Kansas State College
BULLETIN

Vol. XXXIII August 15, 1949 No. 8

GENERAL CATALOGUE
1949-1950

KANSAS STATE COLLEGE of
Agriculture and Applied Science
Manhattan, Kansas

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BULLETIN

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MANHATTAN, KANSAS

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ACADEMIC AND FINANCIAL CALENDAR

NOTE.—Students who do not complete their assignments during the regular registration period and those who do not complete registration by payment of fees before the end of the first week of any semester or summer session (see Calendar following) must pay a late registration fee of $2.50.

FIRST SEMESTER, 1949-1950

Date, Time, Days	*Academic calendar*	*Financial calendar*
Sept. 1, Thursday		Beginning of pay period for 9-months staff.
Sept. 7, 10:00 a. m., Wednesday,	Freshman advisers meet.	
Sept. 8, 8:00 a. m., Thursday	Entrance examinations.	
Sept. 8-12, Thurs.-Mon	Testing, orientation, and physical examinations for first semester freshmen.	
Sept. 8, 8:00 a. m., Thursday	Aptitude tests and physical examinations for transfer students.	
Sept. 9, 8:00 a. m., Friday	Registration for seniors and terminal juniors.	Semester begins.
Sept. 10-13, 8 a. m., Sat.-Tues.	Registration for juniors, sophomores, second semester freshmen, and graduate students.	
Sept. 12-13, 8 a. m., Mon.-Tues.,	Registration for School of Veterinary Medicine.	
Sept. 13, 8:45 a. m., Tuesday	Registration for first semester freshmen.	
Sept. 14, 7:00 a. m., Wednesday,	Classes begin.	
Sept. 17, Noon, Saturday		Last day of first week. All fees except matriculation refunded to students withdrawing on or before this date. Fees must be paid on or before this date to avoid penalty.
Oct. 8, Saturday	Examinations to remove conditions (4th week).	
Oct. 15, Noon, Saturday	Deficiency reports due in deans' offices (5th week).	
Oct. 19, 5:00 p. m., Wednesday		Fifty percent of fees except matriculation and student health refunded to students withdrawing on or before this date. No refunds after this date.
Oct. 29, Noon, Saturday	Last day for reassignment before midsemester (7th week).	
Nov. 12, Noon, Saturday	Midsemester deficiency reports due in deans' offices (9th week).	
Nov. 14, 7:00 p. m., Monday	English proficiency examination.	
Nov. 17, 6:00 p. m., Thursday		End of first half of semester.
Nov. 22, 10:00 p. m., Tuesday	Thanksgiving vacation begins.	
Nov. 28, 7:00 a. m., Monday	Classes resume.	
Dec. 21, 10:00 p. m., Wednesday,	Christmas vacation begins.	
Dec. 28, 3:00 p. m., Wednesday	Applications for degrees must be made on or before this date.	
Jan. 5, 7:00 a. m., Thursday	Classes resume.	
Jan. 13, 4:00 p. m., Friday	Last day subject may be dropped before end of semester.	
Jan. 21, Noon, Saturday	Grades to registrar for candidates for degrees.	
Jan. 21-26, Sat.-Thurs	Semester examinations.	
Jan. 25, 11:00 a. m., Wednesday,	General faculty meeting to approve candidacies for degrees.	
Jan. 27, 10:00 a. m., Friday	Commencement.	Semester ends.
Jan. 27, 4:00 p. m. Friday	Deficiency reports due in deans' offices.	
Jan. 30, Noon, Monday	Grades to registrar.	

SECOND SEMESTER, 1949-1950

Date, Time, Days	*Academic calendar*	*Financial calendar*
Jan. 27-28, 8:00 a. m., Fri.-Sat.,	Testing, orientation, and physical examinations for first semester freshmen.	
Jan. 28, 8:00 a. m., Saturday...	Aptitude tests and physical examinations for transfer students.	
Jan. 30, 8:00 a. m., Monday....	Entrance examinations.	Semester begins.
Jan. 30, 8:00 a. m., Monday....	Registration for seniors and terminal juniors.	
Jan. 30-Feb. 1, 2:15 p. m., Mon.-Wed.	Registration for juniors, sophomores, freshmen, and graduate students.	
Feb. 2, 7:00 a. m., Thursday....	Classes begin.	
Feb. 4, Noon, Saturday.....		Last day of first week. All fees except matriculation refunded to students withdrawing on or before this date. Fees must be paid on or before this date to avoid penalty.
Feb. 22, Wednesday.....	Holiday—Washington's birthday.	
Feb. 25, Saturday.....	Examinations to remove conditions (4th week).	
March 4, Noon, Saturday.....	Deficiency reports due in deans' offices (5th week).	
March 9, 5:00 p. m., Thursday.....		Fifty percent of fees except matriculation and student health refunded to students withdrawing on or before this date. No refunds after this date.
March 18, Saturday.....	Last day for reassignment before midsemester (7th week).	
March 29, 6:00 p. m., Wednesday,.....		End of first half of semester.
April 1, Saturday.....	Midsemester defiiciency reports due in deans' offices (9th week).	
April 3, 7:00 p. m., Monday....	English proficiency examination.	
April 6, 10:00 p. m., Thursday..	Easter vacation begins.	
April 11, 7:00 a. m., Tuesday....	Classes resume.	
April 28, 3:00 p. m. Friday.....	Applications for degrees must be made on or before this date.	
May 17, Noon, Wednesday.....	Last day subjects may be dropped before end of semester.	
May 23, Noon, Tuesday.....	Grades to registrar for all candidates for degrees.	
May 22-26, Mon.-Fri.....	Semester examinations.	
May 25, 11:00 a. m., Thursday..	General faculty meeting to approve candidacies for degrees.	
May 27, Saturday.....	Alumni Day.	
May 28, 8:00 p. m. Sunday.....	Commencement.	Semester ends.
May 30, Tuesday.....	Holiday—Memorial Day.	
May 31, Noon, Wednesday.....	Deficiency reports due in deans' offices.	
May 31-June 4, Wed.-Sun.....	4-H Club Roundup.	
June 3, Noon, Saturday.....	Grades to registrar.	

SUMMER SCHOOL, 1950 (Nine-week Session)

Date, Time, Days	*Academic calendar*	*Financial calendar*
June 5, 8:00 a. m., Monday.....	Testing, orientation, and physical examinations for freshmen and transfer students.	
June 6, 8:00 a. m., Tuesday....	Entrance examinations.	
June 6-7, 8:00 a. m., Tues.-Wed.,	Registration.	Session begins.
June 8, 7:00 a. m., Thursday...	Classes begin.	
June 10, Noon, Saturday.....		Last day of first week. All fees except matriculation refunded to students withdrawing on or before this date. Fees must be paid on or before this date to avoid penalty.
June 26, 5:00 p. m., Monday.....		End of first third of session. Fifty percent of fees except matriculation and student health refunded to students withdrawing on or before this date. No refunds after this date.
July 1, Noon, Saturday.....	Last day for reassignment before midsession.	
July 4, Tuesday.....	Holiday—Independence Day.	
July 5, 6:00 p. m., Wednesday.....		End of first half of session.
July 6, 3:00 p. m., Thursday....	Applications for degrees must be made on or before this date.	
July 8, Noon, Saturday.....	Deficiency reports due in deans' offices.	
July 10, 7:00 p. m., Monday....	English proficiency examination.	
July 31, 5:00 p. m., Monday....	Grades to registrar for all candidates for degrees.	
Aug. 1, 4:00 p. m., Tuesday....	Last day subject may be dropped before end of semester.	
Aug. 2, 4:00 p. m., Wednesday..	General faculty meeting to approve candidacies for degrees.	
Aug. 4, 5:00 p. m., Friday.....	Last day of examinations.	
Aug. 5, 10:00 a. m., Saturday...	Commencement.	Session ends.
Aug. 7, 4:00 p. m., Monday....	Deficiency reports due in deans' offices.	
Aug. 10, Noon, Thursday.....	Grades to registrar.	

FIRST SEMESTER, 1950-1951

Date, Time, Days	*Academic calendar*	*Financial calendar*
Sept. 1, Friday.....		Beginning of pay period for 9-months staff.
Sept. 6, 10:00 a. m., Wednesday,	Freshman advisers meet.	
Sept. 7, 8:00 a. m., Thursday...	Entrance examinations.	
Sept. 7-11, 8 a. m., Thurs-Mon.,	Testing, orientation, and physical examinations for first semester freshmen.	
Sept. 7, 8:00 a. m., Thursday...	Aptitude tests and physical examinations for transfer students.	
Sept. 8, 8:00 a. m., Friday.....	Registration for seniors and terminal juniors.	Semester begins.
Sept. 9-12, 8:00 a. m., Sat.-Tues.,	Registration for juniors, sophomores, second semester freshmen, and graduate students.	
Sept. 11-12, 8 a. m., Mon.-Tues.,	Registration for School of Veterinary Medicine.	
Sept. 12, 8:45 a. m., Tuesday...	Registration for first semester freshmen.	
Sept. 13, 7:00 a. m., Wednesday,	Classes begin.	

