus. 117	1(1-0)		
Elective, nonmusic	5(5-0)	Elective, nonmusic	2(-)
Total	18	Total	16

SENIOR

First Semester		Second Semester	
Voice VII, Mus. 160G	4(1-12)	Voice VIII, Mus. 160H	4(1-12)
Instrumentation, Mus. 130	2(2-0)	Orchestration, Mus. 133	2(2-0)
Choral Ensemble VII, Mus. 192G	R(1-0)	Choral Ensemble VIII, Mus. 192H	R(1-0)
Recital V, Mus. 184E	R(-)	Recital VI, Mus. 184F	2(2-0)
Educational Psychology, Educ. 109	3(3-0)		
French I, Mod. Lang. 151	3(3-0)	French I, Mod. Lang. 192	3(3-0)
Repertoire I, Mus. 185A	1(1-0)	Repertoire II, Mus. 185B	1(1-0)
Elective, nonmusic	3(-)	Elective, nonmusic	3(-)
Total	16	Total	15

Summary.—Women: Physical education, required; music, 75 hours; education, 6 hours; other prescribed subjects, 29 hours; elective, 19 hours. Total, 129 semester hours. Men: The same, except that military science, 4 hours, is required. Total, 133 semester hours.

Curriculum in Physical Education for Men

Effective September 1, 1930, for class of 1934 and later classes.

FRESHMAN

First Semester		Second Semester	
Gymnastics I, Phys. Ed. 115A	2(1-3)	Gymnastics II, Phys. Ed. 117A	2(0-6)
Football I, Phys. Ed. 126A	2(1-3)	Track and Field Sports, Phys. Ed. 140A	2(1-3)
Basket Ball, Phys. Ed. 130A	2(1-3)	General Zoölogy, Zoöl. 105	5(3-6)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
General Chemistry, Chem. 110	5(3-6)	El. Org. Chemistry, Chem. 123	3(2-3)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Extem. Speech II, Pub. Spk. 108	2(2-0)
Infantry I, Mil. Tr. 101A	1(0-3)	Infantry II, Mil. Tr. 102A	1(0-3)
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	17	Total	18

SOPHOMORE

Effective September 1, 1930, for class of 1933 and later classes.

First Semester		Second Semester	
Apparatus, Phys. Ed. 109	1(0-3)	Personal Hygiene, Phys. Ed. 119	2(2-0)
Football, Phys. Ed. 127	2(1-3)	Baseball, Phys. Ed. 135A	2(1-3)
Swimming M-I, Phys. Ed. 121	1(0-3)	Swimming M-II, Phys. Ed. 122	1(0-3)
Human Anatomy, Zoöl. 123A	5(3-6)	Kinesiology M, Phys. Ed. 141B	3(3-0)
Embryology A, Zoöl. 135	3(2-3)	Physiology, Zoöl. 130	4(3-3)
Psychology A, Educ. 101	3(3-0)	History and Principles of Phys. Ed., Phys. Ed. 192	3(3-0)
Library Methods, Lib. Ec. 101	1(1-0)	Playground Management and Games M, Phys. Ed. 145A	2(2-0)
Infantry III, Mil. Tr. 103A	1(0-3)	Infantry IV, Mil. Tr. 104A	1(0-3)
Phys. Education M, Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	17	Total	18

JUNIOR

Effective September 1, 1930, for class of 1932 and later classes.

First Semester		Second Semester	
School Hygiene, Phys. Ed. 196	3(3-0)	Gen. Microbiology, Bact. 101	3(1-6)
Boxing, Phys. Ed. 132	1(0-3)	Sociology, Econ. 151	3(3-0)
First Aid and Mas., Phys. Ed. 113A	3(3-0)	Wrestling, Phys. Ed. 128	1(0-3)
Organization and Administration of Phys. Ed. M, Phys. Ed. 146B	2(2-0)	Psychology of Childhood and Adolescence, Educ. 208	3(3-0)
El. Jour., Ind. Jour. 151	2(2-0)	Educ. Admin. A, Educ. 105	3(3-0)
Practice Teaching in Physical Education I, Phys. Ed. 136A	2(0-6)	Practice Teaching in Physical Education II, Phys. Ed. 136B	2(0-6)
Elective†	3(-)	Elective†	3(-)
Total	16	Total	18

† All electives are to be chosen in accordance with the general rules governing electives and taken in departments other than that of physical education.

SENIOR

First Semester		Second Semester	
Phys. Diag. & Presc., Phys. Ed. 124A	3(3-0)	Physiol. of Exercise, Phys. Ed. 123	2(2-0)
Practice Teaching in Physical Education III, Phys. Ed. 136C	2(0-6)	Practice Teaching in Physical Education IV, Phys. Ed. 136D	2(0-6)
Educ. Psychology, Educ. 109	3(3-0)	Methods of Teaching B, Educ. 112	3(3-0)
Special Histology, Path. 252	3(1-6)	Current History, Hist. 126	1(1-0)
		Public-school Program in Physical Education, Phys. Ed. 142A	2(2-0)
Elective†	4(-)	Elective†	5(-)
Total	15	Total	15

Summary.—Military science, 4 hours; physical education, 52 hours; professional education, 15 hours; other prescribed subjects, 48 hours; general electives, 15 hours. Total, 134 semester hours.

Curriculum in Physical Education for Women

Effective September 1, 1930, for class of 1934 and later years.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
General Chemistry, Chem. 110	5(3-6)	El. Org. Chemistry, Chem, 123	3(2-3)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Extem. Speech II, Pub. Spk. 108	2(2-0)
Library Methods, Lib. Econ. 101	1(1-0)	General Zoölogy, Zoöl. 105	5(3-6)
Hygiene, Child Welfare 101	2(2-0)	First Aid, Phys. Ed. 158	1(1-0)
Phys. Education W, Phys. Ed. 151A,	R(0-3)	Phys. Education W, Phys. Ed. 152A,	R(0-3)
Gen. Technic I, Phys Ed. 157A	2(1-3)	Gen. Technic II, Phys. Ed. 157B	2(1-3)
Total	15	Total	16

SOPHOMORE

First Semester		Second Semester	
		Psychology A, Educ. 101	3(3-0)
Human Anatomy, Zoöl. 123A	5(3-6)	Kinesiology W, Phys. Ed. 189	3(3-0)
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Embryology A, Zoöl. 135	3(2-3)	Physiology, Zoöl. 130	4(3-3)
Playground Management and Games W, Phy. Ed. 182A	2(1-3)	History and Principles of Physical Education, Phys. Ed. 192	3(3-0)
El. Journalism, Jour. 151	2(2-0)		
Phys, Education W, Phys. Ed. 153	R(0-3)	Phys. Education W, Phys. Ed. 154	R(0-3)
Gen. Technic III, Phys. Ed. 157C	2(1-3)	Gen. Technic IV, Phys. Ed. 157D	2(1-3)
Total	17	Total	18

JUNIOR

First Semester		Second Semester	
School Hygiene, Phys. Ed. 196	3(3-0)	Educ. Admin. A, Educ. 105	3(3-0)
Hist. of Engl. Lit., Engl. 181	3(3-0)	Psychology of Childhood and Adolescence, Educ. 208	3(3-0)
Gen. Microbiology, Bact. 101	3(1-6)	Therap. and Mas., Phys. Ed. 172	2(1-3)
Phys. Diagnosis W, Phys. Ed. 170	3(3-0)	American History I, Hist. 201	3(3-0)
Folk Dancing I, Phys. Ed. 160	1(0-3)	Folk Dancing II, Phys. Ed. 161	1(0-3)
General Technic V, Phys. Ed. 157E	2(1-3)	General Technic VI, Phys. Ed. 157F	2(1-3)
		Methods of Teaching Gymnastics, Phys. Ed. 168	1(1-0)
Elective†	2(-)	Elective†	2(-)
Total	17	Total	17

† All electives are to be chosen in accordance with the general rules governing electives and taken in departments other than that of physical education.

SENIOR

First Semester		Second Semester	
Educ. Psychology, Educ. 109	3(3-0)	Educ. Sociology A, Educ. 118	3(3-0)
Supervised Teaching in Physical Education, Phys. Ed. 186	3(-)	Organization and Administration of Phys. Ed. W, Phys. Ed. 176	2(2-0)
Teaching and Adaptation of Physical Education, Phys. Ed. 188	3(3-0)	Applied Nutrition, Food & Nut. 121	2(2-0)
Theory and Technic of Dancing, Phys. Ed. 163	1(1-0)	Current History, Hist. 126	1(1-0)
Gen. Technic VII, Phys. Ed. 157G	2(1-3)	Gen. Technic VIII, Phys. Ed. 157H	2(1-3)
Elective†	5(-)	Elective†	6(-)
Total	17	Total	16

Summary.—Physical education, 44 hours; professional education, 18 hours; other prescribed subjects, 56 hours; general electives, 15 hours. Total, 133 semester hours.

Adaptation, Classes of 1931 and 1932.

Junior and Senior years. Omit Sports Technic I to IV. Take General Technic V, VI, VII, and VIII, 2(1-3) each instead of 1(0-3) each.

Curriculum in Commerce

Effective September 1, 1929, for class of 1933.

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Phy. or Bio. Science*	5(-) or 3(-)	Phys. or Bio. Science*	3(-) or 5(-)
Modern Language*	3(3-0)	Modern Language*	3(3-0)
Current History, Hist. 126	1(1-0)	Current History, Hist. 126	1(1-0)
Psychology A, Educ. 101	3(3-0)	College Algebra,* Math. 104	3(3-0)
Extem. Speech I, Pub. Spk. 106	2(2-0)		
Infantry I, Mil. Tr. 101A (men)	1(0-3)	Infantry II, Mil. Tr. 102A (men)	1(0-3)
Phys. Education M, Phys. Ed. 103, *or* Phys. Education W, Phys. Ed. 151A,	R(0-2) R(0-3)	Phys. Education M, Phys. Ed. 104, *or* Phys. Education W, Phys. Ed. 152A,	R(0-2) R(0-3)
Total	15 or 16	Total	15 or 16

SOPHOMORE

First Semester		Second Semester	
Com'l Correspondence, Engl. 122	3(3-0)	Writ. & Oral Salesmanship, Engl. 123,	3(3-0)
Accounting I, Econ. 133	3(2-3)	Accounting II, Econ. 134	3(2-3)
Modern Language	3(3-0)	English Literature, Engl. 172	3(3-0)
Economic Geography, Econ. 122	2(2-0)	Economics, Econ. 101	3(3-0)
Am. Ind. History, Hist. 105 *or* Hist. of Commerce & Ind., Hist. 110	3(3-0) 3(3-0)	History Elective*	3(-)
Extem. Speech II, Pub. Spk. 108	2(2-0)		
Infantry III, Mil. Tr. 103A (men)	1(0-3)	Infantry IV, Mil. Tr. 104A (men)	1(0-3)
Phys. Education M, Phys. Ed. 105, *or* Phys. Education W, Phys. Ed. 153	R(0-2) R(0-3)	Phys. Education M, Phys. Ed. 106, *or* Phys. Education W, Phys. Ed. 154	R(0-2) R(0-3)
Total	16 or 17	Total	15 or 16

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* Eight hours of physical or biological science are to be elected in this curriculum, if possible in the freshman year. Subject to any prerequisites, chemistry, physics, botany, zoölogy and geology are available. If Chemistry I is taken, Chemistry II is required also. In one modern language a student must attain the proficiency given by nine semester hours of College work. If the language has been studied in high school, elementary work may be avoided in College, and the time saved used for elective studies. Students who have had only one year of high-school algebra are assigned to a five-credit course in College Algebra, Math. 107. Because of the various contingencies and elective possibilities in the sciences and modern languages, the proper planning of the work of the freshman year requires great care and foresight.

† All electives are to be chosen in accordance with the general rules governing electives and taken in departments other than that of physical education.

JUNIOR

First Semester		Second Semester	
Elements of Statistics, Math. 126, 3(3-0)*or*		Math. of Investments, Math. 150..3(3-0)*or*	
Math. of Investments, Math. 150....3(3-0)		Elements of Statistics, Math. 126....3(3-0)	
Business Management, Econ. 126....2(2-0)		Business Finance, Econ. 217.....3(3-0)	
Money and Banking, Econ. 116.....3(3-0)		Amer. Govt., Hist. 151, 152, or 153..3(3-0)	
Marketing, Econ. 245 .....2(2-0)		Sociology, Econ. 151 .....3(3-0)	
Special Electives,† minimum ....2 or 3(-)		Special Electives,† minimum ....3 or 2(-)	
General Electives .....5 or 4(-)		General Electives .....2 or 3(-)	
Total.....	17	Total.....	17

SENIOR

First Semester		Second Semester	
Business Law I, Hist. 163.....3(3-0)		Business Law II, Hist. 164.....3(3-0)	
Public Finance, Econ. 213.....2(2-0)		Investments, Econ. 221 .....2(2-0)	
Labor Problems, Econ. 233 .....2(2-0)			
Special Electives,† minimum.....2 or 3(-)		Special Electives,† minimum.....3 or 2(-)	
General Electives .....7 or 6(-)		General Electives .....8 or 9(-)	
Total.....	16	Total.....	16

Summary.—Men: Physical education required; military science, 4 hours; commerce courses, 48 hours; other prescribed courses, 47 hours; special and general electives, 32 hours. Total, 131 semester hours. Women: The same except military science, 4 hours, not required. Total, 127 semester hours.

Adaptation, Class of 1932

Freshman year as given 1928-'29. Later years as for the class of 1933 excepting that in the sophomore year, first semester, Psychology A replaces Extempore Speech II.

Adaptation, Class of 1931

Freshman and sophomore years as provided for 1927-'28 and 1928-'29, respectively. Junior year as for the class of 1933 excepting that in the first semester English Literature replaces Business Management, and the general electives are reduced to 3 or 2 semester hours. The senior year is the same as for the class of 1933 excepting that Business Law I is replaced by two hours of general electives.

Groups of Electives and Options for Students in the Division of General Science

In addition to the courses included in the following groups, others will be found described in the exposition of the work of the respective departments. From any group elected a sufficient number of courses to constitute an effective block of knowledge must be taken. At least eight semester credits in any new field are usually required, but a smaller number will be honored if in a field already entered upon. In a modern language a student must reach a point equivalent to that obtained by college courses aggregating at least eight or nine semester hours. For strong preparation in any field the student should take a total of twenty to forty hours in a department, or in closely related departments, a large part of this work should be in courses designed for juniors and seniors.

Any student desiring to major in a certain field should confer with the head of the department in which most of the work is given. This conference should be held in the sophomore year, or earlier, so that a decision may be made in respect to the subjects that should be taken in that and other departments, and their proper sequence. These will vary with the objective of the student which may be general culture, or preparation for teaching, research, or some other profession.

In connection with some of the groups listed below are brief statements giving the order in which the earlier courses in a field should be taken. Department heads should be consulted for additional advice.

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† Special electives recommended for students in the curriculum in commerce are: Economics, 131, 229, 242, 244, 248, 251, 280, 282, 283A and 285; Education, 170 and 243; English, 223; History and Government, 260; Industrial Journalism, 179.

1. English Language

Students majoring in English should elect courses 113 and 116, and twelve to twenty additional hours of English language and literature, under the guidance of the head of the department. Twelve hours of a modern foreign language is strongly recommended.

First Semester	Second Semester
Advanced Composition I, Engl. 113..2(2-0)	Advanced Composition II, Engl. 116..2(2-0)
Com'l Correspondence, Engl. 122.....3(3-0)	Writ. & Oral Salesmanship, Engl. 123, 3(3-0)
Oral English, Engl. 128.....3(3-0)	Methods of Teaching Engl., Engl. 134, 3(3-0)
The Short Story I, Engl. 251.....3(3-0)	The Short Story II, Engl. 252.....3(3-0)
The Light Essay, Engl. 225.....2(2-0)	Critical Writing, Engl. 202.....3(3-0)
Engineering English, Engl. 110.....2(2-0)	Technical Writing, Engl. 207.....2(2-0)
Agricultural English, Engl. 137.....3(3-0)	Adv. Problems in Commercial Correspondence, Engl. 223.....3(3-0)

2. English Literature

First Semester	Second Semester
Chaucer, Engl. 260.....3(3-0)	Milton and the Puritan Revolt, Engl. 262 .....3(3-0)
The English Bible, Engl. 271.....3(3-0)	American Survey, Engl. 265.....2(2-0)
Shakespearean Drama I, Engl. 273...3(3-0)	Shakespearean Drama II, Engl. 274..3(3-0)
The English Romantic Revival, Engl. 278 .....3(3-0)	English Essayists of the Eighteenth and Nineteenth Cent., Engl. 276...3(3-0)
World Classics I, Engl. 280.....3(3-0)	World Classics II, Engl. 281.....3(3-0)
Contemporary Fiction, Engl. 283.....3(3-0)	Contemporary Drama, Engl. 284.....3(3-0)
The Novel I, Engl. 286.....2(2-0)	The Novel II, Engl. 287.....3(3-0)
English Survey I, Engl. 288.....2(2-0)	English Survey II, Engl. 290.....2(2-0)
American Literature, Engl. 175.....3(3-0)	Browning and Tennyson, Engl. 293...3(3-0)
Kansas Literature, Engl. 267.....2(2-0)	Contemporary Poetry, Engl. 297.....3(3-0)

3. German

First Semester	Second Semester
German I, Mod. Lang. 101.....3(3-0)	German II, Mod. Lang. 102.....3(3-0)
German Readings, Mod. Lang. 111...3(3-0)	Ger. Short Stories, Mod. Lang. 201..3(3-0)
Scientific German, Mod. Lang. 237...4)4-0)	German Comedies, Mod. Lang. 206..3(3-0)
German Classics, Mod. Lang. 226....3(3-0)	
German Prose, Mod. Lang 231.....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	Second Semester
French I, Mod. Lang. 151.....3(3-0)	French II, Mod. Lang. 152.....3(3-0)
French Readings, Mod. Lang. 161....3(3-0)	French Sh. Stories, Mod. Lang. 251..3(3-0)
	French Drama, Mod. Lang. 256.....3(3-0)
	Fr. Comp. & Conv., Mod. Lang. 261, 3(3-0)
Spanish I, Mod. Lang. 176.....3(3-0)	Spanish II, Mod. Lang. 177.....3(3-0)
Spanish Readings, Mod. Lang. 180..3(3-0)	Span. Sh. Stories, Mod. Lang. 272...3(3-0)
The Spanish Novel, Mod. Lang. 275..3(3-0)	Spanish Drama, Mod. Lang. 280....3(3-0)
Spanish Conv., Mod. Lang. 195A....3(3-0)	

5. Mathematics

Students continuing work in mathematics beyond trigonometry are advised to take courses in the following order: Math. 110, 205, 206, 122, 201, 210, 213, and 216, and in any event strictly in accordance with the stated prerequisites.

First Semester	Second Semester
Plane Anal. Geometry, Math. 110....4(4-0)	Calculus I, Math. 205.....5(5-0)
Calculus II, Math. 206.....3(3-0)	Special Methods in the Teaching of Mathematics, Math. 122 .....3(3-0)
Differential Equations, Math. 201....3(3-0)	Advanced Calculus I, Math. 210.....3(3-0)
Advanced Calculus II, Math. 213....3(3-0)	Theory of Equations, Math. 216.....3(3-0)

6. Inorganic and Physical Chemistry

Students desiring extensive training in Chemistry are advised to take the curriculum in industrial chemistry, supplementing the required work by electives chosen with the advice of the head of the department. Those who wish to prepare for teaching chemistry in high schools, in addition to courses 101 and 102, should elect courses 121 or 218 and 219, and courses 207, 241 and 206. Math. 110, 205 and 206 are very desirable and Physics 135 and 140, or 145 and 150 are essential.

FIRST SEMESTER

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 Chemistry, 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 Chem., Chem. 235.....2(2-0)
Biochemistry Analysis, Chem. 237....2(0-6)

SECOND SEMESTER

Organic Chemistry II, Chem. 219....4(2-6)
Stereoisomeric and Tautomeric Compounds, Chem. 225.....2(2-0)
Carbocyclic and Heterocyclic Compounds, 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(3-3)
Photography, Phy. 120.....2(1-3)
Modern Physics, Phys. 250.....3(2-3)
Molecular Phys. & Heat, Phys. 220..3(2-3)
Wireless Telephony, Phys. 130.....2(1-3)
Spectroscopy, Phys. 230 .....3(1-6)
Radio Measurements, Phys. 245.....2(1-3)
Advanced Electrical Laboratory, Phys. 256 .....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. 222 .....2(2-0)
Special Methods in the Teaching of Physics, Phys. 224.....3(2-3)
Meteorology, Phys. 133A .....3(3-0)
Descriptive Astronomy, Phys. 155....3(3-0)
Storage Batteries, Phys. 235 .....2(1-3)
Radioactivity and Electron Theory, 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. 121A, 3(1-6)
Soil Microbiology, Bact. 202.....3(3-0)
Soil Microbiology Lab., Bact. 204...2(0-6)
Pathogenic Bacteriology, I, Bact. 111, 4(2-6)
Dairy Bacteriology, Bact. 211.....3(1-6)
Poultry Bacteriology, Bact. 216.....3(1-6)

11. Botany

Courses 101 and 105 are prerequisites to all other courses, following which students specializing in plant diseases should take, in order, courses 205, 202, 240 and 232; those in plant physiology, courses 208, 209 and 232; those in taxonomy and ecology, courses 225, 228 or 234 and 232. For general training, all are available if the prerequisites have been taken.

First Semester

General Botany I, Bot. 101.....3(1-4, 2)
Plant Pathology I, Bot. 205.....3(1-4, 2)
Morph. of the Fungi, Bot. 206.....3(1-6)
Plant Physiology I, Bot. 208.....3(3-0)
Fruit Crop Diseases, Bot. 202.....2(1-2, 1)
Botanical Problems, Bot. 232....1 to 5(-)
Taxonomic Botany of the Flowering Plants, Bot. 225 .....3(1-4, 2)

Second Semester

General Botany II, Bot. 105.....3(1-4, 2)
Plant Histology, Bot. 215.....2(0-6)
Phytogeography, Bot. 234.....2(2-0)
Plant Physiology II, Bot. 209.....2(0-4, 2)
Plant Ecology, Bot. 228.....2(2-0)
Field Crop Diseases, Bot. 240....2(1-2, 1)
Vegetable Diseases, Bot. 245.....2(1-2, 1)

12. Zoölogy

A student who wishes to major in zoölogy should in connection with the required work in this field or after completing it elect from the courses listed below subjects varying with his special interest, such as parasitology, embryology, genetics, etc. Consult the head of the department.

First Semester

Adv. Human Physiology, Zoöl. 235...4(3-3)
Cytology, Zoöl. 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 Zoöl., Zoöl. 301.....1 to 8 cr.

Second Semester

Comp. Anat. of Vertebrates, Zoöl. 245, 3(1-6)
Evol. & Heredity, Zoöl. 217..2(2-3) or 4(2-6)
Animal Ecology, Zoöl. 211..2(2-0) or 3(2-3)
Ornithology, Zoöl. 230A .....3(2-3)
Embryology B, Zoöl. 219A.....4(3-3)
Adv. Embryology, Zoöl. 220.....4(2-6)
Human Parasitology, Zoöl. 218.....3(3-0)
Zoöl. Technic, Zoöl. 206.....1 or 2(-)
Zoöl. and Ent. Seminar, Zoöl. 225....1(1-0)
Research in Zoöl., Zoöl. 301.....1 to 8 cr.

13. Geology

Comprehensive study of geology involves a knowledge of astronomy, chemistry, physics, botany and zoölogy, but some phases of the field may be studied with profit without acquaintance with all of these sciences.

First Semester

Engineering Geology, Geol. 102.....4(3-3)
Economic Geology, Geol. 207.....4(3-3)
Crystallography and Mineralogy, Geol. 209 .....4(2-6)

Second Semester

General Geology, Geol. 103.....3(3-0)
Historical Geology, Geol. 203.....4(3-3)

14. Entomology

Students majoring in entomology, with due regard for prerequisites, should take courses: Ent. 203, 211, 212, 231, 216, 217, 218, 226, 206, 221 and 238, and preferably in this order.

First Semester

General Entomology, Ent. 203.....3(2-3)
Insect Morphology I, Ent. 211.....3(1-6)
Insect Morphology II, Ent. 212.....3(0-9)
Ent. & Zoöl. Literature, Ent. 231....3(2-3)
Medical Entomology, Ent. 226.....3(2-3)
Advanced Apiculture B, Ent. 228....3(2-3)

Second Semester

Principles of Taxonomy, Ent. 216....1(1-0)
Taxonomy of Insects I, Ent. 217....2(0-6)
Taxonomy of Insects II, Ent. 218....3(0-9)
Adv. Gen. Entomology, Ent. 221....3(3-0)
Gen. Eco. Entomology, Ent. 206.....3(2-3)
Entomological Prob., Ent. 238.....2 to 4 cr.
General Apiculture, Ent. 111.....3(2-3)
Insect Physiology, Ent. 234.....2(2-0)

15. History and Government

To prepare for teaching history in high school the student should have at least ten semester hours of college history following two years of history in high school, or its equivalent in college. History 232, Problems in History Instruction, may then be pursued in summer school. The advice of the head of the department should be followed in each case.

First Semester		Second Semester	
Medieval Europe, Hist. 102	3(3-0)	Ancient Civilizations, Hist. 101	3(3-0)
English History, Hist. 121	3(3-0)	Current History, Hist. 126	1(1-0)
American History I, Hist. 201	3(3-0)	Am. Indust. History, Hist. 105	3(3-0)
American History II, Hist. 202	3(3-0)	American History III, Hist. 203	3(3-0)
American Agr'l History, Hist. 204	3(3-0)	Latin America, Hist. 207	2(2-0)
Modern Europe I, Hist. 115	3(3-0)	Modern Europe II, Hist. 223	3(3-0)
History of the Far East, Hist. 229	2(2-0)	20th Century Europe, Hist. 224	2(2-0)
Hist. of Com. & Ind., Hist. 110	3(3-0)	The British Empire, Hist. 226	2(2-0)
Am. Political Parties, Hist. 206	2(2-0)	History of the Home, Hist. 225	3(3-0)
Immig. & Inter'l Rel., Hist. 228	2(2-0)	International Law, Hist. 256	2(2-0)
Am. Government, Hist. 151	3(3-0)	Gov't Regulations of Bus., Hist. 260	2(2-0)
Am. Nat'l Government, Hist. 152	3(3-0)	Am. State Gov't, Hist. 153	3(3-0)
Comparative Government, Hist. 252	2(2-0)	History of Religions, Hist. 231	2(2-0)

16. Law

First Semester		Second Semester	
Farm Law, Hist. 175	2(2-0)	Commercial Law, Hist. 160	1(1-0)
Business Law I, Hist. 163	3(3-0)	Business Law II, Hist. 164	3(3-0)
Land Law, Hist. 276	2(2-0)	International Law, Hist. 256	2(2-0)

17. Economics, Sociology and Accounting

Some of the subjects in this list are required in the several curricula of the institution, and the others are available as electives if any prerequisites have been satisfied. Additional work is offered in the department of agricultural economics.

First Semester		Second Semester	
Economics, Econ. 101	3(3-0)	Money and Banking, Econ. 116	3(3-0)
Public Finance, Econ. 213	2(2-0)	Business Finance, Econ. 217	3(3-0)
Labor Problems, Econ. 233	2(2-0)	Transportation Prob., Econ. 229	2(2-0)
Marketing, Econ. 245	2(2-0)	Business Management, Econ. 126	2(2-0)
Economic Geography, Econ. 122	2(2-0)	Economic Problems, Econ. 248	(-)
Advanced Economics, Econ. 251	3(3-0)	Community Organization, Econ. 267	3(3-0)
Sociology, Econ. 151	3(3-0)	Advanced Sociology, Econ. 273	3(-)
Rural Sociology, Econ. 156	3(3-0)	Adv. Rural Sociology, Econ. 270	3(-)
Social Problems, Econ. 257	2(2-0)	Property Insurance, Econ. 242	2(2-0)
Accounting I, Econ. 133	3(2-3)	Life Insurance, Econ. 244	2(2-0)
Cost Accounting, Econ. 287	3(3-0)	Accounting II, Econ. 134	3(2-3)
Adv. Accounting I, Econ. 280	3(3-0)	Investments, Econ. 221	2(2-0)
Income Tax Accounting, Econ. 282	2(2-0)	Accounting Systems, Econ. 283A	2(2-0)
Auditing, Econ. 285	3(3-0)	Institutional Accounting, Econ. 132	3(3-0)

18. Education and Psychology

Students desiring to qualify for the state teacher's certificate based on sixty hours of college work should take course 101 or 102 in psychology, and course 107 and 111 in education. Those qualifying for the certificate based on graduation from a four-year curriculum should, in addition to 101 or 102, take 109, and 105 or 106. If without teaching experience course 112 is recommended for this group also. Advice should be obtained from the head of the Department of Education in respect to additional courses necessary or advisable. See, also, "Education" in this catalogue for information concerning special certificates.

First Semester		Second Semester	
Psychol. A, B or C, Educ. 101-103	3(3-0)	Methods of Teaching A, Educ. 111	3(3-0)
School Management, Educ. 107	3(3-0)	Educl. Psychology, Educ. 109	3(3-0)
Educational Administration A or B, Educ. 105 or 106	3(3-0)	Methods of Teaching B, Educ. 112	3(3-0)
Hist. of Education A, Educ. 113	3(3-0)	Educl. Sociology A, Educ. 118	3(3-0)
Applied Psychology, Educ. 170	3(3-0)	Psychology of Childhood and Adolescence, Educ. 208	3(3-0)
Mental Measurements, Educ. 211	3(3-0)	Abnormal Psychology, Educ. 213	3(3-0)
Educl. Measurements, Educ. 212	3(3-0)	Advanced Psychology, Educ. 216	3(3-0)
Technic of Mental Testing, Educ. 235	3(1-6)	Philosophy of Education, Educ. 206	3(3-0)
Introd. to Philosophy, Educ. 150	3(3-0)	Rural Life and Educ., Educ. 201	3(3-0)
Statistical Methods Applied to Education, Educ. 223	3(3-0)	Rural Secondary Educ., Educ. 204	3(3-0)
Vocational Education A, Educ. 125	3(3-0)	Vocational Education B, Educ. 226	3(3-0)
Agric. Educ. B, Educ. 330	3(3-0)		
Supervised Observation and Teaching in Science, Educ. 163	3(3-0)	Special Methods in Teaching of Industrial Arts, Educ. 140	3(3-0)
Special Methods in the Teaching of Home Economics, Educ. 132	3(3-0)	Supervised Teaching in Home Economics, Educ. 160	3(3-0)
Supervised Observation and Teaching in Agriculture, Educ. 161	3(3-0)	Special Methods in the Teaching of Agriculture, Educ. 136	3(3-0)

20. Industrial Journalism

While those who wish to give much attention to journalism will choose the curriculum in industrial journalism, many in other curricula desire some training in this field. Selection from the following list may be made in so far as the prerequisites permit.

First Semester	Second Semester
El. Journalism, Ind. Jour. 151.....2(2-0)	Industrial Writing, Ind. Jour. 161....2(2-0)
Ind. Feature Writ., Ind. Jour. 167....2(2-0)	Jour. for Women, Ind. Jour. 172....2(2-0)
Materials of Jour., Ind. Jour. 265....2(2-0)	Magazine Features, Ind. Jour. 270....2(2-0)
History of Jour., Ind. Jour. 274.....2(2-0)	Jour. Surveys, Ind. Jour. 278.....2(2-0)

23. Music

Students in the various curricula are permitted to study theoretical or applied music, but the acceptability for elective credit of work in voice or instrumental music is contingent upon the attainment of an effective degree of proficiency. Certification to this is made by the head of the department of music.

Voice B (Music 164A to 164H)
Two private lessons a week. Two credits per semester.

Violin A (Music 166A to 166H)
Two private lessons a week. Two credits per semester.

Piano B (Music 173A to 173H)
Two private lessons a week. Two credits per semester.

Violoncello A (Music 178A to 178H)
Two private lessons a week. Two credits per semester.

Double bass (Music 179A to 179H)
Two private lessons a week. Two credits per semester.

Wind Instruments (182A to 182H)
Two private lessons a week. Two credits per semester.

First Semester	Second Semester
Harmony I, Music 101 .....2(2-0)	Harmony II, Music 102.....2(2-0)
Harmony III, Music 103 .....2(2-0)	Harmony IV, Music 104.....2(2-0)
Counterpoint, Music 108A .....2(2-0)	Musical Form and Anal., Mus. 109..2(2-0)
Hist. & Apprec. of Mus. I, Mus. 112..3(3-0)	Hist. & Apprec. of Mus. II, Mus. 113..3(3-0)
Public-school Music I, Music 120....2(2-0)	Public-school Music II, Music 121....2(2-0)
Public-school Music III, Music 122..2(2-0)	Public-school Music IV, Music 123...2(2-0)
Choral Ensemble, Mus. 192A to 192H, 1(0-3)	Choral Ensemble, Mus. 192A to 192H, 1(0-3)
Orchestra, Music 193A to 193H.....1(0-3)	Orchestra, Music 193A to 193H.....1(0-3)
Band, Music 196A to 196H.....1(0-3)	Band, Music 196A to 196H.....1(0-3)

25. Military Science and Tactics

Men who have completed the basic course in infantry may elect the advanced course if approved by the president, the dean and the head of the department of military science and tactics.

First Semester	Second Semester
Infantry V, Mil. Tr. 109.....3(2-3)	Infantry VI, Mil. Tr. 110.....3(2-3)
Infantry VII, Mil. Tr. 111.....3(2-3)	Infantry VIII, Mil. Tr. 112.....3(2-3)

26. Physical Education and Athletics

In connection with the required work or after its completion, students may elect courses in physical education. For a special state certificate at least forty hours are required. The courses listed below, and others on the advice of the head of the department, are available.

FOR MEN

First Semester	Second Semester
Gymnastics I, Phys. Ed. 115A.....2(1-3)	Gymnastics II, Phys. Ed. 117A.....2(0-6)
Football I, Phys. Ed. 126A.....2(1-3)	Track & Field Spts., Phys. Ed. 140A, 2(1-3)
Football II, Phys. Ed. 127.....2(1-3)	Baseball, Phys. Ed. 135A .....2(1-3)
Basket Ball, Phys. Ed. 130A.....2(1-3)	Wrestling, Phys. Ed. 128.....1(0-3)
Swimming M-I, Phys. Ed. 121.....1(0-3)	Swimming M-II, Phys. Ed. 122.....1(0-3)
Boxing, Phys. Ed. 132.....1(0-3)	Playground Management and Games M, Phys. Ed. 145A .....2(2-0)
School Hygiene, Phys. Ed. 196.....3(3-0)	Personal Hygiene, Phys. Ed. 119.....2(2-0)
Apparatus, Phys. Ed. 109.....1(0-3)	
First Aid and Mas., Phys. Ed. 113A,..3(3-0)	

FOR WOMEN

The following courses are available after completing the two years of required work:

First Semester	Second Semester
Folk Dancing I, Phys. Ed. 160.....1(0-3)	Folk Dancing II, Phys. Ed. 161.....1(0-3)
Playground Management & Games W, Phys. Ed. 182A .....2(1-3)	First Aid, Phys. Ed. 158.....1(1-0)
General Technic III, Phys. Ed. 157C, 2(1-3)	General Technic IV, Phys. Ed. 157D, 2(1-3)
General Technic V, Phys. Ed. 157E..2(1-3)	General Technic VI, Phys. Ed. 157F, 2(1-3)

27. Public Speaking

Courses covering various aspects of public speech are open for election after completing any prerequisites. The head of the department should be consulted for advice as to the individual needs.

First Semester	Second Semester
Extempore Speech I, Pub. Spk. 106..2(2-0)	Extempore Speech II, Pub. Spk. 108..2(2-0)
Oral Interpretation, Pub. Spk. 101..2(2-0)	Dramatic Reading, Pub. Spk. 102....2(2-0)
Parliamentary Proced., Pub. Spk. 126, 1(1-0)	Lecture Recital, Pub. Spk. 115.....2(2-0)
Dramatic Produc. I, Pub. Spk. 130...2(2-0)	Dramatic Produc. II, Pub. Spk. 135..2(2-0)
Argumentation and Debate I, Pub. Spk. 121 .....2(2-0)	Argumentation and Debate II, Pub. Spk. 122 .....2(2-0)
Pageantry, Pub. Spk. 251.....3(3-0)	Pageantry, Pub. Spk. 251.....3(3-0)

30. Social Science

(Political and Social History, Government, Economics, and Sociology.)

In the curriculum in industrial journalism students are required to elect twelve hours in a social science option. The following list includes some subjects, and many more are offered by the several departments. See, also, groups 15, 16 and 17.

First Semester	Second Semester
American History I, Hist. 201.....3(3-0)	American History II or III, Hist. 202 or 203 .....3(3-0)
American Government, Hist. 151...3(3-0)*or*	Amer. State Govt., Hist. 153.....3(3-0)
Amer. Nat'l Government, Hist. 152...3(3-0)	Modern Europe I, Hist. 115.....3(3-0)
Latin America, Hist. 207.....2(2-0)	Modern Europe II, Hist. 223.....3(3-0)
Agric. Economics, Ag. Ec. 101.....3(3-0)	English History, Hist. 121.....3(3-0)
Money and Banking, Econ. 116.....3(3-0)	Economics, Econ. 101 .....3(3-0)
Business Finance, Econ. 217.....3(3-0)	Public Finance, Econ. 213.....2(2-0)
Market. of Farm Prod., Ag. Ec. 202..3(3-0)	Labor Problems, Econ. 233.....2(2-0)
Agric. Land Prob., Ag. Ec. 218.....3(3-0)	Sociology, Econ. 151 .....3(3-0)

31. Applied Science

Students in the curriculum in industrial journalism who do not wish to elect subjects directly related to a single industry are permitted to elect sciences that support industries, and subjects that involve applications of the sciences, in so far as they have satisfied requirements as to prerequisites.

First Semester	Second Semester
General Botany I, Bot. 101.....3(1-4, 2)	General Botany II, Bot. 105.....3(1-4, 2)
Plant Pathology I, Bot. 205.....3(1-4, 2)	Field Crop Diseases, Bot. 240....2(1-2, 1)
Fruit Crop Diseases, Bot. 202....2(1-2, 1)	Vegetable Diseases, Bot. 245.....2(1-2, 1)
Farm Forestry, Hort. 114.....3(2-3)	Plant Ecology, Bot. 228.....2(2-0)
Seed Identification and Weed Control, Agron. 105 .....2(1-3)	
General Zoölogy, Zoöl. 105.....5(3-6)	El. of Horticulture, Hort. 107.....3(2-3)
Parasitology, Zoöl. 208 .....3(2-3)	Small Fruits, Hort. 110.....2(2-0)
Zoöl. and Embryol. (Vet.), Zoöl. 109, 5(3-6)	General Microbiology, Bact. 101.....3(1-6)
Landscape Gardening I, Hort. 125....3(3-0)	Gen. Ec. Entomology, Ent. 206.....3(2-3)
Hygienic Bacteriology, Bact. 206....4(2-6)	General Apiculture, Ent. 111.....3(2-3)
General Entomology, Ent. 203.....3(2-3)	Applied Nut., Food & Nut. 121.....2(2-0)
Hort. Entomology, Ent. 201.....2(2-0)	General Geology, Geol. 103.....3(3-0)
El. Org. Chemistry, Chem. 123.....3(2-3)	Historical Geology, Geol. 203.....4(3-3)
Dairy Chemistry, Chem. 254.....3(1-6)	Meteorology, Physics 133A.....3(3-0)
Economic Geology, Geol. 207.....4(3-3)	Household Physics, Physics 101.....4(3-3)
Human Nutrition, Food & Nut. 112..3(3-0)	Photography, Physics 120 .....2(1-3)

32. Home Economics

This group is suggestive to young women in the curriculum in industrial journalism. It states the fundamental subjects in the three lines, food, clothing and applied art. The required option related to an industry may be satisfied by fifteen hours in one or more of these lines. Additional subjects in each line are described in the department sections of the catalogue. Prerequisites count on the group requirement.

First Semester		Second Semester	
Household Physics, Physics 101	4(3-3)	Household Microbiology, Bact. 121A	3(1-6)
Organic Chem. (HE), Chem. 121	5(3-6)	Clothing I, Clo. & Text. 101	2(1-3)
Foods I, Food & Nut. 101A	3(1½-4½)	Costume Design I, Art 130	2(0-6)
Foods II, Food & Nut. 106	5(3-6)	Textiles, Clo. & Text. 116	3(2-3)
Human Nutrit., Food & Nut. 112	3(3-0)	House Furnishings, Art 108	2(1-3)
Dietetics, Food & Nut. 201	5(3-6)	Int. Dec. and Furn., Art 114	3(1-6)
Applied Nutrit., Food & Nut. 121	2(2-0)		
Clothing II, Clo. & Text. 111	3(1-6)	Principles of Art and Their Appreciation, Art 124	3(3-0)
Elementary Design, Art. 101	3(1-6)	Advanced Design, Art 105	2(0-6)
Intermediate Design, Art. 102	3(1-6)		

35. Agriculture

This group, compiled for the use of young men who elect the agriculture option in connection with their work in industrial journalism, gives the basic subjects in some agricultural lines. Subjects for which these are prerequisite are also acceptable. See the expositions of the work of the several departments in the division of agriculture.

First Semester		Second Semester	
General Botany I, Bot. 101	3(1-4, 2)	General Botany II, Bot. 105	3(1-4, 2)
Live-stock Judging, An. Husb. 120	3(2-4)	El. of Horticulture, Hort. 107	3(2-3)
El. of Dairying, Dairy Husb. 101	3(2-3)	Dairy Judging, Dairy Husb. 104	1(0-3)
El. Org. Chemistry, Chem. 123	3(2-3)	Prin. of Feeding, An. Husb. 152	3(3-0)
Plant Pathology I, Bot. 205	3(1-4, 2)	Field Crop Diseases, Bot. 240	2(1-2, 1)
Soils, Agron. 130	4(3-3)	Farm Crops, Agron. 101	4(2-6)
Farm Poultry Production, Poultry Husb. 101	2(1-2, 1)	Genetics, An. Husb. 221	3(3-0)

36. Architecture

Students in industrial journalism, with due regard for prerequisites, may elect fifteen hours from this group in order to fulfill the requirement in respect to subjects related to an industry.

First Semester		Second Semester	
Engr. Drawing, Mach. Des. 101	2(0-6)	Descr. Geom., Mach. Des. 106	2(0-6)
El. of Arch. I, Arch. 106A	3(0-9)	El. of Arch. II, Arch. 107A	3(0-9)
Object Drawing I, Arch. 111	2(0-6)	Object Drawing II, Arch. 114	2(0-6)
Design I, Arch. 142	3(0-9)	Design II, Arch. 144	3(0-9)
Coml. Illustration I, Arch. 165	2(0-6)	Coml. Illustration II, Arch. 170	2(0-6)
General Hist. of Arch., Arch. 244	3(3-0)	Domestic Arch., Arch. 124	2(2-0)
Pencil Rend. & Sketch., Arch. 116	2(0-6)	Pen and Ink Drawing I, Arch. 134	2(0-6)
Water Color II, Arch. 119	2(0-6)	Water Color I, Arch. 118	2(0-6)

37. Manual Training and Engineering.

Fifteen hours may be chosen from this group by students in industrial journalism in satisfaction of the option related to an industry. Students preparing to teach manual training will require credits in at least forty semester hours in that line. Prerequisites must be observed.

First Semester		Second Semester	
Engr. Drawing, Mach. Des. 101	2(0-6)	Engr. Woodwork I, Shop 101	1(0-3)
Descr. Geom., Mach. Des. 106	2(0-6)	Manual Training for Primary Grades, Shop 117	2(0-6)
Woodworking for Grammar Grades, Shop 120	2(0-6)	Woodworking I for High Schools, Shop 125	2(0-6)
Woodworking II for High Schools, Shop 130	2(0-6)	Wood Turning, Shop 135	2(0-6)
Forging I, Shop 150	1(0-3)		
Machine Tool Work I, Shop 170	2(0-6)	Farm Carpentry I, Shop 147	3(1-6)
Machine Tool Work III, Shop 193	1(0-3)	Machine Tool Work II, Shop 192	2(0-6)
Gas Engine and Tractors, Ag. Engr. 130	3(2-3)	Metallurgy, Shop 165	2(2-0)
Machine Drawing I, Mach. Des. 111	2(0-6)	Farm Buildings, Ag. Engr. 103	3(1-6)
Reed Furn. Constr., Shop 119	2(0-6)	Surveying I, Civ. Engr. 102	2(0-6)
Foundry Production, Shop 161	1(0-3)	Farm Shop Methods, Shop 175	3(1-6)
Shop Practice Tchg. I, Shop 184	3(2-3)	Metallography, Shop 167	1(0-3)
Adv. Shop Practice, Shop 260	1 to 5 cr.	Shop Practice Tchg. II, Shop 185	2(2-6)

45. Milling Industry

Students in general science or industrial chemistry may elect work in milling industry for which they have taken the prerequisites.

FIRST SEMESTER

Milling Practice I, Mill. Ind. 109....3(1-6)
Wheat and Flour Testing, Mill. Ind. 205 .....3(0-9)
Advanced Wheat and Flour Testing, Mill. Ind. 210 .....1 to 5(-)
Farm Crops, Agron. 101.....4(2-6)
Grain Marketing, Ag. Ec. 203.....3(3-0)
Quantitative Analysis A, Chem. 250..3(1-6)

El. Org. Chemistry, Chem. 123.....3(2-3)

Milling Technology I, Mill. Ind. 201..2(0-6)
Mill. Ind. Problems, Mill. Ind. 214, 1 to 5 cr.

SECOND SEMESTER

Prin. of Milling I, Mill. Ind. 104....2(1-3)
Prin. of Milling II, Mill. Ind. 106....1(0-3)
Milling Practice II, Mill. Ind. 111....3(1-6)
Milling Qualities of Wheat, Mill. Ind. 212 .....3(3-0)
Exptl. Baking, Mill. Ind. 206.....3(1-6)
Grain Grading and Judging, Agron. 108 .....2(0-6)
Quant. Analysis B, Chem. 251.....3(1-6)
The Chemistry of Proteins, Chem. 236A .....3(2-3)
Milling Technology II, Mill. Ind. 202, 2(0-6)
Colloidal Chemistry, Chem. 213 .....2(2-0)

Bacteriology

Professor BUSHNELL
Professor GAINEY
Associate Professor FAY
Assistant Professor BRANDLY
Instructor FOLTZ
Graduate Assistant AIKINS

The department of Bacteriology occupies parts of the first and second floors of Veterinary Hall. The space is divided into offices and private laboratories, an experiment station and research laboratory, two large general laboratories, incubator or temperature room, preparation room, and stock room. The laboratories are well lighted and equipped with gas, lockers, ice chests, sterilizers, wall cases, microscopes, and other modern facilities necessary for bacteriological work.

The instruction consists of lectures, recitations, demonstrations, and laboratory practice. Printed synopses of lectures and printed laboratory directions are furnished the students in some of the courses; in others textbooks are required. The department library contains textbooks on bacteriology and allied subjects, also the current files of the important technical periodicals relating to bacteriology. These are at the constant disposal of the students for reference. To those who desire graduate work the department offers excellent facilities.

Bacteriology is presented to the students as a biological science and as a practical factor in everyday life. In this subject only the simplest forms of life, consisting almost invariably of one-celled organisms, are studied. It is now possible to study these microscopical forms with ease and accuracy, thus paving the way for a more complete study and better understanding of cells in the aggregate. The second point of view from which this subject is approached is that of its practical application in agriculture, medicine, domestic science, and sanitation.

This department owns equipment valued at $14,178.

COURSES IN BACTERIOLOGY

FOR UNDERGRADUATE CREDIT

101. GENERAL MICROBIOLOGY. 3(1-6); I and II.* Not open to students who have credit in Bact. 106 or 121. Prerequisite: Chemistry II, or General Chemistry. Dr. Gainey and Mr. Foltz.

Morphological and biological characters, classification and distribution of bacteria, factors necessary for the development of bacteria, culture media, cul-

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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.

tural features, staining values, and fundamental principles of applied bacteriology.

Laboratory.—The student prepares culture media and becomes familiar with principles of sterilization and incubation, and with general laboratory technic. Deposit, $10.

106. Agricultural Microbiology. 3(1-6); I and II. Not open to students who have credit in Bact. 101 and 121. Prerequisites: Chem. 122, Gen. Org. Chemistry. Dr. Gainey and Mr. Fay.

A general course emphasizing particularly the relation of microörganisms to agriculture.

Laboratory.—Methods of cultivating and studying bacteria, yeasts, and molds; methods for quantitative and qualitative analysis of water, milk, etc.; methods of sterilization and use of germicidal agents. Deposit, $10.

111, 116. Pathogenic Bacteriology I and II. 4(2-6) each; II and I respectively. Prerequisite: Chem. 123, El. Org. Chemistry. Dr. Bushnell and Dr. Brandly.

I: Distribution and morphological and biochemical features of microörganisms; factors necessary for the development and cultivation of bacteria; fundamental principles of bacteriology as applied to veterinary medicine. II: Morphology, powers of resistance, pathogenesia, distribution, channels of infection, and means of dissemination of pathogenic bacteria; epizoötic and epidemic diseases of unknown etiology; manufacture, standardization, preparation for the market and use of vaccines, antitoxins, and other biological products related to diagnosis, prevention, and treatment of specific infectious diseases; and various other topics.

Laboratory.—I: General laboratory technic; pathogenic microörganisms studied morphologically, culturally, and biochemically; quantitative and qualitative examinations of milk, and of water. II: Microscopical and cultural characteristics of pathogenic microörganisms continued; laboratory animal inoculations, autopsy, and diagnosis; prevention and treatment of specific infectious diseases; experimental production of opsonins, antitoxins, agglutinins, precipitins, and cytolysins; etc. Deposit, $10.

121A. Household Microbiology. 3(1-6); I and II. Not open to students who have credit in Bact. 101 or 106. Prerequisite: Chem. 121, Organic Chemistry HE. Mr. Fay and Mr. Foltz.

Classification, distribution, and relative importance of bacteria; morphological and biochemical characters of microörganisms; factors necessary for the proper development of bacteria; fundamental principles of the science as applied to household economics.

Laboratory.—Practical applications of theories discussed in the classroom, such as bacteriological study of water, milk, and foods; determination of the potability of water; microscopical study of yeasts and molds; methods of food preservation; the germicidal action of various disinfectants, etc. Deposit, $10.

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 microörganisms; the influence of such phenomena as ammonification, nitrification, denitrification, symbiotic and nonsymbiotic nitrogen fixation upon crop production. Various texts recommended as reference books.

204. Soil Microbiology Laboratory. 2(0-6); II. Prerequisite: Course 101 or 106. To accompany or follow course 202. Dr. Gainey.

The preparation of various special culture media and reagents necessary to conduct bacteriological analyses of the soil; qualitative and quantitative analysis and the laboratory study of nitrification, denitrification, and nitrogen fixation; plot experiments and field work illustrating the influence of various

factors upon the bacterial flora and the inoculation of soil with nitrogen-fixing bacteria. Deposit, $10.

206. Hygienic Bacteriology. 4(2-6); I. Prerequisite: Course 101, 106, or 121A. Dr. Bushnell.

Pathogenic bacteria, especially those related to disease in man; channels of infection, and means of dissemination of pathogenic bacteria; epidemics, their cause and control; and other topics dealing with bacteria in connection with health. Various books recommended as textbooks.

Laboratory.—Microscopical and cultural study of pathogenic bacteria; technic involved in the diagnosis of *Bacterium tuberculosis* in sputum; culture of pathogenic anaërobic bacteria; the isolation and indentification 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 miscoörganisms representing the flora of milk, butter, and cheese; and kindred practical bacteriological studies relating to dairy products. Deposit, $10.

216. Poultry Bacteriology. 3(1-6); II. Prerequisites: Course 101, course 106 or 111. Dr. Brandly.

Etiology, sources, and modes of infection of diseases of poultry; microbial content of freshly laid eggs, cold-storage eggs, and egg products; conditions tending toward increase or decrease of this microbial content.

Laboratory.—Study of microörganisms pathogenic for poultry; microbial content of eggs and egg preparations handled and produced under various conditions. Deposit, $10.

217. Poultry Diseases. 2(2-0); II. Prerequisites: Courses 111 and 116, and Therapeutics (Surg. and Med. 162). Dr. Brandly.

Anatomy of the fowl; poultry sanitation and hygiene; a complete systematic study of the infectious diseases of all classes of domestic fowl; general diseases of a noninfectious nature; external and internal parasites of domestic fowl; minor surgical operations.

226. Bacteriological Problems. 1 to 4 credits; I, II and SS. Prerequisite: course 101, 106, 111 or 121A. Dr. Bushnell, Dr. Gainey, Mr. Fay, and Dr. Brandly.

Special problems assigned, credit depending upon amount and quality of work done. Deposit by arrangement with professor in charge.

230. Bacteriology Seminar. 1(1-0); I and II. For prerequisites, consult professor in charge. Dr. Bushnell.

Papers and discussion by members of the department and the more advanced students on all phases of current research work in bacteriology, serology, and related subjects. Graduate students in this department may be assigned to this subject for credit; others interested may visit the meetings at any time.

FOR GRADUATE CREDIT

310. Research in Bacteriology. Credit to be arranged; I, II and SS. Prerequisites: At least two courses in this department. Dr. Bushnell, Dr. Gainey, Mr. Fay, and Dr. Brandly.

Properly qualified advanced students admitted to this course upon approval of the department head; supervision by a faculty member of the department, and subject for investigation chosen and outlined in consultation with him; opportunity to do experiment-station and advanced research work during vaca-

tion periods under faculty supervision; individual research problems for students working toward an advanced degree; upon completion, results presented in form of a thesis which, when accepted, fulfills part of the requirements for the master's degree. Amount of deposit to be arranged with the professor in charge.

Botany and Plant Pathology

Professor Melchers
Professor Miller
Professor Davis
Professor Haymaker
Professor Gates
Associate Professor Dalbey
Assistant Professor Elmer
Instructor Horn
Instructor Newcomb
Assistant Pathologist Ficke
Associate Pathologist Fellows*
Associate Pathologist Johnston*
Graduate Assistant Kingsley
Graduate Assistant Bosley

The instruction given in the Department of Botany and Plant Pathology has a threefold purpose: To give a training in botany for the general broadening of the student's knowledge; to give a training in the knowledge of plants that will serve as a foundation for the student's further college courses in agricultural subjects; and to instruct and direct those students who desire to investigate such problems in plant life as affect agriculture. Investigations may be undertaken in plant pathology, plant physiology, taxonomy, and ecology of plants.

In the general courses each student is supplied with a compound microscope and with all the other accessories of a modern well-equipped botanical laboratory. The laboratory for advanced study is provided with the general equipment for investigational work, and additional facilities are readily available for those who desire to pursue special lines of research. The department has an excellent herbarium, especially complete for Kansas, and a botanical library containing the usual standard texts and the principal botanical journals. The equipment owned by the department has a value of $45,370.

COURSES IN BOTANY

FOR UNDERGRADUATE STUDY

101, 105. General Botany I and II. 3(1-4, 2) each; I and SS, and II and SS., respectively. Mr. Melchers, Dr. Miller, Mr. Davis, Dr. Haymaker, Dr. Gates, Miss Dalbey, Miss Horn, Miss Newcomb, Miss Kingsley.

I: The principal life functions of plants; response of plants, such as photosynthesis, digestion, respiration, transpiration, and growth; the responses of plants to environmental conditions and physical stimuli; and the anatomy of the plant.

II: The significance of plant morphology to the allied branches of botany, such as plant physiology, taxonomy and ecology; the economic importance of the fungi and other pathogenic plants; the evolution of plants, as developed by morphological criteria.

Laboratory.—I: A series of typical experiments followed out in the laboratory and in the greenhouse. Charge, $3.50.

II: Study of the morphology of the typical representatives of the great groups of the plant kingdom, the ecological factors affecting plants, and their identification under both winter and summer conditions by use of an identification key. Charge, $3.50.

126. Medical Botany. 2(1-3); I. Prerequisite: High-school botany or its equivalent. Dr. Gates.

The principal stock-poisoning plants of the range; habitat, poisonous properties, and methods of control and elimination of native poisonous plants.

Laboratory.—A study of the native poisonous plants of the United States, but chiefly of the Western states. Charge, $2.

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

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Fruit Crop Diseases. 2(1-2, 1); I. Prerequisite: Course 205. Offered in 1929-'30 and in alternate years thereafter. Dr. Haymaker.

Diseases affecting fruit crops of all kinds; methods and measures for controlling these diseases; preparation and practical application of standard sprays.

Laboratory.—A detailed study of each disease affecting the major fruit crops; a detailed microscopic study of the organism causing the disease. Charge, $2.

205. Plant Pathology I (or Economic Plant Diseases). 3(1-4, 2) or 3(2-3); I and SS. Prerequisites: Courses 101 and 105. Mr. Melchers, Dr. Haymaker and Dr. Elmer.

Causes and symptoms of plant diseases, infection phenomena, control of plant diseases, breeding for resistance, and plant quarantine.

Laboratory.—Work in the recognititon of all the more common plant diseases of the farm, orchard, and garden; detailed microscopic studies of diseased tissues and identification of the fungous pathogenes which cause them. Charge, $2.

206. Morphology of the Fungi. 3(1-6); I. Prerequisite: Course 205. Offered in 1930-'31 and in alternate years thereafter. Dr. Haymaker.

Structure of slime molds, mold-like bacteria, and fungi studied to determine taxonomic relationships; especial attention to organisms capable of causing disease in plants.

208. Plant Physiology I. 3(3-0); I. Prerequisites: Courses 101 and 105, and Chemistry I and II. Dr. Miller.

A detailed study of such subjects as the root systems of plants, absorption, wilting coefficient, resistance to drought, transpiration, water requirement, photosynthesis, respiration, digestion, and growth with special stress on the phases pertaining to agriculture.

209. Plant Physiology II. 2(0-4); II. Prerequisite: Course 208. Dr. Miller.

Methods used in obtaining experimental data in regard to the more common functions of plants. Charge, $5:

212. Problems in Botanical Instruction. 3(2-3); SS. Prerequisite: Ten credit hours in botany or in courses of botanical nature. Dr. Haymaker.

Advanced work in the morphology, anatomy, physiology, taxonomy, and diseases of plants; special methods of teaching technic in presenting botany to high-school and college students. This course may be used in fulfilling the educational requirements for the state teacher's certificate. Charge, $2.

215. Plant Histology. 2(0-6); II. Prerequisite: Course 101 or 105. Offered in 1929-'30 and in alternate years thereafter. Miss Dalbey.

A thorough training in the principles and practice of microtechnical methods in botany, including the study of anatomy of the higher plants.

218. Field Botany. 3 credits; SS. Prerequisites: Courses 101 and 105. Dr. Haymaker.

A study of the technical terms used in different keys and texts for the identification of various plants; the different systems of classification and nomenclature considered from historical and utilitarian standpoints; history of the higher plants from an evolutionary viewpoint.

Laboratory.—Study and identification of the vegetation of nearby prairies, woodland, and swamps; morphological characteristics, distribution, habits of plants and their relation to different environmental conditions; poisonous or medicinal properties of native plants; and allied subjects. Charge, $2.

220. Botanical Seminar. 1(1-0); I and II. For prerequisites, consult professor in charge.

Presentation of investigational work in botany, including plant pathology, plant physiology, plant ecology, taxonomy, morphology, and genetics; funda-

mental papers along botanical lines reviewed and a digest presented. Graduate students taking major or minor work in the Department of Botany are expected to attend these sessions and take part in the programs.

225. Taxonomic Botany of the Flowering Plants. 3(1-4, 2); I. Prerequisites: Courses 101 and 105. Dr. Gates.

Terms employed; development of the more important systems of classification; and consideration of families of plants.

Laboratory.—Study of selected flower types representing the principal orders and families of plants; identification of plants in field and in the laboratory. Charge, $2.

228. Plant Ecology. 2(2-0); II. Prerequisites: Courses 101 and 105. Dr. Gates.

The structure and dynamics of vegetation.

Laboratory.—With the opening of vegetation in the spring, field trips are taken to selected places.

232. Botanical Problems. 1 to 5 credits; I, II and SS. Prerequisites: Courses 101 and 105, and approval by the head of the department. Mr. Melchers, Dr. Miller, Mr. Davis, Dr. Haymaker, Dr. Gates, Miss Dalbey, Dr. Elmer, and Miss Horn.

A student wishing to pursue a special field of work not definitely represented by one of the undergraduate elective courses may do so upon consultation with the instructor. Charge, $2.

234. Phytogeography. 2(2-0); II. Prerequisites: Courses 101 and 105. Offered in 1929-'30 and in alternate years thereafter. Dr. Gates.

The distribution and characteristics of vegetation.

240. Field-crop Diseases. 2(1-2, 1); II. Prerequisite: Course 205. Offered in 1930-'31 and in alternate years thereafter. Mr. Melchers.

The historical development of phytopathology; the various factors entering into the problem of disease resistance in plants; Breeding for resistance; the most important literature on the subject.

Laboratory.—A detailed microscopic and symptom study of the fungous, bacterial, and nonparasitic plant diseases attacking cereal and forage crops other than those considered in Plant Pathology I. Charge, $2.

245. Vegetable Diseases. 2(1-2, 1); II. Prerequisite: Course 205. Offered in 1929-'30 and in alternate years thereafter. Mr. Melchers.

The problem of disease resistance in plants; breeding for disease resistance in vegetables.

Laboratory.—A detailed microscopic and symptom study of the fungous, bacterial, nonparasitic, and degenerative diseases attacking vegetables. Charge, $2.

265. Literature of Botany. 1(1-0); I and II. Prerequisites: Courses 101, 105, and 205. Miss Horn.

Aims of the course: (1) To become acquainted with the more important sources of botanical literature, including the texts, monographs, etc., of noted authors; (2) to study the periodicals containing articles relating to botany; (3) to learn to use the publications containing citations and abstracts of papers; and (4) to become acquainted with the work of modern botanists by reviewing the articles appearing in current periodicals, experiment station reports, etc. Graduate students majoring in botany are expected to take the course. The subject may be continued the second semester for credit.

FOR GRADUATE CREDIT

301A. Plant Pathology III. 3(1-4, 2); I. Prerequisite: Course 205. Offered in 1930-'31 and in alternate years thereafter. Dr. Elmer.

A course in phytopathological technic; a close and extended study of the pathogenic organisms which cause plant disease; preparation of various kinds of culture media, isolation and culture of pathogenic organisms, nutrition of

fungi, studies in enzyme secretion and action, micrometry, incubation and infection phenomena, etc. Charge, $5.

310. Research in Botany. 1 to 12 credits; I, II, and SS.

Research in the various fields of botany may be outlined. A member of the department staff is chosen by the student as his major instructor in the line of work which he wishes to pursue. Upon the completion of the work it may be submitted in part or as a whole towards the masters's thesis. Work is offered in the following lines:

Plant Pathology. Mr. Melchers, Dr. Haymaker, and Dr. Elmer.
Plant Physiology. Mr. Davis and Dr. Miller.
Taxonomy and Ecology. Dr. Gates and Miss Horn.
Histology, Morphology and Anatomy. Miss Dalbey.

Chemistry

Professor King
Professor Hughes
Professor Brubaker
Professor Colver
Associate Professor Tague
Associate Professor Latshaw
Associate Professor Keith
Associate Professor Brown
Assistant Professor Van Winkle
Assistant Professor Hall
Assistant Professor Perkins
Assistant Professor Harriss
Assistant Professor Whitnah
Assistant Professor Lash
Assistant Professor Barham
Instructor Marlow
Instructor Andrews
Instructor McDowell
Instructor Tyner
Instructor Smith
Instructor Reed
Instructor ————
Graduate Assistant Shenk
Graduate Assistant Mundell
Graduate Assistant Tabor
Graduate Assistant Hubbard

All of the industries are becoming more and more dependent for their highest success upon intelligent application of the physical and biological sciences, and the social sciences are making their greatest progress by tracing their phenomena back to the physical and chemical changes that accompany them. A study of chemistry and physics is therefore essential to any understanding of the processes of nature or of human industry. In the instruction in chemistry the aim is to insist upon a mastery of the chief concepts of the pure science through the agency of textbook drill, accompanied by demonstrations in the lecture room, and experimental observation by the student himself in the laboratory. As the course proceeds, illustrations of chemical principles are drawn from the industrial processes of the chemical, agricultural, domestic, and other arts, thus impressing upon the mind the practical nature of the study. The ultimate object of instruction in this science is to develop in the student the power to form independent judgments upon the manifold problems of daily life in which chemistry plays a part.

The lecture rooms are amply equipped for experiments and demonstrations, and laboratories are designed to accommodate 1,363 students each semester in freshman work and qualitative analysis. The laboratories for more advanced work provide space for 324 students, and are well supplied with general and special facilities. The state work in foods, feeding stuffs, and fertilizers, and the chemical investigations of the Experiment Station in soils, crops, animal nutrition, etc., afford unusually good opportunities for students to obtain experience in practical chemistry. In all of the laboratory work the student is required to give the designated amount of time, and at least a certain amount of work must be satisfactorily performed in order to obtain credit.

The Department of Chemistry possesses equipment valued at $67,817.

COURSES IN CHEMISTRY

FOR UNDERGRADUATE CREDIT

101, 102. Chemistry I and II. 5(3-6) each; I and II, and SS. each. Not open to students who have credit in Chem. 105, 107, 108 or 110. Prerequisite: for II, Chemistry I. Dr. King, Dr. Keith, Miss Harriss, Dr. Lash, Mr. Marlow, Mr. McDowell, Mr. Tyner, Miss Smith, Mr. Tabor, and Mr. Hubbard.

I: The principal theoretical conceptions of chemistry, principles of nomenclature, significance of formulas, chemical equations, etc.; practical uses of the substances and processes used in metallurgy, engineering, agriculture, and other arts.

II: Completion of the study of general chemistry; general principles of qualitative analysis.

Laboratory.—I: Experiments touching preparation and properties of the more important substances performed independently by the student, the objects being here as in other courses to illustrate chemical phenomena, to teach care in manipulation, attentive observation, logical deduction, and discrimination and accuracy in recording results and conclusions. Deposit, $10.

II: Ordinary methods of separation and detection of the more common metals, nonmetals, acids, bases, and salts. Deposit, $10.

105. Chemistry (Vet.). 5(3-6); I and II. Not open to students who have credit in Chem. 101, 102, 107, 108 or 110. Dr. Lash.

Fundamental laws and theories of chemistry, elements and their inorganic compounds; emphasis on the application of chemistry to the arts and industries.

Laboratory.—Training in manipulation and first-hand knowledge of the important laws of chemistry and the properties of substances studied, by use of appropriate experiments performed by the student himself. Deposit, $10.

107, 108. Chemistry E-I and E-II. 4(3-3) each; I and II respectively. Not open to students who have credit in Chem. 101 and 102, respectively. Dr. King, Dr. Van Winkle, Mr. Andrews, Mr. Reed, Mr. Shenk, and Mr. Mundell.

I: General chemistry; fundamental principles of chemistry which have a special bearing upon engineering and engineering material.

II. General chemistry and qualitative analysis.

Laboratory.—I: Experimental work on the topics considered in the classroom. Deposit, $7.50.

II: Qualitative analysis; a systematic study of the chemistry of the more common metals and acids; analysis of alloys, minerals, and ores. Deposit, $7.50.

110. General Chemistry. 5(3-6); I. Not open to students having credit in any college course in inorganic chemistry. Dr. King, Mr. Wampler, Miss Harriss, Dr. Lash, Mr. Marlow, Mr. McDowell, Mr. Tyner, Miss Smith, Mr. Tabor, and Mr. Hubbard.

A general treatment of some of the principal laws and theories of chemistry; preparation, properties, and uses of some of the important metallic and nonmetallic substances.

Laboratory.—Actual preparation and study of the properties of many of the elements and compounds mentioned in the lectures; applications of some of the laws. Deposit, $10.

121. Organic Chemistry (HE). 5(3-6); I and II. Not open to students who have credit in Chem. 122, 218 or 219, and for only two hours to those having credit in Chem. 123. Prerequisite: Chemistry II. Dr. Colver and Dr. Barham.

The more important classes of organic compounds, with special attention to those organic compounds which are used for clothing, fuel, light, antiseptics, disinfectants, anæsthetics, medicinals, solvents, in the commercial manufacture of other important products, as well as to many other compounds which contribute to a fuller understanding of the systematic relations existing among all organic compounds.

Laboratory.—Preparation of one or more representative examples of most of the classes of compounds taken up in the classroom; study of their physical properties and of their chemical properties as shown by typical reactions. Deposit, $10.

122. General Organic Chemistry. 5(3-6); I and II. Not open to students who have college credit in organic chemistry, except that it may be taken for two hours credit by students who have completed Chem. 123. Prerequisite: Chem. 105 or 110. Dr. Colver, Dr. Barham, Mr. Marlow, and Mr. Tyner.

General study of some of the more important classes of organic compounds; a more detailed study of those hydrocarbons, alcohols, ethers, aldehydes, ketones, organic acids, waxes, fats, carbohydrates, and proteins which are of general interest to agricultural students.

Laboratory.—Preparation of a few organic compounds and the study of their physical and chemical properties. Deposit, $10.

123. Elementary Organic Chemistry. 3(2-3); I and II. Not open to students who have college credit in organic chemistry. Prerequisite: Chem. 105 or 110. Miss Harriss.

An elementary outline dealing with some of the more important hydrocarbons, alcohols, aldehydes, ketones, organic acids, and various esters, waxes, fats, carbohydrates, and proteins, with special emphasis on their toxological and physiological properties.

Laboratory.—Preparation of a few organic compounds and the study of their physical and chemical properties. Deposit, $7.50.

130. Inspection Trip. No credit hours. Dr. Brown.

A large number of manufacturing plants of chemical and chemical engineering nature are visited. Different types of plants are selected, only one of each type being visited. An effort is made to vary the trip from year to year and to include such manufacturing centers as Kansas City, St Louis, and Chicago. The cost of the trip varies from about $30 to not more than $50, depending on the places visited.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Inorganic Preparations. 1 credit for each 3 hrs. of laboratory; I and II. Prerequisite: Chemistry II. Dr. Brubaker.

Preparation and purification of some typical inorganic compounds, of those of more complex composition, and compounds of the rarer elements. Charge, $10.

203, 204. Industrial Chemistry I and II. 5(3-6) each; I and II respectively. Prerequisite or concurrent: Physical Chemistry. Dr. Brown.

The fundamental course in industrial chemistry, dealing with the problems of the chemical industries, and placing stress upon the economic questions involved in chemical manufacturing, materials of plant construction, as well as the engineering operations involved in chemical engineering, and the principles underlying the applications of chemistry and engineering to a selected number of chemical industries.

Laboratory.—An introduction to industrial chemical research through assigned manufacturing problems, beginning with the general chemical industries. Deposit, $10.

205. Industrial Electrochemistry. 2(2-0); II. Offered in case of sufficient demand. Prerequisites: College courses in general chemistry and physics. Dr. Brown.

The principles of voltameters, electrochemical methods of analysis, electroplating, electrotyping, and the production of metallic objects by electroplating methods, electrolytic refining of metals, manufacture of various industrial products by electrolytic and electrothermic methods, etc.

206. Physical Chemistry I. 5(3-6); I. Prerequisites: Organic Chemistry and Quantitative Analysis; Calculus, though not a prerequisite, is recommended. Dr. King and Dr. Hall.

The modern conception of the atom and radioactive phenomena; relations with matter in the gaseous, liquid, and solid states; emphasis placed upon osmosis, solution including colloids, surface tension, adsorption, equilibria, ionization, hydrolysis, electromotive force, and hydrogen ion concentration.

Laboratory.—The laboratory follows the subject matter of the lectures very closely. Deposit, $10.

207. Advanced Inorganic Chemistry. 3(3-0); I. Prerequisite: Chemistry II. Dr. Keith.

A thorough study of the facts of chemistry and their theoretical interpretations according to the views of the present; special stress upon the properties of the elements as a basis for methods of classification, and upon the rarer elements and compounds. Students electing this course are advised to take course 202.

208. History of Chemistry. 1(1-0); II. Prerequisite: Chem 206. Dr. Van Winkle.
History of the development of the principal laws and theories of chemistry, with special emphasis upon the failures and triumphs of the founders of chemical science.

209. Surface Tension and Related Phenomena. 2(2-0); I or II, when requested by a sufficient number. Prerequisite: Chem. 206. Dr. King.
Methods of measuring surface tension; surface energetics; relation of surface tension to absorption; and colloidal formation.

210. Chemical Statics and Dynamics. 2(2-0); II, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry and calculus. Dr. King.
Chemical equilibria, velocity of chemical reactions, hydrolysis, catalysis, etc.

211. Paint Oils and Pigments. 2(2-0); I, by appointment. Prerequisites: Satisfactory courses in organic chemistry and qualitative analysis. Dr. King.
Extraction, purification, and properties of the oils commonly used in paints; manufacture and properties of paint pigments; the products employed as protective coverings for both wood and metal.

213. Colloidal Chemistry. 2(2-0); II, when requested by a sufficient number. Prerequisite: Chem. 206. Dr. Tague.
Suspensoids and emulsoids, optical and electrical properties of colloids, Brownian movement, action of electrolytes on colloids, adsorption and surface phenomena, and short review of the method for the preparation of colloids.

215. Chemical Thermodynamics. 3(3-0); II, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry and calculus. Dr. Keith.
Those fundamental principles of thermodynamics which are particularly applicable to chemistry, such as the first and second laws of thermodynamics and their application to fusion, evaporation, phase rule, chemical equilibrium, chemical affinity, electromotive force, surface tension and adsorption.

216. Theoretical Electrochemistry. 3(3-0); I, when requested by a sufficient number. Prerequisites: Approved courses in physical chemistry. Dr. Keith.
The theory of electrolytic cells, the electrochemical series of metals, electrodes, potentials, polarization, overvoltage, and deposition of metals by electrolysis.

217. Electrochemistry Laboratory. 2(0-6); II. Prerequisite; Physical Chemistry I or equivalent. Dr. Hall.
A laboratory course designed and recommended to accompany or follow Theoretical Electrochemistry. Selected experiments in electrometric titrations, storage battery efficiency, polarization, overvoltage, electrode potentials, and related subjects. Deposit, $10.

218, 219. Organic Chemistry I and II. 4(2-6) each; I and II, respectively. Prerequisite: Chemistry II. Dr. Colver.
I: The aliphatic hydrocarbons, alcohols, ethers, aldehydes, ketones, acids, esters, amides, and related compounds considered particularly from the standpoint of structure, methods of laboratory and commercial preparation, reactions and uses; special attention to such topics as structural, geometrical, and optical isomerism, and the use of acetoacetic ester in organic synthesis.
II. Structure, methods of laboratory and commercial preparation, reactions and uses of the aromatic compounds, orientating influence of various groups; structure and reactions of the diazonium compounds; the different classes of dyes, the alkaloids, the terpenes, and a few heterocyclic compounds.

Laboratory.—I: Preparation, purification, and reactions of one or more typical examples of most of the groups of compounds studied in the classroom. Deposit, $10.

II: Various preparations that illustrate the reactions characteristic of aromatic compounds; determination of carbon, hydrogen, and nitrogen in pure unknown organic compounds by the combustion method. Deposit, $10.

223. Organic Preparations. 1(0-3) to 5(0-15); I. Prerequisite: Organic Chemistry II. Dr. Colver.

Such compounds prepared as give a thorough knowledge of the fundamental principles of synthetic organic chemistry. Deposit, $10.

224. Qualitative Organic Analysis. 2 (0-6); II, when requested by sufficient number. Prerequisite: Course 219. Dr. Colver.

Characteristic reactions of the various classes of organic compounds; class reactions, using known compounds; classification and identification of pure, unknown substances and mixtures. Charge, $10.

225. Stereoisomeric and Tautomeric Compounds. 2(2-0); II, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Optical isomerism and methods of determining the configuration of the asymmetric carbon atoms of sugar; geometrical isomerism; and keto-enol tautomerism.

226. Carbocyclic and Heterocyclic Compounds. 2(2-0); II, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Structure, orientation, methods of synthesis, and reactions of benzene, naphthalene, anthracene and derivatives; furane, pyrrol, thiophene, pyridine, quinoline, isoquinoline, purine, pyrimidine, hydantoin, and some structurally related substances.

228. Special Reactions of Organic Compounds. 2(2-0); I, when requested by a sufficient number. Prerequisite: Organic Chemistry II. Dr. Colver.

Some of the less common reactions which take place with certain aliphatic and aromatic compounds.

230. Principles of Animal Nutrition. 3(3-0); II. Prerequisite: Organic Chemistry. Dr. Hughes.

The relation of animals to matter and energy, and the physiological principles involved.

231. Physiological Chemistry. 5(3-6); I. Not open to students who have credit in Chem. 232 or 233. Prerequisite: An acceptable course in organic chemistry. Dr. Hughes.

The synthetic and analytical chemical changes that accompany the physiological processes of animals and plants.

Laboratory.—Practical work with the compounds and processes discussed in the classroom. Deposit, $10.

234. Biochemical Preparations. 5(0-15); II. Prerequisites: Organic Chemistry II, and Physiological Chemistry. Dr. Hughes.

The isolation, purification, and analysis of a number of compounds which are of importance in biochemistry and nutrition. Deposit, $10.

235. Pathological Chemistry. 2(2-0); when requested by a sufficient number. Prerequisite: An approved course in physiological chemistry. Dr. Hughes.

The chemical facts involved in the causation, progress, and results of disease discussed under the following heads: Inflammation, degeneration, infection, anæmia, tuberculosis, dyspepsia, typhoid fever, jaundice, nephritis, diabetes, gout, rheumatism, and intoxication.

236A. The Chemistry of the Proteins. 3(2-3); I, when requested by a sufficient number. Prerequisite: An approved course in organic chemistry. Dr. Tague.

The chemistry of the proteins, particulary as regards their sources, isola-

tion, purification and uses, their derivatives and degradation products. Deposit, $7.50.

237. Biochemical Analysis. 2(0-6); I and II. By appointment. Prerequisite: Physiological Chemistry. Dr. Hughes.
Quantitative determinations of the organic and inorganic constituents of blood, urine, and other biological material. Deposit, $10.

238. Chemistry of Enzyme Action. 2(2-0); I. Prerequisite: Physical Chemistry. Dr. Hughes.
A brief review of catalysis; physical and chemical properties of enzyme preparations, and the reactions catalyzed by them.

238A. Catalysis in Organic Chemistry. 3(3-0); I. Prerequisites: Organic Chemistry II and Physical Chemistry. Dr. Barham.
The theories of catalysis and its applications along with some of the most recent developments in that field.

239. Laboratory Technique in Animal Nutrition. 2(0-6); I and II. Prerequisite: An acceptable course in nutrition or physiological chemistry. Dr. Hughes.
Preparations of diet and the care of experimental animals used in the study of various nutritional problems. Deposit, $10.

240. Advanced Qualitative Analysis. 3(1-6); I, when requested by a sufficient number. Prerequisite: Chemistry II. Dr. Van Winkle.
A systematic study of the properties of the acid and basic elements and their compounds as shown in a detailed study of systematic analysis; the application of chemistry theory to analytical reactions. Deposit, $10.

241. Quantitative Analysis. 5(1-12); II. Prerequisite: Chemistry II or equivalent. Dr. Brubaker.
Practically the same as course 250 and 251. Deposit, $10.

242. Fire Assaying. 2(0-6); I. Prerequisite: Course 241. Dr. Brown.
The ordinary methods of fire assaying, with some attention to wet assaying. Fire assays of ores containing such metals as copper, zinc, lead, bismuth, tin, silver, and gold. Deposit, $10.

243. Gas Analysis. 1(0-3); I. Prerequisite: Quantitative Analysis. Dr. Brown.
Use of standard apparatus in analysis of gases; analysis of air, flue and furnace gases, and illuminating gas. Deposit, $7.50.

245. Microchemical Methods of Analysis. 1(0-3); I and II, when requested by a sufficient number. Prerequisites: Organic Chemistry and Quantitative Analysis I. Dr. Brubaker.
The various methods of using the microscope in chemical analysis, both qualitative and quantitative, applied to both inorganic substances and to vegetable and animal products. Deposit, $7.50.

250, 251. Quantitative Analysis A and B. 3(1-6) each; I and II, respectively. Prerequisites: For A, Chemistry II; for B, course A. Dr. Brubaker.
Course A: General procedures of gravimetric analysis; chemical theory as applied to quantitative reactions. Deposit, $10.
Course B: General procedures in volumetric analysis; preparation of standard solutions and their uses. Deposit, $10.

252A. Chemistry of Soils and Fertilizers. 2(0-6); I. Prerequisite: Quantitative Analysis I, or equivalent. Dr. Perkins.
The most important chemical methods used in the analysis and investigations of soils and fertilizers. Deposit, $10.

253A. Chemistry of Crops. 2(0-6); II. Prerequisites: Organic Chemistry and Quantitative Analysis I, or equivalent. Dr. Perkins.
The most important chemical methods used in the analysis and investigations of substances present in plants and plant products. Deposit, $10.

254. Dairy Chemistry. 3(1-6); I. Prerequisites: Organic Chemistry and Chem. 250. Dr. Whitnah.

Chemical compounds present in milk, butter, cheese, and other dairy products; chemical changes effected by conditions of handling dairy products; a review of literature relating to recent investigational work in dairy chemistry.

Laboratory.—The most important chemical methods used in the analysis and investigation of dairy products. Deposit, $10.

256. Insecticides and Fungicides. 2(2-0); given when requested by a sufficient number. Prerequisites: Satisfactory courses in organic chemistry and quantitative analysis. Mr. Latshaw.

The manufacture of spray materials; the chemistry involved in mixing, and the theory of their toxic actions.

257. Food Analysis. 3(0-9); II, when requested by a sufficient number. Prerequisites: Organic Chemistry and course 250. Dr. Brubaker.

The quantitative methods employed in the analysis of foodstuffs; practice in testing for the presence of adulterants, preservatives, and coloring materials. Deposit, $10.

260. Advanced Quantitative Analysis. 1 credit for each 3 hrs. of laboratory; I. Prerequisites: Courses 250 and 251. Dr. Brubaker.

Included here, any kind of quantitative chemical work not otherwise designated; a large opportunity for advanced work afforded by the various research and state laboratories. Deposit, $10.

270. Chemistry Problems. 1 to 5 credits; I, II, and SS.

Individual problems to fulfill the thesis requirements of students in agricultural chemistry, biochemistry, and industrial curricula.

271. Selected Topics in Inorganic Chemistry. 2(2-0); II. Prerequisite: A course in physical chemistry. Dr. Lash.

Material from such topics as thermal analysis, temperature measurements, atomic hydrogen, the hydrides, the halogens, corrosion of metals, and the ammonia system.

272. Physical Chemistry II. 3(3-0); II. Prerequisite: A beginning course in physical chemistry. Dr. King.

A continuation of the general principles of physical chemistry, with particular attention given to the elementary principle of thermodynamics, chemical kinetics, homogeneous and heterogeneous equilibrium, electromotive force, photochemistry, electrical theory of matter, radio activity, and atomic structure.

275. Chemistry Seminar. Once a week, throughout the year, the officers of the department, with the more advanced students and such others as wish to, meet for papers and discussion upon topics representing the progress of chemical science, chiefly as found in the current journals. The preparation of subjects for presentation at these meetings may be made a part of the credit work of advanced students.

280. Elements of Chemical Engineering. 3(2-3); I. Prerequisites: Calculus, Physical Chemistry. Physical Chemistry may be taken concurrently. Dr. Brown.

The design and use of chemical engineering equipment; chemical engineering operations such as storage, disintegration, mechanical separation, heat flow, fluid flow, filtration, crystallization, calcination drying, evaporation, distillation, conveying, refrigeration, absorption, mixing and high pressure work. Deposit, $7.50.

281. Chemical Engineering Principles. 2(2-0); II. Prerequisites: Same as for Elements of Chemical Engineering. Dr. Brown.

The principles of plant location, plant layout and design; the principles of organization and control of chemical plants, utilization of fuels and energy, and chemical engineering operation costs; laboratory research and technical development.

FOR GRADUATE CREDIT

301. Chemical Research. Excellent opportunities are offered students to undertake research work in chemistry. Such work is being constantly conducted in the laboratories of the department in connection with the Agricultural and Engineering Experiment Stations. The State Food Laboratory and the laboratories for analysis of feeds and fertilizers are also accessible to students desiring research along such lines. Much emphasis is placed upon research in the department, and all graduate students whose training is adequate are encouraged to participate. Students working out their master's thesis in the Department of Chemistry are assigned to this course. Work is offered in the following lines:

Agricultural Chemistry. Dr. King, Mr. Latshaw, and Dr. Perkins.
Industrial and Engineering Chemistry. Dr. Brown and Dr. Van Winkle.
Analytical Chemistry. Dr. Brubaker and Mr. Latshaw.
Organic Chemistry. Dr. Colver and Dr. Barham.
Biochemistry. Dr. Hughes, Dr. Tague, and Dr. Whitnah.
General and Physical Chemistry. Dr. King, Dr. Hall, Dr. Keith, Dr. Lash.

305. Animal Nutrition Seminar. 1 credit for the year. For prerequisites, consult instructor. Dr. Hughes.

Experiments in nutrition, the methods employed, and validity of conclusions drawn.

Economics and Sociology

Professor Kammeyer
Professor Anderson*
Associate Professor Hill
Assistant Professor Spurrier
Assistant Professor Stewart
Assistant Professor Holtz
Instructor Jones
Instructor Thompson†

Some of the courses offered by this department are either required or elective in most of the curricula of the several divisions of the College. In the curriculum in commerce more than twenty-eight per cent of the required courses are given by this department; and of the sixteen special electives recommended for students in this curriculum, eleven are courses offered by this department. This shows a wide distribution of courses among the curricula and a concentration of courses in the curriculum in commerce. While special emphasis is placed on the relation of these courses to commerce and industry, their cultural advantage is not neglected. Vocational training is essential and important to students in their preparation for occupational activity, but the state also needs men and women trained for citizenship. It is the purpose of this department to plan and direct its work with these ends in view.

The department has equipment valued at $840.

COURSES IN ECONOMICS

FOR UNDERGRADUATE CREDIT

101. Economics. 3(3-0); I, II, and SS. Not open to students who have credit in Agricultural Economics. Dr. Kammeyer, Mr. Spurrier, Mr. Stewart, and Mr. Thompson.

An introductory study of the fundamental facts, concepts, and principles pertaining to modern economic phenomena; a foundation course for all specialized studies in economics.

116. Money and Banking. 3(3-0); I, II, and SS. Prerequisite: Economics. Dr. Kammeyer and Mr. Thompson.

The nature, history, and functions of money; its place as a factor in man's economic progress, and its importance as such in his business activities as organized to-day; banking in its historic forms; the federal reserve system, the

* Absent on leave, year 1929-'30.
† Appointed for the year 1929-'30.

federal farm loan system, and state banks; savings banks, trust companies, building and loan associations and other institutional forms of credit.

122. Economic Geography. 2(2-0); I and SS. Dr. Holtz. Mr. Spurrier.
The major facts and principles relative to the origin, distribution, and development of the industries and commerce of the world.

126. Business Management. 2(2-0); I, II, and SS. Prerequisite: Economics, or may be taken concurrently. Dr. Kammeyer and Mr. Spurrier.
The business structure and executive functions—an analysis of management factors such as personnel, finance, accounting, production, and marketing. An elementary course covering the entire range of business endeavor.

FOR GRADUATE AND UNDERGRADUATE CREDIT

213. Public Finance. 2(2-0); I. Prerequisite: Economics. Mr. Thompson.
The major facts and principles relative to public expenditures; public revenues, especially taxation; the administration of public funds; fiscal emergencies and public indebtedness; the budget and other means of control over expenditures and revenues.

217. Business Finance. 3(3-0); II. Prerequisite: Money and Banking (Econ. 116). Mr. Thompson.
Business financing, with special emphasis upon the problems of financing corporations; the securing of capital, internal financial management, financial methods in case of receivership and corporate reorganization.

221. Investments. 2(2-0); II and SS. Prerequisite: Money and Banking (Econ. 116). Mr. Spurrier.
Financial types of investment securities; investment risks; effect of economic trends upon investment values; functions of investment banks; investment policies suitable for various investment classes.

229. Transportation Problems. 2(2-0); II. Prerequisite: Economics. Mr. Thompson.
A brief review of the development of transportation, followed by a study of the economic characteristics of the railroad industry, results of unrestrained competition in the industry, adoption of public regulation, and the legal and economic phases of regulation.

233. Labor Problems. 2(2-0); I and II. Prerequisite: Economics or Sociology. Dr. Holtz.
Present status and trends in industrial relations; the background in history and activities of labor organizations and employers' associations; legislation bearing upon industrial relations; new problems of personnel administration, coöperation, profit-sharing, industrial partnership, etc.

242. Property Insurance. 2(2-0); I, SS. Prerequisite: Economics. Mr. Spurrier.
Fire, marine, automobile, title, and credit insurance, and corporate bonding; also other forms of property insurance, such as burglary and theft, plate glass, steam boiler, windstorm and tornado, etc.

244. Life Insurance. 2(2-0); II, SS. Prerequisite; Economics. Mr. Spurrier.
Nature and uses of life insurance, kinds of policies, determination of premiums, reserves, surrender values, dividends, etc.; the organization and management of legal reserve companies, and important legal phases of life insurance.

245. Marketing. 2(2-0); I. Prerequisite: Economics. Mr. Spurrier.
Marketing functions, such as assembling and grading of products, storing, transportation, financing and risk taking, stimulation of demand, and merchandising; marketing agencies and methods by means of which products are moved from producer to consumer; basic marketing systems; retailing as

carried on by department, specialty, and chain stores, and mail order houses; marketing problems of the individual business; prices and price policies, sales planning and management, salesmanship, and advertising campaigns.

248. Economic Problems. Credits and hours arranged by consultation with the head of the department. Prerequisites: Economics, and a two-hour course in advanced economics. Dr. Kammeyer and Mr. Spurrier.

251. Advanced Economics. 3(3-0); I and SS. Open only to seniors and graduates. Dr. Kammeyer.

A critical study of fundamental economic principles and the writings of leading economists of the past and present. The course is designed for mature students in the field of economics.

FOR GRADUATE CREDIT

301. Research in Economics. 1 to 10 credits; I, II, and SS. Prerequisites: Such courses as the problem undertaken may require. Dr. Kammeyer and Mr. Spurrier.