Date, Time, Days	*Academic calendar*	*Financial calendar*
Sept. 16, Noon, Saturday		Last day of first week. All fees except matriculation refunded to students withdrawing on or before this date. Fees must be paid on or before this date to avoid penalty.
Oct. 7, Saturday	Examinations to remove conditions (4th week).	
Oct. 14, Noon, Saturday	Deficiency reports due in deans' offices (5th week).	
Oct. 18, 5:00 p. m., Wednesday		Fifty percent of fees except matriculation and student health refunded to students withdrawing on or before this date. No refunds after this date.
Oct. 28, Noon, Saturday	Last day for reassignment before midsemester (7th week).	
Nov. 11, Noon, Saturday	Midsemester deficiency reports due in deans' offices (9th week).	
Nov. 13, 7:00 p. m., Monday	English proficiency examination.	
Nov. 16, 6:00 p. m., Thursday		End of first half of semester.
Nov. 21, 10:00 p. m., Tuesday	Thanksgiving vacation begins.	
Nov. 27, 7:00 a. m., Monday	Classes resume.	
Dec. 20, 10:00 p. m. Wednesday,	Christmas vacation begins.	
Dec. 27, 3:00 p. m., Wednesday,	Applications for degrees must be made on or before this date.	
Jan. 4, 7:00 a. m., Thursday	Classes resume.	
Jan. 12, 4:00 p. m., Friday	Last day subject may be dropped before end of semester.	
Jan. 20, Noon, Saturday	Grades to registrar for candidates for degrees.	
Jan. 20-25, Sat.-Thurs	Semester examinations.	
Jan. 24, 11:00 a. m., Wednesday,	General faculty meeting to approve candidacies for degrees.	
Jan. 26, 10:00 a. m., Friday	Commencement.	Semester ends.
Jan. 26, 4:00 p. m., Friday	Deficiency reports due in deans' offices.	
Jan. 29, Noon, Monday	Grades to registrar.	

SECOND SEMESTER, 1950-1951

Date, Time, Days	*Academic calendar*	*Financial calendar*
Jan. 26-27, 8:00 a. m., Fri.-Sat.,	Testing, orientation, and physical examinations for first semester freshmen.	
Jan. 27, 8:00 a. m., Saturday...	Aptitude tests and physical examinations for transfer students.	
Jan. 29, 8:00 a. m., Monday....	Entrance examinations.	
Jan. 29, 8:00 a. m., Monday....	Registration for seniors and terminal juniors.	Semester begins.
Jan. 29-31, 2:15 p. m., Mon.-Wed.	Registration for juniors, sophomores, freshmen, and graduate students.	
Feb. 1, 7:00 a. m., Thursday....	Classes begin.	
Feb. 3, Noon, Saturday.....		Last day of first week. All fees except matriculation refunded to students withdrawing on or before this date. Fees must be paid on or before this date to avoid penalty.
Feb. 22, Thursday.....	Holiday—Washington's birthday.	
Feb. 24, Saturday.....	Examinations to remove conditions (4th week).	
March 3, Noon, Saturday.....	Deficiency reports due in deans' offices (5th week).	
March 8, 5:00 p. m., Thursday.....		Fifty percent of fees except matriculation and student health refunded to students withdrawing on or before this date. No refunds after this date.
March 17, Saturday.....	Last day for reassignment before midsemester (7th week).	
March 22, 10:00 p. m., Thursday,	Easter vacation begins.	
March 27, 7:00 a. m., Tuesday..	Classes resume.	
March 28, 6:00 p. m., Wednesday,.....		End of first half of semester.
March 31, Noon, Saturday.....	Midsemester deficiency reports due in deans' offices (9th week).	
April 2, 7:00 p. m., Monday....	English proficiency examination.	
April 27, 3:00 p. m., Friday.....	Applications for degrees must be made on or before this date.	
May 16, Noon, Wednesday.....	Last day subject may be dropped before end of semester.	
May 22, Noon, Tuesday.....	Grades to registrar for all candidates for degrees.	
May 21-25, Mon.-Fri.....	Semester examinations.	
May 24, 11:00 a. m., Thursday..	General faculty meeting to approve candidacies for degrees.	
May 26, Saturday.....	Alumni Day.	
May 27, 8:00 p. m., Sunday....	Commencement.	Semester ends.
May 28-June 2, Mon.-Sat.....	4-H Club Roundup.	
May 30, Wednesday.....	Holiday—Memorial Day.	
May 31, Noon, Thursday.....	Deficiency reports due in deans' offices.	
June 2, Noon, Saturday.....	Grades to registrar.	

SUMMER SCHOOL, 1951 (Nine-week Session)

Date, Time, Days	*Academic calendar*	*Financial calendar*
June 4, 8:00 a. m., Monday	Testing, orientation, and physical examinations for freshmen and transfer students.	
June 5, 8:00 a. m., Tuesday	Entrance examinations.	
June 5-6, 8:00 a. m., Tues.-Wed.,	Registration.	Session begins.
June 7, 7:00 a. m., Thursday	Classes begin.	
June 9, Noon, Saturday		Last day of first week. All fees except matriculation refunded to students withdrawing on or before this date. Fees must be paid on or before this date to avoid penalty.
June 25, 5:00 p. m., Monday		End of first third of session. Fifty percent of fees except matriculation and student health refunded to students withdrawing on or before this date. No refunds after this date.
June 30, Noon, Saturday	Last day for reassignment before midsession.	
July 4, 6:00 p. m., Wednesday		End of first half of session.
July 4, Wednesday	Holiday—Independence Day.	
July 5, 3:00 p. m., Thursday	Applications for degrees must be made on or before this date.	
July 7, Noon, Saturday	Deficiency reports due in deans' offices (5th week).	
July 9, 7:00 p. m., Monday	English proficiency examination.	
July 30, 5:00 p. m., Monday	Grades to registrar for all candidates for degrees.	
July 31, 4:00 p. m., Tuesday	Last day subject may be dropped before end of semester.	
Aug. 1, 11:00 a. m., Wednesday,	General faculty meeting to approve candidacies for degrees.	
Aug. 3, 5:00 p. m., Friday	Last day of examinations.	
Aug. 4, 10:00 a. m., Saturday	Commencement.	Session ends.
Aug. 6, 4:00 p. m., Monday	Deficiency reports due in deans' offices.	
Aug. 9, Noon, Thursday	Grades to registrar.	

REGISTRATION AND ASSIGNMENT SCHEDULES

No student will be permitted to register who has not taken the required physical examination and aptitude tests.

The following tabulation shows the schedule of hours for registration and assignment of students for the college sessions indicated, arranged according to initial letters of last names:

FIRST SEMESTER, 1949-'50

Schedule for SENIORS AND TERMINAL JUNIORS*

Friday, September 9, 1949

Hours	*Initial letters*
8:00 to 8:45 a. m.	A, F, O, Q, T
8:45 to 9:30 a. m.	D, P, Sa-Si
9:30 to 10:15 a. m.	C, Si-Sz, U
10:15 to 11:00 a. m.	E, G, R
12:00 to 12:45 p. m.	Ba-Bl, H, X, Z
12:45 to 1:30 p. m.	Bo-Bz, J, L
1:30 to 2:15 p. m.	I, K, V, W
2:15 to 3:00 p. m.	M, N, Y

Schedule for JUNIORS, SOPHOMORES, SECOND SEMESTER FRESHMEN,† AND GRADUATE STUDENTS

Saturday, September 10, 1949

Hours	*Initial letters*
8:00 to 8:45 a. m.	A, O, Q, T
8:45 to 9:30 a. m.	F, P
9:30 to 10:15 a. m.	D, Sa-Se, U
10:15 to 11:00 a. m.	Sh-Sz

Monday, September 12, 1949

8:00 to 8:45 a. m.	C
8:45 to 9:30 a. m.	E, G, Z, X
9:30 to 10:15 a. m.	H
10:15 to 11:00 a. m.	Ba, R
12:00 to 12:45 p. m.	Bl-Bz
12:45 to 1:30 p. m.	L, Wa-Wh
1:30 to 2:15 p. m.	I, J, V, Wi-Wz, Y
2:15 to 3:00 p. m.	Ma-Me, N

Tuesday, September 13, 1949

8:00 to 8:45 a. m.	K, Mi-Mz

Schedule for FRESHMEN Entering College for the First Time

Hours	*Initial letters*
8:45 to 9:30 a. m.	A, D, F, P, T, O
9:30 to 10:15 a. m.	C, E, S, U
10:15 to 11:00 a. m.	G, H, Q, R, X, Z
12:00 to 12:45 p. m.	B, L, W
12:45 to 1:30 p. m.	I, J, K, M, N, V, Y
1:30 to 3:00 p. m.	All those (including upperclassmen) who failed to report during the period provided for their group.