Graduate students who enroll in this course may elect for original investigation any acceptable problem in the general field of economics.

COURSES IN SOCIOLOGY

FOR UNDERGRADUATE CREDIT

151. Sociology. 3(3-0); I, II, and SS. Dr. Hill.

The fundamental principles of social life as related to other scientific principles; their practical application to social action and organization; normal constructive social evolution emphasized; the processes of socialization, social forces, and social control, particularly in their relation to commercial, industrial, and professional leadership.

156. Rural Sociology. 3(3-0); I. Preferably a course in sociology should precede this. Dr. Hill.

The fundamental principles of the science of sociology applied to rural society; social phases of agricultural and economic movements; the relation of nation, state and county to socializing projects in rural society.

FOR GRADUATE AND UNDERGRADUATE CREDIT.

257. Social Problems. 2(2-0); I. II. and SS. Prerequisite: Sociology. Dr. Hill.

The social phases of population movements, dealing with the problems of quantity and quality; charity and reform organization and technique; professional social work.

267. Community Organization. 3(3-0); II and SS. Prerequisite: Sociology. Dr. Hill.

A study, on a functional basis, of organizations working in the urban and rural fields; the principles involved and the technique of organization. The student has opportunity to choose for special study an organization or institution in which he hopes to have a position of leadership for his life work. Special assistance will be given in these special studies, which may afford the capable student valuable means of approach to future employment.

270. Advanced Rural Sociology. 3 credits. Prerequisite: Rural Sociology. Dr. Hill.

A continuation of Rural Sociology; a wide field of reading in the literature of rural life; original research work and a thesis required.

273. Advanced Sociology. 3 credits. Prerequisite: Course 151 (Sociology). Dr. Holtz.

A continuation of Sociology, with the view of examining critically the sociological theories of recent writers, and of laying a foundation for a constructive theory of social life.

277. History of Social Thought. 3(3-0); I. Prerequisite: Sociology. Dr. Holtz.

The development of social thought from ancient civilization to the present—the social philosophies of Plato, Aristotle, St. Augustine, Thomas Aquinas, Machiavelli, Hobbes, Locke, Hume, Montesquieu, Condercet; and the sociological systems of Comte, Spencer, Sumplowicz, Ratzenhofer, Tarde, Ward, and others.

279. Sociology Seminar. I, II, and SS. Prerequisite: Sociology. Credits to be arranged in consultation. Dr. Hill.

Selected literature and investigation of social problems.

FOR GRADUATE CREDIT

351. Research in Sociology. 1 to 10 credits; I, II, and SS. Prerequisites: Such courses as the problem undertaken may require. Dr. Hill.

Graduate students who enroll in this course may elect for original investigation any acceptable problem in the field of sociology.

COURSES IN ACCOUNTING

FOR UNDERGRADUATE CREDIT

132. Institutional Accounting. 3(3-0); II. Mr. Stewart.

A study of elementary accounting principles and their application to the home, cafeteria, lunch and tea rooms, dormitories, clubs, hospitals, and other institutions.

133, 134. Accounting I and II. 3(2-3) each; I, II, and SS. Prerequisite: For 134, course 133. Mr. Stewart and Mr. Jones.

I: A study of the principles and structure of accounts designed to give power to analyze commercial accounts and statements; problems and practice sets used as an application of principles to practice.

II: Partnership and corporation accounting and problems peculiar to them; valuation of balance-sheet items with special reference to depreciation, inventories, and intangibles; and several other topics.

280. Advanced Accounting. 3(3-0); I. Prerequisite: Course 134. Mr. Stewart and Mr. Jones.

Advanced course in accounting theory relating to depreciation, goodwill, intangibles, funds, reserves, inventories, capital accounts, income and its determination, and other special topics.

282. Income-tax Accounting. 2(2-0); II. Given in 1929-'30 and alternate years thereafter. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

Preparation of federal income-tax returns, and a study of accounting problems arising in connection with them.

283. Accounting Systems. 2(2-0); II. Given 1930-'31 and alternate years thereafter. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

The construction and installation of accounting systems for commercial enterprises.

285. Auditing. 3(3-0); I. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

Auditing accounts of commercial enterprises; attention to balance sheet and detail audits with study of both principles and practice.

287. Cost Accounting. 3(3-0); II. Prerequisite: Course 134. Mr. Stewart.

A study of cost accounting principles and the principal types of cost systems now in use; methods of estimating and charging production, administrative, and selling costs.

289. Governmental Accounting. 2(2-0); I. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart.

Federal, state, and municipal accounts, and accounts for certain public institutions.

292. C. P. A. Problems. 3(3-0); II. Prerequisite: Advanced Accounting or Cost Accounting. Mr. Stewart and Mr. Jones.

Advanced problems taken from numerous certified public accountant examinations and covering various accounting fields. Aim is to familiarize students with typical problems used in such examinations.

Education

Professor Holton
Professor Andrews
Professor Williams
Professor Peterson
Professor Strickland
Professor Rust
Associate Professor Davidson
Associate Professor Alm
Instructor Langford
Instructor Baxter
Assistant Hall
Assistant Williamson
Assistant Robertson
Doctor Holtz
Graduate Assistant White

The courses in this department have for their controlling purpose the professional training of teachers. Two types of courses are offered: (1) courses that give the broad, fundamental principles upon which public education is based, and (2) courses that develop technic and skill in school management and the organization of the subject matter of the curricula. All courses are based upon the proposition that education supported by public taxation should function in social and vocational efficiency. The department possesses equipment valued at $4,317.

The State Board of Education has set up the following standards or their equivalents for the certification of teachers:

1. Three-year Certificates Renewable for Life.
   a. Complete four years of college work with degree.
   b. At least eighteen hours of the four years' work must be taken in the Department of Education, as follows:
      (1) Three semester hours in Psychology, three in Educational Administration, and three in Educational Psychology.
      (2) Nine additional semester hours elected from the Department of Education, and approved by head of department.
   c. Credit obtained in college courses in the teaching of special subjects will be accepted to the extent of three semester hours to apply on the required credits in Education, provided that these courses are conducted with the approval of the College Department of Education and are offered in the junior or senior year, with preliminary preparation as follows:

      English.—Not less than fifteen semester hours of college credit, following at least three high-school units.

      Foreign Languages.—Not less than fifteen semester hours of college credit in the language in which the teachers' course is taken, following at least three high-school units or equivalent in some foreign language or languages.

      Mathematics.—Not less than fifteen semester hours of college credit, following at least two high-school units.

      Physical Science.—Not less than ten semester hours of college credit in the science in which the teachers' course is taken, following at least two high-school units or equivalent in physical science.

      Biological Science.—Not less than ten semester hours of college credit in the science in which the teachers' course is taken,

following at least two high-school units or its equivalent in biological science.

History.—Not less than ten semester hours of college credit, following at least two high-school units or equivalent.

In any of the above, six hours of college credit will be regarded as the equivalent of one high-school unit.

d. Valid in any elementary or high school in Kansas.

2. Three-year Certificates Renewable for Three-year Periods.

a. Complete at least two years of college work, including three semester hours in Psychology, three in School Management, and three in Methods of Teaching.

Not more than fifteen semester hours in any one department of education will be accepted on transcripts showing only sixty hours of credit.

b. Valid in any elementary school, junior high school or high school offering not more than a two-year course of study.

3. Certificates for Teachers of Vocational Agriculture.

a. Complete four years of college work, including the following:

(1) Not less that fifty semester hours in technical or practical agriculture.

(2) Not less than twenty-one hours of science related to agriculture.

(3) Eighteen semester hours in the Department of Education: viz., three in Psychology, three in Educational Administration, three in Educational Psychology, three in Vocational Education, three in Special Methods in Agriculture, and three in Supervised Observation and Teaching.

(4) Eighteen semester hours in mechanical lines related to farm-shop problems.

b. Valid for three years and may be renewed for life.

4. Certificates for Teachers of Vocational Home-making.

a. Complete four years of college work, including the following:

(1) Thirty-four semester hours in technical home economics, as required in the curriculum in Home Economics, and six semester hours of electives: viz., three semester hours in Child Welfare, and three semester hours in Practice Work in Household Management.

(2) Eighteen hours in the Department of Education: viz., three in Psychology, three in Educational Administration, three in Educational Psychology, three in Vocational Education, three in Special Methods in Home Economics, and three in Supervised Observation and Teaching.

b. Valid for three years and may be renewed for life.

COURSES IN EDUCATION

FOR UNDERGRADUATE CREDIT

Psychology A, B and C are parallel courses in introductory psychology. The content of these courses is fundamentally the same, but emphasis differs according to the preparation and needs of the various groups of students as indicated below. Only one of these three courses may be taken for credit.

101. Psychology A. 3(3-0); I or II. Not open to juniors or seniors, or to those who have credit in courses 102 or 103. Dr. Alm and Mr. Langford.

An introduction to the fundamental facts and principles of general psychology. The physiological and neural basis of behavior; innate and acquired tendencies to reaction; the nature of the learning process and the methods and conditions which favor rapid and effective learning; individual differences as related to vocational and personal efficiency.

102. Psychology B. 3(3-0); I. Not open to students who have credit in courses 101 and 103. Dr. Alm.

Based on the same facts and principles as course 101, but draws largely from musical material for illustration and application; includes experimental work in the analysis and measurement of musical talent, and bears directly upon the teaching and learning of vocal and instrumental music.

103. Psychology C. 3(3-0); I or II. Not open to freshmen or sophomores, nor to students who have credit in courses 101 or 102. Dr. Peterson and Mr. Langford.

The same general content as course 101, with some additional materials in the application of psychology; more attention given to the methods by which new facts are discovered and interpreted.

105, 106. Educational Administration A and B. 3(3-0) each; I or II. Only one of these courses may be taken for credit. Dr. Andrews.

Course A: The organization of state, city and county school systems; organization of school systems in Kansas, both rural and city; the school laws of Kansas.

Course B: Similar to course A in that it discusses the general principles of educational administration in a democracy, but differs from it in that it gives special emphasis to the administration and supervision of vocational agriculture, home-making, and trades and industry.

107. School Management. 3(3-0); I or II. Limited to freshmen and sophomores. Dr. Strickland.

A survey of classroom and school administration and management of pupils in groups; problems of discipline, school sanitation and hygiene and school health, and general classroom efficiency. The student is shown how to develop an efficient classroom routine and class program.

109. Educational Psychology. 3(3-0); I or II. Prerequisite: General Psychology. Dr. Strickland.

The native equipment of human beings which serves as a basis for education, individual differences, and the psychology of learning.

111. Methods of Teaching A. 3(3-0); I or II. Prerequisite: General Psychology. Open to freshmen and sophomores only. Dr. Strickland.

Problems of general method in classroom procedure in grades and junior high school. Required of candidates for three-year certificate renewable for three-year periods.

112. Methods of Teaching B. 3(3-0); I or II. Prerequisite: General Psychology. Open to juniors and seniors only. Dr. Strickland.

Problems of general method in classroom procedure from the high school viewpoint.

113. History of Education A. 3(3-0); I or II. Dr. Andrews.

An outline survey of the development of educational institutions and practice in Europe and America; emphasis upon institutional history rather than theory; the history of education as a conscious evolution of society.

118. Educational Sociology A. 3(3-0); I, II and SS. Dr. Holton.

The group activities of the school in relation to personality traits; psychology of personality; the school's responsibility in the development of socialized personality traits.

125. Vocational Education A. 3(3-0); I or II. Prerequisite: Course 105 or 106. Dr. Williams.

A comparative study of the provisions for the different phases of vocational education in Kansas and other states and countries, and of the principles underlying such education, with emphasis upon the relation of vocational education to the community, county, state, and nation, and the part to be played by each in its development. The aim is to fit the student to plan, teach, and administer or supervise vocational work, especially in high schools.

132. Special Methods in the Teaching of Home Economics. 3(3-0); I, II, and SS. Prerequisites: Foods I and II, Clothing I and II, and Psychology. Mrs. Rust.

The principles of teaching applied to the selection and development of home-economics subject matter in lessons for all types of pupils, and to the conduct of laboratory and classroom exercises.

136. Special Methods in the Teaching of Agriculture. 3(3-0); I, II, and SS. Prerequisite: Psychology. Mr. Davidson.

Training in planning lessons, organizing materials, and conducting class, laboratory, and field instructional work in vocational agriculture is the purpose of this course. The individual and class project are studied, as well as the problem of coördinating farm mechanics work.

140. Special Methods in the Teaching of Industrial Arts Subjects. 3(3-0); II. Prerequisites: Mechanical Drawing II, Woodworking II, and Educational Psychology. Dr. Williams.

The various lines of work included under the head of industrial arts; a series of progressive lessons worked out in each of these lines, with emphasis upon important elements; the various materials employed and the methods of utilizing them for the needs of pupils; the arrangement of courses; the outlining and presentation of assignments; preparation of assignments; preparation of laboratory material and the conduct of laboratory exercises.

141. Special Methods in the Teaching of Physics. 3(2-3).
(See Department of Physics, course 224.)

142. Special Methods in the Teaching of Mathematics. 3(3-0).
(See Department of Mathematics, course 122.)

144. Methods of Teaching English. 3(3-0); II and SS.
(See Department of English, course 134.)

145. Special Methods in Arithmetic. 2(2-0); SS.
(See Department of Mathematics, course 123.)

146. Supervised Teaching in Physical Education. 3(0-0); I.
(See Department of Physical Education for Women, course 186.)

150. Introduction to Philosophy. 3(3-0); I. Prerequisite: Junior standing or better. Dr. Andrews.

A study of the more important interpretations of experience and an examination of the bases of values in modern life.

160. Supervised Teaching in Home Economics. 3 credits; I, II, and SS. Prerequisites: Foods I and II, and Clothing I and II; prerequisite or parallel: Educ. 132. Mrs. Rust.

Supervised teaching carried on in the home economics classes of the Manhattan high school.

161. Supervised Observation and Teaching in Agriculture. 3 credits; I and II. Prerequisites: Courses 109 and 136. Mr. Davidson.

Three weeks of observation and practice teaching in vocational agriculture classes in the Manhattan high school and other high schools by arrangement; group study of classroom problems; lesson plans and presentation criticized by the College instructor and the vocational teacher in the practice department.

163. Supervised Observation and Teaching in Science. 3 credits; I and II. Prerequisities: Methods of Teaching, or Educational Psychology, and at least ten hours of college credit in the science to be taught. Dr. Strickland.

Three weeks of observation and practice teaching in a science; group study of lesson plans, special methods and devices, organization of courses, etc.

170. Applied Psychology. 3(3-0); I or II. Prerequisite: Psychology. Dr. Peterson.

The psychological conditions of personal, industrial, and business efficiency as determined by observation and experiment in such special fields as adver-

tising, salesmanship, employment, scientific management, etc.; use of psychological tests in employment, vocational guidance, etc.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Rural Life and Education. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Mr. Davidson.

Historical and social study of rural life; institutions and organizations that have contributed to rural life development; evolution from the one-room rural school to the rural high school and consolidated schools; farmers' organizations and all forms of organized community life in the open country, in relation to the problems of public education.

202. Extra-Curricular Activities. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Dr. Holton and visiting instructors.

A careful survey of the extra-curricular activities in the junior and senior high schools; determination of the educational objectives of these activities and the most effective methods and means employed in the accomplishment of the objectives.

203. Problems in Teaching. 3(3-0); SS. Prerequisites: Educational Psychology, and senior or graduate standing. Visiting instructors.

What the superintendents expect of the teacher in (1) classroom instruction and standrads, (2) attitudes and ideals, (3) coöperation and teamwork, and (4) professional growth.

204. Rural Secondary Education. 3(3-0); I or II. Prerequisite: Educational Administration. Dr. Williams.

A brief historical study of rural secondary education with special emphasis on objectives of junior and senior high-school organization; curriculum and methods of organizing and conducting rural secondary schools; field problems in rural secondary education set up. A certain amount of field work is required.

205. The Junior College. 3(3-0); SS. Prerequisite: Educational Administration. Dr. Andrews and the dean of a junior college.

A study of the historical development of the junior college and its place in the American public school system; its curricula and administration; the present-day trends in its development and extension.

206. Philosophy of Education. 3(3-0); II and SS. Prerequisite: Educational Sociology and Educational Psychology. Dr. Holton.

A critical study of the controlling and unifying philosophy of the American public school system and its European background.

207. Problems of the Principal. 3(3-0); SS. Prerequisite: Educational Administration. Visiting city superintendents.

A careful survey of the work of the principals of junior and senior high schools.

208. The Psychology of Childhood and Adolescence. 3(3-0); I or II. Prerequisite: Psychology A, B, or C. Dr. Alm.

A genetic study of the developing child with applications valuable to parents and teachers. The course is conducted in two sections: Section A, with emphasis on the psychology of childhood; and section B, with emphasis on the psychology of adolescence.

211. Mental Measurements. 3(3-0); I. Prerequisite: Psychology. Dr. Peterson.

The methods and devices employed and the more significant results so far obtained in the measurement of mental alertness, special aptitudes, and character traits.

212. Educational Measurements. 3(3-0); I or II. Prerequisites: General Psychology and Educational Psychology. Dr. Strickland.

The scientific measurement of achievement as distinguished from intelligence testing.

213. Abnormal Psychology. 3(3-0); II. Prerequisite: Psychology A, B, or C. Dr. Peterson.

Such manifestations of faulty integration of bodily activities and mental functions as are found in hysteria, dreams, hypnotism, trances, multiple personality, etc.; certain questionable concepts of abnormal psychology in current literature; prevalent practices in dealing with mental disorders.

215. Problems in Psychology. 1 to 3 credits; I, II, and SS, by appointment. Prerequisite: Superior performance in one or more courses in psychology and general scholarship standing of B or better. Dr. Peterson, Dr. Alm, and Mr. Langford.

Each student studies an individual problem appropriate to his degree of advancement in the field of psychology. A written report is required. The amount of credit depends upon the work done. Enrolment by recommendation of the instructor not later than mid-semester.

216. Advanced Psychology. 3(3-0); I or II. Prerequisite: Psychology. Mr. Langford.

Fundamental problems, methods, and interpretations of general psychology.

217. Experimental Psychology. 3(3-0); I or II. Prerequisite: Psychology A, B, or C. Dr. Peterson.

A few representative experiments in animal and sensorimotor learning, as an introduction to the types of problems encountered and to the basic methods of procedure essential to the analysis of the thought processes; a survey of the experimental literature on the higher mental processes, with special attention to the more objective studies in the experimental analyses of the thought processes.

219. The Curriculum. 3(3-0); I or II. Prerequisites: Six hours in education, and junior standing. Dr. Andrews.

The fundamental requirements of our modern life upon the schools; educational objectives in the light of these requirements; each subject in the curriculum examined for its minimum essentials both in the elementary school and in the high school.

221. Extension Methods and Problems. 2(2-0); II. Prerequisites: Educational Administration, and Vocational Education A. Dr. Williams and members of the Division of College Extension.

Origin and development of extension work, its aim and purposes, and its relation to other general educational activities; organization and administration of extension work under the Smith-Lever law and the part taken by colleges and the Department of Agriculture; types of extension work conducted by bankers, railroads, manufacturers, and other agencies; and future problems of extension work.

223. Statistical Methods Applied to Education. 3(3-0); I, II, and SS. Prerequisites: Six hours in education, and junior standing. Not open to students who have credit in Math. 203. Dr. Andrews.

Aims of the course: To organize material and data of educational experience and research for statistical interpretation; to develop skill and confidence in the use of statistical methods; to provide discussions and interpretations of statistical methods employed in scientific studies in education; and to give experience in the computation of statistical constants and develop the ability of graphical representation and interpretation.

225. Foundations of Method. 2(2-0). Dr. Strickland.

A critical study of the underlying principles by which current methods of teaching may be evaluated and the development of method may be gained.

226. Vocational Education B. 3(3-0); I, II, and SS. Prerequisite: Educational Administration. Dr. Williams.

The administration and supervision of the different fields of vocational education, including agriculture, home making, trade, and industrial and commercial education; curricula and curriculum building in the different vocational fields in relation to community needs.

230A. Vocational Guidance. 3(3-0); I, II, and SS. Prerequisites: Educational Administration, Psychology, and Vocational Education. Dr. Williams.
The best methods and practices now used in the field of pupil guidance in study of vocations and career planning; analysis of a number of the more desirable trades, professions, and business callings; guidance problems of the elementary, junior high school, senior high school and continuation schools.

235. The Technic of Mental Testing. 3(1-6); I or II. Prerequisites or parallels: Courses 211 and 223. Dr. Peterson.
Methods of giving and scoring the Stanford Revision of the Binet Scale, with practice under the observation of the instructor until sufficient reliability is secured; the principal standard group tests of intelligence and special abilities analyzed and finally given and scored under observation; choice of tests for specific purposes; tabulation and interpretation of scores.

240. Social Psychology. 3(3-0); II. Prerequisites: Psychology A, B, or C. Mr. Langford.
The reactions of individuals to the behavior of their fellow beings; the genesis and motivation of group habits, such as language, money, customs, conventions, fashions, laws, etc., and of group norms of capacity and achievement as they affect the relations of social classes, nationalities, and races.

241. History of Modern Psychology. 3(3-0); I. Prerequisite: Psychology A, B, or C. Dr. Alm.
A study of trends in modern psychology traced back to their origins. The various schools of thought are compared and their views are evaluated.

243. Psychology and Personnel Management. 3(3-0); I. Prerequisites: A grade above M in Psychology A, B, or C, and consent of the instructor. Dr. Peterson.
Scientific principles and procedures involved in employment; promotion, motivation of work, measurement and reward of achievement, etc.

245. The Junior High School. 3(3-0); SS. Prerequisites: Six semester hours of Psychology and Education. Dr. Andrews.
Educational and social bases of the intermediate school, its method of teaching, its administration and discipline; the curriculum of the junior high school and its articulation with the elementary school and the senior high school.

250. Problems in Special Teaching Methods. 3(3-0); I, II, and SS. Prerequisites. Psychology, and Special Methods of Teaching Home Economics. Mrs. Rust.
Objectives and principles involved in teaching subjects related to home economics; planning of courses of study which are based upon the problem methods of teaching. (Designed for teachers of science and art related to vocational home-making, required in the Smith-Hughes high-school courses.)

253. Administration and Supervision of Secondary Schools. 2(2-0); 2d SS. Prerequisites: Psychology, Educational Administration, and Educational Psychology. Dr. Williams.
Problems of organization, administration, and supervision covering the complete program of an administrative head of a school system in a small city. (Designed for principles of rural high schools and superintendents of small city systems.)

255. The Project Method in Agricultural Education. 2(2-0; 2d SS. Prerequisites: Education 136 and 161. Mr. Davidson.
The project as a teaching device, with intensive treatment of project values, project analysis, project accounting, project supervision, project types, project results, project records, project reports, etc. The course is conducted on the problem basis.

257. Organization and Conduct of Class Projects. 2 credits; 2d SS. Prerequisites: Education 106 and 125. Mr. Davidson.
Fundamentals and principles on which productive class projects should be organized. Research and field work in class project study will be undertaken.

258. Administration and Supervision of Vocational Education. 2(2-0); 2d SS. Prerequisites: Educational Administration, Psychology, and Educational Psychology. Dr. Williams.

Objectives, curriculum organization and content, administrative and supervisory problems from the viewpoint of the city superintendent—leadership needs which must be met in a school system offering vocational education. The problem basis of treatment is used.

262. Community Problems in Vocational Agriculture. 2 credits; 2d SS. Prerequisites: Dr. Williams.

Methods, organization, and conduct of club work, junior project work, class projects, and community projects in general—a course conducted on the problem basis and designed specifically for teachers, supervisors, and directors of agricultural work.

263. Problems in Evening School Classes. Class, 2 hours, daily; 2 credits; 2d SS. Open to college graduates who have taught one year of vocational agriculture. Dr. Williams or Mr. Davidson.

Problems of organization, curriculum, and methods of teaching evening schools and classes sponsored by the national vocational education act. Designed for teachers in service.

264. Organization Problems in Teaching Farm Mechanics. Class, 2 hours, daily; 2 credits; 2d SS. Prerequisites: Educ. 136 and 161. Mr. Bradford.

An analysis of the farm mechanics course of study; needs and interests of boys, learning difficulties, skills and technical knowledge required. Correlation with agriculture. Application of laws of learning to the teaching process. Determining objectives.

265. Problems in Organization and Presentation of Home Economics. 1 to 5 credits; I, II, and SS. Prerequisite: Senior or graduate standing. Dr. Justin, dean of the Division of Home Economics, and Mrs. Rust.

This course permits opportunity for study of problems of organization and administration in this field.

FOR GRADUATE CREDIT

301, 302. Educational Seminar I and II. 4 credits for both (2-0); I and II, respectively. Prerequisites: Psychology, Educational Psychology, and Educational Administration. Dr. Holton and other members of the graduate faculty.

A topic for special investigation chosen by each member of the seminar early in the term; preliminary reports, and the final results of the study embodied in a carefully prepared report.

303. Educational Sociology C. 3(3-0); I, II, and SS. Prerequisites: Psychology, Educational Psychology, and Educational Sociology A. Dr. Holton.

Fundamental social objectives for the curricula in high schools and colleges. Research and critical study of curricula.

306. Educational Administration C. 3(3-0). Dr. Andrews.

Fundamental problems in public school administration are assigned to each student for investigation and report.

307. History of Education B. 3(3-0). Dr. Andrews.

The history of education in the United States, with a consideration of the more important present-day problems in the organization, administration, and adjustment of public education in the light of historical development.

309. Problems in Educational Psychology. 3(3-0); I, II, and SS. Prerequisites: General Psychology, Educational Psychology. Dr. Strickland.

A study of problems, recent experimentations, and applications of the principles of educational psychology.

310A. Psychology of Teaching and Learning. 3(3-0); I or II. Dr. Peterson.

An analysis of the various forms of learning and of the conditions favorable to the rapid development and effective functioning of knowledge, skills, attitudes, and purposes.

313. Research in Organization and Presentation of Home Economics. 1 to 10 credits; I, II, and SS. Prerequisite: Graduate standing. Dr. Justin, dean of the Division of Home Economics, and Mrs. Rust.

Individual research problems in phases of organization and administration for home economics. May be chosen as the basis for thesis for the master's degree. The nature of the problem will depend upon the student's major interest.

315. Supervision in Home Economics. 2 credits; by appointment. Prerequisites: Psychology, Special Methods in Teaching Home Economics, and experience in teaching home economics. Mrs. Rust.

Problems met by a supervisor or director of home economics in the public schools; standardization of work; relation of supervisor to teacher; modernization of plant and equipment; course of study, etc.

320. Research in Psychology. 1 to 10 credits; I and II. Members of Graduate Faculty.

Individual research problems in the field of psychology.

325. Research in Education. 1 to 10 credits; I and II. Members of Graduate Faculty.

Individual research problems in the general field of education and in the fields of psychology—mental testing, administration, and vocational education.

330. Agricultural Education B. 3(3-0); I or II. Dr. Williams.

A research survey course in the field of agricultural education required of all candidates for the degree of Master of Science whose major work in the Department of Education is in the field of agricultural education.

COURSES IN RELIGIOUS EDUCATION

The purpose of courses in religious education is twofold: To train students in the method of establishing social control through the implanting and careful nurture of ideals; and to serve as a basis for preministerial or prereligious vocational training. (Not accepted as part of the requirements in education for a teacher's certificate.)

FOR UNDERGRADUATE CREDIT

180. Religious Education A. 2(2-0); I. Dr. Holtz.

The origin of the Bible; the Bible as a social inheritance; Old Testament history with special emphasis upon the social message of the prophets; the New Testament with attention given to the social teachings of Christ.

182. Religious Education B. 2(2-0); II. Dr. Holtz.

The fundamental instincts; the physiological and psychological characteristics of the various stages of development; and the best methods of moral and religious instruction suited to these stages.

184. Religious Education C. 2(2-0); II. Prerequisite: Psychology. Dr. Holtz.

The recognized principles underlying modern religious education; organization of Sunday schools, the subject matter best adapted to each department of the organization, and the application of modern methods of teaching.

English

Professor Davis
Professor Conover
Professor Rockey
Professor Matthews*
Professor Rice
Professor Faulkner
Associate Professor Sturmer
Associate Professor Elcock*
Associate Professor Breeden
Assistant Professor Garvey
Assistant Professor Rushfeldt*
Assistant Professor Callahan
Assistant Professor Parker
Instructor Bower
Instructor Aberle
Assistant Scott
Assistant Clark
Assistant Stensaas
Assistant Campbell

Ability to think accurately and speak well, and capacity to appreciate the world's best literature are recognized essentials of a liberal education. The work of the Department of English is to acquaint the student with the best standards of English practice and appreciation and to encourage him to maintain these standards in all his work. To this end the department offers studies in cultural and technical English and special drills in expressing thought freely and effectively in matters touching the vital interests of the student. The study of the English language and literature is thus made the means of increasing his power and efficiency.

The equipment owned by the department is valued at $1,929.

COURSES IN ENGLISH LANGUAGE

FOR UNDERGRADUATE CREDIT

101. College Rhetoric I. 3(3-0); I, II, and SS. Prerequisites: Three units of high-school English. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Miss Sturmer, Miss Elcock, Mr. Breeden, Miss Garvey, Miss Rushfeldt, Mr. Callahan, Mrs. Parker, Miss Bower, Miss Aberle, Miss Scott, Mr. Stensaas, Miss Clark, and Miss Campbell.

The improvement of students' written and spoken English by reviewing the principles of correct and effective diction, grammar, and sentence structure; by discussing models of good contemporary writing; by studying and practicing various types of paragraph; and by writing expository themes with guidance in selecting material, planning, writing, and revision.

104. College Rhetoric II. 3(3-0); I, II, and SS. Prerequisite: Course 101. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Mr. Breeden, Miss Sturmer, Miss Elcock, Miss Bower, Miss Garvey, Miss Rushfeldt, Miss Aberle, Mr. Callahan, Mrs. Parker, Miss Scott, Mr. Stensaas, and Miss Campbell.

The principles of argument, description, and narration, illustrated by standard and contemporary literature, and applied in frequent themes; correct form, structure, and diction of some common business letters; organization and writing of one extended composition.

107. Special English. No credit. (3-0); I and II, when need arises. Miss Rice, Miss Elcock, and Miss Aberle.

A review of English grammar, spelling, and diction with drill exercises, and individual consultations, required of students in courses 101 and 104 who show marked inability to write clearly and accurately.

110. Engineering English. 2(2-0); I and II. Prerequisites: College Rhetoric II, and junior standing. Mr. Rockey, Mr. Matthews, and Mr. Faulkner.

The general problems of engineering writing: technical descriptions, and the exposition of ideas, mechanisms, and processes; the preparation of engineering talks, business letters, technical manuscripts, and reports. A brief review of composition essentials is included.

* Absent on leave, year 1929-'30.

113. Advanced Composition I. 2(2-0); I. Prerequisite: College Rhetoric II. Mr. Conover and Mr. Matthews.

Special emphasis given to exposition; subjects selected from the student's particular field of work; exposition of mechanisms, processes, and general expository writing carefully studied.

116. Advanced Composition II. 2(2-0); II. Prerequisite: Advanced Composition I. Mr. Conover and Mr. Matthews.

Narrative writing both in its relation to the other forms of composition and as an independent form; practical forms of the narrative, special attention to the short story.

122. Commercial Correspondence. 3(3-0); I, II, and SS. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Faulkner, and Mr. Callahan.

A thorough review of the routine types of business correspondence; the writing of adjustment, credit, collection, and sales letters; the principles of effective writing as seen in the best writing in the commercial world.

123. Written and Oral Salesmanship. 3(3-0); I and II. Prerequisite: College Rhetoric II. Mr. Faulkner and Mr. Callahan.

Special attention to the writing of follow-up systems of sales letters and to the composition and display of circular material and catalogues; the basic principles of advertising and the psychology of selling; special practice in the various forms of sales talks; arrangement made for actual sales practice with commercial concerns.

128. Oral English. 3(3-0); I, II, and SS. Prerequisite: College Rhetoric I. Mr. Rockey and Mr. Matthews.

The principles of oral composition as applied to conversation and informal discussion; the correction of the grammatical faults of everyday speech; the application of rhetorical principles to informal speech and discussion. Subjects selected from the fields of painting, politics, music, and literature.

134. Methods of Teaching English. 3(3-0); II and SS. Prerequisite: College Rhetoric II. Mr. Davis, Miss Rice, and Miss Elcock.

The course of study, the application of English instruction to life needs, and definite methods of motivating English instruction especially considered. (For those called upon to teach English in connection with the applied sciences.)

137. Agricultural English. 3(3-0); I. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Conover, Mr. Matthews, and Mr. Faulkner.

A brief review of the composition essentials, business correspondence, bulletin writing, the organization of short business talks, the principles of farm advertising; and writing the problems that confront the county agent, the high-school teacher of agriculture, and the farm manager.

140. Literature from the Readers. 3(3-0); SS. Miss Bower, Miss Aberle, and Mrs. Parker.

Reading considered both as a fundamental means of acquiring knowledge and as a stepping stone to the appreciation of literature. (Planned to meet the needs of teachers of rural and graded schools.)

143. Advanced Grammar. 3(3-0); SS. Miss Bower, Miss Aberle, and Mrs. Parker.

A systematic study of grammar with emphasis on English etymology, inflections, syntax, and modern usage in both England and America. Especially those details of grammar closely related to the use of English as a tool are stressed.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Critical Writing. 3(3-0); II. Prerequisite: College Rhetoric II. Mr. Matthews.

Representative examples of criticism from English and American literature, from leading critics, and from standard newspapers and magazines; assignment to musical programs and art exhibits on the campus, and writing of reviews of books published by the faculty.

207. Technical Writing. 2(2-0); II. Prerequisite: One of the following courses: 113, 116, 122. Mr. Davis, Mr. Conover, Mr. Matthews, and Mr. Faulkner.

Fundamental principles of technical and scientific writing, with such practice as will necessitate clearness, accuracy, and effectiveness.

223. Advanced Problems in Commercial Correspondence. 3(3-0); II. Prerequisite: Commercial Correspondence. Mr. Faulkner.

Problems in special types of business letters; writing of adjustment, credit, and collection letters; specialized study and writing of sales and business promotion letters; composition of form paragraphs, circular letters, and business reports; correspondence supervision.

225. The Light Essay. 2(2-0); I and SS. Prerequisite: College Rhetoric II. Mr. Davis.

Much writing practice, with light essays and sketches from current standard magazines as models; the writing of humor.

251, 252. The Short Story I and II. 3(3-0) each; I and II respectively. Prerequisites: For I, English Literature; for II, The Short Story I. Miss Rice.

I: The world's best short stories; practice in writing sketches and short stories; special emphasis on the elements of the story—plot, setting, action, and characterization.

II: Special stress on the preparation of the short story for publication; the short story in America, with special attention to types, characteristics, and tendencies; standards set by the leading magazines; market problems.

COURSES IN ENGLISH LITERATURE

FOR UNDERGRADUATE CREDIT

172. English Literature. 3(3-0); I, II, and SS. Prerequisite: College Rhetoric II. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Mr. Breeden, Miss Sturmer, Miss Elcock, Miss Bower, Miss Garvey, Miss Rushfeldt, Miss Aberle, Mr. Callahan, Mrs. Parker, Miss Scott, Mr. Stensaas, and Miss Campbell.

The application of principles of literary appreciation to representative texts in narrative, lyric, and dramatic poetry, and to examples of the essay and the novel.

175. American Literature. 3(3-0); I, II, and SS. Prerequisite: English Literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Mr. Breeden, Miss Sturmer, Miss Elcock, Miss Bower, Miss Garvey, Miss Rushfeldt, Miss Aberle, Mr. Callahan, Mrs. Parker, Miss Scott, Mr. Stensaas, and Miss Campbell.

A study of American prose and poetry, the purpose being to acquaint the student with representative American writers by intensive study of illustrative selections, and to present the historical background and the tendencies of American literature.

181. History of English Literature. 3(3-0); I and II. Prerequisite: English Literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Rice, Mr. Faulkner, Miss Sturmer, Miss Elcock and Miss Aberle.

A study in the history of English literature, the object being to give the student a perspective of the field of English letters, and to study the works of authors in relation to their own periods.

FOR GRADUATE AND UNDERGRADUATE CREDIT

260. Chaucer. 3(3-0); I. Prerequisite: English Literature. Miss Elcock.

The life, times, works, and characteristic language of Chaucer, with the emphasis upon the study of his principal works.

262. Milton and the Puritan Revolt. 3(3-0); II. Prerequisite: English Literature. Miss Elcock.

The life and times of Milton and his chief works; the conflict in the seven-

teenth century between the reverence for authority in government, religion, and literature, and the growing spirit of intellectual inquiry.

265. American Survey. 2(2-0); II. Prerequisites: Courses 172 and 175. Mr. Davis and Mr. Breeden.
An advanced study in the history of American literature beginning with colonial literature and continuing through the period of the Civil War down to the present time.

267. Kansas Literature. 2(2-0); I and SS. Prerequisite: American Literature. Mr. Callahan.
A study of the novels, short stories, essays, and poems written about the state. Especially the literature produced by Kansas authors.

271. The English Bible. 3(3-0); I, II, and SS. Prerequisite: English Literature. Mr. Conover.
The Bible as literature, with special stress on the narratives of the Old Testament, poetry, wisdom literature, and the book of Job.

273, 274. Shakespearean Drama I and II. 3(3-0) each; I and II, respectively. Prerequisite for each. English Literature. Mr. Davis and Miss Sturmer.
I: The life and times of Shakespeare and the background of Shakespearean tragedy; intensive study of five of Shakespeare's tragedies: Macbeth or Othello, Hamlet, King Lear, Coriolanus, and Romeo and Juliet.
II: An intensive study of five of Shakespeare's comedies: The Winter's Tale, As You Like It, Twelfth Night, Cymbeline, and The Tempest; collateral readings of earlier comedy, Shakespearean comedy, that of his contemporaries, and present-day criticism of Shakespeare.

276. English Essayists of the Eighteenth and Nineteenth Centuries. 3(3-0); II. Prerequisite: English Literature. Mr. Davis and Mr. Conover.
Two periods of especially notable English prose. Among the authors discussed are Swift, Addison, Steele, Johnson, Burke, Lamb, Hazlitt, DeQuincey, Wilson, Newman, Ruskin, Spencer, Huxley, Pater, and Wilde.

278. The English Romantic Revival. 3(3-0); I. Prerequisite: English Literature. Mr. Rockey.
The chief poetical works of Wordsworth, Shelley, Keats, Coleridge, and Byron, with some consideration to the period as a revival of romanticism.

280, 281. World Classics I and II. 3(3-0) each; I and II, respectively. Prerequisites for each: English Literature and American Literature. Mr. Faulkner.
I: The literary masterpieces (in translation) of early times, particular attention being paid to Greek and Latin classics.
II: The literary masterpieces (in translation) of Western Europe, with particular attention to the works of Italian, Spanish, French, and German writings that have attained lasting world fame.

283. Contemporary Fiction. 3(3-0); I. Prerequisite: American Literature. Mr. Conover.
The more important British and American fiction since Hardy.

284. Contemporary Drama. 3(3-0); II. Prerequisite: American Literature. Mr. Conover.
Development of the drama since Ibsen; types of modern drama; works of important English, Irish, and American dramatists.

286, 287. The Novel I and II. 3(3-0) each; I and II, respectively. Prerequisites: For I, American Literature; for II, The Novel I. Mr. Breeden.
1: The English novel, its historic development, its relation to other forms of fiction, and its place in contemporary literature; especial attention to representative works of modern English and American writers.
II: Continuation of The Novel I. Review of essentials in study of the novel; readings of representative modern novels continued; class reports.

288, 290. English Survey I and II. 2(2-0) each; I and II, respectively. Prerequisites: For I, History of English Literature; for II, I. Mr. Davis, Mr. Conover, and Mr. Breeden.

I: An advanced study in the history of English Literature from Anglo-Saxon times down to the close of the Elizabethan period.

II: The rise of Puritanism and its influence on English literature; the classical movement emphasized; romanticism and its development.

293. Browning and Tennyson. 3(3-0); II. Prerequisite: English Literature. Mr. Rockey.

Interpretation of the most important poetic and dramatic works of Alfred Tennyson and of Robert Browning.

297. Contemporary Poetry. 3(3-0); II. and SS. Prerequisite: History of English Literature. Mr. Davis and Mr. Conover.

A study of representative contemporary poetry.

298. Problems in the Teaching of English. 3(3-0); SS. Prerequisites: 15 hours of English and 9 hours of Education. Mr. Davis and Miss Elcock.

The history of the teaching of English both in England and in America; an investigation of English curricula in representative high schools of the United States; and a thorough consideration of the subject matter for both composition and literature courses in the high-school teaching of English.

299. Research in English. Advanced students with acceptable fundamental training may, with the approval of the head of the department, undertake original investigation in some definitely prescribed field of English literature or applied English. Such work must be pursued under the direct supervision of some member of the faculty of the department, and the final results may be used to fulfill the thesis requirements for the master's degree. Students doing research in English will be required to give evidence of approved training in the subject and to have a broad general knowledge of English literature. Mr. Davis, Mr. Conover, Mr. Rockey, Mr. Matthews, Miss Sturmer, and Miss Elcock.

FOR GRADUATE CREDIT

Classes in courses listed under the graduate group are organized whenever the demand for them is sufficient. When the demand does not justify the organization of a class, the work may be arranged for by appointment. Special arrangements for work should be made with the head of the department.

301, 302. History of the English Language I and II. 2(2-0) each; I and II, respectively. Prerequisite: History of English Literature. Mr. Conover and Miss Sturmer.

I: The origin and development of the English language, with special stress on Old English.

II: A continuation of course 301, with special emphasis on Middle English, and Modern English.

304. Research in Applied English. 2(2-0); II. Prerequisite: History of English Literature. Mr. Davis.

Individual assignments in fundamental fields of research in applied English, an original investigation, and an acceptable report thereon being required.

315. Research in the Literature of Industry. 2(2-0); I. Prerequisite: History of English Literature. Mr. Davis and Mr. Conover.

This is an investigation and research course based on a careful study of the development of the distinctive literature of industry.

Entomology

Professor Dean
Professor McColloch†
Professor Smith‡
Associate Professor Parker
Assistant Professor Painter
Assistant Professor Wilbur ||
Assistant Professor Bryson

In all courses a special effort is made to make the student realize that he is studying living things which form a part of his daily environment, and upon which his welfare in many cases vitally depends. In courses in which both class and laboratory instruction is given, the closest correlation is striven for, and whenever possible the same form is studied simultaneously in laboratory and class. The student is led to integrate his classroom knowledge with local animal life by means of frequent and carefully planned field excursions and by the free use of vivaria in laboratory and museum. The courses offered are intended to awaken in the student a keen appreciation of the general principles underlying insect life, of the life economy of the more beneficial as well as the more injurious species, and of the general principles governing methods for their control.

Standard anatomical charts, a representative collection (especially of local species), a high-grade lantern for the projection of lantern and microscope slides, a large and excellent series of lantern slides (many of them colored), and a series of microscope slides are available for illustration. Compound and dissecting microscopes sufficient for the needs of laboratory classes have been provided.

Facilities for advanced work are provided for graduate students and others who expect to pursue the subject professionally. An advanced laboratory is equipped with individual desks, binocular microscopes, compound microscopes, rotary microtome, imbedding ovens, drawing apparatus, and a supply of glassware and reagents sufficient for histological work and for research. A well-equipped insectary is available for training in insectary methods. An air-conditioning machine in the insectary adds materially to the possibilities for experimental work. A field station with all the necessary equipment provides means for the study of insects under normal field conditions.

The department owns equipment valued at $26,834.

COURSES IN ENTOMOLOGY

FOR UNDERGRADUATE CREDIT

111. General Apiculture. 3(2-3); II. Prerequisite: General Entomology. Dr. Parker.

A general study of the structure, life history, general behavior, activities, and products of the honeybee; practice beekeeping and best methods used among beekeepers; bee diseases and the standard methods to be used in their eradication and control; relation of bees to agriculture and horticulture. Charge, $1.

116. Milling Entomology. 1(1-0); I. Offered 1930-'31 and alternate years thereafter. Mr. Dean.

Insect pests of flour mills, elevators, granaries, warehouses, and bakeries and standard methods of dealing with them; inspection trips to flour mills and warehouses.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Horticultural Entomology. 2(2-0); I. Prerequisite: General Entomology. Dr. Parker.

The most important insect pests of orchard, garden, and forest, and standard methods of controlling their ravages.

203. General Entomology. 3(2-3); I, II. Prerequisite: General Zoölogy. Mr. Dean and Mr. Bryson.

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† Died November 11, 1929.
‡ Absent on leave to March 31, 1930.
|| Temporary appointment.

The elementary anatomy and physiology of insects, complete enough to give a thorough understanding of the life history and habits of the most important species and the general principles upon which the control of these economic forms is based; the more important general facts about insects as a class; main characters of the different orders and groups; how they survive and multiply; and why measures of control differ for different groups. Charge, $1.

206. General Economic Entomology. 3(2-3); II. Prerequisite: General Entomology. Mr. McColloch.

The life history of the more important economic insects of field crops, methods to be used in dealing with them, and the literature of economic entomology.

Laboratory.—Practical problems in insect surveys, control, rearing, collecting, and life histories, in the course of which the student gains a first-hand acquaintance with the more important injurious insects at home in nature. Charge, 50 cents.

211, 212. Insect Morphology I and II. 3(1-6) and 3(0-9), respectively; 211, I; 212, I or II. Prerequisites: For I, General Entomology; for II, course 211. Dr. Painter.

I: The external anatomy of representative insects belonging to a number of orders, the types studied being selected to present the essentials of the structure of the exoskeleton and to afford a basis for the courses in taxonomy and for professional studies in hexapod morphology. Charge, $1.

II: The internal anatomy of representative insects, the dissections of which present the general plan and structure of the internal systems; one conference each week, with assigned readings in selected texts and papers. Charge, $1.

216. Principles of Taxonomy. 1(1-0); II. Prerequisites: (1) For students taking course 217, courses 203 and 211; (2) for students taking General Zoölogy. This course must be taken with course 217 or with one of the taxonomic courses in zoölogy. Dr. Painter.

Fundamental principles of zoölogical taxonomy. In detail: Systems of classification; terminology of taxonomic groups; criteria of species and genera; binomial nomenclature, pre-Linnæan and modern nomenclature; international code of zoölogical nomenclature, and other codes; laws of priority; professional ethics and modern tendencies in taxonomy.

217, 218. Taxonomy of Insects I and II. 2(0-6) and 3(0-9), respectively; II each. Prerequisites: For I, General Entomology and Insect Morphology I. Principles of Taxonomy must be taken with this course. For II, Taxonomy of Insects I. Dr. Painter.

I: Practice in the determination of insects, at least of all the major orders to genera, sometimes species; an acquaintance with the most useful taxonomic literature in each group and the use of catalogues. Charge, $1.

II: A group is selected, and intensive study of the insects and literature of the group is made in order to become proficient in their determination. Charge, $1.

221. Advanced General Entomology. 3(3-0); II. Prerequisite: General Entomology. Mr. Wilbur.

A comprehensive view of the broad biological aspects of the subject and an understanding of the relation of insects to the complex of environmental factors; the various subdivisions of entomology correlated and used as a basis in the presentation of general principles as well as illustrating the problems of maintenance and the various ways in which insects have solved them.

226. Medical Entomology. 3(2-3); I. Prerequisites: General Entomology. Mr. Wilbur.

Insects and other arthropods as parasites and disseminators of diseases of man and domestic animals; the life cycles, biology and control of insect parasites.

Laboratory.—A detailed study in order to recognize the various stages of

the insect parasites of man and domestic animals; a study of the organisms of insect-borne diseases; house fumigation and observation of local sanitation problems bearing on the subject. Charge, $1.

227. Advanced Apiculture A. 3(2-3); SS. Prerequisite: Apiculture. Dr. Parker.

A continuation of apiculture. The principles of bee behavior studied under actual conditions during the active season; practical work in the manipulation of bees during the production of the honey crop, in swarm-control methods, and making increases in the colony; queen rearing. Charge, 50 cents.

228. Advanced Apiculture B. 3(2-3); I. Prerequisite: Apiculture or its equivalent. Dr. Parker.

A continuation of apiculture. The principles of bee behavior, and how these are related to practice of good beekeeping; preparation for wintering, feeding for winter, and winter protection; merits and demerits of different systems of wintering; extracting honey, preparing it for market, marketing, and other advanced subjects. Charge, 50 cents.

231. Entomological and Zoölogical Literature. 2(2-0); I. Prerequisite: General Entomology. Dr. Painter.

The literature of entomology which is inseparably associated with that of zoölogy and hence of equal importance to students of both subjects; general and special biographical sources; foreign and American scientific journals and serials; the construction of special bibliographies according to approved methods; a study of the biographies of leading world biologists of all ages and their publications, particularly of those in the College library. All advanced students of entomology and zoölogy are expected to take this course.

234. Insect Physiology. 2(2-0); given when requested by two or more students. Prerequisites: Insect Morphology II, Cytology or Histology, and Physiological Chemistry. Dr. Parker.

Physiology of the cell, respiration, metabolism, reproduction, muscular activity, nervous responses, sense organs and senses, circulation, glandular system, and the metamorphosis of insects.

235. Field Entomology. 2(0-6); I and SS. Prerequisite: General Entomology.

Study of insects in the field, methods of collecting, mounting, preserving, and rearing; identification of some of the commoner insects in the field; ecological phases stressed, especially with regard to communities and apparatus for measuring factors. Charge, $1.

236. Zoölogy and Entomology Seminar. 1(2-0); I and II. For prerequisites, consult seminar committee.

Presentation of original investigations, reviews of papers appearing in current journals, summaries of recent advances in various fields and discussion of various aspects of the fundamental problems of modern biology.

238. Entomological Problems. 2 to 4 credits; I and II. For prerequisites, consult instructors. Mr. Dean, Mr. McColloch, Dr. Parker, Dr. Painter, Mr. Bryson, and Mr. Wilbur.

Students having sufficient training may, with approval of the head of the department, pursue under the direct supervision of some members of the departmental staff a special problem in one of the following subjects: Insect life history, insect control, insect classification, apiculture, insects injurious to stored grain and milled products, and household insects.

FOR GRADUATE CREDIT

316. Research in Entomology. Prerequisites: (1) For research in taxonomy and morphology, Entomology 203, 211, 217, and Cytology; (2) for research in economic entomology, Entomology 203, 206, and 217. Mr. Dean, Mr. McColloch, Dr. Parker, Dr. Painter, Mr. Bryson, and Mr. Wilbur.

With the approval of the head of the department, advanced students having sufficient fundamental training may undertake original investigation in one of the following fields of entomology: Taxonomy, morphology, economic entomology. Such work is pursued under the direct supervision of some member of the departmental faculty and the final results, if of sufficient merit, may be used to fulfill the thesis requirement for the master's degree. If willing and capable, special students may be drawn into the research work of the Agricultural Experiment Station during the summer vacation and receive training in the investigation of economic problems.

Geology

Professor Sperry.

The courses offered in geology are designed to meet the needs of three kinds of students: The technical student in agriculture, civil engineering or chemistry who must know something of the relationship of geology to his particular field; the general student who desires some knowledge of the world about him, and who realizes the cultural and economic value of understanding his physical environment; and finally the student who wishes to major in geology.

The equipment consists of collections of rocks, fossils, and minerals and the laboratory instruments necessary to study these materials. The country around Manhattan, in addition to splendid Permian and Late Pennsylvanian invertebrate fossils, offers considerable variety of geologic phenomena such as limestone outcrops, sand dunes, glacial drift, a small volcanic plug, and the physiographic features characteristic of the prairie-plains. To take advantage of this outdoor laboratory, field trips are given in most courses as a regular part of the laboratory work.

COURSES IN GEOLOGY

FOR UNDERGRADUATE CREDIT

102. Engineering Geology. 4(3-3); I. Prerequisite: Chemistry 105, or equivalent. Mr. Sperry.

The general principles of geology and their application to engineering problems.

Laboratory.—Observation and description of the structural and dynamic features of this locality; the study of topographic and geologic maps. Charge, $1.50.

103. General Geology. 3(3-0); I and II. Three or four field trips are taken during the semester. Not open to students having credit in Geology 102. Prerequisite: High school or general chemistry. Mr. Sperry.

The structural and dynamic features of the earth; the rock-forming minerals; the rocks and their decay; a short history of the earth.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Historical Geology. 4(3-3); II. Prerequisites: Course 102 or 103. Mr. Sperry.

The procession of physical and biological events through which the earth has gone, with stress on the philosophical side of earth history.

Laboratory.—Collection and study of local fossils, and their application in the identification of the rock measures; study of museum specimens and of paleogeographic maps. Charge, $1.50.

207. Economic Geology. 4(3-3); I. Prerequisite: Course 103. Mr. Sperry.

The origin and mode of occurrence of nonmetallic minerals, including coal and petroleum, and of metallic mineral deposits.

Laboratory.—Identification and study of the ore-forming minerals; map studies of the economic areas. Charge, $1.50.

209. Crystallography and Mineralogy. 4(2-6); I. Prerequisite: General Chemistry. Mr. Sperry.
The fundamentals of crystallography and mineralogy.

Laboratory.—The measurement of crystal angles and the determination of crystal constants; identification of minerals by physical characters and with the blowpipe. Charge, $1.50.

210. Field Geology. SS. Credit to depend upon the amount of work done. Opportunity is offered students to do field work in the Rocky Mountains. Students interested should consult Mr. Sperry.

FOR GRADUATE CREDIT

301. Research in Geology. Credit to be arranged; I and II.
Students with adequate preparation may undertake original investigations in geology.

History and Government

Professor Price
Professor Iles
Professor James
Associate Professor Correll
Associate Professor Shannon
Associate Professor Williams
Associate Professor Parrish
Assistant Professor Alsop

Training for citizenship, breadth of view, historic-mindedness, fairness of judgment and general culture are constant and specific aims of each course offered by the Department of History and Government. As a result of the training received in these courses the student is better prepared to understand and appreciate the institutions in the midst of which he lives and of which he is a part. He is also prepared to act more wisely his part as a leader in good citizenship wherever his lot may be cast. In our modern age and self-governing nation, and in an institution supported by the state and nation, it would seem to be the imperative duty of every student to secure specific training for wise and effective leadership in the governmental affairs of the state and nation that are thus preparing him for life and its duties.
Equipment valued at $1,006 is owned by this department.

COURSES IN HISTORY

FOR UNDERGRADUATE STUDY

101. Ancient Civilizations. 3(3-0); II and SS. Mr. Parrish.
The beginnings and growth of western culture; early civilizations of the Near East and Mediterranean regions, from the rise of Egypt and Babylonia to the decline of the Roman Empire (395 A.D.). Special attention is given to the achievements of the Greeks and Romans.

102. Medieval Europe. 3(3-0); I and SS. Mr. Parrish.
The development of civilization in Europe from the decline of the Roman Empire (395 A.D.) to the discovery of the new world (1500 A.D.). Changes which laid the foundation for modern Europe: Interaction of forces of Roman Empire, organized Christianity, barbarians, Islam, Arabic and Byzantine culture; monasticism, feudalism; beginnings of modern states; universities and cathedrals; towns and trade; the intellectual awakening and a new world.

103. American History Lectures. 0(2-0); SS. Mr. Price.
A series of lectures on American history; no recitations and no examinations.

105. American Industrial History. 3(3-0); I, II, and SS. Not open for credit to students who have credit in course 203. Dr. Shannon.
History of American agriculture, manufactures, and commerce with related activities from their colonial beginnings to the present; survey of the physical

basis of American history, the growth of population and its expansion across the continent, and the reflection of these things on our industrial, social and political life; European developments, as a side light on American history; growth of our national industrial organization and its present-day aspects.

110. History of Commerce and Industry. 3(3-0); I. Dr. Shannon.
The evolution of industry and commerce from primitive beginnings to present-day organization traced in broad outline, and economic survey of world history, with special stress on the modern period.

115. Modern Europe I. 3(3-0); I or II. Miss Alsop.
The evolution of modern institutions from the renaissance to the opening of the nineteenth century, the principal movements being the commercial revolution through which European trade turned from Mediterranean to Atlantic ports; the Reformation; the earlier phases of the development of political democracy through the Puritan revolt in England and the French Revolution; and the Napoleonic era.

121. English History. 3(3-0); I, II, and SS. Mr. James.
A general survey of the whole field of English history, including the outlines of political history and the essentials of English constitutional development and stressing the development of the empire, the English background of American history, and the industrial and social development of the English people.

126. Current History. 1(1-0); I, II, and SS. May not be taken more than four semesters for credit. Mr. Price, Mr. Iles, Mr. James, Mr. Correll, Dr. Shannon, Mr. Williams, Mr. Parrish, and Miss Alsop.
The essentials of American and foreign governments, of international relations, of international law, of biography, of industrial developments, and of the larger world issues as they appear in current news reports giving a wide outlook on the world of to-day and a better understanding of conditions and institutions in the midst of which we live.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. American History I. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Price.
Beginning of the American nation: The origin and development of American nationality and democracy to the end of the War of 1812, with special stress on the industrial phases, but including our constitutional and political development, with the European background in each case.

202. American History II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Price.
Western expansion and sectionalism: The industrial conditions, the political issues, and the leaders of the middle period of our history, from the close of the War of 1812 to the Civil War.

203. American History III. 3(3-0); II and SS. Prerequisite, when taken for graduate credit: Course 105, 201, or 202.
The new industrial age: Review of the industrial conditions in America just before the Civil War; industrial effects of that war; the political and governmental activities of the last half century in the light of the industrial conditions and developments of that period.

204. American Agricultural History. 3(3-0); I. Prerequisite, when taken for graduate credit: Three credits of college history. Dr. Shannon.
European background and Indian beginnings; agricultural development during the colonial period; the westward movement into the prairie regions of the Mississippi valley, with the distinctive American developments in methods, live stock, and especially farm machinery; the last quarter century with its varied industries, more intensive farming, and higher cost of living.

206. American Political Parties. 2(2-0); I. Intended to supplement

course 105 or 204. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Iles.

Origin, development, leaders, and function of political parties in America; issues and results of the more important presidential elections; growth of nationality and development of self-government through American history, with special reference to present tendencies.

207. Latin America. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. James.

History, government, and industrial and social conditions of Mexico, Central America, and the South American nations; the interrelations of each of these and the United States; particular attention given to contemporary Latin America.

223. Modern Europe II. 3(3-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 115. Mr. Parrish.

Evolution of the modern European nations since 1814, with special attention to political organization, industrial development and colonial expansion; political problems and social and economic adjustments due to the Great War.

224. Twentieth Century Europe. 2(2-0); I, II, and SS. Prerequisite, when taken for graduate credit: Course 223. Mr. Correll.

The causes of the World War; the nations that entered it and why; the war; the making of the treaty, and its provisions; the League of Nations; and postwar reconstruction.

225. History of the Home. 3(3-0); II. Prerequisite, when taken for graduate credit: Three credits of college history. Miss Alsop.

The primitive family; the Hebrew family; family life of the Greeks and of the Romans; the home and family life during the Middle Ages, including the influence of the Christian church; the English family in the seventeenth and eighteenth centuries; the American colonial home; the industrial revolution and its effects upon family life; the family during the nineteenth century; the present situation and tendencies.

226. The British Empire. 2(2-0); II and SS. Prerequisite: For undergraduates, entrance credit in English history or three credits of college history; for graduate credit, the latter. Mr. James.

The English phase of the European expansion movement, with consideration to the forces and influences promoting the "swarming of the English" overseas; growth and development of the English provinces into self-governing colonies and the union of these into practically independent dominions; the drawing together of the widely scattered English people into a British commonwealth of nations, and the significance of this fact in the struggle for democracy.

228. Immigration and International Relations. 2(2-0); I and SS. Prerequisite, when taken for graduate credit: Three credits of college history. Mr. Price.

Causes and effects—economic, social, and political—of the coming of the foreigner to our shores, from the colonial period to the present, with special reference to the recent changes as to the character of the immigrants and as to the conditions in Europe and in America that affect the number and quality of immigrants; a clear survey of the important epochs in our diplomatic history.

229. History of the Far East. 2(2-0); I. Prerequisite, when taken for graduate credit; three credits of college history. Mr. Parrish.

Rise, development and spread of Chinese civilization in the Far East; achievements in politics, economics, philosophy, science, art, literature; impact of the modern West, including United States; special attention is given to China's economic, social and diplomatic problems since 1840; rise of Japan; partial dismemberment of China under the Manchus, and rise of the republic; new role of China and of Japan in world commerce, trade and politics.

231. History of Religions. 2(2-0); I or II, and SS. Prerequisite, when taken for graduate credit: 3 credits of college history. Mr. Parrish.

Rise and growth of historic religions which influence most of the peoples of the world to-day; relation of each religion to race, physical environment, and advance in culture; the leading personalities, religious conceptions, and historic events and movements which modify life and thought in Hinduism, Buddhism, Confucianism, Taoism, Zoroastrianism, Mohammedanism, Judaism, and Christianity.

232. Problems in History Instruction. 2(2-0); SS. May be taken for three graduate credits, in which case ten credits in history and nine credits in education are prerequisites, and a series of problems must be worked out from first-hand material. Mr. Iles or Dr. Shannon.

The different texts in history and civics critically compared as to points of excellence or weakness, including lectures on the content and viewpoint of each; the best available illustrative material and helps in the teaching of history and civics; evolution in the writing of history; the growing importance of history and civics in the modern school curriculum; the improving viewpoint as to content of both the history and civics courses; for the more advanced students, special attention to the bibliography of history, to the better known collections of sources, and to the more approved methods of taking and using notes in teaching history.

250. Seminar in History and Government. 2 to 5 credits; I, II, and SS. Prerequisite: Six credits of college history of a type that will serve as a proper background for the subject to be studied. Mr. Price, Mr. Iles, Mr. James, Mr. Correll, Dr. Shannon, and Mr. Parrish.

Preference to special fields connected with the history of agriculture, of industry, or of commerce, though other fields may be studied at the discretion of the department.

FOR GRADUATE CREDIT

301. Research in History. 1 to 6 credits; I, II, and SS. For prerequisites, consult instructor. Mr. Price, Mr. Iles, Mr. James, Mr. Correll, Dr. Shannon, and Mr. Parrish.

Individual research problems in European or American history, including international relations. Conclusions will generally take the form of a thesis.

COURSES IN GOVERNMENT

FOR UNDERGRADUATE CREDIT

151. American Government. 3(3-0); I, II, and SS. Not open to students having credit in History and Government 152 or 153. Mr. Iles.

A definite review of the fundamental principles and operations of our state and national governments, including the principles of constitutional law, but giving special emphasis to present-day conditions and movements in our governmental and political life.

152. American National Government. 3(3-0); I. No credit for students having credit in course 151. Mr. Iles.

The mechanism, functions, and control of the government of the United States, with considerable attention to principles and problems. With course 153, this course affords a comprehensive study of American national, state, and local government.

153. American State Government. 3(3-0); II. No credit for students having credit in course 151. Mr. Iles.

State and local government, with special attention to functions and problems.

155. Our National and State Constitutions. 2(2-0); SS. Mr. Iles and Mr. Williams.

The state texts, supplemented by an abundance of illustrative material intended to be specifically useful in presenting the subject to pupils. For teachers required by law to teach the constitution of the United States; of value also to those preparing for a course in law.

160. Commercial Law. 1(1-0); I. Mr. Williams.
The elementary principles of contracts, agency, sales, and negotiable instruments. Business Law A may be substituted for Commercial Law, where the requirements of the curricula permit, and the extra credit used as an elective.

163, 164. Business Law I and II. 3(3-0) each. Prerequisite for II: Course 163 or 167. Mr. Williams.
I: Contracts, agency, and sales.
II: Negotiable instruments, partnership, and corporations.

167. Law for Engineers. 2(2-0); I and II. Mr. Williams.
A study, chiefly through cases, of such rules of law as will prove most useful to engineers and architects, with special emphasis on the law of contracts.

175. Farm Law. 2(2-0); I. Offered 1929-'30 and alternate years thereafter. Not open to students having credit in Business Law I or II. Mr. Williams.
A study of the particular rules in various branches of the law, such as property (including deeds, mortgages, the relation of landlord and tenant) contracts, negotiable instruments, sales, agency, insurance, and police regulation, a knowledge of which is most useful to the conduct of the business of a farmer.

FOR GRADUATE AND UNDERGRADUATE CREDIT

252. Comparative Government. 2(2-0); I or II, and SS. Mr. Iles.
The leading features, especially with regard to administration, of certain European governments such as England, France, and Germany, and a comparison of essential feature with government in the United States. (A supplement to the course in American Government.)

256. International Law. 2(2-0); II. Mr. James.
Fundamental principles of international law and international relations; public and private rights and obligations in time of peace and in time of war, especially in the light of recent developments, such as the Hague conference.

260. Government Regulation of Business. 2(2-0); II. Prerequisite, when taken for graduate credit: Course 151, 161, or 163. Mr. Williams.
Government powers; trade regulations; labor unions; protection of debtors; business affected with a public interest; conservation of natural resources; vested rights; confiscatory legislation; and certain positive governmental activities.

276. Land Law. 2(2-0); I or II. Planned to supplement Agricultural Land Problems (Ag. Ec. 218.) Mr. Williams.
The estates, interests, and rights in land, including relation of landlord and tenant, future interests, joint estates, easements, equitable interests, and mortgages; acquisition of land, including conveyances, descent, devise, adverse possession; notice of rights of power owner or incumbrancer, including notice by recording, notice by possession, etc.

FOR GRADUATE CREDIT

351. Research in Government. 1 to 6 credits; I, II, and SS. For Prerequisites in each case, consult instructor. Mr. Price, Mr. Iles, Mr. James, Dr. Shannon, and Mr. Williams.
Individual research problems in national or local government, American or European, including studies in comparative government or international law. The conclusions generally take the form of a thesis.

Industrial Journalism and Printing

Professor Rogers
Professor Keith
Assistant Professor Amos
Assistant Professor Charles
Assistant Professor Boughner
Instructor Thackrey

The work in industrial journalism and printing is designed to accomplish two purposes—the preparation of students in other fields to do occasional writing for newspapers and other periodicals on subjects of special interest; and the training of students fundamentally interested in journalism for positions on farm journals, newspapers and other publications, particularly where writing on agriculture and other industrial subjects is in demand. The instruction considers the requirements of newspapers, agricultural papers, trade publications, and general magazines, and the ethical problems of the profession of journalism. *The Kansas Industrialist,* the official paper of the College, is under the editorial and mechanical direction of the department. The office of *The Kansas State Collegian,* the student semiweekly newspaper, is in the department practice room. *The Brown Bull,* a humorous magazine is published by students in the department. Students write also for general newspapers, farm journals, and magazines.

Attention is given to the mechanical side of the profession in the instruction in printing, which is required of all students taking the curriculum in industrial journalism. Printing has been taught in the institution continuously since 1873—the longest period during which instruction in the subject has been given in any American college.

The equipment for instruction in journalism and printing is that of a practical publishing and printing plant. This department owns equipment valued at $14,785.

A large amount of timely agricultural and other information is furnished regularly to Kansas newspapers, farm journals, and other publications. Special assignments are covered for these periodicals, and special inquiries are answered.

All students enrolled in the curriculum in industrial journalism and all students electing journalism practice or laboratory courses pay a laboratory charge of $1.50 a semester.

COURSES IN PRINTING

FOR UNDERGRADUATE CREDIT

101. Principles of Typography. 3(2-3); I and II. Mr. Amos.

The case, the point system, and the measurement of type and stock; the history of printing; development of the various typographic styles; practice in setting straight matter, with emphasis on accuracy. Type faces and the typography of advertisements and head display; principles of effective make-up.

108, 111, 112. Ad. Composition, I, II and III. 2(0-6) each; I and II each. Prerequisites: For I, course 101; for II, course 108; for III, course 111. Mr. Amos.

I: Principles of display and design as applied to newspaper and magazine advertisements; practical work in setting ads. for magazines.

II and III: Course 108 continued; more complicated work studied.

114, 118, 120. Job Composition I, II and III. 2(0-6) each; I and II each. Prerequisites: For I, course 101; for II, course 114; and for III, course 118. Mr. Amos.

I: Emphasis on differences in requirements for job composition and ad. composition; proper selection of type faces, borders, and ornaments; setting jobs and locking them up for the pressroom.

II and III: Color work, tabular forms, and other complicated kinds of job work.

122, 126. Platen Press Work I and II. 2(0-6) each; I and II each. Prerequisites: For I, course 108 or 114; for II, course 122. Mr. Amos.

I: Practical platen presswork under ordinary printing-office conditions; feeding of the press and preparation of the jobs by the student; selection of inks and care of printing rollers.

II: I continued, with more advanced work in mixing inks and in color work.

131, 136. Cylinder Press Work I and II. 2(0-6) each; I and II each. Prerequisites: For I, course 126; for II, course 131. Mr. Amos.

I: The fundamentals for work on all kinds of cylinder presses; how to make the work ready and how to feed; the general care and handling of cylinder presses.

II: A continuation of Cylinder Presswork I.

COURSES IN INDUSTRIAL JOURNALISM

FOR UNDERGRADUATE CREDIT

141, 142. Pre-Journalism Lectures I and II. 1(1-0) and 1(1-0); I and II, respectively. Mr. Rogers.

I. Examination and description of the publishing field, the daily newspaper, press services and syndicates, the weekly newspaper, the trade and business press, the agricultural press, preparatory to entering professional courses in journalism.

II. Continuation of I. Women in journalism, the field of advertising, circulation, magazines, free-lance writing, information services, the printing trades, photography and art, accounting and executive work.

151. Elementary Journalism. 2(2-0); I and SS. Prerequisites: Courses 141 and 142. Mrs. Boughner.

Methods of obtaining news of various types, the writing of the lead, and the general styles of the news story.

160. Agricultural Journalism. 3(2-3); I and II. Mr. Charles.

The course is intended to supply sufficient knowledge of the principles of news writing as applied to agriculture to enable students in agriculture to become occasional contributors to newspapers and farm journals. Much practice given in agricultural writing.

161. Industrial Writing. 2(2-0); I. Prerequisite: Course 151. Mrs. Boughner and Mr. Thackrey.

Application of the principles of journalism to the treatment of industrial subjects, such as are found in agriculture, engineering, home economics, and more general scientific research.

163. Advanced Reporting. 3(3-0); I. Prerequisite: Course 161. Mrs. Boughner and Mr. Thackrey.

Recitation and practice covering the work of the reporter in connection with local, state, and national government; the reporting of conventions, exhibitions, and large public gatherings. Special assignments in connection with industrial and scientific news. (For students who are familiar with the fundamentals of news reporting.)

167. Industrial Feature Writing. 2(2-0); I and SS. Prerequisite: Course 161. Mr. Rogers.

The feature article; its underlying principles applied to writing on agricultural and other industrial subjects; demands of newspapers, farm journals, and general magazines for writing of this character; agricultural journals, trade journals, and other publications of highly specialized character; actual writing for publications of these types and submission of material to editors.

172. Journalism for Women. 2(2-0); II. Prerequisite: Course 167. Mrs. Boughner.

A course for women students in news and feature writing for women's pages and women's magazines, and consideration of specialized fields for the woman writer.

179. Principles of Advertising. 3(3-0); I and II. Prerequisites: For in-

dustrial journalism students, course 161; for commerce students, Written and Oral Salesmanship. Mr. Keith.

Study of the goods to be advertised, analysis of the market, psychology of advertising, preparation of advertising copy, and other important matters; application of the principles involved.

181. The Rural Press. 2(2-0); I and II. Prerequisite: Course 151. Mr. Charles.

Nature and needs of the community newspaper, with emphasis on its presentation of the agriculture and rural life in its field; actual writing of news stories and items gathered on the campus for publication in Kansas community newspapers.

183. News Bureau Methods. 2(2-0); I. Mr. Charles.

A study of publicity methods, accepted and condemned practices, the psychology of the press agent's copy, its effect on the editor and the reader. Lecture and recitation supplemented with practice writing for the College news bureau.

FOR GRADUATE AND UNDERGRADUATE CREDIT

220, 221. Advertising Practice I and II. 2(2-0) each; II and I respectively. Prerequisites: For I, course 179; for II, course 220. Mrs. Boughner.

I: Practice in advertising writing, with special attention to copy and display problems; practical problems in the advertising of student activities and of local merchants; actual commercial work.

II: Making of layouts and consideration of advertising production methods such as art work, typography, engraving processes.

251A. Circulation and Advertising Promotion. 2(2-0); I. Prerequisite: Course 171 or equivalent. Mr. Keith.

Building up of circulation of periodical publications; soliciting of advertising; premiums and other plans for increasing circulation; the advertising agency, circulation analysis, and the fixing of advertising rates.

254. Copy Reading. 2(0-6); II. Prerequisite: Course 163. Mr. Charles, Mrs. Boughner, and Mr. Thackrey.

Practice in the work required of a copy reader, whether on a newspaper, an agricultural journal, or some other publication.

255. Contemporary Thought. 3(3-0); I. Prerequisite: Course 254. Mr. Rogers.

Correlation and unification of various subjects previously pursued in college; unbiased presentation of contemporary development and contemporary figures in science, the arts, and philosophy.

257. Editorial Practice. 2(2-0); I. Prerequisite: Course 254. Mrs. Boughner.

The writing of editorials suitable for farm papers, trade papers, and newspapers; the shaping of editorial policies.

260. Ethics of Journalism. 2(2-0); II. Prerequisite: Course 255. Mr. Rogers.

The ethics of journalism as exemplified in the use of contributed matter, in the work of the reporter or staff writer, in the editorial conduct of the paper, and in the handling of circulation and advertising; federal and state laws relating to periodical publications, to advertising, to libel, and to author's rights.

265. Materials of Journalism. 2(2-0); I. Mr. Charles.

The principal newspapers and magazines; accuracy and adequacy of news reports and other published matter; materials handled by the publications; methods of treatment; character of editorial comment.

270. Magazine Features. 2(2-0); I, II, and SS. Prerequisite: Permission of the instructor. Mr. Rogers and Mrs. Boughner.

The matter of the course is varied to suit the needs and desires of the students, emphasis being laid upon such types of magazine writing as members of the class wish to practice.

274. History of Journalism. 2(2-0); I. Prerequisite: One semester of college American History. Mrs. Boughner.

The history of journalism from its beginning and the history of printing as far as this is concerned with periodical publications.

278. Journalism Surveys. 2(0-6); II. Mr. Rogers and Mrs. Boughner.

Careful investigation of the periodical reading matter of communities; tabulation of information obtained; relation of the reading matter to the industrial, economic, social and moral life of the communities.

282. Column Conducting. 2(2-0); II, when requested by a sufficient number. Mr. Davis, of the Department of English.

The conducting of the so-called column, humorous or semiserious; writing paragraphs, light verse, and similar material, with stress on practice in writing humor.

287. Current Periodicals. 3(3-0); II. Mrs. Boughner.

The material contained by current periodicals of various types, and the nature of its appeal to the reader.

FOR GRADUATE CREDIT

351. Research in Industrial Journalism. 2 to 5 credits: I and II. Mr. Rogers.

Several courses embodying creative literary work or detailed research in specialized journalism are arranged to meet the specific needs and desires of the individual graduate students.

Library Economics

Librarian Smith
Associate Librarian Derby
Acting Reference Librarian Davis
Loan Librarian Camp
Reference Assistant Swenson
General Assistant Hoff
Loan Assistant Cullipher

The Library supplements the work of every department of the College. It is a storehouse of knowledge for every student. It supplies information and the latest results of scientific research for every instructor. The Library is thus essential to the College, forming, as it were, a center from which its various activities radiate.

In order that the Library may perform its functions with the highest degree of efficiency it is necessary that instruction be given regarding its use. With this thought in mind a course is offered, the purpose of which is to familiarize the student with scientific, up-to-date methods in the use of books and to acquaint him with the best general reference books as well as with standard works on various subjects. Placed at the beginning of his College course it should tend to increase largely his efficiency in study throughout the entire course.

The books and pamphlets in the library are valued at $280,919; other equipment has a value of $58,738.

COURSES IN LIBRARY ECONOMICS

FOR UNDERGRADUATE CREDIT

101. Library Methods. 1(1-0); I and II. Miss Derby, Miss Hoff, Miss Davis, Miss Camp, Miss Swenson, and Miss Cullipher.

Classification and arrangement of books in the library; card catalogues; the principal works of reference, such as dictionaries, encyclopedias, atlases, and standard works in history, literature, economics, quotations, statistics, etc.; public documents and their indexes; indexes to periodicals, etc.; methods of indexing current reading for purposes of future reference.

Mathematics

Professor Remick
Professor White
Professor Stratton*
Associate Professor Hyde
Associate Professor Lewis
Associate Professor Lyons
Assistant Professor Janes
Assistant Professor Mossman*
Assistant Professor Holroyd
Instructor Eldridge
Instructor Porter
Instructor Battig
Instructor Evans

In an institution that stands as an exponent of the industrial type of education, mathematics should occupy an important place. Training in this exact science is valuable not only for its own sake but also on account of its manifold applications. On this basis the courses in mathematics are offered primarily with the following ends in view: (1) The attainment of mental power and accuracy in the interest both of general culture and special application; (2) the acquirement of facts and processes that will provide the student with an indispensable tool for further scientific and technical study.

As several of the curricula of the College are formulated on the assumption that a half-year of solid geometry will have been taken in high school, classes in this subject are provided for students who are deficient in this respect. College credit on electives is allowed for this work.

The equipment owned by this department is valued at $810.

COURSES IN MATHEMATICS

FOR UNDERGRADUATE CREDIT

101. Plane Trigonometry. 3(3-0); I, II, and SS. Prerequisites: Plane geometry and one and one-half years of high-school algebra. Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, Mr. Porter, Miss Eldridge, Mr. Battig, and Mr. Evans.

Functions of acute right triangles, goniometry, oblique triangles, practical problems.

102. Solid Geometry. 2(2-0); I, II, and SS. Prerequisites: Plane geometry and one year of high-school algebra. Mr. Lewis, Mr. Janes, Miss Holroyd, Mr. Porter, Miss Eldridge, and Mr. Evans.

Principal theorems, numerical exercises, and mensurational problems

104. College Algebra. 3(3-0); I, II, and SS. Duplicates latter part of Math. 107. Prerequisites: Plane geometry and one and one-half years of high-school algebra. Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, Mr. Porter, Miss Eldridge, Mr. Battig, and Mr. Evans.

Elementary topics, functions and their graphs, and quadratic equations rapidly reviewed; complex numbers, theory of equations, permutations and combinations, partial fractions, logarithms, and determinants.

107. College Algebra A. 5(5-0); I, II, and SS. Includes Math. 105. Prerequisite: Plane geometry and one year of high-school algebra. Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, Miss Holroyd, Mr. Janes, Miss Mossman, Mr. Porter, Miss Eldridge, Mr. Battig, and Mr. Evans.

Brief review of elementary subjects; a thorough treatment of quadratics, ratio, proportion, progressions, and the binomial theorem for positive exponents; the chief content of course 104.

110. Plane Analytical Geometry. 4(4-0); I, II, and SS. Prerequisites: Plane Trigonometry and College Algebra. Mr. White, Mr. Stratton, Miss Hyde, Mr. Lyons, Mr. Lewis, Mr. Janes, Miss Mossman, and Mr. Battig.

Coördinate systems, projections, loci, straight line conics, parametric and empirical equations, with a discussion of the general equation of the second degree.

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* Absent on leave, year 1929-'30.

119. Calculus. 3(3-0); I. Not open to students who have credit in Math. 205. Prerequisite: Plane Analytical Geometry. Mr. Remick, Mr. Stratton, and Mr. Lyons.

Brief treatment of the fundamental principles of both branches of calculus; practice with the standard formulas of differentiation and their application to geometry and mechanics; integration of the usual elementary forms; the idea of the definite integral and a few of the more important applications.

122. Special Methods in the Teaching of Mathematics. 3(3-0); II. Miss Hyde.

Best methods of teaching arithmetic, algebra, and geometry; the reports of prominent mathematical organizations, especially those of the international commission; comparison of the curricula of different schools; an examination of books and articles of the teaching of mathematics; emphasis on pedagogical questions, with some reference to the historical development of elementary mathematics.

123. Special Methods in Arithmetic. 2(2-0); SS. Miss Holroyd.

Best methods of presenting the various topics; use of standardized and practice tests; supplementary work; best method of adapting the state test to the minds of the pupils, etc.

126. Elements of Statistics. 3(3-0); I. Not open to students having credit in Educ. 223. Mr. White.

The parts of algebra most needed as a basis for statistical work; development of the elementary principles used in analysis of statistical data.

129. Survey Course in Mathematics. 3(3-0); II. Prerequisites: Trigonometry and College Algebra. Mr. Stratton.

A general culture course designed to give an insight into the nature and function of mathematics beyond the elementary field. Essential ideas of analytical geometry and calculus with applications.

150. Mathematics of Investment. 3(3-0); I and II. Prerequisite: Accounting II (Econ. 134). Mr. Stewart, from Department of Economics and Sociology.

Problems relating to interest, annuities, sinking funds, amortization and valuation of bonds, depreciation, building and loan, and life insurance.

FOR GRADUATE AND UNDERGRADUATE CREDIT

The following courses are available on request by a sufficient number of students. Numbers 201, 203, 205, 206, 210, 213, and 216 are offered each year.

201. Differential Equations. 3(3-0); I. Prerequisite: Calculus II. Mr. Remick.

The various standard types of differential equations, with the usual applications.

203. Theory of Statistics. 3(3-0); II. Prerequisite: Elements of Statistics, or equivalent. Mr. White.

The theory of probability applied to statistical problems; statistical curves, correlation theory, curve fitting, and problems of random sampling; actual practice with data from biology, agronomy, physics, etc.

204. Method of Least Squares and Theory of Measurement. 2(2-0); II. Prerequisite: Calculus II. Mr. Remick and Mr. White.

The law of errors based on the theory of probability and the probability curve; adjustment of observations by the method of least squares, development of precision measures; distribution of errors; and Gauss's method of substitution in the solution of normal equation.

205. Calculus I. 5(5-0); I, II, and SS. Open for only two hours credit to students who have credit in Math. 119. Prerequisite: Plane Analytical Geometry. Mr. Remick, Mr. White, Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, and Mr. Janes.

The usual topics of differential calculus, with integration of standard forms, definite integrals, rational fractions, and integration by parts.

206. Calculus II. 3(-0); I. Prerequisite: Calculus I. Mr. Remick, Mr. White, Mr. Stratton, Miss Hyde, Mr. Lewis, Mr. Lyons, and Mr. Janes.
Problems involving areas, lengths, surfaces, and volumes treated by processes of single integration; idea of successive and partial integration applied to areas, moments, centers of gravity, surfaces, volumes, etc.; types of differential equations most frequently met subsequently by the student of engineering.

206A. Calculus IIA. 4(4-0); I and II. Prerequisite: Calculus I. Mr. Remick, Mr. White, Miss Hyde, Mr. Lewis, Mr. Lyons, and Mr. Janes.
Similar to course 206 with the addition of a brief statement of some of the more common types of differential equations likely to be met in engineering applications.

207. Solid Analytical Geometry. 3(3-0); II. Prerequisites: Courses 110 and 206. Mr. White.
Coördinates of points in space and their transformation involving discussion of lines and planes; standard types of quadratic surfaces, their classification and principal properties.

210. Advanced Calculus I. 3(3-0); I. Prerequisite: Calculus II. Mr. White and Mr. Lyons.
Special topics in integral calculus, including various methods of integrating elementary forms, definite integrals with attention to gamma and beta functions, and applications to lengths and areas.

213. Advanced Calculus II. 3(3-0); II. Prerequisite: Course 210. Mr. White and Mr. Lyons.
Continuation of course 210, including further application to geometry and mechanics, a treatment of line, surface, and space integrals, and a discussion of elliptic integrals.

216. Theory of Equations. 3(3-0); I. Prerequisite: Calculus II. Mr. Remick.
The elements of the classical theory including the general cubic and quartic equation and the complete solution of numerical equations; discussion of symmetric functions, resultants, and discriminants.

FOR GRADUATE CREDIT

The following courses are available by appointment:

301. Theory of Functions of a Complex Variable. 3(3-0); II. Prerequisites: Advanced Calculus II and Differential Equations. Mr. Remick.
An introductory course with the usual line of topics.

306. Theoretical Mechanics. 3(3-0); I. Prerequisite: Calculus II. Mr. Stratton.
Mechanics in its relation to mathematical analysis.

311. Projective Geometry. 3(3-0); II. Prerequisite: Course 110. Mr. White.
The fundamental forms, projective relations, point rows, and pencils of the second order, poles and polars, properties of conics and involution.

316. Advanced Differential Equations. 3(3-0); I. Prerequisite: Course 201. Mr. Remick.
Treatment of special topics, such as the equations of Legendre, Bessel, and Ricatti, with applications.

321. Lie Theory of Differential Equations. 3(3-0); II. Prerequisite: Course 201. Mr. Remick.
Lie's theory of one-parameter groups, with special reference to its application to the solution of the various types of differential equations.

326. Calculus of Variations. 3(3-0); I. Prerequisite: Course 201. Mr. Remick.

Some of the standard problems of maxima and minima wherein a definite integral affords the fundamental form of expression.

331. Mathematical Research. Credit and hours of work arranged in consultation with the head of the department; I and II. Required of all candidates for the master's degree whose major work is in the Department of Mathematics.

Military Science and Tactics

Professor Petty, Colonel Inf., U. S. A.
Associate Professor Humphreys,* Maj. C. A. C., U. S. A.
Associate Professor Bowen, Capt. Inf., U. S. A.
Assistant Professor Stewart,† Capt. C. A. C., U. S. A.
Assistant Professor Young, Capt. C. A. C., U. S. A.
Assistant Professor Van Tuyl, Capt. V. C., U. S. A.
Assistant Professor Rose, Capt. Inf., U. S. A.
Assistant Professor Madison, First Lieut. C. A. C., U. S. A.
Assistant Professor Myrah,‡ First Lieut. C. A. C., U. S. A.
Assistant Professor Marshall, First Lieut. Inf., U. S. A.
Military Property Custodian Claeren, Major D. E. O.
Instructor Coffee, First Sergeant C. A. C., U. S. A.
Instructor Connolly, Staff Sergeant Cav., U. S. A.
Instructor Pugh, Sergeant Inf., U. S. A.
Instructor Wilson, Sergeant C. A. C., U. S. A.

Since this College is one of the beneficiaries of the act of congress of 1862, military tactics is required in the College curricula. All male students, not physically disqualified, are required to take military training three hours a week for two years. Students entering with 25 hours of advanced credit are excused from one year of military training; those entering with 59 hours of advanced credit are excused from all military requirements.

Requests for excuse from military science, or for postponement of the work, are acted upon by the president of the College. Such requests are presented through the student's dean, and the president obtains the advice of the professor of military science and tactics, who thoroughly investigates each case on its merits and makes his recommendation to the president. Requests based on physical condition must be accompanied by a recommendation made by the College physician. Students excused from military science for any reason are assiged to an equivalent amount of some other College work instead. Students permitted to postpone military science are not thereby excused, but must take it up later.

Students enrolling in military courses who were members of junior units, R. O. T. C., at military academies or high schools, or those receiving military training while enrolled in government-aided schools (section 55c, national defense act, and section 1225, Revised Statutes) may apply for advanced credit examinations on the basis of one semester for each year of training at a high school or government-aided school; provided there is stationed at these schools a regular officer of the United States Army; and provided further, that no credit will be given beyond the basic course, which comprises the first four semesters of the College curricula (freshman and sophomore years). (See "Advanced Credits.")

The act of congress of June 3, 1916, known as the national defense act, provides for the establishment in civil institutions of a Reserve Officers' Training Corps (R. O. T. C.).

The object of this provision is stated as follows:

"The primary object of establishing units of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, students at civil institutions for reserve officers. The system of instruction, herein prescribed, presents to these students a standard measure of that military training

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* From November 21, 1929.
† On sick leave after November 29, 1929.
‡ From January 24, 1930.

which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

"Units of the senior division may be organized at civil institutions which require four years of collegiate study for a degree, including state universities and those state institutions that are required to provide instruction in military tactics under the provisions of the act of congress approved July 2, 1862, donating lands for the establishment of colleges where the leading object shall be practical instruction in agriculture and the mechanic arts, including military tactics.

"Units of the junior division may be organized at any other public or private educational institution."

An infantry unit, a coast artillery unit, and a veterinary unit of the Reserve Officers' Training Corps have been established in this College.

Members of the R. O. T. C. will receive the benefits mentioned below:

1. Senior Division, Basic Course (freshmen, sophomores). Each student of these classes will be furnished with complete uniform, and equipment for his use during the course. The articles remain the property of the United States and must be accounted for and turned in by each student at the close of each college year or upon withdrawal from the R. O. T. C. Shoes are not furnished. Each student will provide himself with a pair of high tan shoes (not laced boots), before entering College, as they will be required immediately upon his admission.

A laboratory fee of 35 cents per semester is charged all students assigned to military training.

Corporals are selected from sophomores and specially qualified freshmen.

2. Senior Division, Advanced Course. (Students who have completed the two years' Basic Course.) The student who continues in the R. O. T. C. after completing the Basic Course will receive the following benefits:

He will receive a special uniform allowance.

He will receive commutation of subsistence at the rate of 30 cents per day, provided he executes an agreement to complete the Advanced Course, or to continue in the course during the remainder of his time in College, and to take the course in camp training during such period as prescribed by the Secretary of War. The camps referred to involve no expense on the part of the student. In addition, a complete summer uniform will be issued and he will be paid at the rate of 70 cents per day for not to exceed six weeks, and five cents per mile to and from camp to cover travel expenses.

After graduation he will be eligible for appointment by the President of the United States as a reserve officer of the army, and if so appointed he may, under certain conditions, be appointed and commissioned a second lieutenant in the regular army with pay at the rate of $125 per month, with the usual allowances. (Ration allowance is $18 and allowance for quarters, $40 per month.)

In order to elect the Advanced Course, R. O. T. C., a student must have the recommendation of the president of the College, his dean, and the professor of military science and tactics.

The corps of cadets at present is organized as one regiment. A military band is also provided for, the members of which must be thoroughly trained in military tactics. Assignments to the military band are made upon recommendation of the bandmaster, who has charge of the technical instruction.

Officers and higher noncommissioned officers are selected from the students taking the Advanced Course, R. O. T. C., according to class standing. This selection is made from among those cadets who have been most studious and soldierlike in the performance of their duties, and the most exemplary in their general deportment.