* Juniors leaving K. S. C. at end of year to enter professional schools; must have dean's permit to enroll on this day.

† Freshmen who have credit for a minimum of one summer session.

SECOND SEMESTER, 1949-'50

Schedule for SENIORS AND TERMINAL JUNIORS*

Monday, January 30, 1950

Hours	*Initial letters*
8:00 to 8:45 a. m.	B, L
8:45 to 9:30 a. m.	I, J, N, V, W, Y
9:30 to 10:15 a. m.	K, M, X, Z
10:15 to 11:00 a. m.	H, R, T
12:00 to 12:45 p. m.	D, O, P, Sa-Se, U
12:45 to 1:30 p. m.	C, Sh-Sz
1:30 to 2:15 p. m.	A, E, F, G

Schedule for JUNIORS, SOPHOMORES, FRESHMEN, AND GRADUATE STUDENTS

Monday, January 30, 1950

Hours	*Initial letters*
2:15 to 3:00 p. m.	Ba-Bo, Q

Tuesday, January 31, 1950

8:00 to 8:45 a. m.	Br-Bz, L
8:45 to 9:30 a. m.	W
9:30 to 10:15 a. m.	J, N
10:15 to 11:00 a. m.	I, K, V, Y
12:00 to 12:45 p. m.	M
12:45 to 1:30 p. m.	R
1:30 to 2:15 p. m.	H
2:15 to 3:00 p. m.	P, X, Z

Wednesday, February 1, 1950

8:00 to 8:45 a. m.	D, T
8:45 to 9:30 a. m.	O, Sa-Si
9:30 to 10:15 a. m.	Sj-Sz, U
10:15 to 11:00 a. m.	C
12:00 to 12:45 p. m.	E, G
12:45 to 1:30 p. m.	A, F, Q
1:30 to 3:00 p. m.	All those who failed to report during the period provided for their group.

* Juniors leaving K. S. C. at end of year to enter professional schools; must have dean's permit to enroll on this day.

THE BOARD OF REGENTS

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The College

As a land-grant college, Kansas State has as one of its primary objectives technical instruction in agriculture, engineering and architecture, home economics, veterinary medicine, and the physical and biological sciences. There is also instruction in music, art, physical education, social and humane studies, business administration, and journalism as related to such fields as agriculture, home economics, engineering, and industry. The College prepares high school teachers in these various fields, and also laboratory technicians and specialists in institutional management.

In addition to this, however, the College gives a broader general education, designed to fit its students for their social and political responsibilities and for exercise of judgment in their individual lives. In policies and in practice, the College tries to stimulate an understanding of democracy and an enthusiasm for it.

Instruction is combined with research. In the agricultural and engineering experiment stations, in the Bureau of Research in Home Economics, and in the laboratories of the various scientific departments, there is constant investigation of problems of importance to the people of Kansas. Such research is largely conducted by the staff, but there is opportunity for capable students to participate.

Through the Division of College Extension, adult education is carried throughout the state. Although the work is largely in agriculture and home economics, there is opportunity for all the people in the state to profit in many ways. The Department of Home Study offers numerous correspondence courses and classes in extension centers which cover various fields. This phase of college usefulness will presumably grow as needed.

Admission

All correspondence about admission should be addressed to the Director of Admissions.

High School Graduates

A graduate of any Kansas high school or academy accredited by the State Board of Education is eligible to enter the freshman class. A graduate of an accredited high school or academy in another state is eligible to enter if his principal recommends him as capable of college work.

The Director of Admissions will send every applicant an information blank which should be filled in and returned as soon as possible. On it the student must specify the curriculum in which he plans to enroll.

When the Director of Admissions gets the student's information blank properly filled in, he will ask the applicant's high school principal to send a transcript of record. If this transcript is satisfactory, the Director will send the student a permit to register. Students who present such permits will not have to meet with the committee before registration.

Students without permits to register must meet with the Committee on Admissions before registering. Those without satisfactory transcripts of record may be enrolled provisionally at the option of the committee.

The committee cannot act on transcripts received later than two weeks before the date of registration.

Entrance examinations will be given to students who are deficient in high school units. See the dates on the College Calendar (page 5). Applications for such examinations must be made in advance to the Director of Admissions.

As enrollment in the curriculums in Milling and Veterinary Medicine is limited, students who wish to be admitted to those curriculums should read the statements entitled "Milling Enrollment Limited" and "Veterinary Enrollment Limited," under the schools of Agriculture and Veterinary Medicine.

There are certain fixed requirements for all curriculums. Although a high school graduate may enroll in the College if he lacks some of these, he must make up entrance deficiencies.

For the following curriculums the fixed admission requirements are 3 units* of English, 1 of algebra, 1 unit of plane geometry, and 1 unit of biological or physical science, with the exception of all curriculums in Home Economics. In those curriculums, 1 unit of general mathematics, or 1 unit of applied mathematics will be accepted in lieu of plane geometry.

Agriculture
Agriculture (2 years)
Agricultural Administration
Agricultural Education
Agricultural Journalism
Arts and Sciences
Biological Science
Business Administration
Citizenship Education
Dairy Manufacturing
Dietetics and Institutional Management
Floriculture and Ornamental Horticulture
Home Economics (all curriculums)
Industrial Journalism
Music, Applied
Music Education
Physical Education for Men
Physical Education for Women
Preveterinary
Soil Conservation

For the following curriculums, ½ unit of algebra is required in addition to the fixed requirements listed for the group of curriculums named above.

Milling Administration
Milling Chemistry

For the following curriculums, ½ unit of algebra and ½ unit of solid geometry are required in addition to the fixed requirements listed for the group of curriculums named first above.

Agricultural Engineering
Architectural Engineering
Architecture
Chemical Engineering
Civil Engineering
Electrical Engineering
Geology, Applied
Industrial Arts
Industrial Chemistry
Industrial Physics
Landscape Design
Mechanical Engineering
Milling Technology
Physical Science

A student who enters without one unit of algebra or one unit of plane geometry is not permitted to register for any engineering curriculum. He may transfer to any engineering curriculum as soon as the fixed requirements in mathematics are completed.

A student who enters without one unit of algebra or one unit of plane geometry will be enrolled as a special student if he wishes to enter the curriculums in Applied Geology, Industrial Chemistry, Industrial Physics, Landscape Design, Milling Technology or Physical Science. As soon as the fixed requirements in mathematics are completed, he will be transferred to regular status without loss of credit.

A student who lacks one unit of algebra must complete this requirement

* A unit represents five recitation periods a week for a full school year.

during his first semester in College through courses offered by the Division of College Extension in resident centers on the campus.

The student who lacks one unit of plane geometry should complete this requirement in the geometry class or by correspondence during his first semester of attendance; he must have completed it or be enrolled in it at the beginning of his third semester of residence.

For information about making up deficiencies in algebra and geometry, the student should consult the Department of Home Study. See page 278. No student lacking required units in algebra and plane geometry will be advanced in classification.

A student lacking a half unit of advanced high school algebra, if he enrolls in a curriculum for which it is prerequisite, will in general be enrolled in a noncredit course in Intermediate Algebra to make up his deficiency before enrolling in college algebra.

A student lacking solid geometry will, if he enrolls in a curriculum for which it is required, be assigned to a two-hour course in solid geometry. For these hours he may be given elective credit toward graduation, except in engineering curriculums.

A student lacking one-half or one required unit of biological or physical science will be held for two or four hours of college science in addition to the science required in his curriculum. For these hours he may be given elective credit toward graduation, except in engineering curriculums.

A matriculated student, who has high school units in excess of the fifteen units required for admission, may apply for an examination in certain subjects of freshman rank on the basis of his surplus units. The application should be made to the Registrar, who will check surplus units and authorize an examination within the first thirty days of the semester or summer session. Examinations which affect the assignment of a semester or summer session, however, will be given on the first Saturday of that semester or summer session. After the expiration of the thirty-day period, the student's dean may authorize an examination. The fee is $2 a semester hour for residents of Kansas, $6 a semester hour for nonresidents.

High School Nongraduates

A student who is not a graduate of an accredited high school or academy may enter the freshman class if he has completed fifteen acceptable units of high school work, including the fixed requirements. One who offers fourteen such units will be admitted, but will be conditioned in one unit. The deficiency must be made up during the first year of attendance. In addition to three units of English and one unit each of algebra, plane geometry, and biological or physical science, he must offer nine units in the subjects listed below. There are eight groups of acceptable subjects shown in the following table with the number of units of each that will be accepted.

Group	*Subject*	*Number of Units Acceptable*
I. English	English	3 or 4
	Journalism	½ or 1
	Speech	½ or 1
II. Mathematics	General or Applied Mathematics	½ or 1
	Elementary Algebra	1
	Advanced Algebra	½ or 1
	Plane Geometry	1
	Solid Geometry	½
	Plane Trigonometry	½
III. Languages	Foreign Languages	1 to 4
IV. Science	General Science	½ or 1
	Biology	½ or 1
	Botany	½ or 1
	Physical Geography	½ or 1
	Physiology	½ or 1
	Chemistry	1
	Physics	1
	Zoölogy	½ or 1

V. History and Social Studies...	Modern or European History	1
	World History	1
	American History	1
	Geography	½
	Civics	½ or 1
	Government	½ or 1
	Constitution	½
	International Relations	½
	Vocations	½ or 1
	Sociology	½
	Economics	½ or 1
VI. Commercial Subjects.....	Typewriting	½ or 1
	Shorthand	½ or 1
	Bookkeeping	½ or 1
	Commercial Law	½
	Salesmanship	½
VII. Industrial Subjects.....	Agriculture	½ to 4
	Home Economics	½ to 4
	Drawing	½ or 1
	Aeronautics	½ or 1
	Forging	½ or 1
	Woodwork	½, 1, or 2
	Printing	½, 1, or 2
VIII. Normal Training Subjects...	Methods and Management	½
	Psychology	½
	Reviews	1
	Grammar, Geography, and Reading, 12 weeks each, *or* Two of these, 18 weeks each	
	Music	1
	Art	1

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

Students from high schools not in Kansas must be recommended by their principals as capable of doing college work.

Students with Advanced Credit

Students presenting transcripts of record of work done in other accredited institutions of collegiate level are allowed hour-for-hour credit on courses in this College insofar as the credits can be accepted in the student's curriculum. A student who cannot furnish an acceptable transcript of record of work for which he has advanced credit, may be examined in subjects that he has studied under competent instructors.

On the information blank furnished by the Committee on Admissions a student with advanced credit must not only state the curriculum he plans to follow, but also list all other institutions in which he has been enrolled. He must ask these institutions to send a transcript of his record to the Director of Admissions. If fees are charged for such transcripts, the applicant must make necessary arrangements with his former institutions.

When the transcripts have been evaluated, the committee will send the student a copy of the evaluation. Students without an approved evaluation of credits must meet with the committee before registering. If their records are not completely satisfactory, they may be enrolled provisionally at the option of the committee.

The committee cannot act on transcripts received later than two weeks before the date of registration.

NOTE: Transcripts of record must come to the Director of Admissions directly from the institutions issuing them. Others will not be accepted.

In general, no student will be admitted to the College unless he is eligible to return to the institution last attended.

Special Students

A special student is one not regularly enrolled to work for a degree. He may, however, on completing entrance requirements and with the consent of his dean, become a regular student.

A student who satisfies entrance requirements may be admitted as a special student for such work as is approved by the dean of the school in which he enrolls.

A student who satisfies requirements for entrance to the College, but lacks fixed requirements for admission to certain curriculums (see page 15) may, with the approval of the dean, be admitted as a special student to the school in which he wishes to enroll. When the fixed requirements have been completed, he may, with the consent of the dean, become a regular student without loss of credit.

Because experience and maturity often compensate for lack of scholastic attainment, the College admits as special students men and women over twenty-one years of age who cannot meet the regular entrance requirements. The age limit does not apply to special students in music.

Special students must give evidence of satisfactory preparation for the courses they wish to take, and most special students must present transcripts of record of their preliminary education. In some cases a special student may present a statement from another college in lieu of a transcript of record. This statement must certify that the student is in good standing, list the courses that the student wishes to take, and declare that the student has completed the prerequisites

Special students are subject to regulations for regular students, payment of all fees, regular attendance at classes, maintenance of satisfactory standing, and as a rule assignment to physical education and military training.

The College will give special consideration to students who apply for admission as special students on the basis of experience gained in service in the Armed Forces. (See "Veterans of the Armed Forces," p. 21.)

Late Admission

A student is not admitted to the College later than ten days after the opening of a semester, except by special permission of his dean. A fee of $2.50 is charged anyone enrolling after the first week of a school term or after such earlier date as may be announced by the College. (See the College Calendar.)

Aptitude Tests

Before he is permitted to enroll, every applicant for admission to the College must take aptitude tests designed to discover in what way he may most satisfactorily direct his efforts. They show in what fields he may best proceed and in what types of work his abilities and interests are strongest.

These tests are given for freshmen enrolling in Kansas State College for the first time during the Freshman Orientation period, and to other new students at a stated time before they register. Equivalent tests taken elsewhere cannot be substituted for the tests required in this College.

Mathematics Proficiency Tests

In all curriculums in which college algebra is required, sudents will take a proficiency test in algebra within the first two weeks of their enrollment in any course in algebra. The results of this test will be used to determine whether a student shall be required to take the course in intermediate algebra to qualify for college algebra.

In all other curriculums containing a required course in mathematics, students will take a proficiency test in mathematics. This test will be given during the orientation period before each semester and will be used to determine whether a student should take remedial work in mathematics.

All new freshmen in the School of Home Economics will be required, at the time of entrance, to take a proficiency test in mathematics. Those enrolled in the Curriculum in General Home Economics or the Curriculum in Dietetics and Institutional Management who fail the test will be required to take the three-hour course, Mathematics in Human Affairs, in their freshman year. Advanced credit in college mathematics exempts students in the School of Home Economics from the course, Mathematics in Human Affairs.

English Requirement

Each freshman entering the College for the first time will be required to take an English placement test consisting of a theme and a written examination on the mechanics of writing. Students who meet a standard set by the Department of English in the placement examination may elect to take Written Communications II and to substitute another English course for Written Communications I. They are also automatically eligible to take a special examination which, if passed satisfactorily, will permit them to receive credit in Written Communication I. Students having low scores in the placement test will be required to take Subfreshmen English either preceding or concurrently with Written Communications I.

The special examination for credit in Written Communications I will be given the fourth Saturday of each semester and the second Saturday of the Summer Session. The examination will cover the content of the course as it is offered at Kansas State College. Permission to take the examination must be secured from the student's dean and the head of the Department of English. The charge for the examination is $6 for residents of Kansas and $18 for nonresidents.

The examination must be taken the first semester that the student is enrolled in the College.

Physical Examinations

Before he is permitted to enroll in the College, every new student must take a comprehensive physical examination given at a specified time by the Department of Student Health. New freshmen will take this examination during the induction period.

Junior Colleges

There is excellent coöperation between the junior colleges of Kansas and Kansas State College. A student who plans to begin his work in a junior college and complete it in Kansas State College may arrange his program so as to proceed without loss of time. Different curriculums require different subjects, but the College will give all possible credit for work done in junior colleges. Hour-for-hour credit is given where junior college work can be accepted to satisfy curricular requirements.

The College will gladly furnish to junior college students a list of recommendations for any curriculum, so that a student may begin his work in junior college with an assignment acceptable to this institution, and later transfer without loss of credit. A junior college student who has followed the advice of the College can usually complete his work for the bachelor's degree from Kansas State in two years.

The curriculums printed in this catalogue give full information as to courses required in each, but the College will be glad to hear from students as to specific problems.

The following Kansas junior colleges are accredited by the State Board of Education:

PUBLIC

Arkansas City Junior College, Arkansas City
Chanute Junior College, Chanute
Coffeyville Junior College, Coffeyville
Dodge City Junior College, Dodge City
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
Kansas City Junior College, Kansas City
Parsons Junior College, Parsons
Pratt Junior College, Pratt

PRIVATE

Central Academy and College, McPherson
College of Paola, Paola
Hesston College, Hesston
Sacred Heart, Wichita
Saint John's College, Winfield
Tabor Academy and College, Hillsboro

Veterans of the Armed Forces

All men and women honorably discharged from the armed forces of the United States will be considered for admission to Kansas State College.

The College will consider the individual needs of each student whose education was interrupted by a call into the armed forces. Those who lack high school graduation or a full list of high school prerequisites will be given an opportunity to make up what they lack with General Educational Development Tests, entrance examinations, or other means. For certain technical curriculums, high school prerequisites, especially in mathematics, must be made up.