Students who are regularly enrolled in the Advanced Course of the Senior Division normally receive three semester credits of elective work toward graduation for each semester of military training taken beyond the Basic Course.

This department possesses equipment valued at $3,175. In addition, the department is the custodian of federal government equipment valued at $300,000.

COURSES IN MILITARY SCIENCE AND TACTICS

FOR UNDERGRADUATE CREDIT

Senior Division R. O. T. C.

BASIC COURSE, INFANTRY

101A. INFANTRY I. 1(0-3); I. Capt. Bowen, Capt. Rose and Lieut. Marshall.

(*a*) *Practical.* Physical Drills, infantry drills (close and extended order.

(*b*) *Theoretical.* Military courtesy and discipline, national defense policy, infantry drills.

102A. INFANTRY II. 1(0-3); II. Prerequisite, Course 101. Capt. Bowen, Capt. Rose and Lieut. Marshall.

(*a*) *Practical.* Infantry drills (close and extended order), rifle marksmanship.

(*b*) *Theoretical.* Rifle marksmanship, military courtesy and customs, military hygiene and first aid, scouting and patrolling.

103A. INFANTRY III. 1(0-3); I. Prerequisite: Course 102. Lieut. Marshall.

(*a*) *Practical.* Acting as instructors of freshmen in infantry drills.

(*b*) *Theoretical.* Infantry drills (close and extended order), combat principles (squad), ceremonies.

104A. INFANTRY IV. 1(0-3); II. Prerequisite: Course 103. Lieut. Marshall.

(*a*) *Practical.* Automatic rifle firing, musketry problems, scouting and patrolling. Acting as instructors of freshmen in infantry drills.

(*b*) *Theoretical.* Automatic rifle, scouting and patrolling, musketry.

ADVANCED COURSE, INFANTRY.

109. INFANTRY V. 3(2-3); I. Prerequisite: Infantry IV. Captain Rose.

(*a*) *Practical.* Instructors of freshmen and sophomores in all basic course subjects, map reading and sketching.

(*b*) *Theoretical.* Infantry drill. Machine gun, map reading and sketching.

110. INFANTRY VI. 3(2-3); II. Prerequisite: Infantry V. Captain Rose.

(*a*) *Practical.* Firing of 37-mm. and trench mortar, combat principles of the rifle section and platoon, instructors in all basic course subjects.

(*b*) *Theoretical.* 37-mm. gun and trench mortar, combat principles of the rifle platoon and section.

111. INFANTRY VII. 3(2-3); I. Prerequisite: Infantry VI. Captain Bowen.

(*a*) *Practical.* Instructors in all basic course subjects and first year advanced course subjects, infantry drills and ceremonies.

(*b*) *Theoretical.* Review of infantry drill, company administration, military law and reserve corps regulations.

112. INFANTRY VIII. 3(2-3); II. Prerequisite: Infantry VII. Captain Bowen.

(*a*) *Practical.* Instructors in all infantry subjects, field engineering, combat principles of the rifle, machine gun and howitzer companies.

(*b*) *Theoretical.* Military history and policy, field engineering, combat principles of the rifle, machine gun and howitzer companies.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year, and is held normally at Fort Leavenworth, Kan.

BASIC COURSE, COAST ARTILLERY

(For students of the Division of Engineering only.)

113A. ARTILLERY I. 1(0-3); I. Maj. Humphreys, Capt. Stewart and Lieut. Madison.

(*a*) *Practical.* Physical drill, infantry drill.

(*b*) *Theoretical.* Close-order infantry drill, to include the company, military courtesy and customs of the service. Discipline, national defense act, military hygiene and first aid, rifle marksmanship.

114A. ARTILLERY II. 1(0-3); II. Prerequisite: Artillery I or Infantry I. Maj. Humphreys, Capt. Stewart and Lieut. Madison.

(*a*) *Practical.* Close-order infantry drill, parades, rifle marksmanship, and preliminary artillery instruction.

(*b*) *Theoretical.* Ammunition, cordage, telephones and coast artillery instruction covering duties of the second-class gunner.

115A. ARTILLERY III. 1(0-3); I. Prerequisite: Artillery II. Capt. Young.

(*a*) *Practical.* Close-order infantry drill and ceremonies; harbor defense, mobile, and antiaircraft artillery.

(*b*) *Theoretical.* Fire control instruments, range finding and range section duties for harbor defense, mobile, and antiaircraft artillery.

116A. ARTILLERY IV. 1(0-3); II. Prerequisite: Artillery III. Capt. Young.

(*a*) *Practical.* Section (*a*) of course 115 continued.

(*b*) *Theoretical.* Continuation of section (*b*), course 115 to include the duties of the second class gunner; aiming and laying of guns; target characteristics.

ADVANCED COURSE, COAST ARTILLERY

(For students of the Division of Engineering only.)

117. ARTILLERY V. 3(2-3); I. Prerequisite: Artillery IV and Plane Trigonometry. Capt. Stewart.

(*a*) *Practical.* Duties as cadet officers and noncommissioned officers in connection with course 113 to 116, artillery materiel, sketching.

(*b*) *Theoretical.* Topography, position finding, gunnery for heavy artillery.

118. ARTILLERY VI. 3(2-3); II. Prerequisites: Artillery V and Plane Trigonometry. Capt. Stewart.

(*a*) *Practical.* Section (*a*) of course 117 continued.

(*b*) *Theoretical.* Gunnery for heavy and antiaircraft artillery.

119. ARTILLERY VII. 3(2-3); I. Prerequisite: Artillery VI. Maj. Humphreys.

(*a*) *Practical.* Duties as cadet officers and noncommissioned officers, artillery materiel, motor transportation, command and leadership, orientation.

(*b*) *Theoretical.* Military law, motor transportation, orientation.

120. ARTILLERY VIII. 3(2-3); II. Prerequisite: Artillery VII. Maj. Humphreys.

(*a*) *Practical.* Section (*a*) of course 119; gunnery.

(*b*) *Theoretical.* Tactical employment of artillery, field engineering, administration and supply, artillery materiel, military history and policy.

NOTE.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year and is held normally at Camp Knox, Ky.

BASIC COURSES, VETERINARY CORPS

(For students in the Division of Veterinary Medicine only.)

121A. MILITARY SCIENCE (VET.) I. 1(0-3); I. Capt. Van Tuyl.

(*a*) *Practical.* Same as course 101 (Infantry I).

(*b*) *Theoretical.* Organization and policies of the U. S. Army, military art.

122A. Military Science (Vet.) II. 1(0-3); II. Prerequisite: Course 121. Capt. Van Tuyl.

(*a*) *Practical.* Same as course 102 (Infantry II).

(*b*) *Theoretical.* Organization and administration, sanitation, logistics, first aid.

123A. Military Science (Vet.) III. 1(0-3); I. Prerequisite: Course 122. Capt. Van Tuyl.

(*a*) *Practical.* Same as section (*a*) of course 102; duties of privates and noncommissioned officers of the veterinary corps demonstrated.

(*b*) *Theoretical.* Tactics, logistics.

124A. Military Science (Vet.) IV. 1(0-3); II. Prerequisite: Course 123. Capt. Van Tuyl.

(*a*) *Practical.* Same as courses 102 (Infantry) and 123.

(*b*) *Theoretical.* Organization and administration, sanitation, military art, logistics, first aid.

ADVANCED COURSES, VETERINARY CORPS

(For students in the Division of Veterinary Medicine only.)

129A. Military Science (Vet.) V. 1(1-10); I. Prerequisite: Course 124. Capt. Van Tuyl.

(*a*) *Practical.* Duties of junior officers demonstrated.

(*b*) *Theoretical.* Organization and administration, sanitation, and animal management.

130A. Military Science (Vet.) VI. 1(1-0); II. Prerequisite: Course 129. Capt. Van Tuyl.

(*a*) *Practical.* Continuation of section (*a*), course 129.

(*b*) *Theoretical.* Sanitation, including inspection of meat and food products.

131A. Military Science (Vet.) VII. (1-0); I. Prerequisite: Course 130. Capt. Van Tuyl.

(*a*) *Practical.* Continuation of section (*a*), course 129.

(*b*) *Theoretical.* Hospitals, hospitalization, and sanitation.

132A. Military Science (Vet.) VIII. 1(1-0); II. Prerequisite: Course 131. Capt. Van Tuyl.

(*a*) *Practical.* Continuation of (*a*), section 129.

(*b*) *Theoretical.* Communicable diseases, foreign inspection, organization and administration (continued), résumé of entire course.

Note.—Advanced-course students are required to attend one camp. This comes normally at the end of the junior year, and is held normally at Fort Snelling, Minn.

Modern Languages

Professor Cortelyou
Professor Limper
Associate Professor Crittenden.
Assistant Professor Pettis
Instructor Burns

The study of modern foreign languages serves a number of purposes. It gives the student general training and culture; it throws helpful side lights upon English, his mother tongue; and it gives him important aid in scientific research. It is desired that the instruction in modern languages here given be as practical as possible, without, however, failing to encourage an appreciation of modern foreign literature. The plan of instruction in general is a combination of the grammatical and conversational methods, each of which has its own special advantages.

A number of literary and scientific periodicals published in French, Spanish, and German are received by the College Library, and afford the student excellent opportunity to amplify his reading knowledge of these languages.

Students who have had French, Spanish, or German in high school are required, as a rule, to take more advanced courses as their elective or required work in that language. Those who have had one year of a foreign language in high school should be assigned to the second course here; those who have had two years in high school should consult the head of the department regarding assignment to advanced work here.

The department equipment is valued at $637.

COURSES IN GERMAN

FOR UNDERGRADUATE CREDIT

101, 102. German I and II. 3(3-0) each; I and II respectively. Prerequisite: For II, I or equivalent. Dr. Cortelyou and Mr. Limper.

Introductory courses; grammar completed.

111. German Readings. 3(3-0); I. Prerequisite: German II or equivalent. Dr. Cortelyou and Mr. Limper.

Readings of fairly easy, idiomatic selections from modern authors; grammatical drill; German conversation based on the text read.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. German Short Stories. 3(3-0); II, when requested by a sufficient number. Dr. Cortelyou and Mr. Limper.

Interesting short stories by modern authors.

206. German Comedies. 3(3-0); II. Prerequisite: German Readings. Dr. Cortelyou and Mr. Limper.

Recent one-act comedies of literary merit and of a realistic, lively, and cleanly humorous nature; conversation and composition based on the text.

226. German Classics. 3(3-0); I, when requested by a sufficient number. Dr. Cortelyou.

An introduction to the German classics.

231. German Prose. 3(3-0); I, when requested by a sufficient number. Prerequisite: Course 201 or 206. Dr. Cortelyou.

Designed to give facility in rapid translation of fairly easy prose; prepared translations and sight translations.

237. Scientific German. 4(4-0); I. Prerequisite: German II. Dr. Cortelyou.

An introduction to the vast field of scientific publications appearing in German; miscellaneous scientific articles, especially those dealing with chemistry and physics.

COURSES IN FRENCH

FOR UNDERGRADUATE CREDIT

151, 152. French I and II. 3(3-0) each; I, II, and SS, each. Prerequisites: For II, I or one year of high-school French. Mr. Limper and Miss Pettis.

The fundamentals of French grammar; reading and conversation.

161. French Readings. 3(3-0); I and SS. Prerequisite: French II or equivalent. Mr. Limper and Miss Pettis.

Primarily a reading course; grammar reviewed; conversation.

FOR GRADUATE AND UNDERGRADUATE CREDIT

251. French Short Stories. 3(3-0); I and II. Prerequisite: French Readings or two years of high-school French. Mr. Limper and Miss Pettis.

Modern short stories by such writers as Daudet, Maupassant, and Zola.

256. The French Drama. 3(3-0); II. Prerequisite: 12 hours of college French or equivalent. Mr. Limper.

Some outstanding plays of Moliére, Corneille, Beaumarchais, Labiche et Martin, and Hervieu; their place in French drama.

261. French Composition and Conversation. 3(3-0); II, when requested

by a sufficient number. Prerequisite: 12 hours college French, or equivalent. Mr. Limper.

Class period devoted to practice in speaking French, written themes required as preparation for each recitation.

270. Teachers' Course in French. 3(3-0); when requested by a sufficient number. For prerequisites, consult instructor. Mr. Limper.

Anatomical basis for production of sounds peculiar to French; methods of presenting grammar; thorough grammar review; careful examination of the French reading texts used in Kansas; methods of conducting a *cercle français,* and material to be used in it.

COURSES IN SPANISH

FOR UNDERGRADUATE CREDIT

176, 177. Spanish I and II. 3(3-0) each; I, II, and SS, each. Prerequisite: For II, I or one year of high-school Spanish. Miss Crittenden and Miss Burns.

The fundamentals of Spanish grammar, stress on training to understand spoken Spanish.

180. Spanish Readings. 3(3-0); I, II, and SS. Prerequisite: Spanish II, or equivalent. Miss Crittenden and Miss Burns.

Readings from such representative Spanish authors as Alarcón, Padre Isla, and Martinez Sierra.

195A. Spanish Conversation. 3(3-0); I. Prerequisite: Spanish Readings or equivalent. Miss Crittenden and Miss Burns.

Purpose, to develop an ability to speak Spanish and to understand the spoken language.

FOR GRADUATE AND UNDERGRADUATE CREDIT

272. Spanish Short Stories. 3(3-0); I and II, by appointment. Prerequisite: Spanish Readings. Miss Crittenden and Miss Burns.

Stories from the most eminent of modern Spanish authors, such as Béquer, Trueba, Alarcón, Valdés, and Ibañez.

275. The Spanish Novel. 3(3-0); I. Prerequisite: Course 272 or equivalent. Miss Crittenden and Miss Burns.

A panoramic view of the Spanish novel in the several periods of Spanish literary production.

280. The Spanish Drama. 3(3-0); II. Prerequisite: Course 272 or equivalent. Miss Crittenden and Miss Burns.

A general view of the drama produced in Spain's best literary periods.

Music

Professor Lindquist
Associate Professor Smith
Assistant Professor Hartman
Assistant Professor Painter
Assistant Professor Sayre
Assistant Professor Jefferson
Assistant Professor Downey
Assistant Professor Martin
Instructor Farrar
Instructor Grossmann
Instructor Stratton*
Instructor Pelton
Instructor Talmadge
Instructor Goerwitz
Instructor Hlavaty
Instructor Jesson

To be a vital factor in the life of every student is the aim of the Department of Music. It strives to create and foster a love for and an appreciation of the best in music, and to give to students that broader culture and more complete education which is gained through academic, professional and vocational training combined with musical and artistic study. Believing that this can be accomplished to a much greater degree by having a teaching staff of

* Absent on leave, year 1929-'30.

musicians who are not only capable instructors but also artistic performers, courses are offered which will prepare the student not only for the teaching profession, but for an artistic career as well. Students enrolled in the department participate in the musical contributions to the public programs of the College and such participation is a part of their training and study. The Department of Music is provided with equipment valued at $22,091.

METHODS OF INSTRUCTION

Instruction in vocal and instrumental music is given in private lessons. No two students have the same mental, physical or artistic capacity, and their individual capabilities can be neither properly nor fully developed without painstaking personal attention. The best results are dependent on a close adaptation to the individual needs of the pupils, and this, of course, cannot be gained in classes, as is the case in the individual lessons. The effectiveness of the methods used is demonstrated by the interest and progress of the pupils.

All theoretical work is taught in classes. These and some other classes in the Department of Music are free to any student in the institution.

CREDITS

Students taking work in the Department of Music to a sufficient extent are allowed credits on their electives in the Divisions of General Science, Home Economics, and Agriculture, while substitutes in Music, with the approval of the dean, may be made in the Division of Engineering, as follows: For Voice or some instrument, two hours each semester; for History and Appreciation of Music, three hours each semester; for Harmony, two hours each semester; for Counterpoint, two hours each semester; for Musical Form and Analysis, two hours each semester; for Orchestra or Band, one hour each semester; for Public-school Music methods, two hours each semester. Any student having a full assignment may, upon recommendation of the director of music together with the approval of the student's dean, take music without credit.

Students coming from other schools to enter our courses in music may be sufficiently advanced as players or singers to enter the second or third year of the regular music curricula but prohibited therefrom owing to their lack of knowledge of theory. If such students enter the first year of the theoretical course, their progress as players and singers is not retarded, but it would be much to their advantage to make special theoretical preparation in the hope of qualifying for more advanced standing.

PRELIMINARY MUSICAL TRAINING

Preliminary training in music is undertaken by two classes of students. The first class consists of College students not able to meet the College entrance requirements for freshman standing in the four-year music curricula. The second consists of grade-school and high-school students whose parents desire to secure for their children the kind of "conservatory" instruction that the Department of Music is in a position to offer.

Special training is given in rhythm, ear training, sight reading, scale building, melody writing, and appreciation. This work aims to develop in the student a natural means of expression through music and to furnish the right foundation for a musical education.

Applicants for freshman standing in the four-year music curricula must pass an examination over certain requirements, which are as follows:

Piano: A considerable degree of proficiency in the fundamentals of piano technic and in the playing of the easier classics.

Public-school band and orchestra: A practicable degree of proficiency in the fundamentals of piano technic.

Public-school music: A practicable degree of proficiency in the fundamentals of piano technic and sight reading, and the ability to sing in time and in tune.

Violin: A considerable degree of proficiency in the fundamentals of violin technic and in the playing of the easier classics.

Voice: A voice of superior quality, ability to sing in time and in tune, and a practical knowledge of musical notation.

A list of examination material may be had by writing the director of the Department of Music.

THEORETICAL COURSES IN MUSIC

The aim of theoretical courses is to give the student an intelligent conception of music through the study of its historical development and scientific construction.

FOR UNDERGRADUATE CREDIT

101, 102. Harmony I and II. 2(2-0) each; I, II, and SS. Prerequisite: Music Fundamentals or equivalent. Mr. Sayre and Mr. Jesson.

I: A study of the major and minor scales, intervals, construction and progression of the primary triads and their inversions; the dominant seventh and its progressions and inversions, harmonizing melodies and basses.

II: Subordinate triads and their sevenths in progressions and inversions; the beginnings of modulation; writing of original exercises.

103, 104. Harmony III and IV. 2(2-0) each; I and II, respectively, and SS. Prerequisite: Harmony II. Mr. Jesson.

I: Modulation completed; altered and mixed chords; embellishments.

II: Works of the masters; writing of original exercises and small compositions.

105, 106, 107, 108. Ear Training and Sight Singing I, II, III and IV. 2(2-0) each, but no credit outside the music curricula; I, II, I and II, respectively. Prerequisite: Music Fundamentals or equivalent. Miss Hartman.

The reading and hearing of intervals, chords, and rhythmical forms.

108A. Counterpoint. 2(2-0); I, II, and SS. Prerequisite: Harmony IV. Miss Jefferson.

A study of melody writing, the association of melodies in simple counterpoint, leading to the writing of original two- and three-part inventions.

109. Musical Form and Analysis. 2(2-0); I, II, and SS. Prerequisites: Harmony IV and Counterpoint. Mr. Jesson.

The various forms used in composition; the music of Bach, Haydn, Beethoven, Schumann, Chopin and others.

110. Survey of Public-school Music. 2(2-0); II. Miss Hartman.

A general résumé of the work in public-school music methods and materials, designed to give the student such data as will enable him to understand the relationship of his specialized work to the public-school music system.

112, 113. History and Appreciation of Music I and II. 3(3-0) each; I and II, respectively. Mr. Downey.

Aim of this course: To give definite knowledge of each of the musical periods, the style of music peculiar to each, and musical contact with the great personalities in music.

114. History and Appreciation of Music. 3(3-0); SS.

A condensation of courses 112 and 113.

117. Conducting I. 1(1-0); I, II, and SS. Mr. Downey.

Practical training in essentials of good conducting, including the correct method of indicating all forms of rhythm, the seating arrangements of bands, orchestras and choruses, and a practical illustration of the use of this information in the various ensemble organizations of the College.

118. Vocal Composition. 2(1-0), six hours of preparation; II. Prerequisites: Harmony I to IV. Mr. Downey.

Comprehensive study of rhythm and tone color in poetry; writing of original musical settings for the different poetic forms; composition of vocal solos, duets, trios, and quartets, both with and without piano accompaniment.

119. Instrumental Composition. 2(1-0), six hours of preparation; II. Prerequisites: Harmony I to IV, and Counterpoint. Mr. Downey.

Advanced study in composition; writing of music for all instruments, both in solo and ensemble.

120, 121. Public-school Music I and II. 2(2-0); I and II, respectively, and SS. Prerequisite: Understanding of musical notation and the piano keyboard. Miss Hartman.

Given for the training of teachers of music in the public schools. These courses cover work for primary and intermediate grades and meet requirements of the state of Kansas for such training.

122 to 127. Public-school Music III to VIII. 2(2-0) each; I, II, I, II, I and II, respectively. Miss Hartman.

Courses 120 and 121 continued. III covers work in the grammar grades; IV consists of a comparison of methods for elementary grades; V and VI consist of methods and practice teaching material suitable for junior high school, and VII and VIII, for senior high school.

Students in the above courses are expected to do one semester of practice teaching of music in the grade schools of Manhattan under the supervision of Miss Hartman, and to observe such additional music work in the high schools as may be possible.

128. Conducting II. 1(1-0); I, II, and SS. Prerequisites: Harmony I to IV, and Conducting I. Mr. Downey.

A continuation of Conducting I, course 117.

130. Instrumentation. 2(2-0); I and SS. Prerequisite: Harmony II. Mr. Downey and Mr. Martin.

All band and orchestra instruments studied with relation to their character, range, and function; simple and familiar compositions scored for string trio, quartet, and quintet, and for wind quartet and sextet.

133. Orchestration. 2(2-0); II and SS. Prerequisites: Harmony I to IV, and Counterpoint. Mr. Downey, Mr. Martin.

Writing of music for orchestra and band studied; analytic and synthetic study of music scores.

135. Practice Conducting. 1(½-2); II. Prerequisite: Conducting II. Mr. Downey.

A special ensemble group is trained by the student in some work he has prepared in the course in orchestration. This problem is then presented in public.

140. Normal Piano Methods. 2(2-0); I. Miss Smith.

Discussion of principles and processes involved in various phases of piano study as a means of music education; study of teaching material for the piano; observation of lessons given in the preliminary piano classes.

142A, 142B. Orchestral Instruments I and II. 1(½-6) each; I and II, respectively, and SS. Mr. Downey, Mr. Martin, and assistants.

A course designed to acquaint the student with the methods of tone production and fingering of the most important instruments in the orchestra. Each instrument is studied for a period of from four to six weeks.

145. Methods of Teaching Music. 1(-); I. Mr. Lindquist, Miss Smith, Mr. Downey, and Mr. Martin.

Methods of teaching fundamental technic, selection of teaching materials, and the outlining of courses of study. Designed for public-school music students majoring in some instrument and preparing to teach it in high school; taught in separate divisions for voice, violin, piano, etc.

PRACTICAL COURSES IN MUSIC*

137A to 137H. INSTRUMENT I TO VIII. 3(1-9) each for courses I to V, 2(1-6) each for VI and VII, and 1(½-6) for VIII; I courses I, III, V, and VII) and II (courses II, IV, VI, and VIII), and SS. Mr. Downey, Mr. Martin, and assistants.

These courses are offered exclusively to students taking the curriculum in public-school band and orchestra, and these general designations cover assignments to any of the band or orchestral instruments, one of which is chosen by the student as his major instrument and studied through the four years.

155. MUSIC FUNDAMENTALS. 1(2-0); I, II, and SS. Mr. Sayre.

Class singing, study of note values, rhythm, scales, intervals, key signatures, etc.; and the application of this knowledge to the singing of part songs.

160A to 160H. VOICE I TO VIII. 4(1-12) each; I (courses A, C, E, G) and II (B, D, F, H) and SS. For the Curriculum in Voice. Prerequisite: An entrance examination to determine quality of voice, ability to sing in time and in tune, and extent of knowledge of musical notation. Prospective students should write the head of the Department of Music for a list of material required. Mr. Lindquist, Mr. Sayre, Miss Grossmann, Mr. Farrar, and Miss Talmadge.

Since production of tone in singing is governed by certain fundamental, explainable laws of phonetics and breath control, teaching the intelligent use of these laws is the constant objective of these courses. Coaching is given in the singing of French, Italian, and German songs; but the greater part of the work is in English, and pure enunciation of the mother tongue is constantly stressed. This series of courses is intended for students having special talent, and its purpose is to give sound technical training in the use of the vocal mechanism, and to develop capable teachers and good performers.

162A to 162H. VOICE A-I TO A-VIII. 2(1-6) each for courses I, III, V, VI, VII and VIII; and 1(½-6) each for courses II and IV; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the Curriculum in Public-school Music. Prerequisite: An entrance examination to determine ability to sing in time and in tune. Courses V to VIII are optional under Voice or Instrument. Mr. Lindquist, Mr. Sayre, Miss Grossmann, Mr. Farrar and Miss Talmadge.

Instruction similar to that given in courses 160A to 160H.

164A to 164H. VOICE B-I TO B-VIII. 2(1-6) each; I (courses A, C, E, G) and II (courses B, D, F, H) and SS. For the Curriculum in Piano, and elective in other curricula. No prerequisites. Mr. Lindquist, Mr. Sayre, Miss Grossmann, Mr. Farrar, and Miss Talmadge.

Instruction similar to that given in courses 160A to 160H.

165A to 165H. VIOLIN I TO VIII. 4(1-12) for courses A to D; 6(1-24) for courses E to H; I (courses A, C, E, G) and II (courses B, D, F, H) and SS. For the Curriculum in Violin. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of violin technic, and in the playing of the easier classics. Prospective students should write the head of the Department of Music for a list of material required. Mr. Martin.

Reserved for students showing an especial talent for the violin and entering college technically equipped to begin study of the standard works of violin literature; no special method advocated; a graceful and natural style insisted upon; outline of study so planned that an equibalanced technic and sound musicianship are developed.

166A to 166H. VIOLIN A-I TO A-VIII. 2(1-6) each. I, II, and SS. For students who take Violin as an elective. No prerequisites. Mr. Martin and assistants.

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* In cases in which a course in music which requires two private lessons a week is desired by a student who can take only one lesson per week, the course shall be designated in the correct form followed by the notation, "a," or, if one-half of the course has already been taken the notation shall be "b." A student may be assigned to the second half of one course and the first half of another by this procedure. The requirements of a series of courses may thus be satisfied semester hour by semester hour.

Instruction begins with the fundamentals of violin technic and extends over the more difficult literature written for this instrument.

169A to 169H. Violin Ensemble I to VIII. 1(0-3) each; I (courses A, C, E, G) and II (courses B, D, F, H). Elective for students of superior talent. Prerequisites: Four semesters of violin, viola, or violincello, or the equivalent. Mr. Downey.

A practical course in the playing of string duets, trios, and quartets.

170 to 170H. Piano I to VIII. 4(1-12) each; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the Curriculum in Piano. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of piano technic and in the playing of the easier classics. Prospective students should write the head of the Department of Music for a list of material required. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson and Miss Hlavaty.

Intended for students having special talent. Its purpose is to give a sound technical foundation; to cultivate a thinking musicianship; to acquaint students with a generous amount of the best music literature; to develop capable teachers and good performers, and thus to furnish the foundation upon which the superstructure of the artist may be built. Instruction outlined for each year is a conservative estimate of what a student of average talent is expected to accomplish. Every two weeks a one-hour auxiliary playing class is held, which all students majoring in piano are required to attend, and which is also open to all piano students recommended for admission by their teachers. Opportunity is given for frequent playing, study of music terminology, discussion of how to study, and acquiring a knowledge of the development of piano literature.

171A to 171H. Piano A-I to A-VIII. 1(½-6) each for courses I and III; 2(1-6) each for courses II, IV, V, VI, VII, and VIII; I (courses A, C, E, G) and II (courses B. D, F, H), and SS. For the Curriculum in Public-school Music. Courses V to VIII are optional under Voice or Instrument. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of piano technic and sight reading. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson, and Miss Hlavaty.

Attention given to sight reading and accompaniment for public-school music students and to developing a medium grade of pianistic performance.

173A to 173H. Piano B-I to B-VIII. 2((1-6) each; I (courses A, C, E, G) and II (courses B, D, F, H), and SS. For the curricula in Voice and Violin, and for students who take piano as an elective. No prerequisites. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson, and Miss Hlavaty.

Instruction follows same plan as for courses 171A to 171H.

175A to 175D. Piano C-I to C-IV. No credit (1-6). Designed for students who cannot meet entrance requirements for courses 170A, 171A and 177A. May require one semester or longer, according to ability and previous training of student.

176A to 176H. Piano Ensemble I to VIII. R (1-0); I (courses A, C, E, G) and II (courses B, D, F, H). Miss Painter.

During the first two years this work is in classes of four, for practice in sight reading and ensemble playing, the chief material used being orchestral music arranged for eight hands. During the last two years the work is done partly in classes of four, but develops into two-piano work and training for accompaniment and ensemble with various groups of orchestral instruments.

177A to 177D. Piano D-I to D-IV. 1(½-6) each for courses I and III; 2(1-6) each for courses II and IV; I (courses A and C) and II (courses B and D), and SS. For the curriculum in public-school band and orchestra. Prerequisite: An entrance examination to determine degree of proficiency in the fundamentals of piano technic. Miss Smith, Miss Painter, Miss Jefferson, Mr. Jesson, and Miss Hlavaty.

Instruction follows same plan as for courses 171A to 171H.

178A to 178H. Violoncello A-I to A-VIII. 2(1-6) each. For students who take Violoncello as an elective. No prerequisites. Mr. Downey.

Instruction begins with the fundamentals of violoncello technic and extends over the more difficult literature written for this instrument.

179A to 179H. Double-bass I to VIII. 2(1-6) each. For students who take Double-bass as an elective. No prerequisites. Mr. Downey.

Instruction begins with the fundamentals of double-bass technic and extends over the more difficult literature written for this instrument.

180A to 180H. Ensemble I to VIII. I (courses A, C, E, G) and II (courses B, D, F, H). Required or optional without credit in semester hours in the curriculum in piano and in the curriculum in violin. In the curriculum in public-school band and orchestra, ensemble work is required or optional without credit in the freshman and sophomore years, but in the junior and senior years gives one hour of credit per semester. Mr. Lindquist, Mr. Downey, and Mr. Martin.

Required ensemble work may be taken in Chorus (courses 190A to 190H), Orchestra (193A to 193H), or Band (196A to 196H).

182A to 182H. Wind Instruments I to VIII. 2(1-6) each. For students who take Wind Instruments as elective. No prerequisites. Mr. Downey, Mr. Martin, and assistants.

Opportunity for study of any wind instrument. Instruction begins with elementary scale and technical study and extends over the more difficult literature written for wind instruments.

184A to 184F. Recital I to VI. No credit for courses A, B, C, and E; 2 credits each for courses D and F; I (courses A, C, and E) and II (courses B, D, and F).

An entire solo recital in courses IV and VI.

185A, 185B. Repertoire I and II. 1(1-0) each; I and II, respectively. Mr. Lindquist.

An exhaustive study of vocal literature of all periods; songs prepared out of class and presented in class for criticism. Classes limited to eight members.

188. Practice Teaching of Music. 2(-); I and II. Miss Smith.

Practice teaching in private classes for students in the curriculum in piano.

188A. Practice Teaching of Music, A. 1(-); I and II. Mr. Lindquist, Mr. Downey and Mr. Martin.

Practice teaching in private classes for students in the curricula in public school band and orchestra, public-school music, violin and voice.

MUSICAL ORGANIZATIONS

The existence of an organization of individuals is justified by the service such a body renders. The musical organizations at this College are second to none in the colleges of America. Students are here given a rare opportunity to study the great musical compositions that have been written for various ensemble combinations, and to render very good service to the College and community as well as to themselves in the presentation of public programs.

190A to 190H. Chorus I to VIII. Weekly rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Prerequisite: Ability to read musical notation and to sing in tune. Written approval of the head of the department of music must be obtained. Mr. Lindquist.

The College Chorus presents two or more standard cantatas or oratorios each year.

The Men's Glee Club. The Men's Glee Club is composed of about forty of the best men's voices in the College. Membership is open to the best voices that try out from the whole College. This organization is available for a limited number of concert engagements throughout the state. Mr. Lindquist.

The Women's Glee Club. This is an organization of the young women of the College. The voices are selected in the same manner as are those of the Men's Glee Club. Mr. Sayre.

The combined glee clubs present one standard opera each year.

192A to 192H. Choral Ensemble I to VIII. Required without credit in the curriculum in voice; as elective in nonmusic curricula gives one hour of credit per semester. Weekly rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Prerequisites: A voice of good quality, a knowledge of musical notation, ability to sing in time and in tune, and an entrance examination. Mr. Lindquist and Mr. Sayre.

Membership in both the College Chorus and the Men's Glee Club or the College Chorus and the Women's Glee Club.

193A to 193H. Orchestra I to VIII. Required or optional without credit in semester hours in curricula in music; as elective in other curricula gives one hour of credit per semester. Weekly rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Mr. Downey.

The College Orchestra is a definite organization in which discipline prevails and permanent membership with regular attendance is insisted upon. This body maintains a correct and well-balanced instrumentation, containing all the instruments of the modern symphony orchestra. The work is highly educational, and offers in the preparation of concerts and performances with the College Chorus the actual experience and routine necessary for efficient orchestra playing. Membership is open to all in the College who are capable of playing acceptably.

196A to 196H. Band I to VIII. Required or optional without credit in semester hours in curricula in music; as elective in other curricula gives one hour of credit per semester. Regular rehearsals, all special rehearsals, and public performances; I (courses A, C, E, G) and II (courses B, D, F, H). Mr. Downey and Mr. Martin.

The College Band plays for all military functions and major athletic events. In addition to this, several concert appearances on the campus are made during the early fall and in the spring. The band plays the musical settings for the annual May Fete.

FEES 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*	$26†
Voice	$46	40	38	36	34*	...	28*	26†
Violin	...	40	...	...	34*	32	28*	26†
Other orchestral instruments	...	40	...	...	34*	...	28*	26†
One lesson each week for a semester:								
Piano	...	$22	$21	$20	$19	$19*	$16*	$15†
Voice	$25	22	21	20	19*	...	16*	15†
Violin	...	22	...	...	19*	18	16*	15†
Other orchestral instruments	...	22	...	...	19*	...	16*	15†

Piano ensemble—$5 a semester.
Orchestral Instruments I and II—$5 a semester.

* Fees for children.
† Student assistants' fees.

Physical Education and Athletics

Professor Ahearn
Professor McMillin
Associate Professor Washburn
Associate Professor Saum
Assistant Professor Corsaut
Assistant Professor Root
Assistant Professor Patterson
Instructor Geyer
Instructor Moll
Assistant Myers
Assistant Haylett
Assistant Morrow

The purpose of the Department of Physical Education and Athletics is to assist the students of the College to live to the best advantage, and so to aid them in the formation of hygienic habits that during their college course they may make a profitable physical preparation for life.

All young men and all young women of the College are entitled to the privileges of the gymnasium, which is large and well equipped with all sorts of apparatus for physical training, with lockers, plunge baths, shower baths, and other accommodations. The gymnasium equipment is valued at $10,966.

In courses requiring a change of clothing, lockers may be obtained by making a locker deposit of $3. Upon return of lock, key and towels a refund of $1 is made in each case. Only one locker fee is required of a student in any one semester.

Equipment is furnished to acceptable candidates for varsity and freshman athletic teams. It is checked out to individual candidates and they are held responsible for it. It must be returned when called for by the property clerk. Failure to return or replace equipment when called for subjects the offender to a fine or to other disciplinary action.

Physical education is required of all freshmen and sophomores unless excused for disability on recommendation of the College physician. Students entering with 15, 25, 44 or 59 hours of advanced credit are excused from one, two, three or four semesters, respectively, of physical education, no substitution being required.

The work of the department is based largely upon a physical examination given each student when he enters upon the work of the department. All students, whether taking work in the department or not, are entitled to receive a physical examination and advice as to their physical condition.

A diagnosis is made of the vital organs to ascertain their functional condition, and a complete inspection of the whole body is made to detect any weakness or deformity that may exist. Based upon the information thus obtained, advice is given and work assigned to students in accordance with their physical needs, tastes, and capabilities. All candidates for athletic teams are expected to pass a thorough physical examination.

Members of men's varsity and freshman athletic team squads may substitute such athletic work for the regular class work and will receive full semester credit for the work, provided they report regularly and for the full season of such sport.

COURSES IN PHYSICAL EDUCATION

FOR UNDERGRADUATE CREDIT—MEN.

103, 104, 105, 106. Physical Education M. R(0-2) each semester of freshman and sophomore years. Mr. Washburn, Mr. Corsaut, Mr. Root, and Mr. Moll.

Personal hygiene and social problems; marching, calisthenics, apparatus and games, selected with the object of obtaining the best hygienic, educational and recreative results for the student.

The following activities may be elected by students in place of the gymnasium work: (*a*) Swimming: Beginning, advanced, and Red Cross life-saving. (Beginning swimming is a prerequisite for advanced swimming and for Red Cross life-saving. Students must pass a preliminary test before entering the Red Cross life-saving class unless they have passed the tests given in the advanced swimming class.) (*b*) Boxing, (*c*) Wrestling, and (*d*) Corrective Gymnastics. Deposit, $3 each semester.

109. Apparatus. 1(0-3); I. Prerequisite: Gymnastics I and II. Mr. Moll.
Carefully selected and graded exercises on the various pieces of apparatus, fundamental apparatus stunts, mat exercises and tumbling. Deposit, $3.

113A. First Aid and Massage. 3(3-0); I and SS. Prerequisite: Human Anatomy. Mr. Moll.
Different forms of injuries and their temporary protection, including dressing, bandaging, transportation of the injured, etc., aid in case of accident, preparation of solutions, bandages, splints, etc., the methods of massage.

115A, 117A. Gymnastics I and II. 2(1-3) and 2(0-6), respectively; I and II, respectively, and SS. Mr. Washburn and Mr. Moll.
I: Theory and practice of marching and calisthenics; principles of the gymnastic lesson; nomenclature and arrangement of exercises; light apparatus; games. Deposit, $3.
II: Continuation of course 115A, with the addition of gymnastic dancing, the composition and teaching of model lessons, fundamental exercises on the apparatus and mat work. Deposit, $3.

119. Personal Hygiene. 2(2-0); II and SS. Mr. Washburn.
This course deals with health from the standpoint of the individual; care of the body, its organs, and vital processes.

121, 122. Swimming M-I and M-II. 1(0-3) each; I and II, respectively, and SS. Swimming I is a prerequisite for Swimming II. Mr. Patterson and Mr. Moll.
I: Instruction and practice of breast, back and crawl strokes, of diving, treading water, and floating, land exercises and methods of breathing. Deposit, $3.
II: Continuation of Swimming M-I. Advanced swimming and diving, water games and stunts, Red Cross life-saving methods. Methods of teaching and conduct of swimming meets and programs are discussed. Deposit, $3.

123. Physiology of Exercise. 2(2-0); II. Prerequisites: Human Anatomy and Physiology. Mr. Washburn.
The effect of exercise on the tissues, systems, and organs of the body.

124A. Physical Diagnosis and Prescription. 3(3-0); I. Prerequisites: Gymnastics I and II, and Kinesiology. Mr. Washburn.
Students are taught to diagnose faulty conditions and, in cases that can be remedied by exercise, to give directions and write prescriptions of exercise.

126A, 127. Football I and II. 2(1-3) each; I and SS. Mr. McMillin.
I: Study of the rules, theory, and the practice of fundamentals, equipment, care and treatment of injuries, and the use of mechanical devices. Deposit, $2.
II: Various positions on a football team, generalship and field tactics, and systems of offensive and defensive football. Deposit, $3.

128. Wrestling. 1(0-3); II. Mr. Patterson.
Rules, and the method of attack and defense in catch-as-catch-can wrestling; theories of wrestling, and wrestling psychology. Deposit, $3.

130A. Basket Ball. 2(1-3); I and SS. Mr. Corsaut.
The rules, technic of basket shooting, foul throwing, catching and passing, dribbling, reverse turn, different styles of play, offense, defense, team work, selection of players, training and equipment. Deposit, $3.

132. Boxing. 1(0-3); I. Mr. Patterson.
Instruction in various modes of attack and defense; discussion of training, wrestling and boxing tournaments, and related topics. Deposit, $3.

135A. Baseball. 2(1-3); II and SS. Mr. Corsaut.
Theory and technic, each position being studied separately; rules, schedules, equipment, strategy, signals, team organization, plays, and players. Deposit, $3.

136A, 136B. Practice Teaching in Physical Education I and II. 2(0-6) each; I and II, respectively. Prerequisite: Junior standing. Mr. Washburn.
Under immediate supervision of the teachers and coaches, students assist

in the physical education classes, athletic squads, intramural teams, and officiate in intramural games. The theory of teaching and officiating is also discussed. Deposit, $3 for each course.

136C, 136D. Practice Teaching in Physical Education III and IV. 2(0-6) each; I and II, respectively. Mr. Washburn.
Continuation of courses 136A and 136B. Deposit, $3 for each course.

140A. Track and Field Sports. 2(1-3); II and SS. Mr. Haylett.
Rules and theory of track and field events; organization, conduct, officiating of meets, construction of all track equipment, training, dieting, equipment, and selection of material. Fundamentals of track and field sports. Deposit, $3.

141B. Kinesiology M. 3(3-0); II. Prerequisite: Human Anatomy. Mr. Washburn.
The mechanics of movements; elemental body movements analyzed, and principles involved applied to teaching of physical education.

142. Public-school Program in Physical Education. 2(2-0); II. Prerequisite: Senior standing. Mr. Washburn.
The objectives of physical education; the educational, health and recreative significance, content of the school program, types of activity to be emphasized in grades, high school and college.

145A. Playground Management and Games M. 2(2-0); II. Mr. Washburn.
Management and activities of the playground; equipment of playgrounds, arrangement of apparatus and places for games, track work, wading pools, etc.; municipal and industrial recreation centers, mass athletics.

146B. Organization and Administration of Physical Education M. 2(2-0); I. Prerequisite: Junior standing. Mr. Washburn.
Organization and administration of the physical education department in various types of institutions; intercollegiate, interscholastic and intramural athletics.

FOR UNDERGRADUATE CREDIT—WOMEN

151A, 152A, 153, 154. Physical Education W. R(0-3) each; I of freshman year to II of sophomore year. Miss Saum, Miss Patterson, Miss Geyer, Miss Morrow.
Interpretative dancing, swimming and corrective gymnastics offered throughout the year: Hockey, volley ball, tennis, basket ball, archery, baseball, track and field sports given in season. Deposit, $3 each semester.
Recreational swimming hour. There is an open hour in the pool, on Tuesdays and Thursdays at 4 o'clock. No instruction is given. This hour is open to those who have registered in the College and paid the necessary fees. Charge $1 each semester.

157A. General Technic I. 2(1-3); I. Miss Saum, Miss Morrow.
Theory and practice of tennis and interpretative dancing. Deposit, $3.

157B. General Technic II. 2(1-3); II. Miss Geyer.
Theory and practice of gymnastics and soccer. Deposit, $3.

157C. General Technic III. 2(1-3); I. Prerequisite: 157B. Miss Saum, Miss Geyer.
Theory and practice of swimming and gymnastics and light apparatus. Deposit, $3.

157D. General Technic IV. 2(1-3); II. Miss Geyer.
Theory and practice of moderate sports, *i. e.*, bowling, canoeing, field ball, speed ball, golf, handball, horseshoes, indoor baseball and deck tennis, and field and track. Deposit, $3.

157E. General Technic V. 2(1-3); I. Miss Saum, Miss Geyer.
Methods of teaching hockey and volley ball. Deposit, $3.

157F. General Technic VI. 2(1-3); II. Miss Patterson.
Methods of teaching basket ball and baseball. Deposit, $3.

157G. General Technic VII. 2(1-3); I. Prerequisites: Courses 157A, B and C. Miss Geyer.
Practice teaching in gymnastics and interpretative dancing. Deposit, $3.

157H. General Technic VIII. 2(1-3); II. Prerequisites: Courses 157B, C and D. Miss Saum, Miss Patterson and Miss Geyer.
Methods of teaching swimming, archery and Danish gymnastics. Deposit, $3.

158. First Aid. 1(1-0); II and SS. Miss Geyer.
The prevention of accidents, and the treatment of injuries in an emergency.

160. Folk Dancing I. 1(0-3); I. Prerequisites: Courses 151A to 154. Miss Patterson.
Singing games for gymnasium, classroom and playground; selected and graded list of simple folk dances. Material adapted for use in elementary schools. Deposit, $3.

161. Folk Dancing II. 1(0-3); II. Prerequisite: Course 160. Miss Morrow.
A selected list of folk dances and clog dances for use in junior and senior high schools. Deposit, $3.

163. Theory and Technic of Dancing. 1(1-0); I. Prerequisites: Folk Dancing II and at least one semester of advanced dancing. Miss Morrow.
Place of dancing in education, value of dancing as an art and as a means of expression; dancing correlated with music, literature, painting, and sculpture.

168. Methods of Teaching Gymnastics. 1(1-0); II. Prerequisites: courses 157A to 157C. Miss Geyer.
Selection, classification, arrangement, and progression of gymnastic exercises; practice teaching within the class.

170. Physical Diagnosis W. 3(3-0); I. Prerequisites: Anatomy, Kinesiology and Physiology. Miss Patterson.
Causes and symptoms of common diseases, deformities, and other abnormal conditions; methods of giving physical examinations.

172. Therapeutics and Massage. 2(1-3); II. Prerequisites: Anatomy, Kinesiology, and Physical Diagnosis. Miss Patterson.
Postural defects studied and exercises given for correction of each; general and local massage practiced for cases which can be treated by the Department of Physical Education. Deposit, $3.

176. Organization and Administration of Physical Education W. 2(2-0); II. Prerequisites: Courses 157A to 157H, 182A, 186 and 188. Miss Saum.
Administrative policies of physical education departments: the staff, activities, basic principles. Construction, equipment and care of plant.

178. Folk Dancing. 1(0-3); SS. Miss Morrow.
Lectures on origin and values of folk dancing, principles of teaching folk dances, use of folk dances in festivals; practical work consisting of graded folk dances and some practice teaching; a notebook required. Deposit, $3.

182A. Play Ground Management and Games W. 2(1-3); I, and SS. Prerequisites: Courses 151A and 152A. Miss Morrow.
Organization and administration of playground activities and equipment; history of the playground movement and the various theories of play. Types of games suitable for different age periods, methods of coaching and managing group contests. Deposit, $3.

183. Physical Education for Elementary Schools. 1(0-3); SS. Miss. Patterson.
Principles of selection, methods of teaching and organization of work in elementary schools; practice of the activities used, and some practice teaching. Deposit, $3.

185. Tennis and Clogging. No credit. 0(0-3); SS. Miss Patterson.

Practice in the correct form in playing tennis and simple clog dances. This course may be substituted for one semester of the physical education requirement. Deposit, $3.

186. Supervised Teaching of Physical Education. 3(-); I. Prerequisite: Senior standing. Miss Saum and Miss Patterson.
Supervised teaching carried on in the physical education classes of the Manhattan grade and high schools.

187A. Technic of Basket Ball, Baseball, and Volley Ball. 1(0-3); SS.
Rules, duties of officials, organization of squads and teams, equipment. Methods of coaching and conducting of tournaments. Deposit, $3.

188. Teaching and Adaptation of Physical Education. 3(3-0); I. Prerequisites: Courses 161, 157A to 157F, 168 and 182A. Miss Saum.
Problems of physical education and general principles of leadership; adaptation of material to meet needs of various groups and to meet aims and ideals of physical education.

189. Kinesiology W. 3(3-0); I. Prerequisite: Human Anatomy (Zoöl. 123). Miss Geyer.
The mechanics of movement; elemental body movements analyzed and principles involved applied to the teaching of physical education.

190. Elementary and Intermediate Swimming W. No credit. 0(0-3); SS.
Beginning class for those who do not know how to swim, 4th hour daily. Intermediate class for those who can swim sidestroke length of pool, 7th hour daily. Charge, $1. This course may be substituted for one semester of the physical education requirement.

FOR UNDERGRADUATE CREDIT—MEN AND WOMEN

192. History and Principles of Physical Education. 3(3-0); II. Prerequisite: Sophomore standing. Miss Saum.
A survey of the field of physical education from ancient to modern times; aims and ideals of physical education and its relation to general education.

196. School Hygiene. 3(3-0); I. Prerequisites: Personal Hygiene, Human Anatomy, and Physiology. Mr. Washburn.
Hygiene of the building and of the teacher; principles, content, and methods of health education.

Physics

Professor Hamilton
Professor Raburn
Professor Floyd
Associate Professor Brackett
Associate Professor Lyon
Assistant Professor Hartel
Assistant Professor Chapin
Assistant Professor Maxwell
Assistant Professor Avery
Assistant Professor Feroe

Recognizing the need of a thorough knowledge of the fundamental laws and principles involved in all physical changes, provision has been made, in the courses which follow, for both a theoretical and a practical treatment of the subject. Instruction is based upon the facts given in selected textbooks, and these topics are enlarged upon by lectures and illustrated by experimental demonstrations. The purpose is to give a training in exact reasoning, and a knowledge of principles that will be factors in the solution of problems in all branches of science as well as in everyday life.

The laboratory work which accompanies the courses in physics gives a student abundant opportunity to test the principal laws of the science; and, since he is expected to arrange and operate the apparatus, the work should enable him to acquire skill in manipulation, precision of judgment, and care in the use of delicate instruments. The laboratories are well arranged for the work, and the equipment provided is of a nature adapted to meet the requirement of accurate work in all courses. The manual in use in most of the courses

is one prepared by the department to meet the exact conditions and equipment of the laboratory.

The equipment owned by this department has a value of $31,420.

COURSES IN PHYSICS

FOR UNDERGRADUATE CREDIT

101. Household Physics. 4(3-3); I and II. Includes parts of Physics 135, 140, 145, and 150. Mr. Hamilton, Mr. Floyd, and Miss Avery.

Lectures and demonstrations, in which the laws relating to principles involved in appliances of the household are explained and illustrated. Deposit, $3.

120. Photography. 2(1-3); I and II. Mr. Hamilton.

Chemical and physical principles involved in photography; practice in making good negatives and prints. Deposit, $3.

130. Wireless Telephony. 2(1-3); I. Mr. Lyon.

The most efficient types of receiving and transmission sets, fundamental principles of electric waves, the most important factors in the erection of a good plant.

Laboratory.—Various radio circuits assembled by the student from standard parts and tried out for their transmitting and receiving properties. Charge, $3.

133A. Meteorology. 3(3-0); II. Mr. Hamilton and Mr. Raburn.

Weather phenomena and the underlying principles of weather forecasting; factors that fix the climate of Kansas and of the United States; applications of weather to agriculture and the teaching of general science and 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, respectively. Not open for full credit to students who have credit in Physics 101, nor to students who have credit in Physics 145 and 150. Prerequisite: Plane Trigonometry. Mr. Floyd, Mr. Brackett, Mr. Hartel, Mr. Lyon, and Mr. Chapin.

I: A thorough treatment of the general principles involved in mechanics, sound and heat.

II: Theory of electricity and light with special emphasis on those parts that have an immediate bearing on the work of other sciences, such as electrolysis, thermal effects, relation of electrical and mechanical energy.

Laboratory.—Exercises based on laws and principles discussed in the classroom and giving a practical illustration of the facts learned. Charge, $3 for each course.

145, 150. Engineering Physics I and II. 5(4-3) each; I and II each. Prerequisites: For I, Plane Trigonometry; for II, I. Not open for full credit for students who have credit in Physics 101, 135, and 140. Mr. Hamilton, Mr. Raburn, Mr. Brackett, Mr. Lyon, Mr. Maxwell, and Mr. Feroe.

I: A course in mechanics, sound, and heat; intended to give a thorough working knowledge of fundamental units and laws involved in force, work, power, and energy.

II: Units employed and fundamental laws of electricity; methods of producing a current, its uses, and the system by which electrical energy is measured; the principal phenomena of light and the laws that may have direct bearing upon light as a standard and method of measurement.

Laboratory.—I: Use of apparatus to test the laws of inertia, moments of force, moments of torsion, elasticity and rigidity, and other laws and principles involved in mechanics and heat. Charge, $3.

II: Measurements of electrical resistances, study of primary cells and transformation from mechanical into electrical energy; laws of reflection and refraction of light, measurements of wave length by means of the spectrometer, use of the interferometer, and photometry. Charge, $3.

155. Descriptive Astronomy. 3(3-0); I. Mr. Hartel.
An introductory course in astronomy largely descriptive in character.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Laboratory Technic. 2(0-6); I. Mr. Floyd and Mr. Brackett.
Saw filing and tool grinding; glass blowing, cutting, grinding, polishing, and cementing; metal filing, drilling, soldering, and brazing; and making a set of punches, reamers, and cold chisels. In certain cases, special problems may be undertaken at a cost covering the raw materials. Deposit, $3.

213. Acoustics. 1(1-0); I. Prerequisite: Engineering Physics II. Mr. Floyd and Mr. Brackett.
Acoustic properties of building; architectural defects which give rise to poor acoustics; special methods to avoid such troubles in construction of buildings or to correct them in constructed buildings.

220. Molecular Physics and Heat. 3(2-3); I. Prerequisite: One year of college physics. Mr. Floyd and Mr. Raburn.
Molecular physics presented and utilized as a basis of an explanation of such phenomena as depend on the interaction of molecules and such as are fundamental in the presentation of the molecular theory of heat.

222. Harmonics. 2(2-0); II. Prerequisite: One year of music. Mr. Hamilton and Mr. Floyd.
Lectures, library work, and demonstrations dealing with pitch, loudness, quality and dissonance, scales and chords.

224. Special Methods in the Teaching of Physics. 3(2-3); II. Prerequisites: Educational Psychology and College Physics. For credit toward state teacher's certificate, must be taken in senior year. Mr. Floyd and Mr. Brackett.
An analysis of the present status of physics and of physics instruction in our high schools based on a critical study of the state text as well as other modern texts that may be used for reference.

Laboratory.—Formation and adaptation of courses suitable for high school.

230. Spectroscopy. 3(1-6); I. Prerequisites: College Physics and College Chemistry. Mr. Raburn and Mr. Floyd.
Theory and use of the spectroscope and spectrometer as instruments for identifying elements or their compounds, when rendered incandescent, by means of their characteristic spectra or definite wave lengths.

Laboratory.—Calibration of prisms and gratings for ready use in chemical laboratories; ample training in measuring wave lengths and in identifying the spectra of many substances.

231. Optics. 3(2-3); II. Prerequisite: One year of college physics. Mr. Hamilton and Mr. Floyd.
An advanced course in light, dealing with reflection, refraction, interference, diffraction, and polarization.

233. Radioactivity and the Electron Theory. 3(3-0); II. Prerequisites: College Physics and College Chemistry. Mr. Hamilton and Mr. Raburn.
Nature of the electron and its behavior in electric and magnetic fields; temperature effects and behavior of the electron in cathode tubes using a hot cathode; historical development of methods for determining mass and velocity of electrons; nature and effects of the various rays.

235. Storage Batteries. 2(1-3); II. Prerequisites: Physics and Chemistry. Mr. Hamilton, Mr. Floyd, and Mr. Maxwell.
History and development of the storage cell, lead and other types of cells; characteristics and behavior of cells on charge and discharge, care and operation of storage batteries, and renewal of sulphated cells.

Laboratory.—Testing of batteries for efficiency, rebuilding of broken down cells, rejuvenation of sulphate cells.

237. Teachers' Course in Advanced Electricity. 2 credits; SS. Prerequisite: Physics. Mr. Lyon.

Laboratory exercises following or intermixed with lectures; experiments and demonstrations, use of models, properties of alternating current circuits, rectifiers, transformers, transmitting and receiving radio circuits, radio sets suitable for use in high school; construction of these appliances by members of the class under direction of the instructor.

245. Radio Measurements. 2(1-3); I and II. Prerequisite: College Physics, and an elementary course in radio or equivalent. Mr. Lyon.

Standard radio measurements, such as determination of tube characteristics, calculation and design of inductances and capacities, properties and designs of antennas, tuning of transmitting sets, wave lengths and calibration of receiving sets, etc. The student may arrange to carry on an investigation of some special problem of radio.

250. Modern Physics. 3(2-3); I. Prerequisites: College Physics (1 yr.) and Chemistry (1 yr.). Mr. Brackett and Mr. Lyon.

Theories involved in recent advances in physics reviewed critically from the historical standpoint and the evidence for and against them discussed; each member of the class assigned to read several texts and articles on modern physics and to report and discuss his findings before the class.

252. Advanced Mechanics Laboratory. 1(0-3) or 2(0-6); I. Prerequisite: One year of college physics. Mr. Hamilton and Mr. Hartel.

A second course in mechanics experiments selected according to the needs and interests of each student from topics such as: Surface tension, viscosity, simple harmonic motion, torsion, pendulum, flexure, moment of inertia, rigidity, etc.

254. Advanced Heat Laboratory. 1(0-3) or 2(0-6); II. Prerequisite: One year of college physics. Mr. Floyd and Mr. Chapin.

A second course in heat experiments selected according to the needs and interests of each student from topics such as: Differential thermometers, vaporization, ratio of specific heats, vapor density and humidity, thermal conductivity, the mechanical equivalent, isotherms, etc.

256. Advanced Electrical Laboratory. 1(0-3) or 2(0-6); I. Prerequisite: One year of college physics. Mr. Brackett and Mr. Lyon.

A second course in electrical experiments selected according to the needs and interests of each student from topics such as: The magnetometer, hysteresis, types and characteristics of galvanometers, effect of temperature on cells, thermoelectricity, ratio of e/m, quadrant electrometers, potentiometer, power factor, recifiers, vacuum tubes, etc.

258. Advanced Light Laboratory. 1(0-3) or 2(0-6); II. Prerequisite: One year of college physics. Mr. Raburn and Mr. Maxwell.

A second course in light experiments selected according to the needs and interests of each student from topics such as: Laws of lenses, laws of mirrors, the sextant, interferometer, polarimeter, gratings, total reflection, Brownian movements, Zeeman effect, photometry, calorimetry, etc.

260. Experimental Problems in Physics. 1(0-3) or 2(0-6); I, II, and SS, by appointment. Prerequisite: College Physics or equivalent. Mr. Hamilton and Mr. Brackett.

Selected problems involving physical phenomena or work preliminary to such investigations. This may count as part of the major requirement for the master's thesis provided the problem selected has the approval of the head of the department in which the major work is taken.

263. Mathematical Problems in Physics. 2(2-0). Prerequisites: Physics 135 and 140, or 145 and 150. Mr. Raburn and Mr. Lyon.

Solution of practical mathematical problems based on fundamental principles of physics.

264. Biophysics. 3(2-3); II. Prerequisites: One year each of college physics or household physics, organic chemistry, and zoölogy or botany, or their equivalents. Mr. Floyd.

Some of the more important physical manifestations as related to living

matter from the point of view of the organism as a whole and from that of the cell. For students of biology, nutrition, and medicine; lectures, library readings, and quiz; seminar reports on the literature.

FOR GRADUATE CREDIT

301. Research in Physics. 1 to 10 credits; I, II, and SS. Prerequisite: College Physics.

Problems in original investigations; new and important fields investigated.

Public Speaking

Professor Hill
Professor Shinn*
Associate Professor Summers*
Assistant Professor Heberer
Instructor Elliott
Instructor Faunce
Instructor Mase

It is the constant effort of the Department of Public Speaking to relate the training in public speaking to the work of all other departments of the College and to harmonize it with the spirit of the College. With this object in view, students are trained in the presentation and discussion of the valuable ideas acquired in their various fields of study. The method pursued in this training is that of actual practice on the platform before an audience.

The department seeks to place itself at the service of those various organizations of the College which desire or need its assistance, and at the service of the communities of the state. In addition to its regular courses, it aims to make itself available as far as possible for individual rehearsals. It trains the orators of the College, coaches and directs college plays, and prepares intercollegiate debating teams. Students are urged to ally themselves with the organizations representing those various activities.

The equipment of this department has a value of $510.

COURSES IN PUBLIC SPEAKING

FOR UNDERGRADUATE CREDIT

101. Oral Interpretation. 2(2-0); I and II. Dr. Hill and Dr. Shinn.

Purpose, to enable the student to attain some proficiency in the art of oral interpretation; training to develop a natural style; points of theory and routine drill necessary for the development and use of the voice and for proper platform deportment.

102. Dramatic Reading. 2(2-0); I and II. Prerequisite: Course 101, or by arrangement with head of department. Dr. Hill, Dr. Shinn, and Mrs. Elliott.

A continuation of course 101, involving more advanced study of the principles of oral interpretation and their application to platform reading.

106, 108. Extempore Speech I and II. 2(2-0) each; I and II each. Prerequisite: For II, I. Dr. Hill, Dr. Shinn, Mr. Summers, Mr. Heberer, Mr. Mase, Mr. Faunce, and Mrs. Elliott.

I: Preparation and delivery of short addresses based on prepared outlines.

II: Course 106 continued, with special attention to specific application of the principles of that course to particular occasions.

115. Lecture Recital. 2 credits; I and II. Prerequisites: Courses 101 and 102, or by special arrangement with the head of the department. Dr. Hill.

Preparation and delivery by the student of one extended lecture recital, lecture, or preparation and delivery of short recitals; a study of types.

121, 122. Argumentation and Debate I and II. 2(2-0) each; II, and by appointment, respectively. Prerequisite: For I, course 106; for II, course 121; or, for both, by arrangement by head of the department. Mr. Summers.

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* Absent on leave, year 1929-'30.

I: Fundamentals of argumentation as applied in debate, with special work on the making of debate outlines, collection and organization of material, structure and style of the debate speech, and methods of refutation; opportunity given to participate in a number of classroom debates for criticism.

II: The more technical phases of contest debating, with special attention to the outstanding problems of debate coaching, debate strategy and generalship, persuasion as used in debate, methods of increasing rebuttal effectiveness, and management of debates; participation in classroom debates; opportunity to gain experience in debate coaching or judging.

126. Parliamentary Procedure. 1(1-0); I. Mr. Summers and Mr. Mase.

How to organize and conduct meetings and take part in deliberative assemblies, with stress on three phases: How to conduct a meeting as chairman; how to take part from the floor; and how to organize and work in committee.

130, 135. Dramatic Production I and II. 2(2-0) each; I, II, and SS each. Prerequisite for II: I or consent of the instructor. Mr. Heberer.

I: The elementary principles of acting, diction, and make-up.

II: The theory and technique of stage craft with particular reference to producing plays in high schools; practical experience in scene design, lighting, and direction. Several one-act plays are presented during the semester in the workshop theater.

150, 152. Development of the Theater I and II. 2(2-0) each; I and II, respectively. Mr. Heberer.

I: The theater from its beginning down to the end of the nineteenth century; types of plays, theaters, acting and production, and their relations to the time.

II: The modern theater, its problems, plays, actors, artists, and producers—a study of the American theater principally, and a survey of the contemporary stage.

FOR GRADUATE AND UNDERGRADUATE CREDIT

251. Pageantry. 3(3-0); I and II. Prerequisites: English Literature and Extempore Speech I. Mrs. Elliott.

History of community drama and pageantry; finding and arranging materials; organization of pageant groups; methods of financing; the adaptation of costuming, dancing, music, and setting to pageant production. Students during the course write a complete pageant manuscript, and produce a pageant in reality or in miniature under laboratory conditions.

Zoology

Professor Nabours*
Professor Ackert
Professor Harman
Associate Professor Johnson
Assistant Professor Jewell
Assistant Professor Wimmer
Instructor Dobrovolny
Instructor Goodrich
Instructor Harbaugh
Assistant Larson
Graduate Assistant Campbell
Graduate Assistant Harper
Graduate Assistant Woodward
Graduate Research Asst. Cauthen
Graduate Research Asst. Graham
Graduate Research Asst. Wade

The courses have been planned to give a fundamental knowledge of the structures, functions, and relations of animals; information concerning the manner in which animals respond to the conditions of the environment; an appreciation of their human values; and a consideration of the problem of heredity and evolution.

General Zoölogy (course 105) constitutes a general survey, and forms an introduction to all lines in agriculture, general science, and home economics. Embryology B (219A), Physiology (130), Cytology (214), Neurology (250), Advanced Embryology (220), Parasitology (208), Human Parasitology (218), Evolution and Heredity (217), Heredity and Eugenics (216), Advanced Hu-

* Absent on leave, year 1929-'30.

man Physiology (235), and Historical Geology (Geol. 203) are preliminary to advanced work in animal breeding, animal husbandry, dairy husbandry, veterinary medicine, home economics, and nursing. Selections may be made among these courses and Embryology (219), Comparative Anatomy of Vertebrates (245), Ornithology (230A), Field Zoölogy (205), Animal Ecology (211), Zoölogical Problems (203), Research in Zoölogy (301), and the Seminars (225, 227), by those who expect to do advanced work in zoölogy or entomology, or become teachers of biology.

The classrooms and laboratories are equipped with charts, models, microscopes, microtomes, paraffin baths and other apparatus both for elementary and advanced work, and a good natural history museum is available. A specially trained technician is in charge of equipment and available in matters connected with zoölogical technic. The equipment belonging to the department is valued at $31,570.

COURSES IN ZOÖLOGY

FOR UNDERGRADUATE CREDIT

105. General Zoölogy. 5(3-6); I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Jewell, Mr. Goodrich, and Mr. Harbaugh.

Structures, functions, relations and evolution of types of both invertebrates and vertebrates in the class, laboratory and in nature. Charge, $3.

109. Zoölogy and Embryology (Vet.). 5(3-6); I. Dr. Johnson.

A study of the principles and types of animal life, and of the development of vertebrate embryos. Charge, $3.

123A. Human Anatomy. 5(3-6); I. Prerequisite: General Zoölogy or equivalent. Dr. Wimmer.

Special attention to the human skeleton and organs; study of dissectible models, skeletons, charts, and living models. Charge, $3.

130. Physiology. 4(3-3); I, II, and SS. Prerequisites: Zoöl. 105 and General Chemistry or equivalent. Dr. Wimmer.

Functions of the organs and systems of the human body. Charge, $3.

135. Embryology A. 3(2-3); I and SS. Prerequisites: Zoöl. 105 or equivalent. Dr. Harman.

Development of the germ cells, fertilization, origin of the germ layers, initiation and growth of systems of organs, establishment of fetal relations, and nutrition and growth of mammals. The chick and pig are used principally as laboratory materials. Charge, $3.

137. Special Methods in Teaching Zoölogy. 3(3-0); I, II, and SS. For selected assistants in zoölogy. Prerequisites: Psychology and ten hours in zoölogy. Dr. Harman, Dr. Jewell, and Dr. Wimmer.

The functions of courses in general zoölogy, embryology and physiology, and their places in curricula; reviews of the subjects with special reference to their presentation in high school and junior college; care of live animals and the use of the local field; utilization of charts, models, specimens, apparatus and general technic in the teaching of the subjects.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Zoölogical Problems. 1 or 2 credits; I, II, and SS. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Jewell, Dr. Wimmer, and Mr. Harbaugh.

Individual problems in heredity, parasitology, physiology, cytology, embryology, and ecology assigned by the instructors in charge.

205. Field Zoölogy. 3(1-6); I. Prerequisite: Zoöl. 105. Dr. Jewell.

A general survey of the animal kingdom with collection, preservation, and identification of local forms; notes on their life histories, distribution, and relationships. Charge, $3.

206. Zoölogical Technic. 1(0-3) or 2(0-6); II. Prerequisite: General Zoölogy, or equivalent. Dr. Nabours and Mr. Dobrovolny.

Methods of killing, fixing, imbedding, using microtome, staining, dehydrating, and other processes in preparation of microscopical slides, principles of photomicography, museum mounting and labeling, and introduction to taxidermy. Charge, $3.

208. Parasitology. 3(2-3); I. Prerequisite: Zoöl. 105, or 109. Dr. Ackert.
A study of the biology, pathology, and prophylaxis of the principal external and internal parasites of the domestic animals. Charge, $2.

211. Animal Ecology. 3(2-3) or 2(2-0); II. Prerequisite: Zoöl 105, or equivalent. Dr. Jewell.
Relation of animals to the complete environment, with special attention to the dynamic factors of the environment and their effect on the present status and future changes of the animal community. Charge, $2.

214. Cytology. 4(2-6); I. Prerequisite: Zoöl. 105, or equivalent. Dr. Harman.
Methods of preparing material for cytological study, development of the germ cells and theories of structures and functions of the different parts of the cell. Charge, $3.

216. Heredity and Eugenics. 2(2-0); I. Prerequisite: Zoöl. 105, or equivalent. Dr. Nabours and Mr. Harbaugh.
Human inheritance and the interactions of nurture and heredity.

217. Evolution and Heredity. 3(2-3) or 4(2-6); II. Prerequisites: Zoöl. 105 and Genetics (An. Husb. 221), or equivalent. Dr. Nabours and Mr. Harbaugh.
Development of the idea of evolution; evidence and principal theories of the causes of evolution; problems of variation, heredity, and experimental evolution.

218. Human Parasitology. 3(3-0); II. Prerequisite: Zoöl. 105, or equivalent. Dr. Ackert.
Biological, pathological and prophylactic phases of the principal parasitic maladies of man.

219A. Embryology B. 4(3-3); I, II, and SS. Prerequisite: Zoöl. 105, or equivalent. Dr. Harman.
The physiology of reproduction, developmental anatomy and physiology of mammals, with special reference to man. Charge, $3.

220. Advanced Embryology. 4(2-6); I. Prerequisites: Zoöl. 105 and 201 or 109, or equivalent. Dr. Harman.
Further study of the main facts of embryology, with special reference to their bearings upon biological theories, and a comparative study of the physiology of reproduction in mammals, including man. Charge, $3.

225. Zoölogy and Entomology Seminar. 1 credit; I and II. Prerequisite: Zoöl. 105, or equivalent.
Presentation of original investigations, reviews of papers appearing in current journals, summaries of recent advances in various fields, and discussion of various aspects of the fundamental problems of modern biology.

227. Genetics Seminar. 1 credit; the year. Prerequisite: Zoöl. 105, or equivalent. Dr. Nabours, Dr. Warren, Dr. Parker, and Dr. Ibsen.
Study and criticism of genetic experiments in plants and animals, biological and mathematical methods employed, validity of conclusions drawn.

230A. Ornithology. 3(2-3); II and SS. Prerequisite: Zoöl. 105. Mr. Goodrich.
Study of birds with reference to classification, habits, habitats, adaptations, migrations, and economic importance. Charge, $2.

235. Advanced Human Physiology. 4(3-3); I. Prerequisites: Zoöl. 105 and Organic Chemistry. Dr. Wimmer.
The fundamental principles and theories of the functions of muscles, nerve, circulation, digestion, respiration, secretion and excretion. Charge, $3.

240. Taxonomy of Parasites. 2(1-3); I. Prerequisite: Zoöl. 105 or 109. Dr. Ackert.

Structure of animal parasites; relation of certain animal groups; principles of classification; identification of parasites of man and of domestic animals.

245. Comparative Anatomy of Vertebrates. 3(1-6); II. Prerequisite: Zoöl. 105, or equivalent. Dr. Johnson.

A comparative consideration of the skeletal, muscular, nervous, digestive, respiratory, circulatory, and urogenital systems and the sensory organs of vertebrates. Charge, $3.

250. Comparatve and Human Neurology. 3(2-3); I. Prerequisite: Zoöl. 105. Dr. Johnson.

Structure, functions and evolution of the nervous system. Charge, $2.

FOR GRADUATE CREDIT

301. Research in Zoölogy. 1 to 8 credits; I, II, and SS. Prerequisite: Zoöl. 105. Dr. Nabours, Dr. Ackert, Dr. Harman, Dr. Johnson, Dr. Jewell, Dr. Wimmer, and Mr. Harbaugh.

Individual research problems are assigned in the fields of heredity and experimental evolution, parasitology, cytology, embryology, ecology, physiology, neurology, and endocrinology.

The Division of Home Economics

Margaret M. Justin, *Dean*

Modern research in the sciences and present-day development of the industries, arts, and professions have brought a recognition of the value of technical training as a part of the preparation for life's work. An educational plan which combines industrial, technical, and scientific subjects with the older general studies results to the students in the power to express, in everyday activities, the knowledge acquired in the classroom. It increases the capacity for productive work and develops the desire to realize in practical form the theories and principles studied. The aim of a collegiate course in home economics is not merely to increase the student's stock of information, but to stimulate interest in continued study or research, to train in accuracy in detail, to teach discrimination with regard to criteria by which to interpret results of work, and to cultivate an attitude of economic and social responsibility.

The course as outlined below is arranged to meet the needs of the following groups of students: Those who wish to teach, those who wish to enter graduate courses leading to technical or professional work, and those who wish to apply their knowledge to various problems of home life or in fields of industry and social service in which an understanding of home-economics subjects is essential to intelligent action. While emphasis is laid on the material and practical side of life, the training does not stop here. The young women are constantly reminded that life is not drudgery; that technical knowledge and scientific skill even fail to include the full meaning of education in its highest sense. They are taught that any training that fails to develop harmoniously body, mind, and spirit is inadequate and incomplete. They are brought face to face with ideals as well as with actualities, and are made to see that, while skillful labor gives dignity to life, grace, refinement, and self-poise are the highest requisites for true service.

That training given is as varied as it is broad. It includes a knowledge of the laws of health; and understanding of the sanitary requirements of the home; the study of values, both absolute and relative, of the various articles used in the home; the wise expenditure of money, time, and energy; the scientific principles underlying the selection and preparation of food; the right care of children; and the ability to secure efficient service from others. Instruction is methodical and thorough, and is suited to the circumstances of the students. Experience shows that such training teaches contentment, industry, order, and cleanliness, and fosters a woman's independence and feeling of responsibility.

The work in home economics includes:

A four-year curriculum, leading to the degree of Bachelor of Science.

A four-year curriculum leading to the degree of Bachelor of Science with special training in art.

A five-year curriculum leading to the degree of Bachelor of Science and a diploma in nursing.

Graduate work leading to the degree of Master of Science, majoring in home economics.

CURRICULA IN HOME ECONOMICS

The training in the four-year curriculum is both general and specific. Since scientific training is fundamental in the intelligent and successful administration of the home, strong courses in the sciences are given as a foundation for the special training in home economics. To the end that well-rounded culture may be attained, courses in English, history, economics, sociology, and psychology receive due prominence. The time of the student is about equally

divided among the purely technical subjects, the fundamental sciences, and studies of general interest. The courses in the related subjects are given in the different departments of the College, while the technical courses are given in the Division of Home Economics. In the junior and senior years opportunity is given for choice of electives, which makes it possible for students to specialize in some chosen line. To this end electives are to be chosen in groups combined logically in courses approved by the faculty or by the student's dean. This choice of electives will be made during the second semester of the sophomore year.

THE CURRICULUM IN HOME ECONOMICS

The four-year curriculum is recommended for all who desire to teach home economics, or to enter professional fields in which home economics may be applied.

CERTIFICATION FOR TEACHING HOME ECONOMICS

The student who in addition to securing the Bachelor of Science degree is desirous of qualifying for the three-year Kansas state teacher's certificate, renewable for life and valid in any high school or other public school in the state, should elect certain courses in the Department of Education and other technical courses which are deemed essential for vocational home economics and desirable for all teaching of home economics. These courses are as follows:

Educational Subjects	Technical Subjects
Educ. Ad. A or B, Educ. 105 or 106..3(3-0)	Child Care & Training I., Child Welf. 201.....3(1-6)
Educ. Psychology, Educ. 109.....3(3-0)	House Furnishings, Art 108.....2(1-3)
Vocational Educ. A, Educ. 125.....3(3-0)	Practice Course in Household Management, Hshld. Econ. 116.....3(-)
Special Methods in Teaching of Home Economics, Educ. 132 .....3(3-0)	Clothing III, Clo. and Text. 126.....3(1-6)
Supervised Teaching in Home Economics, Educ. 160 .....3(3-0)	

THE CURRICULUM IN HOME ECONOMICS AND ART

The four-year curriculum offering special training in art is designed to meet the need of students especially interested in this field. The courses give background for professional work in the art field, for teaching of art and for the general culture afforded by art study.

THE CURRICULUM IN HOME ECONOMICS AND NURSING

The five-year curriculum, offered in affiliation with the Charlotte Swift Hospital of Manhattan, enables the student wishing to take the Bachelor of Science degree and the full professional training in nursing to complete this work in five years. The first two years are spent at the College. The third and fourth years are spent at the Nursing School of the hospital, where both theoretical and practical training in nursing is given. During the fifth year required courses for the Bachelor of Science degree are completed at the College and electives are chosen which will prepare the student for the field of nursing in which she is most interested.

The demand for trained women to fill administrative and teaching positions in schools of nursing and to enter the various branches of public-health nursing is greater than the supply and offers a growing and attractive field of work for the college graduate.

Before entering upon this curriculum the student must report to the superintendent of the Hospital for a physical examination, and she must have her plan of study approved by the dean of the Division of Home Economics.

Further information concerning the work at the hospital may be obtained from the director of the Training School for Nurses of the Charlotte Swift Hospital, Manhattan.

The College does not assume the responsibility of insuring employment to graduates, but the latter rarely experience difficulty in obtaining remunerative positions.

Curriculum in Home Economics

FRESHMAN

First Semester		Second Semester	
College Rhetoric I,* Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Chemistry I, Chem. 101	5(3-6)	Chemistry II, Chem. 102	5(3-6)
Elementary Design, Art 101	3(1-6)	Costume Design I, Art 130	2(0-6)
Foods I, Food & Nut. 101A	3(1½-4½)	Psychology A, Educ. 101	3(3-0)
Hygiene, Child Welf. 101	2(2-0)*or*	Clothing I, Clo. & Text. 101	2(1-3)*or*
Psychology A, Educ. 101	3(3-0)	Foods I, Food & Nut. 101A	3(1½-4½)
Clothing I, Clo. & Text. 101	2(1-3)	Hygiene, Child Welf. 101	2(2-0)
Seminar, Gen. H. E. 101	R(1-0)	Current History, Hist. 126	1(1-0)
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	16	Total	16

SOPHOMORE

First Semester		Second Semester	
Organic Chem. (HE), Chem. 121	5(3-6)	Foods II, Food & Nut. 106	5(3-6)
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*
Clothing II, Clo. & Text. 111	3(1-6)*or*	Physiology, Zoöl. 130	4(3-3)
Household Physics,† Physics 101	4(3-3)	Clothing II, Clo. & Text. 111	3(1-6)*or*
Phys. Education W, Phys. Ed. 153	R(0-3)	Household Physics, Physics 101	4(3-3)
		Phys. Education W, Phys. Ed. 154	R(0-3)
Total	16 or 17	Total	15 or 16

JUNIOR

First Semester		Second Semester	
German I & II, ‡§ Mod. Lang. 101 and 102	6(6-0)*or*	German Readings,§ Mod. Lang. 111	3(3-0)*or*
French I & II, Mod. Lang. 151 & 152,	6(6-0)	French Readings, Mod. Lang. 161	3(3-0)
Human. Nut., Food & Nut. 112	3(3-0)	Hshld. Mngt., Hshld. Econ. 107	3(2-3)
Economics, Econ. 101	3(3-0)	Textiles, Clo. & Text. 116	3(2-3)
Art Elements, Art 118	1(1-0)	Hshld. Microb., Bact. 121A	3(1-6)
Elective	3(-)	Elective	4(-)
Total	16	Total	16

SENIOR

First Semester		Second Semester	
American History I,§ Hist. 201	3(3-0)	Amer. Govt.,§ Hist. 151, 152 or 153	3(3-0)
Dietetics, Food & Nut. 201	5(3-6)	Family Health, Child Welf. 211	3(3-0)
Elective	8(-)	Seminar, Gen. H. E. 151	R(1-0)
		Elective	10(-)
Total	16	Total	16

Total requirement for degree of Bachelor of Science in Home Economics, 128 hours.

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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 each week.

† General Physics may be substituted if a student plans to pursue research later.

‡ Students in the Division of Home Economics enrolling in modern language take a minimum of nine hours of French or German unless they have had previously one or more years high-school work in the language in question. In case French or German has been taken previously in high school only six semesters in advanced courses of that language are required. Students who under these circumstances take less than nine semester credits in modern language are required to take additional elective hours, so that their total requirement is the same as for other students.

§ An option of equivalent hours in the fields of mathematics, chemistry, physics or zoology may be taken instead of the course marked, with the advice and approval of the dean.

Curriculum in Home Economics with Special Training in Art

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
Elementary Design, Art 101	3(1-6)	Intermediate Design, Art 102	3(1-6)
Hygiene, Child Welfare 101	2(2-0)	Clothing I, Clo. & Text. 101	2(1-3)
Foods I, Food & Nut. 101A	3(1½-4½)	Costume Design I, Art 130	2(0-6)
Seminar, Gen. H. E. 101	R(1-0)	Current History, Hist. 126	1(1-0)
Phys. Education W, Phys. Ed. 151A	R(0-3)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Total	16	Total	16

SOPHOMORE

First Semester		Second Semester	
English Literature, Engl. 172	3(3-0)	American Literature, Engl. 175	3(3-0)
Psychology A, Educ. 101	3(3-0)	Foods II, Food & Nut. 106	5(3-6)
General Zoölogy,* Zoöl. 105	5(3-6)	Ancient Civilization, Hist. 101	3(3-0)
Art Elements, Art 118	1(1-0)	Advanced Design, Art 105	2(0-6)
Sketching, Art 120	2(0-6)	Clothing II, Clo. & Text. 111	3(1-6)
Extem. Speech I, Pub. Spk. 106	2(2-0)	Phys. Education W, Phys. Ed. 154	R(0-3)
Phys. Education W, Phys. Ed. 153	R(0-3)		
Total	16	Total	16

JUNIOR

First Semester		Second Semester	
German I and II, Mod. Lang. 101 and 102	6(6-0)*or*	German Readings, Mod. Lang 111	3(3-0)*or*
French I and II, Mod. Lang. 151 and 152	6(6-0)	French Readings, Mod. Lang. 161	3(3-0)
Human Nut., Food & Nut. 112	3(3-0)*or*	Hist. & App. of Music, Music 114	3(3-0)
Applied Nut., Food & Nut. 121	2(2-0)	Costume Design III, Art 138	2(0-6)
Costume Design II, Art 134	2(0-6)	Medieval Europe, Hist. 102	3(3-0)
Elective	5 or 6(-)	Elective	5(-)
Total	16	Total	16

SENIOR

First Semester		Second Semester	
Prin. of Art and their Application I, Art 124	3(3-0)	American History I, Hist. 201	3(3-0)
Child Care and Training I, Child Welf. 201	3(1-6)	Int. Dec. and Furn., Art 114	3(1-6)
Elective	10(-)	Principles of Art and their Application II, Art 126	3(3-0)
		Hist. of Cost., Clo. and Text. 265	1(1-0)
		Seminar, Gen. H. E. 151	R(1-0)
		Elective	6(-)
Total	16	Total	16

Number of semester hours required for graduation, 128.

Curriculum in Home Economics and Nursing

FRESHMAN

First Semester		Second Semester	
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Gen. Chemistry, Chem. 110	5(3-6)	Gen. Organic Chemistry, Chem. 122	5(3-6)
German I & II, Mod. Lang. 101 and 102	6(6-0)	Gen. Zoölogy, Zoöl. 105	5(3-6)
Foods I, Food & Nut. 101A	3(1½-4½)	Psychology A, Educ. 101	3(3-0)
Seminar, Gen. H. E. 101	R(1-0)	Phys. Education W, Phys. Ed. 152A	R(0-3)
Phys. Education W, Phys. Ed. 151A,	R(0-3)		
Total	17	Total	16

* General Botany I and II may be taken as an option for General Zoölogy and the necessary adjustment made in providing the required number of hours each semester and in lessening the electives one hour if the option is desired.

SOPHOMORE

First Semester		Second Semester	
Foods II, Food & Nut. 106	5(3-6)	Gen. Microbiology, Bact. 101	3(1-6)
Physiol. Chem., Chem. 231	5(3-6)	Amer. Govt.,§ Hist. 151, 152 or 153	3(3-0)
Embryology B, Zoöl. 219A	4(3-3)*or*	American Literature, Engl. 175	3(3-0)
Physiology, Zoöl. 130	4(3-3)	Current History, Hist. 126	1(1-0)
English Literature, Engl. 172	3(3-0)	Elective	6(-)
Phys. Education W, Phys. Ed. 153	R(0-3)		
Total	17	Total	16

JUNIOR

(Replaced by two years at Charlotte Swift Hospital)

Theoretical and practical work during the time includes:

First Year	Second Year
History and Ethics of Nursing	Surgery and Surgical Nursing and Bandaging
Hospital Economics	Obstetrics and Gynecology
Nursing Methods	Pediatrics
Medical Nursing	Diseases of Eye, Ear, Nose and Throat
Communicable Diseases	Nervous and Mental Diseases
Special Therapeutics and Massage	Materia Medica
	Problems in Nursing

Equivalent to 32 college hours

SENIOR

First Semester	Second Semester	
(Specialized work in affiliated hospitals)	American Hist. I,§ Hist. 201	3(3-0)
Equivalent to 16 college hours	Dietetics, Food & Nut. 201	5(3-6)
	Seminar, Gen. H. E. 151	R(1-0)
	Elective	6(-)
	Total	14

Total requirement for degree of Bachelor of Science in Home Economics and Nursing, 128 hours.

Groups of Electives for Students in the Division of Home Economics

The groups given below are selected with a view to training students for the vocations in which home economics may be directly applied.

A sufficient number of hours may be chosen from any group to fill the elective requirement, or a smaller number of hours may be taken from a group and, for the remaining elective hours, advanced courses of related subject matter may be chosen.

Music may be added to any group, in a minimum of six semester hours.

Child Care and Training

First Semester		Second Semester	
Sociology, Econ. 151	3(3-0)	History of the Home, Hist. 225	3(3-0)
Social Problems, Econ. 257	2(2-0)	Psychology of Childhood and Adolescence, Educ. 208	3(3-0)
The Mod. Family, Child Welf. 216	2(2-0)	Child Care and Training II, Child Welf. 206	3(3-0)
Fld. Work in Nut., Food & Nut. 215	3(2-3)	Pos. Child Health, Child Welf. 111	2(2-0)
Heredity & Eugenics, Zoöl. 216	2(2-0)	Problems in Child Welfare, Child Welf. 221	1 to 5
Child Care and Training I, Child Welf. 201	3(1-6)		
Seminar in Child Welfare and Euthenics, Child Welf. 226	1 or 2		

§ An option of equivalent hours in the field of mathematics, chemistry, physics or zoology may be taken instead of the course marked, with the advice and approval of the dean.

Costuming

First Semester

Hist. of Costume, Clo. & Text. 265...1(1-0)
Clothing III, Clo. & Text. 126.....3(1-6)
Clothing IV, Clo. & Text. 270.....3(1-6)
Clothing Economics, Clo. & Text. 237, 3(3-0)
Hygiene of Clothing, Clo. & Text. 251, 3(3-0)
Sociology, Econ. 151.....3(3-0)
Costume Design II, Art 134.....2(0-6)
Intermediate Design, Art 102.....3(1-6)

Second Semester

Prin. of Adv., Ind. Jour. 179.....3(3-0)
Prin. of Art and their Application I, Art 124 .....3(3-0)
Labor in Clo. & Text. Industries, Clo. & Text. 260.....1(1-0)
Medieval Europe, Hist. 102.....3(3-0)
Prob. in Clo. & Text., Clo. & Text. 256, 1 to 3
Modern Europe I, Hist. 115.....3(3-0)

Dietetics

First Semester

Inst. Econ. I, Inst. Econ. 201.....3(1-6)
Physiological Chem., Chem. 231.....5(3-6)
Fld. Work in Nut., Food & Nut. 215..3(2-3)
Food Econ. & Nut. Seminar I, Food & Nut. 251.....2(2-0)
Child Care and Training I, Child Welf. 201 .....3(1-6)

Second Semester

Inst. Econ. II, Inst. Econ. 205.....3(3-0)
Dietetics for Abnormal Conditions, Food & Nut. 205 .....2(1-3)
Meats (HE), An. Husb. 176.....1(0-3)
Inst. Marketing, Inst. Econ. 215.....2(2-0)
Meth. of Invest. in Foods & Nut., Food & Nut. 265.....2(1-3)
The Nut. of Dev., Food & Nut. 210..2(2-0)

Food and Nutrition

First Semester

Physical Chemistry I, Chem. 206.....5(3-6)
Microchemical Meth. of Anal., Chem. 245 .....1(0-3)
Adv. Human Physiology, Zoöl. 235...4(3-3)
Hygienic Bacteriology, Bact. 206.....4(2-6)
Problems in Food Econ. & Nut. I, Food & Nut. 248..... 2 to 5
Food Econ. & Nut. Seminar I, Food & Nut. 251 .....2(2-0)
Fld. Work in Nut., Food & Nut. 215..3(2-3)
Bact. Problems, Bact. 226..... 1 to 4
College Algebra, Math. 104.....3(3-0)
Plane Trigonometry, Math. 101.....3(3-0)

Second Semester

Physiological Chem., Chem. 231.....5(3-6)
Biochem. Prep., Chem. 234.....5(0-15)
Quantitative Anal., Chem. 241.....5(1-12)
Food Analysis, Chem. 257.....3(0-9)
Histology I, Path. 101.....3(1-6)
Food Econ. & Nut. Seminar II, Food & Nut. 252.....2(2-0)
Meth. of Invest. in Foods & Nut., Food & Nut. 265.....2(1-3)
Human Parasitology, Zoöl. 218.....3(3-0)
Stat. Meth. Applied to Education, Educ. 223 .....3(3-0)
Nut. of Dev., Food & Nut. 210.....2(2-0)

Home Making

First Semester

Child Care & Training I, Child Welf. 201 .....3(1-6)
The Mod. Family, Child Welf. 216..2(2-0)
Sociology, Econ. 151.....3(3-0)
Community Organization, Econ. 267..3(3-0)
Prob. in Foods I, Food & Nut. 243.. 1 to 3
Practice Course in Hshld. Mngt., Hshld. Econ. 116 .....3(-)
World Classics I, Engl. 280.....3(3-0)
The Nut. of Dev., Food & Nut. 210..2(2-0)

Second Semester

Child Care & Training II, Child Welf. 206 .....3(3-0)
Principles of Art and their Application I, Art 124.....3(3-0)
Econ. of Hshld., Hshld. Econ. 265...2(2-0)
Clothing III, Clo. & Text. 126.....3(1-6)
Meats (HE), An. Husb. 176.....1(0-3)
Hist. of Eng. Lit., Engl. 181.....3(3-0)
Psychology of Childhood & Adolescence, Educ. 208 .....3(3-0)

Institutional Economics

First Semester

Inst. Econ. I, Inst. Econ. 201.....3(1-6)
Com. Correspondence, Engl. 122.....3(3-0)
Prob. in Inst. Adm., Inst. Econ. 210, 1 to 5
Inst. Econ. II, Inst. Econ. 205.....3(3-0)
Prob. in Fds., Foods & Nut. 243, 244..1 to 3
Fld. Work in Nut., Food & Nut. 215..3(2-3)

Second Semester

Meats (HE), An. Husb. 176.....1(0-3)
Inst. Marketing, Inst. Econ. 215.....2(2-0)
Inst. Accounting, Econ. 132.....3(3-0)
Tea Room Mngt., Inst. Econ. 225....3(0-9)
Physiological Chem., Chem. 231.....5(3-6)
Meat Studies (HE), An. Husb. 182...1(1-0)

Journalism

First Semester

Elem. Journalism, Ind. Jour. 151.....2(2-0)
Journalism for Women, Ind. Jour. 172, 2(2-0)
Indust. Writing, Ind. Jour. 161.....2(2-0)
Advanced Reporting, Ind. Jour. 163..3(3-0)

Second Semester

Copy Reading, Ind. Jour. 254.....2(0-6)
Indust. Feature Writ., Ind. Jour. 167, 2(2-0)
Contemporary Thought, Ind. Jour. 255 .....3(3-0)

Additional selections to be chosen in the subject-matter fields.