Correspondence courses taken from accredited institutions through the United States Armed Forces Institute will be accepted from veterans, subject to the regular rules covering the acceptance of advanced credit by correspondence.

Correspondence courses and others given by the United States Armed Forces Institute, in-service courses, and other courses taken by men and women while in service in the armed forces, may be accepted for entrance credit or advanced credit if validated by examinations given by the College, or in some other manner satisfactory to the student's dean. No credit is given for General Educational Development Tests, College Level.

Work done in the Army Specialized Training Program, the Navy V-12 Program, or the Army Air Forces Pre-Meteorology or Meteorology courses will in general be accepted as of collegiate grade, and used for advanced credit insofar as it applies on the student's curriculum. Work done in the Army Air Forces College Training Program and the Navy V-5 Program must usually be validated by examination.

In general the College follows the recommendations given in "A Guide to the Evaluation of Educational Experiences in the Armed Services," published by the American Council on Education.

Services for Veterans

College-wide agencies giving special services for veterans are grouped in Anderson Hall. The Veterans Service Office and the Bureau of Counseling are operated by Kansas State College. The Guidance Center and Contact Office are operated by the Federal Veterans Administration. Each veteran attending Kansas State College under the Federal educational benefits program must supply evidence of his eligibility to the College Veterans Service Office. Application for benefits under Public Law 346 may be filled out in that office. Application for vocational counseling for veterans should be made at the Federal Guidance Center.

The Office of Admissions, Housing Bureau, Business Office, and other College-wide service offices are also located in Anderson Hall. Correspondence concerning veterans' educational benefits should be addressed to the Coördinator of Veterans Affairs.

State Vocational Rehabilitation Training

The College coöperates with the State Board for Vocational Education in providing rehabilitation training for physically handicapped persons who need financial assistance. Correspondence should be addressed to the Vocational Rehabilitation Division of the State Board for Vocational Education, Topeka, Kansas.

General Information

The College, founded on February 16, 1863, was established under the Morrill Act, under which land grant colleges came into being. According to the law of its establishment, the object of the College 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."

At first the College was located on the grounds of the old Bluemont Central College, chartered in 1858, but in 1875 most of the work of the College was moved to the present site. The campus is at the northwest corner of the city of Manhattan, convenient to both business and residential sections. The campus itself consists of 153 acres carefully landscaped, while beyond the campus there are about 2,800 acres of land belonging to the College, used for experimental work in agriculture.

Most of the College buildings are constructed of native limestone. They are so placed as to give maximum effect to the landscaping of the campus.

Business Directions

General information about the College is obtainable from the President.

Prospective students should communicate with the Director of Admissions.

The experiment stations and the various departments are always ready to respond to requests for information in their special fields. Those who need scientific and practical information should write to the head of the department concerned with the work under consideration.

Requests for publications of the Agricultural Experiment Station or the Engineering Experiment Station should be made to the director of the station.

Fees

Fees Subject to Change. All fees are subject to change at any time by the Board of Regents. The various customary enrollment fees are listed under the recapitulation on page 23.

Payment of Fees. The matriculation fee is paid during the first registration in the College only. The incidental fee, the student health fee, the student activities fee, and the student union fee are paid during registration at the beginning of each semester or summer session.

All fees must be paid in full during the period of registration. Checks on out-of-town or local banks are accepted to the amount of the fees.

Refunds will not be made until sufficient time has elapsed to insure that student checks will be honored—usually 10 days after students enroll.

Tuition. There is no tuition fee. Fees are charged for individual lessons in music but not for class instruction. (See Personal Service Fees.)

Matriculation Fee. The matriculation fee, paid only once, covers the cost of registration and assignment and keeping a student's record throughout his college course. All students who enroll for credit (including enrollees in workshops and short courses if enrolled for credit) must pay this fee when first enrolling.

Incidental Fee. The incidental fee represents the student's contribution toward the cost of instruction.

Student Health Fee. For a description of the Department of Student Health, see page 33.

Student Union Fee. In accordance with a vote of the student body and with section 4 of chapter 364 of the Kansas Session Laws of 1941, each student pays a student union fee. The fund so collected is to be used to provide a student union building.

Recapitulation. To make clear the amount of fees due at the opening of each semester of the College year, the following tabular statement is given:

FOR RESIDENTS OF KANSAS AND STAFF MEMBERS

Paid for each semester (sixteen weeks or more, if enrolled in more than six hours) except matriculation, which is paid only once.

	New students	*Old students*
Matriculation (paid at first enrollment only)	$10.00	None
Incidental		
All except Veterinary Medicine Students	50.00	$50.00
Veterinary Medicine Students	60.00	60.00
Student Health	7.50	7.50
Student Union	5.00	5.00
Totals—All except Veterinary Medicine Students,	$72.50	$62.50
Totals—Veterinary Medicine Students	82.50	72.50

FOR NONRESIDENTS OF KANSAS

Paid for each semester (sixteen weeks or more, if enrolled in more than six hours) except matriculation, which is paid only once.

	New students	*Old students*
Matriculation (paid at first enrollment only)	$20.00	None
Incidental		
All except Veterinary Medicine Students	100.00	$100.00
Veterinary Medicine Students	110.00	110.00
Student Health	7.50	7.50
Student Union	5.00	5.00
Totals—All except Veterinary Medicine Students,	$132.50	$112.50
Totals—Veterinary Medicine Students	142.50	122.50

"Persons entering the state educational institutions who if adults have not been, or if minors, whose parents have not been residents of the state of Kansas for six months prior to matriculation in the state educational institutions, are nonresident for the purpose of the payment of matriculation and incidental fees: *Provided further,* That no person shall be deemed to have gained a residence in this state for the aforesaid purpose while or during the elapse of time attending such institution as a student, nor while a student of any seminary of learning, unless, in the case of a minor, his parents shall have become actual residents in good faith of the state of Kansas during such period, or unless, in the case of a minor, he has neither lived with nor been supported by his parents or either of them for three years or more prior to enrollment and during said years has been a resident in good faith of the state of Kansas."

Definition of Resident. The residence of students entering Kansas State College is determined by an act of the legislature (L. 1938, Special Session, ch. 70, sec. 1), which reads as follows:

Pro Rata Fees. Fees for enrollees enrolling originally in six semester hours or less for a regular semester or three semester hours or less for a summer session of seven week or more are as follows:

	Kansas residents and staff members	*Nonresidents*
Incidental Fee: (regular semester or summer session)		
All except Veterinary Medicine Students, a semester hour	$3.25	$7.25
Veterinary Medicine Students, a semester hour	4.00	8.00
Student Union:		
Regular semester	5.00	5.00
Summer term	2.00	2.00
Student Health: (regular semester or summer session)	Not eligible	Not eligible
Recreation fee, summer session only	2.00	2.00

Special Examination. Any student granted permission to attempt to obtain college credit by taking a special examination (in lieu of attending classes) shall be assessed a fee of $2 a semester hour in which examined if a Kansas resident or a staff member, or $6 a semester hour in which examined if a nonresident. This fee must be paid before taking the examination and is not subject to refund; this service is available only to matriculated students.

Graduate Research Work *in Absentia.* The fee for graduate research work *in absentia* is $2.50 a semester hour for both residents and nonresidents. Resident staff members may not be enrolled *in absentia* while regular college sessions are in progress. This fee is not subject to refund.

Home Study Fees. For a complete listing of fees charged for work offered through the Department of Home Study, Division of College Extension, see page 279. Resident students taking work by correspondence are required to pay the *enrollment* fee for that work.

Refund Policy. If an enrollee withdraws during a school term, the following schedule of refunds shall apply:

A. Withdrawal during first week of a school term—100 percent of fees refunded, except matriculation fee, which is not subject to refund. (See Calendar.)

B. Withdrawal after first week of school term and before one-third of the term has passed—50 percent of fees refunded, except matriculation and student health fees. (See Calendar.)

C. Withdrawal after first week of school term and before one-third of the term has passed—no refund of matriculation and student health fees.

D. Withdrawal after one-third of a school term has passed—no refund of fees.

Late Enrollment, Including Reënrollment After Withdrawal. A late enrollment fee of $2.50 shall be assessed and collected for each person who fails to complete his registration when regularly scheduled, or fails to pay his fees before the end of the first week of a school term or before such earlier date as may be announced by the President of Kansas State College. This fee shall not be subject to refund; payment of it shall be considered a part of the enrollment process.

Laboratory Fees and Course Charges or Deposits. No laboratory fee or course charge is assessed against or collected from persons enrolled in any regular semester or summer session at Kansas State College, except for excessive usage or breakage or losses due to personal negligence on the part of the student, and then only for actual fair value of supplies so used or lost and subject to the approval of the appropriate dean or the President.

Short Courses and Workshops. Fees for short courses and workshops, to be assessed and collected as announced in official college publications, shall be based on the following schedule and shall be subject to the refund policy outlined above:

	Kansas residents and staff members	*Nonresidents*
Matriculation	$10.00	$20.00
Incidental Fee (a week)	3.25	5.25
Student Health		
First week	1.00	1.00
Each additional week	.50	.50
Recreation fee (summer sessions only)		
Less than 4 weeks	None	None
For first 4 weeks	1.00	1.00
Each additional week	.25	.25
Student Activities (fall and spring semesters)	Optional	Optional
Student Union		
For first 3 weeks	1.00	1.00
Each additional week	.25	.25

Consumable supplies charge, as determined in each instance.

Personal Service Fees. Charges for private music lessons or for other individual instruction are in addition to the fees outlined above; such fees, however, are subject to the refund policy set forth above. The schedule for private music lessons is as follows:

	*Students paying incidental fee**	*Students not paying incidental fee*
Two lessons a week for 16 to 18 weeks	$35.00	$42.00
One lesson a week for 16 to 18 weeks	17.50	23.00
Separate individual lessons, each	1.50	2.00

Charges for individual training in flight instruction are based upon actual costs to the College estimated as follows: Dual flying time at the rate of $10 an hour; solo flying time at the rate of $8 an hour; and books and supplies as required, estimated not to exceed $5. Veterans who enroll under Public Law No. 346 must have applied to the Veterans Administration to accelerate their eligibility to a maximum of 225 days, in addition to having sufficient eligibilty to cover all other College charges, or make up the difference with a cash deposit at the time of enrollment. Veterans who enroll under Public Law No. 16 must have in addition the Veterans Administration's approval to include the course of flight instruction in their course of training or employment objective. For all other students, a deposit of $475 is required at the time of enrollment. All unused deposits are refunded when the course is completed.

Summer Sessions. In general the fees for the regular summer session are approximately one-half the fees as outlined for regular semesters, and are subject to the refund policy outlined above. The following schedule of fees will be charged for summer sessions of more than 7 and less than 13 weeks.

	Kansas residents and staff members	*Nonresidents*
Incidental Fee:		
All except Veterinary Medicine students	$29.50	$59.50
Veterinary Medicine students	34.50	64.50
Student Health:		
If taking more than 3 hours	3.75	3.75
If taking 3 hours or less	Not eligible	Not eligible
Student Union	2.00	2.00
Totals—All except Veterinary Medicine students	$35.25	$65.25
Totals—Veterinary Medicine students	40.25	70.25

Each fee for a summer session of six weeks or less shall be one-half (to the nearest dollar) the fee for a regular summer session, except that no fee shall be less than $1, and no pro rata fees shall be assessed.

Audition Fee. An auditor who is neither an enrollee nor a staff member shall be assessed $1 a semester hour for courses audited. Laboratory courses may not be audited. These fees shall not be subject to refund.

Commencement and Certificate Fees. Each person eligible for a degree shall be assessed $9 for each degree to be conferred to cover cost of diploma and commencement activities. Each person eligible for a certificate of completion of a course of study shall be assessed $5 for each such certificate to cover cost of preparing the certificate and of related commencement activities. These fees shall not be subject to refund.

Transcript Fees. Each student is entitled to receive without charge one transcript of his record. For each additional transcript requested by such student there shall be charged a fee of 50 cents. Payment of each commencement fee beyond the first entitles the recipient of a further degree to an additional transcript. For transcripts requested by any person or agency other than the student or graduate concerned, there shall be charged a fee of $1 for each transcript. *These fees are not subject to refund.*

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* There is no aditional charge for equipment used by students paying incidental fees, except that the number using the organ may be limited by the music department. The term "incidental fee" as used here refers to a *full* incidental fee, not a pro-rata incidental fee.

† Subject to certain state and federal taxes.

Military Uniforms. Every student who takes military training (except Veterinary) must have a uniform. For the basic courses the uniform is furnished by the Government. The money value of any missing articles will be collected when the uniform is returned. The Government makes a substantial allowance toward the cost of the uniform used in advanced courses. Failure to return or pay for missing articles of the uniform may result in withholding of credit and in extreme cases may cause the College to refuse a transcript or to graduate the student concerned.

Charges to Governmental or Private Agencies. The fees collected under federal contracts or arrangements with other governmental or private agencies follow in general the fees outlined above, and in all cases the charges are equal to or greater than the fees stated herein.

Other Expenses

Textbooks. The cost of textbooks varies considerably from semester to semester and according to the curriculum chosen. A freshman may reckon with an expenditure of about $30 for new textbooks during his first semester, and of about $20 during his second semester. Certain curriculums require books costing slightly more than these figures; most curriculums require books costing slightly less. For many courses secondhand books are satisfactory.

Drawing Instruments. In several curriculums, especially in architecture and engineering, drawing intruments are necessary. These range in price from $23 to $35 a set.

Gymnasium Suits. Every woman taking physical education must have an approved gymnasium suit costing $3 to $3.75. In the major course the suit costs $5 to $6. The gymnasium suit for a man costs about $3.50. In the major course the suit costs $9.

Housing

Boarding and rooming establishments accommodating College students are regularly inspected by the Department of Student Health. The establishments approved by this department are issued certificates of approval by the Housing Office under the direction of the Faculty Council on Student Affairs.

For Women

All undergraduate women students at Kansas State College are required to live in houses approved by the College.

The College operates three residence halls for women: Van Zile Hall, capacity 169; Waltheim Hall, capacity 78; and East Stadium Hall, capacity 60. The contract is for room and board for a full semester, and may be cancelled only for reasons satisfactory to the Dean of Women or the Assistant Dean of Women. The food service is under the direction of the Department of Institutional Management of the College. The rates, subject to change, are announced by the College before the opening of each semester.

There are thirteen organized off-campus houses for women. Some of these offer both room and board, while others offer room only. The contract in all women's houses is for one full semester.

Other women students live in unorganized off-campus houses or in private homes which have been approved by the College.

Members of fraternities and sororities find living and dining facilities in houses maintained by these groups.

Women should address correspondence about room and board to the Dean of Women.

For Men and Families

All unmarried undergraduate men students at Kansas State College are required to live in houses approved by the College.

The College provides accommodations on the campus for 482 unmarried men. The West Stadium Dormitory has a capacity of 146 and the Moro

Courts converted barracks dormitory accommodates 336. The rent is $42 a semester if paid in advance, subject to no refunds, or $44 if paid in four equal installments of $11 each. Contracts for rooms are made for one full semester in the West Stadium Dormitory.

Two organized houses are operated off-campus for single students. Other single men live in unorganized off-campus houses or in private homes which have been approved by the College. All off-campus rooms are contracted for one full semester. Rent for single men students off-campus accommodations ranges from approximately $8 to $25 a month.

For married veteran students, the College operates 101 furnished trailers, 336 (one bedroom, two bedroom) unfurnished apartments, and 31 spaces to park privately owned trailers. Expansible trailers rent for $20 a month and standard trailers rent for $15. Two bedroom apartments rent for $28 and $30 a month; one bedroom apartments rent for $24 a month; and trailer space rents for $12 a month. All rates are subject to change.

Apartments in private homes or apartment houses off-campus provide additional housing for married students. Rent for off-campus apartments ranges from approximately $30 to $60 a month, depending on the size of the apartment and its location in Manhattan.

Inquiries should be addressed to the Director of Housing.

Board

The College operates cafeterias serving all meals except on College holidays and during vacations. There are also numerous clubs and boarding houses offering meals.

Responsible Citizenship

Students coming to K. S. C. have an opportunity to participate in student government, hall government, independent student association, the student planning conferences, and many other groups. Through these organiations the student has a share in formulating many of the policies under which he lives and as a result learns to live in a democratic way under them. Through this kind of activity a person can become a responsible citizen of the college community.

Conduct

Students are expected to conduct themselves in a way becoming to any good citizen. Students who violate standards of good citizenship are subject to disciplinary action by the Student Council and the Faculty Council on Student Affairs.

Counseling Bureau

The Counseling Bureau offers testing and counseling service to students seeking help for personal problems and those relating to reading deficiencies or vocational or curricular choice. The Bureau serves as a reference agency for advisers who need specialized information or assistance for advisees. It also has available for student use a file of vocational information.

Freshman Orientation Week

Freshmen enrolling for the first time come to the campus several days before registration begins. (See Calendar.) During these days they have the opportunity of becoming acquainted with the College, meeting faculty members and classmates, getting information and other help from advisers, taking aptitude, placement, and physical examinations, and attending social functions.