Lecturing and Demonstrating

First Semester		Second Semester	
Oral English, Engl. 128	3(3-0)	Dramatic Read., Pub. Spk. 102	2(2-0)
Oral Interp., 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)
Prac. in Food Dem., Food & Nut. 117	1(0-3)	Ind. Writing, Ind. Jour. 161	2(2-0)
Meats (HE), An. Husb. 176	1(0-3)	Methods for Ext. Workers in Foods, Food & Nut. 260	2(-)
Ind. Feat. Writing, Ind. Jour. 167	2(2-0)		

Social Welfare Work

First Semester		Second Semester	
Child Care and Training I, Child Welf. 201	3(1-6)	Child Care and Training II, Child Welf. 206	3(3-0)
The Mod. 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. Rela., Hist. 228	2(2-0)
Fld. Work in Nut., Food & Nut. 215	3(2-3)	Prob. in Child Welfare, Child Welf. 221	1 to 5

Textiles

First Semester		Second Semester	
College Algebra, Math. 104	3(3-0)	Physical Chemistry I, Chem. 206	5(3-6)
General Physics I, Physics 135	4(3-3)	Qualitative Analysis, Chem. 224	2(0-6)
General Physics II, Physics 140	4(3-3)	Prob. in Clothing and Textiles, Clo. & Text. 256	1-3*
Plane Trigonometry, Math. 101	3(3-0)	Adv. Human Physiology, Zoöl. 235	4(3-3)
Hygiene of Clothing, Clo. & Text. 251	3(3-0)	Statistical Methods Applied to Education, Educ. 223	3(3-0)
Clothing Economics, Clo. & Text. 237	3(3-0)	Bact. Problems, Bact. 226	1 to 4
Experimental Textiles, Clo. & Text. 312	3*	Advanced Textiles, Clo. & Text. 246	3(1-6)

Art

Professor Holman
Associate Professor Arnold
Associate Professor Everhardy
Instructor Morris
Instructor Harris
Instructor Smith

There is an increasing realization of the need for a usable knowledge of art. The curriculum in art is designed to develop the general culture afforded by art study, to train teachers of art, and to provide a background for professional work.

This department owns equipment valued at $8,987.

COURSES IN ART

FOR UNDERGRADUATE CREDIT

101. Elementary Design. 3(1-6); I, II, and SS.† Miss Holman, Miss Arnold, Miss Everhardy, Miss Morris, Miss Harris, and Miss Smith.

A fundamental course in the study of color and form and the application of their principles to daily living. Charge, 50 cents; deposit, 25 cents.

102. Intermediate Design. 3(1-6); I and II. Prerequisite: Course 101. Miss Arnold, Miss Everhardy, and Miss Harris.

A continuation of course 101 with special emphasis on color possibilities in different processes. Charge, 50 cents; deposit, 25 cents.

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* By appointment.

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

105. Advanced Design. 2(0-6); II. Prerequisite: Course 102. Miss Arnold, Miss Everhardy, and Miss Harris.
A continuation of course 102, with emphasis on art structure. Charge, 50 cents; deposit 25 cents.

108. House Furnishings. 2(1-3); I and II. Prerequisite: Course 101. Miss Holman, Miss Harris, and Miss Morris.
The decorative phase of design studied in the solving of problems which occur in the furnishings of the house. Planned specifically for the students meeting requirements for vocational home economics teaching. Charge, 50 cents; deposit, 25 cents.

110. Public-school Art. 2(1-3); SS. Prerequisite: Course 101. Miss Holman, Miss Arnold, Miss Everhardy, and Miss Harris.
Methods and problems in art as aids for the public school teacher. Charge, 50 cents; deposit, 25 cents.

114. Interior Decoration. 3(1-6); II. Prerequisite: Course 102. Miss Holman, Miss Everhardy, Miss Morris, and Miss Harris.
Study of the house and its furnishings as a design. Charge, 50 cents; deposit, 25 cents.

118. Art Elements. 1(1-0); I and II. Prerequisite: Course 101. Miss Holman and Miss Morris.
A course to stimulate an interest in art and to foster the appreciation of beauty in our surroundings.

120. Sketching. 2(0-6); II. Prerequisite: Course 101. Miss Arnold and Miss Harris.
Representative sketching, decorative illustrating, and creative designing in which a variety of mediums and technique is employed. Charge, 50 cents; deposit, 25 cents.

124. Principles of Art and Their Application I. 3(3-0); II. Prerequisite: Course 101. Miss Holman and Miss Arnold.
A study of color and form as found in the world's art.

126. Principles of Art and Their Application II. 3(3-0); I. Prerequisite: Course 124. Miss Holman and Miss Arnold.
A continuation of course 124.

130. Costume Design I. 2(0-6). Prerequisite: Course 101. Miss Holman, Miss Arnold, Miss Everhardy, Miss Morris, Miss Harris, and Miss Smith.
Modern dress as a design, consideration of individual requirements; brief survey of historic costume; this course a design basis for garment selection and construction. Charge, 50 cents; deposit, 25 cents.

134. Costume Design II. 2(0-6). Prerequisite: Course 130. Miss Arnold, Miss Morris, and Miss Harris.
Review of line, form, and proportion in modern costume and in the human figure as the structure upon which costume is built; special problems in historic dress design; the Hambidge Theory of Dynamic Symmetry. Charge, 50 cents; deposit, 25 cents.

138. Costume Design III. 2(0-6). Prerequisite: Course 134. Miss Arnold, Miss Morris, and Miss Harris.
A continuation of course 134, particularly in relation to historic costume. Charge, 50 cents; deposit, 25 cents.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201, 202. Problems in Elementary and Intermediate Design. 1 to 3 credits each; SS. Prerequisites: For Course 201, Course 134; for Course 202, course 201. Miss Arnold and Miss Everhardy.

Course 201: Special phases of decorative design considered with reference to the student's experience and development of projects through research and invention. Charge, 50 cents; deposit, 25 cents.

Course 202: The aim, to develop appreciation for art in everyday surroundings and as far as time permits to develop skill in expression; problems adapted to the needs of the student. Charge, 50 cents; deposit, 25 cents.

206. Problems in Teaching Art. 3(1-6); SS. Prerequisites: Elementary Design and Special Methods in Teaching of Home Economics, or its equivalent. Miss Holman, Miss Arnold, and Miss Everhardy.

For the high school teacher who is correlating art with home economics subjects, particularly for the teacher of art subjects connected with vocational training; training given through lectures and class discussions of methods, consideration of suitable laboratory equipment, use of illustrative material, and preparation of courses of study. Charge, 50 cents; deposit, 25 cents.

211. Problems in Costume Design. 2(0-6); I. Prerequisites: 9 credits in Design; consult instructors. Miss Arnold and Miss Morris.

Problems to develop taste in selection and use of historic material for dress, plays, and pageants. The aim is to increase appreciation and improve technique. Notes and sketches are required. Charge, 50 cents; deposit, 25 cents.

FOR GRADUATE CREDIT

301. Art Research. 2 to 10 credits, by appointment. For prerequisites, consult head of department.

A problem in art selected from some of the following fields: (*a*) Historic research; (*b*) organization of curriculum; (*c*) methods of teaching; and (*d*) theoretical aspects of art education.

Child Welfare and Euthenics

Professor Ford
Instructor Sharp
Instructor Kell
Assistant Noble
Assistant Langford
Graduate Assistant Edwards

Home economics must always be chiefly concerned with the individuals in the homes, and the various phases of home economics gain in importance only as they contribute something of value to the lives of individuals. If homes are to prepare their members to help in the progress of society and to receive the highest satisfactions from life, they must insure three things.

They must first of all insure a childhood safeguarded by the wise application of the latest principles of science. The environment must be such as to foster the fullest development of desirable qualities and to suppress the development of undesirable qualities. In the second place, through right family relationships and family living based on sound principles and high ideals, the home must insure such help and sense of security to the individual as can come in no other way. In the third place, the home must lay a sure foundation for both the physical and mental health of its members. We realize now that health is much more than the absence of disease. It is positive, buoyant health that homes must strive to give individuals to-day.

To help educate in right living, from the standpoint both of individual and family well-being, and to further whatever is of benefit to children are the aims of the courses offered in this department.

This department has equipment valued at $2,608.

FOR UNDERGRADUATE CREDIT

101. Hygiene. 2(2-0); I and II. No prerequisite; must be taken parallel with Foods I by home economics students. Dr. Sharp.

Personal hygiene as a means of maintaining and improving health.

111. Positive Child Health. 2(2-0); I and II. For prerequisites, consult instructor. Dr. Sharp.

Public-health aspects of school hygiene, the object of health development in educational systems, organization and administration of health work in

public schools, and the teaching of hygiene by practical demonstration and the project method.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Child Care and Training I. 3(1-6); I and II. Prerequisites: Embryology or Physiology, psychology, and Human Nutrition. Dr. Ford.
Development, care, and training of the infant and preschool child.

Laboratory.—Directed observations and assisting in the nursery school. Charge, $1.

206. Child Care and Training II. 3(3-0; II. For prerequisites, consult the instructor. Dr. Ford.
The development, care, and training of older children; community problems in child welfare.

211. Family Health. 3(3-0); I and II. Prerequisites: Embryology or Physiology, and Household Microbiology. Dr. Sharp.
Health of individuals in the family; the importance of preventive medicine; the household as a factor in health conservation; the interrelation of home and community health; simple nursing procedures.

216. The Modern Family. 2(2-0); I and II. Prerequisite: Senior or graduate standing. Consult instructor. Dr. Ford.
Functions of the family and the various problems which confront it to-day.

221. Problems in Child Welfare and Euthenics. 1 to 5 credits; I and II. Prerequisite: Child Care and Training I. Consult instructor. Dr. Ford.
Individual investigation of a special problem in some phase of child welfare; conferences, and reports at appointed hours.

226. Seminar in Child Welfare and Euthenics. 1 or 2 credits; I and II. Prerequisite: Child Care and Training I. Dr. Ford.
Discussions and reports dealing with important publications and activities in the field of child welfare and euthenics.

FOR GRADUATE CREDIT

301. Research in Child Welfare and Euthenics. 1 to 10 credits; I and II. Prerequisites: Consult instructor. Dr. Ford.
Opportunity for original research in the field of child welfare and euthenics which may form the basis of work for a master's thesis.

Clothing and Textiles

Professor Baker
Associate Professor Cowles
Assistant Professor Bruner
Assistant Professor Hess
Assistant Professor Quinlan
Graduate Assistant Anderson
Graduate Research Assistant Southard

Clothing is an important factor in both the physiological and psychological well-being of the individual and of the family. The wise selection of the clothing requires a high degree of skill in the application of hygienic, economic, and æsthetic principles. The preservation and care of clothing are based upon a practical knowledge of chemistry, entomology, and bacteriology. In the construction of garments, art, applied art, and technic are presented in their proper relations in order to train students in fundamental principles and enable them to utilize these principles in their everyday practices. In this department advanced courses are offered for students who wish to prepare for vocational, professional, and business positions such as college teachers, research workers, textile chemists, clothing consultants, purchasing agents for institutions, department stores, and millinery establishments, and extension workers as well as other professions.

The equipment belonging to this department is valued at $7,609.

COURSES IN CLOTHING AND TEXTILES

FOR UNDERGRADUATE CREDIT

101. Clothing I. 2(1-3); I and II. Prerequisite or parallel: Elementary Design. Miss Baker, Miss Cowles, and Mrs. Hess.

The factors that influence the individual in the selection and purchase of clothing; knowledge of clothing fabrics, the testing of sewing ability, learning buying procedures, the use of the clothing budget, and self-analysis as a basis for clothing choices. Charge, $1; deposit, 25 cents.

111. Clothing II. 3(1-6); I and II. Prerequisites: Clothing I and Costume Design I. Miss Quinlan and Miss Cowles.

This course offers an opportunity for the girl to design and construct dresses that express individuality through the correct use of line and color. Charge, $1; deposit, 25 cents.

116. Textiles. 3(2-3); I and II. Prerequisites: Organic Chemistry and Clothing I. Mrs. Hess and Miss Bruner.

The social and economic development of the textile industry, from the "industrial revolution" to the present time; the combination of art, science, and mechanics that makes it possible to develop a clear and sound judgment in the selection of textile fabrics for household and personal use and to become familiar with best methods of determining quality.

Laboratory.—Chemical, physical, microscopic tests on textile fibers, yarns, and fabrics. Charge, $2; deposit, 25 cents.

126. Clothing III. 3(1-6); I and II. Prerequisites: Courses 101, 111, 116, and Costume Design I. Open to juniors and seniors.

Aesthetic and modish adaptation of materials to the individual; self-expression through dress; emphasis on problems of the high school teacher and designs for clothing based on natural objects.

Laboratory.—Self-fitting and problems in silk fabrics, renovation and practice in demonstration work. Charge, $1.50; deposit, 25 cents.

130. Clothing and Linens for the Household. 3(1-6); I and II. Prerequisite or parallel: Elementary Design or approval of instructor. Miss Cowles.

The selection, purchase, and construction of children's clothing and the linens (sheets, curtains, table linens, etc.) needed in the ordinary home. Planned for students desiring a general clothing course; may be used as an elective for home economics majors. Charge $1; deposit, 25 cents.

FOR GRADUATE AND UNDERGRADUATE CREDIT

237. Clothing Economics. 3(3-0); I. Prerequisites: Economics, Textiles, Clothing I and II. Miss Baker.

A study of the organization of the textile industries and markets, of wages and standards of efficiency in workmanship, of standardization of fabrics, and legislation concerning textiles. Topics are assigned for reading and investigation in addition to classroom work.

246. Advanced Textiles. 3(1-6); I. Prerequisites: Textiles, and Clothing I and II. Mrs. Hess, and Miss Bruner.

Special work in the analysis of fabrics, study of scientific equipment used in colleges and commercial plants as well as assigned problems in textiles, dyeing, and deterioration in fabrics and fibers.

Laboratory.—Charge, $3; deposit, 25 cents.

251. Hygiene of Clothing. 3(3-0); II. Prerequisites: Textiles, Embryology or Physiology, Microbiology, and Clothing I and II. Miss Baker.

A study of the body as it may be affected by clothing, and a summary of the factors in textile fibers and fabrics that affect the health of the body. Students are assigned special problems for investigation based on clothing in relation to health and its effect upon anatomical form, muscular development, and physiological functions.

256. Problems in Clothing and Textiles. 1 to 3 credits; I and II. By appointment. For prerequisites consult Miss Baker.

An assigned problem in some phase of clothing or textiles. Charge, to be arranged with the instructor.

260. Labor in the Clothing and Textile Industries. 1(1-0); II. For prerequisites consult instructors. Miss Cowles and Miss Quinlan.

Ancient and modern methods of textile production; problems arising from the conditions of labor, especially as affecting the mental, moral, and physical health of the workers, methods used in bettering these conditions, in addition to a local survey of labor related to textiles.

265. History of Costume. 1(1-0); I. Prerequisites: Costume Design I and II, Textiles, or approval of instructor. Miss Quinlan.

Ancient and modern costumes with their various phases of development; comparison of classes and the relative cost of living in the various ages.

270. Clothing IV. 3(1-6); II. For prerequisites, consult Miss Baker and Miss Quinlan.

Sociological, historical, and philosophical aspects of costume; the relation of dress to civilization, architecture, religion, occupation, amusement, and the like; a summary of clothing and textile subject matter and its place in the high-school and college curricula.

Laboratory.—Fundamentals in tailoring and essentials in millinery. Charge, $2; deposit, 25 cents.

FOR GRADUATE CREDIT

301. Research in Clothing and Textiles. 2 to 10 credits; by appointment, I and II. For prerequisites consult instructors. Miss Baker, Mrs. Hess, and Miss Bruner.

A research problem considering the hygienic or economic aspects of textiles or an investigation of clothing as it is related to art, psychology or bacteriology may be chosen as the problem, depending on the courses elected. Charge, to be arranged with the instructor.

312. Experimental Textiles. 3 credits; by appointment. Prerequisites: Advanced Textiles. Mrs. Hess and Miss Bruner.

The work covered in this course consists primarily of experimental work on and with textiles. Written reports of all work done will be required before a student will receive credit for the course. Charge, $5; deposit, 25 cents.

Food Economics and Nutrition

Professor Pittman*
Professor Kramer
Professor Chaney
Associate Professor Ahlborn
Instructor Tucker
Instructor Vail
Assistant Boehm
Technician Potter
Graduate Assistant Ehrhardt
Research Graduate Assistant Agan

Food is an important factor in the health of the individual and the family. Selection of wholesome and economical food requires the application of chemistry, physiology, sanitary science, and economics. Preparation and preservation of food involve processes dependent upon physics, chemistry, and bacteriology. In the modern science of nutrition and dietetics, the student learns the chemical and physiological principles involved in the nutrition of the body and applies these to planning of food for the individual and the group.

Advanced courses in this department provide training for teachers of foods, dietitians, demonstrators, extension workers and similar professions.

The equipment belonging to this department is valued at $22,527.

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* Absent on leave, year 1929-'30.

COURSES IN FOOD ECONOMICS AND NUTRITION

FOR UNDERGRADUATE CREDIT

101A. Foods I. 3(1½-4½); I and II. No prerequisite; must be accompanied by Hygiene (Child Welfare 101). Miss Vail, Miss Boehm, and Miss Ehrhardt.

Study of elementary nutrition and etiquette; practice in the various methods of preparing and serving meals. Charge, $4; deposit, 25 cents.

106. Foods II. 5(3-6); I and II. Prerequisites: Organic Chemistry, and Foods I or equivalent. Miss Pittman, Miss Tucker and Miss Vail.

Classification, composition, occurrence, and general properties of foods; food values in relation to cost; legal and sanitary aspects of food products handled in commerce; place of various foods in diet.

Laboratory.—Foods are tested to show chemical composition and reactions. Food preparation is from the experimental standpoint. Recipes are compiled and food products are scored. Charge, $4.25; deposit, 25 cents.

112. Human Nutrition. 3(3-0); I and II. Prerequisites: Organic Chemistry, Embryology or Physiology, and Foods II.* Dr. Kramer.

The chemistry of food and nutrition, with emphasis upon the food nutrients, digestion, and metabolism.

117. Practice in Food Demonstrations. 1(0-3); II. Prerequisite: Foods II. Miss Pittman and others.

Instruction in the technic of food demonstrations; each student allowed opportunity for practice in various types of demonstrations. Charge, $3; deposit, 25 cents.

121. Applied Nutrition. 2(2-0); I and II. Prerequisite: Organic Chemistry or permission of instructor. Miss Pittman and Miss Ahlborn.

Practical nutrition for the college student, including food requirements, food selection, and food habits. A course designed for men and women students not majoring in home economics.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Dietetics. 5(3-6); I and II. Prerequisites: Foods II and Human Nutrition. Dr. Chaney, Miss Ahlborn, and Miss Tucker.

Food requirements in health throughout infancy, childhood, adolescence, adult life, and old age; typical dietaries for each period of life; milk formulæ; the problem of satisfying the diverse requirements in families and other groups.

Laboratory.—Studies of weight, measures, and cost of some of the common food materials; calculations and quantitative preparation of standard portions and combinations of foods; practice in marketing and serving; and other practical applications of classroom theories. (For graduate students, an assigned problem instead of marketing and serving.) Charge, $6; deposit, 25 cents.

205. Dietetics for Abnormal Conditions. 2(1-3); II. Prerequisite: Dietetics. Dr. Kramer.

Varying dietetic requirements in different pathological conditions, such as diabetes, nephritis, gout, gastric ulcer, etc. (For students who expect to qualify as professional dietitians.)

Laboratory.—Demonstrations of special foods used in such conditions, and computation of dietaries. Charge, $3; deposit, 25 cents.

210. The Nutrition of Development. 2(2-0); II. Prerequisites: Human Nutrition and Dietetics. Dr. Chaney.

Food requirements in pregnancy, fetal life and lactation. Infant feeding, food for the preschool child, the school child, and the adolescent.

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* Students from other divisions desiring to elect Human Nutrition may substitute an equivalent number of hours in other sciences for Embryology or Physiology, and Foods II.

215. Field Work in Nutrition. 3(2-3); I and II. Prerequisites: Human Nutrition, and Dietetics. Dr. Chaney and ———.

Survey work along nutritional lines and corrective work with malnourished individuals, either separately or in groups. Charge to be arranged with instructor.

243, 244. Problems in Foods I and II. 1 to 3 credits each; I and II, respectively. Prerequisites: Foods II, and Human Nutrition. Miss Pittman, Miss Tucker, and Miss Vail.

I: Problems in food assigned for individual study. Charge to be arranged with instructor.

II: A continuation of I, or may be elected independently. Charge to be arranged with instructor.

248, 249. Problems in Food Economics and Nutrition I and II. 2 to 5 credits each; (conferences, laboratory work, and reports); I and II, respectively. Prerequisite: Senior or graduate standing. Miss Pittman, Dr. Kramer, and Dr. Chaney.

I: Problems in the nutritive value of foods; feeding experiments; dietary studies, or practice in the methods commonly used in the simpler experiments in nutrition, are assigned for individual study. Charge depends on problem chosen.

II: Continuation of course 248 or may be elected independently. Charge depends on problem chosen.

251, 252. Food Economics and Nutrition Seminar I and II. 1 or 2(2-0) each; I and II respectively. Prerequisite: Human Nutrition. Dr. Kramer.

I: Assigned reading and discussion of topics in the fields of food economics and nutrition, with special attention to recent literature bearing on problems in dietetics in both normal and pathological conditions, on growth, and on normal and subnormal nutrition in infancy and childhood.

II: Continuation of I or may be elected independently.

260. Methods for Extension Workers in Foods. 2 credits; II. Prerequisite: Dietetics. Miss Pittman.

Origin and development of the extension field in home economics; food problems of the extension worker and methods suggested for handling them; federal, state, and county organizations considered. Some field work required.

265. Methods of Investigation in Foods and Nutrition. 2(1-3); I and II, by appointment. Prerequisite: Dietetics. Dr. Kramer and Dr. Chaney.

Current methods in investigation of foods and of problems in nutrition.

Laboratory.—Laboratory procedures in simple food analyses, digestion and metabolism experiments, and animal feeding technic. Charge, $3; deposit, 25 cents.

FOR GRADUATE CREDIT

305. Research in Food Economics and Nutrition. 1 to 10 credits; I and II. For prerequisites, consult instructors. Miss Pittman, Dr. Kramer, and Dr. Chaney.

Individual research problems, which may form the basis for the thesis submitted for the master's degree. Charge to be arranged with instructor.

306. Animal Nutrition Seminar. 1 credit for the year. Prerequisite: Consult instructor. Miss Pittman, Dr. Kramer, and Dr. Chaney.

Experiments in nutrition, methods employed, and validity of conclusions drawn.

General Home Economics

Dean Justin
Assistant Dean Ahlborn
Professor Rust*
Graduate Assistant Nowlin

COURSES IN GENERAL HOME ECONOMICS

FOR UNDERGRADUATE CREDIT

101. Home Economics Freshman Seminar. R(1-0); I. Dean Justin, Assistant Dean Ahlborn, department heads of the division, and Professor C. V. Williams.*

The purpose of the seminar is: (1) The orientation of the student to her college environment. (2) The development of the ability to study. (3) Guidance in choice of one of the several fields of home economics for her profession.

151. Home Economics Senior Seminar. R(1-0); II. Dean Justin.

The opportunities and responsibilities of the home economist are presented, and means for professional growth and personal advancement of the trained woman are stressed.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Problems in Organization and Presentation of Home Economics. 1 to 5 credits; I and II. Prerequisite: Senior or graduate standing. Dean Justin and Mrs. Rust.*

This course permits opportunity for study of problems of organization and administration in this field.

There are investigations that touch the various fields of home economics which are primarily approached from the standpoint of organization and presentation of home economics, taking subject matter from the departments and correlating it into a general program. Such investigations may be carried on in conjunction with the Department of Education or with the Department of Home Economics in Extension.

FOR GRADUATE CREDIT

301. Research in Organization and Presentation of Home Economics. 1 to 10 credits; I and II. Prerequisite: Graduate standing. Dean Justin and Mrs. Rust.*

Individual research problems in phases of organization and administration for home economics. May be chosen as the basis for thesis for the master's degree. The nature of the problem will depend upon the student's major interest.

Household Economics

Dean Justin
Assistant Professor Gunselman
Assistant Professor Taylor
Graduate Assistant Heywood
Graduate Research Assistant Smith

The successful administration of the home depends upon the wise expenditure of time, money and effort, the maintenance of healthful and comfortable home conditions, and an appreciation of the importance of the home and its relation to the community. Through the courses in this department, training is given in household equipment, problems of household administration, and standards of living.

Those preparing to become directors of residence units, specialists in household management, teachers, or research workers in this field find suitable courses in this department.

The department owns equipment valued at $3,041.

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* Of the Department of Education.

FOR UNDERGRADUATE CREDIT

107. Household Management. 3(2-3); I and II. Prerequisites: Foods II, and Clothing II. Miss Gunselman and Miss Taylor.

Organization and simplification of housework; choosing the home and its furnishings; time schedules; the income and its expenditures; advancement of the family; and the place of the family in the community.

Laboratory.—Planning the spending of the income. Time and efficiency studies; care of metals and restoration of wood surfaces; planning and equipping a kitchen. Charge, $1.

116. Practice Course in Household Management. 3 credits; I and II. Prerequisites: Household Physics, Household Management, and Human Nutrition. Miss Gunselman.

Opportunity is given in the practice house for the practical application of principles of science and art to the home. The aim is to develop good judgment in planning expenditures of time, money and effort, and in evaluating the factors that determine standards of living.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Household Equipment. 3(1-6); I and II. Prerequisites: Physics 101 and Hshld. Ec. 107. Miss Taylor.

Studies and tests of household equipment from the physical standpoint. Charge, $2.50.

243. Problems in Household Economics. 1 to 5 credits; I and II. Prerequisite: Household Management. Consult instructor. Dr. Justin, Miss Gunselman, and Miss Taylor.

Special problems for individual investigation in standards of living and family expenditures; housing, household equipment, organization and methods of housework; use of time freed from housework, or social aspects of the household and of the family.

265. Economics of the Household. 2(2-0); II. Prerequisites: Foods II and Economics. Miss Gunselman.

Problems of income, housing, standards of living, budgets, and accounts.

FOR GRADUATE CREDIT

301. Research in Household Economics. 1 to 10 credits; I. Prerequisites: Consult instructors. Dr. Justin, and Miss Gunselman.

An individual research problem in the field of household administration. This may form part or all of the basis for a master's thesis.

Institutional Economics

Professor West
Assistant Professor Wood
Assistant Harris
Graduate Assistant Trump
Graduate Assistant Hoover
Graduate Assistant Deal

The successful administration of the institution involves the wise expenditure of time, energy, and money, in order that the requirements of food and shelter may be satisfactorily furnished to large groups. Courses in this department provide training for cafeteria, tea-room, lunch-room managers, dietitians, and directors of residence halls. The equipment of this department is valued at $13,229.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Institutional Economics I. 3(1-6); I and II. Prerequisite: Foods II; prerequisite or parallel: Human Nutrition. Miss Wood and graduate assistant.

Food problems of institutions, including preparation and serving of food, arrangement of menus and cost of service.

Laboratory.—Carried on in College cafeteria and Girls' Residence Hall, where food is prepared in large quantities for serving. Charge, $2.50.

205. Institutional Economics II. 3(3-0); I and II. Prerequisite: Institutional Economics I. Graduate students may parallel Institutional Economics I and II. Miss Wood.

A study of institutions, their organization and management problems. Includes floor plans, equipment, qualifications and duties of the manager, personnel work, and office management.

210. Problems in Institutional Administration. 1 to 5 credits; I and II. Prerequisite: Institutional Economics I; prerequisite or parallel: Institutional Economics II. Consult instructor. Mrs. West.

Individual investigation of problems in the field of institutional economics. Conferences are held and reports made at appointed hours.

215. Institutional Marketing. 2(2-0); I. Prerequisite: Foods II. Mrs. West.

Study of producing areas, storage, local and general marketing of fresh, canned, and dehydrated vegetables; meats; and fresh, canned, and dried fruits.

218. School Lunch-room Management. 2(2-0); II and SS. Prerequisite: Human Nutrition. Mrs. West.

The principles involved in equipment, organization, administration, purchasing, and menu-making of the school lunch.

225. Tea-room Management. 3(0-9); I and II. Prerequisites: Institutional Economics I. Prerequisites or parallel: Institutional Economics II and Institutional Marketing. Miss Wood and graduate assistant.

Practical experience in the planning, preparation and serving of food to the public. Afternoon tea, dinner, and catering for small parties is included. The College Tea Room serves as a laboratory for this course. Charge, $2.50.

FOR GRADUATE CREDIT

301. Research in Institutional Economics. 2 to 10 credits; I and II. For prerequisites, consult instructor. Mrs. West.

Home Economics in the Summer School

In addition to instruction in various branches of home economics available to teachers during the regular College year, the College offers numerous courses in this subject in the Summer School. These courses apply directly on the curriculum in home economics, or on graduate credit.

A special circular giving in detail the courses offered in the Summer School may be had by applying to the vice president of the College.

The Division of Veterinary Medicine

Ralph R. Dykstra, *Dean*

The College has one of the best-equipped schools of veterinary medicine in the West. It is rated in class "A" by the United States Department of Agriculture, which rating places it among the best in the United States and Canada. In addition to giving the student the best possible technical training in veterinary medicine, the course is designed to give the broad culture necessary for men who are to take their places in public affairs. Professional men, such as veterinarians, are placed in a more or less public relation to the communities they serve. They must have a broad groundwork in culture and ethical training, which will win them the confidence and respect of their communities. Success is measured in something more than dollars and cents, and the man whose view of life is no broader than his profession adds but little to the world and its happiness. The training given by the College in veterinary science seeks to emphasize the value of the man as a man, as much as his value as a specialist.

The Division of Veterinary Medicine gives most of the technical work in the curriculum in veterinary medicine, a general description of which is given below. The division is housed in the Veterinary buildings, which were erected at a cost of over $175,000, and are thoroughly equipped throughout. Veterinary Hall contains modern classrooms, and its laboratories possess the necessary appliances for illustrating the several subjects required. The mode of instruction is more specifically detailed in succeeding sections.

The policy adhered to in the instruction in all the departments is that the science of veterinary medicine is the foundation, and the art merely supplementary. A thorough drill is given in the foundation studies, and later in the curriculum practical application of these is made in actual field work. This result is a thoroughly scientific veterinary education.

In the arrangement of the schedule of the veterinary curriculum it is implied that the courses should be followed in regular sequence, as each year's work depends upon the work done the previous year. Certain courses, however, may be selected as electives if a student has the necessary prerequisites. These courses are mentioned in the list of electives.

THE CURRICULUM IN VETERINARY MEDICINE

Veterinary medicine has made remarkable advances within recent years, and is taking its place alongside human medicine as a science. In truth, medical science and veterinary science are but specialized branches of the same science, and must be developed together. The modern veterinarian takes his place in the community as a professional man of education and culture. With the general improvement of the live stock on the farms, and with the advance of live stock in value, there is constant increase in the demand for skilled physicians to care for them.

The veterinarian, while primarily trained to conserve the health of farm animals, has yet larger service to render in preventing disease common to both man and beast from being communicated from domestic animals to man. Moreover he must see that the animals slaughtered for meat are healthy and that the products are handled under such conditions as to render them suitable for human food. The public is now demanding that milk and other food products be free from contamination and that they be incapable of transmitting dangerous diseases, like tuberculosis, typhoid fever, scarlet fever, and diphtheria. There is ample work for all of the thoroughly competent veterinarians that the colleges of the country will train.

The curriculum in veterinary medicine at the Agricultural College was established to give the young men of this state an opportunity to pursue these studies in an agricultural environment, where the facilities offered by other branches of the College would be at their command. While the instruction in this curriculum is largely technical, enough subjects of a general character are included to give a sound education and a broad outlook. Better to fit the veterinarian to deal wisely with the live-stock problems which he has to meet, he is required to take the work in live-stock feeding, breeding and judging, and in milk inspection, zoölogy, and embryology, in addition to his purely professional work.

The diploma from this school is recognized by the United States Department of Agriculture, by the United States Civil Service Commissions, by the American Veterinary Medical Association, and by the various examining boards of the several states and territories of America where it has been presented.

THE CURRICULUM IN ANIMAL HUSBANDRY AND VETERINARY MEDICINE

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

This curriculum is prepared especially for students who intend to become managers of live-stock farms or to enter special lines of veterinary practice.

THE CURRICULUM IN GENERAL SCIENCE AND VETERINARY MEDICINE

The combined curriculum in general science and veterinary medicine has been so arranged that students may receive the degree of Bachelor of Science at the end of four years, and the degree of Doctor of Veterinary Medicine at the end of two years more, thus securing both degrees in six years. The curriculum is intended especially for students who intend to pursue teaching or research work in agricultural experiment stations.

Curriculum in Veterinary Medicine

FRESHMAN

First Semester		Second Semester	
Anatomy I, Anat. 104	*4(3-3)	Anatomy II, Anat. 109	7(3-12)
Histology I, Path. 101	3(1-6)	Histology II, Path. 106	3(1-6)
Zoöl. and Emb. (Vet.), Zoöl. 109	5(3-6)	Chemistry (Vet.), Chem. 105	5(3-6)
College Rhetoric I, Engl. 101	3(3-0)		
Mil. Sci. (Vet.) I, Mil. Tr. 121A	1(0-3)	Mil. Sci. (Vet.) II, Mil. Tr. 122A	1(0-3)
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	16	Total	16

SOPHOMORE

First Semester		Second Semester	
Anatomy III, Anat. 112	4(1-9)	Anatomy IV, Anat. 116	3(1-6)
Comp. Physiology I, Anat. 221	5(4-3)	Comp. Physiology II, Anat. 226	3(2-3)
Medical Botany, Bot. 126	2(1-3)	Path. Bact. I, Bact. 111	4(2-6)
El. Org. Chemistry, Chem. 123	3(2-3)	Pathology I, Path. 202	3(2-3)
Live-stock Judging, An. Husb. 120	3(2-4)	Prin. of Feeding, An. Husb. 152	3(3-0)
Mil. Sci. (Vet.) III, Mil. Tr. 123A	1(0-3)	Dairy Judging, Dairy Husb. 104	1(0-3)
Phys. Education M, Phys. Ed. 105	R(0-2)	Mil. Sci. (Vet.) IV, Mil. Tr. 124A	1(0-3)
		Phys. Education M, Phys. Ed. 106	R(0-3)
Total	18	Total	18

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

JUNIOR

First Semester		Second Semester	
Surgery I, Surg. and Med. 101	3(3-0)	Surgery II, Surg. and Med. 106	3(3-0)
Diagnosis, Surg. and Med. 170	2(2-0)	Dis. of Lg. Ani. I, Surg. & Med. 174	4(4-0)
Materia Medica, Surg. and Med. 157	4(4-0)	Farm Poult. Pro., Poult. Husb. 101	2(1-2, 1)
Pharmacy, Surg. and Med. 166	1(0-3)	Therapeutics, Surg. and Med. 163	3(3-0)
Pathology II, Path. 207	3(2-3)	Pathology III, Path. 212	5(4-3)
Patho. Bact. II, Bact. 116	4(2-6)		
Clinics I, Surg. and Med. 137	1(0-6)	Clinics II, Surg. and Med. 140	1(0-10)
Total	18	Total	18

SENIOR

First Semester		Second Semester	
Surgery III, Surg. and Med. 111	3(3-0)	Surgery IV, Surg. and Med. 116	3(3-0)
Dis. of Lg. Ani. II, Surg. & Med. 177	5(5-0)	Inf. Dis. of Large Animals, Surg. and Med. 181	5(5-0)
Jurisprudence, Anat. 161	1(1-0)	Dis. of Small Ani., Surg. & Med. 186	2(2-0)
Pathology IV, Path. 214	3(2-3)	Poultry Diseases, Bact. 217	2(2-0)
Meat Inspection, Path. 216	2(2-0)	Op. Surgery, Surg. and Med. 121	1(0-3)
Parasitology, Zoöl. 208	3(2-3)	Obstetrics, Surg. and Med. 131	3(3-0)
Clinics III, Surg. and Med. 143	1(0-12)	Dairy Insp. II, Dairy Husb. 118	1(0-3)
		Clinics IV, Surg. and Med. 146	1(0-12)
Total	18	Total	18

Number of semester hours required for graduation, 140.

EXTRA-CURRICULAR ELECTIVES

First Semester		Second Semester	
		Special Histology, Path. 252	3(1-6)
Vaccine Manu. I, Path. 227	2(1-3)	Vaccine Manu. II, Path. 230	2(1-3)

First or Second Semester

Pathological Technic and Diagnosis I, Path. 220	2(0-6)
Pathological Technic and Diagnosis II, Path. 221	4(0-12)
Research in Pathology, Path. 302	1 to 10(-)
Special Anatomy, Anat. 202	2 to 4(-)
Applied Anatomy, Anat. 206	1(0-3)
Problems in Physiology, Anat. 215	3 to 5(-)

Curriculum in Animal Husbandry and Veterinary Medicine[1]

FRESHMAN

Freshman year of the Curriculum in Agriculture

SOPHOMORE

First Semester		Second Semester	
General Zoölogy, Zoöl. 105	5(3-6)	Path. Bact. I, Bact. 111	4(2-6)
Anatomy I, Anat. 104	4(3-3)	Anatomy II, Anat. 109	7(3-12)
Soils, Agron. 130	4(3-3)	College Rhetoric II, Engl. 104	3(3-0)
Elements of Horticulture, Hort. 107	3(2-3)		
Infantry 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(0-3)
Agric. Seminar, Gen. Agric. 103	R	Agric. Seminar, Gen. Agric. 103	R
Total	17	Total	17

1. This curriculum is so arranged that students may receive the degree of Bachelor of Science (in agriculture) at the end of four years, and the degree of Doctor of Veterinary Medicine at the end of two more years.

JUNIOR

First Semester		Second Semester	
Embryology A, Zoöl. 135	3(2-3)	Prin. of Feeding, An. Husb. 152	3(3-0)
Anatomy III, Anat. 112	4(1-9)	Anatomy IV, Anat. 116	3(1-6)
Histology I, Path. 101	3(1-6)	Histology II, Path. 106	3(1-6)
Genetics, An. Husb. 221	3(3-0)	El. Journalism, Ind. Jour. 151	2(2-0)
Electives[2]	4(-)	Jour. Pract. I, Ind. Jour. 154	2(0-6)
		Farm Crops, Agron. 101	4(2-6)
Agric. Seminar, Gen. Agric. 103	R	Agric. Seminar, Gen. Agric. 103	R
Total	17	Total	17

SENIOR

First Semester		Second Semester	
Gen. Entomology, Ent. 203	3(2-3)	Agric. Rela., Gen. Agric. 105B	R(1-0)
Agric. Economics, Ag. Ec. 101	3(3-0)	Farm Org., Ag. Ec. 106	3(2-3)
Comp. Physiology I, Anat. 221	5(4-3)	Comp. Physiology II, Anat. 226	3(2-3)
		Pathology I, Path. 202	3(2-3)
Electives[2]	5(-)	Electives[2]	7(-)
Agric. Seminar, Gen. Agric. 103	R	Agric. Seminar, Gen. Agric. 103	R
Total	16	Total	16

FIFTH YEAR

Junior year of the Curriculum in Veterinary Medicine.

SIXTH YEAR

Senior year of the Curriculum in Veterinary Medicine.
Number of semester hours required for graduation, 202.

Six-year Curriculum in General Science and Veterinary Medicine

FRESHMAN

First Semester		Second Semester	
Anatomy I, Anat. 104	4(3-3)	Anatomy II, Anat. 109	7(3-12)
College Rhetoric I, Engl. 101	3(3-0)	College Rhetoric II, Engl. 104	3(3-0)
Chemistry I, Chem. 101	5(3-6)	Chemistry II, Chem. 102	5(3-6)
College Algebra,* Math. 104	3(3-0)		
Mil. Sci. (Vet.) I, Mil. Tr. 121A	1(0-3)	Mil. Sci. (Vet.) II, Mil. Tr. 122A	1(0-3)
Phys. Education M, Phys. Ed. 103	R(0-2)	Phys. Education M, Phys. Ed. 104	R(0-2)
Total	16 or 18	Total	16

SOPHOMORE

First Semester		Second Semester	
Histology I, Path. 101	3(1-6)	Histology II, Path. 106	3(1-6)
German I or French I, Mod. Lang. 101 or 151	3(3-0)	German II or French II, Mod. Lang. 102 or 152	3(3-0)
General Zoölogy, Zoöl. 105	5(3-6)	Plane Trigonometry, Math. 101	3(3-0)
Library Methods, Lib. Econ. 101	1(1-0)	Prin. of Feeding, An. Husb. 152	3(3-0)
Organic Chemistry I, Chem. 218	4(2-6)	Organic Chemistry II, Chem. 219	4(2-6)
Mil. Sci. (Vet.) III, Mil. Tr. 123A	1(0-3)	Mil. Sci. (Vet.) IV, Mil. Tr. 124A	1(0-3)
Phys. Education M, Phys. Ed. 105	R(0-2)	Phys. Education M, Phys. Ed. 106	R(0-2)
Total	17	Total	17

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2. All electives must be officially approved before assignment by both the head of the Department of Animal Husbandry and the dean of the Division of Agriculture.

* Students who offer but one unit of algebra for admission take a five-credit course in College Algebra, Math. 107, making a total of 17½ credits for the semester.

JUNIOR

First Semester		Second Semester	
Anatomy III, Anat. 112	4(1-9)	Anatomy IV, Anat. 116	3(1-6)
General Botany I, Bot. 101	3(1-4, 2)	General Botany II, Bot. 105	3(1-4, 2)
General Physics I, Physics 135	4(3-3)	General Physics II, Physics 140	4(3-3)
Live-stock Judging, An. Husb. 120	3(2-4)	Pathogenic Bact. I, Bact. 111	4(2-6)
Modern Europe II, Hist. 223	3(3-0)	Amer. Ind. Hist., Hist. 105	3(3-0)
		Dairy Judging, Dairy Husb. 104	1(0-3)
Total	17	Total	18

SENIOR

First Semester		Second Semester	
Comp. Physiology I, Anat. 221	5(4-3)	Comp. Physiology II, Anat. 226	3(2-3)
Patho. Bact. II, Bact. 116	4(2-6)	Dairy Bacteriology, Bact. 211	3(1-6)
Parasitology, Zoöl. 208	3(2-3)	Embryology A, Zoöl. 135	3(2-3)
El. of Statistics, Math. 126	3(3-0)	Dairy Insp. II, Dairy Husb. 118	1(0-3)
Advanced German or French, Mod. Lang.	4(4-0) or 3(3-0)	American Government, Hist. 151	3(3-0)
		Pathology I, Path. 202	3(2-3)
Total	19 or 18	Total	16

Summary for the first four years.—Physical education, required; military science, 4 hours; sciences, 54 hours; veterinary subjects, 35 hours; other prescribed subjects, 42 to 45 hours. Total 135 to 138 semester hours.

FIFTH YEAR

The same as the junior year in the curriculum in veterinary medicine, except that four semester hours of elective replace Pathogenic Bacteriology II, which has been taken in the junior year.

SIXTH YEAR

The same as the senior year in the curriculum in veterinary medicine, except that four hours of elective replace Parasitology, 3 hours, and Dairy Inspection II, 1 hour, these having been taken in the senior year.

Summary.—Physical education, required; military science, 4 hours; sciences, 56 hours; veterinary subjects, 99 hours; other prescribed subjects, 47 to 50 hours, elective, 7 hours. Total, 213-216 semester hours.

Anatomy and Physiology

Professor Burt
Associate Professor McLeod

This branch of veterinary medicine extends over the freshman and sophomore years for veterinary students, and one semester is required in the curriculum in agriculture.

The classroom instruction consists of lectures, quizzes and recitations and special dissection of the part under discussion, also a study of dissected specimens, various models, and the Azoux model of the horse. Mounted skeletons and limbs, and loose bones are abundant in the museum. The horse is taken as a type and the other domestic animals are compared with the horse. As often as necessary parts of other animals are dissected to show the differences.

The courses in anatomy require several lecture rooms, which contain models, skeletons, and bones of all kinds, and a thoroughly sanitary dissecting room equipped with all the latest materials necessary to give a course in anatomy second to none on the continent.

The equipment for instruction in physiology is ample to give the student a thoroughly comprehensive course of laboratory study.

The department owns equipment valued at $9,407.

COURSES IN ANATOMY

FOR UNDERGRADUATE CREDIT

103. Anatomy I. 3(2-3); I.* Dr. McLeod.
A detailed study of the bones of the horse, and a comparative study of the bones of other domestic animals, and of man. Deposit, $3.

108. Anatomy II. 8(4-12); II. Prerequisite: Anatomy I. Drs. Burt and McLeod.
Myology, arthology, and splanchology, or a study of muscles, joints, and viscera. Deposit, $5.

112, 116. Anatomy III and IV. 4(1-9) and 3(1-6) respectively; I and II respectively. Prerequisites: For III, Anatomy II; for IV, III. Dr. Burt.
Distribution, location, and relation of the blood vessels and nerves; all parts not previously dissected; two-thirds of the subject covered in Anatomy III, one-third in Anatomy IV; in Anatomy IV also a comparative study of the principal structural differences of the various domestic animals, not studied concurrently with the previous courses. Deposit, $5 for each course.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Special Anatomy. 2 to 4 credits; II. Prerequisite: Any course in Anatomy and Physiology (102, 107, 111, 116, or 131), or equivalent. Dr. Burt.
Study of any part of the horse, as the digestive system, the genital system, etc., or of similar parts of the ox, sheep, pig, etc., or of poultry anatomy; this course being adaptable to the requirements of the line of work in which the student is specializing.

206. Applied Anatomy. 1(0-3); I. Prerequisite: Anatomy IV. Dr. Burt.
Dissection of certain areas embraced in performing the various surgical operations, and study of all the structures in each area and their relation to one another as they would present themselves during an operation.

COURSES IN ANATOMY AND PHYSIOLOGY

FOR UNDERGRADUATE CREDIT

131. Anatomy and Physiology. 3(2-3); I. Drs. Burt and McLeod.
Physiology of the domestic animals with special emphasis on digestion, absorption, metabolism and excretion; sufficient anatomy to give a thorough understanding of the correlation between the two subjects and of the physiologic relations existing among the various organs of the body. Charge, $1.

COURSES IN JURISPRUDENCE

FOR UNDERGRADUATE CREDIT

161. Jurisprudence. 1(1-0); I. Dr. Burt.
The veterinarian's legal responsibilities; national and state live-stock laws; quarantine regulations, etc.

COURSES IN PHYSIOLOGY

FOR GRADUATE AND UNDERGRADUATE CREDIT

215. Problems in Physiology. 3 to 5 credits; I and II. Prerequisites: Any course in Anatomy and Physiology (131, 221, or 226), or their equivalent. Drs. Burt and McLeod.

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

Individual investigational problems in the physiology of digestion, reproduction, endocrin glands, etc.

221. Comparative Physiology I. 5(4-3); I. Prerequisites: For veterinary students, Anatomy I and II and Organic Chemistry (Vet.); for others, an approved course in organic chemistry. Drs. Burt and McLeod.

Physiology of domestic animals and man, beginning with the study of the blood, heart, blood vessels, and continuing with the ductless glands and internal secretions, respirations, digestion, and absorption.

Laboratory.—A practical application of the knowledge derived in the classroom. Laboratory directions furnished the student. Deposit, $3.

226. Comparative Physiology II. 3(2-3); II. Prerequisites: Same as for course 221. Drs. Burt and McLeod.

The urine and urinary system, nutrition, animal heat, muscular and nervous systems, locomotion, generation and development, growth and decay. Deposit, $3.

FOR GRADUATE CREDIT

301. Animal Nutrition Seminar. 1(1-0); I and II. For prerequisite, consult Dr. Burt.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of validity of conclusions drawn.

Pathology

Professor Lienhardt
Associate Professor Scott
Associate Professor Kitselman
Assistant Professor Leasure
Assistant Professor Farley

The Department of Pathology presents courses in histology, pathology and meat inspection. The instruction is presented by lectures or recitations, laboratory periods, and demonstrations which are carried out by the use of the projectoscope and by autopsies.

The laboratory is fully equipped and entirely up to date. The equipment consists of microtomes, paraffin ovens, microphotographic and projection apparatus, centrifuge, shaking machines, sterilizers, etc. Each student is furnished a drawer, microscope, prepared slides for study, and all other essentials needed for study in the laboratory courses.

The department is also in possession of a fairly complete pathological museum, which contains specimens of organs and tissues that show lesions typical of the various infections, and some noninfectious diseases. These specimens are used in the study of pathology, and together with the specimens sent in from over the state and fresh material from the immediate vicinity, they furnish ample material for the course in pathology.

The department library contains text and reference books on pathology and allied subjects, also the current files of the important technical periodicals relating to pathology. These books are at the constant disposal of the student for reference.

The course in meat inspection together with the allied subjects required for a degree in veterinary medicine make the student eligible to take the civil-service examination for meat inspection. In this course visits are made to packing plants in Topeka and Kansas City.

The equipment owned by the department is valued at $13,994.

COURSES IN HISTOLOGY

FOR UNDERGRADUATE CREDIT

101. Histology I. 3(1-6); I. Dr. Leasure.

Care and manipulation of the microscope; microscopical examination of the various tissues previously sectioned and mounted; blood-forming organs,

the digestive tract, etc., studied with a microscope and drawn by the student; preparations are teased and many sections in paraffin and celloidin. Deposit, $3.

106. Histology II. 3(1-6); II. Prerequisite: Histology I. Dr. Leasure.
Study of the stomachs of the dog, the horse and the ox; the intestines, the liver, pancreas, respiratory tract, the urinary organs, genital organs, the skin and appendages, suprarenal gland, the brain, the eye and the ear; these tissues studied with the microscope, and drawn by the student. Text: Same as course 102. Deposit, $3.

FOR GRADUATE AND UNDERGRADUATE CREDIT

252. Special Histology. 3(1-6); I. Prerequisite: Anat. 131 or its equivalent. Dr. Leasure.
A course dealing with special organs, as those concerned with digestion, respiration, etc., tissues fixed, dehydrated, imbedded, sectioned, stained, mounted and studied. Charge, $3.

COURSES IN PATHOLOGY

FOR GRADUATE AND UNDERGRADUATE CREDIT

202, 207. Pathology I and II. 3(2-3) each; II and I respectively. Prerequisites: For I, History II, and Chem. 107; for II, Path. 107 and 202, Anatomy 226, and Bact. 111, I. Drs. Lienhardt and Leasure.
General pathology, treating of the history of pathology, predisposition, immunity, congenital and inherited disease, cause of disease, course and termination of disease. Deposit, $3 for each course.

212. Pathology III. 5(4-3); II. Prerequisites: Path. 207, Anat. 116, and Bact. 116. Drs. Lienhardt and Leasure.
Special pathology and pathological technic; collecting, fixing, hardening, embedding in celloidin and paraffin sections of fresh, frozen and embedded tissues; and study of the method of preserving gross specimens. Deposit, $3.

214. Pathology IV. 3(2-3); I. Prerequisite: Path. 212. Drs. Lienhardt and Leasure.
Pathology of the infectious diseases and laboratory diagnosis. Deposit, $2.50.

216. Meat Inspection. 2(2-0); I. Prerequisite: Path. 212. Dr. Kitselman.
Kinds and classes of stock, traffic and transportation of animals, inspection before and after slaughter, disposition of the condemned from economic, hygienic, and sanitary standpoints, and study of different preparations and methods of preservation, adulterations, sanitary laws and regulations, and other points bearing on the question of healthful meat production.

220, 221. Pathological Technic and Diagnosis I and II. 2(0-6) and 4(0-12) respectively; I and II each. Prerequisites: I, Path. 207; II, Path. 212 and 220. Drs. Lienhardt and Leasure.
Practice in post-mortem and laboratory diagnosis. Deposit, $3 for each course.

227, 230. Vaccine Manufacture I and II. 2(1-3) each; I and II each. Prerequisite: Bact. 116. Dr. Scott.
I: Theory and practice of immunization as applied to blackleg and hog cholera.
Laboratory.—Isolation and identification of the blackleg organism and of related anaërobes, and practical production of blackleg biological products and anti-hog-cholera serum and virus. Deposit, $3.
II: Preparation and standardization of various veterinary biological products, such as tuberculin, bacterial vaccines, and bacterins.

Laboratory.—Production of some of the products mentioned and special work on blackleg biological products and anti-hog-cholera serum and virus. Deposit, $3.

FOR GRADUATE CREDIT

302. Research in Pathology. 1 to 10 credits; I and II. Prerequisites: Pathology 214 and 221, Bact. 116 and Chem. 235, or their equivalent. Drs. Lienhardt and Scott.

Individual research problems in pathology of the nervous system, eye, and ear; investigational work on disease caused by a filterable virus. This work may form the basis for a master's thesis. Deposit, $3.

310. Animal Nutrition Seminar. 1(1-0); I and II. For prerequisite, consult Dr. Lienhardt.

Study and criticism of experimental work in animal nutrition, of the methods employed, and of validity of conclusions drawn.

Surgery and Medicine

Professor Dykstra
Professor Frick
Assistant Professor Frank
Instructor Mott

For instruction in surgery and clinics the equipment is excellent. The veterinary hospital, recently completed at a cost of more than $100,000, is equipped with every modern appliance for surgical operations and diagnosis of animal diseases. The hospital has capacity for more than fifty horses or cattle, and in addition, it can accommodate fifty small animals, such as sheep, swine, cats, dogs, etc. In addition to the foregoing, members of the clinical staff, accompanied by students, make trips into the surrounding country to give veterinary attention to ailing patients. In this way the students come in contact every year with the diseases of animals and their treatment. The work is always under the guidance of proficient practitioners.

For the study of materia medica and pharmacy there is a general pharmacy laboratory containing all the drugs used in the practice of veterinary medicine and a practicing pharmacy where medicines are compounded for the everyday practice connected with the College.

This department owns equipment to the value of $6,297.

COURSES IN SURGERY

FOR UNDERGRADUATE CREDIT

101, 106. Surgery I and II. 3(3-0) each; I and II respectively. Dr. Dykstra.

I: Methods of restraint; asepsis and antisepsis; anæsthesia, both local and general, inoculation, bandaging, controlling hemorrhage; division of tissues and uniting of wounds; injections of medicines into the subcutaneous tissues, blood streams, trachea, spinal canal; thorough study of animal dentistry.

II: Surgical diseases of the head, neck, thorax, abdomen, stomach and bowels, urinary organs and organs of generation.

111, 116. Surgery III and IV. 3(3-0) each; I and II respectively. Dr. Dykstra.

I: Causes, symptoms, and treatment of lameness; fractures and their reduction; diseases of joints, tendons and sheaths, muscles and fascia; surgical diseases of the foot; horseshoeing.

II: Special operations, such as neurectomies, autoplasties, desmotomies, actual cauterization; tenotomies, myotomies, enterotomy and enteroanastomosis, and surgery of the eye.

121. Operative Surgery. 1(0-3): II. Drs. Dykstra, Frank and Mott.

More than 100 operations are performed on old horses which have been placed on the operating table and anæsthetized. The student is required to observe a careful technic, such as antisepsis, and, in fact, performs the operation as thoroughly and completely as possible. Charge, $5.

COURSES IN OBSTETRICS

FOR UNDERGRADUATE CREDIT

131. Obstetrics. 3(3-0); II. Prerequisites: Anatomy IV and Zoölogy and Embryology (Vet.); or Anatomy and Physiology, and Embryology. Dr. Frank.

Physiology of pregnancy, principles of breeding, anatomy of the generative organs, care and hygiene of the pregnant animals, sterility, diseases incidental to pregnancy, diseases of new-born animals, care of new-born animals, abnormal presentation during parturition, surgery of obstetrics, etc.

COURSES IN CLINICS

FOR UNDERGRADUATE CREDIT

137, 140. Clinics I and II. 1(0-6) and 1(0-10) respectively; I and II respectively. Drs. Dykstra, Frick, Frank, and Mott.

A free clinic is conducted, at which all species of domesticated animals are presented for treatment. In clinics I and II junior students assist in these treatments, become proficient, by practical experience, in the restraint of animals, in bandaging, etc., and have charge of compounding prescriptions, preparation of antiseptics and other medicinal agents. Deposit, $5 for each course.

143, 146. Clinics III and IV. 1(0-12) each; I and II respectively. Prerequisite: Junior or senior veterinary assignment. Drs. Dykstra, Frick, Frank, and Mott.

Diagnosis and treatment of hospital patients, including the keeping of clinic sheets, the administering of all medicines, changing of dressings on surgical wounds, etc.; assisting clinicians in out-clinic work. Deposit, $5 for each course.

COURSES IN MATERIA MEDICA

FOR UNDERGRADUATE CREDIT

157. Materia Medica. 4(4-0); I. Dr. Frank.

Modes of action of drugs in general, their method and rapidity of absorption and elimination, physiological and chemical incompatibilities, etc.; origin, physical properties, active constituents, and official preparation of medicinal agents.

163. Therapeutics. 3(3-0); II. Prerequisite: Materia Medica. Dr. Frank.

Physiological and therapeutic action of the various drugs both on the healthy and on the diseased animals; symptoms and treatment of poisons frequently encountered in veterinary practice; the proper dose of the crude drug and its preparation for horses, cows, dogs, cats, and swine.

166. Pharmacy. 1(0-3); I. Drs. Frank and Mott.

Meanings of the various pharmaceutical terms; various systems of weights and measures; prescription writing; principles of filtration, percolation, hot-water and sand baths, etc.; preparation of at least one of each of the following: An infusion, a decoction, a tincture, a wine, a syrup, a fluid extract, a liniment, an emulsion, a liquor, an aqua, a spirit, an ointment, an electuary, and a cataplasm; a thorough course in the compounding of prescriptions. Deposit, $3.

COURSES IN MEDICINE

FOR UNDERGRADUATE CREDIT

170. Diagnosis. 2(2-0); I. Prerequisites: Anat. and Physiol. 116 and 226. Drs. Frick and Mott.

Different diagnostic methods employed for the detection of diseases, including auscultation, percussion, palpation, and inspection; normal and abnormal abdominal and thoracic sounds, including diagnostic inoculations, as an aid to the detection of disease.

174, 177. Diseases of Large Animals I and II. 4(4-0) and 5(5-0) respectively; II and I respectively. Prerequisite: Diagnosis. Dr. Frick.

I: Noninfectious diseases of the digestive, circulatory, and respiratory organs of the larger animals.

II: Noninfectious diseases of the urinary organs, diseases of metabolism, of the nervous system, of the organs of locomotion, of the skin, and of the eye.

181. Infectious Diseases of Large Animals. 5(5-0); II. Dr. Frick.

The distinctly infectious and contagious diseases of the larger domestic animals.

186. Diseases of Small Animals. 2(2-0); II. Prerequisite: Diagnosis. Dr. Frick.

Infectious and noninfectious canine and feline diseases; breeds of dogs, cats, and fur-bearing animals, erection of kennels, the breeding and care of puppies, care and feeding of dogs in general, and the hygienic measures pertaining thereto.

190. Farm Animals in Health and in Disease. 3(2-3); II and SS. Prerequisite: Anatomy and Physiology. Dr. Mott.

First-aid treatment of diseases of domestic animals; special emphasis on cause and prevention of disease in farm animals; domestic animals studied in relation to their surroundings.

FOR GRADUATE CREDIT

301. Research in Surgery. 1 to 10 credits; I and II. Prerequisites: Surgery I to IV, Anatomy I to IV, and Therapeutics. Dr. Dykstra.

The purpose of this course is to attempt to solve many of the surgical problems confronting the average veterinary practitioner. Offered especially for graduates in veterinary medicine.

The Division of College Extension

HARRY UMBERGER, *Dean and Director*

The people of Kansas believe in using their educational institutions to their full capacity, not only for the students privileged to come to them but also for the state at large. They know that the number who complete a College course in agriculture, engineering, or home economics is small in comparison with the great majority of the people who cannot go to college, and it is their wish that this majority also be served. The Agricultural College is in full sympathy with this desire and is ambitious not only to give its resident students the best possible training for leadership in life's work but to be of direct service to every community in the state.

As far back as 1864 conventions of the farmers of Manhattan and vicinity were held at the College. The first well-organized farmers' institute conducted under the auspices of the Faculty was held at Manhattan, November 14, 1868, and this was followed by a similar gathering at Wabaunsee, November 20 and 21 of the same year. In 1868 the Board of Regents adopted a resolution recommending "that a system of lecturing on agricultural subjects at this College and the populous settlements of the several counties of the state should be conducted, so that the benefits of farming according to correct agricultural principles may be disseminated throughout the state."

A few meetings were held each year for the next several years, increasing in number from 1879, but no definite appropriation for extension work was made until 1899, when $2,000 per year was appropriated for this purpose by the state legislature. The annual appropriation remained at this figure until 1905, when the legislature appropriated $4,000 for the work, to which the College added $800. Up to this time no regular staff for extension work was employed, and all extension activities were conducted by a committee. In October of that year, however, a superintendent to organize the institute work was selected by the Board of Regents, and in July, 1906, the Department of Farmers' Institutes was formally organized.

The interest in extension work throughout the state then developed rapidly. Beginning with 1907, appropriations by the Kansas legislature for extension work in the state have been as follows:

For biennium.	*Amount.*	*For biennium.*	*Amount.*
1907-'09	$10,500	1919-'21	$138,277
1909-'11	52,500	1921-'23	174,289
1911-'13	75,000	1923-'25	165,000
1913-'15	95,000	1925-'27	165,000
1915-'17	41,262	1927-'29	203,683
1917-'19	89,762	1929-'31	203,683

This rapid development of extension work was made possible not only because the people of the state wished to have such work done, but because much new light has been thrown on the essentials in agriculture by the effective experimental work done by the Experiment Stations and by the United States Department of Agriculture.

In 1914 the federal government felt that the useful and practical information on subjects connected with agriculture and home economics developed by the experiment stations, by the Department of Agriculture, and by the experience of the best farmers and home makers should be made more readily available to everyone; and in order that this information might be more fully and effectively diffused among the people of the several states and its practical application encouraged, the congress of the United States, in 1914, passed the Smith-Lever bill, which provides for "coöperative agricultural extension work between the agricultural colleges in the several states receiving

the benefits of an act of congress approved July 2, 1862, and of acts supplementary thereto, and the United States Department of Agriculture." To further this act the congress provided for an annual appropriation of $480,000, of which $10,000 is paid each year to each state which assents to the provisions of the act. This initial appropriation was increased each year for seven years, such increase being allotted annually to each state in the proportion which the rural population of such state bore to the total rural population of all the states, providing a sum equal to such increase had been appropriated for that year by the legislature of such state, or had otherwise been provided from within the state, for the maintenance of the coöperative agricultural extension work.

Under this act the coöperation of the agricultural colleges and the United States Department of Agriculture has been assured, extension work has become a national as well as state project, and its effectiveness has been greatly increased.

The governor of the state and the Kansas legislature of 1915 accepted the provision of the Smith-Lever act immediately, and $10,000, therefore, was secured from the federal government for extension work for the year ending June 30, 1915, and for each succeeding year thereafter. The additional sums coming from the federal funds under this act to the state for the years ending June 30, 1916 and 1917, respectively, were $14,555 and $26,685; for the years 1918 and 1919, $38,815 and $50,944, respectively; for the years 1920 and 1921, $63,074 and $75,203, respectively; for the years 1922 and 1923, $80,641 and $90,842, respectively; and for each of the years 1924 to 1929, inclusive, $91,842. These sums were duplicated by an equal appropriation by the legislature of Kansas for the years named with the exception of 1924, 1925, 1926 and 1927, for each of which the legislature appropriated $82,500, and for each of the years 1928, 1929, and 1930, $101,841. In addition, from the appropriation made to the Agricultural College for all its work, $31,000 was set aside for extension work for the year ending June 30, 1923. During the war congress made an emergency appropriation to extension work, in order that special attention might be given to maximum production of food, conservation and economic utilization of farm products. This appropriation terminated June 30, 1919. There was such great demand for continuation of much of the work started under this appropriation, with a view to carrying it on a more constructive and permanent basis, that congress appropriated funds for this purpose, effective July 1, 1919. This is known as the supplementary federal Smith-Lever appropriation. In addition to the federal appropriations named, the seventieth congress enacted the Capper-Ketcham bill. The appropriation resulting from this act is supplemental to those heretofore named in furtherance of extension work. Through this legislation there is appropriated to the state of Kansas $20,000 for the year 1928-'29, and $31,165 for the year 1929-'30. The total sum for extension work under the Smith-Lever act and from state funds for the year ending June 30, 1930, was as follows: From the federal government through the Smith-Lever act, $101,841; from the federal government through the supplementary Smith-Lever appropriations, $35,281; from the general state appropriations made to the College, $29,000; from the state legislature by direct appropriation for Smith-Lever work, $101,841; from federal government through the Capper-Ketcham appropriation, $31,165; from county appropriations duplicating the supplementary Smith-Lever appropriation, $35,281, and $11,165 duplicating the Capper-Ketcham appropriation; total for the year, $345,574.

County funds are appropriated for the support of the county farm bureaus through a special act of the legislature enabling the county commissioners to levy a direct tax for this purpose. (Session Laws of Kansas for 1915, p. 204, ch. 166, sections 1, 2 and 3; Session Laws of Kansas for 1919, p. 217, ch. 157, sections 1, 2 and 3.)

The rapid growth of extension work has demanded efficient administrative machinery. In the judgment of the president of the College and the Board of Regents it became necessary to create, in December, 1912, a Division of College Extension coördinate with the other divisions of the College. This at first was subdivided into four distinct sections or departments, but the increase in work and personnel of the division made necessary a reorgan-

ization into eight departments, namely: institutes and extension schools, county-agent work, boys' and girls' club work, home economics, home demonstration-agent work, rural engineering, rural service, and home-study service, each with its own head and staff. The department of rural service was discontinued June 30, 1922. The heads of the departments are responsible to the director, who is dean of the Division of College Extension. Through this organization it is possible to administer the extension work effectively and economically, to reach directly more than 500,000 people in the state each year, and to conduct some activity in every county.

Publications covering practical subjects in the field of agriculture, home economics and rural engineering are issued from time to time by the Division of College Extension as bulletins, circulars and leaflets. The authors of these publications are the extension specialists or the specialists of the departments in the other divisions of the College. The regular publications of the Agricultural Experiment Station are also used extensively in the extension work. A series of publications in coöperation with the United States Department of Agriculture is receiving special attention. Extension publications are mailed regularly to a list, composed of members of farm and home institutes, homemakers' clubs, extension schools, and farm bureaus; *i. e.*, to members of organizations coöperating closely with the Agricultural College. Any citizen of the state, however, on request, may secure copies of individual publications.

While the extension work is directed by the Division of College Extension for administrative efficiency, its scope would be limited were it not for the close coöperation of the other divisions and departments of the College, which not only help in supplying lectures for agricultural meetings and extension schools, material for publication, assistance in demonstration work and helpful counsel, but also are responsible for all subject matter taught by the extension specialists.

Beginning in February, 1924, the radio has been used as a means of extending information from the College to those living in distant parts of the state. This service has consisted in the giving of instruction in many subjects both by means of regular courses of lectures in specialized fields and by general discussions of subjects having timely interest to the people of the state.

Institutes and Extension Schools

AGRICULTURAL EXTENSION SPECIALISTS

L. C. Williams, in Charge

L. C. Williams, Horticulture
H. L. Lobenstein, Horticulture
C. G. Elling, Animal Husbandry
J. J. Moxley, Animal Husbandry
J. W. Lumb, Veterinary Medicine
E. G. Kelly, Entomology
G. T. Klein, Poultry Husbandry
M. A. Seaton, Poultry Husbandry
———, Rodent Control
Jas. W. Linn, Dairy Husbandry
J. C. Nisbet, Dairy Husbandry
E. B. Wells, Soils
A. L. Clapp, Crops
L. E. Willoughby, Crops
Geo. Montgomery, Marketing
I. N. Chapman, Farm Management
E. H. Leker, Plant Pathology

The Department of Institutes and Extension Schools has direct supervision over farm and home institute organizations, extension schools in agriculture and home economics, and the work of the agricultural extension specialists. The department has charge of the program and arrangement for Farm and Home Week, annual state-wide farmers' meetings, and the scheduling of judges for county and local fairs.

Each farm and home institute of the state is an association or farmers' club with regular officers, constitution and by-laws. Some organizations hold six or more monthly meetings, and practically all of them have no fewer than three, for no institute organization can obtain state aid unless, in addition to the annual meeting, at which some representatives of the College must be present, it also holds at least three local meetings. The College plans to send two specialists to the annual meeting, one in agriculture and one in home

economics, to present certain well-defined lessons and to give the results of demonstration work for the county or locality. The specialists and their subjects are chosen because of a known need or interest of a particular community or a plan to start or encourage certain definite lines of work.

EXTENSION SCHOOLS

Owing to the nature of the farm and home institutes, the demand for instruction can be met only in part, and for that reason extension schools or short courses in agriculture and home economics have been organized in communities which desire more complete courses in these subjects than can be given at the institutes.

The College now conducts extension schools in agriculture and home economics of from one to five days' duration, sending to each school two or more instructors. Well-planned, comprehensive courses are given at these schools in the various lines of agriculture and home economics, so that some of the essentials of these subjects may be learned. The local committees are required to organize the classes and pay the local expenses for each school. The Agricultural College supplies the teachers and pays their traveling expenses from funds appropriated for this purpose.

In addition to these general schools, special schools in animal diseases, dairying, poultry, orcharding, road making, crop production, animal husbandry, tractors and farm machinery, and building construction are held in communities desiring them and willing to defray the local expenses.

Extension schools are popular where the communities are brought to understand the work given. Almost every community that has had one school has petitioned for another. Each community is now required to submit the names of at least thirty men and twenty women who agree to attend as many sessions as possible, unless the schools are held as a regular part of the definite project work being carried on in each county, in which case the specialist in charge outlines the necessary requirements.

EXTENSION SCHEDULES

The specialists of this department work in extension schools and institutes during the winter months only, and a portion of this time is devoted to cooperative demonstration work in agriculture and home economics. During the spring, summer, and fall they conduct special campaigns, such as silo building, poultry culling, wheat improvement, grasshopper control, cow testing, better sires, hog-cholera control, and coöperative demonstration work. The latter phase of the work of the extension specialists is being especially met by the organization of coöperative demonstration work in each branch of agriculture in a certain number of counties each year. In much of the cooperative work each specialist has from 10 to 100 or more coöperators in each county. These men and women work under the direction of the specialist and the county agent. They keep records of the work and call demonstration meetings at their farms on each trip of the specialist. The number of visits which the specialist makes to each point varies from two, in the case of the specialist in soils, to six, in the case of the specialists in horticulture and entomology. The aim in all of this coöperative demonstration work is to show as well as to explain. This line of work is especially appreciated, and the representatives of the department have been able to meet only a fraction of the demands for it.

The extension specialist takes to the farm and farm home the newest research work of the Agricultural Experiment Station and the United States Department of Agriculture in a practical, effective and usable form. He is also of material assistance to the Agricultural Experiment Station of the College and to the United States Department of Agriculture in reporting the progress and success of demonstration work in the field. He seldom makes a trip without coming in contact with new agricultural problems or old ones requiring the attention of the research workers of the Agricultural Experiment

Station. By working in the closest coöperation with the subject-matter department of the College, the specialists become the carriers of information, not only from the Agricultural Experiment Station to the farmers, but from the farmers to the research workers of the Experiment Station. The extension specialist is, therefore, a medium through which both the Agricultural Experiment Station and the farmers can function to their mutual advantage.

To reach all of the people of the state, the work of the specialist becomes largely a matter of teaching and training leaders, such as the county agents, the home demonstration agents, the boys' and girls' club agents, and project leaders. If they are successful in teaching these leaders how to carry forward their various projects they are most efficient in carrying their message to all the farmers in the state. The specialists, therefore, are becoming more and more each year teachers of leaders instead of public speakers at general farmers' meetings as they were in times past.

Through these various leaders a definite check is kept regarding cost of production, need of follow-up work, and the progress made in the demonstration work undertaken. Haphazard, hit-and-miss extension work, therefore, has no place in our program under the present system.

The calls for extension specialists in all lines of work are so many that it is impossible to meet more than two-thirds of the calls for assistance from county agricultural agents and from farmers' organizations. The number of specialists is being increased rapidly, yet the work is growing still more rapidly, thus indicating a healthy condition.

FARM-MANAGEMENT DEMONSTRATIONS

Farm-management demonstrations are conducted by a farm-management specialist in coöperation with the county agents. In these demonstrations such records are taken as are essential to the determination of the net profits of the individual farms. These records are classified according to different types of farming, the profits of each type are determined, and individual farm records are compared with the average of all the farm records taken. The results of the study are made known to each farmer interested, in order that he may use the suggestions received in any need or reorganization of his own business. For those who desire it, farm account books are opened and instruction is briefly given in keeping simple records. The work was begun in September, 1914. The demand for this work was greatly increased by the enactment of the income tax law, the resulting need of business records by which the income might be determined, and by the demand for accurate cost-of-production figures by price-fixing commissions.

COUNTY AND LOCAL FAIRS

The animal husbandry and crop specialists devote from one to two months in judging the live stock and agricultural products at county and local fairs. This furnishes an excellent opportunity for lectures and demonstration work. Large numbers of people are reached through the fair judging work. In many cases people become interested in the work of the specialists who have not been interested or reached through farmers' meetings and demonstrations. Each specialist endeavors to make his judging work as practical and instructive as possible.

FARM AND HOME WEEK

The purpose of Farm and Home Week is to interest the farmers of the state in better methods of production and of farm management that will increase farm profits, to demonstrate to farm women methods of household management that will add to the comfort and enjoyment of farm life, and to encourage farm folks in social organization that will enrich the social life of the rural community.

All meetings, lectures, and demonstrations during Farm and Home Week are free of charge, and the expense of the trip to Manhattan, with reduced railroad rates, should not prevent any farmer from attending. The investment in knowledge and enthusiasm will make bigger profits on the farm.

During this week the Agricultural Experiment Station, the Extension Service, the United States Department of Agriculture, agricultural specialists and leading farmers bring to those in attendance the latest results in investigative work in all lines of agriculture, home economics, and mechanical engineering.

Problems concerning crops and soils, dairying, beef cattle, horses, hogs, sheep, poultry, horticulture, community service, beekeeping, and diseases of animals are discussed by some of the leading agricultural authorities in America. In addition to these lectures and demonstrations there are many other interesting features, such as the display of the live stock of the College, the barns, machinery, buildings, library, museum, dairy, experimental plots, orchards, and gardens.

County Agent Work

H. Umberger, Dean and Director
F. O. Blecha, District Agent
C. R. Jaccard, District Agent
J. V. Hepler, District Agent
A. F. Turner, Field Agent

J. A. Hendriks, Anderson
Joe M. Goodwin, Atchison.
Wm. G. Amstein, Atchison
(Assistant County Agent)
Sherman S. Hoar, Barton
T. F. Yost, Bourbon
W. H. Atzenweiler, Brown
Chas. E. Cassel, Butler
E. A. Stephenson, Jr., Chase
R. T. Patterson, Cherokee
Harvey J. Stewart, Cheyenne
Lyle Mayfield, Clark
Ray L. Graves, Clay
E. A. Cleavinger, Coffey
Fred J. Sykes, Comanche
E. H. Aicher, Cowley
Roy E. Gwin, Crawford
A. E. Jones, Dickinson
Chas. E. Lyness, Doniphan
A. I. Gilkison, Douglas
Geo. W. Sidwell, Edwards
Neil L. Rucker, Ellsworth
Robt. S. Trumbull, Ford
H. A. Biskie, Franklin
Paul B. Gwin, Geary
J. H. Coolidge, Gray
J. W. Farmer, Greenwood
Vance M. Rucker, Harper
R. R. McFadden, Harvey
Geo. S. Atwood, Hodgeman
H. F. Tagge, Jackson
Otis B. Glover, Jefferson
Ralph P. Ramsey, Jewell
C. A. Jones, Johnson
W. S. Speer, Kingman
L. B. Harden, Labette
Harry C. Baird, Lane
Preston O. Hale, Leavenworth
R. L. Stover, Lincoln
W. J. Daly, Linn
Carl L. Howard, Lyon
M. L. Robinson, McPherson
J. D. Montague, Marion
W. O'Connell, Marshall
John H. Shirkey, Meade
J. T. Whetzel, Miami
A. W. Knott, Montgomery
D. Z. McCormick, Morris
G. M. Reed, Nemaha
Lester Shepard, Neosho
Leslie M. Wolfe, Ness
E. L. McIntosh, Osage
Robt. E. Curtis, Ottawa
Chas. H. Stinson, Pawnee
O. W. Greene, Pratt
J. W. Roussin, Rawlins
Geo. W. Hinds, Reno
W. H. von Treba, Rice
S. D. Capper, Riley
B. W. Wright, Russell
D. E. Hull, Saline
H. L. Hildwein, Sedgwick
W. H. Robinson, Shawnee
I. K. Tompkins, Sheridan
E. O. Graper, Smith
E. H. Teagarden, Stafford
L. M. Knight, Sumner
L. F. Neff, Washington
W. C. Farner, Washington
(Assistant County Agent)
C. E. Agnew, Wilson
M. C. Axelton, Woodson
Duke D. Brown, Wyandotte

County-agent work in this state is provided for by the federal Smith-Lever act and the state farm-bureau law. The federal Smith-Lever act provides an appropriation which increased each year until 1922 when it reached its maximum and which is distributed among the states according to their rural population. In addition to the regular Smith-Lever appropriations, Kansas receives additional funds from the so-called supplementary Smith-Lever appropriation. This appropriation was made available immediately following the war period in order that permanent work which had been established during the war period need not be discontinued due to the inability of the regular Smith-Lever appropriations to finance it. Before the federal funds are available they must be duplicated within the state.

The state legislature appropriates at each session an amount approximately equal to that available to this state from the federal Smith-Lever appropriation.

In addition to this, the state farm-bureau law, effective June 17, 1919, provides that when one-fourth, or as many as 250, of the *bona fide* farmers of a county shall form a farm-bureau organization, adopt a constitution and by-laws and elect officers, and when an equipment fund of at least $800 has been provided and deposited in a local bank, the county commissioners shall appropriate at least $1,200 per year (which sum may be raised by a special tax levy), and the Agricultural College shall appropriate at least $1,200, so long as funds are available from the state or federal funds above mentioned, for the purpose of hiring a county agent or agents and paying their expenses.

Previous to 1914 county agents were financed by membership dues, private subscription and a small state appropriation. At that time a membership of at least 100, each paying dues of $5, was required. In 1914, congress passed the Smith-Lever act and in 1915 the Kansas legislature passed the farm-bureau law, which has since been the basis of the extension of this work. During the war period, July 1, 1917, to June 30, 1919, supplemental agricultural appropriations were made by congress for more rapid extension of county-agent work.

August 1, 1912, the first county agent in Kansas was employed by the Leavenworth county farm bureau. The number has increased gradually, until at the present time, October 1, 1929, there are seventy-two active farm bureaus in Kansas, as follows:

Allen	Doniphan	Lane	Pratt
Anderson	Douglas	Leavenworth	Rawlins
Atchison	Edwards	Lincoln	Reno
Barton	Finney	Linn	Rice
Bourbon	Ford	Lyon	Riley
Brown	Franklin	McPherson	Russell
Butler	Geary	Marion	Saline
Chase	Gray	Marshall	Sedgwick
Cherokee	Greenwood	Meade	Shawnee
Cheyenne	Harper	Miami	Sheridan
Clark	Harvey	Montgomery	Sherman
Clay	Hodgeman	Morris	Smith
Cloud	Jackson	Nemaha	Stafford
Coffey	Jefferson	Neosho	Sumner
Comanche	Jewell	Ness	Washington
Cowley	Johnson	Osage	Wilson
Crawford	Kingman	Ottawa	Woodson
Dickinson	Labette	Pawnee	Wyandotte

The county agents are active in conducting demonstrations in the best methods of production and marketing, in assisting farmers with suggestions and plans relative to farm management and the farm business, and in organizing rural activities. Field demonstrations are conducted for the purpose of introducing crops and testing relative value of varieties already grown, and methods of cultivation and harvesting. Proper methods of the feeding, care and management of live stock, and controlling insects and live stock and plant diseases are among the most popular demonstrations. Surveys of the farm business are made in order to study the conditions prevailing in typical areas, and possible improvements in farm-management methods that should be instituted. Improved methods of marketing and community welfare, in which better social relations are fostered, are important features of this work. The county agent interests himself in practically every farm activity, especially where there is need of improvement.

A course suggesting special lines of training for those desiring to enter extension work will be found elsewhere in this catalogue.

Home Economics

Miss Amy Kelly, State Home Demonstration Leader, in Charge

Miss Loretta McElmurry, Clothing
Miss Maude Deely, Millinery
Miss W. Pearl Martin, Home Health and Sanitation
Miss Marguerite Harper, Household Management
Miss Conie Foote, Foods and Nutrition
Miss Georgiana H. Smurthwaite, Foods and Nutrition
Miss Alpha Latzke, Clothing

There are approximately eight hundred women who annually receive instruction in home economics at the Kansas State Agricultural College, and there are several thousand throughout the state who have had the advantages of resident instruction either in this or some other institution. While this is true, the number is small when compared to the great majority of women and girls in the state to whom the work has not been available. To give as much assistance as possible to this vast majority of women is the aim of the Department of Home Economics Extension, and with this in view seven specialists were regularly employed part time during the last year.

The Extension work in home economics is carried on by means of definitely organized programs of work carried on throughout the year through the agency of the County Farm Bureaus, the instruction being given by the specialists and Home Demonstration Agents to local leaders who in turn pass it on to the women in their respective communities.

Home Demonstration Agent Work

Miss Amy Kelly, State Home Demonstration Leader
Miss Ellen M. Batchelor, Assistant State Leader
Miss May Miles, Assistant State Leader
Miss Alpha Latzke, Assistant State Leader

Mrs. Edith O. Rosevear, Allen County
Miss Grace Herr, Bourbon County
Miss Nora E. Bare, Butler County
Miss Florence Funk, Cherokee County
Miss Margaret Koenig, Clay County
Miss Mabel Smith, Crawford County
Miss Mary Elsie Border, Dickinson County
Miss Elizabeth Randle, Douglas County
Miss Ella M. Meyer, Ford County
Miss Eula M. Neal, Franklin County
Miss Ethel Watson, Greenwood County
Miss Alberta Wenkheimer, Harper County
Miss Lucretia Scholer, Harvey County
Miss Charlotte Biester, Johnson County
Miss Alberta P. Sherrod, Kingman County
Miss Christie C. Hepler, Labette County
Miss Iva Holladay, Leavenworth County
Miss Gertrude Allen, Lyon County
Miss Grace M. Reeder, Miami County
Miss Vernetta Fairbairn, Montgomery County
Miss Rachel Markwell, Morris County
Miss Sara Jane Patton, Neosho County
Mrs. Mary D. Ziegler, Pratt County
Miss Esther Mae Huyck, Rawlins County
Mrs. C. M. Carlson, Reno County
Miss Jessie Campbell, Rice County
Mrs. Linnea C. Dennett, Riley County
Mrs. Laura I. Winter, Sedgwick County
Miss Lois Holderbaum, Shawnee County
Miss Ruth Peck, Wyandotte County

Home demonstration work was made possible in August, 1917, through the passage by congress of the emergency bill. This bill provided funds for the employment of county home demonstration agents. These agents were called emergency home demonstration agents. Before the end of the year there were twenty-five of these agents in the state. The emergency fund was discontinued June 30, 1919.

In the early days the work of the emergency home demonstration agents was instituted under the auspices of city or county organizations, but after following this plan for a short time it was found that it would be advantageous to defer the placing of home demonstration agents until the counties were properly organized for this specific purpose.

Since August, 1918, farm-bureau counties which have requested home demonstration agents have been organized on the basis of an ideal farm bureau; that is, the women have been taken into the farm bureau as regular members, having all the rights and privileges, and have become part of the working

organization. In such counties the work of the home demonstration agents is taken up as part of the regular extension program, which includes the development of farm activities, home activities, and community activities. There are thirty counties organized with an extension program which includes the work of the home demonstration agent.

The program of work for the home demonstration agent is based on the needs of the communities in the county and is evolved through the community and committee meetings. To-day each county has a county program of work based on the needs of the communities in the county, and this is a part of the state program. The home demonstration agent, in coöperation with the Agricultural College and United States Department of Agriculture, works to carry out the community, county and state program.

Since July 1, 1921, the counties desiring a home demonstration agent are required to meet the following conditions:

1. Supply an office equipped for work, and adequate stenographic help. 2. Secure a total county appropriation of not less than $2,400 to the county farm bureau for the salary and expenses of the county agricultural agent and the home demonstration agent.

There are certain conditions which must be met before project work in home economics is scheduled in those counties having county agricultural agents but not having home demonstration agents. These requirements are as follows:

1. In each of those counties east of the west line of Sedgwick county and the east line of Rice county, there must be at least one hundred paid-up women members of the farm bureau. This membership must be organized into not less than ten farm bureau units which have for their specific purpose the adoption of home economics projects to be conducted in the county.

2. In each of those counties west of the west line of Sedgwick county and the east line of Rice county, there must be at least seventy paid-up members of the farm bureau. This membership must be organized into not less than seven farm bureau units which have for their specific purpose the adoption of home economics projects to be conducted in the county.

3. The membership dues required shall not be less than $1 per annum for each member and may be such amount above this as may be decided by the membership of the farm bureau at an annual meeting. Such action pertaining to women's dues must be made a part of a regular constitutional provision by the farm bureau and must be approved by the director of extension as required by law.

Boys' and Girls' 4-H Club Work

M. H. Coe, State Club Leader
Edna Bender, Assistant State Club Leader
A. J. Schoth, Assistant State Club Leader
J. Harold Johnson, County Club Agent, Sedgwick County
R. N. Lindburg, County Club Agent, Butler County
J. B. Taylor, County Club Agent, Douglas County
R. L. Remsberg, County Club Agent, Kingman County
T. R. Warren, County Club Agent, Bourbon County

Boys' and girls' 4-H club work is one of the very important phases of Agricultural College extension service. Clubs are organized and conducted in cooperation with farm bureaus, farmers' institutes, business men's organizations, and other interested groups or individuals. Through these clubs the College is able to reach and serve a large class of young people which it could neither reach nor serve in any other way. A large number of boys and girls receive an incentive for higher training in agriculture and home economics and gain their first acquaintance with the College through 4-H club work. Boys and girls receive frequent visits from the county extension agents and written material is prepared by the College specialists, and sent out by the state club leader, giving the members definite information regarding farm and home practices recommended by the College.

The project which each club member selects is a fundamental characteristic of 4-H club work. This project is a substantial piece of work designed to show some better practices on the farm or in the home. The club member keeps a careful record of results, follows instructions that are given to him, and explains the work to others. At the end of the year he makes a final report upon the entire year's project and all points related to the same. Fifteen projects are offered to 4-H club members in Kansas as follows: beef, swine, sheep, dairy, poultry, colt, sorghum, corn, garden, potato, clothing, food preparation, baking, canning, food preservation, supper and room improvement. New projects are being added as fast as interest warrants the same.

In interesting boys and girls in 4-H club work, projects are selected which meet, to some extent, at least, the farm and home problems within a community. For example, in communities badly infested with round worms in hogs, the boys are urged to joint a 4-H club, select the sow and litter project, and raise worm-free litters. This serves as a demonstration to the community in the importance of better swine management and the club member thus feels that he is doing a worthwhile and needed piece of work and that his efforts are of importance.

Four-H club work is available to all boys and girls between the ages of 10 and 20 years, inclusive. The members are organized into clubs varying in size from five or less to fifty or more. In rare instances some clubs reach a membership of over a hundred, though perhaps the average size of the clubs is somewhere between ten and twenty members. These clubs elect their own officers, which consist of a president, vice president, secretary-treasurer, and club reporter, together with any other officers they may desire. Each club has at least one adult leader. In clubs that are especially large it is possible that each project represented may have a leader. The clubs meet from time to time, conduct their meetings along parliamentary lines, have a program in which the project of their respective lines of work is presented and discussed, give demonstrations, sing songs, play games, practice yells, and carry on like matters of interest to young people.

All of the boys and girls of one community interested in club work are organized into one club organization, even though they may vary in the selection of their projects; thus a community club may contain a certain number of members enrolled in baby-beef work, others in swine work, and the girls may be enrolled in poultry, clothing, or other lines of home-economics work. It is preferable that the members of a club unite on the selection of a few projects rather than to have too wide a variation of projects within a club; however, all of the fifteen projects previously mentioned are available for either boys or girls, there being no line drawn between boys' and girls' work.