Each entering freshman gets a booklet that gives the complete schedule of Freshman Week Activities. Since the College handles large numbers of students, it is essential that all freshmen get here on time, follow the schedule closely, and attend all functions.

No one may register as an undergraduate unless he has taken the required physical examinations, and the required aptitude tests, which will help him in making judgments about his work in the College.

Freshman Advising Program

During Freshman Week the Counseling Bureau compiles a folder for each new freshman, containing the results of all tests taken during Freshman Week, and available to the student's adviser. Freshmen have the opportunity of meeting with their advisers at the beginning of the school year, at midsemester, and just before the end of the semester. The purpose of the first meeting is to define student goals to be reached in college, give information regarding appropriate curriculum and courses, and to discuss any problems the student may have. The next two meetings are usually devoted to a discussion of the student's progress and plans for the next semester's work. These meetings give the student a better understanding of himself in relation to his goals and college life as a whole.

Classification of Students

A student who is a high school graduate, or offers fifteen acceptable units of high school work, is classified as a freshman. He is advanced to a higher class when he has credit in hours and points to meet the requirements for advancement in the various schools as listed below:

School	*Sophomore class*	*Junior class*	*Senior class*
Agriculture	23	56	88
Arts and Sciences	23	55	86
Engineering and Architecture*	25	61	97
Home Economics	23	54	81

Students enrolled in the professional curriculum in the School of Veterinary Medicine are classified as First Year, Second Year, Third Year, and Fourth Year students. The First Year students are so classified following admission and assignment to the School, after completion of the two-year Preveterinary curriculum (68 hours). To advance to a higher classification, a student must complete satisfactorily the requirements as listed in the professional curriculum for the previous year or years. Exceptions are granted only in meritorious cases by the Dean of the School of Veterinary Medicine and shall not exceed nine credit hours of deficiencies.

Assignments

A student is responsible for fulfilling all the requirements of the curriculum in which he is enrolled. His assigner and his dean will help him plan his work, but do not assume responsibility for his mistakes. A student should be familiar with the catalogue statements about assignments and curriculums, because the catalogue is the official source of information.

No student may be enrolled in classes or for private lessons in music or other subjects before getting an assignment. No assignment is complete until all fees and charges are paid.

Registration and assignment to courses take place on the dates shown in the Calendar, page 5. Later assignments are made during regular office hours by a student's dean or assigner, but must be checked by the Registrar as to availability of classes, which are closed when the limit as to number is reached.

A student may not enroll later than ten days after the beginning of a semester or summer session except by permission of his dean.

Penalties are provided for failure to enroll during the regularly scheduled registration periods, or failure to complete registration by payment of fees before the dates set for that purpose. See the Calendar, or the section on Fees, page 22, for these penalties.

A student who wants to take work at other than scheduled times must have the written consent of his dean, the head of the department in which the work is to be done, and the dean of the school in which the department belongs.

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* Students enrolled in the five-year curriculum in Architecture are classified according to the following requirements in hours and points: Second Year, 22; Third Year, 55; Fourth Year, 87; Fifth Year, 119.

Every student must take a full assignment unless excused by his dean. Students whose grades averaged B or better during the preceding semester and who did not receive a deficiency of any kind during the preceding semester, may apply to their deans for permission to take excess hours, but not to exceed 21, including correspondence work. Other students may not normally take excess hours. Exceptions to this policy are reported to the President by the dean granting the exception.

An enrolled student may not carry correspondence work except by permission from his dean.

If a student makes special requests about assignments or asks permission to make up deficiencies by study under an approved tutor, his dean will decide after conferring with the heads of the departments concerned.

Changes in Assignments

Deans will not drop subjects from a student's assignment during the last two weeks of a period covered by midsemester or final scholarship deficiency reports.

No student may drop a course or change an assignment except by a formal reassignment, which can be made only by his dean.

If an instructor recommends a reassignment, a student should confer with his dean.

A student who drops out of class without a reassignment is reported absent.

Withdrawal from College

A student who withdraws from College must have an official withdrawal permit from his dean. If a student withdraws from College before midsemester, a mark of Wd (withdrawn) is reported. If he withdraws after midsemester, he gets a grade for one-half semester. A student who withdraws during the eighth or ninth week or the seventeenth or eighteenth week of a semester gets a midsemester or semester grade of F for courses in which he is not doing satisfactory work.

Auditing Classes

An auditor is one who attends a class regularly without participating in class work and without getting credit. Permission to audit a class is granted by the dean of the School in which the class is offered. The fee for those not connected with the College is $1 a semester hour. A student or employee of the College who wants to audit a class must first get the consent of his dean. Laboratory classes cannot be audited.

Grades

The College uses the following grades:

A, for distinguished work
B, for superior work
C, for average work
D, for merely passing work
F, for failure

The equivalent percentage grade for passing is 70. For purposes of translating percentage grades into letter grades the following schedule shall be used when 70 is the minimum passing grade:

94-100 A
86- 93 B
78- 85 C
70- 77 D

The report Con, conditioned, is used for unsatisfactory work on which an examination may be taken. If the examination is passed, the Con becomes D; otherwise, it becomes F. The examination must be taken at the first subsequent semester of enrollment. The report Inc, incomplete, is used when a student may have further time to complete the required work. It, too, must be removed within the first subsequent semester of attendance or the report becomes an F.

Report of Grades

(1) On the fifth and the ninth Saturday of each semester; (2) not later than 6 p. m. on the last day of each semester, reports of unsatisfactory work on those dates are sent to the students concerned and the deans. The dates appear in the Calendar; these reports are an imperative duty of all instructors. The first two 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.

Students desiring reports of grades must supply their instructors with properly filled official cards after the fifth or the ninth Saturday of the semester or with their final examination papers. Instructors will make reports so requested to the students or send them to the student organizations.

The instructor prepares for each student a semester grade based on the examination and class work, and must report this to the Registrar for record as shown in the Calendar.

If a student drops a subject before midsemester, a mark of Wd (withdrawn) is reported.

If a student withdraws from College before midsemester, a mark of Wd is reported for each subject, irrespective of the standing of the student in the subject; except that grades below passing of students withdrawing from College during the eighth and ninth weeks or the seventeenth and eighteenth weeks of a semester are recorded as midsemester or semester grades. Regardless of the time of withdrawal, however, a final grade shall be reported, if all the required work of the course has been completed. 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; but a subject dropped at any time after midsemester on account of failure is given a semester grade of F.

In case of absence from a final examination, no semester grade is reported until the reason for such absence has been learned; the instructor reports to the Registrar a mark of Inc. If the student's absence is inexcusable, a semester grade is reported on the basis of zero for the final examination; but if the absence is excused or excusable, a reasonable time, usually not over one month, is allowed within which the examination may be taken.

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. Special procedures are followed in reporting a grade to replace Inc and in reporting corrections of grades.

Instructors are to leave all class books on file in the proper department when semester grade cards have been made out. The head of the department is to keep all grade books as a permanent file of the department.

Points

For each semester hour of work a student gets points, according to the grades he makes, as follows: A, 3; B, 2; C, 1; D, 0; F, —1. For graduation or for advancement in classification, the requirement in points is the same as in hours.

Scholarship Deficiencies

PROBATION

If a student in either semester or summer session of his first year gets F or Con in one-third of his work, he is put on probation for a semester, and his parent or guardian is informed of the fact. Any other student is put on probation for a semester if he gets F or Con in one-fourth of his work. A third such probation results in dismissal from the College.

DISMISSAL

If a student in either semester or summer session of his first year gets F or Con in one-half of his work, he is dismissed from the College, and his parent or guardian is informed of the fact. Any other student is dismissed if he gets F or Con in two-fifths of his work. After two probations, one probation and one dismissal, or two dismissals, any subsequent probation involves dismissal.

REINSTATEMENT

Students dismissed at the end of the first semester are excluded until the beginning of the next summer session. Those dismissed at the end of the second semester or a summer session are excluded until the end of the next fall semester. During this period they may not habitually appear on the campus or enter any classes. Any student dismissed for scholarship deficiencies may petition in writing, on a form provided by the College, for immediate reinstatement. The Committee on Reinstatement considers such petitions, granting reinstatement in exceptional cases only.

Absence

Students are expected to attend all meetings of classes. Seniors and juniors who have done superior work may be excused from such compulsory class attendance.

Examinations

Final examinations are held at the end of the semester, except for candidates for degrees.

A student whose semester grade in any subject is A may be excused from the final examination in that subject.

Examinations to remove conditions are held on the fourth Saturday of each semester. A student with a mark of Con may take such an examination if he makes arrangements with his instructor or department head not later than the previous Tuesday.

Permission for special examination in subjects not taken in class or to make up failures is given by the student's dean after consultation with the head of the department in which the course is given. A special examination may be given only to a matriculated student.