The very essence of club work is its voluntary nature. Certain minimum requirements are specified which include age of club members, the keeping of records, the conducting of a project, and the attendance at club meetings. Aside from these requirements the work is purely voluntary, and no systematic course of instruction is attempted. Each member is given suggestions as to best methods of handling his project, but whether or not he adopts these methods is left to his own volition. Ownership is an essential characteristic of club work which centers around living things like growing of plants or animals, or concerned with the active processes of home making, or other matters relating directly to the daily life of the farm and the farm home. As previously indicated, the study of books is incidental and supplemental to the actual work of the project. Club work is learning by doing.

Leadership is another very essential characteristic of 4-H club work. This is of two types; the first being the adult leaders who supervise the club activities and the projects selected by the members. These leaders are usually experienced men or women or older club members who are trained by the extension agents and who know how the thing ought to be done and can tell the members something of the reason why. The other type of leadership, which is assuming greater importance as time goes on, is that which is developed in club members as a result of their club experience. This is one of the splendid

products of club work. Boys and girls who several years ago were members of 4-H clubs are now taking their place as young men and young women who are known as leaders for the best things in agriculture and in the home, and in life in general.

Not only is it essential that 4-H club members learn to do by doing, but they are expected to pass on this knowledge and information to others. Therefore, many club members are trained to put on demonstrations and explain their work to the public. They are expected to exhibit at least some of their products which they have grown or made at the local, county, and state fairs. Those who have attended these fairs in Kansas during the last few years will recall that club members have made remarkable exhibits, not only as regards quantity, but quality as well.

The records which the club members have kept throughout the year in regard to time spent, materials used, and costs, form a part of these exhibits. Any prizes which are awarded come as a result of the record which has been kept as well as the excellence of the product itself. Members are trained how to judge quality of such exhibits, and at the time of fairs judging contests are held to determine who has become the best judge. In a similar way demonstration team contests are held to determine what club members have become most proficient in telling others of the things they have learned. Thus, it can be seen that 4-H club work is an educational process, dealing not so much with books as with the things out of which books are made.

Interspersed with all of these essentials of club work are the so-called club activities, which include club tours, club contests, field meetings, festivals, annual club round-up at Manhattan, 4-H club camps during the summer, and similar club functions, which lend color to the work for the young people and bring them in contact with their leaders and the leaders of other clubs. These activities put them in rivalry and contests not only among themselves but with the members from the rest of their county and from the entire state. This "rubbing of elbows" brings them a wholesome contact which helps to develop and broaden their ideals and ambitions. All of these various contacts with men and problems and the affairs of life serve to awaken youth and stimulate the desire to do and accomplish. Thus, by means of these splendid plans and activities and through the recognition of worthwhile and lasting achievements which 4-H club boys and girls are making in the common and ordinary business of the farm and the home, real progressive, sane agricultural leadership is being developed which may be translated in terms of a progressive, intelligent, and happy citizenship for the future.

Rural Engineering

Walter G. Ward,† Extension Architect, in Charge
John S. Glass, Extension Agricultural Engineer
Howard C. Matson,‖ Architect

Kansas farms present numerous problems in engineering. The construction and maintenance of 160,000 sets of farm buildings, valued at more than $350,000,000, offers a big field for the development of more efficient, more durable, more attractive, and better arranged improvements. Standardized plans are furnished each year for hundreds of farm buildings throughout the state. One-day builders' schools held out in the counties furnish information direct to those interested in the planning and construction of farm buildings.

Modern conveniences in the farm home require an understanding of engineering principles for satisfactory operation and maintenance. Water supply systems, sewage disposal, lighting, and heating bring numerous questions to the Department of Rural Engineering.

More than 50,000 tractors and 35,000 combines comprise a part of the more

‡ Absent on leave, year 1929-'30.
‖ Temporary appointment.

than $225,000,000 worth of mechanical equipment on Kansas farms. The selection, adjustment, operation, and repair of this equipment is an important factor in the agriculture of Kansas. Through two-day and three-day extension schools conducted out in the counties, information is disseminated on gas engines and tractors and the adjustment and repair of farm machinery.

Assistance is rendered the farmers of Kansas with their problems in land drainage, irrigation, and the control of soil erosion. This work is handled by establishing demonstrations on suitable farms to illustrate the recommended practice to the farmers of that community. The control of soil erosion by means of terracing is just beginning to be recognized as an important problem and is applicable in all sections of the state. We now have approximately 3,000 acres terraced.

In addition to the information furnished through meetings held out in the counties, several thousand mail inquiries, of an engineering nature, are answered each year by the engineers of this department. The work in the counties is conducted principally in coöperation with the county farm bureaus.

Home-Study Service

CORRESPONDENCE STUDY

George Gemmell,‡ Head of Department
P. L. DePuy, Animal Husbandry
B. H. Fleenor, Education
Floyd Pattison, Industrial Subjects
Glenn Rucker,‖ Industrial Subjects
Ada Billings, History and Government
Marcia Hall, English
Earl Litwiller, Horticulture
Ethel Marshall, Home Economics

Note.—The faculty members employed in the Home-study Service devote their entire time to the work of teaching by correspondence. They keep in close touch with the various departments of the College, and all credit courses which are offered by correspondence must first meet the requirements of the regular College departments handling the courses in residence.

THE PURPOSE OF THE HOME-STUDY SERVICE

There are many people in Kansas and elsewhere who for many reasons cannot attend classes on the college campus, or are past the time when this would be advisable, but who can use the facilities of the college to great advantage. The Home-study Service is a part of the Extension Division of the Kansas State Agricultural College, designed to make the state its campus —to enable the College to come to those who cannot come to it.

Once it was thought that educational problems could be solved only in the classroom, where subject matter was chosen from a textbook. To-day it is realized that the home, the farm, and the shop are calling continually for the solution of problems upon which the future of the people of the state depends. A barren soil, an unprofitable herd, an insanitary home, and kitchen wastes are but petty examples of the innumerable difficulties to be overcome. Years of experience and observation have enabled many to solve their problems with some degree of success, but the lack of scientific knowledge is responsible for many individuals experimenting extravagantly and often uselessly. A combination of experience and training in scientific methods is best.

One way of meeting these situations is through correspondence courses. They are no longer an experiment but are a demonstrated success. With them odd hours of spare time may be made to count. The gross time required to complete correspondence courses is practically the same as would be necessary for the same courses in school. Correspondence courses may be started at any time. They wait when one is busy. They are instantly ready when one has time. In fact, they are "made to order" for the busy person.

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‡ Absent on leave, year 1929-'30.

‖ Temporary appointment.

FOR WHOM INTENDED

Though credit courses offered by the Home-study Service are still limited, the number is steadily growing, and it is the purpose of the department to add courses whenever a demand for them becomes evident. The following groups in particular should profit by the courses offered:

1. Those who have completed a common school course but who for any reason are unable to attend high school.
2. High school graduates temporarily or permanently unable to attend college.
3. Students who for any reason have fallen behind in their work and wish to use their spare time catching up.
4. Students whose attendance at high school or college has been interrupted.
5. The strong, aggressive student who does not wish to halt his progress for vacation and other interruptions.
6. High school and grade classes in practical courses that need supplementing and enrichment.
7. Teachers who wish further professional or other training or who need help in planning and conducting their work.
8. Professional and business men who wish to keep growing along some line of interest, industrial or avocational.
9. Clubs and other organizations that wish to make systematic studies.
10. Men and women who wish effective help in meeting the demands of their vocations for technical and scientific knowledge and training.

HOW THE WORK IS CONDUCTED

In correspondence courses, the assignment usually takes the form of assigned readings, studies, and investigations, together with a list of questions and directions for a written report. To save postage and trouble in mailing numerous lessons, the correspondence lesson is usually much longer than the common lesson in resident class work. When necessary, the lessons may be accompanied by a lecture prepared by the instructor containing helpful outlines and explanations, additional subject matter, and such special directions as seem desirable. The lessons are modified from time to time as suggested by experience and as new information becomes available.

As soon as an enrollment card and fee are received at the Department of Home-study Service, the first assignments are immediately sent out. As reports are received additional assignments are mailed. This plan keeps work always at hand for the student and at the same time makes it possible for the instructor to keep in close touch with the student's progress and to offer from time to time such suggestions as seem desirable to guide the student in his work. As a rule, the student should make careful study of the corrections, comments, and suggestions upon receiving a returned paper before going further with succeeding lessons.

The progress made by the student depends entirely upon his ability, preparedness, and application. As a general suggestion, it might be stated that an hour a day spent in systematic study should enable the average student to complete an assignment a week. Students may work more rapidly if their opportunities permit. Lessons will be received as rapidly as is consistent with good work, providing not more than eight assignments are sent in one week. Under no circumstances will hastily prepared manuscripts showing superficial knowledge be accepted.

The questions accompanying each assignment are intended to help the student to a better understanding of the subject. After careful study of the assignment, the student should write his manuscript, answering the questions carefully and concisely. This manuscript should be mailed at once to the Department of Home-study Service, where all lesson papers are read carefully, criticized, marked, and returned to the student with such comments, suggestions, advice, and additional references as may be deemed necessary. This plan is continued throughout the course, and each student should feel

free to ask questions, relate his personal experience, and in every way possible get into close contact with his instructors. No effort is spared by the department to bring about the nearest possible approach to personal acquaintanceship between each instructor and his students.

EXAMINATION

At the close of each course, before a grade is issued, a final examination is necessary. This final examination may be taken in the office of the Department of Home-study Service at the College, or other arrangements may be made by the student to take it locally under the city or county superintendent of schools or the principal of the local high school. In the latter case, the examination questions and instructions for conducting the examination are mailed from the department to the examiner, and the student's paper is sent in by him.

FEES

The enrollment fee for credit courses is $12.50 a year. This rate applies to all residents of Kansas. (The fee required of nonresidents of the state is $17.50 a year.) Those who may be only temporarily employed outside of the state may enroll for the regular $12.50 fee provided they still claim their citizenship in Kansas. Enrollment cannot be transferred from one student to another.

If a student's work is interrupted by protracted illness or other good reason, he may by special arrangements secure an extension of his enrollment period without payment of further dues. All such cases must be handled individually.

Each student is expected to pay the postage on lessons, manuscripts, and communications sent in to the department. This office will furnish postage for the return of all such papers to the student.

This enrollment entitles the student to as much work as can be satisfactorily completed in one year, not to exceed eight semester hours of college work or three semester credits of high school work, unless work is of a very high character, in which event special arrangements may be made for a limited amount of additional work.

REGULATIONS

1. Enrollments for correspondence-study work will be received at any time during the year, and students may continue their work uninterruptedly throughout the entire year.
2. Correspondence students will be expected to complete any course for which they are enrolled within twelve months from date of enrollment.
3. Not more than two courses are advised by correspondence at any one time. It is recommended that a student carry but one subject at a time, particularly where only part of the time is given to the work.
4. Each subject listed under the various departments constitutes what is known as a correspondence "course."
5. Students enrolling for correspondence courses must meet the prerequisites the same as if undertaking the work in residence.
6. A student may not be enrolled for correspondence work while in attendance at any institution of learning without special permission from the dean or proper authorities in the institution of which he is a student.
7. No correspondence student shall be permitted to complete a three-hour course in less than three weeks; a two-hour course in less than two weeks; a one-hour course in less than one week.
8. A student enrolled for resident work in College, who enrolls in a subject by correspondence, shall be required to take an examination after each eighth lesson before proceeding with the course; *i. e.,* after the eighth, the sixteenth, and the twenty-fourth lessons, respectively.
9. Where there is evidence of any correspondence student copying any part of the lessons from the papers of another student who has previously taken the course, such student is to be automatically and permanently dropped from the course and a failing grade is to be sent to the registrar's office with notation of cause.

HIGH-SCHOOL COURSES

(College Entrance Credit Work)

In offering the following work for high-school credit, there is no intention of competing with high schools of the state. It is not the purpose of those who have planned the work to present a full four-year high-school course. Students who have opportunity to attend local high school should by all means take advantage of the opportunity, for in such attendance they will have the benefits to be derived from association with fellow students as well as many other advantages which will be helpful to immature students of high school age.

These courses are offered as an aid to those who may by necessity be temporarily out of high school, who may not find the work which they desire offered locally, or who wish to carry work for high-school credit during vacation periods. It is not to be expected that a student can progress as rapidly by correspondence-study methods as he can by devoting his full time to his work when attending high school. Any student who completes a half year of high school work in a year by correspondence may feel that he has done exceedingly well.

The high-school courses will be especially advantageous to prospective college students who have entrance deficiencies and to public school teachers who may not have had the opportunity to do this type of work. No effort has been spared to make the work as nearly as possible parallel with the courses offered by the accredited high schools of the state. The same textbooks have been used wherever feasible, and the credits issued by this department are recognized by the colleges and State Board of Education.

List of High-school Courses

Course No.		*Number of assignments*	*Unit H. S. credit*
	AGRICULTURE		
PCA 1.	Elementary Agriculture I	20	½
PCA 2.	Elementary Agriculture II	20	½
	DRAWING		
PCD 3.	Shop Mechanical Drawing I	20	½
PCD 4.	Shop Mechanical Drawing II	20	½
	ENGLISH		
PCE 1C.	Grammar and Composition (first year)	20	½
PCE 2L.	Literature (first year)	20	½
PCE 3C.	Composition (second year)	20	½
PCE 4L.	Literature (second year)	20	½
PCE 5C.	Composition (third year)	20	½
PCE 6L.	Literature (third year)	20	½
	HISTORY AND CIVICS		
PCH 1.	Ancient History I	20	½
PCH 2.	Ancient History II	20	½
PCH 3.	Modern History I	20	½
PCH 4.	Modern History II	20	½
PCH 5.	American History I	20	½
PCH 6.	American History II	20	½
PCH 7.	Community Civics	20	½
PCH 8A.	Civics	20	½
PCH 8.	Constitution of United States	20	½
PCH 9.	World History I	20	½
PCH 10.	World History II	20	½
	MATHEMATICS		
PCM 1.	Algebra I	20	½
PCM 2.	Algebra II	20	½
PCM 3.	Algebra III	20	½
PCM 4.	Plane Geometry I	20	½
PCM 5.	Plane Geometry II	20	½
PCM 6.	Solid Geometry	20	½
PCM 7.	Bookkeeping	20	½

Course No.	SCIENCE	*Number of assignments*	*Unit H. S. credit*
PCS 1.	Physical Geography	20	½
PCS 2.	Botany	20	½
PCS 4.	Physiology	20	½
PCS 5.	General Science	20	½
PCC 1.	Commercial Geography	20	½
PCC 2.	Elementary Economics	20	½

College Credit Courses

DIVISION OF AGRICULTURE

Course No.	AGRONOMY	*Semester credits*	*Assignments*
CA 3.	Farm Crops	3	24
	ANIMAL HUSBANDRY		
CL 2.	History of Breeds	2	16
	HORTICULTURE		
CH 1.	Elements of Horticulture	2	16
CH 2.	Vegetable Gardening	2	16
CH 3.	Floriculture	2	16
CH 5.	Landscape Gardening	1	8
CH 6.	Small Fruits	2	16
	POULTRY HUSBANDRY		
CPP 1.	Farm Poultry Production	1	8

DIVISION OF ENGINEERING

	MACHINE DESIGN		
CE 2.	Engineering Drawing	2	16
CE 6.	Machine Drawing I	2	16
CE 4.	Mechanism	3	24
CE 11.	Descriptive Geometry	2	20
	CIVIL ENGINEERING		
CE 1.	Highway Engineering I	2	16
	SHOP PRACTICE		
CE 7.	Metallurgy	2	16
	AGRICULTURAL ENGINEERING		
CE 3.	Gas Engines and Tractors	2	16
	MECHANICAL ENGINEERING		
CE 9.	Steam Turbines	3	24
CE 10.	Essentials of Steam and Gas Power Engineering	2	16

DIVISION OF HOME ECONOMICS

	CLOTHING AND TEXTILES		
CHE 1.	Textiles	2	16
	HOUSEHOLD ECONOMICS		
CHE 3.	Sanitation and Public Health	3	24

DIVISION OF GENERAL SCIENCE

	ECONOMICS AND SOCIOLOGY		
CEc 1.	Economics	3	24
CS 2.	Rural Sociology	3	24
CS 3.	Sociology	3	24
CS 4.	Community Leadership	2	16
	EDUCATION (PROFESSIONAL)		
CP 2.	Educational Psychology	3	24
CP 3.	Educational Sociology	3	24
CP 4.	History of Education	3	24
CP 5.	School of Management	3	24
CP 6G.	Methods of Teaching in Elementary Graded Schools and Rural Schools	3	24
CP 6H.	Methods of Teaching in the High School	3	24
CP 7.	Educational Administration	3	24
CP 8.	Psychology	3	24

Course No.		*Semester credits*	*Assignments*
CP 9.	School Discipline	2	16
CP 12.	Home Economics Education	3	24
CP 13.	Vocational Guidance	2	16
CP 14.	Vocational Education	3	24
	ENGLISH		
CCE 1.	College Rhetoric I	3	24
CCE 2.	College Rhetoric II	3	24
CCE 3.	Commercial Correspondence	3	24
CCE 4.	The Short Story	3	24
CCE 6.	English Literature I	3	24
CCE 7.	American Literature	3	24
	JOURNALISM		
CCJ 1.	Agricultural Journalism	3	24
	GEOLOGY		
CG 1.	Geology	3	24
	HISTORY AND CIVICS		
CHC 1.	Community Civics	2	16
CHC 2.	Modern Europe I	3	24
CHC 4.	English History	3	24
CHC 5.	Medieval History	3	24
	MATHEMATICS		
CM 7.	Plane Trigonometry	3	25
CM 8.	College Algebra	3	25

The Agricultural Experiment Station

The Kansas Agricultural Experiment Station was organized under the provisions of an act of congress, approved March 2, 1887, which is commonly known as the "Hatch act," and is officially designated as—

"An act to establish agricultural experiment stations in connection with the colleges established in the several states under the provisions of an act approved July 2, 1862, and the acts supplementary thereto."

The wide scope and far-reaching purposes of this act are best comprehended by an extract from the body of the measure itself, in which the objects of its enactment are stated as being—

"To aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and practice of agricultural science."

The law specifies in detail—

"That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses for forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

On the day after the Hatch act had received the signature of the President, the legislature of Kansas, being then in session, passed a resolution, dated March 3, 1887, accepting the conditions of the measure, and vesting the responsibility of carrying out its provisions in the Board of Regents of the Kansas State Agricultural College.

Until 1908 the expenses of the Agricultural Experiment Station were provided for entirely by the federal government. The original creative act (the Hatch act) carried an annual congressional appropriation of $15,000. No further addition to this amount was made until the passage of the Adams act, which was approved by the President March 16, 1906. This measure provided, "for the more complete endowment and maintenance of agricultural experiment stations," a sum beginning with $5,000, and increasing each year by $2,000 over the preceding year for five years, since which time the annual appropriation has been $15,000—

"To be applied to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States, having due regard to the varying conditions and needs of the respective states or territories."

It is further provided that—

"No portion of said moneys exceeding five percentum of each annual appropriation shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings, or to the purchase or rental of land."

The Adams act, providing as it does for original investigations, supplied the greatest need for the Agricultural Experiment Station—means of providing men and equipment for advanced research. Only such experiments may be entered upon under the provisions of this act as have first been passed upon and approved by the Office of Experiment Stations of the United States Department of Agriculture.

Further support for the Agricultural Experiment Station was provided by

the federal government by the passage of the Purnell act, which was approved by the President February 24, 1925. This measure authorized an appropriation of $20,000 for the fiscal year beginning July 1, 1925, with increasing annual allotments of $10,000 until a total of $60,000 will be reached for the fiscal year beginning July 1, 1929. The law specifies that—

"The funds appropriated pursuant to this act shall be applied only to paying the necessary expenses of conducting investigations or making experiments bearing directly on the production, manufacture, preparation, use, distribution, and marketing of agricultural products and including such scientific researches as have for their purpose the establishment and maintenance of a permanent and efficient agricultural industry, and such economic and sociological investigations as have for their purpose the development and improvement of the rural home and rural life, and for printing and disseminating the results of said researches."

The Purnell act, while specific in its statement of the purposes for which the appropriation may be used, is broad in scope and provides specifically for scientific research in agricultural economics, home economics and rural sociology, in addition to providing more liberal support for the older established work of the Agricultural Experiment Station.

More than one hundred projects, covering practically all phases of agriculture investigation, are being studied by the members of the Agricultural Experiment Station staff.

The farms, live stock, laboratories, and general equipment of the College are all directly available for the use of the Agricultural Experiment Station.

The results of the work of the Station are published in the form of bulletins, circulars, and scientific papers. These bulletins are of two classes—those which record the results of research work of a purely scientific character and those which present technical information in a simplified form, suitable for the general reader. The circulars are popular presentations of data which call for immediate application, as well as timely and useful information not necessarily new or original. The scientific papers are usually published as reprints or addresses given before scientific bodies. These reprints contain original information or report definite step in the progress of investigations under way.

All bulletins and other publications from the Agricultural Experiment Station are sent without charge to citizens of the state. Any person in the state who so desires may have his name placed on the permanent mailing list of the station.

Letters of inquiry and general correspondence should be addressed: "Agricultural Experiment Station, Manhattan, Kan." Special inquiries should be directed, so far as possible, to the heads of departments having in charge the matters concerning which information is desired.

CONTROL WORK OF THE STATION

In addition to the work of agricultural investigation, the state has enlarged the activities of the station along various lines of state executive or control work.

One of the important lines of control work is that of the State Entomological Commission. (Laws of 1907, ch. 386; 1909, ch. 27.) This commission, created in 1907, was established—

"To suppress and eradicate San José scale and other dangerous insect pests and plant diseases throughout the state of Kansas."

The professors of entomology at the Agricultural College and at the University of Kansas are by law designated as two of the five members of the above commission. Acting under the title of state entomologists, they divide between them the territory of the state, for the purpose of inspection.

They are empowered—

"To enter upon any public premises . . . or upon any land of any firm, corporation or private individual within the state of Kansas, for the purpose of inspection, destroying, treating, or experiment upon the insects or diseases aforesaid."

They may treat or cause to be treated "any and all suspicious trees, vines, shrubs, plants, and grains," or, under certain conditions, may destroy them.

They must annually inspect all nursery stock, and no nursery stock is to be admitted within the state without such inspection.

By legislative act (Laws of 1909, ch. 49), a "division of forestry" at the Agricultural College is also provided for in the following terms:

"For the promotion of forestry in Kansas there shall be established at the Kansas State Agricultural College, under the direction of the Board of Regents, a division of forestry. The Board of Regents of the Kansas State Agricultural College shall appoint a state forester, who shall have general supervision of all experimental and demonstration work in forestry conducted by the Agricultural Experiment Station. He shall promote practical forestry in every possible way, compile and disseminate information relative to forestry, and publish the results of such work through bulletins, press notices, and in such other ways as may be most practicable to reach the public, and by lecturing before farmers' institutes, associations, and other organizations interested in forestry."

It will thus be seen that the state of Kansas is making increasing use of the scientific staff of the Agricultural Experiment Station in matters of state importance requiring the application of technical knowledge.

Branch Agricultural Experiment Stations

FORT HAYS BRANCH STATION

The land occupied by this Station is a part of what was originally the Fort Hays military reservation. Being no longer required for military purposes, it was turned over to the Department of the Interior, October 22, 1899, for disposal under the act of congress of July 5, 1884. Through the influence of Senator, later Regent, W. A. Harris, and of Congressman Reeder, a bill was passed in the fifty-sixth congress setting aside this reservation "for the purpose of establishing an experimental station of the Kansas Agricultural College and a western branch of the Kansas State Normal School thereon and a public park." This bill was approved by the President on March 28, 1900. By act of the state legislature, approved on February 7, 1901, the act of congress donating this land and imposing the burden of the support of these institutions was accepted. The same session of the legislature passed an act providing for the organization of a branch experiment station and appropriating a small fund for preliminary work. In the division of this land, the College received 3,560 acres.

The land at the Fort Hays Branch Station consists mainly of high, rolling prairie, with a limited area of rich alluvium bordering on a creek, and is situated on the edge of the semiarid plains region. It is well suited for experimental and demonstration work in dry farming, in irrigation, and in crop, forestry, and orchard tests, under conditions of limited rainfall and high evaporation.

The work of this Station may be divided into two divisions: (A) experimental projects, (B) general farm and live-stock work. The experimental projects are as follows: Dry-farming investigations, forage-crop investigations, cereal-crop investigations, forest, nursery and park demonstration and investigations, farm dairying, and experiments in the feeding and breeding of live stock. All this work is confined to the study of the problems peculiar to the western half of the state, and relates especially to crop production under limited rainfall, to the development of varieties better adapted to the climatic conditions there prevailing and to studies of the systems of animal husbandry and dairy husbandry suited to this region. The facilities of this Station are being used for the growing of large quantities of pure seed of the strains and varieties which have proved in actual test to be most productive in the western part of the state.

GARDEN CITY BRANCH STATION

In 1906 the county commissioners of Finney county purchased, for purposes of agricultural experimentation, a tract of land amounting to 320 acres, situated four and one-half miles from Garden City, on the unirrigated upland.

The land has been leased for a term of ninety-nine years to the Kansas Agricultural Experiment Station as an "experimental and demonstration farm," for the purpose of determining the methods of culture, crop varieties, and crop rotation best suited to the southwestern portion of the state, under dry-land farming conditions. A pumping plant irrigating from eighty to one hundred acres has been installed for the purpose of investigating the expense of pumping and the cost of equipment necessary for plants of this type, which are common in the shallow-water districts between Garden City and Scott City and along the Arkansas valley. The Agricultural Experiment Station's investigations in irrigation agriculture are centered at this branch station.

COLBY BRANCH STATION

The legislature of 1913 provided for the establishment of a branch experiment and demonstration station near Colby, in northwestern Kansas, "for the purpose of advancing and developing the agricultural, horticultural, and

irrigation interests of this state and western Kansas." This Station was located upon a tract of three hundred and fourteen acres of land bordering upon the town site of Colby. This land was purchased by the county and deeded to the state for the purposes named above. Operations were begun in March, 1914. Cropping experiments are being conducted under dry-land conditions and under irrigation. Water is being lifted one hundred and fifty feet for irrigating a garden, fruit trees, and a few desirable crops, such as alfalfa, that could not be grown successfully in western Kansas with the natural rainfall. The primary purpose of the Colby Station is to determine the best methods of developing the agriculture of northwestern Kansas and to make it a still more desirable place to live.

TRIBUNE BRANCH STATION

At the Tribune Station experimental and demonstration work is conducted for the benefit of the surrounding territory. Special attention is paid to the problems of producing, storing, and utilizing crops for winter feeding of cattle which in summer graze the extensive range areas of the extreme western part of the state.

The Engineering Experiment Station

The Engineering Experiment Station was established for the purpose of carrying on tests and research work of engineering and manufacturing value to the state of Kansas, and of collecting, preparing and presenting technical information in a form readily available for the use of the various industries within the state. It is the intention to make all the work of the Experiment Station of direct importance to Kansas.

All of the equipment of the various engineering and scientific laboratories, the shops, and the College power plant are available for the work, while the personnel of the Station consists of members of the teaching staff from the various departments of the Division of Engineering and from other scientific departments whose work is directly related to the work of this division, and others employed especially for the work of the station.

Among the investigations now being carried on are: Quality of concrete used in Kansas highway construction; air resistance of motor vehicles; farm sewage disposal systems; radio-activity of gas-well borings; Lewis factors for nonstandard gear teeth; durability tests of belt lacings or fastenings; tests of oil and gas burners for house-heating boilers; study of automobile headlights; road material resources of Kansas; *pisé de terre* construction; a small furnace for melting brass and aluminum; durability of concrete; short-time strength tests for concrete sands; study of tension and compression tests of cement and mortars; relation of electricity to processing and handling of grain and forage; study of electric fireless cookers; the Kansas farm home; deterioration of concrete in silos; harvesting and storage of grain crops; volume changes in sand concrete; economic study of rural-line electrification; refrigeration in the home; harvesting and baling hay; modernizing the home; hydrogenation of Kansas coals; farm lighting plants; farm refrigeration; properties of early strength cements; and the elastic properties of concrete.

The testing laboratories of this Station have been designated by law* as the testing laboratories for the State Highway Commission and the state highway engineer, and as such have charge of the testing of all road materials for use in federal-aid road construction in this state.

The results of the investigations are published as bulletins and circulars of the Engineering Experiment Station, which are sent free to any citizen of the state upon request. Twenty such bulletins have been published and are now available. Besides issuing these bulletins, the Station answers yearly many hundreds of requests for information upon matters coming within its field.

Requests for bulletins and general correspondence should be addressed to Engineering Experiment Station, Manhattan, Kan. Requests for information in specific matters should be addressed, so far as it is possible, to the heads of departments in whose fields the particular matters lie.

* Sec. 5, ch. 64, Laws of 1917.

Bureau of Research in Home Economics

The Bureau of Research in Home Economics conducts investigations in the scientific, economic and social problems of the home. The purpose of this research is to discover new facts and new methods of the application of scientific knowledge bearing upon the welfare of the members of the family and the conditions under which they live.

The fields of research included in the bureau are: Child welfare, clothing and textiles, food economics, household administration, institutional economics, human nutrition, dietetics, and public health.

The laboratories of the Division of Home Economics include equipment suitable for work on certain of the problems. Opportunities for surveys and investigations of conditions in the state are found through the coöperation of various educational and social agencies.

The results of all investigations are published from time to time and are available on request to all citizens of the state.

The personnel of the bureau staff includes members of the teaching faculty in home economics. Several of the departments in other divisions of the College advise or collaborate with officers of the bureau on problems of related interest.

Among the investigations in progress are the following:

*Utilization by children of calcium and phosphorus from canned, dried, fresh, and other forms of milk.

*Factors influencing the growth of children.

*Vitamin content of foods relating to human nutrition:

a. Fruits.
b. Vegetables.
c. Cereals.

Human utilization of the carbohydrates of parsnips.

A study of the coefficient of protection of clothing fabrics.

*The screening action of fabrics against sunlight.

A study of costs of sickness to farm families.

The development of motor abilities of preschool children.

The effect of certain factors of nursery school environment upon the modification and development of definite personality traits.

The effect of cod-liver oil on the erythrocyte count and the gastric activity of anemic college girls.

Age factor in the resumption of growth by stunted children.

Factors affecting seasonal variation of the growth of children.

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* Those starred are being supported in part by funds from the Agricultural Experiment Station.

Special Courses

Short Courses in Agriculture

Farmers' Short Course

Kansas State Agricultural College offers in agriculture primarily a four-year curriculum, which gives the student fundamental training in the sciences relating to agriculture and their application to the production of crops and live stock, and to farming in general. Such a curriculum not only equips a man to become a successful farmer, but makes of him a better citizen, and a leader in the broader duties of life.

Many men who have chosen farming as their vocation, and who are alive to some of the advantages offered by this institution to the farmers of the state, are denied the opportunity of pursuing the College curriculum in agriculture, or even as much as one year's work in that curriculum. For such men the Agricultural College provides the Farmers' Short Course.

The course requires two years for completion, an eight-week term being given each year. For 1931 the session will begin Monday, January 5, and close Saturday February 28. Besides the required subjects each student may take one or two elective subjects each year.

SUBJECTS IN FARMERS' SHORT COURSE

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

FIRST YEAR

REQUIRED

Soils and Fertilizers	4(4-0)
Live-stock Production I	5(3-4)
Dairying I	5(3-4)
Grain Crops	4(3-2)
Special Lectures	1(2-0)

ELECTIVE

Poultry Husbandry	3(3-0)
Live-stock Sanitation	3(3-0)
Farm Management	4(3-2)
Farm Marketing	3(3-0)
Farm Accounting	3(2-2)
Dairying II	5(3-4)
Gas Engines and Tractors	5(2-6)
Blacksmithing	2(0-4)
Carpentry	2(0-4)
Automobiles	5(2-6)

SECOND YEAR

REQUIRED

Forage Crops	4(3-2)
Live-stock Production II	5(3-4)
Farm Buildings and Equipment	4(4-0)
Farm Horticulture	3(3-2)
Special Lectures	1(2-0)

Any of the subjects listed in the elective work of the first year may also be taken as electives during the second year.

For each hour of recitation per week usually at least one hour of outside preparation is required. Laboratory or field work requires little or no outside preparation. Each credit (standard for measuring the quantity of work done) represents not less than two hours' work per week for the entire eight weeks of

the term. A regular, full-time assignment consists of not less than twenty credits, and students are usually not encouraged to take more than twenty-four credits.

Certificate. A certificate will be granted to each student completing satisfactorily the thirty-six credit hours of work required and not less than four credit hours of electives.

Requirements for Admission. This course is intended primarily for mature individuals. High-school work in the state is becoming so general and available to all communities that the demand for short-course work for boys of high-school age is being greatly reduced. Young farmers, not in school, are especially urged to consider the advantages of the Farmers' Short Course. Students over seventeen years of age are admitted without examination.

Expenses. There is no charge for tuition, but each student is required to pay, on enrollment, an incidental fee of $5, also student-health fee of $1.50. This latter fee entitles him to free medical attendance by the College physician. In several of the laboratories, laboratory deposits or charges varying from 50 cents to $1 must be made to cover cost of materials used. In "Gas Engines and Tractors" and "Automobiles" the laboratory charges must necessarily be higher, being $3 and $2.50, respectively.

Self-support. The subjects of this course are primarily practical. They bring the student into actual contact with farm conditions and products. Besides the classroom work, many hours each week are spent in the stock-judging pavilion, laboratory, shop and barn. This leaves the student but little time for outside labor, and students are therefore advised to come provided with as nearly all the necessary funds for the course as possible.

BRIEF DESCRIPTION OF THE WORK

Soils and Fertilizers. (Agron. 3.) Various soil types common in Kansas are studied, especially with reference to their economical management for the production of profitable crops and the maintenance of fertility.

Live-stock Production I. (An. Husb. 6.) A study of the principles and practices of feeding and management of live stock. The laboratory time is devoted to judging market live stock.

Dairying I. (Dairy Husb. 1.) Farm dairying, including the composition and properties of milk, the feeding of the dairy cow, the selecting and breeding of the dairy herd, and dairy sanitation. The laboratory provides practical work with the Babcock tester, in the use of the farm separator, and in butter making. Deposit, $1.

Grain Crops. (Agron. 1.) A practical study of grain-crop production. Laboratory exercises are given for the identification of different kinds of threshed grain and the determination of damage and market classes and grades. Charge, 50 cents.

Special Lectures. One credit is given each year for attending these lectures. Among the speakers provided are members of the College Faculty, including the president of the College, and some outside, well-known agricultural leaders.

Forage Crops. (Agron. 2.) A study of the distribution and production of important forage crops, especially for Kansas conditions. Practical exercises in identification are given in the laboratory. Charge, 50 cents.

Live-stock Production II. (An. Husb. 8.) A study of the principles and practices in breeding, history of the development of the different breeds, and the pedigrees of noted individuals. Some time is given to the matter of fitting live stock for show and sale. The laboratory work consists of judging breeding live stock and butchering and handling meats.

Farm Buildings and Equipment. (Ag. Engr. 2.) A study of the funda-

mental principles of farm building arrangement and construction, including barns, houses, hog houses, poultry houses, machine sheds, silos, cribs, and granaries. Particular attention is given to farm equipment, such as tillage, seeding, and harvesting machinery, both horse-drawn and power. Some time is devoted to concrete construction, farm water systems, sanitation, heating, lighting, and ventilation.

Farm Horticulture. (Hort. 1.) A study of the possibilities of the art of horticulture in creating better living conditions and better homes. Planning of the farmstead; the planting of ornamentals, wind-breaks, and forrest trees; and the care of garden, small fruits, and the home orchard. Incidentally an attempt is made to suggest the possibilities of commercial horticulture in localities adapted to special crops.

Poultry Husbandry. (Poult. Husb. 1.) The practical phases of poultry management, including feeding, breeding, housing, incubation, and brooding.

Live-stock Sanitation. (Vet. Med. 1.) A study of diseases that are communicable from animal to animal or from animal to man. The causes, symptoms and methods that are employed to prevent and to combat the spread of diseases, and the drugs that are commonly used as disinfectants, for washes, dips, etc., are given full consideration. The uses of serums, vaccines, etc., for the prevention of diseases is considered. Methods of disposal of sick and dead animals as well as the means employed to clean and to disinfect the premises so as to prevent a recurrence of diseases are considered.

Farm Management. (Ag. Ec. 1.) In this class the work in the various agricultural subjects is correlated and placed on a practical workable basis. The principles of farm accounting, distribution of capital, laying out of fields, planning rotations, etc., are given first consideration. Charge, 50 cents.

Farm Marketing. (Ag. Ec. 2.) A study of marketing functions and services and means of improving the methods of marketing farm products. Considerable attention is given to coöperation as a means of improving the marketing of farm products.

Farm Accounting. (Ag. Ec. 3.) Records which the farmer should keep, methods of keeping these records, and ways of utilizing the information given by the records. Laboratory exercises deal with inventory, crop, live stock, labor, and other accounts, using figures obtained from Kansas farms. The practice work shows methods of keeping accounts and analyzing their results. Accounting forms and supplies for laboratory use are furnished the student. Charge, 50 cents.

Dairying II. (Dairy Husb. 3.) Keeping records and accounts of dairy-farm business; building up the dairy herd; dairy buildings and equipment; silos and silage; the dairy business and soil fertility; cow-testing associations; coöperative ownership of dairy sires; and detailed plans for the management of the dairy farm. Laboratory work consists of judging dairy cattle from the standpoint of economical production and breed type.

Gas Engines and Tractors. (Ag. Engr. 3.) A practical study of the principles and applications of the stationary gas engine and the tractor for farm use. Class work includes a study of tractor construction, operation, and repair, and of carburetion, ignition, lubrication, and cooling systems. A study is made of the repair jobs the tractor operator should be able to do himself. Charge, $3.

Blacksmithing. A series of graded exercises or problems in blacksmithing closely related to farm work is given. Charge, $1.50.

Carpentry. The work begins with a few preliminary problems especially adapted to teaching the proper use of woodworking tools. This is followed by actual experience in the various phases of building construction. Charge, 75 cents.

Automobiles. This subject consists of lectures, discussions, and laboratory

practice in the operation and care of automobiles from the standpoint of the owner. Instruction and practice are provided in adjusting bearings and ignition points, timing valves and spark, grinding valves, cleaning carbon, etc. Charge, $2.50.

Dairy Manufacturing Short Courses

Four dairy manufacturing short courses, each lasting two weeks, will be offered January 5 to February 28, 1931. The first course (January 5 to 17, inclusive) will be a general one devoted principally to the testing of milk, cream, and other dairy products. The course for the second two weeks (January 19 to 31, inclusive) will be devoted to a study of market milk and cheese making. The third period (February 2 to 14, inclusive) will consist of intensive study and practice in butter making. The fourth and last two-week course (February 16 to 28, inclusive) will be one in ice-cream making.

The work is so arranged that students can take one or more of the four courses, the full eight weeks of work making an intensive and practical commercial creamery short course. While, as a rule, it will be recommended that students take the entire course, the plan makes it possible for students in certain cases to take just the work that interests them most.

Admission. Any one not less than 17 years of age may enroll in any of these courses.

Expenses. An incidental fee of $5, a student-health fee of $1.50, and a laboratory fee of $2 will be charged all students enrolling for the eight weeks of work. For students enrolling for less than the entire course, an incidental fee of $3 will be charged and an additional laboratory fee of $2 for each two-week course taken.

Certificates. Students who complete the entire eight weeks of required work as here outlined, and who show satisfactory evidence that they have had six months successful creamery experience will be granted certificates.

OUTLINES OF THE COURSES

General Course in Milk and Cream Testing

January 5 to 17, 1931

LECTURES

Scope of Dairy Industry
Testing Milk
Milk Secretion, Composition, and Properties
Factors Affecting Composition
Sampling Milk and Cream
Cream Testing
Cream Separation and Farm Separators
Standardization of Milk and Cream
Testing Milk for Solids—the Lactometer and Its Uses.
Bacteriology of Milk
Counting Bacteria in Milk
Keeping Milk and Butter-fat Records
The Butter Industry
Application of Babcock Test to Other Products
Acidity and Its Relation to Dairy Products
Kansas Dairy Laws
Clean Milk Production
Dairy Breeds
The Ice-cream Industry
Food Value of Milk and Its Products
The Market Milk Industry
Cheese and Condensed-milk Industry
Examinations

LABORATORY WORK

Milk Testing—the Babcock Test
Testing Milk of Different Breeds
Testing Skim Milk, Buttermilk, and Whey
Testing Frozen, Sour and Churned Milk
Testing Cream
Study of Farm Separators
Standardization of Milk and Cream
Testing Milk for Solids and Adulterations
Separation of Milk
Plating Milk for Bacterial Counts
Farm Butter Making and Creamery Butter-making Demonstration
Testing Butter and Cheese for Fat
Testing Powdered Milk, Ice Cream, and Condensed Milk for Fat
Dairy Arithmetic
Testing Milk and Cream for Acidity
Dairy Farm and Plant Inspection
Demonstration in Freezing Ice Cream
Demonstration in Market Milk Handling
Demonstration in Cheese Making and Milk Condensing

A Course in Market Milk and Cheese Making

JANUARY 19 TO 31, 1931

LECTURES

History and Development of Market Milk Industry
Milk as a Food
Grades of Milk
Bacteriology as Applied to Market Milk
How to Produce Low-count Milk
Pasteurization of Milk
Cream Line Studies
Cultured Buttermilk
Chocolate Milk
Cottage Cheese and Soft Cheese
Milk Plant Equipment
Cheddar Cheese
Milk Ordinances
Condensed Milk and Milk Powders
Milk By-products
Types of Milk Plants
Milk Distribution
Adulteration in Milk
Cost of Milk Production
Examinations

LABORATORY WORK

Standardization of Milk and Cream
Receiving, Clarification, Pasteurization
Bottling Milk
Determination of Food Value by Fat and Solids Test
Determination of Cleanliness and Keeping Quality by Acid and Sediment Test
Plating Milk for Bacteria
Methylene Blue Test
Cream Line Studies
Making Starters and Cultured Buttermilk
Making Chocolate Syrup and Chocolate Milk
Making Cottage Cheese
Making Cheddar Cheese
Detection of Adulterations
Designing Milk Ordinances
Making Condensed Milk

A Two-week Course in Butter Making

FEBRUARY 2 TO 14, 1931

LECTURES

History of the Butter Industry
Neutralization of Cream
Pasteurization of Cream
Churning Cream
Composition of Butter
Overrun in Butter
Cream Procurement
Cream Grading
Starter Making
Cream Ripening
Cream Station Operation
Market Grades of Butter
Butter Defects
Cream Separation
Bacteria and Their Relation to Butter Making
Yeast and Mold in Butter
Sweet-cream Butter
Factory Losses
Food Value of Butter
Marketing Butter
Examinations

LABORATORY WORK

Pasteurization of Cream
Analysis of Butter
Cream Grading and Testing
Preparation of Starters
Printing Butter
Churning
Cream Station Inspection
Judging Butter
Yeast, Mold, and Bacteria Counts
Receiving, Weighing, and Sampling Cream
Condensing Buttermilk
Flash Pasteurization
Sweet-cream Butter

A Two-week Course in Ice-cream Making

FEBRUARY 16 TO 28, 1931

LECTURES

History and Development
Composition and Properties of Milk
Testing Milk and Cream
Testing Ice-cream Mix
Standardization of Milk and Cream
Acid Test
Ingredients Used in Ice Cream
Composition of Ice Cream
Calculation of the Mix and Standardization
Processing the Mix
Freezing the Mix
Bacteria and Their Relation to Ice Cream
Ices and Sherbets
Fruit and Fancy Ice Cream
Refrigeration
Storage of Ice Cream
Gelatin and Egg in Ice Cream
Flavoring Materials
Food Value of Ice Cream
Defects of Ice Cream
Examinations

LABORATORY WORK

Standardization of Milk and Cream
Preparation of Simple Mix
Testing Mix for Fat
Freezing Simple Mix
Preparation and Freezing of Mixes with Varying Per cent of Fat
Preparation and Freezing of Mixes with Varying Per cent of Serum Solids
Preparation and Freezing of Mixes with Varying Per Cent of Sugar
Preparation and Freezing of Mixes with Varying Per cent of Gelatin and Egg Yolk
Use of Improvers
Preparation and Freezing of Ices and Sherbets
Mojonnier Testing
Preparation of Mixes in Vacuum Pan
Bricks and Fancy Molds
Preparation of Mixes from Butter and Powder
Judging Ice Cream
Study of Refrigeration Machinery

One- and Two-Year Courses in Trades Related to Engineering

The purpose of these courses is to give practical working knowledge of the trades, and in addition to give training in shop arithmetic, shop drawing, and other subjects which are essential to its successful application. Each of the courses is intensely practical. A certificate is granted to each student satisfactorily completing the prescribed work. These courses begin and end on the same dates as the regular College work as given in the College calendar on page 7.

For each hour of recitation per week at least one hour of outside preparation is required. Laboratory work requires little or no outside preparation. Each semester credit (standard for measuring the quantity of work done) represents not less than two hours' work per week for the entire semester. For Summer School each credit represents not less than four hours' work per week.

In general, students are required to take the subjects in the order outlined; however, if the conditions warrant, the order may be changed by the head of the department.

Substitutions will be allowed in certain cases where the conditions seem to justify them.

Requirements for Admission. Students entering either of the trade courses should be at least eighteen years old and should have completed the eighth grade in common-school education, or its equivalent.

Two-year Trade Course for Machinists

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

FIRST YEAR

First Semester		Second Semester	
Shop Calculations I, Shop 1	3(3-0)	Shop Calculations II, Shop 2	3(3-0)
Shop Drawing I, Shop 3	2(0-4)	Shop Drawing II, Shop 4	2(0-4)
Sold. and Babbit., Shop 20	2(0-4)	Machine Shop II, Shop 11	16(0-32)
Blacksmithing I, Shop 21	2(0-4)		
Oxy. and Elect. Welding, Shop 24	2(0-4)		
Foundry I, Shop 40	2(0-4)		
Machine Shop I, Shop 10	6(0-12)		

SUMMER SCHOOL

Machine Shop III, Shop 12 ..... 10(0-40)

SECOND YEAR

First Semester		Second Semester	
Shop Drawing III, Shop 5	2(0-4)	Shop Management, Shop 7	3(3-0)
Machine Shop IV, Shop 13	18(0-36)	Jig and Fixt. Design, Shop 6	2(0-4)
		Machine Shop V, Shop 14	15(0-30)

SUMMER SCHOOL

Machine Shop VI, Shop 15 ..... 10(0-40)

One-year Trade Course for Automechanics

The Arabic numeral immediately following the name of a subject indicates the number of credits, while the numerals in parentheses indicate the number of hours a week of recitation and laboratory, respectively.

First Semester		Second Semester	
Shop Calculations I, Shop 1	3(3-0)	Shop Calculations II, Shop 2	3(3-0)
Shop Drawing I, Shop 3	2(0-4)	Shop Drawing II, Shop 4	2(0-4)
Sold. and Babbit., Shop 20	2(0-4)	Shop Management, Shop 7	3(3-0)
Blacksmithing I, Shop 21	2(0-4)	Automechanics I, Shop 30	13(0-26)
Oxy. and Elect. Welding, Shop 24	2(0-4)		
Foundry I, Shop 40	2(0-4)		
Machine Shop I, Shop 10	6(0-12)		

SUMMER SCHOOL

Automechanics II, Shop 31 ..... 10(0-40)

BRIEF DESCRIPTION OF COURSES

Shop Practice Department

1. Shop Calculations I. 3(3-0). Mr. Sink.
Practice and use of the principles of arithmetic in the solution of shop problems, including information on various matters to which shop mathematics is applied.

2. Shop Calculations II. 3(3-0). Prerequisite: Shop I. Mr. Sink.
Continuation of Shop Calculations I, including problems and applications.

3. Shop Drawing I. 2(0-4). Mr. Sink.
Free-hand lettering, use of drawing board, T-square, and drawing instruments; the construction of geometrical figures, making orthographic projections and sections of simple objects.

4. Shop Drawing II. 2(0-4). Prerequisite: Shop 3. Mr. Sink.
Continuation of Shop Drawing I. Practice in the construction of orthographic and isometric projections, and sheet-metal drafting.

5. Shop Drawing III. 2(0-4). Prerequisite: Shop 4. Mr. Sink.
Working drawing from plates, free-hand sketches of machine parts and working drawings from these sketches.

6. Jig and Fixture Design. 2(0-4). Prerequisite: Shop 5. Mr. Sink.
Design of jigs and fixtures for machining interchangeable machine parts, empirical methods used to acquaint the student with the use of standard handbooks.

7. Shop Management. 3(3-0). Mr. Sink.
Problems of the shop foreman or owner, study of the selection, installation, and arrangement of equipment.

10, 11, 12, 13, 14, 15. Machine Shop I, II, III, IV, V, and VI. 6(0-12), 16(0-32), 10(0-20), 18(0-36), 15(0-30), and 10(0-20), respectively. Mr. Jones.
Exercises to bring into use the various machines and practical work in the building of wood lathes; in making repairs on machinery, babbiting and fitting of bearings; aligning shafting and pulleys; lacing and fitting belts. More advanced work includes instruction on milling machines, universal grinders, and screw machines. Special work is given in tool making when the skill necessary for this class of work is acquired. Charge, $1.50 per credit.

20. Soldering and Babbiting. 2(0-4). Mr. Sink.
Instruction and practice in forming and soldering the common metals; the use of the different fluxes; proper pouring and fitting of babbit bearings. Charge, $1.50 per credit.

21. Blacksmithing I. 2(0-4). Mr. Lynch.
Practice in forging operations; exercise in drawing, upsetting, welding, bend-

ing; instruction in the use and care of the fire and tools, drills, hammers, and other tools used in the trade. Charge, $1.50 per credit.

24. Oxyacetylene and Electric Welding. 2(0-4). Mr. Lynch.
Instruction and practice in making different types of welds. Charge, $7 for 2 credits.

30, 31. Automechanics I and II. 13(0-26), 10(0-20), respectively. Mr. Sink.
A study of the mechanism, adjustments, materials of automotive construction; carburetion; cooling systems, and lubrication. The most important fundamental principles of electricity and magnetism are included in electrical work. Advanced work includes systematic trouble shooting. During the latter part of the course the students are allowed, when conditions warrant, to specialize in the work they expect to follow. Charge, $1.50 per credit.

40. Foundry I. 2(0-4). Mr. Grant.
Bench, floor, and machine molding, using a great variety of patterns; use of different kinds of sands and facings; open sand work, sweep moulding, core making, and all important foundry operations. Repairing and operating of cupola and brass furnace, and practical work, such as found in a commercial foundry.
Selection of equipment and general foundry layout are considered. Charge, $0.75 per credit.

Degrees and Certificates Conferred

In the Year 1929

SPRING COMMENCEMENT, May 29

DEGREES CONFERRED

GRADUATE COURSES

MASTER OF SCIENCE

Arthur Clinton Andrews, B. S., University of Wisconsin, 1924, Manhattan
Earl Blackbourn Belscamper, A. B., College of Emporia, 1925, Electra, Tex.
Arthur Wallace Benson, B. S., Kansas State Agricultural College, 1928, Clay Center
Gladys Matilda Boehm, A. B., Drury College, 1925, Springfield, Mo.
Almond Derrill Bull, B. S., Oklahoma Agricultural and Mechanical College, 1925, Crawford, Okla.
Lila Marguerite Canavan, A. B., University of Kansas, 1919, Lawrence
Ida Alfreda Carlson, B. S., Kansas State Agricultural College, 1913; M. S. (in English), ibid., 1927, Manhattan
Percy Walter Cockerill, B. S., Kansas State Agricultural College, 1915, Manhattan
*Leonard Paul Elliott, B. S., Kansas State Agricultural College, 1923, Manhattan
Vernon Daniel Foltz, B. S., Kansas State Agricultural College, 1927, Belle Plaine
Edward Raymond Frank, B. S., Kansas State Agricultural College, 1918; D. V. M., ibid., 1924, Manhattan
Henry Nelson Gilbert, A. B., Friends University, 1925, Wichita
Isabelle Gillum, B. S., University of Texas, 1927, Elgin, Tex.
Randolph Forney Gingrich, B. S., University of Nebraska, 1923, Manhattan
David Goodsell Hall, B. S., Ohio State University, 1926, Tippecanoe City, Ohio
Charles Wilber Howard, B. S., Kansas State Agricultural College, 1922, Holcomb
Ralph Alexander Irwin, B. S., Kansas State Agricultural College, 1928, Manhattan
John Wesley Jarrott, B. S., Kansas State Teachers College, Emporia, 1924, Hutchinson
Carroll Mendenhall Leonard, B. S., Kansas State Agricultural College, 1924; M. E., ibid., 1928, Manhattan
Lucille McCall, A. B., Southwestern College, 1926, Winfield
Arthur Einas Mortensen, B. S., South Dakota State College, 1926, Bruce, S. D.
Ali Nouman, Graduate, Halkali Agricultural College, Turkey, 1914, Angora, Turkey
Edward Schneberger, B. S., Kansas State Agricultural College, 1928, Cuba
Emmett Allen Smith, B. S., Kansas State Teachers College, Hays, 1925, Manhattan
Francis Lorin Smith, B. S. A., University of Arizona, 1927, Snow Flake, Ariz.
Mildred Bertha Thurow, B. S., Kansas State Agricultural College, 1927, Macksville
Howard Dale Tyner, B. S., Illinois Wesleyan University, 1925, Manhattan
George B. Wagner, B. S., Kansas State Agricultural College, 1928, Manhattan
Herkle Lester Wampler, A. B., McPherson College, 1925, McPherson
Rachel Wright Working, B. S., Kansas State Agricultural College, 1928, Manhattan

PROFESSIONAL DEGREES IN ENGINEERING

AGRICULTURAL ENGINEER

Rudolph Henry Driftmier, B. S., Iowa State College, 1920; M. S., Kansas State Agricultural College, 1926, Manhattan

CIVIL ENGINEER

Ira David Sankey Kelly, B. S., Kansas State Agricultural College, 1924, Thebes, Ill.
Francis Joseph Nettleton, B. S., Kansas State Agricultural College, 1925, Winfield

MECHANICAL ENGINEER

Claude Leonard Wilson, B. S., Kansas State Agricultural College, 1925, Prairie View, Tex.

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* In absentia.

UNDERGRADUATE CURRICULA

Division of Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

Henry Chaffee Abell, Riley
Forrest Bennett Alspach, Wilsey
Scott Roe Bellamy, Meade
James Lyle Blackledge, Manhattan
Hobart Pattison Blasdel, Sylvia
Floyd Albert Blauer, Stockton
Omar Lewis Buzard, Kansas City, Mo.
Francis Edward Carpenter, Wakefield
George J. Casper, Jr., Alida
Everett Garth Champagne, Oketo
Carl Sutter Channon, Ottawa
Edward Crawford, Stafford
Norman Curtis, Toronto
Marion Kerr Fergus, Garnett
Theodore Russell Freeman, West Plains, Mo.
Ogden Worley Greene, Paradise
William Ellsworth Gregory, Walnut
Theodore Fowler Guthrie, Jr., Saffordville
Fred Lincoln Huff, Chapman
Samuel Greenberry Kelly, Manhattan
Albert Best King, Centralia
Terrell Weaver Kirton, Amber, Okla.
Leonard William Koehler, Kansas City, Mo.
Waldo Haymond Lee, Keats
Ralph Oscar Lewis, Parsons
Philip Bard McMullen, Stella, Neb.
Donald James Martin, Fellsburg
Albert William Miller, Manhattan
Merle Glen Mundhenke, Lewis
Theophilus Edward Nafziger, Cimarron
Howard Milton Nester, Scranton
William Harold Polhamus, Parker
Robert Louis Rawlins, Holton
Ray Lewis Remsberg, La Harpe
John Wesley Roussin, Brewster
Charles Elmer Russell, Stafford
Marion Lynn Russell, Garden City
Paul Griffith Sayre, Manhattan
Robert Theodore Schafer, Jewell
John Frederick Smerchek, Cleburne
James Harold Sutton, Ensign
Ivan Keith Tompkins, Byers
James Frederick True, Jr., Perry
Azel Oscar Turner, Lawrence
Lyle Alexander Will, Denison
Temple Fay Winburn, De Kalb, Mo.
Leslie Melvin Wolfe, Johnson
Ralph Rogler Wood, Cottonwood Falls

BACHELOR OF SCIENCE IN AGRICULTURAL ADMINISTRATION

Silas Solomon Bergsma, Lucas
Thomas Glen Betts, Detroit
Roy Elmer Bonar, Washington
*Edgar Dowden Cannon, Manhattan
Tudor John Charles, Jr., Republic
Charles Raymond Curtis, St. John
Harold David Garver, Manhattan
William Wade Gosney, Goddard
Francis William ImMasche, Saffordville
John Paul Lortscher, Fairview
Joseph Ardrey Watson, Sedan

Division of Engineering

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Edgar Lee Barger, Topeka
Raymond Rodney Drake, Nekoma
Frank Leroy Fear, Jr., Clay Center
Clifford Nelson Hinkle, Lenora
John Arwin Hoop, Fowler
Chester Merle Roehrman, White City
Walter Elsworth Selby, Manhattan
Harold Earl Stover, Colwich
Raymond Jennison Tillotson, Shields
Hugh Erwin White, Kingsdown

BACHELOR OF SCIENCE IN ARCHITECTURE

*Harman Edward Guisinger, Kansas City, Mo.
Harvey Rockburn Harwood, Farmington, N. M.
*Harry Adolph Koenig, Chanute
Stanley Eaton Morse, Manhattan

BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING

Paul A. Cooley, Neodesha
Ernest Burton Woodward, Medicine Lodge

BACHELOR OF SCIENCE IN LANDSCAPE ARCHITECTURE

Emmet Leonard Hill, Jennings
Ned Woodman, Manhattan

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Robert Frederick Childs, Hugoton
*Joseph Homer Garrison, Lincolnville
Walter Rudolph Helm, Chanute
Joe Hyer, Coffeyville
Lester Melvin Mishler, Sabetha
Galen Emil Schwandt, Manhattan

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Francisco Albano Asis, Piddig, P. I.
Thomas Ralph Barner, Belle Plaine
*Clint Eugene Critchfield, Kansas City, Mo.
Loyal Hendrickson Davies, Manhattan
Homer Thomas Deal, Hoisington
Arthur Elmer Dring, Pawnee Rock
Martin Keller Eby, Wellington
Ralph Wilson Frank, Manhattan
Perry Lester Gardner, Louisburg
Orvel Leonard Gathers, Miltonvale
Virgil Himes Harwood, Manhattan
George Allan Johnson, Manhattan
Emil E. Larson, Agenda
Victor Palenske, Alma
Kenneth Edward Rector, Scott City
Earl Leroy Sloan, Boise City, Okla.
Harold Germain Wood, Topeka

* In absentia.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Earl Bowater Ankenman, Dellvale
*Noel Grant Artman, Denison
Laurence Edwin Baty, Manhattan
Alfred Merle Breneman, Parsons
Thomas Richard Brennan, Bonner Springs
Arthur Westnidge Broady, Plains
Leonard Hathaway Brubaker, Manhattan
Donald Cameron, El Dorado
Paul Southworth Colby, Denver, Colo.
Earl Jewell Cover, Ozawkie
Verl Harvey Dobbins, Pratt
Emerson George Downie, Hutchinson
Norton Taylor Dunlap, Berryton
*Philip Joseph Edwards, Athol
Edward V. Ellifrit, Kansas City
*Francis Glenn Fry, Waldo
Chester Alexander Garrison, Pittsburg
Malaeska Milton Ginter, Manhattan
Cecil Edgar Hammett, Manhattan
Garcel Kelly Hays, Manhattan
Arthur Henry Hemker, Great Bend
Wesley McKinley Herren, Manhattan
David Paul Hutchison, Council Bluffs, Iowa
Glenn Koger, Herington
Donald Cutler Lee, Harper
Harold Carl Lindberg, Courtland
Ralph LaRue Miller, Norton
Vern Denton Mills, Manhattan
Charles Belgrove Olds, Delphos
Merton Elias Paddleford, Randolph
Craig Evan Pickett, Glen Elder
Elwood Effenger Reber, Wetmore
Benjamin Luce Remick, Jr., Manhattan
Carl Clark Rice, Manhattan
Owen Gayle Rogers, Bronson
Galen Emil Schwandt, Manhattan
Harold Alfred Senior, Independence
Joe Joshua Shenk, Manhattan
Edward John Skradski, Kansas City
Claude Wilber Sloan, Dalhart, Tex.
*Arthur William Vance, Garden City
Arthur R. Weckel, Piqua
Rex Edward Wheeler, Manhattan
Rexford Everett White, Jewell
Francis Eugene Wiebrecht, Strong City

BACHELOR OF SCIENCE IN FLOUR MILL ENGINEERING

Robert Earl McCormick, Oatville

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Loyle William Bishop, Kansas City, Mo.
*Martin Arthur Edwards, Chautauqua
Arthur Oran Flinner, Wichita
Laurence Charles Hill, Emporia
*Harold Clarence Huffman, Pittsburg
James Dan McGregor, Columbus
Jay Clayton Marshall, Manhattan
Walter Seamons Mayden, Manhattan
Fred Roy Mouck, Grove, Okla.
Lois Thomas Richards, Parsons
Charles Fredrick Sardou, Topeka

Division of General Science

BACHELOR OF SCIENCE

Malcolm Llewellyn Alsop, Wakefield
Verne Russell Alspach, Wilsey
Inez Pearl Anderson, Richland
Joseph McDaniel Anderson, Salina
Alta Elizabeth Barger, Manhattan
Mary Elizabeth Blakslee, Manhattan
Frederick Bruce Bosley, Manhattan
Kenneth Arthur Boyd, Irving
Carolyn Marie Brandesky, Severy
Beatrice Brown, Manhattan
Nancy Genevieve Carney, Manhattan
Helen Van Zandt Cortelyou, Manhattan
Bruce Oliver Dallam, Faucett, Mo.
Rebecca Lillian Dubbs, Ransom
Irene Elliott, Topeka
Virgil Monroe Fairchild, Wichita
William Boswell Floyd, Manhattan
Ernest Rixey Foltz, Belle Plaine
Eldred LaMonte Gann, Burden
Roderic Grubb, Kanopolis
Iola Marguerite Gunselman, Holton
Ben Henry Hageman, White Cloud
Ruth Meryle Harlow, Lucas
Helen Leone Hawley, Manhattan
Irene Burnema Heer, Manhattan
Helen Charlotte Heise, Topeka
Earl William Henderson, Beloit
Arle William Higgins, Manhattan
Willetta Jane Hill, Belleville
Stanley John Holmberg, Stillwater, Minn.
William Milton Holt, Augusta
Mary Florence Hoop, Fowler
John Lester Hooper, Robinson
Elizabeth Raley Hullinger, Garden City
Anna Alice Jacobs, McCune
Elston Leslie Johnson, Randolph
Tracy El Delle Johnson, Olsburg
George Clair Jordan, Jewell
Dorothy Alice Kendall, Manhattan
Margaret Knight, Medicine Lodge
Walter Fred Kuiken, Glen Elder
*Virgil Hudson Leonard, Richland
Una Minnette Le Vitt, Wilson
Joseph Kenneth Limes, La Harpe
Curtis Joseph Lund, Lasita
Renness Irene Lundry, Arlington
Agnes Jeanne Lyon, Manhattan
Wayne McCaslin, Osborne
Paul Joseph McCroskey, Netawaka
Walter Gordon McMoran, Coldwater
Harold Parker Mannen, Lincoln
Silas Milbern Miller, McPherson
Wilhelmina Louise Moehlman, Manhattan
Reginald Moore, Robinson
Thelma Jane Moore, Humboldt
Helen Augusta Mundell, Nickerson
Anna Mae Nettrouer, Manhattan
Elsie Sonya Nuss, Hoisington
Mabel Grace Paulson, Whitewater
Clara Margaret Paustian, Manhattan
Lillian Susanna Paustian, Manhattan
Marjorie Prickett, Wamego
*Frank Hoyt Purcell, Jr., Kansas City, Mo.
Hazel Romer, Holly, Colo.
*Marshall Berry Ross, Manhattan
Letha Mildred Schoeni, Athol
*Emma Schreiner, Ramona
Myrna Frances Smith, Manhattan
Ida Elizabeth Snyder, Effingham
Donald Alvin Springer, Manhattan
Elma Mae Stoops, Bellaire
Carol Lusetta Stratton, Manhattan
Ruth Varney, Manhattan
Theodore Roosevelt Varney, Manhattan
Esther Weisser, Paxico
Lila Williams, Broughton

* In absentia.

BACHELOR OF SCIENCE IN INDUSTRIAL CHEMISTRY

Edwin Henry Kroeker, Hutchinson
William Robert Love, Bronson
John Henry Shenk, Manhattan
Donald Wade, Manhattan

BACHELOR OF SCIENCE IN INDUSTRIAL JOURNALISM

John Stothers Chandley, Kansas City
Kathryn Frances Coles, Galena
Charles Edward Converse, Manhattan
Charles Lafayette Dean, Manhattan
Meredith Ernestine Dwelly, Manhattan
Glen Robert Fockele, Le Roy
Gordon Sheffield Hohn, Marysville
Ralph Richard Lashbrook, Almena
Lenore McCormick, Cedarvale
Albert Houston Meroney, Garden City
Shirley Caroline Mollett, Manhattan
Wilmar Walton Sanders, Clay Center
Gladys Estelle Suiter, Macksville

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Lillian Colleen Alley, Manhattan
Alma E. Brown, Kansas City
Jennie Maurine Burson, Manhattan
Ruth Correll, Manhattan
Ruth Davies, Delphos
Hope Dawley, Manhattan
*Albert Rowland Edwards, Fort Scott
Ruth Isabel Frost, Blue Rapids
Zella Elizabeth Hartley, Manhattan
Mildred Huddleston, Fulton, Ky.
Marjorie Blanche Mirick, Halstead
Kirk Monroe Ward, Elmdale
Beatrice Wilhelmina Wood, Great Bend

BACHELOR OF SCIENCE IN RURAL COMMERCE

Ray Lee Althouse, Bartlesville, Okla.
Robert Anderson Barr, Manhattan
Verne W. Boyd, Irving
Charles Frank Chrisman, Hutchinson
Lyle Daily DeBusk, Macksville
Glenn Albert Durland, Irving
John Clayton Dwelly, Manhattan
Everett Emerson Fear, Bala
Clarence Joseph Goering, Moundridge
Virginia Deane Hawkins, Monte Vista, Colo.
*Ralph Taft Howard, Mount Hope
Charles Harold Hughes, Manhattan
Blanche Lucille Myers, Americus
Raymond Soper Myers, Manhattan
Robert William Myers, Manhattan
Frank Nellis Parshall, Manhattan
Dwight Kimball Putnam, Salina
George Doster Stewart, Abilene
Scott Lester Turnbull, Allen
Christopher Simon Williams, Manhattan
*Hal Spring Wilson, Valencia
Edward Everett Wyman, Clifton

BACHELOR OF MUSIC

Dorothy Lee Allen, Fayetteville, Ark.
Hazel Alberta McGuire, Manhattan
Jeanice Reel, Detroit
Lillias Maria Samuel, Manhattan
Gladys Alice Swartz, Atchison
Ruth Lillian Turner, Manhattan

Division of Home Economics

BACHELOR OF SCIENCE IN HOME ECONOMICS

Agnes Mertina Bane, Manhattan
Lottie Nevella Benedick, Manhattan
Bertha Jane Boyd, Manhattan
Miriam Elizabeth Brenner, Waterville
Helen Virginia Brewer, Peabody
Doris Isabelle Bryan, Greensburg
Daryl Durland Burson, Manhattan
Georgiana Bush, Little River
Vivian Hall Bushong, Clinton, Mo.
Bessie Mabel Cook, Bucklin
W. Garnet Crihfield, Geneseo
Mary Louise Crowder, Manhattan
Louise Johanna Cunningham, Manhattan
Grace Annetta Daugherty, Republic
Ina Williametta Davidson, Manhattan
Flora Marie Deal, Great Bend
Linnea Carlson Dennett, Lindsborg
Vianna Ruth Dizmang, Manhattan
Opal Dougherty, Manhattan
Lillys Molly Duvall, Arkansas City
Elizabeth Fairbank, Topeka
*Frances Webb Frey, Manhattan
Florence Mable Funk, Iola
*Olive Grace Haege, Manhattan
Viola Grace Hart, Topeka
Beulah Mae Henderson, Solomon
Grace Virginia Henley, Eureka
Iva Luella Holladay, Dodge City
Norma Lucile Hook, Topeka
Emma Lobelia Huxmann, Arnold
Dorothy Alice Johnson, Lyons
Mary Ellen Karns, Bucklin
Mary Louise Kinkead, Troy
Lorie Konantz, Olathe
Agatha Meta Leuthauser, Beemer, Neb.
Mabel Mae McClung, Manhattan
*Esther Beatrice McGuire, Manhattan
Thelma Faye Mall, Manhattan
Marceline Markle, Chase
Mary Edith May, Wichita
*Beryl Johnson Mohri, Olsburg
Mattie Louise Morehead, Norton
Eula Frances Morris, Yates Center
Pearl Frances Musgrave, Hillsdale
Mary Araminta Norman, Fowler
*Ethel Evelyn Oatman, Lawrence
Velma Luella Oliphant, Kinsley
Edythe La Verne Parrott, Manhattan
Carrie Alma Paulsen, Stafford
*Helen Elizabeth Paynter, Manhattan
Marguerite Leona Richards, Manhattan
Lucile Kathryn Rodgers, Abilene
Irene Josephine Rogler, Matfield Green
Pearl Elzora Rorabaugh, Lebanon
*Lois Russell, Manhattan
Florence Caroline Sederlin, Scandia
Ida Mabel Shrontz, Wilsey
Mildred Mabel Sinclair, Macksville
Florence Verlene Smith, Tarkio, Mo.
Kathryn Socolofsky, Tampa
*Anna Caroline Stewart, Manhattan
Jessie Sarah Stewart, Maplehill
Reva Mae Stump, Blue Rapids
Cora Esther Thomas, Narka
Helen Grace Trembley, Hutchinson
Grace Elsie Walrod, Bradshaw, Neb.
Hazel Maude Walter, Riley
Beatrice Shirley Warner, Goodland
Vera C. Warnock, Hutchinson
Nana Frances Whitman, Kansas City
Helen Willcuts, Burr Oak
Ruth Williams, Broughton
Helen Mildred Wilmore, Halstead

* In absentia.

Division of Veterinary Medicine

DOCTOR OF VETERINARY MEDICINE

*Carroll Ferdinand Alexander, Manhattan
Clair Lenna Butler, Glasco
Frank Howard Callahan, Abilene
Clifford Vernon Conger, Ionia
Daniel DeCamp, Manhattan
Finis Ewing Henderson, Manhattan
Hugh Edward McClung, Haywards, Cal.
Ralph William Mohri, Manhattan
Needham Branch Moore, Jr., Manhattan
Lawrence Orville Mott, Spencer, Neb.
Karl Willim Niemann, Manhattan
Charles Robert Omer, Mankato
Harry Edward Schaulis, Wakefield
Francisco Rioja Taberner, Dolores, Abra, P. I.
Martin Van Der Maaten, Orange City, Iowa

COMMISSIONS AWARDED

SECOND LIEUTENANT, OFFICERS' RESERVE CORPS

Forrest Bennett Alspach, Wilsey
*Joseph Monroe Barger, Manhattan
James Lyle Blackledge, Manhattan
Thomas Richard Brennan, Bonner Springs
Charles Frank Chrisman, Hutchinson
Charles Edward Converse, Manhattan
Daniel DeCamp, Manhattan
Emerson George Downie, Hutchinson
Arthur Elmer Dring, Pawnee Rock
*Gabriel Ernest Drollinger, Wichita
Arthur Oran Flinner, Wichita
Cecil Edgar Hammett, Manhattan
*Eugene Francis Harmison, Great Bend
Garcel Kelly Hays, Manhattan
Arthur Henry Hemker, Great Bend
Arlie William Higgins, Manhattan
*Thomas Burl Hofmann, Silver Lake
Stanley John Holmberg, Stillwater, Minn.
Charles Harold Hughes, Manhattan
Samuel Greenberry Kelly, Manhattan
*Wayne Kimes, Dodge City
Glenn Koger, Herington
Donald Cutler Lee, Harper
Hugh Edward McClung
Robert Earl McCormick, Oatville
Jay Clayton Marshall, Manhattan
Charles Hubert Mehaffey, Farmington
Silas Milbern Miller, McPherson
Ralph William Mohri, Manhattan
Needham Branch Moore, Manhattan
Lawrence Orville Mott, Spencer, Neb.
Merlin Mundell, Nickerson
Robert William Myers, Manhattan
Charles Belgrove Olds, Delphos
Charles Robert Omer, Mankato
*Leonard Milton Pike, Goddard
Charles Edward Reeder, Troy
Arthur Vernon Roberts, Vernon
James William Schwanke, Alma
Robert Philip Smith, Junction City
William Jay Sweet, Wichita
Gerald Dean Van Pelt, Beloit
Rex Edward Wheeler, Manhattan
Temple F. Winburn, De Kalb, Mo.
Harold Germain Wood, Topeka

CERTIFICATES AWARDED

CERTIFICATE IN FARMERS' SHORT COURSE

Lorin Y. Bradshaw, Langdon
H. Bertram Garard, Olivet
Charles Thornton Grimm, Caldwell
Floyd D. Guyer, Bloomington
Irving R. Guyer, Bloomington
Harold Nelson Kilbourn, Sterling
Joseph Wendell McFarland, Sterling
Dwight B. Robb, Dodge City
Dale W. Schweitzer, Osborne
Louis C. Schweitzer, Osborne

DAIRY MANUFACTURING SHORT COURSE

Walter Teddy Becker, Manhattan
Noble Christenson, Tonganoxie
Glen Irvin Dunham, Eureka
Harold Knight Freeman, Manhattan
Charles Raymond Gillilan, Manhattan
Albert Eugene La Croix, Hiawatha
Otto Reynold Shultz, Lawrence
James Milton Soper, Herington
Dorwin Clair Wright, Manhattan

* In absentia.

SUMMER SCHOOL COMMENCEMENT, July 31, 1929

DEGREES CONFERRED

MASTER OF SCIENCE

Jean Greiner Alexander, A. B., Oklahoma City University, 1928, Oklahoma City, Okla.
*Floyd Warnick Atkeson, B. S., University of Missouri, 1918, Moscow, Idaho
Frances Mable Backstrom, B. S., Kansas State Agricultural College, 1928, Kansas City, Mo.
Roy Bainer, B. S., Kansas State Agricultural College, 1926, Manhattan
Jacob Biely, B. S. A., University of British Columbia, 1926, Vancouver, B. C.
Cecil Thomas Blunn, B. S., University of California, 1928, Los Angeles, Cal.
*Homer Cleo Bray, B. S., Oregon State Agricultural College, 1928, Salem, Ore.
Margaret Angeline Brenner, B. S., Kansas State Agricultural College, 1926, Waterville
Marian Elizabeth Brookover, B. S., Kansas State Agricultural College, 1922, Eureka
Francis Eugene Charles, B. S., Kansas State Agricultural College, 1924, Manhattan
Early Mast Chestnut, A. B., University of Kansas, 1921, Manhattan
Helen Elizabeth Cobb, B. S., University of Wisconsin, 1924, Fort Scott
Hubert Lee Collins, B. S., Kansas State Agricultural College, 1923, Denver, Colo.
William Eugene Connell, B. S., Oklahoma Agricultural and Mechanical College, 1928, Rupert, Idaho
Nellie May Cook, A. B., Hiram College, Ohio, 1913; B. S., Phillips University, 1923, Chapman
Eula Mae Currie, B. S., Kansas State Agricultural College, 1928, Manhattan
Alice Josephine Englund, B. S., Kansas State Agricultural College, 1926, Salina
Howard Kay Gloyd, B. S., Ottawa University, 1924, Manhattan
Clarence Owen Grandfield, B. S., Kansas State Agricultural College, 1917, Manhattan
Harry Herbert Halbower, B. S., Kansas State Agricultural College, 1923, Kingman
Florence Harris, B. S., Kansas State Agricultural College, 1925, Manhattan
Martha Luella Hensley, B. S., University of Missouri, 1926, Jackson, Mo.
Robert Towner Hill, B. S., South Dakota State College, 1928, Grand Meadow, Minn.
Cecil Canum Holmes, B. S., Kansas State Agricultural College, 1923, Goff
Ruth Louise Holton, B. S., University of Minnesota, 1926, Manhattan
William Robert Horsefall, B. S. A., University of Arkansas, 1928, Monticello, Ark.
*Vincent Charles Hubbard, A. B., University of Minnesota, 1927, Minneapolis, Minn.
Herbert Lee Kammeyer, B. S., Kansas State Agricultural College, 1925, Wamego
Dale Franklin King, B. S., Oregon State Agricultural College, 1928, Manhattan
Fred Franklin Lampton, B. S., Kansas State Agricultural College, 1924, Cherokee
Iva Larson, A. B., University of South Dakota, 1927, Alcester, S. D.
Paul Merville Larson, B. S., Kansas State Agricultural College, 1927, Manhattan
John Lowe, B. S., University of Missouri, 1923, Winfield
*George Edward Marshall, B. S., Kansas State Agricultural College, 1928, Bonner Springs
Edith Seavey Martin, B. S., Kansas State Agricultural College, 1928, Manhattan
Leon Francis Montague, B. S., Kansas State Agricultural College, 1926, Solomon
Mary Hope Morris, B. S., Kansas State Agricultural College, 1924, Manhattan
Luther Owen Nolf, B. S., Kansas State Agricultural College, 1926, Manhattan
Laurence Parker, B. S., Kansas State Teachers College, Pittsburg, 1926, Manhattan
Louise Arminda Phelps, A. B., Washburn College, 1924, Beaver, Okla.
Raymond Edwin Samuelson, B. S., Iowa State College, 1928, Ames, Iowa
Gabe Alfred Sellers, B. S., Kansas State Agricultural College, 1917, Manhattan
Beulah Fern Shockey, B. S., Kansas State Teachers College, Pittsburg, 1921, Iola
Samuel Allen Summerland, A. B., Arkansas State Teachers College, 1922; A. M., Peabody College, 1926, Manhattan
Eugene Albertice Waters, B. S., Kansas State Agricultural College, 1925, Wellsville
Bertha Evelyn Wentworth, A. B., Friends University, 1903, Furley
Jesse Frederick Westerdale, B. S., Kansas State Teachers College, Pittsburg, 1925, Topeka
*Ruth Esther Williams, B. S., Kansas State Teachers College, Hays, 1926, Ransom
Karl Marx Wilson, B. S., Kansas State Agricultural College, 1924, Concordia
Wilbur William Wright, B. S., Kansas State Agricultural College, 1917, Hope

UNDERGRADUATE CURRICULA

Division of Agriculture

BACHELOR OF SCIENCE IN AGRICULTURE

James Byron Brooks, Garrison
Walter McConnell Crossen, Turner

BACHELOR OF SCIENCE IN AGRICULTURAL ADMINISTRATION

Albert Brown, Circleville
Richard Edward Hamler, Manhattan
Carl Heinrich, Durham
Hugh Kenneth Richwine, Holcomb
James Arlie Stewart, Abilene

* In absentia.

Division of Engineering

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Hilliard Lafayette Gamble, Halstead

BACHELOR OF SCIENCE IN ARCHITECTURE

*Harold Mahlon Souders, Eureka

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Harvey Stafford German, Little River
James Roe Heller, Detroit
James Eugene Irwin, Le Roy
Harry Kibler, Sedan
Walter Harold Murray, Manhattan
Lee Rudell St. John, Morland

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

*Melvin Cooper Coffman, Wakefield
Edwin Osborne Earl, Nickerson
Lester Charles Gates, Seward
Thomas Burl Hofmann, Silver Lake
Glade W. Hurst, Caldwell
Francis Earnest Johnson, Burlington
Floyd Sereign Naugle, Highland
William Anthony Nelson, Alta Vista
Gerald Dean Van Pelt, Beloit
*Forrest Barber Volkel, Lenora
Royden Keith Whitford, Hamlin

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Justin Joe Joy, Osborne
Charles Hubert Mehaffey, Farmington
Karl Polk Niederlander, Wichita

Division of General Science

BACHELOR OF SCIENCE

Helen Rose Anderson, Thayer
Lottie Sybell Andrews, Junction City
Sister Domitilla Arnoldy, Manhattan
Sister Nicholas Arnoldy, Manhattan
Cora Mae Geiger, Salina
Velna Genevieve Hallock, Ada
Verna Doris Holmstrom, Randolph
Helen Kimball, Manhattan
Vivian Iliene Kirkwood, Manhattan
Dorothy Beryl Kuhnle, Concordia
Mildred Hazel Lemert, Cedarvale
Alice Manley, Cheney
Mary Amanda Meyer, Mound City, Mo.
Maurice Charles Moggie, Manhattan
Merlin Mundell, Nickerson
Bernice Elizabeth Shoebrook, Horton
Katherine Bingman Snair, Manhattan
John Willard Truax, Peabody
Mary Pierce Van Zile, Manhattan
John Howard Worley, Randall

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

Hellen Rachel Elling, Manhattan
*Lee Elmar Hammond, Osborne
Madison Bertrand Pearson, Manhattan

BACHELOR OF SCIENCE IN RURAL COMMERCE

*Joseph Monroe Barger, Manhattan
Theodore Allen Fleck, Wamego
Hazel Juanita Hotchkiss, Manhattan
Charles Ellis Luthey, Carbondale
Fred Irwin Nevius, Paola

BACHELOR OF MUSIC

Gladys Hattie Crumbaker, Manhattan
Florence Estelle Dudley, Clay Center
Bert Lewis Hostinsky, Manhattan
Carola Peshel Swanson, Manhattan

Division of Home Economics

BACHELOR OF SCIENCE IN HOME ECONOMICS

Johanna Helena Barre, Tampa
Erma Mildred Coleman, Mayetta
Marjorie May Collins, Manhattan
Frances Eloise Gibson, Muskogee, Okla.
Mary Gertrude Grider, Rolla
Eunice Grace Grierson, Medicine Lodge
Ruth Velma Hallett, Topeka
Gertrude Claire Hamilton, Wichita
Margaret Lorraine Hemphill, Chanute
Norma Louise Knoch, Lincoln
Josephine Elizabeth Koenig, Kansas City, Mo.
Agnes Vivian McKibben, Springfield, Mo.
Ferne Hilda Moore, Blue Rapids
Gladys Myers, Burns
*Martha Mary Sandeen, Stillwater, Minn.
Mabel Luella Sellens, Russell
Velma Elizabeth Vincent, Alden
Mary Frances Wagner, Manhattan
Violet Lovina Walker, Manhattan
Lulu Parken Wertman, Morrowville
Mary Christine Wiggins, Eureka

* In absentia.

HONORS

PHI KAPPI PHI

CANDIDATES FOR THE MASTER'S DEGREE, 1929

Arthur Clinton Andrews
Floyd Warnick Atkeson
Howard Kay Gloyd
Ralph Alexander Irwin
John Wesley Jarrott
Lawrence Parker
Lila Marguerite Canovan
Iva Larson
Early Mast Chestnut
Wilbur William Wright
Clarence Owen Grandfield
Jean Greiner Alexander
Leon Francis Montague
Ruth Esther Williams
Henry Nelson Gilbert
Herkle Lester Wampler

GRADUATES, CLASS OF 1929

Division of Agriculture

Hobart Pattison Blasdell
Albert William Miller
Leonard William Koehler
Samuel Greenberry Kelly
James Lyle Blackledge
Henry Chaffee Abell
Norman Curtis
Ralph Oscar Lewis

Division of Engineering

Earl Leroy Sloan
James Eugene Irwin
Emerson George Downie
Ralph La Rue Miller
Charles Belgrove Olds
Arthur Elmer Dring
Glenn Francis Fry
Arthur Oran Flinner
Harold Alfred Senior
Homer Thomas Deal
Robert Frederick Childs
Paul Southworth Colby
David Paul Hutchinson
Philip Joseph Edwards
Martin Keller Eby

Division of General Science

Carol Lusetta Stratton
Nancy Genevieve Carney
Helen Van Zandt Cortelyou
John Henry Shenk
Helen Charlotte Heise
Shirley Caroline Mollett
Letha Mildred Schoeni
Mabel Grace Paulson
Renness Irene Lundry
Esther Weisser
Donald Wade
Walter Gordon McMoran
Marjorie Prickett
Charles Harold Hughes
Vivian Iliene Kirkwood
Ben Henry Hageman
Gladys Estelle Suiter
Edward Everett Wyman
Robert William Myers
Mildred Huddleston

Division of Home Economics

Esther Beatrice McGuire
Mattie Louise Morehead
Linnea Carlson Dennett
Helen Virginia Brewer
Marguerite Leona Richards
Flora Marie Deal
Lucile Kathryn Rogers
Ina Willametta Davidson
Mary Arminta Norman
Thelma Faye Mall

Division of Veterinary Medicine

Karl Willim Niemann
Lawrence Orville Mott

SENIOR HONORS

(1929)

Division of Agriculture

Henry Chaffee Abell
Albert Brown
*Hobart Patterson
Norman Curtis
Sam Greenbury Kelly
*†Leonard William Koehler
†Albert William Miller

Division of Engineering

Robert Frederick Childs
*Paul Southworth Colby
†Homer Thomas Deal
Martin Keller Eby
*†Arthur Oran Flinner
*Francis Glenn Fry
Emmett Leonard Hill
James Eugene Irwin
Harold Alfred Senior
Joe Joshua Shenk
†Earl Leroy Sloan

Division of General Science

Frederick Bruce Bosley
*†Nancy Genevieve Carney
*†Helen Van Zandt Cortelyou
Eldred La Mont Gann
Cora Mae Geiger
*Helen Charlotte Heise
Vivian Iliene Kirkwood
†Renness Irene Lundry
Walter Gordon McMoran
Silas Milbern Miller
*Maurice Charles Moggie
Shirley Caroline Mollett
†Letha Mildred Schoeni
†John Henry Shenk
Elma Mae Stoops
*†Carol Lusetta Stratton
Mary Pierce Van Zile
Donald Wade

Division of Home Economics

Helen Virginia Brewer
†Flora Marie Deal
*†Linnea Carlson Dennett
Esther Beatrice McGuire
Thelma Faye Mall
*†Mattie Louise Morehead
Gladys Myers
Marguerite Leona Richards
Irene Josephine Rogler

Division of Veterinary Medicine

Laurence Orville Mott
*Karl Willim Niemann

---

* Awarded high honors.

† Also received sophomore honors.

SOPHOMORE HONORS

Division of Agriculture

John Lincoln Wilson
George David Oberle
Fulton George Ackerman
Bruce Ross Taylor

Division of Engineering

Clyde Newman
Harold Everett Trekell
Kenneth Duree Grimes
Gayle Hosack
Lee Otis Stafford
Floyd Gerald Winters
Charles Elmore Funk
Otis Harold Walker
William Richard Chalmers
George Eugene Wise
Ernest Samuel Cook
Melvin Ernest Smith

Division of General Science

Josephine Lighter
Clarice Virginia Erickson
Selma Ellen Turner
Drusilla Madge Beadle
Vernal Charles Rowe
Edna Elizabeth Findley
Mildred Emily Purcell
Aline Wegert
Charles William Koester
Pauline Willa Samuel
Alice Tribble
Richard George Vogel
Helen Louise Sloan
Geraldine Joan Johnston

Division of Home Economics

Thelma Reed
Edna Irene Pieplow
Marian Genie Eads
Luella Cane Vanderpool
Grace Dorothy Brill
Mary Alice McCreight
Gertrude Louise Seyb

Division of Veterinary Medicine

Don Harvey Spangler

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LISTS OF STUDENTS

SIXTY-SEVENTH SESSION, 1929-'30

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Lists of Students

Students Pursuing Graduate Work

June 1, 1929, to May 29, 1930

GRADUATE STUDENTS

Henry Chaffee Abell; Riley
Harry Enoch Adell; Leonardville
Anna Tessie Agan; St. Edward, Neb.
Mildred Laura Ahlstrom; Reading
Glenn Allen Aikins; Valley Falls
Dorothy Marguerite Akin; Manhattan
William Purvis Albright; Greensboro, N. C.
Alfred Evan Aldous; Manhattan
Jean Greiner Alexander; Manhattan
Martin Adkisson Alexander; Manhattan
Ethlyn Marie Alsop; Junction City
Malcolm Llewellyn Alsop; Wakefield
Forrest B. Alspach; Wilsey
Hazel Lillian Anderson; Bronson
Ida Anderson; Norfolk, Neb.
Arthur Clinton Andrews; Manhattan
Ruth Evangel Angstead; White City
Ethel May Arnold; Manhattan
Floyd Warnick Atkeson; Moscow, Idaho
Madelyn Avery; Wakefield
Frances Mable Backstrom, Kansas City, Mo.
Roy Bainer; Manhattan
Lilian Baker; Manhattan
Clarence Orval Banta; Ottawa
Jane Wilson Barnes; Manhattan
Arthur Theodore Bartel; Bard, Cal.
Laura Falkenrich Baxter; Manhattan
Henry Monroe Beachel; Manhattan
Winifred Daisy Beeby; Hays
Erwin John Benne; Manhattan
Marjorie Marie Berger; Manhattan
Silas S. Bergsma; Lucas
Jacob Biely; British Columbia, Can.
Ada Grace Billings; Manhattan
Floyd Albert Blauer; Stockton
Cecil Thomas Blunn; Manhattan
Gladys Matilda Boehm; Springfield, Mo.
Frederick Bruce Bosley; New Creek, W. Va.
Boyd Bertrand Brainard; Manhattan
Carl Alfred Brandly; Manhattan
George Francis Branigan; Manhattan
Marian E. Branigan; Manhattan
Homer Cleo Bray; Manhattan
Parks Hillis Brittain; Manhattan
Frank Brokesh; Munden
Marian Elizabeth Brookover; Eureka
Harold J. Brooks; Ottumwa, Iowa
Frances L. Brown; Tucson, Ariz.
Vira Brown; Edmond
Esther Bruner; Manhattan
Thomas Walter Bruner; Jewell
Elgin R. Button; Meriden
James Phillip Callahan; Manhattan
Marion Isabell Campbell; Manhattan
Hugh Stanley Carroll; St. Marys
Sherman Harold Carter; Oneida
Elisha Joe Castillo; Independence
George E. Cauthen; Manhattan
Joanna Seiler Challans; Halstead
Virginia Chambers; Grandfield, Okla.
Ira Nichols Chapman; Manhattan
Francis Eugene Charles; Manhattan
Early Mast Chestnut; Manhattan
Alfred Lester Clapp; Manhattan
Helen Elizabeth Cobb; Manhattan
Maynard Henry Coe; Manhattan
John Robert Coleman; Wichita
Laurence LaRue Compton; Manhattan
William Eugene Connell; Rupert, Idaho
Emma Miller Cook; Milford
Nelle May Cook; Chapman
Robert Francis Copple; Flagstaff, Ariz.
E. Jack Coulson; Manhattan
Margaret Coventry; Pittsburg
Fern Covert; Wichita
Ina Foote Cowles; Sibley
Francis Scott Coyle; Manhattan
Orville Robinson Cragun; Milford
Naomi Zimmerman Crawford; Manhattan
Clarence E. Crews; Manhattan
Blaine Crow; Silver Lake
Eula Mae Currie; Manhattan
Erma Evangeline Currin; Manhattan
Bruce Oilver Dallam; Faucett, Mo.
Earl Gilbert Darby; Manhattan
Sarah Emily Davies; Riley
Charles Deforest Davis; Manhattan
Loren LeRoy Davis; Manhattan
Raymond Howard Davis; Hays
Minor Day; Tamaqua, Pa.
Flora Marie Deal; Great Bend
Lawrence William Decker; Manhattan
Dorsie Laurence Deniston; Louisburg
Linnea Carlson Dennett; Manhattan
Percy Leroy DePuy; Manhattan
Fred V. Dial; Manhattan
Russell Reuben Dodderidge; Council Grove
Dorothea Ruth Dowd; Manhattan
Clara Kathryn Dugan; Manhattan
Joy William Dull; Manhattan
John Clayton Dwelly; Manhattan
W. Harvey Ebersole; Newton
Janet Cuthbert Edelblute; Topeka
Winifred M. Edwards; Athol
Helen Ehrhardt; Garnett
Harold Chester Elder; Smith Center
Leonard Paul Elliott; Manhattan
Mary Myers Elliott; Manhattan
Delbert Frederick Emery; Parsons
Opal Marion Endsley; Manhattan
Alice Josephine Englund; Salina
Morris Evans; Manhattan
Paul Lawrence Evans; Baldwin
Thomas Conway Faris; Lebanon
Vern Oren Farnsworth; North Topeka
Luther M. Feathers; Johnson City, Tenn.
Ethel B. Feese; Junction City
Ruth Mead Fertig; Manhattan
Alice R. Fitch; Manhattan
Beattie Hope Fleenor; Manhattan
Vernett Edward Fletcher; Alton
Arthur Oran Flinner; Manhattan
Kenney Lee Ford; Manhattan
Orval French; Geneseo

GRADUATE STUDENTS—*Continued.*

Louis Edwin Fry; Manhattan
Edith Fultz; Wichita
Harold David Garver; Merriam
Annabel Alexander Garvey; Topeka
Bessie Geffert; Manhattan
George Albert Gemmell; Manhattan
Harvey S. German; Little River
Willard Dyke Gilbert; Alden
Adelaide Louise Glaser; Ozawkie
John Snell Glass; Manhattan
Archibald Alexander Glenn; Webster
Beulah McNall Glenn; Webster
Frederick Edward Goetz; Saskatoon, Sask., Can.
Austin Gerald Goth; Red Cloud, Neb.
Earle Ervin Graham; Magnolia, Ark.
George Lauvin Graham; Manhattan
Clarence Orrin Grandfield; Manhattan
E. Rebecca Green; Cawker City
Roy Monroe Green; Manhattan
Ethel Mae Griggs; Palestine, Tex.
Hilda R. Grossmann; Manhattan
Welthalee Grover; Iola
Myrtle Annice Gunselman; Manhattan
Ferdinand Daniel Haberkorn; Hutchinson
Earl Henry Hahn; Mallard, Iowa
Harry Herbert Halbower; Kingman
Marcia Biddison Hall; Manhattan
Philip Walter Hansen; Columbus
Bernice Lucille Harper; Vicksburg, Mich.
Florence Harris; Manhattan
Vida Agnes Harris; Manhattan
William Pliny Harriss; Kansas City
Maude Hart; Albuquerque, N. Mex.
Everett F. Haukenberry; Manhattan
Chester Havley; Frankfort
Irene Burnema Heer; Manhattan
Grace Mildred Henderson; Lincoln, Neb.
Alice Evangeline Henley; Ness City
Martha Louella Hensley; Jackson, Mo.
Elizabeth Spears Hepler; Parsons
F. Floyd Herr; Argonia
Katharine Paddock Hess; Manhattan
Stella May Heywood; Bennington
Earl Martin Hiestand; White Cloud
Frank Webster Hill; Rochester, N. Y.
Leona Thurow Hill; Manhattan
Robert Towner Hill, Grand Meadow, Minn.
Julian Adair Hodges; Manhattan
Ralph Edward Hodgson; Mazomanie, Wis.
Mary Alice Holladay; Augusta
Cecil Cannum Holmes; Goff
William Milton Holt, Augusta
Ruth Louise Holton; Manhattan
Lucretia Maye Hoover; Sedgwick
Otho J. Hopper; Chillicothe, Mo.
Elsa Ottilia Horn; Manhattan
William Robert Horsfall; Manhattan
Sarah Genevieve Howe; Emporia
Merle Raymond Hubbard; Kingman
Leo Everett Hudiburg; Independence
Verda Murphy Hudson; Manhattan
Lelia Mary Hughes; Kansas City, Mo.
Orville D. Hunt; Manhattan
Esther Victoria Hyrup; Mentor
Cecile Mae Jackson; Kress, Tex.
Clarence Oliver Jacobson; Sedgwick
William Charles Janes; Manhattan
Lois Bennett Jarrott; Hutchinson
Alice Claypool Jefferson; Manhattan
Margaret Louise Jodon; Salina
Julian Almon Johnson; Kiowa
Victor H. Johnston; Winfield
Edward C. Jones; Manhattan
Ruth Cress Jones; Manhattan
G. Clair Jordan; Jewell
Louis Mark Jorgenson; Manhattan
Herbert Lee Kammeyer; Wamego
Samuel Greenberry Kelly; Manhattan
Beulah Henderson Kenison; Solomon
Harry Llewellyn Kent; State College, N. Mex.
John Humphrey Kerr; Miltonvale
Bruce Alvin Kindig; Medicine Lodge
Dale Franklin King; Manhattan
Eunice Leola Kingsley; Tolley, N. Dak.
Vivian Iliene Kirkwood; Manhattan
Lester Henry Koenitzer; Manhattan
Aldene Scantlin Langford; Manhattan
Roy Clinton Langford; Manhattan
Harold Christian Larsen; Brookings, S. Dak.
Iva Larson; Alcester, S. Dak.
Paul Merville Larson; Manhattan
Bessie Adaline Leach; Bird City
Elden Emanuel Leasure; Manhattan
Willis Lloyd Lesher; Manhattan
Clarence F. Lewis; Manhattan
Ralph Oscar Lewis; Parsons
Ruby Mae Lewis; Concordia
Joe Kenneth Limes; La Harpe
Arthur William Lindquist; Lindsborg
Gustave William Lindquist; Manhattan
Aubrey Erskine Lippincott; Manhattan
Earl Milo Litwiller; Manhattan
Charles Alden Logan; Eskridge
Alden H. Loomis; Manhattan
John Lowe; Winfield
John Wallace Lumb; Manhattan
Georgie Seaman Lyman; Ulysses
Jeanne Lyon; Manhattan
Lucille McCall; Winfield
Maude Nonamaker McColloch; Manhattan
Grace Kerns McCoppin; Phillipsburg
Robert Earl McCormick; Oatville
Maynard L. McDowell; Manhattan
Alice Edna McLean; Jewell
David Leslie Mackintosh; Manhattan
Stella Cook Maddy; Seibert, Colo.
Hubert Whatley Marlow; Manhattan
Ethel Justin Marshall; Manhattan
George Edward Marshall; Bonner Springs
Earl Harrison Martin; Pratt
Ralph R. Martin; Topeka
Edith Edna Seavey Martin; Manhattan
Charlotte Viola Mathias; Manhattan
Lora Gertrude Mendenhall; Manhattan
Arthur Meyer; Manhattan
Albert William Miller; Manhattan
William Edward Moling; Carterville, Mo.
Leon Francis Montague; Solomon
George Montgomery; Manhattan
Helen Handel Moore; Altamont
Una Morlan; Courtland
Katherine Dyllys Morris; Manhattan
Maria Morris; Manhattan
Eula Frances Morris; Yates Center
Mary Hope Morris; Manhattan
Merle Dallas Morris; Paxico
Reed F. Morse; Manhattan
William P. Mortenson; Manhattan
Thirza Adaline Mossman; Manhattan
Lawrence Orville Mott; Spencer, Neb.
James Herbert Moyer; Manhattan
Anna Neal Muller; Topeka
Flavius Albert Mundell; Nickerson
Merlin Mundell; Nickerson
Robert Russell Murphy; State College, Pa.
Nancy Mary Mustoe; Norton
Joyce Myers; Sylvia
Eula May Neal; Walnut
Alma Dale Newell; Durham
Philip Myron Noble; Manhattan
Ruth Kell Noble; Manhattan
Onie L. Norton; Altamont
Genevieve Alice Nowlin; Manhattan
Harold Alfred Noyce; Keats
Loren Manuel Nuzman; Manhattan

GRADUATE STUDENTS—*Concluded.*

John C. Olsen; Manhattan
Bessie Mae Orr; Summerfield
Opal Frances Osborne; Partridge
Alfred Robb Paden; Argonia
Lita Mae Paine; Admire
John Huntington Parker; Manhattan
Laurence Parker; Manhattan
Olodine Nina Parshall; Manhattan
Dwight Patton; Harper
Marian Herfort Pelton; Manhattan
Royce Owen Pence; Manhattan
Louise Arminda Phelps; Dwight
Gerald Pickett; Manhattan
Irene Olive Pierson; Stanton, Iowa
Isa Ruth Plank; Lyons
James Leroy Potter; Carthage, Mo.
Myra Thelma Potter; Lawrence
Marjorie Prickett; Wamego
Galen Stephen Quantic; Riley
Elizabeth Quinlan; Manhattan
Addie Alice Radebaugh; Frankfort
George Hemrod Railsback; Manhattan
Mary Betz Reed, Manhattan
Fred Thomas Rees; Mound City
Ethelyn Pray Rees; Mound City
Roger E. Regnier; Fairview
Carl Clark Rice; Manhattan
Alma Margaret Richhart; Nickerson
Bella Catherine Robertson; Manhattan
Ethel Ann Robinson; Emporia
Frazier Rogers; Gainesville, Fla.
Glenn L. Rucker; Ottawa
Marguerite Dorothy Samco; Canning, S. Dak.
William H. Sanders; Manhattan
Harry Weber Schaper; Jewell City
Ruth Schlotterbeck; Chickasha, Okla.
Lester John Schmutz; Wakefield
Ralph Schopp; Abilene
Mary Frances Schuerer; Junction City
Harold Martin Scott; Manhattan
Myra Edna Scott; Manhattan
Dwight M. Seath; Manhattan
Minnie Seath; Manhattan
Sopha Mae Shade; Hays
George Oscar Sharp; Pittsburg
Floyd Henry Sheel; Earlton
John Henry Shenk; Manhattan
Elsie Leah Shippy; Chapman
Lina Maria Shippy; Chapman
Beulah Fern Shockey; Iola
Mabel Shrontz; Wilsey
Sidney Simmons; Greensboro, N. C.
Sister M. Domitilla Arnoldy; Manhattan
Earl LeRoy Sitz; Manhattan
Veda Rozella Skillin; Frankfort
Clifford Lovejoy Smith; Corvallis, Ore.
Florence Verlene Smith; Tarkio, Mo.
Glenn Sanborn Smith; Manhattan
Lolie Smith; Marlin, Tex.
Maybelle Pritchard Smith; Dixon, Ill.
Sam J. Smith; Florence
Victoria Smith; St. Louis, Mo.
Georgiana Hope Smurthwaite; Ogden, Utah
Stanley Livingstone Soper; Manhattan
Julia Lurena Southard; Southard, Mo.
Alma Spencer; Yates Center
Jessie Sarah Stewart; Maplehill
William Timothy Stratton; Manhattan
Mary L. Summers; Horton
Coit Alfred Suneson; Missoula, Mont.
Wilma Olive Sutton; Kingman
Charlotte Huntington Swanson; Manhattan
Elbert Cecil Tabor; Manhattan
Mary Fidelia Taylor; Newton
William Henry Teas; Kingman
Russell Ira Thackrey; Manhattan
Francis Leonard Timmons; Manhattan
Ivan C. Townsdin; Randall
Ethel Florence Trump; Russell
Mary Edna Tupper; Manhattan
Howard Dale Tyner; Manhattan
Gladys Ellen Vail; Plains
Lois Castle Vance; Kiowa
Leland Stanford Van Scoyoc; Manhattan
Mary Pierce Van Zile; Manhattan
Jerry Julian Vineyard; Junction City
Nelson J. Wade; Saugatuck, Mich.
Crystal Louise Wagner; Manhattan
Walter Gilling Ward; Manhattan
Eugene Albertice Waters; Eureka
Jewell Kimball Watt; Coyville
Ella H. Webb; Kansas City
Iva Belle Welch; Pittsburg
Thornton Walton Wells; Hays
Bessie Brooks West; Manhattan
Jesse Frederick Westerdale; Wakefield
Forest Whan; Manhattan
Florence Rilla Whipple; Manhattan
K. Marie White; Oswego
Mary Frances White; Manhattan
Margaret Katherine Wieda; Hiawatha
Donold Alden Wilbur; Manhattan
Esther Margaret Wilkins; Meade
Viola Jenet Williams; Kansas City, Mo.
Harold Arthur Williamson; Manhattan
Mary Lois Williamson; Independence, Mo.
Hugh Willis; Williamsburg
Luther Earle Willoughby; Manhattan
Karl Marx Wilson; Concordia
Temple F. Winburn; De Kalb, Mo.
Verna B. Winchel; Salina
Homer Carlton Wood; Reading
LeVelle Wood; Manhattan
Mary Woodward; Manhattan
Wilbur William Wright; Hope
Claude Newton Yaple; Ford
Joe Stanley Yoder; McPherson
Marian Irene Young; Cedar Point
Carol Oscar Youngstrom; Culver, Ore.
Iscah Marion Zahm; Topeka

GRADUATE STUDENTS PURSUING WORK IN ABSENTIA

Arthur Theodore Bartel; Bard, Cal.
John Flower Bullard; Lafayette, Ind.
Elisha Joseph Castillo; Independence
Emma Miller Cook; Milford
Orville Robinson Cragun; Milford
Raymond H. Davis; Hays
Dorsie Laurence Deniston; Louisburg
Harold C. Elder; Smith Center
Ethel B. Feese; Junction City
Archibald Alexander Glenn; Webster
Earle Ervin Graham; Magnolia, Ark.
Elizabeth Spears Hepler; Parsons
Lois Bennett Jarrott; Hutchinson
Grace Kerns McCoppin; Phillipsburg
Claire Arnot Martin; Abilene
Alfred Robb Paden; Argonia
Isa Ruth Plank; Lyons
Lina Maria Shippy; Chapman
Thornton Walton Wells; Hays
Emily Wilson; La Harpe

SENIORS PURSUING GRADUATE WORK

Henry John Barre; Tampa
Raymond Andrew Bell; Beverly
Albert Ross Challans; Newton
Robert James Copeland, Jr.; Canon City, Colo.
Frances Rebekah Curtis; Kansas City
Marjorie Hazel Curtis; Manhattan
Bernice Louise Decker; Holton
Irene Jeanette Decker; Robinson
Rosamond Aleda Eddy; Havensville
Edward Joseph Fisher; Leavenworth
Rex Le Roy Fossnight; Ottawa
Howard Johnson Jobe; Sedan
William Howard Jobling; Caldwell
Anne Helen Klassen; Inman
Joe Alphonsus Kuffler; Parsons
Thelma Fern McClure; Hutchinson
Charles Porter McKinnie; Glen Elder
Richard Bruce Mather; Burdett
Austin Morgan; Lebo
Winifred Ann Nachtreib; Atchison
Raymond William O'Hara; Blue Mound
Bruce Robinson Prentice; Clay Center
Louise Eleanor Reed; Holton
Frederick Henry Schultis; Sylvan Grove
Harry Edwin Skoog; Caldwell
Floyd Howard Smith; Wichita
Martha Agnes Smith; Durham
George Ruben Vanderpool; Meade

SPECIAL STUDENTS PURSUING GRADUATE WORK

James Thomas Newton; Douglass
William Richards; Burrton

Undergraduate Students

The following lists include seniors, juniors, sophomores, freshmen and special students in College. For students in the Summer School and in special courses see lists following these.

Abbreviations here used denote curricula as follows: AA, agricultural administration; Ag, agriculture; AE, agricultural engineering; AH&V, animal husbandry and veterinary medicine; ApA, applied arts; Ar, architecture; ArE, architectural engineering; C, commerce; CE, civil engineering; ChE, chemical engineering; EE, electrical engineering; FME, flour-mill engineering; GS, general science; GS&VM, general science and veterinary medicine; HE, home economics; HE&N, home economics and nursing; IC, industrial chemistry; IJ, industrial journalism; LA, landscape architecture; LG, landscape gardening; M, music; ME, mechanical engineering; PE, physical education; PSM, public school music; PSB&O, public school band and orchestra; VM, veterinary medicine.

SENIORS

Vivian Dial Abell (HE); Riley
Hugh Richard Abernathey (CE); Manhattan
Frank Milton Adair (ME); Frontenac
Roland Edgar Adams (ArE); Manhattan
Jay Adriance (IJ); Manhattan
Raymond Hilton Alexander (VM); Manhattan
George Mitchell Allen (CE); Manhattan
Milton Francis Allison (IJ); Great Bend
Kenneth Charles Anderson (ChE); Eskridge
Lois Ida Anderson (HE); Byers
Ross Harris Anderson (GS); Richland
Virginia Anderson (HE); Lincoln
Phil V. Andrew (Ar); Ottawa
Anna Annan (PE); Beloit
Marie Arbuthnot (HE); Bennington
Mahala Arganbright (HE); Wamego
Leslie Linnaeus Aspelin (ME); Dwight
Garland Martin Atkins (C); Fort Scott
Byron Edson Atwood (EE); La Cygne
Harry Fisk Axtell (Ag); Dimmitt, Tex.
Cleo Orland Baker (CE); Marysville
Howard William Baker (Ar); Lyndon
Mildred Marita Baker (HE); Gove
Baha E. Bakri (Ag); Damascus, Syria
Clarence DeWitt Barber (EE); Iola
Mary Elvina Barkley (GS); Manhattan
Claude Lawrence Barnett (Ar); Manhattan
Fern Doris Barr (GS); Manhattan
†Henry John Barre (AE); Tampa
Etnah Beaty (ApA); Lakin
Vernon Augustus Beck (ME); Topeka
Sigrid Evangeline Beckstrom (HE); Wichita
Lyle Holmes Beebe (VM); Manhattan
George Edward Bell (ArE); Yates Center
†Raymond Andrew Bell (PE); Beverly
Bernice Eleanor Bender (IJ); Holton
Gladys Meyer Benne (HE); Linn
Kenneth Dean Benne (GS); Washington
Helen Lee Bentley (HE); Manhattan
John Thomas Bertotti (ME); Osage City
Wesley Watson Bertz (VM); Manhattan
Henry John Besler (EE); Manhattan
John Alexander Bird (IJ); Hays
Olive Elizabeth Bland (HE); Garden City
Jesse Benjamin Boehner (IC); Downs
William Robert Boggess (EE); Scandia
Fletcher Gist Booth (C); Olathe
Tony Borecky (GS); Holyrood
Ruth Mary Boyles (HE); Manhattan
John Frank Boznick (EE); Frontenac
Howard Raley Bradley (AA); Kidder, Mo.
Charles Lewis Brainard (Ar); Manhattan
Elmer James Branham (EE); Altamont
Robert Fenton Brannan (Ag); Meade
William Jacob Braun (Ag); Council Grove
Elmer Henry Bredehoft (EE); Fairmont, Okla.
Gertrude Elizabeth Brookens (GS); Westmoreland
Edwin Lewis Brower (VM); Manhattan
Orpha Brown (HE); Edmond
Jasper Leland Brubaker (EE); Manhattan
Hugh Herschel Bruner (C); Concordia
Ralph Ernest Brunk (EE); Kansas City
Lillian Josephine Brychta (HE); Blue Rapids
Hazel Eirene Buck (HE); Derby
Dorothy Helen Burnet (ApA); Manchester, Okla.
Henry Alonzo Burt (AA); Manhattan
Lester Burton (EE); North Topeka
Norval Odell Butler (EE); Manhattan
Beulah Louise Callis (GS); Chase
Gladys Marie Griffin Calvert (IJ); Manhattan
Erma Belle Canning (HE); Manhattan
Clifford Beamer Carlson (ME); Utica
Dave Anthony Carlson (Ag); Manhattan
Raymond Delasmith Caughron (GS); Manhattan
†Albert Ross Challans (GS); Newton
William Chapman (Ag); Wichita
Katherine Chappell (HE); Manhattan
Beatrix Lorena Charlton (HE); Edwardsville
Rose Louise Child (IJ); Manhattan
Paul Raymond Chilen (AA); Miltonvale
Ruth Rosalie Claeren (IJ); Manhattan
Joseph Eugene Clair (VM); Manhattan
Curtis Forgy Clayton (CE); El Dorado
Floyd Alfred Clayton (IC); El Dorado
Laurence Victor Clem (GS); Chanute
Arlie Lewis Coats (EE); Altoona
Harry Pliny Coberly (AE); Hutchinson
Max William Coble (ME); Sedgwick
Owen Lovejoy Cochrane (PE); Manhattan
Dave Miles Colby (VM); Manhattan
Harley Edward Cole (ME); Manhattan
Howard Allen Coleman (CE); Denison
†John Robert Coleman (ChE-1; Grad.-2); Wichita
Garlie Franklin Collins (ChE); Emporia

† Also pursuing graduate study.

SENIORS—*Continued.*

*Kenneth W. Comfort (CE); Topeka
†Laurene LaRue Compton (Ag-1; Grad.-2); Manhattan
Frances Rebecca Conard (HE); Ottawa
Paul Waldo Condry (IC); Beloit
*Blaine Davies Coolbaugh (PSM); Stockton
†Robert James Copeland, Jr. (ChE); Canon City, Colo.
Herman Charles Cowdery (CE); Lyons
Manford Lester Cox (Ag); Goodrich
†Francis Scott Coyle (Ag-1; Grad.-2); Manhattan
Andy W. Crawford (VM); Manhattan
Harold Samuel Crawford (LG); Bonner Springs
Vera Lucille Crawford (IJ); Lincoln
William Leslie Criswell (EE); Manhattan
Earl Edward Crocker (C); Manhattan
Genevieve Crowley (GS); Manhattan
Chester Arthur Culham (ME); Junction City
George Joseph Cunningham (Ag); Manhattan
*Lemuel Joseph Cunningham (Ag); Manhattan
†Frances Rebekah Curtis (HE); Kansas City
John Jay Curtis (Ag); Toronto
†Marjorie Hazel Curtis (HE) Manhattan
Nellie Dorothy Darrah (HE); Marquette
Bernice Veneta Davidson (HE); Manhattan
Frank Marshall Davis (IJ); Manhattan
Paul Davis (EE); McPherson
Saloma Elizabeth Davis (C); Carthage, Mo.
†Bernice Louise Decker (HE); Holton
†Irene Jeanette Decker (HE); Robinson
John William Decker (Ag); Holton
Clara Farmer Denison (GS); Hazelton
Walter Raymond Denman (EE); Sedan
Robert Irving Denny (AE); Harper
Russell Clay Derbyshire (GS); Omaha, Neb.
Theodore Marion DeVries (VM); Manhattan
Darcy Dayton Dial (FME); El Dorado
*Donna Marie Dickinson (HE); Udall
*Omeda Mae Dickison (HE); Nevada, Mo.
Mary Lucile Dietz (HE); Cawker City
Herbert A. Dimmitt (EE); Manhattan
Robert Hugh Dodge (Ag); Manhattan
Harry Stillman Dole (IJ); Almena
Gabriel Ernest Drollinger (ME); Manhattan
Donna Gayle Duckwall (Ar); Abilene
*Etha Chloa Dungan (HE); Independence
Clarence Mitchell Dunn (Ag); Oskaloosa
Leda Anna Dunton (GS); Lebanon
Neil Durham (AG); Randall
†Rosamond Aleda Eddy (HE); Havensville
Edna Frances Ehrlich (HE); Marion
Kyle Engler (EE); Burrton
Alfred Harlan Epperson (AA); Hutchinson
Anna Marie Erickson (HE); Clyde
Karl Wheeler Ernst (EE); Topeka
Clifford Charles Eustace (Ag); Wakefield
Thomas Marion Evans (PE); Gove
Galen Lee Farnsworth (IC); Wichita
Everett Ellsworth Fauchier (C); Osage City
John Virgil Faulconer (CE); El Dorado
Elwin E. Feather (GS); Minneapolis
†Edward Joseph Fisher (ChE); Leavenworth
Janice Irene Fisher (PSM); Beverly
Josephine Louella Fisk (GS); Alta Vista
Geraldine Genevieve Foley (GS); Oronoque
†Rex Le Roy Fossnight (CE); Ottawa
Mildred Mae Fox (HE); Wichita
Harold Earl Frank (AA); Manhattan
Maurice Benjamin Franklin (EE); Topeka
Kathleen Grace Fraser (GS); Talmage
Harry Orwin Frazier (GS); Idana
Alva Henry Freeman (PE); Manhattan
Ralph William Freeman (FME); Kirwin
†Orval French (AE-1; Grad.-2); Geneseo
Amelia Marie Frohn (HE); White City
Raymond Glenn Frye (AA); Freeport
Roy Jacob Furbeck (CE); Larned
Kenneth Manning Gapen (AA); Manhattan
Margaret D. Garrison (HE&N); Chanute
Charlie Gurdon Gates (CE); Kingman
Charles Richard Gerardy (ChE); Clay Center
Walter Geurkink (VM); Manhattan
Clarence Emmett Ghormley (AE); Hutchinson
Henry Wilbur Gilbert (LG); Manhattan
Thomas Henry Gile (Ag); Scandia
Florence Ann Glenn (GS); Manhattan
La Vone Goheen (GS); Oak Hill
Myrtle Genevieve Gohlke (HE); Holton
Ruth B. Gordon (HE); De Soto
George Mather Grafel (C); Herndon
Joseph Howard Greene (AA); Beverly
Margaret Hamilton Greep (HE); Longford
Roy Orval Greep (GS); Longford
Rudolph Thechsel Greep (IC); Longford
Cloyde Lowell Guinn (VM); El Dorado
Eva Maude Guthrie (HE); Woodston
Chester Walton Haas (C); Winfield
Edwin Otto Habiger (AA); Bushton
Minnie Rosie Hahn (HE); Inman
Vernon Leslie Hahn (AA); Muncie
Kenneth Morgan Hall (AA); Agra
Catherine Marie Halstead (IJ); Manhattan
Lewis Greeley Hamilton (VM); South Haven
Lee Allen Hammond (ArE); Wichita (deceased)
George Risley Hanson (AA); Syracuse
Junieta LeeElla Harbes (HE); Manhattan
Katharine Frances Harding (PSM); Manhattan
William Fred Hardman (EE); Frankfort
Eugene Francis Harmison (ME); Great Bend
Florence Lavina Harold (HE); Dresden
Faye Harris (ApA); Parsons
Paul Washington Harris (GS); Havensville
Theodore Garrard Harris (Ag); Manhattan
Rodney DeWalt Harrison (C); Burden
Laura Zurilda Hart (PSM); Overbrook
Benjamin Franklin Hartman (ChE); Topeka
Russell Lynn Hartman (CE); Hoisington
Lillian Iola Havley (GS); Manhattan
Orville Elton Hays (Ag); Manhattan
Cecil Benjamin Headrick (ME); Manhattan
Robert Bates Heckert (EE); Independence
Fred Hederhorst (ME); Stockton
Paul Raymond Heinbach (EE); Neodesha
Helen Alberta Hemphill (IJ); Clay Center
Esther Marie Herman (C); Abilene
Byron William Herrington (IJ); Silver Lake
Thomas Marion Heter (Ar); Sterling
Theron W. Hicks (CE); Norton
Lora Valentine Hilyard (ApA); Manhattan
Charles Frank Hirsch (C); Ellinwood
Eva Burndette Hixson (C); Wakeeney
Harold Chester Hoffman (GS); Haddam
Russel Walter Hofsess (CE); Partridge
Virginia Schwager Hoglund (HE); Manhattan
Anita Mae Holland (HE); Harper
Erwin Dean Hollingsworth (ArE); Salina
Eugene Holmberg (ME); Kansas City
Johnson Alcott Holmes (IJ); Manhattan

* Matriculated 1929-'30.

† Also pursuing graduate study.

SENIORS—*Continued.*

Myrtle Evelyn Horne (HE); Alma
Roy Mitchell Hoss (AA); Potwin
William Harris Houston (Ag); Potwin
Clarence Paul Howard (IJ); Mount Hope
Ida Mae Howard (HE); Garnett
Muriel Howard (GS); Oberlin
Orlando Whiting Howe (AE); Stockdale
Aileen Hull (ApA); Manhattan
Florence Hazel Hull (HE); Downs
Kathleen Virginia Hulpieu (HE); Dodge City
James Ward Ingraham (EE); Manhattan
Marie Insley (HE&N); Manhattan
Glenn Charles Isaac (Ag); Baldwin
Mary Jane Isbell (HE); Bennington
Ralph William Jackson (VM); Manhattan
Sherman Keith Jackson (CE); Holton
Russell Everett James (ME); Wetmore
Vernon Elmer Jefferies (EE); Kiowa
George Jelinek (GS); Ellsworth
Ernest Frank Jenista (GS); Caldwell
Wilma Jennings (PE); Little River
†Howard Johnson Jobe (CE); Sedan
Mary Jeanette Jobling (PSM); Caldwell
†William Howard Jobling (IC); Caldwell
Alvin Adolph Johnson (AA); Kanana
James Foley Johnson (GS); Manhattan
Margaret Verneal Johnson (HE); Axtell
Robert Franklyn Johnson (C); Salina
Hazel Mae Johnston (PSM); Leonardville
Sara Virginia Jolley (IJ); Manhattan
Esther Margaret Jones (GS); Frankfort
J. Harold Karr (EE); Troy
Josephine Dell Keef (IJ); Glen Elder
Pauline Kegereis (HE); Salina
Elmer Willis Kelley (C); Kansas City
Robert Warren Kellogg (ChE); Sedan
Carol Sanford Kelly (GS); Manhattan
Mary Janice Kelly (HE); Lindsborg
Charles Harris Kenison (C); Solomon
Annie Mary Kerr (HE); Manhattan
John Harold Kershaw (EE); Garrison
*Marjorie Russell Kimball (GS); Manhattan
Solon Toothaker Kimball (IJ); Manhattan
Wayne Kimes (EE); Dodge City
Milford Jeter Kindig (AA); Olathe
Willis Bertrand Kinnamon (C); Larned
Loren Robert Kirkwood (EE); Manhattan
†Anne Helen Klassen (GS); Inman
Julius William Kloepper (ME); Monrovia
Martin Simon Klotzbach (EE); Humboldt
Frank Wendell Knopf (EE); Holton
Henry H. Knouft (GS); Circleville
George Herman Koelling (IC); Talmage
Clemons Malcolm Kopf (EE); Beverly
Grace Esma Kottwitz (HE); Peabody
Louis Joseph Kovar (AE); Rossville
†Joe Alphonsus Kuffler (CE); Parsons
Kenneth James Latimer (ChE); Humboldt
Ruth Laura Lattimore (HE); Westmoreland
Verna Latzke (HE); Chapman
Eleanor Laughead (HE); Dodge City
Eugene Pepper Lawrence (PE); Manhattan
†Bessie Adaline Leach (GS-1; Grad.-2); Bird City
Oliver Glen Lear (Ag); Stafford
Eugene Marshall Leary (Ag); Lawrence
Thomas Joy Leasure (VM); Solomon
Greta Velma Leece (HE); Formoso
Robert Lengquist (ME); Riverton
Evelyn Mae Lindsey (HE); Winchester
Clabern Oakley Little (ME); Manhattan
Abe B. Litvien (CE); Kansas City
Robert Ivan Lockard (Ar); Norton
Genevieve Long (HE); Haviland
Louise Loraine Lortscher (HE); Fairview
Herbert Dale Lott (CE); Minneapolis
Henry Wilbur Loy (ChE); Chanute
Bernice Etha Loyd (GS); Hiawatha
Verna Merne Loyd (HE); Hiawatha
Reland Estella Lunbeck (IJ); Manhattan
Lawrence Nile Lydick (EE); Winfield
George Cardinal Lyon (PE); Manhattan
Andrew Lafayette McBride (VM); Manhattan
Ed Cleland McBurney (CE); Newton
Ruth Beryl McCammon (GS-1; HE-2); Norton
Caroline Louise McCarthy (HE); Kansas City
Elinor Mary McCaul (HE); Elk City
†Thelma Fern McClure (HE); Hutchinson
Robert Herald McCollum (PE); El Dorado
Roy H. McKibben (ME); Kansas City
Margaret McKinney (IJ); Great Bend
†Charles Porter McKinnie (Ag); Glen Elder
Harold Isaac McKinsey (C); Manhattan
Dan McLachlan, Jr. (IC); Pleasanton
Howard Orville McManis (AE); South Haven
Ray John McMillin (PE); Manhattan
Cecil James Wilson McMullen (EE); Norton
Daisy Ferne McMullen (ApA); Norton
*Elbert Bonebrake Macy (GS); Woodston
Merle Lyle Magaw (Ag); Ames
Harold Gustav Mangelsdorf (EE); Atchison
Preston Leonard Manley (C); Topeka
Roy Merlin Mannen (Ag); Manhattan
Marjorie Ellen Manshardt (IJ); Leonardville
Charles Mantz (AA); Preston
Willa Lois Mantz (HE); Coldwater
Laura Mae Marcy (GS); Milford
*Miriam Leona Marsh (HE); Chanute
†Claire Arnot Martin (GS-1; Grad.-2); Abilene
Paul Erastus Massey (EE); Yates Center
Arnold Alcorn Mast (Ag); Abilene
Clara Winfred Mather (HE); Centralia
†Richard Bruce Mather (Ag); Burdett
Corinne Fern Maxey (HE); Coats
Mary Evangeline Maxwell (HE); Manhattan
Mary Frances Maxwell (C); Manhatan
Paul Arthur Mears (AA); Beloit
Ralph Francis Melville (C); Muncie
Glen Ervan Meredith (ArE); Junction City
Thomas Nelson Meroney (Ag); Garden City
John Kingsley Merritt (C); Haven
Clara Grace Miller (HE); Manhattan
Marion Edgar Miller (CE); Quenemo
Paul Alvin Miller (EE); Parsons
Robert Wilson Miller (ME); Haviland
John Lensfred Minor (Ag); Syracuse (deceased)
Warren Dale Moore (Ag); Copeland
†Austin Morgan (CE); Lebo
Charles Elias Morgan (GS); Hollis
Arlee Murphey (HE); Scott City
Thomas Jerome Muxlow (VM); Manhattan
Channing George Myers (IC); Salina
†Winifred Ann Nachtreib (HE); Atchison
Loyle Mac Nash (PE); Long Island
Marvin Francis Naylor (IC); Tonganoxie
Borden Dean Neiman (EE); Manhattan
William Melvin Newman (AA); Centralia
Roscoe Townley Nichols, Jr. (C); Manhattan

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* Matriculated 1929-'30.

† Also pursuing graduate study.

SENIORS—*Continued.*

Gordon Curtis Nonken (EE); Manhattan
Laurence Harold Norton (AA); Kalvesta
Clarence Evan Nutter (Ag); Falls City, Neb.
Lois Marie Oberhelman (HE); Barnes
Ruth Malissa O'Donovan (ApA); Topeka
†Raymond William O'Hara (Ag); Blue Mound
Beatrice Oliphant (HE); Hutchinson
Luella O'Neill (HE); Winchester
Mildred Marie Osborn (PE); Clifton
Arthur Owen (EE); Wichita
Laurel Joseph Owsley (EE); Manhattan
Leone Evelyn Pacey (GS); Manhattan
William Hocksworth Painter (GS); Meade
Frances Lenore Paisley (GS); Manhattan
Leslie Ellison Paramore (EE); Delphos
Helen Verna Parcels (HE); Hiawatha
LeRoy Clay Paslay (EE); Manhattan
Harry Albert Paulsen (AA); Stafford
Ray Charles Paulson (EE); Whitewater
Warren Caufield Perham (C); Iola
Vernon Stanley Peterson (AE); Gypsum
Ralph Frank Pettit (Ag); Manhattan
Karl Hamilton Pfuetze (GS); Manhattan
Frances Louise Pickens (HE); Lake City
Leonard Milton Pike (Ag); Goddard
Harold Henry Platt (Ag); Manhattan
Clark Gardner Porter (GS); Manhattan
Everett Francis Potter (ME); Manhattan
Walter Preston Powers (AA); Netawaka
James Wilson Pratt (C); Manhattan
†Bruce Robinson Prentice (EE); Clay Center
Doris Estelle Prentice (HE); Manhattan
†Galen Stephen Quantic (AA-1; Grad.-2); Riley
George LeRoy Quigley (EE); Halstead
Francis James Raleigh (Ag); Clyde
Ben Elkins Ramsey (CE); Dighton
Elsie Emma Rand (HE); Wamego
Elmer Wayne Randle (EE); Jefferson
Margaret Elizabeth Rankin (IJ); Wakefield
Mary Edith Rankin (HE); Kansas City
Mildred Hester Rathbun (GS); Manhattan
Esther Virginia Ratliff (HE); Manhattan
Mary Bell Read (PE); Manhattan
Lawrence Rector (C); Manhattan
Oscar Earl Reece (AA); Hopewell
Alzina LaVerne Reed (GS); Wakefield
Anna Reed (GS); Kanopolis
Grace Editha Reed (PE); Topeka
†Louise Eleanor Reed (HE); Holton
Charles Edward Reeder (ArE); Troy
Louis Powers Reitz (Ag); Belle Plaine
John Sword Rhodes (EE); Tampa
Clement Dee Richardson (EE); Hugoton
Earl Cranston Richardson (IJ); Coffeyville
George Elliott Richardson (EE); Pittsburg
Ruth Roberta Richardson (HE); Manhattan
Herbert Cecil Reipe (CE); Dighton
Ronald Carl Riepe (IJ); Kansas City
Wanda Harriett Riley (GS); Chanute
Mary Eilleen Roberts (GS); Manhattan
Thelma Gossard Roberts (GS); Manhattan
*Pauline Roedel (HE); Iola
Floyd Nolan Rogers (FME); Smith Center
Ralph Rogers (ChE); Madison
Randle Chester Rolfs (C); Lorraine
William Alfred Romary (VM); Manhattan
Mae Margaret Rooney (HE); Haddam
Marjorie Evon Root (HE); Medicine Lodge
Flora Helena Ross (HE); Amarillo, Tex.
Frank Henry Roth (EE); Wichita
Dorothy Harriet Rucker (HE); Burdett
Neva Edwina Rush (HE); Severy
Ray Russell (ME); Kansas City
Robert Henry Russell (ME); Manhattan
William Everett Russell (IJ); La Crosse
Helen Marguerite Rust (PSM); Manhattan
Alton Hoyt Ryon (EE); Manhattan
Russell Scott Sage (EE); Maplehill
Miner Ray Salmon (Ag); Manhattan
Jack Sanders (EE); Independence
Marjorie Maud Sanders (HE&N); Clay Center
Robert Elmer Sanders (PE); Burlington
Gladys Myrtle Schafer (IJ); Del Norte, Colo.
Margaret James Schattenburg (IJ); Riley
Raymond Schlotterbeck (PE); Manhattan
Gladys Schmedemann (PSM); Manhattan
Lorna Katherine Schmidler (IJ); Marysville
Edward Henry Schneider (EE); Kansas City
Ruby Thelma Scholz (HE); Manhattan
Leah Schreiner (HE); Ramona
Dorothy Schrumpf (HE); Cottonwood Falls
Charles Arthur Schubert (EE); Centralia
†Frederick Henry Schultis (AA); Sylvan Grove
William Joseph Schultis (GS); Sylvan Grove
James William Schwanke (EE); Alma
Sybella Adelaide Scott (PE); Manhattan
Hazel Lindley Scott (HE); Rolla, Mo.
Ralph Lester Scott (GS); Le Loup
Frances Deane Shewmaker (HE); Chanute
Gertrude Sheetz (PSB&O); Admire
Frances Dow Sheldon (GS); Blue Rapids
Allen Parker Shelly (ME); Atchison
Ralph Shenk (GS); Silver Lake
Juanita Lee Shuck (HE); Kansas City, Mo.
Helen Marie Shuyler (IJ); Hutchinson
Dale Harold Sieling (IC); Hays
Travis William Siever (GS); Manhattan
Kermit James Silverwood (IJ); Ellsworth
†Harry Edwin Skoog (VM); Caldwell
Henry Devore Smiley (VM); Manhattan
Elmer Harold Smith (AE); Baldwin
†Floyd Howard Smith (EE); Wichita
Gerald George Smith (EE); Topeka
James Everett Smith (Ag); Woodward, Okla.
†Martha Agnes Smith (PE); Durham
Ralph Ottis Smith (EE); Hutchinson
*Ruth Irene Smith (ApA); Winfield
Edward Paul Smoot (EE); Eureka
Inez Eva Snyder (GS); Osborne
Dale Edward Springer (AE); Garrison
Marjorie Elizabeth Stafford (GS); Leonardville
Herbert Norman Stapleton (AE); Jewell
Arlo Lester Steele (EE); Manhattan
Irwin Roy Stenzel (EE); Marion
Helen Steuart (GS); Winchester
Harland Stevens (Ag); Valencia
Harold Calvin Stevens (AE); Blue Rapids
Samuel Roger Stewart (Ag); Vermillion
Ross Alonzo St. John (CE); Morland
Maidene Bertha Stout (PE); Peobody
Marguerite Marie Stullken (GS); Bazine
Ida Jane Summers (GS); Manhattan
William Joy Sweet (ArE); Wichita
Charles Henderson Synnamon (ChE); Wichita
John Edward Taylor (Ag); Topeka

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* Matriculated 1929-'30.

† Also pursuing graduate study.

SENIORS—*Concluded.*

Merrill Medsger Taylor (Ag); Perry
Edgar Arnold Templeton (AA); El Dorado
Joel Allen Terrell (Ag); Syracuse
Zabel Herman Tessendorf (CE); Onaga
Mary Cleo Teter (HE); El Dorado
Emily Sheppeard Thackrey (IJ); Manhattan
Eugene Ware Theiss (VM); Hutchinson
Howard Phil Thudin (EE); Mulvane
Opal Florennia Thurow (IJ); Macksville
Orville William Thurow (C); Moscow
Ralph Victor Thurow (C); Macksville
Charles Cheuvront Todd (AA); Auburn
Frederick Walter Toomey (EE); Neodesha
John Gordon Towner (CE); Dwight
William Lowell Treaster (IJ); Beloit
Nellie Florine Trechsel (GS); Idana
Roy Henderson Trompeter (Ag); Horton
Lorene Renata Uhlrig (GS); Belvue
Lucille Adella Uhlrig (GS); Belvue
Mildred Fern Ungeheuer (HE); Centerville
†George Ruben Vanderpool (CE); Meade
Virginia Van Hook (HE); Topeka
Jeanette Verser (GS); Tulsa, Olka.
Chris Viergever (GS); Willard
Frances Marian Wagar (PE); Florence
Dorothy Wagner (ApA); Topeka
Mildred Ann Walker (GS); Manhattan
Ruel Scott Walker (Ar); Galena
Elsie Gertrude Wall (PSM); Cawker City
Everett Robert Wallerstedt (Ar); Manhattan
Henry Brown Walter (LG); Wichita
Mary Virginia Washington (HE); Manhattan
Edgerton Lynn Watson (Ag-1; VM-2); Manhattan
Ellen Louise Watson (HE); Manhattan
John Clarke Watson (IJ); Frankfort
Vernon Reed Weathers (CE); Great Bend
Maurice Franklin Weckel (EE); Garnett
*Alice Weigel (HE); Victoria
Frances Laverne Wentz (HE); Ames
Stanley Archie White (EE); Lewis
Kathryn Whitten (HE); Wakarusa
Louis George Wieneke (ChE); Sabetha
Jess Willard Wilhite (EE); Manhattan
Kathryn Louise Wilson (PSB&O); Liberty, Mo.
Leone Wilson (PE); Wichita
Mary Helene Wilson (HE); Council Grove
Richard Maxwell Wilson (Ag); Geneva
Adrian Edward Winkler (Ag); Paxico
Lula Josephine Winter (HE); Ashland
Delbert Lester Yeakley (C); Hoisington
Homer Yoder (PSB&O); Manhattan
Clemens Harry Young (Ag); Manhattan

JUNIORS.

Fulton G. Ackerman (Ag); Lincoln
Alice Virginia Adams (HE); Leavenworth
Edna Fay Allen (HE); Burlington
William H. Allen (EE); Rock Creek
Loren Norton Allison (EE); Falls City, Neb.
James Westerfield Amis (C); Manhattan
Henry Everett Anderson (C); Richland
*Ralph Lester Anderson (GS); Dodge City
Lydia Elizabeth Andres (GS); Alta Vista
Edwin Lee Andrick (GS); Wheaton
Theodore Alois Appl (EE); Great Bend
Clifford Elroy Armstrong (EE); Pittsburg
Roy Herbert Armstrong (GS); Lecompton
William John Arndt (CE); Hutchinson
Kimball Lincoln Backus (AA); Olathe
*Clementine Vosse Bacon (GS); El Dorado
Olive Baker (GS); West Helena, Ark.
Donald C. Baldwin (Ar); Manhattan
*William Bryce Bandy (EE); Parsons
Dwight Hale Banks (EE); Wamego
Ben William Barber (Ar); Alton
Byron Barkley (EE); Little River
Alex Barneck (EE); Salina.
Lawrence Richard Barnhart (IJ); Independence
Josephine Louise Barry (GS); Manhattan
Kenneth Clinton Bauman (C); Salina
Drussilla Madge Beadle (PSM); Effingham
Ray Hadley Beals (PSB & O); Dodge City
Ernest Wilson Bennett (EE); Great Bend
Gladys Benson (HE); Clay Center
Keith Bentz (EE); Peabody
*Robert Allen Bickel (ChE); Kansas City, Mo.
George Gorrell Biles (C); Chanute
Howard T. Blanchard (Ar); Wichita
Harold Deen Boles (CE); Madison
Harold Clifford Boley (EE); Topeka
James Patrick Bonfield (C); Elmo
Georgena Bowman (GS); Garnett
Richard Earl Bowman (GS); Pawnee Rock
John Shaw Boyer (Ag); El Dorado
Margaret Irene Boys (HE); Linwood
Margaret Louise Bragg (HE); Dodge City
*Oliver Karl Brandon (ME); Ash Valley
Donald Parker Brenz (ME); Arkansas City
Quentin Victor Brewer (IJ); Manhattan
Anna Esther Briggs (GS); Hutchinson
Gertrude Adeline Brill (HE); Westmoreland
Grace Dorothy Brill (HE); Westmoreland
Faith Winifred Briscoe (GS); Cambridge
Louie Elizabeth Britt (GS); Manchester
George Shelton Brookover (AA); Eureka
Paul Edwin Brookover (ME); Scott City
Chester Lee Brown (EE); Herington
Esther Louise Brown (IJ); Manhattan
Maxine Brown (PSM); Manhattan
Ralph Irvin Brown (C); Hutchinson
Lewis Jay Bryan (C); Manhattan
Edwin George Brychta (GS); Blue Rapids
Alpheus Darrel Buckmaster (PE); Manhattan
Lowell Jacob Burghart (ME); Chanute
Merl Leroy Burgin (EE); Coats
John Wesley Burke (ArE); Glasco
Vada Burson (PE); Manhattan
Neva Le Verne Burt (HE); Greensburg
Walter Ward Butler (Ar); Glasco
Gerald Edwin Cain (EE); Pomona
*Marion John Caldwell (ChE); El Dorado
David Valentine Campbell (ArE); McPherson
Richard Joseph Campbell (ME); Herington
*Ferro Castellani (EE); Frontenac
Marvin Oliver Castle (AA); Mayetta
James Willard Caughron (C); Manhattan
Marguerite Virginia Chaffin (HE); Caldwell
William Richard Chalmers (CE); Burlingame
Wilbur Chamberlin (EE); Newton
Arnold Ervin Chase (GS-1; AA-2); Abilene
*Melvin Fuller Chubb (Ag); Baxter Springs
Elmer Field Clark (AE); Jewell
Olive Josephine Clark (AA); Leavenworth
Vernie Irene Clausen (HE); Alton
Ruth Clency (GS); Manhattan
William Welch Coffman (AA); Overbrook
Clarence Ralph Collins (GS); Wellsville

* Matriculated 1929-'30.

† Also pursuing graduate study.

JUNIORS—*Continued.*

Eugene Frederick Collins (CE); Wellsville
Gilbert Underwood Combs (EE); Manhattan
Lloyd Harold Compton (EE); Larned
Frank Robert Condell (ME); El Dorado
Carl Clarence Conger (Ag); Manhattan
Mary Naomi Cook (IJ); Linn
Wilber Abram Copenhafer (LG); Manhattan
Harold Richard Corle (CE); Caney
Kenneth Deorace Cornell (EE); Kansas City
E. Kenneth Corporon (ME); Wichita
John Trumbull Correll (IC); Manhattan
Bernice Louise Cousins (GS); Manhattan
Byron Irwin Cousins (EE); Manhattan
Frances Marian Covey (GS); Miltonvale
Marion Asa Cowles (EE); Sharon Springs
Inez Mildred Crabb (HE); Colby
Cecil Clyde Crane (CE); Severy
Jay James Cress (EE); Manhattan
Hilah Eileen Crocker (IJ); Manhattan
George Richard Crossen (ME); Turner
Clarence Benedict Cunningham (Ag); Manhattan
*Donald Curtis (CE); Kansas City
Eli Egbert Daman (C); Fort Riley
Margaret Hodges Darden (GS); Manhattan
Lillian Boyer Daugherty (PSM); Manhattan
Dorothy Loreen Dexter (PSM); Manhattan
Richard Kimball Dickens (IJ); Manhattan
Florence Matilda Diehl (HE); Chapman
*Nellie Ruth Dilsaver (HE); Kensington
Paul Lawrence Dittemore (IJ); Manhattan
Iva Fern Dix (HE); Manhattan
Helen Laura Dodge (PE); Manhattan
*W. Russell Downs (CE); Wellington
Thomas Edward Doyle (PE); Manhattan
Clair Eber Dunbar (Ag); Manhattan
Martha Lois Dunlap (HE); Reece
Izola Mildred Dutton (ApA); Manhattan
*Edward James Dyer (ME); Leavenworth
Miriam Genie Eads (HE); Cullison
Dean Martin Earl (CE); Nickerson
Lester Alfred Eastwood (Ag); Summerfield
Nina Edelblute (GS); Keats
Howard Carl Edinborough (LG); Tescott
Frank Edward Edlin (IC); Herington
Chester Oliver Ehrlich (IJ); Marion
Marvin Neel Elder (ME); Manhattan
Carl Emmert Elling (Ag); Manhattan
Howard Andrew Elwell (EE); Hutchinson
Ruth Mary Emrich (HE); Tyronza, Ark.
Kermit Vernon Engle (Ag); Abilene
Walter Newton Epler (ChE); Scott City
*Ernestine Barbara Ernst (HE); Paolo
Katrinia Eskeldson (HE); Ramona
James Howard Evans (C); Barnard
William G. Evans (CE); Barnard
*Verna Mae Eveleigh (PE); Hoisington
Arthur Edward Everett (CE); Hutchinson
Wayne Ewing (AA); Beloit
Sidney L. Falin (IJ); Cleburne
Joseph Fickel (ME); Chanute
Edna Elizabeth Findley (M); Manhattan
Ladek Charles Fiser (PE); Mahaska
Clella Lula Fisher (HE); Fellsburg
*Howard Roland Fisher (AA); Hays
William McAvoy Fitzgerald (ME); Goodland
Max Charles Fleming (EE); Paola
George M. Fletcher (Ag); Pawnee City, Neb.
Elsie Louise Flinner (IJ); Wichita
John Sebastian Florell (ArE); Manhattan
Virginia Forrester (IJ); Manhattan
Wallace Albin Forsberg (PE); Lindsborg
*Irene Etta Fox (GS); Junction City
Ray Leslie Fox (GS); Perth
Alva Leo Frashier (EE); Kings Mill, Tex.
Chester B. Freeman (Ar); Junction City
Lloyd Everett Fritzinger (EE); Manhattan
Howard Leroy Fry (AA); Hope
Vernon Eugene Frye (AA); Quenemo
Katherine Idell Fullinwider (HE); El Dorado
Charles Elmore Funk (EE); Iola
Edgar Daniel Furse (EE); Pleasanton
Ruth Starkweather Garrison (HE); Chanute
Helen Iola Gates (HE); Iola
Orville Howard Gates (ME); Seward
Marion Jennings Gaumer (CE); Oberlin
Nathan Bartlett Geer (AE); Auburn
Herschel R. Geiman (EE); Larned
Miles Wiley George (LG); Wichita
Ralph Friedley Germann (Ag); Fairview
Eolia Eunice Gilson (HE); Manhattan
Theodore Roosevelt Gingrich (CE); Garden City
Charles Eugene Glasco (EE); Emporia
*Ed Cephas Glover (EE); Coolidge
Letha Goheen (GS); Oak Hill
Trilla Bell Goheen (HE); Manhattan
William Isaac Gorrell (ArE); Onaga
Edward Lawrence Grafel (ME); Herndon
George Alex Graham (C); Manhattan
Ruth Elinor Graham (ApA); Manhattan
Spencer William Graham (EE); Beattie
Fred Foster Greeley (ME); Manhattan
Freda Leila Greer (HE); Marion
Winston King Grigg (C); Abilene
Kenneth Duree Grimes (EE); Topeka
Charles Leonard Gunn (FME); Great Bend
Arthur Carroll Hadley (Ar); Wichita
Lela Mae Hahn (C); Manhattan
Velma Irene Hahn (PSM); Idana
Wilma Helene Hahn (GS); Clay Center
Dale Evart Halbert (Ag); Abilene
Cloyce Marvin Hamilton (IJ); Solomon
Alice Hawkins Hammett (PSM); Manhattan
John Bonar Hanna (Ag); Clay Center
May Harland (HE); Frankfort
R. Clare Harner (IJ); Howard
*Clarence Edmund Harness (CE); Liberal
Ivan Harold Harris (CE); Manhattan
*Glen Russell Harsh (ME-1; C-2); Oil Hill
Frank Merle Hartman (ArE); Dodge City
Vernon Eugene Harvey (CE); Selma
*Orville I. Haury (AA); Halstead
William Thomas Havens (EE); Manhattan
Maxine Hawley (PE); Manhattan
Mary Opal Hay (HE); Parker
Ralph Carroll Hay (AE); Parker
Violet Alvina Heer (HE); Manhattan
Harold Keith Hefling (CE); Manhattan
John James Heimerich (ArE); Clay Center
*Robert Bruce Helming (VM); Waukon, Iowa
Ruth Wilhelmina Helstrom (IJ); McPherson
Harold Kingsley Herr (C); Hutchinson
Frances Ada Hester (ApA); Medicine Lodge
*Marcelline Murial Hill (GS); Plainville
Opal Brown Hill (ApA); Manhattan
Ruth Hill (HE); Guthrie, Okla.
*Opal Lorene Hoard (HE); Kingsdown
Harvey Edward Hoch (AA); Alta Vista
Meryle Hammett Hodges (GS); Manhattan
Clarence Athel Hollingsworth (Ag); Perry

* Matriculated 1929-'30.

JUNIORS—*Continued.*

*Phillip Forrester Hoover (EE); Enid, Okla.
Gayle R. Hosack (EE); Holton
John Thomas Hoyne (EE); Salina
Marie Hughes (C); Salina
Edythe Grace Huitt (PSM); Talmage
Raymond P. Hunsberger (CE); Mount Hope
La Verne Elizabeth Huse (GS); Manhattan
Alice Mary Irwin (PSM); Manhattan
Percy Jennings Isaacson (PE); Walsburg
William Bart Jackson (ME); Holton
*Florence Elizabeth James (HE); New England, N. Dak.
Genevieve Albertine Johnson (C); Manhattan
Raymond Delbert Johnson (C) Washington
Elmer David Johnston (VM); Pomona
Geraldine Joan Johnston (PE); Manhattan
Glenn Vivian Joines (CE); Manhattan
Dale Vincent Jones (GS); Junction City
Hugh Jones (Ar); Horton
Elbert Elvin Karns (AE); Bucklin
Le Roy Francis Kepley (CE); Chanute
Wayne Otho Kester (VM); Manhattan
Clifford Wayne Kewley (AE); Stockton
Walter Elwood Keyser (EE); Maplehill
*Martin Murvin Kig r (AA); Washington
Lawrence Wilford Kilbourne (EE); Manhattan
Paul A. Kindsvater (Ag); Hoisington
Edna Alma King (HE); Manhattan
Leslie R. King (CE); Manhattan
Venice Marie King (GS); Olsburg
Hester Ellen Kinkead (IJ); Troy
Willis Francis Kipper (CE); Belleville
Herbert H. Kirby (EE); Toronto
Dorothy Elizabeth Klein (IC); Topeka
Louis Dunham Kleiss (ChE); Coffeyville
Millard Paul Knock (GS); Independence
Fritz Gustave Knorr (PE); Manhattan
*James Gerard Koch (ChE); St. Joseph, Mo.
Clarence Walter Koerner (CE); Wellington
Norma Evelyn Koons (HE); Sharon Springs
Elsa Dorothy Krause (HE); Manhattan
Menno Philip Krehbiel (EE); Moundridge
Alden Glen Krider (Ar); Newton
Lawrence Gilbert Kurtz (GS); Alton
*Edgar Colberg Laird (CE); Wichita
Alonzo Lambertson (Ag); Fairview
Charles Herbert Lantz, Jr. (GS); Manhattan
*Thelma Lois Large (PE); Protection
Edna May Lawhead (GS); La Cygne
Lesta Lolita Lawrence (M); Abilene
Daniel Noel League (C); Wetmore
Eugenia Leighton (HE); West Helena, Ark.
*Mildred Woodcock Leker (HE); Manhattan
Pauline Ruth Lengquist (HE); Manhattan
Helen Adams Lentz (PSM); Everest
Miles Corrington Leverett (ChE); Bartlesville, Okla.
Lawrence Lewis (EE); Hays
John Eugene Ley (EE); Sharon Springs
*Helen Marie Lichty (HE); Sabetha
Alice Charlotte Linn (HE); Clyde
Jack Harris Linscott (EE); Manhattan
Eugene Clifford Livingston (ME); Hutchinson
Esther Emma Lobenstein (HE); Edwardsville
George Wayne Long (IJ); Burlington
Edith Marian Loomis (PSM); Osborne
Charles Thomas Lorenz (C); Salina
Forrest Coniver Love (VM); Manhattan
Hugo Frederick Lucas (EE); Dodge City
Harold Frederick Luffel (C); Fort Scott
*Marjorie Nelson Lyles (PE); Saffordville
William Jesse Lynn (Ag); Centralia
William D. Lyon (Ag); Faulkner
*Joan Berry Lytle (IJ); McPherson
Arla Amelia McBurney (GS); Manhattan
Alice Alene McCammon (IJ); Mankato
*Edith Louise McCauley (ApA); Coldwater
Agnes Helen McClaren (PSM); Galena
Arthur Jesse McCleery (EE); Esbon
Alice Louise McClelland (IJ); Topeka
*Sarah Katherine McClintock (GS); Wichita
Harriet Elizabeth McConnell (HE); Cherryvale
*Raynard Edward McCormick (ME); Fort Scott
*R. Stewart McCoy (AA); Cedarvale
Mayme V. J. McCrann (GS); Manhattan
Mary Elizabeth McCroskey (HE); Junction City
Eugene Porter McCulley (EE); Beloit
Marshall S. McCulloch (C); Shawnee
Orpha Olive McDaniels (HE); Scottsville
*Zula Gladys McDonald (HE); Grantville
Hiram Temple McGehee (IC); Manhattan
*Elizabeth Warren McGeorge (GS); Wellington
Arthur Sidney McIntire (ME); Burlingame
E. Pearle McKinney (PSM); Junction City
Gladys Vera McKown (HE); Manhattan
Conway McLeavy (C); Dwight
Leona Irene Maas (PSM); Alma
*Christine Louise Madison (HE); Columbia, Mo.
Dorothy LaVern Magee (GS); Goddard
Helen Lovine Magee (PE); Goddard
Carl Jacob Majerus (VM); Falls City, Neb.
Vera Pearle Marietta (HE); Cawker City
*Minerva Emma Marlow (GS); Manhattan
D. Madge Marteney (ApA); Hutchinson
Howard Eugene Martin (Ar); Eskridge
Jess Roland Mathias (CE); Manhattan
*Marjorie Agnes Mauzy (C); Atchison
Victor Harold Meseke (CE); Manhattan
Alvin D. Meyer (ME); Haven
Alfred Maxwell Meyers (CE); Merriam
Harold Spencer Miller (ME); Kansas City
Loyal J. Miller (AA); Lebanon
Marion Francis Miller (ME); Norton
*Merna Beatrice Miller (HE); Kansas City
Ruth Christine Miller (C); Palco
Ruth Marie Miller (ApA); Minneapolis
Walter Ford Mitchell (C); Manhattan
Walter Rankin Mitchell (EE); Salina
Olney Merle Mohney (AE); Sawyer
Cloris Rex Molineux (EE); Goff
Vivian Monson (C); Lindsborg
Frederick Thomas Moore (ArE); Manhattan
*Jay Fred Morgan (AA); Ottawa
Olive Elfa Morgan (GS); Manhattan
*Thomas Daniel Morgan (CE); Kansas City, Mo.
*Frances Morlan (PSM); Courtland
Marjorie Eleanor Moulton (HE); St. George
*William Gottlieb Munz (ChE); Hudson
Clyde Allen Munell (AA); Hopewell
Charles Wilbur Naylor (EE); Burr Oak
Ruby Eva Nelson (PE); Jamestown
James Neville (CE); Coffeyville
Clyde Newman (EE); Holton
William Granville Nicholson (Ag); Neal
James Andrew Nielson (AE); Spearville
Alex Nigro (C); Kansas City
Leon Fred Nixon (EE); Manhattan

* Matriculated 1929-'30.

JUNIORS—*Continued.*

Lawrence Bertram Noble (ME); Stockton
*Julia Anna Noell (GS); Syracuse
Orville Arthur Noell (EE); Hartford
Dale Leora Norris (EE); Raymond
Dorothy Elaine Norris (C); Raymond
Earl Conley North (EE); Marlow, Okla.
George David Oberle (Ag); Carbondale
Dorothy Lydia Obrecht (HE); Topeka
Ida Elizabeth Osborn (GS); Clifton
Marvin George Ott (EE); Madison
*Harold Owen (ChE); Douglass
Robert Joseph Pafford (EE); Salina
Edith Alice Painter (HE); Meade
Clement C. Parrish (CE); Radium
Gwendolyn Anne Paslay (ApA); Manhattan
Lloyd Everett Patterson (EE); St. John
Raymond Patterson (GS); Morrowville
Nina Dorothea Paulsen (HE); Onaga
Paul Eugene Pearson (C); Concordia
*Albert Arnold Pease (AA); Fort Scott
Laurence Adolph Peck (AA); Soldier
Mary Aleta Peck (GS); Council Grove
*Dorothy Weatherly Peery (GS); El Dorado
Helen Jane Pembleton (GS); Ness City
Alice Elizabeth Peppiatt (ApA); Ellsworth
Lewis S. Perkins (Ag); Argonia
Paul Chadwick Perry (ME); Manhattan
*Eugene Forrest Peterson (EE); Yates Center
Walden Richard Peterson (GS); Topeka
Charles A. Pine (CE); Coffeyville
*Mary Irene Piper (HE); Garden City
Frank Leslie Platt (IJ); Davenport, Iowa
Wilfred Emerson Platt (PE); Manhattan
Lucena Margaret Plummer (IJ); Newton
*Barbara Jean Pollock (GS); Topeka
Dorine Helen Porter (HE); Stafford
*Mildred Aileen Porter (HE); Mount Hope
Opal Mae Porter (HE); Stafford
Frances Edna Potter (PSM); Natoma
Frederick Gerald Powell (EE); Frankfort
Horace Pierce Powers (AA); Junction City
Frank B. Prentup (PE); Fort Riley
Nellie Lucile Pretz (HE); Irving
Clayton John Price (VM); Osage City
Delmas Eugene Price (C); Wakefield
Willet Jesse Price (VM); Liberty
Don Glenn Purcell (ArE); Wichita
Mildred Emily Purcell (PE); Manhattan
Dorothy Raburn (GS); Manhattan
Helen Marie Randall (PSM); Ashland
Effie Grace Rasher (PE); Solomon
*James Chalmers Rayburn (CE); Newton
Edris William Rector (C); Manhattan
Willard Virgil Redding (Ag); Coffeyville
Albert Leonard Reed (ArE); Cassaday
James Kessi Reid (ME); Manhattan
Earl Milton Regier (ChE); Moundridge
Niles Franklin Resch (Ar);
Independence, Mo.
*S. John Rever (EE); Parsons
Alice Lou Rhea (HE); Larned
Claude Marion Rhoades (ArE); Newton
Harold Duane Richardson (GS); Long Island
Thelma Gladys Rickey (GS); Phillipsburg
Clark A. Rife (CE); Anthony
Clarence Adam Rinard (Ar); Salina
Esther Joanne Rockey (IJ); Manhattan
Steven Samuel Roehrman (GS); White City
Mabel Elsa Roepke (HE); Manhattan
Ovella Mary Fay Rogge (HE); Muscotah
Fred Madison Root (Ar); Medicine Lodge
Everett Laurence Ross (EE); Ashland
Vernal Charles Rowe (C); Dighton
Lloyd Findley Roy (CE); Wilsey
Iva Salinda Rust (HE); Junction City
Mabel Verbina Ruthi (HE); Bloomington
Robert Jacob Rychel (EE); Downs
Milton Ernest Saffy (AA); Alma
Pauline Samuel (PE); Manhattan
Mart Benjamin Sanders (EE); Marion
Harry Clinton Sawin (EE); Waterville
*Flossie Evelyn Sawyer (HE); Kensington
Matilda Amelia Saxton (PSM); Fort Scott
Venita Grace Schade (PSM); Manhattan
*Donald Frederick Schafer (C); Fort Scott
Dorothy Pauline Schermerhorn (IJ); Wilson
Alva Marion Schlehuber (Ag); Durham
Maxine Sophia Schorer (IJ); Clyde
Elmer Philip Schrag (AA); Moundridge
Ebur Samuel Schultz (Ag); Miller
*Hildred Schweiter (GS); Wichita
James Foster Scott (IJ); Manhattan
*Lucille Scribner (C); Hutchinson
Fred Andrew Seaton (IJ); Manhattan
Mildred Elaine Sederlin (GS); Scandia
Roy Nelson Selby (AE); Manhattan
Gertrude Louise Seyb (HE); Pretty Prairie
Clyde Shade, Jr. (IJ); Ottawa
*David Marion Shannon (C); Iola
Karl Shaver (EE); Cedarvale
*Laurena Bertha Sheetz (HE); Wichita
Estella Bernice Shenkel (GS); Geneseo
Nina Sherwood (GS); Talmo
Joe Henry Shepek (EE); Wayne
Leota Isabella Shields (ApA); Ramona
George Raymond Shier (AE); Gypsum
Harold Henry Shomber (EE); Ottawa
Leo Charles Short (ME); Norton
Curtis Daniel Sides (EE); Lamar, Mo.
Dorothy Elizabeth Simpson (Ar);
Colorado Springs, Colo.
*Frances Harriet Simpson (IJ); McPherson
Elvon Gilbert Skeen (PE); Eskridge
Mina Mae Skillin (PE); Frankfort
Helen Louise Sloan (IJ); Hutchinson
Elbert Wendell Smith (C); Russell
Francis Glenn Smith (C); Potwin
*Harold Larkin Smith (ChE); Parsons
*Helen Mildred Smith (IJ); Augusta
Melvin Ernest Smith (EE); Concordia
Roy Blanchett Smith (PE); Herington
Dale Smith Snider (C); Abilene
Maynard Harold Solt (IC); Manhattan
Don Harvey Spangler (VM); Stanton, Neb.
Bessie Loretta Sparks (HE); Kingman
Raymond Guy Spence (C); Fairbury, Neb.
Marie Elizabeth Sperling (GS); Manhattan
Richard Kenneth Stahl (C); Kansas City
Clifford A. Standley (EE); Lucas
*Mable Anna Steiner (HE); Moundridge
Harlan Bennett Stephenson (LG); Iola
William Emil Steps (CE); Halstead
Clarence Walter Stewart (CE); Coldwater
Eva Almeda Stewart (GS); Manhattan
Hugh Leonard Stewart (AA); Vermillion
James Leslie St. John (Ag); Louisville
Esra Ervin Stockebrand (AA);
Yates Center
Leah Angeline Stout (HE); Peabody
Bennett Thorne Stryker (CE); Waterville
Richard William Stumbo (Ag); Bayard
Dale Suplee (VM); Council Grove
Cleon Orel Tackwell (PE); Manhattan
Philip Jesse Tatman (CE); Lucas
Bruce Ross Taylor (Ag); Alma
Harold Everett Taylor (IJ); Clay Center
*John George Taylor (GS); Parsons
Katherine Edna Taylor (HE); Chapman
Lot Forman Taylor (AA); Ashland
*Earl D. Tefertiller (ChE); Wichita

* Matriculated 1929-'30.

JUNIORS—*Concluded.*

Howard Everett Tempero (GS); Broughton
*Robert Eldon Teter (ME-1; GS-2); El Dorado
*Vera Charlotte Thackrey (GS); Lyons
Elmer Howard Thom (EE); Oakley
Dale Alfred Thomas (IJ); Ellsworth
Jay Humphrey Thomson (C); Emporia
Clyde Francis Thudin (EE); Mulvane
Margaret Lucille Titus (HE); Council Grove
Esther Rozella Toburen (HE); Cleburne
Glenn Edwin Toburen (M); Cleburne
Wayne Tolley (EE); Delphos
William Gilbert Towler (PE); Topeka
Ruth Anna Tredway (GS); La Harpe
Harold Everett Trekell (EE); Belle Plaine
Alice Tribble (GS); Circleville
Elliott Rodney Trull (VM); Padonia
Selma Elin Turner (GS); Manhattan
Clarence Correll Uhl (CE); Manhattan
*Samuel George Unger (ChE); El Dorado
Luella Cone Vanderpool (HE); Meade
Helen Louise Van Pelt (PE); Beloit
Olive Elsie Van Pelt (PSM); Beloit
*Catherine Vaughn (HE); Garnett
John Lee Vaupel (GS); Manhattan
Richard George Vogel (C); Stuttgart
Ralph Francis Vohs (PE); Osawatomie
Ralph Richard Wagner (Ar); Emporia
Juanita Kathryn Walker (GS); Valley Falls
Otis Harold Walker (CE); Junction City
Vera Isabelle Walker (IJ); Wakeeney
Vesta Estelle Walker (IJ); Wakeeney
Andrew Bernard Walsh (ME); Kansas City
Chester Joseph Ward (Ag); Osawatomie
John Robert Warner (EE); Whiting
Rodney Otto Warner (EE); Manhattan
Frederick Henry Warnken (GS); Hutchinson
Aline Wegert (GS); Rice
Margaret Wegert (GS); Rice
Kenneth Albert Wehl (AE); Scottsville
Mabel D. Weir (HE); Newton
F. Henry Weirick (CE); Olathe
Ruth Weisser (HE); Paxico
Verne Elbridge Wesley (CE); Eureka
Frank Loy Westerman (EE); Wamego
Paul Charles Westerman (IJ); Wamego
Bernice Elizabeth Weygandt (HE); Keats
Kenneth Paul White (GS); Kingsdown
Fay Allan Whiteside (Ar); Neodesha
Max Wible (ArE); Caldwell
Ruth Alice Widestrand (GS); Topeka
Earl LaVerne Wier (Ag); Blue Mound
Ada Caroline Wiese (GS); Manhattan
Donald Wiggins (ArE); Lyons
Gertrude H. Wilber (PE); Belleville
Jesse Isiah Wilcoxen, Jr. (AE); Ford
*Leroy Albert Wilhelm (Ag); Arkansas City
Carl Williams (AA); Dodge City
Anna Marian Wilson (HE); St. George
Edward William Wilson (VM); St. George
Jerome W. Wilson (GS); Ashland
John Lincoln Wilson (Ag); Geneva
Martha Alice Wilson (C); Blue Rapids
Herbert L. Winston (EE); Stilwell
Floyd Gerald Winters (AE); Oswego
George Eugene Wise (EE); Wichita
Chester Aaron Wismer (Ag); Pomona
Beatrice Woodworth (HE); Corning
Clair M. Worthy (CE); Wetmore
Dorwin Clair Wright (Ag); Bronson
Zint Elwin Wyant, Jr. (CE); Topeka
Clifford Richard Yardley (EE); Hutchinson
James J. Yeager (Ag); Bazaar
Erville Elmo Young (ArE); Hutchinson
*Josephine Young (PE); Junction City
Flor B. Zapata (GS&V); Lawrence
Grace Irene Zeller (HE); Manhattan
Frank Zitnik (Ag); Scammon

SOPHOMORES

Joseph Shirley Adams (Ag); Oak Mills
Donald Adair Adell (CE); Manhattan
Clarence Edward Ainsworth (CE); Elmo
Vivian Forestine Albright (HE); Netawaka
Merle Walter Allen (GS); Manhattan
Ruth L. Allen (IJ); Parsons
Sam Edward Alsop (Ag); Wakefield
Clare Kenneth Alspach (C); Wilsey
*Dallas Dale Alsup (Ag); Frontenac
Alpha Harold Ames (Ar); Corbin
*Frances Ida Amstutz (GS); Halstead
Mabel Caroline Amthauer (HE); Dwight
Harold Lee Anderson (IC); Manhattan
John Edmond Anderson (IC); Belvue
Lewis Keith Anderson (Ag); Cleburne
Joye Ansdell (HE); Jamestown
*John Lawrence Armstrong (ArE); Salina
Omo Arthur Attwood (IC); Randolph
William Henry Auchard (CE); Manhattan
Elden LeRoy Auker (PE); Norcatur
Herbert Willard Avery (VM); Wakefield
Donald Keith Ayers (EE); Manhattan
Walter Worth Babbit (Ag); Willis
James Lister Baird (Ag); Wellsville
*Dorothy Attal Baldwin (GS); Manhattan
Dorothy Gertrude Barlow (HE); Manhattan
Donald Wynne Barnett (Ag); Gallatin, Mo.
Everett Chlelen Barnett (CE); Manhattan
Bertha Gesine Barre (HE); Tampa
Vernon C. Bates (ArE); Garden City
Raymond William Bebermeyer (AA); Abilene
La Verne Dwight Behnke (Ag); Bushton
*Mildred Eleanor Beil (ApA); Bavaria
John Gregory Bell (Ag); Atchison
Lawrence Marion Bell (ME); Selden
Lawrence Charles Benne (CE); Washington
*Earl Benjamin Benner (Ag); Weston, Mo.
Jay Russell Bentley (Ag); Ford
Esto Ray Berkey (EE); Hutchinson
Dalys Lewis Berry (VM); Wilsey
Lynn Nathan Berry (CE); Manhattan
William Henry Berry (CE); Attica
Martha Pearl Betz (HE&N); Enterprise
Winifred Bickel (IJ); Kansas City, Mo.
John Milan Biddison (EE); Manhattan
Mary Katherine Bird (Ar); Hays
*Opal Eleanor Birt (HE); Beloit
Dean Francis Bishop (ME); Kendall
Elmer Carson Black (PE); Utica
*John Alexander Black (CE); Galena
Ensly Dee Blackburn (CE); Anthony
Philip Carl Blackburn (IC); Herington
Gordon Ingraham Blair (C); Junction City
Robert Overall Blair (Ag); Coleman, Tex.
*Maxine Rose Blankenship (HE); Downs
Major Guy Bliss (CE); Minneapolis
Nellie J. Bloom (HE); Liberal
Benny Wayne Blosser (ME); Caldwell
Loyd Edwin Boley (VM); Topeka
*Grace Louise Booker (HE); Clay Center

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SOPHOMORES—*Continued.*

*George Wiley Bookless (ME); Nickerson
George Illingworth Boone (C); Manhattan
*Astrid Anna Borg (GS); Marysville
Vera Theresa Bowersox (Ar); Great Bend
*Mildred Whitehead Bowles (HE); Walnut
Neil Duane Bowman (Ar); Pawnee Rock
*Theodore Edmond Bowman (Ar); Denver, Colo.
Albert Henry Boyer (EE); Welda
Fred Ewing Brady (EE); Topeka
Howard Albert Brand (Ar); McPherson
Walter E. Brandenburg (AA); Riley
Agustin Younse Breeden (GS); Manhattan
Clarence Eckhart Brehm (Ar); Wichita.
Justina Veronica Brening (ApA); Burns
*Noble Elmer Brewer (EE); Abilene
Alice Katherine Brill (GS); Westmoreland
Carol Mildred Briscoe (HE); Cambridge
Mary Esther Brittain (HE); Atchison
Ruthford E. Brodie (ME); Manhattan
Arthur Raymond Brodine (EE); Salina
Robert Vernon Brown (EE); Manhattan
Verdis U. Brown (ME); Larned
Barbara Brubaker (GS); Manhattan
Aileen Virginia Brunson (IJ); Dellvale
John Arthur Bryan (C); Leoti
Leslie Matthew Bryson (ChE); Abilene
Margaret Iola Buck (ApA); Derby
*Burnill Howard Buikstra (GS); Cawker City
Gladys Ruth Buikstra (HE); Manhattan
Vance L. Burch (C); Manhattan
Virgil Arthur Burfield (CE); Lyons
Harry Dale Burkholder (CE); Wamego
Leon Pennington Burris (C); Chanute
Scott Burton (EE); Burlingame
Elizabeth Doris Butrum (HE); Holton
Floyd William Caldwell (CE); Parsons
Harold Vanevery Carlson (ME); Utica
*Hugo Homer Carlson (CE); Lindsborg
Twila Marie Carmony (HE-1; GS-2); Manhattan
Mary Latta Carney (C); Manhattan
John Clarence Carter (Ag); Bradford
Alfred Louis Casey (AE); Corning
*Mildred Castleman (HE); Junction City
Boyd Ralph Cathcart (Ag); Winchester
Margaret Brooks Chaney (GS); Manhattan
*Leland Randall Chapin (GS); Glasco
James Percy Chapman (IJ); Manhattan
Carl James Chappell (CE); Republic
John Bertram Cheshire (VM); Hopkins, Mo.
Edwin Roy Chesney (IJ); Wichita
Ida Margaret Chitwood (HE); Meriden
Leonard William Christal (Ag); Manhattan
Mary Kathryn Chronister (C); Topeka
Raymond William Cilek (C); Jennings
*Erick R. Claassen (ME); Newton
Virgil Howard Clark (VM); Montrose
*Marietta Cleland (PE); Whiting
Donald C. Close (EE); Belleville
Beth Cole (PSM); Norton
Maxine Alice Cole (C); Norton
Dema F. Coleman (HE); Manhattan
Lester Estel Collier (FME); Ardmore, Okla.
Ruby Leona Colony (IJ); Manhattan
Margaret Louise Colver (PSB & O); Manhattan
Murray Devine Comer (EE); Muscotah
Helen Josephine Cook (HE); Monument
Morris Jackson Coolbaugh (CE); Natoma
Lloyd Marion Copenhafer (LG); Manhattan
Lucile Maude Correll (PSM); Manhattan
James Delos Corrigan (C); Holyrood
Mary Josephine Cortelyou (GS); Manhattan
Sammie Prentis Cory (EE); Dodge City
Lucile Marie Costello (HE); Carlton
Grant Fuller Cottrell (VM); Andover
Ferrol Eugene Cowan (C); Nickerson
Walter Ellis Crabb (Ar); Lebanon
Mary Ellen Crabbe (IJ); Manhattan
Dale Everett Crangle (CE); Mankato
Marian Crocker (IJ); Manhattan
Henry Oliver Cronkite (PE); Belle Plaine
Alvin Warren Crooke (IJ); Great Bend
Richard Jerome Crowley (Ar); Manhattan
*Helen Jennings Culbertson (GS); Kansas City, Mo.
Blanche Irene Curry (HE); Winchester
Faigh Ruth Daigh (ApA); Ashland
Sterle Ernest Dale (Ag); Protection
Ward Edward Dale (ME); Topeka
William Wesley Daniels (C); Ellsworth
Roy Emanuel Danielson (EE); Manhattan
*Georgia Maree David (HE); Bartlesville, Okla.
George Hughes Davis (C); Manhattan
Hilma Ruth Davis (HE); Manhattan
*Louise Davis (HE); Nashville, Tenn.
Thomas John Dawe (AA); Abilene
*Aryles Howard Dawson (AE); Tulia, Tex.
Ben Harrison Dean (VM); Manhattan
Loua Marjorie Dean (GS); Manhattan
Phares Decker (AG); Holton
Ruth Ernestine DeWitt (HE); Medicine Lodge
Robert C. Dial (CE); Manhattan
Marsden Hall Dice (Ar); Wichita
Tom David Dicken (Ag); Winfield
B. A. Dillard (PE); Manhattan
Charles Eugene Dimon (VM); Manhattan
Dale D. Dixon (CE); Norcatur
Dick Albert Dodge (AA); Manhattan
Iris Roberta Dodson (PSM); Silt, Colo.
Gerald Michael Donahue (EE); Ogden
Dorothea Helen Doty (HE); Cunningham
Gladys Hope Dowd (IJ); Bayneville
Dorothy Downie (PE); Grantville
Lynn Emerson Drake (C); Natoma
Truman Ben Drury (EE); Burden
Robert Watson Dudley (PE); Manhattan
Junia Louise Duffin (GS); Kingman
Ethel Louise Dunn (HE); Oskaloosa
James Phil Dunn (CE); Liberal
Helen Gertrude Durham (M); Manhattan
Keith Barber Dusenbury (Ag); Anthony
Orin Dutton (CE); Jamestown
Philip William Dutton (CE); Burlingame
Max Leon Eaton (ChE); Colby
Ethel Amelia Eberhart (Ar); Topeka
*Rudolph Eugene Eberle (CE); Emporia
Virginia Edelblute (PE); Manhattan
Mildred Rae Edlin (HE); Herington
Harold Edmondson (FME); Manhattan
Anna Marie Edwards (GS); Athol
Richard Laurence Edwards (ME); Meade
Milton Ehrlich (C); Marion
Oscar Sievert Ekdahl (Ar); Manhattan
*Margaret Virginia Elder (HE); Hutchinson
Glenn Leslie Ellithrope (AE); Russell
James Clinton Ellsworth (Ag); Cherryvale
*John W. Enns (EE); Newton
*Dorothy Edith Ericson (GS); Salina
Carl Hugh Errington (Ag); Ruleton
Grace Elizabeth Eustace (GS); Wakefield
Paul Eugene Fairbanks (PE); Topeka
Laura Virginia Fairman (IJ); Manhattan
Verona Anna Fark (GS); Greensburg
James Severy Farmer (EE); Pratt
Emma Lucile Farris (HE); Winchester
Harold Ralph Fatzer (AA); Fellsburg
Hubert Louis Fatzer (AA); Fellsburg
Forrest Malcolm Faulconer (IC); Clay Center
Violet Sarah Featherston (ApA); Quenemo
Gerald Emerson Feldhausen (AE); Frankfort
G. Jean Ferguson (HE); Manhattan

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SOPHOMORES—*Continued.*

Elsie Marie Fiechter (C); Robinson
Elma Viola Filson (M); Scott City
Eva Merle Filson (HE); Scott City
Alice Louise Fincham (IJ); Pratt
Lendall Kiple Firth (VM); Manhattan
Ronald Walter Fleck (EE); Beloit
Donald Murlin Flippo (AA); Abilene
Wyona Myrtle Florence (IJ); Manhattan
Robert Sheldon Florer (CE); Marion
Oliver Elroy Flory (VM); Great Bend
Max Frank Fockele (C); Ottawa
*Lyle A. Foland (ME); Coffeyville
Kale Max Fones (AE); Kansas City, Mo.
*Marjorie Forbes (HE); Columbus
Anthony Dominie Fornelli (CE); Cherokee
Curtis H. Foss (EE-1; C-2); Manhattan
Leta Orvillene Foster (HE); Penalosa
Ferne Murray Frashier (PSM); Manhattan
Frank Ryder Freeman (Ag); Kirwin
*Sidney Maria Freeman (HE); Manhattan
Keith Gerald Friel (C); Manhattan
Edith Martha Fritz (HE); Manhattan
Frank B. Fry (AA); Eureka
Leonard Elvin Garrison (C); Manchester
John Glynn Garver (AA); Abilene
Elizabeth Gaston (IJ); Philadelphia, Pa.
*Fern Emeline Gaston (C); Wakefield
John Lester George (VM); Mulberry
Bernard Kenneth Geraghty (EE); Selden
Robert Clyde Getty (ChE); Winchester
Leah Myrtle Gibbs (IJ); Spearville
Clarence Byron Gibson (IC); Douglass
*Harold Gibson (EE); Altoona
George Adamson Gillespie (Ag); Welda
*Kathryn Gillihan (IJ); Gallatin, Mo.
Helen Glunt (ApA); Garrison
William Phillip Glunt (GS); Garrison
Harold Alvin Goff (Ag); Manhattan
Esther Isabelle Gould (HE); Manhattan
Grace Gould (GS); Beloit
*Lois Alta Graham (HE); Peabody
Gerald Goodale Green (C); Norton
Marian Mildred Greene (ApA); Lincoln
Bertie Lester Greer (GS); Manhattan
Ada Irene Gregory (PE); Woodston
Howard Henry Gregory (CE); Ellsworth
George Robbins Grimes (EE); Jetmore
*Lloyd William Grothusen (Ag); Ellsworth
Orrin F. Grover (IC); Manhattan
Dorothy Belle Gudgell (IJ); Edmond
Lloyd Oscar Gugler (Ag); Woodbine
*Frank Wilbanks Gurney (CE); Independence
Hazen A. Gustafson (EE); Abilene
Paul Anton Haas (EE); Kansas City
Lester Theodore Hagadorn (CE); Manhattan
Charles Tomas Hall (Ag); New Albany
Lyman Monroe Hall (C); Downers Grove, Ill.
Thomas Eliot Hall (Ag); Manhattan
William Hall (ME); Lindsborg
*Helen Margaret Halstead (GS); Manhattan
Lewis Glenn Halverstadt (EE); Oxford
Georgia Margaret Hamm (ApA); Humbolt
Homer Joshua Hammond (EE); Osborne
Frances Pearl Hampshire (HE); Manhattan
*Virgiline Wilma Hanes (ApA); Augusta
Carl Hansen (ME); Strong City
Oscar Miles Hardtarfer (AA); Lawrence
Harold Byron Harper (Ag); Manhattan
Harold Percy Hartzell (VM); Manhattan
*Ira Berton Haskett (EE); Parsons
Russell Hastings (Ar); Atchison
Louis Ernest Hay (EE); Clay Center
Raymond William Hayes (VM); Manhattan
David A. Hays (IJ); Manhattan
Lowell Doan Hazlett (EE); Bloomington, Neb.
Hal Thomas Heath (C); Enterprise
Achille Charles Hebert (EE); Boley, Okla.
Ivalee Beryl Hedge (HE); Manhattan
Allen Richard Heidebrecht (EE); Buhler
Alfred Helm (Ag); Chanute
Willard Sandman Hemker (EE); Great Bend
*Charles T. Herring (Ag); Tulia, Tex.
Lynn Bandy Hicks (ME); Oil Hill
Inez Mildred Hill (HE); Topeka
Harry Wilson Hinckley (PSB&O); Barnard
Walter Clarence Hinkle (AE); Lucerne
*William Haden Hobbs (CE); Oil Hill
Esther Elzena Hobson (PE); Kingman
Melvern Eugene Hodgson (VM); Hutchinson
*Robert Lee Hodshire (ME); Coffeyville
Raymond Kenneth Hoefener (ArE); Leavenworth
Willard Emmerson Hoffman (AA); Hope
Loretta Alberta Hofman (HE); St. George
Alfred Arnold Holmquist (CE); Manhattan
Zadock Wayne Hook (Ag); Manhattan
Otis Horchem (C); Ransom
Seward Ellis Horner (GS); Abilene
Otis Fearing Hornish (EE); Bucklin
Sydney Will Hornsby, Jr. (VM); Manhattan
Floyd James Hoss (AA); Potwin
Alvin Albert Hostetler (C); Hutchinson
Helena Mae Hotchkiss (C); Concordia
DeWitt Clinton Houck (AA); Americus
Ruth Vivian Houghton (HE); Jamestown
*James William Howard (IJ); Douglass
Helen Phebe Howe (HE); Stockdale
Genevieve Loban Hoyt (IJ); Manhattan
Adolph Rudolph Hraba (FME); East St. Louis, Ill.
Helen Mary Hughes (GS); Manhattan
Edwin Louis Hulland (ME); Hollister, Mo.
Fred Huntington (CE); Eureka
Lloyd Wendling Hurlbut (AE); Sylvan Grove
James Lawrence Hurley (CE); Aurora
Velma Good Huston (HE); Manhattan
Adelaide Hutter (C); Cherryvale
Kermit Roosevelt Huyck (AA); Morrowville
Harold Thomas Hyde (ChE-1; C-2); Wichita
Kenneth Vernon Ingle (CE); Caldwell
Luther Arthur Jacobson (Ag); Horton
Pearl Elizabeth Jahnke (HE); Leonardville
Leila Grace James (HE); Kansas City, Mo.
Paul Leslie Jameson (Ag); Garrison
*Amy Eva Jasperson (GS); Colby
George Henry Jenkins (EE); Carthage, Mo.
Elmer Roy Jenson (EE); Herington
John Jay Jewett (CE); Halstead
Earnest Mason Joerg (ArE); Randall
Earl H. Johnson (AA); Norton
Herbert Galloway Johnson (GS); Larned
*James Tobin Johnson (C); Solomon
*Joseph Claude Johnson (C); Russell
Naomi Marie Johnson (HE); Oskaloosa
Roland Justin Johnson (ME); Marysville
Vern Waldo Johnson (ArE); Salina
Winifred Laura Johnson (HE); Frankfort
Zara Walter Johnson (C); Beeler
John Hoffman Johntz (C); Abilene
Anna Baker Jones (HE); Frankfort
Elmo Elder Jones (CE); Manhattan
*Frances Jane Jones (C); Kansas City

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SOPHOMORES—*Continued.*

Louise Emma Jones (GS); Manhattan
Mildred Irwin Jones (C); Clay Center
Robert Reynolds Jones (GS); Clifton
Taylor L. Jones (Ag); Garden City
Wayne Le Roy Jones (AE-1; AA-2); Talmage
William Laurie Jones (VM); Manhattan
John Willis Jordan (Ag); Claflin
Paul Nick Jorgensen (EE); Stockton
Mildred Bernice Julien (C); Wamego
William J. Justice (ME); Olathe
John Joseph Kackley (CE); Burrton
Mildred Ruth Kadel (HE); Victor
*Frank Kolm Keinoth (Ar); Emporia
John Howard Kelly (C); Mayetta
Lonnie Worth Kemper (EE); Wichita
*Goldie Merle Kennedy (ApA); Macksville
George Raymond Kent (AA); Wakefield
Russell Anthony Kern (GS); Junction City
Oliver Willard Kershaw (AA); Garrison
Keith James Kimball (AA); Nickerson
Pattie Margaret Kimball (GS); Manhattan
Tom Russell Kimball (GS); Manhattan
Fay Kimes (EE); Dodge City
Claude Lewis King (Ag); Olsburg
George Wilson King (ME); Manhattan
Mildred Kingsburg (PE); Herington
Howard Levasseur Kipfer (CE); Manhattan
Arthur Elliott Kirby (EE); Chanute
William Goodman Kirby (CE); Toronto
Lawrence Dee Kirkman (C); Hays
*Roy Charles Kirkpatrick (EE); Iola
Norbert Julius Klinge (EE); Topeka
Harold Kneeland (C); Council Grove
*James Raymond Knox (CE); El Dorado
Benjamin Christ Kohrs (AA); Dillon
Otho Merton Koontz (C); Jetmore
Al Joseph Koster (ME); Manhattan
Edwin Kotapish (GS); Irving
Fred Short Kruger (Ag); Holton
Theodore Andrew Kurtenbach (VM); Lindsay, Neb.
Dorothea Annette LaFollette (IJ); Manhattan
*Malcolm Laman (GS); Manhattan
*Julia Sirena Lamb (C); Blue Rapids
Rachel Joy Lamprecht (IJ); Manhattan
Florence Mary Landrum (GS); Effingham
*Harold Melvin Lang (GS); Winfield
*Benjamin Reight Lantz (LA); Salina
Ernest Ira Largent (C); Oak Hill
Frances Katheryn Marie Larson (HE); Smolan
John Russell Latta (Ag); Holton
Minnie Marie Laue (HE); Lyndon
Philip Ott Lautz (EE); La Junta, Colo.
Howard Kenneth Learned (IC); Plevna
Freda Nixon Leasure (GS); Topeka
Olin Zebediah Leasure (ME); Boicourt
Carolyn Alice Leonard (HE); Coolidge
Murray Lesher (Ar); Manhattan
Velma Liles (HE); Kingsdown
Elizabeth Maris Lloyd (GS); Leavenworth
*Nina Mary Lodge (HE); Wellington
Carlton Edward Logan (CE); Quenemo
Edward Wallace Lohman (IJ); Clay Center
John Roger Long (ChE); Abilene
Evelyn E. Longren (GS); Leonardville
Harley Lawrence Lowe (ME); Powhattan
Gilbert Victor Ludeman (EE); Anthony
Arthur Conrad Lundgren (EE); Osage City
William Harold Lundry (ME); Arlington
Sumner V. Lyons (GS); Lucas
Warren Peer Lyttle (EE); Council Grove
James Andrew McBride (CE); Seneca
Mildred Katherine McBride (HE); Boyle
John Everett McBurney (C); Manhattan
Ted Roosevelt McCandless (Ag); St. John
A. Lucile McClaskey (GS); Manhattan
*George Max McClellan (CE); Glasco
*Joseph Everett McClellan (AA); Topeka
Vernita Rose McClelland (IJ); Topeka
Harold LeRoy McClure (ChE); Kingman
William Elroy McClurg (CE); Meriden
Loretta Irene McCormick (IJ); Plainsville
Zada Gayle McCutchen (PE); Kingman
Wilbur McDaniel (GS); Michigan Valley
Harold McElroy (CE); Randall
*Don Thomas McKee (GS); Hiawatha
Blanche Irene McMoran (ApA); Coldwater
W. Loy McMullen (AA); Oberlin
*Georgia Anne McNickle (C); Ashland
Fred Elmo McVey (ME-1; AA-2); Oak Hill
Murt Francis Makins (Ar); Abilene
Arvid Irwin Mall (C); Manhattan
Carroll Manda (C); Dodge City
*Helen Charlotte Mangelsdorf (HE); Atchison
Dorothy Ione Mannen (HE); Manhattan
Merle Mark (HE); Abilene
Benjamin Eber Markley (PSB&O); Bennington
Margaret Mary Marks (PSM); Ogden
*Francis Kirby Marston (C); Junction City
Frank Stephen Martin (ChE); Manhattan
James William Martin (EE); Sabetha
Margaret Belle Martin (HE); Glasco
*Mary Marie Martin (PE); Sterling
Carl Jesus Martinez (EE); Manhattan
Mildred Ruth Masden (PSM); Lenora
Everett Raymond Mason (EE); Wakefield
James Milton Mason (ME); Kansas City
Margaret Maude Mathews (GS); Manhattan
Murray Edgar Matter (EE); Jewell
Edna Estella Maxwell (HE); Manhattan
William Henry Meissinger (Ag); Abilene
Mildred Elnora Mellinger (GS); Milford
*Joseph William Menzie (GS); Manhattan
Stanley Taylor Merrill (EE); Abilene
*Lawrence Paul Miles (ME); Independence
Vera Jane Miles (GS); Jewell
Albert Royce Miller (EE); Centralia
Arch Earl Miller (AA); Cottonwood Falls
Edith Frances Miller (GS); Milford
Grant Gould Miller (EE); Offerle
Harry Carl Miller (GS); Manhattan
Joyce W. Miller (Ag); Sycamore
Verna Irene Miller (HE); Milford
Zola Frances Miller (HE); Minneapolis
Clark Carlyle Milligan (Ag); Boyle
*Wilma Phebe Mills (GS); Frankfort
John George Mogge (C); Goodland
Luther Emanuel Monell (EE); Osage City
*Freda Miriam Monfort (HE); Iola
Charles Talmott Monteith (CE); Hoxie
Leonard Howard Montgomery (Ag); Neodesha
*Carol Elizabeth Moore (C); Ashland
Hugh Isaac Moore (AA); Wakarusa
Grace Selina Morehouse (GS); Irving
Clark Leroy Morford (GS); Olsburg
Alvin Morgan (Ag); Manhattan
Lawrence Dale Morgan (Ag); Manhattan
Marvin Bradford Morgan (AA); Manhattan
*Marguerite Morris (HE); Paxico
Eva Hope Morrison (HE); Manhattan
Jared Barnette Morse (Ar); Manhattan
Gladys Mortensen (PSM); Everest
Clarence Henry Moyer (AE); Hiawatha
Grace Irene Mundell (HE&N); Nickerson
*Claire W. Munger (Ag); Hoisington
Ralph Conrad Munson (Ag); Junction City

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SOPHOMORES—*Continued.*

Will Martin Myers (Ag); Bancroft
Charles William Nauheim (Ag); Hoyt
*Benjamin A. Neill (GS); Miltonvale
Dorothy Belle Neill (ApA); Clay Center
Jennie Joy Nelson (ApA); Manhattan
Kenneth Elmer Netson (ArE); Manhattan
Ralph Wesley New (EE); Norcatur
Edwin Mahlon Newman (CE); La Crosse
Mary Vivien Nickels (GS); Manhattan
*Margaret Nolan (HE); Larned
Harold Leroy Nonomaker (AA); Osborne
*Harriette Juanita Norton (IJ); Kalvesta
Evelyn Jean Nuzman (IJ); Manhattan
Gretchen Ellen O'Conner (HE); St. John
Lillie Clara Olson (HE); Manhattan
Carl Gerhardt Ossmann (ArE); Concordia
Dale Oswalt (AE-1; AA-2); Little River
Marion Corydon Oursler (C); Newton
Roberta Lee Oursler (IJ); Circleville
Harold Weekley Overbey (Ag); Winfield
*Neil Welton Owen (CE); Fort Riley
Carol Lee Owsley (GS); Manhattan
Chester Anson Paige (VM); Aurora, Mo.
Clifford Arthur Palmquist (EE); Concordia
Ralph Berthard Parker (ChE); Broughton
*Sybil Maurine Parks (PSM); Parsons
Luella Gertrude Parrott (HE); Manhattan
Glen Frank Patton (VM); Cawker City
*Leonard William Patton (Ag); Newton
Eugene J. Peltier (CE; Concordia
Paul Clutter Perry (CE); Little River
Robert Bruce Perry (IC); Manhattan
Raymond Louis Peters (ME); Leavenworth
Vera Linnea Peterson (ApA); Gypsum
Elmer Petsch (ME); Waterville
Thomas Marshall Petty (IJ); Manhattan
Robert Emil Pfuetze (GS); Manhattan
Kenneth Dale Phelps (ME); Pratt
Marion Edgar Phillips (CE); Scott City
Robert Phillips, Jr. (Ag); Joplin, Mo.
Edna Irene Pieplow (HE); Hutchinson
Lorenza Dow Pierce (AE); Scranton
Lawrence Bryan Pilcher (PE); Glasco
Wallace Henderson Piper (ArE); Fort Scott
Dale Franklin Pocock (C); Atlanta
Lucile Posey (PE); Larned
Charles Edwin Powell (LG); Frankfort
Cornelia Jane Prather (C); Excelsior Springs, Mo.
Laurence Allen Pratt (C); Manhattan
John Jesse Province (AE); Manhattan
George Lee Pryor (C); Salina
Esther Clarabel Quenzer (HE); Bazine
Emerald Glenn Rader (CE); Severy
Emma Evelyn Rathbone (GS); Manhattan
Mary Josephine Ratliff (C); Manhattan
Pearl Rayback (Ar); Goodland
*Royce Sudendorf Rearwin (ME); Salina
Donald Reber (EE); Manhattan
Leonard Abbott Rees (Ag); Abilene
Earl Hubert Regnier (AA); Spearville
Holly Marks Reichart (C); Valley Falls
*Wilma Elizabeth Reinhardt (HE); Bison
Charlotte Louise Remick (PE); Manhattan
Harlan Cromer Rhodes (C); Manhattan
Laurence Walter Rice (CE); Parsons
Garfield Richard (IJ); Topeka
*James Munroe Richardson (AE); Port au Prince, Haiti
Helen Sophie Richt (VM); South Omaha, Neb.
*Jean Rickenbacker (IJ); Turlock, Cal.
Carl Jay Riggs (EE); Clayton
Eugene Ellis Rippey (Ar); Ellis
Joseph Alexander Ritchie (Ag); McLouth
Ivan Everett Roberson (C); Abilene
June Roberts (AE); Ford
*John Bissell Roberts (AA); Manhattan
Ralph Edwin Roderick (CE); Manhattan
Lyla Sophia Roepke (HE); Manhattan
Roland Cribner Rogler (AA); Manhattan
Ray Carl Rohrdanz (ChE); Bala
Karl William Root (C); Topeka
Theodore Joseph Rostocil (EE); Zurich
Clyde Eugene Row (IC-1; AA-2); Larned
Harold Thomas Rowland (AE); Clay Center
Dorothy B. Rude (HE); Great Bend
Anna Marie Rueschhoff (HE); Grinnell
*Henry Ruff (ME); Newton
Emily Olive Rumold (M); Herington
John Howard Rust (VM); Manhattan
*Roy Herman Saffle (ChE); Topeka
Victor Henry Saffry (AA); Alma
Ray Fred Sanders (PE); Manhattan
Loretta Maye Sawin (HE); Waterville
Mary Elizabeth Sayre (HE); Manhattan
Norma Harriet Sayre (HE); Ingalls
Karl Marion Scanlan (ME); Agra
John Seaton Schafer (ME); Del Norte, Colo.
Mary Ellen Schafer (HE); Manhattan
John Will Scherzinger (C); Ransom
Martha Louise Scheu (HE); Clay Center
Dallas Glenn Schmidt (EE); Lorraine
Fred F. Schmidt (VM); Junction City
J. Clifford Schmidt (CE); Syracuse
Leon Schmutz (ME); Chanute
Robert Allen Schober (Ar); Manhattan
*Dorothy May Schooler (HE); Kansas City, Mo.
Forrest Leroy Schooley (C); Hutchinson
Marlin Charles Schroder (GS); Olivet
Eunice Alvina Schroeter (HE); Ellenwood
Charles Henry Schruben (C); Stockton
LaVelle Robert Schruben (EE); Dresden
Nick John Schumacher (VM); Granville, Iowa
Henry John Schwartz (CE); Hanover
Marvin Rudolph Scranton (EE); Ulysses
Emily Alberta Seaburg (PSM); Manhattan
William Elden Seagraves (C); Topeka
Walter Bell Sexton (EE); Garden City
Floyd Henry Seyb (AA); Pretty Prairie
Kenneth Leroy Shay (CE); Miltonvale
*Lydia Marian Sellors (LA-1; LG-2); Fort Worth, Tex.
Ralph William Sexton (EE); Neodesha
Jerome Anthony Shaffer (GS); Simpson
Leslie Maurice Shaw (ME); Bloomington
Wyatt Ellett Shelor (AE); Dodge City
*Ayleen Hartzell Shenk (GS); Manhattan
Emma Frances Shepek (HE); Narka
Charles Laurence Shepherd (C); Harveyville
William Humphrey Shivel (EE); Galena
Oliver Wendell Shoup (AA); Udall
Virgil William Siebert (ME); Pretty Prairie
Galvesta May Siever (PE); Manhattan
Ruth Elizabeth Silkensen (PE); Dell Rapids, S. Dak.
Loula Marie Simmons (HE); Manhattan
Josephine Nell Skinner (HE); North Topeka
Kelso Wilton Slaughter (ME-1; C-2); Manhattan
Leland Milton Sloan (Ag); Leavenworth

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SOPHOMORES—*Continued.*

Frieda A. Sloop (HE); Lyndon
*Myrtle Marie Smedley (GS); Gretna
Elizabeth Ann Smerchek (HE); Cleburne
Joseph Daniel Smerchek (Ag); Garnett
Libbie Ann Smerchek (HE); Garnett
*Charles Robb Smith (Ar); McPherson
Daphyne Vivian Smith (HE); Manhattan
Frank Lynn Smith (IC); Manhattan
Gerald Francis Smith (C); Manhattan
Hobart Muir Smith (GS); Bentonville, Ark.
Mildred Marie Smith (HE); Manhattan
Walter Bruce Smith (ME); Hoisington
*Ralph Owen Snelling (Ag); West Point, Ind.
Paul Francis Snyder (EE); Elkhart
Edna Mae Socolofsky (C); Tampa
Lela Vale Sourk (PSM); Goff
John Henry Sours (EE); Manhattan
Jane Sparr (PE); Ellsworth
*James Grey Speer (ME); Olathe
Genevieve Miller Stanley (EE); Manhattan
Z. Roy Stanley (EE); Manhattan
Lewis Alvin Stapp (EE); Norton
*Quentin Jerome Stein (EE); Parsons
Elden Russell Steinsass (EE); Concordia
Laura Esabel Stepanek (C); Cuba
Alvin Howard Stephenson (Ag); Clements
Dorothy Claire Stevens (GS); Medicine Lodge
Charles William Stewart (AE); Hunter
*Wilbur Charles Stewart (ME); Harland
Russell Stoker (CE); Morrowville
*Geoffery Donald Stoltz (ME); El Dorado
Mona Valeria Stoops (GS); Bellaire
Fred Storz (VM); Kansas City
*Eugene Bristol Stotts (EE); Manhattan
Ruby Roberta Stover (GS); Kansas City
Edith Elizabeth Streeter (GS); Wakefield
Ione Strickland (GS); Manhattan
Ida Sarah Studt (PSM); Glasco
Harold Howard Stump (AA); Blue Rapids
Harold Leroy Sturdevant (ME); Chanute
Karl J. Svaty (CE); Ellsworth
*Orva Lucille Swafford (HE); Cullison
Santos Dumont Swancy (EE); Kansas City
Price Kenneth Swartz (AA); Everest
*Roland Harold Swenson (CE); Cimarron
*Edward Henry Tabb (CE); Oil Hill
Harry Joseph Tannehill (Ag); Broughton
Elmer Alexander Taylor (AE); Solomon
Mark Mowell Taylor (Ag); Harveyville
Marvin Howard Taylor (EE); Downs
Lewis Whitney Teall (IC-1; LG-2); Larned
John D. Tedrow (C); Medicine Lodge
Helen Theodora Teichgraeber (HE); Marquette
George Baldridge Telford (C); Manhattan
Floyd Leonard Tempero (CE); Broughton
John Franklin Thackrey (IJ); Manhattan
Howard Irwin Thaller (VM); Manhattan
Ruth Thomas (M); Baxter Springs
Chester Gordon Thompson (Ag); Randolph
William Sims Thompson (EE); Topeka
Willis Alexander Thomson (VM); McCune
Edith Catherine Thummel (IC); Leavenworth
Lovell Thurow (AE-1; Ag-2); Macksville
Mary Louise Thurow (M); Macksville
Vernell Ellsworth Thurston (EE); Delphos
John Herman Tietze (CE); Kansas City
Alvin Paul Timmons (ME-1; AA-2); Geneseo
Lee Toadvine (AA); Dighton
Mayme Thelma Toburen (ApA); Cleburne
Irene Lillice Todd (HE); Topeka
Corabelle Tolin (GS); Havensville
Helen Tolin (PE); Havensville
William Norton Tomlinson (ChE); Heber Springs, Ark.
Elta Marie Tompkins (HE); Byers
T. Kyle Tomson (CE); Dover
Gladys Clara Tonn (PSM); Haven
Joseph Edward Torkelson (PE); Everest
Ruth Sarah Tracewell (HE); Lincoln
Allen Tucker (C); Ottawa
Dell William Turner (EE); Holton
Roland F. Turner (EE); Manhattan
Ernest Julius Underwood (CE); Topeka
*Howard A. Van Doren (ME); El Dorado
Clea Maurine Van Meter (ApA); Ada
Arthur Frederick Van Meveren (VM); Orange City, Iowa
Fred Lewis Van Scoyoc (ME); Oak Hill
*Christine Eloise Vaughan (HE); Scott City
Beatrice Petrinella Vaught (HE); Plains
Robert Vernon Vaupel (GS-1); Manhattan
William Dale Vawter (ME); Liberty
Oliver Rodger Vignery (C); Concordia
Hadley Herman Voights (AA); Kansas City
Georgie Frances Voshell (HE); Bucklin
Lloyd Loomis Vrooman (ArE); Independence
Leo Conrad Wacker (EE); Leavenworth
Henry Castle Walbridge (AA); Russell
*Dent McCalmont Walker (GS); Anthony
Fred Henry Walker, Jr. (Ag); Salem, Mass.
Helen Frances Walker (IJ); Manhattan
Mary Catherine Walker (HE); Manhattan
*Paul Benson Walker (Ar); Wichita
Cecil Newton Walter (CE); Kingman
Virgil Howard Walters (ME); Centralia
*John Edward Wampler (AA); Garden City
Doris Aileen Wapler (GS); Wakefield
Charles Fayette Ward (GS); Pratt
Louise Ware (HE); Fairbury, Neb.
Larry Oneil Washington (ArE); Kensington
Alva S. Watson (VM); Oakley
*Ramona Ernestine Weddle (GS-1; ApA-2); Lindsborg
Russell True Weirick (Ar); Olathe
Harold Rowe Weller (PE); Olathe
*Ethel Sue Wells (GS); Manhattan
Eugene L. Wells (EE); Meriden
Everett Homer Wells (ChE); Turon
Ivan Lee Welty (CE); Hill City
Dick Estes West (EE); Hartford
Elsie Mae West (GS); Manhattan
Sydney Francis Weybrew (EE); Wamego
Harry Clifton White (ME); Kansas City
*Marcia Jane White (C); Kansas City, Mo.
Delta Nadine Whitmore (ApA); Manhattan
Herbert Justice Whitney (ME); Utica
Wayne Clark Whitney (Ag); St. George
Max Allen Wickham (C); Manhattan
Maxine Wickham (PE); Manhattan
George Samuel Wiggins (PE); Lyons
Leon Clifford Wilcoxen (ArE); Ford
Ernest Sherman Wild (PE); Wilsey
George Frank Wiley (ME); Chanute
*Otis Earl Wiley (EE); Manhattan
Harold Roy Williams (CE); Valley Falls
William Everett Williams (ME); Neodesha
*Lois A. Williamson (HE); Manhattan
*Clare Wilson (GS-1; HE-2); Onaga
Robert Jerome Wilson (C); Manhattan
Claude Chester Winchell (ME-1; C-2); Winfield
Florence Thelma Wineinger (HE); Norwich
*Estelle Winters (GS); Onaga
Jo Marie Wise (PSM); Manhattan

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SOPHOMORES—*Concluded.*

Eleanor Womer (GS); Agra
John Dewey Woodruff (CE); Dodge City
Alfred Eugene Wooster (EE); Erie
*Harry Bush Wooten (AE); Liberal
William Worthington (CE); Turner
Walter Irvin Wright (C); Larned
Helen Katherine Wyant (PE); Topeka
Fred George Wyatt (ArE); Kansas City
*Harold Everett Yenzer (CE); Saffordville
Mary Irene Yoder (GS); Manhattan
John Dean Youle (Ag); Winfield
George William Young (C); Paola
Laurence Walter Younkin (GS); Wakefield
Della Evangeline Zeigler (HE); Abilene
Iva May Zimmerman (GS); Simpson
Bertha Annetta Zimmers (ApA); Hiawatha
Catherine Eva Zink (HE); Lincoln
Harold Anderson Zirkle (EE); Berryton

FRESHMEN

Erwin Abmeyer (Ag); Grantville
*Cirilo Lagmay Adam (Ag); Sison, P. I.
*Lola Mae Adams (HE); Dodge City
*Leonard Rusco Adler (EE); Goddard
Max Bruce Ainsworth (Ag); St. John
*Clifford Lankford Alcorn (EE); Ionia
*Pearl Mareta Alexander (HE); Norcatur
*Robert Joseph Alexander (ArE); Independence, Mo.
*Gayle Derwood Allen (VM); Shelton, Neb.
*Velma Dorothy Allen (HE); Liberty
*Carl Dwight Allmon (ME); Kingsdown
*Juliana Amos (M); Manhattan
*Junior Donald Amos (CE); Latimer
*Bernice William Anderson (VM); Springfield, Mo.
*Clarence Hobert Anderson (AA); Richland
*Edna Evelyn Anderson (IJ); Wichita
*Leslie Elvira Anderson (C); Concordia
*Marion Charles Anderson (GS); Moscow
*Olin Alvin Anderson (VM); Reynolds, Neb.
*Dosie Lee Andrews (HE); Kansas City
*Homer Derrington Anshutz (EE); Healy
*Lawrence Alfred Antenen (C); Bazine
*Nelle Geraldine Arbuthnot (ApA; Lake Alfred, Fla.
*Everett Asjes, Jr. (LG); Kansas City, Mo.
*Clarence William Ater (Ag); Fort Scott
*Katherine Burt Avery (Ar); Ashland
*Thomas Burt Avery (Ag); Coldwater
*Lois Louise Avis (HE); Fostoria
*Helen Evelyn Axelton (HE&N); Manhattan
*Fred Ernest Ayers (Ag); Estancia, N. Mex.
Guy William Ayers (ME); Pratt
*James Richard Ayres (C); Greenleaf
Mark J. Babb (C); Lebanon
*Ruth Maxine Babbitt (HE); Miltonvale
*Lewis Harold Bacon (Ag); Sylvan Grove
*Margaret May Bacon (Ar); Wellington
*Albert Kilian Bader (ArE); Junction City
*Myron Albert Bailey (ME); Syracuse
William A. Baird (Ag); Topeka
*Kenneth Baker (EE); Harper
*Merle Ivan Baker (PE); Winfield
*Janette Ina Ballagh (HE); Oskaloosa
*Lu Roy Ballard (CE); Almena
*Dale Everett Barkalow (EE); Burden
Loraine Metta Barrett (PE); Topeka
*Albert Lee Barton (C); Filer, Idaho
*Robert Laverne Barton (C); Filer, Idaho
*Arthur Paul Baxter (PE); Little River
*Don Francis Beach (ME); Chanute
*Glen Gerald Beal (Ag); Eureka
Leslie Richard Beard (ArE-1; C-2); McPherson
*Carl Crawford Beeson (GS); Wamego
*Kenneth Gordon Behrends (ME); Randall
*Don Wilton Belisle (EE); Miltonvale
*Frances Elaine Bell (HE); Marysville
*Grace Anna Bell (M); Beverly
*Hayden Ellwood Bemis (C); McPherson
*Kenneth Urbon Benjamin (EE); Deerfield
Newton Lee Bennett (CE); Norton
*Herman Theodore Beninga (GS); Bala
*Martha Bruik Benninga (GS); Bala
Kenneth Bentz (C); Peabody
*Dale Berger (ME); Burlingame
*Gale Berger (Ar); Burlingame
*Robert Charles Berger (AA); Douglass
*Robert Treat Berry (Ag); Atchison
*J. Ralph Bert (LA); Abilene
*Robert Charles Besler (ME); Manhattan
*Joe Anthony Bieberly (IJ); Spearville
*Margaret Doreen Bierman (HE); Kensington
Wayne Gordon Billings (Ag); Jetmore
*Dale Lafe Bivin (VM); Glasco
*Loren Cleatus Blackburn (VM); Norman, Neb.
*Blanche Louise Blair (GS); Manhattan
*Fenton William Blake (PE); Glasco
*Leslie Marion Blake (GS); Glasco
*Hazle Florence Bland (HE); Garden City
*Elmer Red Blasdel (CE); Belle Plaine
*John Thomas Blasdel (ME-1; Ag-2); Sylvia
*Douglass Arthur Bly (EE); Pierceville
Edith Irene Bockenstette (C); Sabetha
*Helen Ruth Bocock (C); Wilsey
*John William Bogart (C); Tescott
*Raymond Arthur Boles (Ag); Liberal
*Thomas Leonard Bond (VM); Cumberland, Iowa
*Forrest Edmund Booth (Ag); Fairview
*Perle Lewis Bottger (ChE); Belleville
*Patricia Capsey Boult (C); Manhattan
Josephine Alberta Bouse (HE); Ottawa
*Mildred Margaret Bower (HE); Norton
*Fred Virgil Bowles (Ag); Walnut
*Donald Houts Bowman (AgE); Manhattan
*George William Boys (EE); Linwood
*Alice Marguerite Bozarth (M); Lenora
*Ferrell McClellan Bozarth (AgE); Lenora
Forest Clifford Braden (C); Eureka
*Marjorie Vera Bradley (PE); Manhattan
*Doris Mae Bramwell (PSM); Concordia
*Mabel Rebeca Brasche (HE); Volland
*Fred William Braun (EE); Galena
Merle Dutton Breeding (VM); Herkimer
*William Raymond Brenner (C); Manhattan
*Veva May Brewer (IJ); Wichita
*Helen Bernadine Bright (PSM); Little River
*Robert Clyde Briix (EE); White City
*Joseph Emil Brinkman (EE); Americus
*Carrol Wright Brooks (PE); Manhattan
*Bartos Burton Brown (AA); Osborne
*Cecil Gaylord Brown (ME); Herington
*Charles Gabriel Brown (Ag); Osborne
*Edna Brown (ApA); Fort Scott
*Homer Ryland Brown (EE); El Dorado
*Kenneth Sanford Brown (CE); Lewis
*Maurice Emerson Brown (ME); Herington
*Richard Carlton Brown (ArE); Hill City
*Rita Brown (PE); Edmond
*Robert William Brown (Ag); Fall River

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FRESHMEN—*Continued.*

*Russell Earnest Brown (Ag); Ashland
*George Harold Brummer (C); Tipton
*Allen Vincent Brunke (VM); Campbell, Neb.
Ralph Young Buchanan (CE); Marquette
*Lester Ramond Buell (GS); Nickerson
*William Allen Buell (Ag); Topeka
Marvin Almanza Burd (GS); Clyde
*David Minford Burgess (C); Oswego
*Alva Neill Burns (Ag); North Topeka
Bun William Burnside (Ag); Garden City
Edith Marian Burt (HE); Manhattan
Vester Marion Butts (ME); Norton
*Earle Conrad Byers (ME); Manhattan
*Henry Rudolph Byers (CE); Hoxie
*Franklin Alfred Cain (ME-1; PE-2); Chanute
Olyn Danford Calhoon (ME); Manhattan
Don Thomas Campbell (CE); Topeka
*Marcine Dorothy Campbell (PE); Hollis
*Dorothy Ruth Canham (PE); Kansas City, Mo.
*Cyril Anthony Carberry (VM); Buffalo, N. Y.
*Carrol Obert Carlgren (AgE); Scandia
*Cecelia Barbara Carlson (HE); Manhattan
*Lyle Carmichael (C); Manhattan
*Jack Carr (ArE); Salina
*Glen Allen Carriker (EE); Kansas City, Mo.
*Nelda Marian Carson (IJ); Morganville
*Albert Earl Carter (ME); Ulysses
*Merrill Levern Carter (ChE); Smith Center
*Leroy William Carver (CE); Junction City
*Fairy Kathryne Casey (GS-1; HE-2); Glasco
*Francis Willard Castillo (Ag); McCune
*Gerald Arthur Caufield (GS); McLouth
*Joseph Leo Cavanaugh (VM); Esbon
Merle Vernon Chase (1C-1; VM-2); Manhattan
*Charlotte Maude Chatterton (HE); Admire
*Willard Martin Cheney (EE); Abilene
Emerson Dwight Chilcott (AA); Manhattan
Henry Chiles (Ag); Silver Lake
*Lester Raymond Chilson (Ag); Oberlin
*Loraine Chrisman (C); Hutchinson
*Blanch Lucille Christensen (HE); Bushong
*Eunice Sarah Christenson (HE); Olsburg
*Donald Christy (AE); Scott City
*Dorothy Mabel Christy (HE); Scott City
*Mary Lou Clark (PE); Burr Oak
Henry Louis Clarke (EE); Troy
*Myron Grover Clausen (Ag); Alton
*Harry Donald Clawson (VM); Hartford
*Carl Andrew Cleek (ME); Olathe
*Herbert William Clutter (Ag); Larned
*Allene Cochrane (C); Manhattan
*John Grover Coe (ME); Council Grove
*Raymond Joseph Cohorst (Ag); Marysville
Laurence Len Cole (PE); Cedar
Robert Cole (EE); Wetmore
*Lea Rae Collett (PSB&O); Manhattan
*Elery Lowe Collins (Ag); Fontana
*William Vaughn Combs (Ag); Linn
*Ida Emma Comstock (C); Fort Scott
*Grace Caroline Conger (PSM); Ionia
*Wilmer I. Conger (VM); Ionia
*Ralph Martin Conrad (IC); Manhattan
*Paul Wesley Converse (GS); Pawnee Rock
Ned Dennis Conrow (Ag); Manhattan
*Dorothy Louise Conwell (PE); Potwin
*Helen Beulah Cook (GS); Bucklin
Herbert Derwood Cool (C); Manhattan
*Henry Charles Cooley (CE); Stockton
*John Robert Cooper (Ag); Humboldt, Neb.
*Bessie Maybelle Copper (GS); McDonald
*James Lamar Corbin (Ag); Washington
*William Law Corkill (GS); Dover
*Manly Everett Cornwell (Ag); Bushong
*Earl Clark Coulter (Ag); Willis
*David Perry Course (PE); Abilene
*Gertrude Alice Cowdery (GS); Lyons
*Verne Willard Cowell (GS); Fairbury, Neb.
*Joel Frank Cox (Ag); Goodrich
Donald K. Coy (EE); Deerfield
*Glenn W. Crabb (ME); Colby
*Robert Norman Craft (Ag); Latham
*Ronald Kenneth Cram (PE); Bird City
*Audrey Louvina Cramer (HE); Webber
*Edward Richmond Crans (EE-1; C-2); Lenora
*Dwight Edward Crawford (ME); Dodge City
*Mary Elizabeth Crawford (HE); Madison
Lowell Creighton (GS); Manhattan
*Edward Everett Criner (C); Wamego
Marian Carolyn Cross (IJ); Manhattan
*Stanley Emil Cummings (C); Coldwater
*Gerard Vincent Cunningham (C); Wellington
*Isabel Clara Cunningham (IJ); Manhattan
Burdell E. Curl (EE); Bartlett
*Esther Ruth Curry (HE); St. Francis
*Ray Curry (VM); Selma
*Francis Elizabeth Curtis (GS); Frankfort
*William Edward Curtis (C); Wichita
James Riley Custer (LA); Manhattan
Harold Amos Daily (Ag); Waverly
Richard B. Dale (Ag); Stafford
*James Chester Dalgard (CE); Manhattan
*Lloyd Henry Dalton (C); Fort Scott
*Sydney Glen Dalton (C); Dodge City
*Earl Clifton Daniels (C); Westfall
*Laurence Robert Daniels (CE-1; Ag-2); Haigler, Neb.
*Earl Anstem Davidson (Ar-1; C-2); Cimarron
*Floyd Ewing Davidson (Ag); Madison
*Lysle A. Davidson (EE); Bucklin
*Paul Hughes Davies (Ag); Delphos
*Marvin David Davis (Ag); Rossville
*William DeOzro Davis, Jr. (ChE); McPherson
*Milbern Harry Davison (CE); Concordia
*Myron Winterstein DeGeer (EE); Lake City
*Vaughn Eugene DeGeer (AE); Lake City
*Salvador Baldonado Della (Ag); Santa Maria, P. I.
Orville Frederick Denton (Ag); Denton
*Bertus Johannas Deters (GS); Cawker City
*Leonard Idenire Devore (IC); Narka
*Mary Helen Dick (GS); Little River
*Hilma Nadine Dickinson (HE); Udall
*Oliver Henry Dilsaver (EE); Kensington
Louis James Dittemore (CE); Manhattan
*Leo Bernard Dixon (EE); Severy
*Louis Elmer Dobson (LA); Manhattan
*LaVerne Hamilton Dodd (EE); Parker
William Lovejoy Dole (CE); Almena
*Alfred Loyd Dorman (ME); Lucas
*Calvin Elmer Dornberger (Ag); Talmage
Devere Delos Doty (AA); Cunningham
*Sandy Doubleday (GS); Selden
*Orva Harrison Douglas, Jr. (ME); Courtland
*Abbie Kay Downey (ApA); Manhattan
*Avis A. Downey (GS); Manhattan
*Maurice Edgar Downing (AA); Deerfield
*Melba Mae Doyle (HE); Eskridge
Lowell Miles Drake (C); Natoma
*Howard A. Drew (EE); Rolla

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FRESHMEN—*Continued.*

*James Drew (EE); Rolla
*Wallace Reed Dudley (EE); Goodland
*Harold Arthur Duffy (AE); Vermillion
*Maurice Leland DuMars (IJ); Agra
*George Wallace Duncan (Ar); Topeka
*Laverne John Duncan (Ag); Bushong
Kenneth Wayne Dunnington (ME); Elmont
*Grand Canapa Duquling (VM); Concepcian, P. I.
*Florence Durham (HE); Randall
*Glenn Wane Durrell (ME); Bartlesville, Okla.
*Max Vernon Dyerly (C); Pratt
*Richard Francis Eads (Ag); Cullison
*Robert Morris Eakins (CE); Topeka
*Louis Bion Earle (VM); Washington
*Wilma Annabelle Eastman (HE & N); Whiting
*Charles Kesler Ebert (ChE); Salina
*Glenys Edna Ebright (HE); Lyons
*John Lawrence Edie (ME-1; C-2); Merriam
*Barbara Anne Ehrman (HE); Howard
*Margaret Virginia Eiler (C); Oberlin
*Lester Clayton Ekberg (Ag); Alma, Neb.
*Kenneth Joseph Ekdahl (C); Manhattan
*William Mervan Elliott (VM); Emporia
*Gene Ellis (CE); Council Grove
Harold Ward Ellis (Ag); Coldwater
*Frances Evlynn Ellsworth (IJ); Formoso
Gerald Franklin Ely (EE); Spivey
*Clyde Emmerson Emel (Ag); Winona
*Laurence Ivan Engdahl (CE); Marquette
*Darwin Russell Enochs (ArE); Randolph
*James Russell Epperson (ME); Hutchinson
*George Erdtmann (EE); Ellsworth
*Andrew Brian Erhart (Ag); Timken
*Reuben Carl Erwin (EE); Kansas City, Mo.
*Deward Hilton Estes (ME); Topeka
*Charles William Evans, Jr. (EE); Washington
*Charles Vern Everett (ME); Longford
William Exline, Jr. (C); Kipp
*Robert Clifton Eychner (ChE); Jewell
*Pearl Allene Fanning (IJ); Holton
*John Allen Farnham (C); Abilene
*Glen Orlin Farrar (ME); Burlingame
Edith A. Fear (HE & N); Clay Center
*Verla Lucile Feldhausen (HE); Frankfort
*Glenn David Ferguson (EE); Gridley
*John M. Ferguson (EE); Bazine
*Burton Carl Filken (Ag); Wilsey
*Elmer Fred Finke (VM); Buckner, Mo.
*Mabel Rosalind Fisher (HE); Mahaska
*Charles Emil Fisher (Ag); Cuba
*Francis Eugene Fisher (C); Cedarvale
*Leonice Marie Fisher (HE); Fort Scott
*Vera Marie Fisher (HE); Fellsburg
*Willa Genevieve Fiser (HE); Bennington
*Hazel Dee Fix (HE); Bird City
*Richard Winston Fleming (C); Manhattan
*Fred Franklin Fletcher (AA); Bucklin
*Frances Ann Fockele (PSM); LeRoy
*Thalia Follmer (GS); Buffalo
*Gordon Edward Foltz (C); Belle Plaine
*Maxine Elizabeth Fones (ApA); Kansas City, Mo.
*Kenneth Edward Foote (VM); Chase
*Hazel Vivian Forbes (PE); Eureka
*Gerald James Ford (CE-1; C-2); Solomon
*LaVare June Fossnight (C-1; HE-2); Ottawa
Joseph Freman Foster (Ag); Topeka
*Glenn Sylvester Fox (Ag); Rozel
*Sidney Lorenz Franz (AgE-1; Ag-2); Soldier
*Marian Frances Freedlun (Ar); Chanute
*Marvin William Freeland (EE); Effingham
*Geraldine Mabel Freeman (HE); Hamilton
*Beulah May Frey (HE); Elmdale
*William Robert Friend (ArE); Randall
*Wilbur Clyde Frisbie (IC); Bonner Springs
*Theodora Fritze (HE &N); Strong City
*Dwight Dalbey Fulkerson (AE); Jerseyville, Ill.
*Elcye Olive Gaddie (HE); Wellington
*Frank Gaddie, Jr. (Ag); Bazaar
Harold Henry Gaines (ArE); Peabody
*Harry Winston Ganstrom (Ar); Hollis
*Harry Bertram Garard (Ag); Olivet
Eugene Louis Gardiner (Ag); Oxford
George Donald Garner (C); Hiawatha
*Robert Elmer Garvin (Ag); Ogden
*Clarence Henry Gatch (C); Hope
Ward A. Gibbs (C); Topeka
*Wayne Virgil Gibbs (AA); Gem
Walter Coleridge Gill (VM); St. Johns, B. W. I.
*Margaret Flora Gillespie (HE); Harper
*Harriet Cordilla Gilson (GS); Manhattan
*Garold Elton Ginder (IC); Dodge City
*John Kenneth Glasscock (CE); Moline
*Charles Kenneth Glenn (AH&V); Sharon Springs
*Nona Bernice Goff (GS); Bucklin
William Rollie Gohn (ME); Protection
*Jack Going (ME); Topeka
*Emery Atwood Good (PSB&O); Manhattan
*Parker Bryant Goodman (ArE); Independence, Mo.
*Linn Alvin Gore (ME); Bushton
*Elmer Ellsworth Gorman (VM); Creston, Neb.
*Gladys Graham (GS); Emporia
*James Delbert Gray (IJ); Randall
*Dorothy Elizabeth Green (HE); Whiting
*Ernest Warren Green (EE); Concordia
*Gilbert Dale Green (C); Norton
Rockwell N. Greene (Ag); Lincoln
*Ruth Marjorie Greene (PE); Beverly
*Howard Leslie Gregory (Ag); Lawrence
*Arthur Louis Gribben (AE); Gypsum
*Paul Wilson Griffith (Ag); Edmond
Wava Eula Grigsby (HE); Attica
*Arthur Groesbeck, Jr. (C); Manhattan
*Richard Leo Groody (C); Washington
*Rose Katherine Grossardt (PSM); Claflin
*Ida Natalie Groves (HE); McPherson
*William Upton Guerrant (C); Manhattan
*Robert Henry Gump (VM); Abilene
*Maurice Lee Gunn (ME); Great Bend
*Frank Wilson Gwinn (ME); Falls City, Neb.
*Mary Sue Haas (IJ); Arrington
*William Thomas Hacker (Ag); Medford, Okla.
*Dorothy Hadsell (IJ); Manhattan
*Charles Adrian Hageman (Ag); White Cloud
*William Hagstrom, Jr. (EE-1; C-2); Lindsborg
*Milo Franklin Hahn (C); Clay Center
*Alice Lucille Hakl (HE); Stanton, Neb.
John Lowell Hakl (VM); Stanton, Neb.
*Jack Fredrich Hall (C); Council Grove
*Mabel Lillian Hall (GS); Kensington
Thelma Lucille Hall (HE); Utopia
*Bernard Eugene Hammond (EE); Salina
*Leo Jeremiah Hammond (GS); Manhattan
Marvin Harvey Hammond (C); Great Bend
*Loren Allen Hammond (GS); Great Bend
*John Hamon (Ag); Valley Falls
John Edward Haney (C); Topeka
*Oran Andrew Harger (EE); Oberlin
*Hal Charles Harned (GS); Manhattan
*Kermit Harris (EE); Peabody
*Helen Hettie Harrision (HE); Burden
*George Bertrand Harrop (C); Manhattan

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FRESHMEN—*Continued.*

Edward Lynn Hartley (AA); Manhattan
*Frederick Baker Hartman (Ar); Horton
*Zonald Clark Hartman (ChE); Lyons
*John Craton Hartung (PSB&O); Parsons
*Mary Elizabeth Harvey (C); Harveyville
*Harry Larry Hasler (PE); El Dorado
*Hoyt Vincent Hatfield (C); Belle Plaine
*Ruth Esther Haughawont (PSM); Onaga
*Irving Bennett Hawk (Ag); Effingham
*George William Hawks (PE); Holton
*Donald Quentin Haws (PE); McPherson
*Eugene Harold Heck (VM); Carthage, Mo.
*Harold Ray Heckendorn (EE); Cedar Point
*Wilbur Gould Heer (ME); Manhattan
*Hubert Raymond Hein (Ag); Washington
*David Allen Henley (AA); Eureka
*Earl Claud Henry (ME); Chanute
*Samuel Wilson Hepworth (GS); Kansas City, Mo.
*Lowell Vance Hermon (ArE); Dighton
*Max Powell Hickman (Ag-1; FSC-2); Kirwin
*Ruth Dorothy Hickok (HE); Ulysses
*Charline Vee Hill (ApA); Horton
Joseph Glenn Hilyard (IJ); Severy
*Keith Harry Hinchsliff (Ar); Kensington
*Thomas Clark Hinkle (Ag); Carbondale
*Newton Lowell Hinkson (ME); Halstead
*Lucy Alice Hodgson (GS); Little River
*Mable Virginia Hodgson (HE); Little River
*Robert Milton Hodgson (Ag); Little River
*Rexford Daniel Hodler (AE); Beloit
*Lawrence Chester Hoener (ME); Preston
*Marlin Shafer Hoffman (GS); Wilsey
*Grace Dawson Hofsess (LA); Partridge
*John Collins Hofsess (CE-1; PE-2); Mexico, Mo.
*Leor Virgil Hogg (EE); Manhattan
*C. Raymond Hoglund (Ag); McPherson
*Glen Arnold Hoglund (CE); Miller
*Hilton Delas Hollembeck (Ag); Ingalls
*Earl Finley Hollenshead (C); Neosho
*Dorothy Louise Holm (HE); Dwight
*Harvey Collins Holm (Ag); Dwight
*Donald Max Holmes (EE); Augusta
Horace Alvin Holmes (IJ); Eureka
*Mary Holton (HE); Manhattan
*George Leslie Honstead (GS); Waterville
*John William Hood (CE); Washington
*Katherine Virginia Hooven (C); Westmoreland
*Orville Wareham Hopkins (EE); Augusta
*Ralph Horchem (C); Ransom
*Karl Frederick Horn (ArE); Russell
*LaVona Ruth Horner (HE); Fellsburg
*VerLee Ona Hotz (C); Dodge City
*Jack Wesley Householder (C); Clay Center
*Mary Caroline Houser (IJ); Wooster, Ohio
*Philip Clay Houston (AA); Elgin
*Claude Henry Houtz (Ag); Abilene
*Clair Louis Howard (CE); Clyde
*Darrel Ervin Hubbard (C); Minneapolis
*Gail Leonard Hubbell (Ag); Bellefont
*Clarence Preston Hubbs (ME); Manhattan
*William Ben Hudelson (EE); Attica
*Claude Hudson (VM); Gothenburg, Neb.
Harlow Kenyon Hudson (VM); Manhattan
*Raymond Hickman Hughes (GS); Manhattan
*John Robert Hughey (CE); Junction City
*Imogene Muriel Hugunin (C); Kirwin
*Boyd Henry Hull (Ar); Concordia
*Walter George Hume (Ar); Arkansas City
*Harry McDowell Hunt (C); Chillicothe, Mo.
James William Hunter (Ag); Irving
*John Mark Hurd (VM); Pawnee, Neb.
*Howard Kendal Hynes (EE); Arlington
*Sue Washington Irons (HE); Winter Haven, Fla.
*George Raleigh Irvine (AE); Stafford
*Frank Arthur Irwin (Ar); Manhattan
*Una Juanita Irwin (HE); Waterville
*William Francis Irwin (ArE-1; VM-2); Wilsey
*Conley Gordon Isenberg (VM); Manhattan
*Louta Lucille Ives (HE-1; IJ-2); Mount Hope
*Frances Marie Jack (PSM); Russell
*Roberta Amelia Jack (PE-1; ApA-2); Russell
Arlie Virgil Jackson (AE); Lenora
*Warren Cowan Jackson (ME); Nickerson
*Frank Jacobs (ME); Quenemo
*Jack Edwards Jacobsen (EE); Attica
*Verland Thomas Jahnke (GS); Woodbine
*Harry Douglas James (EE); Rossville
*Hazle Marie James (ApA); New England, N. Dak.
Olive Catharine James (HE); Wetmore
*Ralph Wilson James (EE); Rossville
*Victor Harold Jefferies (ArE); Kiowa
*Paul William Jenicek (AE); Holyrood
*Isabel Betty Jenkins (HE); Holton
*Mark Edwin Jennings (Ag); Eskridge
*Rex Mortimer Jennings (C); Hoyt
*Allan Francis Johnson (EE); Manhattan
*Arvid Theodore Johnson (Ag); Miami, Fla.
*Charles Edward Johnson (Ag-1; PE-2); Belpre
*Irving Mauritz Johnson (EE); Smolan
Jay Bernard Johnson (C); Olsburg
*Kathryn J. Johnson (GS); Abilene
*Leora Caroline Johnson (HE); Brookville
*Myrtle Helena Johnson (GS); Concordia
*Raymond Arthur Johnson (Ag); Yates Center
Wendell Wilbur Johnson (C); Axtell
*Jack Arnold Johnston (C); Junction City
*William Asa Joines (IJ); Clyde
Walter Newman Jolley (CE); Manhattan
*Harold D. Jones (GS); Augusta
*Lawrence Delmer Jones (GS); Manhattan
*Lenore Elizabeth Jones (PE); Chanute
*Walter James Jones (ME); El Dorado
*Helen Shell Joseph (HE); Kirwin
Richard Hulett Jurden (VM); Manhattan
*Isabelle Ruth Kaine (ApA); Wamego
*Earle Laurance Karr (C); Troy
*Charles Manuel Kastner (VM); Manhattan
*D'Vere Kay (EE-1; PSB&O-2); Morland
*Mary Elizabeth Keegan (HE-1; GS-2); Great Bend
*Sylvester Harwood Keller (AE); Newton
James Vincent Kelley (Ag); Chapman
*Louis Arthur Kelly (Ag); Manhattan
*Elna Ralph Kennedy (VM); Chase
*Charles Harry Kent (AE); Wakefield
*Earle Lewis Kent (EE); Carthage, Mo.
*Wilbur Warren Kent (ME); Beloit
*Dorothy Jane Kern (HE); Leavenworth
*John Elwood Kerr (Ag); Craft
*Joel Platt Kesler (EE); Overbrook
*Howard Luther Kester (VM); Cottonwood Falls
Yum Sur Kim (Ag); Shanghai, China
Jay Grant Kimball (IJ); Manhattan
*Inez Vera King (PE); Junction City
*Thomas Clair King (GS); Oakley
*Carl Lawrence Kirk (C); Newton
William Harold Kirkpatrick (GS); Webber
*Lucia Mabel Kirkwood (HE); Leavenworth
*Maurice Raymond Kirkwood (Ag); Natoma

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FRESHMEN—*Continued.*

*Frank Edward Kiser (CE); El Dorado
*Robert Hayman Kissick (ME); Kansas City
*Darwin Bruce Kissinger (CE); Beloit
*William George Klein (ChE); Halstead
*Jay B. Kline (ChE); Dodge City
*Edwin Knapp (EE); Winona
*Clovis Lee Roy Knecht (GS); Leona
*Everett Carl Kniestadt (Ag); Home
*Zora Lee Knox (HE); Emporia
*James Douglass Kohler (CE); Herington
*Velma May Koontz (C); Jetmore
*Ada Leah Krause (GS); Marysville
*Adin Elmer Krause (ME); Hutchinson
*Edith Emma Krause (GS); Marysville
*Lilly Anna Krause (GS); Marysville
*Louise Frances Krauss (HE-1; IJ-2); Topeka
Waldo Ottive Kretzmeier (Ar); Manhattan
*Harold LeRoy Kugler (Ag); Abilene
Vaughn Lacey (PE); Sharon Springs
*Wilbur Eugene Laird (CE); Wichita
*Russell Laman (GS); Rice
*Kenneth George Lancaster (ME); Junction City
*Robert Francis Lang (PE); Denver, Colo.
*Roger Andrew Lang (GS-1; Ag-2); Denver, Colo.
*Gladys Carrie Langdon (GS); Lebanon
*Merriam Marvin Langmade (IJ); Oberlin
*Melvin Earl Lantz (EE); Madison
Ralph Vernon Larkin (Ag); Admire
*Loyt Leland Lathrop (EE); Burlington
*Raymond Price Latimer (Ag); Topeka
*Harry Edward Lattin (EE); Gypsum
*Irvin Dale Lawman (EE); Severy
*Beulah Mae Leach (HE); Bird City
*Bernard Roy Leak (AA); Colby
Lawrence Cecil Learned (Ag); Plevna
*Raymond Dale Lee (EE); Pratt
*Irvin Arthur Lehman (ME); Halstead
*Lorraine Lucille Lemon (HE); Douglass
*Norvelle Nielson Lemon (EE-1; IJ-2); Douglass
*Berney Hallonquist Lesher (CE); Dodge City
*N. Clyde Lewis (PE); Topeka
Charles M. Light (Ag); Liberal
Eugene Michael Lill (CE); Mount Hope
*Theodore Russell Lilyhorn (GS); Bertrand, Neb.
*Russell Allen Lindley (Ag); Hill City
*William Hautecoyne Lindley (VM); Vicksburg, Miss.
*Frank J. Linenberger (EE); Victoria
*Dorothy Edna Linge (HE); Topeka
*Claude Earl Livengood (AE); Kinsley
*Urban Monroe Lodge (ChE); Wellington
*Lillian Marie Lohmeyer (PSM); Bern
*Clark Henderson Long (ME); Haddam
Willard Shull Longabach (CE); Wakarusa
Cled Dempsey Loper (ME); Dewey, Okla.
*Hazen Clyde Love (Ag); Wilsey
*Charles Herbert Lovitt (Ag); Centralia
*Gerald Lowell (IC); Hollis
*Otto Walter Ludloff (VM); Honolulu, T. H.
*Henry Norbert Luebeke (EE); Marysville
*Rhodoric William Lumb (GS); Wakefield
*Virgil Ferderand Lundberg (EE); Falun
Ruth Devouta Lutz (HE); Manhattan
*Margaret Anna Lynch (HE); Hutchinson
*Alvena McArm (HE); Okemah, Okla.
*James Milton McBeth (Ar); Abilene
Lester LoVerne McBride (VM); Manhattan
Francis Dean McCammon (Ag); Oronoque
*Ruth McChesney (PSM); Luray
*John Roscoe McClintock (CE); Hamilton
*Clifford Edward McClure (AE-1; Ag-2); Republic
*Thyra Corrine McClure (ApA); Manhattan
*John Pierce McClurg (GS); Meriden
*Nellie Edith McConnell (ApA); Dodge City
*Wayne John McConnell (GS); Auburn
*Hal H. McCord, Jr. (ArE); Manhattan
*Richard B. McCord (LA); Manhattan
*Ralph Erving McCormick (EE); Arkansas City
*Margaret Elizabeth McCoy (GS); Meriden
*Hiram M. McCullough (IC); Mulberry
*Frank Clemens McCurdy, Jr. (GS); Leavenworth
*Ivan Earnest McDougal (EE); Chardon
Willard Lawrence McFillen (EE); Athol
*Edna Fern McGill (HE-1; GS-2); Moscow
*Allen William McGinness (Ag); Lincoln
*Velmer Wayne McGinnis (VM); Ords, Neb.
*Mary Rosetta McKean (HE); Scott City
*Velma Dorthy McKee (ApA); Spearville
*Emily Mae McKenzie (PE); Plainville
*Robert Tulloss McLean (AA-1; VM-2); Ottawa
*George Miles McLenon (Ag); Monrovia
Marvin Albert McMinimy (AA); Ashland
*Ruth McNally (ApA); Olathe
*Everett John McNay (Ag); Clay Center
*Quentin Dalbert McNergney (C); Seneca
*May Louise McNiff (ApA); Manhattan
*Robert Fred McNitt (Ag); Washington
Louise Madsen (M); Natoma
*Tyson Harvey Mailen (ChE); Cottonwood Falls
*Alice Marie Maixner (GS); Wilson
*Dorothy Lorraine Maltby (PE); Canton
*Clarence Lingard Mann (CE); Dodge City
*Grace Sadie Mann (GS); White City
*James Leonard Mann (AE); Quinter
Robert Franklin Mannen (C); Manhattan
*Ralph Ernest Marken (Ag); Topeka
Merrill Manning Marshall (C); Manhattan
*Wayne Stalnaker Marteney (C); Hutchinson
*Arthur Ray Martin (ChE); Sabetha
Robert George Martin (EE); Leavenworth
*Wilber John Martin (IJ); Broughton
*Lorraine Virginia Martinson (PE-1; HE-2); North Topeka
Roy Marion Martz (CE); Liberal
*Lawrence Norbert Marx (CE-1; GS-2); Manhattan
*Earl Henry Massengill (AE); Caldwell
*Harold Ross Matheny (ME-1; IJ-2); Douglass
Irl McClellan Mayden (GS); Manhattan
*Floyd James Mayer (CE); Wetmore
*Hester Leonell Mazy (HE); Bryan, Tex.
*Hazel Marie Mead (HE); Manhattan
Challis Walter Meagher (IJ); Wamego (deceased)
*Ruth Marie Mears (HE); Simpson
*Kenneth Gerald Medley (EE); Hill City
Ben L. Meibergen (CE); Downs
*Gordon Clarence Raymond Melgren (EE-1; GS-2); Olsburg
*John Alden Meredith (CE); Auburn
*William Jerrold Meredith (C); Hill City
*Anton C. Mermis (EE-1; C-2); Gorham
*Victor Therom Merryfield (IC); Minneapolis
Jess F. Merryman (CE); Topeka
*Josephine Elizabeth Merryman (ApA); Topeka
*Donald Kenneth Meyer (CE); Topeka

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FRESHMEN—*Continued.*

*Wiley Wilbert Meyer (Ar-1; Ag-2); Bazine
*John Wesley Meyers (C); Merriam
*Lloyd William Michael (PE); Lawrence
*Julius Carl Michaelis (GS); Paxico
*Murray Samuel Mikesell (VM); Republic
*Arvena Mildred Miller (PSM); Manhattan
*John Ivan Miller (Ag); Prescott
*Kenneth Byron Milliken (CE); Tecumseh
James Martin Mills, Jr. (CE); Kansas City
Frank Missimer, Jr. (C); Russell
*Irene Catherine Missimer (GS); Manhattan
*Catherine Beatrice Mitchell (C); Concordia
*Ralph Emen Mitchell (Ar); Manhattan
Loyal Ray Mock (ME); Osborne
Fred William Moehlman (C); Manhattan
*Mary Ida Molby (HE); Greenleaf
*Orville Bertrand Moody (Ag); Ogden
*Gilbert Carlyle Moore (Ag); Louisburg
Raymond Benjamin Moorman (GS); Manhattan
*Margaret Naida More (GS); Glen Elder
*Neal Francis Morehouse (IC-1; CE-2); Manhattan
*Virgil Idmire Morey (GS); Narka
*Etna Faye Morgan (GS); Hugoton
*Lee Thomas Morgan (Ag); Hugoton
*Mildred Elaine Morgan (PE); Smith Center
*Wade Lawrence Morgan (Ag); Phillipsburg
*Alfred Less Morris, Jr. (Ag); New Albany
*Earl Frederick Morrison (PE); Colby
*Dorothea Mable Morse (HE); Wichita
*Ethel Clarine Morton (HE); Coldwater
*Amos William Mosher (AE); Lucas
*Richard Edward Moss (Ag); Coats
*Buard Loree Motes (ME); Scottsville
*Marvin Rodney Motes (AE); Scottsville
Florence Erma Mott (HE); Webster Grove, Mo.
*George Frederick Mueller (Ag); Hanover
*Karl Muenzenmayer (AA); Woodbine
*Howard Muilenburg (C); Palco
*William Clarence Muirhead (VM); Bradshaw, Neb.
*Kenneth Calvin Mulliken (Ag); Topeka
*Esther Laura Mundell (M); Nickerson
*Bessie Glea Munson (GS); King City, Mo.
Gaylord Russell Munson (Ag); Junction City
*Fred Immanuel Munz (EE); Hudson
*Vera Lois Murphy (ApA); Detroit
*Clarence Bredette Murray (C); Nickerson
*Henry Lower Muth (GS); Washington
*Ella Augusta Naylor (ApA); Cimarron
*Robert Bennett Neihart (CE); Lyndon
*Frances Maude Neill (GS); Clay Center
*Joseph P. Neill (Ag); Miltonvale
Harold Milton Nellams (ME); Potwin
*Isabelle Elizabeth Nelson (PSM); Delphos
*Lucille Velma Nelson (PE); Jamestown
*Raymond Maurice Nelson (EE); Troy
*Roy Addison Nesbit (Ag); Ottawa
Hampton Nett (Ag); Edwardsville
*Charles Schomp Nevius (ME); Paola
*Harold Redmond New (AE); Lenexa
*Merta Louise Newcombe (ApA); Hutchinson
*Rollin Allen Newcombe (Ag); Manhattan
*Clifford Franklin Newell (CE); Abilene
*John Walter Newton (CE); Winfield
Bonnidelle Nicholson (HE); Olathe
*Joseph Fedelis Nieberding (VM); Marysville
*Arthur Benjamin Niemoller (EE); Wakefield
*Walter William Niemoller (Ag); Wakefield
*Lucy Ermine Nixon (HE); Manhattan
*Galen Wiley Nolder (EE); Dodge City
*Raymond Norman (EE); Halls Summit
Sidney Bertrand North (Ar-1; C-2); Marlow, Okla.
*Stephen Duane Northup (EE-1; C-2); Quinter
*Don Leroy Nutter (IJ); Republic
*Axel Reynold Nydell (EE); Cleburne
Wilber Enoch Oberg (IJ); Manhattan
*Kathryn Mary Offerle (HE); Dodge City
*Chester Francis Ogan (VM); Madison
*Orin Relis Olinger (GS-1; AE-2); Hugoton
*Wayne Edward Olson (EE); Junction City
*Frieda Marie Oltjen (HE); Leona
*Ruby Isabelle Orebaugh (HE); Dodge City
*Ruth Ellen Orebaugh (HE); Dodge City
*John Allen Owen (EE); Oil Hill
*Joenetta Orelna Owens (HE); Manhattan
*Mina Opal Paddack (ApA); Lakin
*Carmy Gross Page (Ag); Norton
*Grant Wingerd Page (Ag); Detroit
*Arlie Edward Paige (EE); Manhattan
*Lucille Ruth Palmquist (C); Concordia
*Leona Pauline Parken (ApA); Dwight
*Lois Lilly Parker (GS); Broughton
Robert Scott Parker (LG); Manhattan
*Virginia Anne Parker (ApA); El Paso, Tex.
Luman Gilbert Parrott (Ar); Kansas City, Mo.
Harry Clinton Parshall (Ag); Manhattan
*Horace Allan Paskl (C); Toronto
*Lormor Allen Pearman (ArE); Holton
*LeRoy Matthew Peak (CE); Pratt
Paul Frederick Peak (RC); Manhattan
*Marion Wesley Pearce (Ag); Miltonvale
*Dorothy Pease (ApA); Manhattan
*Eugene Way Peck (VM); Falls City, Neb.
*Frederick Adams Peery (ArE); Manhattan
*Fern Doris Pendleton (PE); Rossville
*Francis Joseph Perrier (ME); Olpe
*Erma Juanita Perry (HE); Greenleaf
*Hester Marie Perry (GS); Manhattan
*Jack Curtis Perry (EE); Manhattan
*Raymond Charles Peterson (AE); Wilsey
*Virginia Janette Peterson (GS); Manhattan
*Robert Pattison Peyton (Ag); Topeka
*Maria Elizabeth Pfuetze (HE&N); Manhattan
*Ward Robert Philip (Ag); Hays
*Charles Deets Pickett (VM); Kansas City, Mo.
*LeeRoy Albert Pierce (VM); Manhattan
*Margaret Kathryn Pierson (HE); Wakeeney
*Benjamin David Pile (EE); Pomona
*Charles LeDell Pincomb (ME); Overland Park
*Mila Margaret Pishney (HE); Cleburne
*Mildred Mary Pishny (HE); Waterville
*Alvin George Ploger (Ag); Kinsley
*Hazel Irene Poague (GS); Westmoreland
Theodore Nicholas Polcyn (C); Gorham
*Nancy Elizabeth Poole (GS); Kansas City, Mo.
*William Alonzo Poole (Ar); Oil Hill
*Dorothy Nadine Porter (PE); Lyons
*William Sanford Powers (EE-1; GS-2); Gove
*Walter Grizzell Praeger (EE); Claflin
*Homer Lee Prather (Ag); Elmdale
*Charles Joseph Prchal (VM); Omaha, Neb.
*Hickman Price, Jr. (Ag); Kress, Tex.
*Marie Vivian Priddy (ApA); Cullison
*Charles Stanley Prince (EE); Manhattan

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FRESHMEN—*Continued.*

*Amos Leo Prouty (Ar); Newton
Kenneth Webb Putney (CE); Topeka
*Marjorie McDonald Pyle (IJ); Manhattan
*Byron White Quinby (Ag); Sun City
*Eva Elizabeth Raase (GS); Belvue
*Everett Scott Rairdon (IC); Havensville
*Edith LaVerne Ramey (HE); Manhattan
*Marjorie Elizabeth Ramey (HE); Manhattan
*Eldred Adelbert Randall (Ag); Ashland
*John Milton Raven (AA); Morrowville
*Glenn Joseph Rawlin (ME); Gypsum
Clarence Maynard Record (EE); Humboldt
*Gladys Louise Reddington (ApA); Blue Rapids
*Ernest Harold Reed (GS); Norton
*Eunia Reed (Ar); Kanopolis
*Everett Eugene Reed (ArE); Smith Center
*Myrton Reeves (EE); Beeler
*Arthur Abraham Regier (EE); Elbing
Donald William Rehberg (EE); Niles
*Albert Cones Reicherter (PE); Silver Lake
*Jake Louis Reineccius (VM); Creston, Neb.
*John Henry Reinecke (IJ); Great Bend
*Ross William Reinhardt (VM); Home
*Clarence Reiswig (EE); Hutchinson
*Frank Henry Remlinger (EE); Strong City
*Clarence Augustic Reynolds (VM); Wilder
*John Lyman Rhea (Ag); Louisburg
*George Phillip Rhoades (ME); Ashland
Mildred Joyce Rhodes (GS); Tampa
*Wayne G. Richards (EE); Manhattan
*William Andrew Richmond (C); Stockton
Burrell R. Rightmire (IC); Manhattan
*Marian Riordan (C); Solomon
*William Robert Roberts (EE); Manhattan
*Harry Brookhart Robeson (EE); Galena
*Philip Dean Rockwood (GS); Parker
Frank Alonso Rody (IC-1; Ag-2); Leoti
*Raymond Rollin Roepke (IC); Manhattan
*Harold Roeske (CE); Bison
*Charles Harold Rogers (CE); Blue Mound
*Clyde Henry Rogers (Ag); Willard
*Melvin Palmer Rogers (Ag); Glasco
*Donald Winter Rohrbaugh (Ag); Ingalls
*John Newby Romine (ME); Kansas City, Mo.
*Robert Talbot Romine, Jr. (Ag); Kansas City, Mo.
*Hazel May Roney (HE); Hutchinson
*Thomas Chester Roney (ME-1; C-2); Webb City, Mo.
*Elizabeth Roniger (HE); Elmdale
*Maxine Garr Roper (IJ); Manhattan
*Dorothy Rosencrans (GS); Manhattan
*Don Carson Ross (GS); Manhattan
*Frances Noami Ross (PE); Armarillo, Tex.
*Edward Charley Rostočil (Ag); Zurich
*Myra May Roth (HE); Ness City
*William Hugh Roth (EE); Ness City
*Esther May Row (C); Larned
*Merritt Roscoe Royer (CE); Newton
Louis Elmer Rufener (AE); Strong City
*Edna Maria Runcinman (PSM); Culver
*Aileen Rundle (HE); Clay Center.
*Dorothy Pearl Ruscoe (HE); Wakefield
*Loyal Luther Rush (VM); Erie
*Louise Rust (IJ); Manhattan
*Olin Sandlin (Ag); Hill City
*Frank Santo (EE); Manhattan
*Edward Robert Satunas (PE); Manhattan
*Flossie Arlene Sauvain (PE); Broughton
Mary Lois Saxton (HE); Fort Scott
*Joan Gladys Schafer (IJ); Vermillion
John Nicholas Schiltz (GS); Wakefield
*Lova May Schlatter (HE); McPherson
*Mary Alice Schnacke (IJ); La Crosse
Ethel Lucille Schoen (GS); Cawker City
*Grace Leona Scholz (HE); Manhattan
Jonah Schreiner (CE); Ramona
*Ronald Raymond Schroeder (EE); Beverly
*Luke Michael Schruben (C-1; AA-2); Dresden
*Maurice Elmer Schruben (PSB & O); Dresden
*Elbert Konrad Schuler (ArE-1; GS-2); Valley Falls
*Loyd Schulz (VM); Norton
*Ephraim Orion Schwab (AE); Greeley
*Louis Carl Schwanke (EE); Alma
*Robert William Schwindler (Ar); Manhattan
*Leon Lee Schwandt (CE); Bison
Elizabeth Scott (GS); Manhattan
Harold J. Scott (C); Altoona
*Herbert Franklin Seibert (VM); Nelson, Neb.
*Olmer John Selfridge (Ar-1; C-2); St. John
*Ben Alfred Sellers (ME); Lyons
*Gardner Charles Sellers (EE); Downs
*William Arthur Sells (EE); Effingham
*Frederic Raymond Senti (FME); Cawker City
*Ralph Franklin Shaner (VM); Topeka
*Glenn Virgle Shank (C); Bazine
*LeNora Marie Shara (C); Narka
*Leona Edythe Shara (HE); Narka
*James Leroy Sharp (EE-1; C-2); Newton
*Doria Maxine Shaver (PE); Cedarvale
*Marvin Ruderer Shaw (FME); Holton
*Stanley Byrne Shaw (ME); Galesburg
*Mildred Fay Shawver (ApA); Kincaid
*Samuel LeRoy Sheetz, Jr. (C); Manhattan
*Genevieve Marie Shellhaas (GS); Junction City
*Josephine Clara Shellhaas (GS); Junction City
*Nina Mae Sherman (HE); Grinnell
*Margaret Elizabeth Shewell (HE); Neosho Falls
*Wayne David Shier (Ag); Gypsum
*Elwyn Space Shonyo (IC); Bushton
*Lloyd Russell Shoup (ME); Udall
Francisco Antonio Sierra de Soto (GS); Atchison
*Dessie Caroline Sigg (C); Chapman
Earl Lee Sims (PE); Republic
*Gerald Alvin Simpson (Ag); Milton
*George Walter Skinner (ME); Baxter Springs
*Jane Isabell Skinner (PE); Stockton
*Theodore Skinner (C); Manhattan
*William Edgar Skinner (ChE); Belleville
*Sadie Sylvia Sklar (Ar); Manhattan
*Andrew Skradski (ME); Kansas City
*Joseph Charles Slechta (IC); East St. Louis, Ill.
*Glenn Wilkins Sloan (CE); Selden
*Quintine Joseph Smart (EE); Collyer
*Lisle Leroy Smelser (CE); Manhattan
*Helen Elsie Smerchek (HE); Garnett
*Esther Smiley (ApA); Manhattan
*Hubert Leslie Smith (VM); Marshall, Mo.
*Maurine E. Smith (HE-1; C-2); Hutchinson
*Pansy Smith (HE); Moran
*Russell Smith (IC); Manhattan
*Vera Genevieve Smith (PSM); Manhattan
*William Richard Smith (Ag); Manhattan
*William Berchard Snodgras (VM); Manhattan
*Orville Lewis Snyder (EE); Salina
*Charles Raymond Socolofsky (PE); Tampa
*Theodore Sommers (Ag-1; C-2); Leoti
*Margaret Grace Souders (GS); Colby
*Elroy Clarence Sowers (EE); Leoti

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FRESHMEN—*Continued.*

*Donald James Spangler (Ag); Lone Elm
*Reuben Albert Sparks (GS-1; Ag-2); Carneiro
*Howard Scott Spear (EE); Leoti
*Kenneth Ross Speed (Ar); Holton
Robert William Spiker (ChE-1; C-2); Manhattan
*Raymond Robert Spilman (Ar-1; IJ-2); Manhattan
Homer Ackerly Staadt (CE); Garnett
*Earl Louis Stadel (VM); Manhattan
John Loren Stafford (C); Leonardville
*Helen Maxine Stanley (ApA); Concordia
*George Alfred Stansbury (ME-1; PSB&O-2); Ulysses
*Lois Lillian Starbuck (HE); Goodland
Charles Guy Steele, Jr. (AA); Barnes
*Harry William Steele (Ag); Arcadia
*Virginia Maurine Steele (HE); Manhattan
*Ernest Martin Steelsmith (ME-1; C-2); Detroit
*Earl Raymond Stegman (ME); Plains
*Harvey Albert Steiger (GS); Menlo
*James Byron Stephenson (CE); Sedan
*Marjorie Marks Stevenson (IJ); Oberlin
Sylvia Eldana Stewart (PE); Eskridge
*Velton A. Stewart (Ag); Manhattan
*W. Russell Stewart (EE); Lowemont
*Marion R. Stiles (IC); Jewell
*Lois D. Stingley (PE); Manhattan
*Rowena Pearl Stiles (HE); Kansas City
*Ruth Vernetta Stiles (IJ); Kansas City
*Homer John Stockwell (EE); Meriden
*Charles Watson Stull (EE); Osborne
*Dale Kent Stultz (CE); Woodston
Beulah Mae Stumbo (HE); Bayard
*Francis E. Sturgeon (C); Dodge City
*Edward Stephen Sullivan (Ag); Mercier
Carl Clinton Surig (EE); Altoona
*Donald Charles Sutherland (Ar); Herington
*Geneva Mae Sutter (HE); Effingham
*Dorothy Eleanor Sutton (IJ); Kingman
*John Anderson Sutton (C); El Dorado
*Helen Louise Swan (HE); Topeka
*Helen Elizabeth Swartz (HE); Everest
J. Lawrence Stoddard (EE); Manhattan
Edward Leroy Stoneking (Ag); Baldwin
*Elden G. Stoskopf (ME); Baxter Springs
*Cora Irene Stout (HE); Russell
*Harold LeRoy Stowe (CE-1; AA-2); Little River
*Ruth Evangeline Strickland (Ar); Manhattan
*Juanita Lucille Strong (IJ); Topeka
*Helmar Clinton Stuart (GS); Sterling
Maryon Henry Swartz (ArE); Manhattan
*Carl Marion Swinney (EE); Chanute
Charles Henry Talbot (EE); Manhattan
*Hughel K. Tatum (ME); Larned
*Preston Taylor (Ag); Admire
*Helen Marie Tedman (HE); Mount Hope
*George Emil Teichgraeber (FME-1; AA-2); Marquette
*Woodrow Teichgraeber (Ag); Osage City
*Claude Sheigh Templin (ME); Salina
*Alta Nellie Thierer (M); Manhattan
*Viola Martha Thomas (HE); Protection
*Alfred Martin Thompson (PSB&O); Wamego
*Arnold Charles Thompson (GS); Washington
*Chester Irwin Thompson (Ag); Linn
Dale Elliott Thompson (CE); Green
*Florence M. Thompson (HE); Manhattan
*Fred Witt Thompson (Ag); McLouth
*James Vern Thompson (GS); Goodland
*Marian Thompson (HE); Manhattan
*Maurice Hoch Thompson (GS); Dodge City
Orville Freeman Thompson (C); Alma
*Penn Thompson (AA); Williamstown
*Thomas Marion Thompson (VM); Mulberry
*Velma Fern Thompson (HE&N); Manhattan
Arthur Chase Thomson (Ag); McCune
*Esther Wilhellmina Thornwall (HE); Topeka
*Hill Cook Thurman (Ag); Plattsburg, Mo.
*Joseph Francis Tighe (EE); Junction City
*Bessie Smith Timmons (HE); Manhattan
*Rexford Victor Tipton (EE); Glen Elder
*Charles Kirshner Titus (Ag); Manhattan
*Blanche Louise Tomson (HE); Dover
Bessie Louise Torgeson (GS); White City
*Harold Arthur Totten (EE); Clifton
*Ernest Alva Trummel (GS); Wilmore
*Richard Duncan Turk (VM); Ash Grove, Mo.
*Charles Frederick Turner, Jr. (C); Hartford
*Besse Irene Tyree (IJ); Wayne
*Donald Ernest Underwood (IJ); Agra
*Floyd Allen Underwood (Ag); De Kalb, Mo.
Virgil Arvid Unruh (AA); Pawnee Rock
*John Sumner Van Aken (GS); Lyons
*Ralph Arthur Van Camp (IJ); Council Grove
*Lyle Raymond Van Doren (ME); Manhattan
*Charles Winifred Van Vranken (ArE); Pratt
*Francis Arthur Vaughn (CE); Hartford
*Marven Eugene Vautravers (Ag); Centralia
*Albert Vesecky (EE); Kansas City
*Stephen Vesecky (Ag); Kansas City
*Raymond Ralph Vogelman (EE); Potwin
*Ruth Leanore Voshell (PE); Bucklin
*Raymond Beaty Wagner (Ag); Richmond
Betty Jane Wagstaff (HE-1; PE-2); Topeka
*Wilbur Wahl (Ag); Wheaton
*Leslie Elmer Wakeman (EE-1; Ag-2); Dodge City
*Kendall Allison Walker (PE); Glen Elder
*Sam Cyril Walker (GS); Junction City
*Arden Lyal Wallace (C); Hill City
*Wilfred Nuffer Wallace (ME); Augusta
*Freda Pauline Walters (PE); Edmond
*Paul Frank Warner (ChE); Whiting
*Loren Everett Washburn (Ag); Spivey
*Anne Elizabeth Washington (IJ); Manhattan
George Washington (Ag); Manhattan
Fred Charles Weingarth (IC); Leavenworth
*Cleo Belle Welch (ApA); Paxico
*James Wesley Wells (IC-1; ChE-2); Winona
*Max Welton Wells (GS); Asherville
*Carl Edward Wendell (VM); Mulberry
*Henry William Wendt (EE); Howard, Neb.
*Fern Uldeen Wentz (ApA); Ames
*Frank Fowler West (ME); Arkansas City
*Harry Eugene West (EE); Soldier
*Margaret Jo Westermeier (C); Colby
Kermit Louis Westrup (C); Woodbine
*Neil Joseph Weybrew (PE); Wamego
*Helen Frances Weygandt (HE); Keats
*Mabel Edith Wharton (Ar); Powhattan
*Elbert Eden Wheatley (CE); Gypsum
*Dorothy Grace White (GS); Burlington
*Jack White (IC); Kanopolis
*Robert G. White (AE); Norborne, Mo.
*Vee White (GS); Manhattan
*William Morris Whitehead (Ar); Abilene
*Leonard Eugene Whitlock (PE); El Dorado

* Matriculated 1929-'30.

FRESHMEN—*Concluded.*

*James A. Whitten (Ag); Wakarusa
*Margaret Wichers (GS); Downs
*Howard Wildman (Ag); Manhattan
*Loyd Elbert Wildman (AA); Manhattan
*Georgiabelle Wilkerson (HE); Campus
*Velma Ruth Wilkerson (IJ); Smith Center
*Philip Sidney Wilkins (GS); Miltonvale
*Philip Williams (VM); Dodge City
*Delphin Amherst Wilson (C); Axtell
Earl Roland Wilson (Ar); Milford
*Lewis Alfred Wilson (CE); Valley Center
*Merwin Hales Wilson (Ag); Mulvane
*Richard Byron Wilson (ME); Herington
*Rollo Davis Wilson (VM); Jewell
*Walter Edwin Wilson (Ag); Blackfoot, Idaho.
*Walter George Wilson (Ag); Lincoln
*Florence Lillian Wiltse (GS); River Forest, Ill.
*Charles Asher Wimer (EE); South Haven
*Lois Emily Windiate (HE); Nickerson
*Carl William Wing (ME); Benedict
*George Walter Winterscheidt (ME); Horton
George O. Wise (Ar); Newton
*Harley Alvin Witt (CE); Partridge
*John Wright Witts (ME); Topeka
*Cecil Eugene Wittum (Ag); Caldwell
George Gordon Wolf (Ag); Marion
*Jim Alfred Wolfe (GS); Manhattan
*Agnes Anna Wolkensdorfer (HE); Herndon
*Heloise Wood (C); Clay Center
Thomas Austin Wood (EE); Louisburg
*Joe Edgar Woodford (ME); Salina
*Clifford Jay Woodley (ME); Tecumseh
*Edward Francis Woods (IJ); Kansas City
*Sheldon Edgar Woods (IC); Delphos
*Rex Valentine Woodward (EE); Medicine Lodge
*Charles Lee Woodyard (PE); Waterville
*James Clayton Woodyard (PE); Waterville
*John Preston Woolcott (FME); Harrisburg, Ill.
Kenneth D. Worley (IJ); Randall
*Amos Alexander Wright (ME); Concordia
*Eleanor Emily Wright (GS); Concordia
*Estel Lee Wright (Ag); Blue Mound
*Harold Brockway Wright (ChE); Herington
*Merle Elbert Wright (EE); Kiowa
*Gertrude Wuester (PSM); Beattie
*Donald Wilson Wyatt (IJ); Stockton
*Joseph Casewell Wyatt (ME-1; PSB&O-2); Carthage, Mo.
*Wendell Wadsworth Wyatt (ChE); Stockton
*Harold Robert Yonts (Ag); Holcomb
*Leonard Marion Young (ChE); Sabetha
*Verlester Evelyn Young (ApA); Haddam
*Wayne Winkelman Young (C); Alexander
*Gerald Alden Younie (ChE); Natoma
*Everett Fairbanks Yoxall (AE); Woodston
Robert Allen Zebold, Jr. (AA); Pine Bluff, Ark.
Walter William Zecker (ME); Alma
Leslie George Zies (ChE); Pratt
*Paul Willard Zimmer (AA); Dodge City
*Mark Joseph Zoeller (C); Manhattan
*Fred Zohner (EE); Penokee
*John Francis Zumbado (ME); Junction City

SPECIAL STUDENTS

*William Joseph Angeur (GS); Muscatine, Iowa
*Andre Audant (Ag); Port au Prince, Haiti
*Grace Iva Barger (GS); Garfield.
*Dennie Carree Barnett (CE); Goodland
*Nadim A. Barudi (Ag); Damascus, Syria
*Gaston Bert (GS); Milford
Louise Bowlus (GS); Russell
Norma Lou Brien (GS); Bern
Ray James Bryan (GS); Woodbine
*Velma Lorence Capper (GS); Manhattan
Thelma Bernice Carver (GS); Chanute
Miriam Clammer (GS); Manhattan
Edwin Lorenz Coleman (GS); Vermillion
*Catherine Conroy (GS); Manhattan
*Wilma Elizabeth Copper (HE); Stockton
Ralph Howard Crouch (GS); Herington
Harvey Ellis Davidson (EE); Emporia
*Mary Duncan Dimmitt (HE); Iola
*Edith Marie Dobson (GS); Manhattan
Helendeen Harris Dodderidge (GS); Manhattan
*John Joseph Donnelly (ME); Manhattan
Adin Montgomery Downer (GS); Syracuse
Emily Eleanor Downing (GS); Oklahoma City, Okla.
*Maebell Irene Dunbar (GS); Manhattan
*William Louellyn Edwards (GS); Concordia
*Henrietta Lois Erdman (GS); Park Falls, Wis.
Virginia Fielding (HE); Manhattan
*Edward Cumberland Fisher, Jr. (GS); St. Louis, Mo.
Mattie Leona Goodin (GS); Clay Center
*Christine Buckley Goodrich (GS); Manhattan
*Esther Virginia Green (HE); Whiting
David George Griffiths (GS); Manhattan
*Pearle Haas (HE); Winfield
Hazel Hanna (GS); Riley
*S. Louise Huey (GS); Ogden
William Huey (GS); Ogden
Electa Jewell Hull (GS); Manhattan
*Harold Oscar Johnson (GS); Kanona
William Lee Johnson (GS); Alma
William Richard Kendall (GS); Manhattan
*Theodore Monroe Knittle (EE); Salina
*Carol Christianson Kruwell (GS); Manhattan
*Maurine Theresa Lewis (GS); Manhattan
*Carolyn Mather (GS); Burdett
Earle Merritt (GS); Fletcher, Okla.
Wilbur S. Nay (GS); Manhattan
†*James Thomas Newton (Ag); Douglass
Daniel Vernon Norris (GS); Manhattan
*Amelia Regnild Olsen (HE); Manhattan
*Opal Olson (HE-1; GS-2); Manhattan
*Henry Benjamin Peery (GS); Manhattan
*Casimir Pomarzynski (Ar); Buffalo, N. Y.
Claire Price (GS); Fredonia
Clarence Osborn Price (GS); Manhattan
*Ruth Bertha Raase (HE); Belvue
†*William Richards (Ag); Burrton
*Retha Avis Roach (GS); Utica
Harriet Robertson (GS); Manhattan
Grayce Constance Rogers (GS); Stockton
Eva Mae Smalley (GS); Kansas City
Norman Courtland Smith (GS); Manhattan
Vera May Strong (HE); Wichita
James William Taylor (GS); Manhattan
Edith Watson Templeton (HE); Wichita
Ruth E. Tibbetts (GS); Leoti
*Clay H. Tolle (CE); Manhattan
*Ila Hall Wells (HE); Manhattan
Claude Allen White (Ag); Manhattan
Lillian Mary Wilber (GS); Belleville
Wallace Robert Womer (GS); Manhattan

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* Matriculated 1929-'30.

† Also pursuing graduate study.

Students in Special Courses

The abbreviations following the names of students have the following significations: DMSC, dairy manufacturing short course; FSC, farmers' short course; AMTC, auto mechanics' trade course; MTC, machinists' trade course.

William Agin (FSC); Gypsum
Earle David Allen (DMSC); Manhattan
John A. Beck (FSC); Ness City
Amos Harold Beyer (FSC); Gridley
Roy B. Bozarth (FSC); Lenora
Ray Aurthur Buchanan (FSC); Richland
Vira May Crawford (DMSC); Manhattan
Jack Hubert Dannecker (DMSC); Bucklin
A. Adolf Duerksen (DMSC); Hillsboro
Adolph Fehrenbach (FSC); Ness City
Henry William Fluder (FSC); Lenexa
Eldon Donald Furney (FSC); Alta Vista
Clifford Thomas Gordon (AMSC); Manhattan
Ermon Dennis Haag (MTC); Larned
John Henry Haag (DMSC); Holton
Lawrence Habiger (FSC); Bushton
Waldemar Lewis Hanke (FSC); Waterville
Louis Benton Hanson (FSC); Jamestown
George Thomas Hawley (AMTC); Garrison
Hugh Miller Hay (DMSC); Belmont, Ohio
Richard H. Herrs (FSC); Linn
Frank Newton Holliday (FSC); Soldier
Victor Hopeman (FSC); Independence
Gerald Ray Horton (FSC); Madison
Elmer Marion Irvin (AMSC); Lewis
Carl John Henry Jasper (FSC); Fairview
Harold Peyton Jeffers (FSC); Highland
Glenn Dean Johnson (MTC); Larned
William Henry Juzi (FSC); Florence
Orren Leslie Karr (FSC); Americus
Jesse LeRoy Kump (DMSC); Scott City
Donald Henry Laflin (FSC); Broughton
George Edward Larson (FSC); Chanute
Everett Charles Lowry (FSC); Logan
Gerhard H. F. Lutjemeier (FSC); Barnes
Robert Glen McAninch (AMTC); Garrison
Julius Ceasar McCann (AMTC); Manhattan
Irene McGann (DMSC); Manhattan
Delmar Luke Miley (FSC); Hoxie
Frederich William Millenbruch (FSC); Herkimer
William Y. Nauerth (FSC); Keats
Ralph Loren Newsom (AMSC); Lewis
Myron T. Osenbaugh (FSC); Clay Center
Emil Herman Ott (FSC); Madison
Emil Fredrick Peeks (FSC); Marysville
Artie I. Peffley (FSC); Manhattan
Emil William Ploog (FSC); Lorraine
George Michael Reddy (DMSC); Manhattan
Clyde C. Reed (FSC); Kanopolis
Albert Lawrence Reichle (FSC); Riley
Vernon Evan Ritz (FSC); Cawker City
Gerald Leroy Rose (FSC); Agra
Walter Raymond Rothe (FSC); Ness City
Homer Glace Rundle (FSC); Clay Center
Lawrence John Sack (FSC); Hays
Ernest Charles Schlagel (FSC); Lenexa
Will Henry Schneider (FSC); Gridley
Rowland Whedon Schultz (FSC); Lisle, Mo.
Arndt M. Schumann (FSC); Netawaka
Bruce Phillip Scott (FSC); Manhattan
Harry Eldon Scott (FSC); Le Loup
William Bernard Shaffer (FSC); Dighton
Glen Siegle (FSC); Manhattan
James Milton Soper (DMSC); Manhattan
Leland Russell Stewart (MTC); Fort Riley
Gerard Aloysias Still (FSC); Atchison
David Frank Stouffer (FSC); Glen Elder
Ernest P. Suderman (FSC); Hillsboro
Julius Clarence Torkelson (FSC); Everest
Severt Albert Torkelson (FSC); Atchison
Lyle Clifford Trapp (FSC); Waldo
George Vander Giesen (FSC); Cawker City
Neil Cornelious Van Hosen (FSC); Elkhart
Raymond Vogelman (FSC); Potwin
Carl Walker (DMSC); Garden City
Cyril Joseph Wassenberg (FSC); Seneca
Harold Carl Wehrman (FSC); White Cloud
Clifford E. Whitney (DMSC); Manhattan
George Wierenga (FSC); Cawker City
Hugh Scott Wilson (FSC); Council Grove
Paul A. Wood (DMSC); Clay Center

Summer School Students

First Session

Genitha Berneice Adams; Frankfort
Cirilo Lagmay Adam; Sison, Pang, P. I.
Irene Theresa Adams; Frankfort
Donald Adair Adell; Manhattan
Harry Enoch Adell; Leonardville
Mildred Laura Ahlstrom; Reading
Dorothy Marguerite Akin; Manhattan
Jean Greiner Alexander; Manhattan
Glen Allen; North Topeka
Hazel Evelyn Allen; Louisville
Agnes Mae Allender; Junction City
Ethlyn Marie Alsop; Junction City
Malcolm Llewellyn Alsop; Wakefield
Carl Boyd Anderson; Richland
Ethel Leonard Anderson; Rossville
Hazel Lillian Anderson; Bronson
Helen Rose Anderson; Thayer
Kenneth Charles Anderson; Eskridge
Ross Harris Anderson; Richland
Lottie Sybell Andrews; Junction City
Ruth Evangel Angstead; White City
Mary R. Anthony; Wayne
Frederick R. Arnold; Enid, Okla.
Floyd Warnick Atkeson; Moscow, Ida.
Esther Elizabeth Avery; Riley
Ruth Hilda Avery; Riley
Lucile Helen Babcock; Phillipsburg
Ruth Irene Babcock; Harper
Frances Mable Backstrom; Kansas City, Mo.
Kimball Lincoln Backus; Olathe
Roy Bainer; Manhattan
Lilian Baker; Manhattan
Lucille Marguerite Bangs; Madison
Clarence Orval Banta; Ottawa
Lillian Evelyn Banta; Ottawa
Joseph Monroe Barger; Manhattan
Ellen Isabel Barker; Beloit
Dorothy Gertrude Barlow; Manhattan
Claude Lawrence Barnett; Manhattan
Lawrence Richard Barnhart; Independence
Johanna Helena Barre; Tampa
Arthur Theodore Bartel; Bard, Cal.
Laura Falkenrich Baxter; Manhattan
Frances A. Beal; Clearwater
Lillian Louise Bedor; Hollis
Winifred Daisy Beeby; Hays
Lillie Emma Beerhalter; Junction City
John Gregory Bell; Atchison
Bernice Eleanor Bender; Holton
Erwin John Benne; Manhattan
Gladys Ethel Meyer Benne; Manhattan
Kenneth Dean Benne; Washington
Helen Lee Bentley; Manhattan
Marjorie Marie Berger; Manhattan
Myrtle Pauling Berger; Onaga
Silas S. Bergsma; Lucas
William Henry Berry; Manhattan
Mildred Adeline Bettles; Barnes
Thomas Glen Betts; Detroit
Jacob Biely; Vancouver, Canada
Ethel Marie Billups; Arrington
John Alexander Bird; Hays
Doris Marie Bland; Lucas
Olive Elizabeth Bland; Garden City
Floyd Albert Blauer; Stockton
Pearl Cline Blauer; Stockton
Dorothy Ann Blomgren; Randolph
Cecil Thomas Blunn; Manhattan
Mildred Freda Bohnenblust; Leonardville
Helen Elizabeth Boler; Dover
Frederick Bruce Bosley; Manhattan
Belle Bowen; Arnold
Gladys Pearl Bowman; Wamego
Jessie Mildred Bowman; Wamego
Fred Ewing Brady; Topeka
Carl Alfred Brandly; Manhattan
Homer Cleo Bray; Manhattan
Elmer Henry Bredehoft; Manhattan
Evelyn Lanore Brenn; St. John
Alice Katherine Brill; Westmoreland
Gertrude Adaline Brill; Westmoreland
Grace Dorothy Brill; Westmoreland
Eva Edna Brittain; Manhattan
Helen Sproul Brittain; Manhattan
Parks Hillis Brittain; Manhattan
Stanley Hyde Brockway; Topeka
Frank Brokesh; Munden
Gertrude Elizabeth Brookens; Westmoreland
Mirian Elizabeth Brookover; Eureka
James Byron Brooks; Garrison
Albert Brown; Manhattan
Esther Louise Brown; Manhattan
Frances L. Brown; Tucson, Ariz.
Orpha Brown; Edmond
Vira Brown; Edmond
Alice Elizabeth Browne; Vermillion
Barbara Brubaker; Manhattan
Edna Ida Bruenger; Broughton
Frances Brumm; Junction City
Thomas Walter Bruner; Jewell
Lela Jane Bryan; Kansas City
Ray James Bryan; Woodbine
Hazel Eirene Buck; Derby
Roberta Claire Burgert; Hiawatha
Thomas J. Burke; Wheaton
Neva LeVerne Burt; Greensburg
Norval Odell Butler; Manhattan
Hazel Caldwell; Clay Center
James Phillip Callahan; Manhattan
Albert B. Cameron; Smith Center
Edna Dolores Campbell; Hanover
Marcine Dorotha Campbell; Hollis
Marion Isabell Campbell; Lyons
Erma Belle Canning; Manhattan
Bessie Gladys Carey; Belleville
Zelma N. Carey; Protection
Abbie Mae Carpenter; Clay Center
Ina Carolyn Carpenter; Sabetha
Sybil Ione Carpenter; Sabetha
Sherman Harold Carter; Oneida
Thelma O'Dell Carter; Oneida
Mildred J. Casey; Dorrance
Elisha Joe Castillo; Independence
Mildred Castleman; Junction City
B. Helen Caughron; Manhattan
James Willard Caughron; Manhattan
George E. Cauthen; Manhattan
Virginia Chambers; Grandfield, Okla.
Edna Neetta Chapin; Westphalia
Ira Nichols Chapman; Manhattan
Frances Eugene Charles; Manhattan
Merle Vernon Chase; Manhattan
Nettie Evelyn Chavey; Clyde
Early Mast Chestnut; Manhattan
Rose Louise Child; Manhattan
Thelma Elizabeth Child; Manhattan
Leonard William Christal; Manhattan
Mary Kathryn Chronister; Topeka
Julia Madge Clayton; Wilsey
Opal Jane Clayton; Wilsey
Lawrence Victor Clem; Chanute
Ruth Clency; Manhattan
James Wendell Coate; Miltonvale
Helen Elizabeth Cobb; Manhattan
Maynard Henry Coe; Manhattan

SUMMER SCHOOL—*Continued.*

Melvin Cooper Coffman; Wakefield
Harley Edward Cole; Manhattan
Robert Cole; Wetmore
Erma Mildred Coleman; Mayetta
Margaret L. Colver; Manhattan
Frances Rebecca Conard; Ottawa
Quinton Dieter Conklin; Abilene
William Eugene Connell; Rupert, Idaho
Marguerite Josephine Conroy; Manhattan
Bertha Lina Cook; Effingham
Emma Miller Cook, Milford
Nelle May Cook; Chapman
Walter Vernon Cormack; Rossville
E. Jack Coulson; Manhattan
Fern Covert; Wichita
Inez Mildred Crabb; Colby
Mary Ellen Crabbe; Manhattan
Orville Robinson Cragun; Milford
Golda Mildred Crawford; Manhattan
Clarence E. Crews; Manhattan
Grace Marie Crick; Ashton
Earl Edward Crocker; Manhattan
Walter McConnell Crossen; Turner
Genevieve Crowley; Manhattan
Leonard E. Croy; Norcatur
Naomi R. Croy; Norcatur
Gladys Crumbaker; Manhattan
Ethel Beatrice Culbreath; Douglass
Eula Mae Currie; Manhattan
Marjorie Hazel Curtis; Manhattan
Geraldeane Cutler; Manhattan
Edmond Ray Dailey; Garden City
Dorothy Dean Dale; Coldwater
Ward Edmond Dale; Topeka
Bruce Oliver Dallam; Faucett, Mo.
Edith Josephine Dam; Marysville
Grace Emily Darby; Wakefield
Nellie Dorothy Darrah; McPherson
Grace Louise Dart; Washington
Katherene Elizabeth Davies; Manhattan
Mary Anne Davies; Riley
D'Gracia Jane Davis; Lawrence
Hilma Ruth Davis; Manhattan
Howard Preston Davis; Manhattan
Marion Bradford Davis; Manhattan
Raymond H. Davis; Hays
Irene Jeanette Decker; Robinson
Clara Farmer Denison; Hazelton
Dorsie Lawrence Deniston; Louisburg
Walter Raymond Denman; Sedan
Edgar Denny; McLouth
Richard Kimball Dickens; Manhattan
Donna Marie Dickinson; Udall
Hilma Nadene Dickinson; Udall
Mary Beatrice Dickson; Washington
Marguerite Dickson; Washington
Leona Sedonia Diederich; Greenleaf
James Roy Dinwiddie; Easton
Mary Louise Dittemore; Manhattan
Paul Lawrence Dittemore; Manhattan
Edith Marie Dobson; Manhattan
Helendeen Harris Dodderidge; Manhattan
Russell Reuben Dodderidge; Council Grove
Harry Stillman Dole; Manhattan
Mary Monica Dougherty; Lillis
Myrtle Dougherty; Manhattan
Dorothea Ruth Dowd; Manhattan
Fern Louisa Downs; Oak Hill
Thomas Edward Doyle; Manhattan
Bertha Lumena Dreier; Berryton
Gabriel Ernest Drollinger; Manhattan
Florence Estelle Dudley; Clay Center
Clara Kathryn Dugan; Manhattan
Mary Irene Dunn; Clay Center
Helen Gertrude Durham; Manhattan
Izola Mildred Dutton; Manhattan
Edwin Osborne Earl; Manhattan
W. Harvey Ebersole; Newton
Janet Cuthbert Edelblute; Topeka
Frank Edward Edlin; Manhattan
Helen Ehrhardt; Westphalia
Edna Frances Ehrlich; Marion
Harold Chester Elder; Mankato
Lois Wanda Elder; Marysville
Hellen Rachel Elling; Manhattan
Opal Marion Endsley; Manhattan
Mildred V. English; Lincoln
Alice Josephine Englund; Salina
Alfred Harlan Epperson; Manhattan
Anna Marie Erickson; Clyde
Iris Clara Ericson; Bridgeport
Mildred Berniece Esslinger; Bala
Ruth Elizabeth Esslinger; Bala
Everett Noel Evans; Wilsey
Paul Eugene Fairbank; Topeka
Sidney Lanier Falin; Cleburne
Everett Ellsworth Fauchier; Osage City
Elwin E. Feather; Minneapolis
Ethel B. Feese; Junction City
G. Jean Fergerson; Manhattan
Lendall Kiple Firth; Manhattan
Edward Joseph Fisher; Leavenworth
Theodore Allen Fleck; Wamego
Beattie Hope Fleenor; Manhattan
John Sebastian Florell; Manhattan
Kenney Lee Ford; Manhattan
Cora Helen Forney; Minneapolis
LeVern Velma Forsyth; Wakefield
Harold Earl Frank; Manhattan
Kathleen Grace Fraser; Talmage
Enos Allen Fritz; Riley
Raymond Glenn Frye; Manhattan
Edith Fultz; Wichita
Edgar Daniel Furse; Pleasanton
Hilliard Lafayette Gamble; Halstead
Ruth Dible Gamble; Rexford
Marguerite Jane Gardner; Clifton
Alice Louise Garvin; Ogden
Fern Emeline Gaston; Wakefield
Lester Charles Gates; Seward
Martin Henry Gates; Kansas City
Bessie Geffert; Manhattan
Cora Mae Geiger; Salina
Harvey Stafford German; Little River
Glen Erwin Ghormley; Monomi, Neb.
Frances Eloise Gibson; Muskogee, Okla.
Marie Mary Gibson; Palco
T. Henry Gile; Scandia
Adelaide Louise Glaser; Ozawkie
John Snell Glass; Manhattan
Archibald Alexander Glenn; Webster
William Henry Glover; Crescent, Okla.
Myrtle Genevieve Gohlke; Holton
Margaret Rose Goodyear; Wichita
Ruth Beatrice Gordon; De Soto
Austin Beatrice Gordon; De Soto
Austin Gerald Goth; Manhattan
Esther Gould; Manhattan
Earle Ervin Graham; Magnolia, Ark.
George Lauvin Graham; Manhattan
Ruth Elinor Graham; Manhattan
Spencer William Graham; Beattie
Clarence Orrin Grandfield; Manhattan
Erma Sarah Gravenstein; Riley
E. Rebecca Green; Cawker City
Roy Monroe Green; Manhattan
Mary Gertrude Grider; Rolla
Eunice Grace Grierson; Manhattan
David G. Griffiths; Manhattan
Winston King Grigg; Abilene
Danton Grover; Salina
Myrtle Annice Gunselman; Manhattan
Grace Mary Gustafson; Marysville
Ruth Violet Gustin; Manhattan
Eva Maude Guthrie; Woodston
Ferdinand Daniel Haberkorn; Hutchinson
Arthur Carroll Hadley; Wichita

SUMMER SCHOOL—*Continued.*

Bernice Mildred Hageman; Leonardville
Gladys Iona Hahn; Clay Center
Wilma Helene Hahn; Clay Center
Verna Lucille Hahn; Clay Center
Harry Herbert Halbower; Kingman
Marcia Hall; Manhattan
Velna Genevieve Hallock; Manhattan
Helen Margaret Halstead; Manhattan
Doris Independence Hamilton; Glen Elder
Richard Edward Hamler; Manhattan
Gladys Viona Hanson; Leonardville
Katherine Frances Harding; Manhattan
Oscar Miles Hardtarfer; Lawrence
May Harland; Frankfort
Maude Harland; Frankfort
Florence Harris; Manhattan
Vida Agnes Harris; Manhattan
William Pliny Harriss; Kansas City
Maude Hart; Albuquerque, N. Mex.
Frank M. Hartman; Manhattan
Lillian E. Haugstead; Lyndon
Irene J. Hauk; Holton
Everett F. Haukenberry; Manhattan
Stella Havel; Cuba
Chester Havley; Frankfort
Lillian Iola Havley; Manhattan
Martha Jane Hay; Sterling
Alunda Mae Hayes; Onaga
Frederick Hedstrom; Manhattan
Hazel Ruth Heikes; Wakefield
Carl Heinrich; Durham
James Roe Heller; Detroit
Margaret Lorraine Hemphill; Chanute
Alice Evangeline Henley; Ness City
Naomi Ruth Henry; Clay Center
Martha Louella Hensley; Jackson, Mo.
Elizabeth Spears Hepler; Columbus
Katharine Paddock Hess; Manhattan
Lucille Hesselbarth; Abilene
Fern Vivian Hickey; Dover
Lynn Bandy Hicks; Oil Hill
Earl Martin Hiestand; White Cloud
Edna Elizabeth Higgins; Solomon
Charline Vee Hill; Horton
Frank Webster Hill; Rochester, N. Y.
Robert Towner Hill; Grand Meadow, Minn.
Lora Valentine Hilyard; Manhattan
Harry Wilson Hinckley; Barnard
Winnie Blanche Hinman; Esbon
Thomas Burl Hofmann; Silver Lake
Mary Alice Holladay; Augusta
Cecil Cannum Holmes; Goff
Johnson Alcott Holmes; Manhattan
Vera M. Holmstrom; Randolph
Verna Doris Holmstrom; Randolph
Joseph Frank Holsinger; Kansas City
William Milton Holt; Augusta
Ruth Louise Holton; Manhattan
Elsa Ottilia Horn; Manhattan
Myrtle Evelyn Horne; Alma
William Robert Horsfall; Manhattan
Harper Delmar Horton; Plevna
Bert Lewis Hostinsky; Manhattan
Hazel Juanita Hotchkiss; Manhattan
Sarah Genevieve Howe; Emporia
Mildred Howe; Beloit
George Edward Hrdy; Waconda Springs
Nellie May Hubbard; Cedarvale
Lela Ethel Huber; Leonardville
Verda Murphy Hudson; Manhattan
Twila Loreen Huggins; Manhattan
Lelia Mary Hughes; Kansas City, Mo.
Marie Hughes; Salina
Aileen Hull; Manhattan
Glade W. Hurst; Caldwell
Adelaide Hutter; Cherryvale
Esther Victoria Hyrup; Mentor
Helen Eileen Ingalls; Talmage
Edna Victoria Isaacson; Randolph
Percy Jennings Isaacson; Walsburg
Mary Jane Isbell; Bennington
Cecile Mae Jackson; Kress, Tex.
Hazel Elevet Jackson; Clifton
Ralph William Jackson; Manhattan
Lucile Jaedicke; Hanover
Lois Bennett Jarrott; Hutchinson
George Henry Jenkins; Manhattan
Pauline Gertrude Jermark; Delphos
Mary Jeanette Jobling; Caldwell
Lillian Iris Johanek; Esbon
Ethel Evangeline Johnson; Cleburne
Francis Eugene Johnson; Manhattan
Genevieve Alberteen Johnson; Manhattan
George Roll Johnson; Council Grove
Ruth Maude Johnson; Beloit
Hazel M. Johnston; Leonardville
Sara Virginia Jolley; Manhattan
Elmo E. Jones; Manhattan
Esther Margaret Jones; Frankfort
Margaret F. Jones; Abilene
Mildred Irwin Jones; Clay Center
Louis Mark Jorgenson; Manhattan
Justin Joe Joy; Osborne
Ralph M. Karns; Ada
Pauline Kegereis; Salina
Harry Llewellyn Kent; State College, N. Mex.
Harry Kibler; Sedan
Helen Kimball; Manhattan
John Kimball; Smith Center (deceased)
Pattie Margaret Kimball; Manhattan
Bruce Alvin Kindig; Medicine Lodge
Dale Franklin King; Manhattan
Marion Gibbonney Kirkpatrick; Manhattan
Melvin Clair Kirkwood; Natoma
Vivian Iliene Kirkwood; Manhattan
Dorothy Elizabeth Klein; Topeka
Norma Louise Knock; Lincoln
James Raymond Knox; El Dorado
George Herman Koelling; Talmage
Josephine Elizabeth Koenig; Kansas City, Mo.
Elsie LaVerne Kramer; Hiawatha
Carrie Gertrude Krueger; Bison
Dorothy Beryl Kuhnle; Concordia
Malcolm Laman; Rice
Russell Laman; Rice
Rachel Joy Lamprecht; Manhattan
Charles Herbert Lantz, Jr.; Manhattan
Melvin Earl Lantz; Madison
Fern Aileen Larabee; Haddam
Eveline Juliet Larson; Leonardville
Frances Katheryn Marie Larson; Smolan
Iva Larson; Manhattan
Merville Larson; Manhattan
Helen E. Lauck; Maplehill
Bessie Adeline Leach; Bird City
Daniel Noel League; Wetmore
Elden Emanuel Leasure; Manhattan
Edwin E. Lee; Michigan Valley
Greta Velma Leece; Formoso
Lucy Mae Leiszler; Clifton
Mildred Hazel Lemert; Cedarvale
Florence Marie Leonard; Manhattan
M. Marie Lesher; Dodge City
Willis Lloyd Lesher; Manhattan
Bessie Helen Lewis; Wakefield
Clarence F. Lewis; Manhattan
Ruby Mae Lewis; Concordia
Joe Kenneth Limes; La Harpe
Norman M. Lindbloom; Cleburne
Per Gustave William Lindquist; Manhattan
Alice Charlotte Linn; Clyde
Aubrey Erskine Lippincott; Manhattan
Eugene Clifford Livingston; Hutchinson
Twila Ellen Lloyd; Oak Hill
Maude Maxine Lober; Keats

SUMMER SCHOOL—*Continued.*

Robert Ivan Lockard; Norton
Evelyn E. Longren; Leonardville
Elizabeth A. Lorimer; Kansas City, Mo.
L. Loraine Lortscher; Fairview
Virginia Louise Lovitt; Great Bend
Ruth Mildred Lowrey; Selden
Gladys May Loy; Wakeeney
Ruby Lillian Loy; Barnard
Verna Mern Loyd; Hiawatha
Otto Walter Lud.off; Honolulu, T. H.
Elmer Lull; Haddam
John Wallace Lumb; Manhattan
Lucile Alice Lund; Manhattan
Charles Ellis Luthey; Carbondale
Ruth Devouta Lutz; Manhattan
Lawrence Niles Lydick; Winfield
Georgie Seaman Lyman; Ulysses
George Cardinal Lyon; Manhattan
Agnes Jeanne Lyon; Manhattan
Florence Minette McCall; Salina
Lucille McCall; Winfield
Geraldine Alberta McCammon; Wellington
Hazel Juanita McCammon; Wellington
Hildred Naomi McCammon; Wellington
Caroline Louise McCarthy; Kansas City
Wayne McCaslin; Osborne
Elinor Mary McCaul; Elk City
Arthur Jesse McCleery; Esbon
Anna Evelyn McClung; Attica
Helen Edith McClung; Attica
Thelma Fern McClure; Hutchinson
Grace Kerns McCoppin; Phillipsburg
Robert Earl McCormick; Oatville
Mary Alice McCreight; Soldier
Ethel McDonald; Manhattan
Ada Marie McKeever; Holton
Agnes Vivian McKibben; Manhattan
E. Pearle McKinney; Junction City
M. Roselyn McKinney; Junction City
Mary Martha McMichael; Council Grove
Daisy Ferne McMullen; Norton
Alvin Arthur Maddy; Utica
Stella Cook Maddy; Seibert, Colo.
Dorothy Andrews Madison; Manhattan
Helen Lorine Magee; Goddard
Hazel Mahon; Silver Lake
Alice Manley; Cheney
Selma Marie Maronde; Gorham
Daniel Claire Marshall; Manhattan
Ethel Justin Marshall; Manhattan
George Edward Marshall; Bonner Springs
Arthur Ray Martin; Sabetha
Claire Arnot Martin; Abilene
Dorothy A. Martin; Manhattan
Edith Edna Seavey Martin; Manhattan
Flossie Pearl Martin; Topeka
Helen Crittendon Martin; Abilene
Ralph R. Martin; Topeka
Charlotte Viola Mathias; Manhattan
Esther Carol Mathies; Alma
James Asel Matson; Miltonvale
Mary Evangeline Maxwell; Manhattan
Charles Hubert Mehaffey; Farmington
Glen Ervan Meredith; Junction City
Alfreda Meyer; Frankfort
Mary Amanda Meyer; Mound City, Mo.
Alfred Maxwell Meyers; Merriam
Albert William Miller; Manhattan
Breta Stena Miller; Blue Rapids
Clara Grace Miller; Manhattan
Govan Mills, Jr.; Lake City
Esther Edna Mitchell; Rosedale
Walter Rankin Mitchell; Salina
Maurice Charles Moggie; Manhattan
Aldie Ann Moline; Randolph
William Edward Moling; Carterville, Mo.
Luther Emanuel Monell; Osage City
Leon Francis Montague; Solomon
George Montgomery; Manhattan
Leonard Howard Montgomery; Neodesha
Ferne Hilda Moore; Blue Rapids
Helen Handel Moore; Altamont
Raymond Benjamin Moorman; Manhattan
Alta M. Morehouse; Manchester
Alice Prince Moreland; Manhattan
J. Wade Morey; Narka
Virgil Idmire Morey; Narka
Alice Lucille Morgan; Concordia
Charles Elias Morgan; Concordia
Una Morlan; Courtland
Eula Frances Morris; Yates Center
Irene Morris; Paxico
Marguerite Morris; Paxico
Maria Morris; Manhattan
Mary Hope Morris; Manhattan
Merle Dallas Morris; Paxico
Paul R. Morris; Paxico
Eva Hope Morrison; Manhattan
Thirza Adaline Mossman; Manhattan
Edna Caroline Mueller; Washington
Anna Neal Muller; Topeka
Flavius Albert Mundell; Nickerson
Merlin Mundell; Nickerson
Stella Constance Munger; Manhattan
Ferne Aileen Murray; Manhattan
Walter Harold Murray; Manhattan
Nancy Mary Mustoe; Norton
Gladys Myers; Burns
Joyce Myers; Sylvia
Floyd Sereign Naugle; Highland
Irene Josephine Nelson; Bridgeport
William Anthony Nelson; Alta Vista
Louis Bert Neuman; Norton
Fred Irwin Nevius; Paola
Alma Dale Newell; Durham
Leanor Nichols; Manhattan
Bonnidell Nicholson; Olathe
Karl Polk Niederlander; Manhattan
Freda Marie Nixon; Topeka
Philip Myron Noble; Manhattan
Ethel Myrtle Noland; Keats
Delmo Alice Nowels; Glasco
Harold Alfred Noyce; Keats
Gladys Mae Nulik; Caldwell
Evelyn Jean Nuzman; Manhattan
Loren Manuel Nuzman; Manhattan
Geraldine O'Daniel; Westmoreland
Vera Maye Odell; Republic
Loren William Olmstead; Great Bend
Lillie Clara Olson; Manhattan
Luella O'Neill; Winchester
Bessie Mae Orr; Summerfield
Opal F. Osborne; Partridge
Robert Leroy Owens; Chapman
Alfred Robb Paden; Argonia
Lita Mae Paine; Admire
Leslie Ellison Paramore; Delphos
John Huntington Parker; Manhattan
Laurence Parker; Manhattan
Marguerite Parker; Lebanon
Muriel Rebecca Parrack; Mahaska
Jennie M. Parry; Riley
Olodine Nina Parshall; Manhattan
Dorothy Paula Pease; Manhattan
Royce Owen Pence; Manhattan
Alice Elevera Peterson; Assaria
Irving Everett Peterson; Haddam
Virginia Janette Peterson; Manhattan
Eunice Ruby Phelps; Blue Rapids
Louise Arminda Phelps; Dwight
Geneva Pauline Phillips; Chapman
Hazel Mae Pickard; Haddam
Irene Olive Pierson; Stanton, Iowa
Isa Ruth Plank; Lyons
Adolph Gustav Pommerenke; Clay Center
Myra Thelma Potter; Lawrence

SUMMER SCHOOL—*Continued.*

H. Pierce Powers; Junction City
George Lee Pryor; Salina
Mildred Emily Purcell; Manhattan
George Morris Purcell; Manhattan
Elizabeth Quinlan; Manhattan
Addie Alice Radebaugh; Frankfort
Grace Radebaugh; Frankfort
George Hemrod Railsback; Manhattan
Edith LaVerne Ramey; Manhattan
Marjorie Elizabeth Ramey; Manhattan
Marie Inez Ramsey; St. Francis
Elsie Emma Rand; Wamego
Lillie Lavone Randle; Idana
Mary Edith Rankin; Kansas City
Emma Evelyn Rathbone; Manhattan
Mary Josephine Ratliff; Manhattan
Lyle Cheadle Read; Clay Center
Lawrence V. Rector; Manhattan
Alzina LaVerne Reed; Wakefield
A. Louise Reed; Manhattan
Mary Betz Reed; Manhattan
Ruth Ellen Reed; Belleville
Charles Edward Reeder; Troy
Ethelyn Pray Rees; Mound City
Charlotte Louise Remick; Manhattan
Anna Hilkea Remmers; Riley
Jennie Fee Richards; Keats
Nell G. Richards; Keats
William Richards; Burrton
Eva Beatrice Richardson; Endicott
Gracia Fern Richardson; Endicott
Alma Margaret Richhart; Nirkerson
Hugh Kenneth Richwine; Holcomb
Tillie Helen Rife; Anthony
Mary Eilleen Roberts; Manhattan
Lucille Roberts; Republic
Sarah Helen Roberts; Manhattan
Bella Catherine Robertson; Manhattan
Chester Merle Roehrman; White City
Mabel Elsa Roepke; Manhattan
Floyd Nolan Rogers; Smith Center
Frazier Rogers; Gainesville, Fla.
Emily May Rogler; Manhattan
Mary Magdalene Rolfe; Fairview
Laree L. Rolph; Delphos
Clara Irene Rosenow; Clay Center
Edna Ross; Clay Center
Frank Henry Roth; Wichita
Dorothy Dee Roy; Wilsey
Glenn L. Rucker; Ottawa
Fern Rundle; Clay Center
Ray Russell; Kansas City
William Everett Russell; La Crosse
Helen Marguerite Rust; Manhattan
John Howard Rust; Manhattan
Henry Benton Ryon; Manhattan
Pauline Elizabeth Sadler; Randall
Russell Scott Sage; Maplehill
Fyrn Salley; Manhattan
Fontella Emma Salmon; Wayne
Marguerite Dorothy Samco; Canning, S. Dak.
Jack Sanders; Independence
Robert E. Sanders; Burlington
Eugene Caldwell Saunders; Roswell, N. Mex.
Mabel Lucille Schardein; Nickerson
Margaret James Schattenburg; Riley
Ruth Schlotterbeck; Chickasha, Okla.
Gladys Schmedeman; Manhattan
Lorna Katherine Schmidler; Marysville
Edward Henry Schneider; Kansas City
Mary Frances Schuerer; Junction City
Ruby Thelma Scholz; Frankfort
Marie Frances Schoneweis; Clay Center
Eunice Alvina Schroeter; Ellinwood
Leona Gwendolyn Schuester; Cowgill, Mo.
James William Schwanke; Alma
Agnes Mabel Scott; Westmoreland
Harriet Newell Scott; Kirwin
Marjorie Marie Scott; Altoona
Myra Edna Scott; Manhattan
Emily Rose Sedivy; Irving
Aurelia A. Seeberger; Hanover
Alma Elizabeth Seematter; Marysville
Lela Mae Segrist; Manhattan
Mirriam Ettna Selden; Clyde
Mabel Luella Sellens; Russell
Sopha Mae Shade; Hays
Maxine M. Shaffer; Beloit
Leona Edythe Shara; Narka
Vivian Bernice Shaw; Louisville
Alene Frances Shay; Miltonvale
Cecelia Matilda Shea; Clifton
James Frederick Shea; Manhattan
Floyd Henry Sheel; Earlton
Gertrude Sheetz; Admire
Vivian A. Shields; Hoxie
Elsie Leah Shippy; Chapman
Lina Maria Shippy; Chapman
Daisy May Shivers; Manchester
Beulah Fern Shockey; Iola
Bernice Elizabeth Shoebrook; Horton
Leo Charles Short; Norton
Mabel Shrontz; Wilsey
Verma Alice Siddens; Westmoreland
Kermit James Silverwood; Ellsworth
Lonnie Joseph Simmons; Manhattan
Dorothy Lois Simpson; Leonardville
Hazel Belle Simpson; Bala
Mildred Virginia Simpson; Dunavant
Sister Lorena Heidrick; Manhattan
Sister M. Domitilla Arnoldy; Manhattan
Sister Nicholas Arnoldy; Manhattan
Sister M. Francis Costello; Manhattan
Sister M. Roselita Hall; Concordia
Lois A. Sitterley; Hanhattan
Sadie Sylvia Sklar; Manhattan
Harry Edwin Skoog; Caldwell
Helen Louise Sloan; Hutchinson
Daphyne Vivian Smith; Manhattan
Ella Lavonne Smith; Agenda
Florence Verlene Smith; Tarkio; Mo.
Frank Lynn Smith; Longford
Hobart Muir Smith; Bentonville, Ark.
Sam J. Smith; Florence
Edward Paul Smoot; Eureka
Katherine Bingman Snair; Manhattan
Ruth Margaret Solomon; Kansas City, Mo.
Stevie Stiles Solt; Manhattan
Stanley Livingstone Soper; Manhattan
Julia Lurena Southard; Manhattan
Alma Spencer; Yates Center
Virgie Spreer; Clay Center
Elda Etta Stafford; Republic
Thelma Winona Stafford; Republic
Ruth Elizabeth Stener; Courtland
Irwin R. Stenzel; Marion
Ruth Sterling; Morganville
Eva Almeda Stewart; Manhattan
James Arlie Stewart; Abilene
La Von Stewart; Wamego
Mary Emma Stewart; Auburn
Lee Rudell St. John; Morland
Catherine Oloyn Stone; Manhattan
Mona Valeria Stoops; Bellaire
Leah Angeline Stout; Manhattan
Maidene Stout; Manhattan
Ruby Roberta Stover; Kansas City
William Timothy Stratton; Manhattan
Ione Strickland; Manhattan
Rozella Stutz; Manhattan
Mary L. Summers; Horton
Coit Alfred Suneson; Missoula, Mont.
Wilma Olive Sutton; Kingman
Gertrude Bernice Swagerty; Clay Center
Carola Agnes Swanson; Manhattan
Charlotte Huntington Swanson; Manhattan
Elizabeth Dorothy Swart; Riley
William Jay Sweet; Wichita

SUMMER SCHOOL—*Concluded.*

Charles Henderson Synnamon; Wichita
Cleon Orel Tackwell; Manhattan
Laura Ethel Taggart; Salina
Velma Arthena Talbot; Marysville
Philip Jesse Tatman; Lucas
James W. Taylor; Manhattan
Lot Forman Taylor; Ashland
Mark Mowell Taylor; Harveyville
Mary Fidelia Taylor; Newton
Sylvia Ernestine Teasley; Glasco
Donald M. Telford; Manhattan
Juanita La Vern Telford; Manhattan
Mary Cleo Teter; El Dorado
Rebecca Louise Thacher; Waterville
Emily Sheppeard Thackrey; Manhattan
Russell Ira Thackrey; Manhatttan
Howard I. Thaller; Manhattan
Beulah Helen Thomas; Ottawa
Grace Anna Toburen; Barnes
Mateel Finch Todd; Manhattan
Evelyn Lucille Torrence; Independence
Ivan C. Townsdin; Randall
Nellie Trechsel; Idana
Ruth Anna Tredway; La Harpe
Opal Pearl Tucker; Alton
Mary Edna Tupper; Manhattan
Faye Marjorie Turner; Manhattan
Clarence Correll Uhl; Manhattan
Mildred Fern Ungeheuer; Centerville
Gladys Ellen Vail; Manhattan
Lois Castle Vance; Kiowa
Ruth Van Orsdol; Rossville
Gerald Dean Van Pelt; Beloit
Grace Emily Van Scoyoc; Mont Ida
Leland Stanford Van Scoyoc; Manhattan
Mary Pierce Van Zile; Manhattan
Lillian Elizabeth Vennum; Columbus
Ruth Kathleen Vennum; Columbus
Velma Elizabeth Vincent; Alden
Jerry Julian Vineyard; Junction City
Crystal Louise Wagner; Manhattan
Dorothy Wagner; Topeka
Mary Frances Wagner; Manhattan
Mildred Margaret Wagner; Ames
Helen Frances Walker; Manhattan
Violet Lovina Walker; Manhattan
Elsie Gertrude Wall; Cawker City
Margaret Lois Walters; Riley
Walter Gilling Ward; Manhattan
Louise Ware; Manhattan
Mary Virginia Washington; Manhattan
Eugene Albertice Waters; Eureka
Ellen Louise Watson; Manhattan
John Clarke Watson; Frankfort
Jewell Kimball Watt; Coyville
Alta Bernice Watters; Marysville
Ella H. Webb; Kansas City
Ray Edward Weide; Leona
Harold Rowe Weller; Olathe
Ethel Sue Wells; Winona
Olive O. Wells; Belleville
Thornton Walton Wells; Hays
Lulu Parten Wertman; Morrowville
Jesse Frederick Westerdale; Wakefield
Opal Augusta Westhausen; Belleville
Bernice Elizabeth Weygandt; Manhattan
Florence Rilla Whipple; Manhattan
Julia Alberta White; Clay Center
K. Marie White; Oswego
Mary Frances White; Manhattan
Royden Keith Whitford; Hamlin
Delta Nadine Whitmore; Manhattan
Kathryn Whitten; Wakarusa
Margaret Katherine Wieda; Hiawatha
Louis George Weineke; Sabetha
Mary Christine Wiggins; Eureka
Esther Margaret Wilkins; Meade
Jean Frances Willis; Washington
Emily Wilson; La Harpe
Karl Marx Wilson; Concordia
Leone Wilson; Wichita
Charles Asher Wimer; South Haven
Ruth Maybelle Wimer; South Haven
Verna B. Winchel; Salina
Jo Marie Wise; Manhattan
Irma Mildred Wolf; Lawton, Okla
Ruth Wolfe; Admire
Hilma Leona Wolgast; Alta Vista
Wallace Robert Womer; Manhattan
Catherine Louise Wood; Wakefield
Etha King Wood; Reading
Mildred L. Wood; Maryville, Mo.
Gracelee Woolverton; Abilene
John Howard Worley; Randall
Clair M. Worthy; Wetmore
Estel Lee Wright; Blue Mound
Wilbur William Wright; Hope
Clifford Richard Yardley; Hutchinson
Evelyn Ruth Yarrow; Wakefield
Mary Irene Yoder; Manhattan
Carol Oscar Youngstrom; Culver, Ore.
Iscah Marion Zahm; Topeka
Bertha Annetta Zimmers; Hiawatha

Second Session

Elgin R. Button; Meriden
Blaine Crow; Silver Lake
John Clayton Dwelly; Manhattan
Thomas Conway Faris; Lebanon
Vern Oren Farnsworth; North Topeka
Vernett Edward Fletcher; Alton
Harold David Garver; Merriam
Willard Dyke Gilbert; Alden
Beulah McNall Glenn; Webster
Philip Walter Hansen; Columbus
F. Floyd Herr; Argonia
Julian Almon Johnson; Kiowa
Herbert Lee Kammeyer; Wamego
John Humphrey Kerr; Miltonvale
John Lowe; Winfield
Earl Harrison Martin; Pratt
Onie L. Norton; Altamont
Dwight Patton; Harper
Fred Thomas Rees; Mound City
Roger E. Regnier; Fairview
Harry Weber Schaper; Jewell City
Lester John Schmutz; Wakefield
Sidney Simmons; Greensboro, N. C.
William Henry Teas; Kingman
Forest Whan; Manhattan
Viola Jenet Williams; Kansas City, Mo.
Hugh Willis; Williamsburg
Homer Carlton Wood; Reading
Claude Newton Yaple; Ford

August Period

Maynard Henry Coe; Manhattan
George Albert Gemmell; Manhattan
Royce Owen Pence; Manhattan
Glenn Rucker; Ottawa
William Timothy Stratton; Manhattan

Home Study Service Students

(Instruction by Correspondence)

For the year January 1, 1929, to January 1, 1930, those who took credit courses numbered 853 and those who enrolled in vocational courses numbered 23.

In the following list, those taking college credit courses are indicated by (c), those taking high-school courses by (p) and those taking vocational courses by (v).

Where enrollments are from Kansas the name of the state is omitted. It is given in all other cases.

Vivian D. Abell (c); Riley
Lora W. Aborn (c); River Forest, Ill.
June Adair (p); Wathena
Alice V. Adams (c); Leavenworth
Leo V. Adkins (p); Glasco
Gladys Ahlericks (p); Winfield
Helen Elizabeth Allison (p); Florence
Ethel L. Alston (c); Raleigh, N. C.
Le Roy Alt (c); Mankato
Ruth C. Anderson (c); Manhattan
Mrs. Birdie Anderson (v); Clay Center
Frances A. J. Anderson (c); Winnetka, Ill.
Elna Andrick (c); Wheaton
L. Keith Anderson (c); Cleburne
Jessie Yahn Andrews (c); Manhattan
Joye Ansdell (c); Jamestown
Paul W. Archer (c); Hutchinson
Ruth C. Archer (c); Hutchinson
Mrs. Mahala Arganbright (c); Wamego
Bessie Marie Argo (p); Oketo
Sister M. Nicholas Arnoldy (c); Manhattan
Sister M. Domitialla Arnoldy (c); Manhattan
Edward L. Askren, Jr. (c); Manhattan
Estella Ault (p); Wamego
Herbert W. Avery (c); Wakefield
Donald K. Ayres (c); Manhattan
Frank H. Backstrom (c); Kansas City, Mo.
Mildred Bailey (p); Agra
J. L. Baird (c); Wellsville
Loran Dale Balderson (p); Wamego
Don C. Baldwin (c); Manhattan
L. R. Ballard (p); Manhattan
Frances Bane (p); Webster
Dora Gladys Banks (p); Wamego
John V. Baptist (p); Uniontown
Irene Barber (c); Miltonvale
Alex J. Barneck (c); Salina
Ruth Barnes (c); Paxico
Wilma M. Barr (p); Manhattan
Ruth Barrett (c); Wichita
William Barth (p); Wathena
L. G. Bartholomew (c); Wichita
Earl T. Basore (p); Valley Center
Sue E. Bates (c); Manhattan
Mrs. Wm. Bauer (v); Clay Center
Cecil Baum (p); Belpre
Kenneth Bauman (c); Salina
Pauline Beck (c); Republic
Neva J. Beckey (c); Bavaria
Sigrid Beckstrom (c); Marquette
Clara Benne (p); Washington
Martin Benston (p); Leona
Thelma Berg (c); Chicago, Ill.
Margaret M. Bergman (p); Independence
H. J. Besler (c); Manhattan
Mildred Adeline Bettles (c); Greenleaf
T. G. Betts (c); Detroit
John Bird (c); Manhattan
Caroline Bivins (c); Chicago, Ill.
Doris Bland (c); Lucas
Nellie Bloom (c); Liberal
Mrs. Irma McKinnell Boardman (c); Thoreau, N. Mex.
Mrs. Louise G. Boatman (c); Norton
George Bolley (p); Washington
Margaret Boore (v); Manhattan
Patricia Boult (p); Manhattan
Mildred Boyd (p); Norton
Beulah B. Boyd (p); Waterville
H. R. Bradley (p); Manhattan
C. Clifford Brady (c); Epworth, Iowa
Katherine Brannan (c); Texarkana, Ark.
Justina Brenning (c); Burns
Lilly Brenner (c); Clay Center
Leonard K. Brewster (p); Independence
Gertrude Brill (c); Westmoreland
Faith Briscoe (c); Cambridge
Vernon L. Britton (c); Wellington
Frances E. Broadbeck (c); Washington
Velma Brockway (p); Simpson
Mildred Bronstine (p); Lewistown, Mo.
Gertrude Brookens (c); Westmoreland
Mrs. K. B. Brooks (c); Junction City
Dorothy M. Brophy (p); Vliets
Lura A. Brown (c); Cassoday
Claude H. Brown (c); Winfield
Flossie Brown (p); Winfield
Ralph M. Brown (c); Kansas City
T. B. Brown (v); Ulysses
Orpha Brown (c); Edmond
Earl Robert Brown (v); Plains
Alice E. Browne (c); Corning
V. C. Brubaker (c); Abilene
Maurine Bryan (c); Delia
Lily Mae Buchanan (c); Ottawa
Thos. Buchman (p); Paola
Wilma Mae Bucknell (c); Olathe
Leon P. Burris (c); Chanute
Jeanne Burt (p); Manhattan
Georgiana Bush (c); Little River
Norvall Butler (c); Manhattan
Floyd W. Caldwell (c); Parsons
Jessie Campbell (v); Lyons
Wm. Frank Campbell (p); Independence
Velva Campbell (p); Norton
Margaret Canham (c); Kansas City, Mo.
Edward Canisius (v); Sheboygan, Wis.
E. D. Cannon (c); Manhattan
Gladys Carder (c); Langdon
Thadene Carey (c); Valley Center
William Carlson (p); Smolan
Helen C. Carlson (c); Cleburne
Mildred Casey (c); Dorrance
Tulloch Casey (p); Corning
Wm. R. Chalmers (c); Topeka
Lucille Chastain (c); Manhattan
Gladys Chegwidden (c); Claflin
Milton Cherry (c); Chicago, Ill.
Leota Chester (p); Glade
Marian Childers (c); Wamego
Harley Chilson (c); Oberlin
Mildred Christenson (c); Concordia

HOME STUDY STUDENTS—*Continued.*

Elverine Clapp (p); Washington
Helena Clapp (p); Washington
Elmer Field Clark (c); Jewell
Velma Clark (p); Savannah, Mo.
Vernie Clausen (c); Alton
Floyd A. Clayton (c); El Dorado
C. F. Clayton (c); El Dorado
Ina L. Clements (p); Havensville
Elizabeth O. Clency (c); Manhattan
Mildred A. Cleveland (c); Chicago, Ill.
Chas. E. Cole, (c); Cicero, Ill.
Lillian M. Colfer (c); Chicago, Ill.
Frances Conard (c); Ottawa
Catherine Conroy (p); Manhattan
Lucy E. Caster (c); Manhattan
Wilma Copper (c); Manhattan
Donald Russell Corey (c); Jackson, Miss.
Sister M. Frances Costello (c); Manhattan
Lucile Costello (c); Carlton
George O. Covert (p); Hiawatha
Frances M. Covey (c); Miltonvale
Donald W. Cowan (c); Valley Falls
Herman C. Cowdery (c); Lyons
Josephine A. Cox (c); Chicago
Lucile Cox (p); Havensville
W. H. Cox (c); Elk City
Norman C. Craig (p); Hiawatha
F. M. Crawford (p); Manhattan
Vera Crawford (c); Lincoln
Jimmie Cress (p); Cedar Point
Earl E. Crocker (c); Manhattan
Geneveieve Crowley (c); Manhattan
Mrs. Naomi R. Croy (c); Norcatur
Ethel Culbreath (c); Douglass
Guy W. Cummings (c); Nettleton, Mo.
Phyllis C. Cunningham, (c);
Michigan City, Ind.
Roy Cupp (c); Washington
Cora Dell Curry (c); Winchester
Mildred W. Cyr (p); Miltonvale
Maude Daniels (c); Randolph
Bill Daniels (c); Westfall
Agnes Daugherty (p); Manning
Rowland A. Davenport (c); Ottawa
Saloma Davis (c); Carthage, Mo.
Frances E. Davis (p); Americus
Paul Davis (c); Manhattan
Glenn M. Deeter (c); Norcatur
Dewian L. Delp (p); Norton
Clara F. Denison (c); Attica
Bessie Elaine Dennis (p); Macksville
Donna Dickinson (c); Douglass
Guy E. Dickinson (c); Sabetha
Hilma M. Dickinson (c); Winfield
Benetta Diehl (c); Polo, Ill.
Earl I. Dixson (p); Forgan, Okla.
Elizabeth R. Dixson (c); Buffalo, Okla.
Thelma A. Dodd (p); Linn
William H. Dodderidge (p); Manhattan
R. R. Dodderidge (c); Council Grove
Mrs. Karl E. Donnell (c); Hutchinson
Esther B. Dosser (p); Jetmore
Joseph A. Doubrava (c); Lorraine
Maggie Doyle (c); Douglass
Etha C. Dungan (c); Independence
Rachel Dunham (c); Broughton
John E. Dunkin (c); Wellington
Martha DuMars (c); Topeka
Jean Lois Durland (c); Irving
Mrs. Mabel L. Eade (c); Duluth, Minn.
Albert R. Edwards (c); Manhattan
Charles Eichman (p); Williamsburg
Mary Eisendrath (c); Hubbard Woods, Ill.
Lino Elefante (p); Fort Riley
Harold Ellington (p); Monticello, Mo.
G. F. Ely (c); Spivey
Mildred Emery (c); Hutchinson
P. A. Engle (p); Abilene
John English (p); Topeka
Arthur A. Erickson (c); Kansas City
Clarice Erickson (c); Aurora, Ill.
Alexander L. Erickson (c); Chicago, Ill.
Geo. F. Ernsbarger (c); Randolph
Ernestine B. Ernest (c); Paola
Ruth E. Esslinger (c); Bala
Grace E. Eustace (c); Wakefield
Thomas M. Evans (c); Gove
Cleora Ewalt (c); Dodge City
Margaret Fairman (p); Manhattan
Sidney L. Falin (c); Cleburne
Wilma Falen (c); Oak Hill
G. L. Farnsworth (c); Wichita
C. Archer Farrell (c); Berwyn, Ill.
Vera Farrell (c); Clay Center
Cecil Farrington (p); Phillipsburg
J. V. Faulconer (c); El Dorado
David M. Feese (c); Bozeman, Mont.
Mrs. Mildred H. Ferguson (c); Fairfield, Ill.
Mabel M. Ferris (c); Chicago, Ill.
Joe Fickel (c); Chanute
Beryl E. Field (c); Ogden
Alta Fields (c); Manhattan
Floyd Finley (p); Waterville
Wm. I. Finley (v); Lyons
Clella L. Fisher (c); Fellsburg
Theodore A. Fleck (c); Manhattan
R. W. Fleck (c); Beloit
Hattie Flesher (c); Carthage, Mo.
Lucy Fletcher (c); Salina
R. S. Florer (c); Marion
Eva Ford (c); Manhattan
Kathryn Forseman (c); Council Grove
Wallace Forsberg (c); Lindsborg
J. M Foster (v); Clifton
Joseph F. Foster (c); Kansas City, Mo.
Zelda Frame (p); Norton
Artie R. Frank (p); Grainfield
Maurice B. Franklin (c); Manhattan
F. J. Franks (p); Rock
Alva H. Freeman (c); Manhattan
Ray French (p); Hiawatha
Elta Frey (c); Sylvan Grove
Matilda Fricke (c); Morrill
John D. Friesen (p); Buhler
J. R. Frizzell (c); Hutchinson
Dollie Mae Frost (c); Emporia
Ruth Frost (c); Blue Rapids
Evangeline Fullerton (p); Medicine Lodge
Margaret Fulton (p); Marysville
Lowell Funk (c); Seneca
Lowell Funk (c); Manhattan
Edgar D. Furse (c); Fort Scott
Ruth Gamber (c); Manhattan
Ruth Dible Gamble (c); Halstead
Kenneth Gapen (c); Manhattan
Victor Garner (p); St. John
William Garner (p); St. John
Alice Garvin (c); Ogden
L. C. Gates (c); Manhattan
Warren G. Gates (p); Broughton
Minnie Dee Gay (p); Paragould, Ark.
Helen M. Gelakoski (c); Chicago, Ill.
Florence L. Getz (c); Chicago, Ill.
Ward Gibbs (c); Topeka
Glen Gibson (p); Independence
Virginia Gibson (c); Potwin
Glen Gilbert (c); Manhattan
Walter C. Gill (c); St. John's Barbados, British West Indies.
Mrs. H. E. Gillette (v); Ottawa
Clarence Lee Gish (c); Abilene
Ruth Gladfelter (c); Whitewater
Louise C. Glick (c); Garden City
Elizabeth Goggin (p); Junction City
Elizabeth Gordon (p); Independence
Ruth Gordon (c); De Soto
W. W. Gosney (c); Goddard
Gwendolyn Gosney (c); Goddard

HOME STUDY STUDENTS—*Continued.*

Geo. M. Grafel (c); Herndon
Gladys Graham (c); Manhattan
Erma Gravenstein (c); Riley
Richard H. Graves (p); Darlow
Margaret Greep (c); Longford
Freda L. Greer (c); Marion
Howard Gregory (c); Manhattan
Donald Green (p); Independence
Gilbert Green (p); Norton
Andrew P. Grimes (c); Greenwood, Mo.
La Verene Grover (p); Menlo
Hilda Grossmann (c); Manhattan
Beatryce Grundy (p); Webster
Elaine Gustafson (c); McPherson
Grace M. Gustafson (c); Manhattan
Miranda Gustafson (c); Chicago, Ill.
Paul Habiger (p); Bushton
August Haegelin (c); Atchison
Minnie Hahn (c); Inman
Albert Hahn (c); Halstead
Vera Hahn (c); Clay Center
Gladys Hahn (c); Clay Center
Sister M. Roselita Hall (c); Concordia
Florence Hall (c); Elkhart
Lucille L. Hamill (c); Grenola
Gertrude Hamilton (c); Wichita
Francis H. Hammett (p); Marysville
Maxine E. Hale (p); Formoso
Harry Hancks (p); Wamego
Zelma Hancock (p); Randolph
Mrs. Ray E. Hanna (v); Clay Center
Gladys Hanson (c); Leonardville
Maude Harland (c); Frankfort
Ruth Harlow (c); Lucas
Florence Harold (c); Dresden
Faye Harris (c); Parsons
Harold Harris (p); Grinnell
Rodney Harrison (c); Burden
Mary C. Harrison (c); Tahlequah, Okla.
Alta Hart (c); Webster
Laura Hart (c); Overbrook
L. R. Hartman (c); Hoisington
John Hartung (p); Manhattan
Mercedes B. Hawkins (c); Tulsa, Okla.
Ola Hay (p); Norwich
Lucile Hayman (p); Formoso
Francis Hayward (p); Menominee, Mich.
Harold Heckendorn (p); Cedar Point
Robert B. Hedrick (c); Wichita
Violet A. Heer (c); Manhattan
Walter Heide (p); Harlan
Edward Heikes (p); Riley
Lawrence Heinz (p); Bushton
Mrs. A. B. Hemphill (v); Broughton
Georgia Hemphill (c); Clay Center
Mrs. W. O. Henderson (v); Lane
Wayne Henderson (p); Oxford
Marguerite Henry (p); Coffeyville
Elizabeth Herold (p); Ellinwood
Lucille Hesselbarth (c); Abilene
Della E. Heibert (p); Hillsboro
Edna Higgins (c); Solomon
Frank W. Hill (c); Manhattan
Everett A. Hinz (c); Abilene
Eva Hixson (c); Wakeeney
Thurman Hobson (p); Sugar City, Colo.
Lawrence F. Hofflinger (c); Kansas City
Mary P. Hoffman (c); Chicago, Ill.
Glen Hoglund (p); Miller
Harold Holmes (c); Riley
Horace A. Holmer (c); Eureka
Joe Holsinger (c); Manhattan
Julian Holuba (p); St. George
James M. Hoover (p); Greenleaf
Fred C. Horan (c); Oak Grove, Mo.
Seward E. Horner (c); Abilene
Virgin Horrell (c); Vinland
De Witt Houck (c); Americus
Harold Hovde (c); Fort Atkinson, Wis.
Dorothy Howard (c); Garnett
Ida Howard (c); Garnett
Muriel Howard (c); Oberlin
Junior Howard (p); Oberlin
John T. Hoyne (c); Manhattan
Adolph Hraba (c); East St. Louis, Ill.
Harold Hoffman (p); Chapman
Elmo Wm. Huffman (c); Cunningham
Louise Huey (c); Ogden
Aileen Hull (c); Manhattan
Walter K. Hull (v); Ottawa
Sibyl Maude Humbert (c); Danville
Anita Humbert (c); Danville
George M. Hunholz (c); Wamego
H. M. Hunter (c); Topeka
Elsie D. Irwin (c); Wakefield
Ima Isom (c); Lebanon
R. W. Jackson (p); Manhattan
Frank Jacobson (p); Manhattan
George Jelinek (c); Ellsworth
Mark Jenkins (p); Paola
Geo. H. Jenkins (c); Carthage, Mo.
La Motte J. Jenkins (c); Quindaro
Dolf Jennings (c); Lyndon
Wilma Jennings (c); Little River
Rena Jewell (p); Kanopolis
Florence Johnson (p); Caldwell
Geneva Johannes (c); Willis
Viola Johnson (p); St. Francis
Mrs. Laura Johnson (v); Ottawa
Robert F. Johnson (c); Salina
Ruth Johnston (c); Berwyn Ill.
Mrs. Edna Johnson (p); Beeler
Wm. Z. Johnson (c); Beeler
Dwight Deihl Johnson (c); Topeka
Glenn Joines (c); Manhattan
Lee G. Jolley (c); Bastrop, Tex.
Lillie Jones (c); Ramona
Dorothy May Jones (p); Belleville
Henry Jones (p); Enterprise
Margaret Jones (c); Abilene
Raymond Judd (p); Wellington
John Junkins (c); Detroit, Mich.
Elva Keefover (p); Waterville
Pauline Kegereis (c); Manhattan
Frances Kehler (p); Solomon
Willis Kelley (c); Kansas City
R. W. Kellogg (c); Manhattan
Evelyn Kelly (c); Wellington
C. H. Kenison (c); New Cambria
Alice E. Kennedy (p); Fort Leavenworth
Virginia F. Kennedy (p); Fort Leavenworth
Sadie M. Kerr (c); Croft
Y. S. Kim (p); Manhattan
Ned Kimball (p); Manhattan
John Kimball (c); Manhattan
Nellie Kimbrell (p); Norton
Dorothy K. Kimman (c); Chicago, Ill.
Clara Bess King (c); Delphos
Frances A. Kinghorn (c); Morrowville
Mildred Kingsbury (c); Smith Center
Vela Kinman (p); Coffeyville
Eunice Kinner (c); White City
Mrs. W. S. Kinsey (v); Overland Park
Aaron Kipp (c); Ellsworth
W. F. Kipper (c); Manhattan
Arthur Kirby (c); Chanute
Herbert H. Kirby (c); Manhattan
Wm. G. Kirby (c); Manhattan
Bernice Kirby (p); Independence
Hazel Kitch (c); Bethel College, Newton
Marius Kjar (p); Bartlett, Ill.
Marie Kline (p); Wathena
Martin Klotzback (c); Humboldt
Frances Knerr (c); Manhattan
Edna Knode (c); Wichita
Laura A. Knop (p); Ellinwood
Viola Koenig (c); Manhattan
Clarence C. Koerner (c); Amarillo, Tex.
Margaret F. Kohl (c); Furley
Alice R. Kunze (c); Green

HOME STUDY STUDENTS—*Continued.*

Blair Kope (p); Winfield
Iva M. Kopp (c); Hiawatha
Grace Kottwitz (c); Peabody
Martha Krehbeil (p); Moundridge
Lawrence G. Kurtz, (c); Alton
Dorothea La Follette (c); Utica
Amy Lamb (c); Blue Rapids
Julia S. Lamb (c); Blue Rapids
Beth Elaine Lambertson (p); Florence
Frank La Plant (c); Minneapolis
Ruth Larimer (v); Topeka
Eveline Larson (c); Leonardville
K. J. Latimer (c); Coffeyville
Joseph W. Laughlin (c); Syracuse
E. P. Lawrence (c); Eads, Colo.
Roy Legg (p); Scott City
Dorothy E. Lehman (c); Bern
Mrs. Mildred W. Keler (c); Manhattan
Ora Francis Leonard (c); El Dorado
Christine Leseberg (p); Phillipsburg
C. A. Lindenmyer (c); Russell
Con Linwall (c); Lindsborg
Cornelia List (c); Chicago, Ill.
Edward Litchen (p); Leavenworth
Robert E. Little (c); Fowler
E. C. Livingston (c); Manhattan
Sophroni Lockhart (p); Beloit
Adolph Lonborg (c); Topeka
Clara Long (c); Idana
Angelina M. Lotesto (c); Chicago, Ill.
H. Dale Lott (c); Minneapolis
Eleanor Loughridge (c); Lyndon
Charlotte Loughridge (c); Lyndon
Leonard M. Lovejoy (c); Almena
Franklin Lundstrom (c); Chicago, Ill.
Mrs. Corrinne W. Lutz (c); Logan
Charles N. Lyman (p); St. Joseph, Mo.
Wm. D. Lyon (c); Faulkner
Avis Mack (c); Clay Center
Elbert B. Macy (c); Manhattan
Dorothy Madison (c); Manhattan
Helen L. Magee (c); Goddard
Melvin L. Marsh (p); Independence
Lewis P. Marshall (p); Wakefield
Raymond A. Marston (p); Chapman
Catherine Martin (p); Bala
Teresa Martin (p); Bala
Wilbur Martin (c); Broughton
Chloe Marland (p); Scott City
Mildred Masden (c); Lenora
Merton Mathews (p); Manhattan
Eva M. Mathes (p); Wichita
J. R. Mathias (c); Manhattan
James A. Matson (c); Miltonvale
Truman Mauck (c); White Water
Gertrude May (c); Manhattan
W. S. Mayden (c); Manhattan
Albert L. McCauley (c); Leoti
Ruth McCammon (c); Oronoque
Milton M. McClintock (p); Denton, Tex.
Percy McClain (p); Gaylord
Mrs. Laura E. McClure (c); Topeka
Ronald McClain (p); Harlan
Charles McClenory (p); Valley Falls
Mabel McCormick (p); Manhattan
Robert H. McCollum (c); Manhattan
Raymond E. McCormick (c); Fort Scott
Joe McCormick (p); Webster
Rachel McCoy (c); Wamego
Harriet McConnell (c); Cherryvale
Ronald McCrea (c) Chicago, Ill.
Dora F. McCrery (c); Hiawatha
Earldine McCune (p); Stafford
Eugene P. McCulley (c); Beloit
Donald McCallister (c); Amarillo, Tex.
Geneva McDaniels (c); Scottsville
Mrs. Z. H. McDonall (v); Wichita
Cole McFarland (p); Fort Leavenworth
Clifford L. McGinnis (c); Valley Falls
A. Sidney McIntire (c); Burlingame
E. Pearle McKinney (c); Junction City
Frances McKenna (c); Ottawa
Niva McManis (c); South Haven
Robert McLean (p); Manhattan
Gail McLaughlin (p); Alta Vista
Don T. McClelland (c); Maplehill
Ruth McManis (c); Manhattan
J. H. McNary, Jr. (p); Manhattan
May McNiff (p); Manhattan
Mildred Meisenheimer (p); Hiawatha
Mrs. Ruth Mellenbruch (v); Anthony
Ralph F. Melville (c); Muncie
John K. Merritt (c); Manhattan
Mary Meyer (c); Mound City, Mo.
Alfreda Meyer (c); Lillis
Alfred Meyers (c); Merriam
M. B. Miller (c); Manhattan
H. S. Miller (c); Kansas City
Alma Miller (c); Howard
Breta S. Miller (c); Blue Rapids
M. E. Miller (c); Quenemo
Govan Mills, Jr. (c); Manhattan
W. R. Mitchell (c); Manhattan
Elvaida Moffit (p); Meriden
Birdie Montgomery (c); Newton
Warren D. More (c); Copeland
Reginald Moore (c); Robinson
Alta Morehouse (c); Abilene
Alvin Morgan (c); Lebo
Olive Morgan (c); Hugoton
Albert Morgan (p); Phillipsburg
Frances Morlan (c); Salina
Phalvie I. Mortenson (c); Chicago, Ill.
Anna Neal Muller (c); Topeka
Arlee Murphey (c); Manhattan
Louise L. Murphy (c); Chicago, Ill.
Margarette Murray (p); Langdon
Ansel Myers (c); Lyons
Channing Myers (c); Salina
Mary Nash (c); Lawrence
Mr. John N. Nash (p); Green
Maxine Naylor (p); Manhattan
Martha Nazarenus (p): Dighton
Hubert S. Neas (c); Wichita
Leonard G. Nehring (c); Harveyville
Mrs. Merrit Nelson (v); Augusta
W. A. Nelson (c); Manhattan
Ella Nelson (p); Manhattan
Lucile Newell (c); Wakefield
Alma Dale Newell (c); Durham
W. M. Newman (c); Centralia
Alex Nigro (c); Manhattan
Rosemary Nilsoon (p); Winfield
Ethel Noland (c); Keats
K L. Noland (c); Cedarvale
Dale Norris (c); Raymond
Dorothy Norris (c); Manhattan
Nora Norris (c); Lawrence
Earl C. North (c); Manhattan
L. C. Northcutt (p); Copeland
W. E. Oberg (c); Manhattan
Lois Oberhelman (c); Barnes
Herbert O'Brien (p); Phillipsburg
Chester O'Brien (c); Sabetha
Geraldine O'Daniel (c); Westmoreland
Beatrice Oliphant (c); Hutchinson
Pauline Olmstead (c); Concordia
Allan Olsmith (p); Fort Leavenworth
Luella O'Neill (c); Winchester
Mildred Osborn (c); Clifton
Aileen Ostlind (c); McPherson
Dale Oswalt (c); Little River
Joenetta O. Owens (p); Manhattan
Mrs. Elizabeth M. Painter (c); Manhattan
Clarence Parker (c); Arkansas City
Marian Parker (p); Long Island
Clemont C. Parrish (c); Great Bend
Dorothy E. Peak (c); Lindsborg

HOME STUDY STUDENTS—*Continued.*

Lormor A. Pearman (c); Holton
Aleta Peck (c); Council Grove
Harold D. Peck (p); Independence
Garland Pennington (p); Wichita
Raymond L. Peters (c); Leavenworth
Leona Peterson (c); Enterprise
A. Blanche Peterson (c); Winfield
Louise Peterson (c); Randolph
Royal Peterson (c); Cleburne
Tom Petty (c); Manhattan
Marion E. Phillips (c); Wichita
Maryellen Phillips (p); White Cloud
Gladys Pickett (p); Manhattan
W. M. Pishmey (c); Leonardville
Velma Pitman (p); Grigston
Russell Pitney (p); Wamego
Wilfred Platt (c); Manhattan
Mrs. Norman V. Plummer (v); Horton
Margaret Polifka (p); Wilson
Orville Pool (p); Wetmore
Gladys Popham (c); Minneapolis
Ora F. Porter (p); Beloit
E. F. Potter (c); Manhattan
Frances E. Potter (c); Natoma
Nellie L. Pretz (c); Irving
Hazel S. Price (c); Liberty
Delmas Price (c); Wakefield
John Province (c); Manhattan
Mrs. E. L. Publes (c); Pine Bluff, Ark.
Betty Purcell (p); Manhattan
Mrs. Maude B. Purdum (c); Glen Ellyn, Ill.
Ernest Quick (c); Bellefont
George E. Rainsberger (c); Chillicothe, Ill.
Francis J. Raleigh (c); Clyde
Ben E. Ramsey (c); Dighton
Ralph P. Ramsey (c); Mankato
Mabel Rand (p); Wamego
Harold Randolph (p); Valeda
Elmer W. Randle (c); Jefferson
Mary Rankin (c); Manhattan
Winetta Rauhut (p); Coats
Georgette Rebeil (c); Chicago, Ill.
Wayne Rector (p); Scott City
Willard V. Redding (c); Manhattan
Mrs. Jaunita J. Redus (c); Lexington, Mo.
Alzina Reed (c); Manhattan
Muriel G. Reed (c); Oak Hill
A. Louise Reed (c); Manhattan
Jeanice M. Reel (c); Detroit
Theodore James Regier (p); Elbing
Alma Regier (p); Whitewater
Maria Reimer (c); Canton
Eleanor Resler (c); Clay Center
Marguerite L. Richards (c); San Leandro, Cal.
Elizabeth Richards (c); Waldo
Earl C. Richardson (c); Coffeyville
J. A. Richardson (c); Douglass
Margaret Richardson (p); Glade
Kate Richardson (c); Manhattan
Paul Ricketts (p); Wallace
R. C. Riepe (c); Kansas City
Carl J. Riggs (c); Clayton
Wanda Riley (c); Chanute
Tracy M. Roberds (c); Caney
Lucille Roberts (c); Republic
L. Clements Robbins (c); Chicago, Ill.
Elsie Belle Rogge (c); Hyde Park, Chicago, Ill.
Randle Rolfs (c); Lorraine
Edith Rolland (p); Clayton
Adolphus Roncaglio (c); Chicago, Ill.
Mae Rooney (c); Haddam
Karl W. Root (c); Topeka
Ruth Rosenstiel (c); Goddard
E. L. Ross (c); Manhattan
Don C. Ross (p); Manhattan
Marshall B. Ross (c); Manhattan
Edward J. Ruisinger (c); Manhattan
Anna Rundus (p); Belleville
Mabel Ruthi (c); Bloomington
Victor H. Saffry (c); Alma
Orville Saffry (p); Alma
Martha M. Sandeen (c); Stilwater, Minn.
Mary Lois Saxton (c); Manhattan
Gladys Schafer (c); Manhattan
Louise Scheu (c); Clay Center
Francis Schiller (c); Abilene
Raymond Schlotterbeck (c); Manhattan
Carrie Mae Schmidt (p); Oketo
Gladys Schmedemann (c); Manhattan
Ann Schonholtz (c); Arlington
Ethel Schoen (c); Cawker City
Lewis M. Schrader, Jr. (p); Kinsley
William J. Schultis (c); Sylvan Grove
Eber Schultz (c); Miller
Virginia M. Schwager (c)) Adrian, Mich.
Galen E. Schwandt (c); Manhattan
Wilber Schweizerhof (p); Smolan
Agnes M. Scott (c); Westmoreland
James F. Scott (c); Manhattan
Clyde Scott (c); Sedan
Eleanor R. Scott (p); Independence
Olivette Scritchfield (c); St. George
Emily Seaburg (c); Manhattan
Mila Sedivy (c); Blue Rapids
Mabel Sellens (c); Russell
Virginia Shafer (p); Manhattan
V. V. Shaffer (c); Salina
C. L. Shepherd (c); Harveyville
Roger T. Shepherd (c); Harveyville
Bearl Shepherd (p); Bala
Mrs. Alice Sherman (v); Kinsley
H. K. Shideler (c); Anthony
Frances Shields (c); Garden City
George R. Shier (c); Gypsum
Avis P. Shobe (p); Independence
Ethel Shobe (p); Independence
Will F. Shorman (c); Morganville
Marie Shouse (c); Kipp
Curt Siemens (c); Newton
Elva Sigler (p); Norwich
Helen Simmons (c); Chicago, Ill.
Harold Simpson (p); Clyde
Wilma Simpson (c); Clyde
Clude Sloan (c); Dalhart, Tex.
John F. Smerchek (c); Cleburne
Sam J. Smith (c); Fairfield, Ill.
E. P. Smoot (c); Eureka
Harry Smoot, Jr. (p); Leavenworth
Carl D. Smith (c); Mayetta
Mildred Smith (c); Belleville
Blanche Smith (p); Norton
Henrietta D. Smith (c); Minneapolis, Minn.
Inez Snyder (c); Osborne
Pearl Snyder (c); Osborne
C. H. Somers (c); Clay Center
Margaret Sorensen (c); Kansas City
Raymond Spence (c); Fairbury, Neb.
Margaret Spencer (p); Manhattan
Margaret Spencer (c); Ottawa
Mary Springer (p); Jetmore
Vivian Squires (c); Topeka
Homer Staadt (c); Garnett
Hirt N. Stapleton (c); Jewell
Mrs. Amy B. Steele (c); Bird City
Mrs. Erwin Stateler (c); Alta Vista
Lillian Steinmeyer (c); Manhattan
Ruth E. Stener (c); Courtland
Mabel Stener (c); Courtland
Kenneth R. Sterett (c); Leavenworth
Ruth Sterling (c); Morganville
Anne Stever (c); Eureka
J. A. Stewart (c); Manhattan
C. W. Stewart (c); Coldwater
Elma K. Stewart (c); Aurora, Ill.
Mrs. Edith L. Stewart (c); Rosedale
Ross A. St. John (c); Wellington

HOME STUDY STUDENTS—*Concluded.*

Kenneth Steinford (p); Alida
Esther J. Stoddard (p); Wakefield
Lorene Stone (p); Norwich
Leonard P. Straub (p); Valeda
Dora May Streator (c); Denton
Paul Streeter (p); Manhattan
Velma M. Streeter (c); Chicago, Ill.
Edith E. Streeter (c); Wakefield
Laura J. Strode (p); Garden City
Vera Strong (c); Manhattan
B. T. Stryker (c); Waterville
Marguerite M. Stullken (c); Bazine
Beulah Stumbo (c); Manhattan
Aimee C. Stumpf (c); Chicago, Ill.
Sofronio O. Suguitan (c); Liberty, Mo.
Mrs. H. B. Summers (c); Manhattan
Ida J. Summers (c); Manhattan
Zara O. Sumner (c); Chicago, Ill.
Martin Sundgren (c); Wilmore
Karl J. Svaty (c); Ellsworth
A. R. Swanson (c); Fort Riley
Mrs. F. A. Swanson (c); Wakefield
Gladys Swartz (c); Atchison
Mary Isabell Talley (c); Council Grove
Garry Taylor (p); Arlington
Chester Teas (p); Manhattan
Douglas Tedrow (c); Medicine Lodge
Edith Tempero (c); Clay Center
Floyd L. Tempero (c); Broughton
Wilma Jane Tennant (p); Manhattan
Alberta Thoes (c); Topeka
Ernest R. Thomas (c); Kansas City
Opal Thomas (p); Medicine Lodge
Raymond Thomas (p); Valeda
Doris Lillian Thompson (c); Belleville
La Vina Thorkelson (c); Chicago, Ill.
Charles A. Thresher (c); Jetmore
Anka Tiarks (p); Valeda
Ruth E. Tibbetts (c); Manhattan
Joseph Tighe (p); Junction City
Carmelita Tipton (c); Atchison
Ellen E. Tinney (p); Norton
Ernest Toland (c); St. John
Ruth Torrance (c); Norwich
Ione Torance (c); Norwich
Wm. Towler (c); Topeka
Ruth Tracewell (c); Lincoln
Marie Trantham (p); Rover, Mo.
Lowell Treaster (c); Beloit
Harold W. Turner (c); Argonia
Andrew Unger (p); Herndon
Mildred Ungeheuer (c); Manhattan
John J. Valek (p); Cuba
Gerald D. Van Pelt (c); Manhattan
Elva B. Vincent (c); Chicago, Ill.
Clair Vincent (p); Phillipsburg
Edward Vlcek (p); Wilson
Margaret Von Senden (p); Fort Leavenworth
B. J. Vroom (c); Chicago, Ill.
Frances Wagar (c); Florence
Henry C. Walbridge (c); Manhattan
Raymond R. Walton (c); Chicago, Ill.
Lewis Wallace (p); Norwich
Catherine Walker (p); Manhattan
F. V. Waller (c); Faucett, Mo.
Beth Walter (c); Manhattan
Chas. M. Ward (c); Manhattan
Charles F. Ward (c); Pratt
Walter G. Ward (c); Manhattan
George W. Ward (p); Glasco
Chester J. Ward (c); Lindsay, Cal.
Winifred W. Warner (c); Rockford, Ohio
D. S. Waters (c); Leavenworth
Elizabeth Watson (p); Garden City
Lynn Watson (c); Manhattan
Glenn E. Webster (c); Manhattan
Thiele Weeks (p); Macksville
Sylvia Weethee (c); Clay Center
Aline Wegert (c); Rice
Margaret Wegert (c); Rice
Don Weik (p); Manhattan
Doris B. Welch (p); Macksville
Ethel Sue Wells (c); Winona
Ruth J. Weyer (p); Webster
Lucy F. White (c); Wyoming, Ill.
Fred White (p); Manhattan
Mildred White (c); Chicago, Ill.
Lois Whitmer (p); Wilson
Vida Whitney (p); Rossville
Ruth Widestrand (c); Topeka
Freda M. Wiegant (c); Wathena
George Wiggins (c); Lyons
Jesse Wilcoxen (c); Ford
Mary Louise Williams (c); Wann, Okla.
B. B. Williams (c); Lone Oak, Tex.
Rolland Wilkens (c); Manhattan
Peggy Edna Wilkinson (p); Independence
Edward M. Wilkinson (p); Independence
Adrian A. Wilson (p); Wetmore
Mrs. Katherine Hutto Wilson (c); Turner
Earl R. Wilson (c); Milford
Almeda Wineinger (c); Wichita
Lena Fern Wing (c); Modoc
Jonathan Wingfield, Jr. (p); Council Grove
Myrna Winter (p); Manhattan
Matilda Winters (p); Webster
Thelma Wood (c); Searcy, Ark.
Mrs. Etha Wood (c); Reading
Mildred L. Wood (c); Maryville, Mo.
Ardyus Woods (p); Lebanon
Matthew Woods (c); Tuskegee Institute, Ala.
Blanche Woodward (c); Frankfort
Beatrice Woodworth (c); Corning
Gladys P. Wooley (c); Osborne
Mabel L. Wray (c); Hunter
Virginia Wright (p); Monticello, Mo.
Helen Wurm (p); Ellinwood
Zint E. Wyant (c); Topeka
Fremont Wylie (c); Salinas, Cal.
Mrs. Fred Yarrow (v); Clay Center
Mrs. Mary Yohe (p); Zurich
Clara Helen Young (c); Winchester
Mrs. Mabelle Zahnley (c); Manhattan
George Zavesky (c); Manhattan
Elva Zigler (c); Hunter

Students by States and Counties

Arizona	2	Michigan	2	Oklahoma	24
Arkansas	7	Minnesota	1	Oregon	2
California	2	Mississippi	1	Pennsylvania	3
Colorado	9	Missouri	75	South Dakota	4
Florida	4	Montana	1	Tennessee	1
Idaho	5	Nebraska	40	Texas	14
Illinois	7	North Carolina	2	Utah	1
Indiana	2	North Dakota	3	West Virginia	1
Iowa	9	New Mexico	4	Wisconsin	2
Kansas	3,740	New York	3		
Massachusetts	1	Ohio	3	Total	3,975

FOREIGN COUNTRIES

British West Indies	1	Haiti	2	Syria	2
Canada	2	Hawaii	1		
China	1	Philippine Islands	3	Total	12
				Grand total	3,987

KANSAS COUNTIES

Allen	23	Greenwood	34	Ottawa	28
Anderson	16	Hamilton	10	Pawnee	24
Atchison	28	Harper	19	Phillips	20
Barber	19	Harvey	38	Pottawatomie	83
Barton	34	Haskell	1	Pratt	26
Bourbon	16	Hodgeman	4	Rawlins	5
Brown	40	Jackson	50	Reno	71
Butler	61	Jefferson	36	Republic	44
Chase	18	Jewell	42	Rice	41
Chautauqua	12	Johnson	25	Riley	852
Cherokee	18	Kearny	5	Rooks	29
Cheyenne	6	Kingman	18	Rush	9
Clark	13	Kiowa	4	Russell	22
Clay	103	Labette	24	Saline	54
Cloud	80	Lane	7	Scott	11
Coffey	13	Leavenworth	20	Sedgwick	58
Comanche	15	Lincoln	28	Seward	7
Cowley	29	Linn	20	Shawnee	123
Crawford	19	Logan	7	Sheridan	13
Decatur	19	Lyon	36	Sherman	8
Dickinson	110	McPherson	35	Smith	29
Doniphan	15	Marion	37	Stafford	22
Douglas	13	Marshall	84	Stevens	7
Edwards	13	Meade	10	Sumner	45
Elk	3	Miami	11	Thomas	11
Ellis	16	Mitchell	40	Trego	6
Ellsworth	24	Montgomery	30	Wabaunsee	43
Finney	17	Morris	48	Wallace	5
Ford	57	Morton	5	Washington	65
Franklin	25	Nemaha	35	Wichita	7
Geary	53	Neosho	32	Wilson	18
Gove	8	Ness	25	Woodson	12
Graham	12	Norton	39	Wyandotte	52
Grant	5	Osage	34		
Gray	6	Osborne	38	Total	3,740

College Enrollment, 1929-1930

The Division.	Men.	Women.	Total.
The Division of Agriculture	**583**	**3**	**586**
Graduate students	53	.....	53
Seniors	80	.....	80
Juniors	64	.....	64
Sophomores	111	1	112
Freshmen	199	.....	199
Special students	5	.....	5
Short-course students	71	2	73
The Division of Veterinary Medicine	**124**	**1**	**125**
Graduate students	3	.....	3
Seniors	20	.....	20
Juniors	12	.....	12
Sophomores	27	1	28
Freshmen	62	.....	62
Special students	.....	.....	.....
The Division of General Science	**629**	**553**	**1,182**
Graduate students	67	49	116
Seniors	91	84	175
Juniors	94	116	210
Sophomores	126	128	254
Freshmen	230	148	378
Special students	21	28	49
The Division of Home Economics	.....	**565**	**565**
Graduate students	.....	58	58
Seniors	.....	117	117
Juniors	.....	91	91
Sophomores	.....	129	129
Freshmen	.....	160	160
Special students	.....	10	10
The Division of Engineering	**1,071**	**19**	**1,090**
Graduate students	37	3	40
Seniors	163	1	164
Juniors	206	2	208
Sophomores	273	5	278
Freshmen	377	8	385
Special students	6	.....	6
Trade-course students	9	.....	9
The Summer School (1929)	**337**	**565**	**902**
Totals	2,744	1,706	4,450
Counted twice	259	204	463
Net totals	**2,485**	**1,502**	**3,987**
Students Pursuing Graduate Work	**252**	**197**	**449**
Graduate students in regular session	128	92	220
Graduate students in summer session (excluding duplicates)	92	87	179
Graduate students in absentia	12	8	20
Senior students pursuing graduate work	18	10	28
Special students pursuing graduate work	2	.....	2
Totals	252	197	449
Counted twice	10	7	17
Net totals	**242**	**190**	**432**

Record of Enrollment and Degrees Conferred, 1863-1930

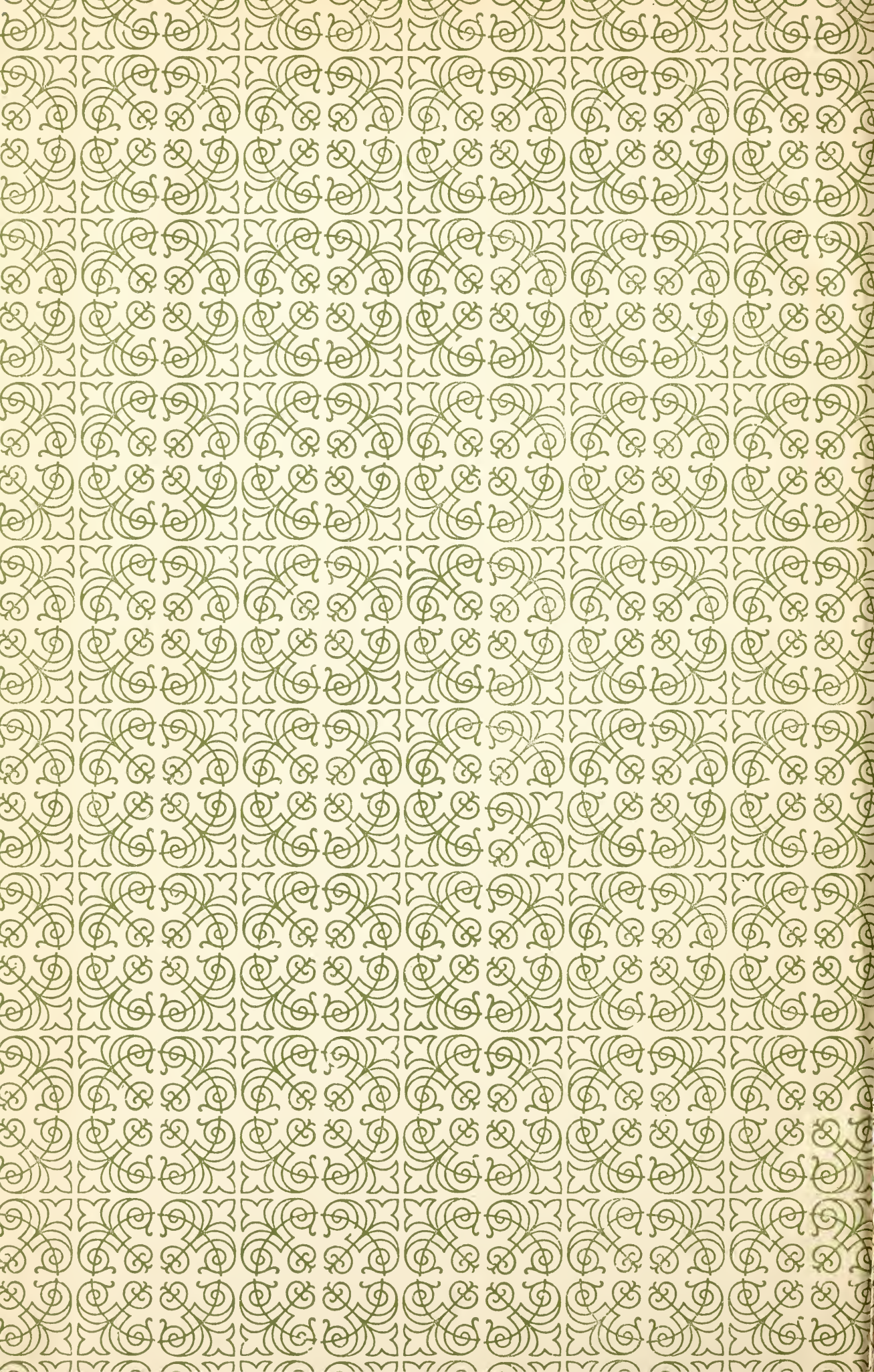
Year.	Summer school	Housekps' sht. course	Dairy Mfg. sht. course	Dairy short course	Farmers' short course	Apprentice	Special	Preparatory	Subfreshman	Vocational school	Freshman	Sophomore	Junior	Senior	Graduate	Counted twice	Net total	Graduated	Advanced degrees
1863- 64	....	....	....	....	....	....	....	93	....	....	14	....	....	....	....	....	107	....	..
1864- 65	....	....	....	....	....	....	....	90	....	....	14	8	1	....	....	....	113	....	..
1865	....	....	....	....	....	....	....	112	....	....	28	5	5	....	....	....	150	....	..
1866- 67	....	....	....	....	....	....	....	154	....	....	11	7	1	5	....	....	178	5	..
1867- 68	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	168	....	..
1868- 69	....	....	....	....	....	....	....	146	....	....	11	10	2	....	1	....	170	....	..
1870- 71	....	....	....	....	....	....	....	164	....	....	13	7	5	5	....	....	194	5	..
1871- 72	....	....	....	....	....	....	....	162	....	....	22	10	3	2	3	....	202	3	..
1873	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*217	2	..
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	..
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	22	5
1887- 88	....	....	....	....	....	....	....	....	....	....	305	92	46	27	2	....	472	22	1
1888- 89	....	....	....	....	....	....	....	....	....	....	266	103	41	28	7	....	445	25	..
1889- 90	....	....	....	....	....	....	1	....	....	....	307	105	63	28	10	....	514	27	1
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	4
1896- 97	....	....	....	....	....	....	6	67	....	....	321	163	69	62	46	....	734	55	8
1897- 98	....	....	....	6	....	9	15	77	....	....	316	174	77	82	57	10	803	69	10
1898- 99	....	....	....	26	....	35	40	110	....	....	306	177	92	65	40	21	870	53	9
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	42	....	....	471	229	141	86	24	57	1,574	55	..
1903- 04	17	51	....	16	122	72	33	443	....	....	403	206	161	114	20	36	1,605	102	1
1904- 05	15	88	....	24	99	12	30	500	....	....	289	198	122	117	26	43	1,462	107	2
1905- 06	18	92	....	28	118	....	46	598	....	....	373	214	145	110	30	64	1,690	96	4
1906- 07	18	134	....	23	179	Engineering School Courses	48	144	511	....	411	269	149	133	24	88	1,937	119	4
1907- 08	29	188	....	26	173		42	134	528	....	450	357	202	148	26	82	2,192	116	3
1908- 09	25	168	....	18	197		42	134	521	....	491	381	243	171	28	86	2,308	139	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	203	2
1911- 12	94	160	14	Lunch room managem't	280		85	Milling Short Cousers	580	....	337	461	288	261	44	81	2,523	230	6
1912- 13	282	175	11		289		129		654	....	444	432	355	268	50	166	2,928	228	4
1913- 14	370	149	12		223		112		Engineering Trade Courses	658	516	431	324	327	64	159	3,027	283	8
1914- 15	472	127	18		199	98	120			560	575	368	383	321	50	200	3,091	223	6
1915- 16	536	85	17		207	188	175			484	605	454	305	401	76	219	3,314	341	18
1916- 17	586	103	14		228	191	171			422	693	471	378	282	68	277	3,340	197	13
1917- 18	481	92	....	8	119	135	138			231	483	349	294	239	36	190	2,406	216	17
1918- 19	519	25	5	....	160	400	199			216	810	322	254	201	34	144	2,991	167	7
1919- 20	415	57	3	6	117	354	271			224	894	401	300	269	43	167	3,352	260	11
1920- 21	604	30	10	....	96	278	270	8		280	878	602	318	273	42	294	3,395	248	14
1921- 22	820	19	10	....	59	173	297	....		221	931	628	422	296	125	813	3,560	271	28
1922- 23	884	19	8	....	55	83	163	12	....	220	1,004	656	460	401	118	457	3,626	341	31
1923- 24	978	12	7	....	43	57	161	3	....	167	1,160	657	458	413	171	475	3,812	342	43
1924- 25	1120	14	14	....	55	54	139	5	....	47	1,391	679	467	347	185	486	4,031	335	52
1925- 26	947	12	11	....	41	29	89	....	....	....	1,494	725	512	344	182	384	4,019	341	51
1926- 27	959	....	18	....	52	....	71	....	19	....	1,311	854	509	411	179	365	4,083	357	77
1927- 28	966	....	20	....	57	....	88	....	7	....	1,039	819	584	500	167	418	3,878	429	70
1928- 29	920	....	18	....	51	....	57	....	9	....	1,084	743	584	537	197	321	3,879	461	84
1929- 30	902	....	13	....	59	....	70	....	9	....	1,128	787	581	554	*429	548	3,987	....	..

* None of the figures above this in this column include graduate students in summer sess ion, nor undergraduate students pursuing graduate work.

Summary of Attendance, 1929-1930

Classification.	Agriculture		Agricultural Administration		Landscape Gardening		Animal Husbandry and Veterinary Medicine		Veterinary Medicine		General Science and Veterinary Medicine		General Science		Industrial Journalism		Commerce		Physical Education		Industrial Chemistry		Public School Music		Minor Years of Instruction of		Home Economics		Home Economics and Nursing		Art		Agricultural Engineering		Architecture		Architectural Engineering		Chemical Engineering		Civil Engineering		Electrical Engineering		Floor mill Engineering		Landscape Architecture		Mechanical Engineering		Miscellaneous Engineering		Summer session, 1929		Totals		Counted twice		Net totals		Net grand total
	Men.		Men.		Men.		Men.		Men.		Men.		Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women	Men.		Men.	Women	Men.	Women.	Men.	Women.	Men.		Men.	Women.	Men.		Men.	Women.	Men.		Men.		Men.		Men.		Men.		Men.		Men.		Men.		Men.	Women.	Total.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Net grand total
Undergraduate:																																																																
Senior	50	27	3				20				27	41	15	19	25	4	11	10	11	2	10						105	3	9	13	8	1	7	13	29	67	3		23														354	202	1	1	353	201	554
Junior	35	25	4				11	1			23	50	16	20	36	8	13	16	*5	1	19	1		2	80			11	14	14	1	12	12	44	*81	1		29														376	209	1		372	209	581
Sophomore	66	42	*4				*28				38	52	9	24	63	16	12	16	*13	2	13			6	168	2		19	20	20	3	12	12	70	*84	3	*2	52														537	264	11	3	526	261	787
Freshman	172	24	2				61				60	50	20	25	97	25	26	29	20	7	15			6	125	6		29	25	25	7	20	20	66	126	4	*5	83														868	316	46	10	822	306	1,128
Special	5										21	28													10					1				2	2			1														32	38			32	38	70
Unclassified in summer sessions																																																						208	450	122	144	86	306	392
Totals	329	118	*13	1	*120	1	159	224	60	88	221	51	62	71	189	12	57	1	14		428	11	68		76		68	12	51	57	211	†360	11	17	188		208	450		2,375	1,479	184	158	2,191	1,321	3,512
Graduate:																																																																
In regular session	42						2				56	40									49				3			2	1	1	4	*8	3		9																128	92			128	92	220
In summer session																																					129	115	244												129	115	31	28	98	87	179
In absentia	4										8	7									1																														12	8	10	7	2	1	3
Undergraduates carrying graduate work	7						1				3	2									8										2	5	2																		20	10			20	10	30
Totals	53						3				67	49									58				3			2	1	3	9	*10	3		9		129	115													288	225	47	35	242	190	432
Trade Courses:																																																																
Machinists'																																					3														3				3		3
Auto mechanics'																																					6														6				6		6
Totals																																					9														9				9		9
Short Courses:																																																																
Farmers'	60																																																															
Dairy Manufacturing	113																																																															
Totals	‡173																																																															
Grand totals	†455	118	*13	1	*123	1	226	270	60	88	221	51	62	71	189	12	57	1	14		486	11	68		79		68	14	52	60	220	†370	14	17	197		337	565	902	2,744	1,706	232	193	2,512	1,513	4,025
Counted twice	16				1		5	3													8				1					3	5	2																				27	11			27	11	38
Net grand totals	†445	118	*13	1	*122	1	221	267	60	88	221	51	62	71	189	12	57	1	14		478	11	68		78		68	14	52	57	215	†368	14	17	197		337	565	902	2,717	1,695	232	193	2,485	1,502	3,987
Group totals								488		148		272		133			69		15									82																																					

* One woman. † Two women. ‡Three women.



17 May 58's		