Entrance examinations in high school subjects are given at the beginning of each semester. (See the Calendar.) Applications for such examinations should be made to the Director of Admissions. No examination to make up deficiencies in entrance requirements will be given to students who have entered on the fourth semester of work in the College.

A matriculated student, who has high school units in excess of the fifteen units required for admission, may apply for an examination in certain subjects of freshman rank on the basis of his surplus units. The application should be made to the Registrar, who will check surplus units and authorize an examination within the first thirty days of the semester or summer session. Examinations which affect the assignment of a semester or summer session, however, will be given on the first Saturday of that semester or summer session. After the expiration of the thirty-day period, the student's dean may authorize an examination.

Required Physical Examinations

Because of the nature of the profession, students who enroll in teaching participation must pass a physical examination. All seniors in home economics, and fourth year veterinary students must take a physical examination before graduation. Under no circumstances will a student be deprived of a degree because of the results of a physical examination. Such examinations are optional for all other seniors.

Honors

In each School of the College *sophomore honors* are awarded to not more than five percent of the members of the sophomore class having the highest standing. Such honors are to be reckoned only on courses completed at this institution, combining the work of the freshman and sophomore years.

Similarly at all commencement programs *senior honors* are awarded to not more than ten percent of the members of the senior class having the highest standing. Such honors are to be determined only on courses completed at this institution, combining the work of the junior and senior years.

Credits for Extracurricular Work

Students may earn credit toward graduation by satisfactorily participating in certain extracurricular activities. These activities, and the maximum of semester hours of credit allowed, are as follows:

Subject	*Semester*	*Total*
Orchestra	1	4
Band	1	4
A Cappella Choir	1	4
Men's Glee Club	1	4
Women's Glee Club	1	4
Debate	2	4
Oratorical Contest	2	4
Kansas State Collegian journalism	1	4
Agricultural Student journalism	1	4
Kansas State Engineer journalism	1	4
K Book journalism (if not paid)	2	2

Credits may be counted as electives in the student's curriculum, or substituted for required subjects if the curriculum does not offer sufficient elective opportunity. A student may have not more than eight semester hours in these subjects, and not more than two in a semester.

A student is regularly assigned to these activities, but only on the written recommendations of the instructor in charge of the work.

Bible Study

Bible study is an elective for which no more than four semester hours of credit may be approved toward requirements for a degree. If work is completed while in residence at this college, instructors must have college approval. The Department of Education and Psychology supervises the work and certifies the credit.

Classes

By order of the Board of Regents classes for freshmen are limited to a minimum of 15. Classes for other than freshmen are limited to a minimum of 10, except that certain advanced technical and laboratory classes may have a minimum of 7.

Assemblies

About every other week students and faculty gather in the auditorium for an assembly program. Often the program is an address by a visitor who is an authority in some field of interest to the College; sometimes it is musical, given by visiting or local artists; it is sometimes of a religious and devotional nature. The programs are designed as part of the liberal education offered to students, and not as entertainment.

Course Numbers

Courses for undergraduates only are numbered from 101 to 199; those for undergraduates and graduates, from 201 to 299; those for graduates only, from 301 to 399. Each department numbers its courses independently. Courses which do not carry college credit are numbered below 100.

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. The Library contains 152,682 bound volumes, besides much unbound material. It receives currently about 3,360 serial publications. As a depository the Library receives the documents and other publications of the United States government, as well as publications of all state experiment stations, extension services, and state departments of agriculture.

Reading Rooms. Three reading rooms are maintained in connection with the Library: The general reference room, containing encyclopedias, diction-

aries, 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.

School Libraries. School 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 department concerned.

College Publications

The Kansas Industrialist is the official alumni newspaper of the College. It is published approximately 20 times a year and is printed by the Kansas State College Press. It contains news of College developments and alumni news notes. Active members of the Alumni Association receive the Industrialist free. For others the subscription is $3 a year.

The Kansas State Collegian, a newspaper published five days a week during the College year, and *The Royal Purple,* student yearbook, are published by Student Publications, Inc.

The Kansas Agricultural Student is issued quarterly by the Agricultural Association of the School of Agriculture. *The Kansas State Engineer* is published by students in the School of Engineering and Architecture.

Student Health

The Student Health Service is supported by the student health fee fund. There are always on duty full-time physicians with an adequate medical supporting staff to care for the college students. The College Hospital has a capacity of 60 beds.

The Student Health Service is located directly west of the Library in the center of the campus, and is now housed in four barrack-type buildings. The clinical part is open to students each day from 8:00 a. m. until 5:00 p. m., with the exception of Saturday, when the clinic closes at 12 noon. Students who become ill at home may be taken directly to the emergency room at any hour.

Those who are able to walk should go to the clinic unless there is a possibility that they have a contagious disease, in which event they should present themselves to the hospital at once. The physicians of the Student Health Service make no private calls to students' rooms.

Any student may be admitted to the College Hospital by a staff physician. Five days of hospitalization are provided for each student without charge in any semester. In the event that the period of hospitalization exceeds 5 days, $2 a day extra will be charged. The student-health fee fund is supplemented by small charges, made while the student is under care, for special expensive medicines, laboratory procedures, and extra periods of hospitalization. These charges are, for the most part, the actual cost price of the extra service rendered.

In the event of the necessity of major surgery, the patient will elect his own surgeons and be transported at his own expense to one of the city hospitals. After surgery and whenever advisable, the student may be returned to the College Hospital for the duration of his illness. When a staff physician recommends the transfer, the five days of free hospitalization will apply also to the city hospitals. However, any special medicines or services rendered by other physicians while there will be at the student's own expense.

The Health Service gives a physical examination to all students entering the College for the first time. Periodic health checkups are recommended by the Service, but are optional. Physical examinations such as for life insurance, C. A. A., and civil service, or any other which the student may need, will be given at any time without extra charge. It is the policy of the Student Health Service to extend unlimited diagnostic and therapeutic facilities to all students regardless of the time or onset of illness.

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College Post Office

The College operates a post office, which is not a part of the United States postal service, but to which students and faculty may have their mail delivered. Mail arrives from the Manhattan post office twice a day. The College post office sells stamps, but not money orders, and insures and registers mail. It also facilitates intercommunication of College departments and communications of faculty with students.s All students should call for their mail at least once every two days, and preferably every day.

Self-support

Students of limited means are encouraged as much as possible, but if they have to give much time to self-support, they should take lighter assignments of College work and extend their courses. A student ought to have money for the first semester, as he will need some time to make acquaintances and find suitable work.

The College employs student labor at rates varying from 40 to 60 cents an hour, according to the nature of the employment and the experience of the employee. Most of this labor is on the College farm, in the library, cafeteria, offices, orchards and gardens, in the shops and the printing office, and for the custodian. Students of exceptional ability are sometimes employed in special duties about the College. Many students get employment in town, and there is some opportunity for obtaining board and room in exchange for work with families.

The College does not guarantee student employment. The Y. M. C. A., however, has an employment bureau for men, and the office of the Dean of Women has one for women.

Foreign Students

The College welcomes students from other countries and coöperates in every way possible with the various agencies in charge of student exchange. The Counseling Bureau is equipped to be of special service to foreign students and will assist in orienting them at the College and in Manhattan. It is suggested that the foreign student, on arriving at the College, call as soon as possible at Room 111, Anderson Hall, for any help that he may need.

The College does not have facilities to furnish banking services or management of personal finances to foreign students. In order to assist foreign governments or other foreign sponsors, however, the College will accept checks payable to the College and transfer the entire amount to the student in one lump-sum payment.

College Organizations

The Student Governing Association

Every undergraduate student who has paid the activity fee is a member of the Student Governing Association, which is charged with the responsibility of student government. The association legislates in its own behalf in its meetings which are held at least once each semester.

The executive body of the association, The Student Council, consists of nine members elected each spring for the following year to represent the students of the various schools of the college. The council discharges all executive functions of the association and sits as a court in all disciplinary cases. The council is responsible to the members of the S. G. A. as a body, and to the President of the College through the Faculty Council on Student Affairs. The S. G. A., through the Student Council, regulates and coördinates the activities of other student organizations and coöperates with other organizations in the promotion of interest and participation in extracurricular activities. It coöperates with the Faculty Council in administering the funds from activity fees.

The Student Governing Association acts in the belief that student self-government will result in a keener sense of coöperation and responsibility among students as members of the campus community.

Religious Organizations

The Young Men's Christian Association

All men students are welcome as members of the College Y. M. C. A. The work of the organization is carried on by a student cabinet, composed of the officers and the chairmen of the standing committees. Each year a freshman commission is organized for the benefit of the new men, especially those who have had Hi-Y experience. The Y. M. C. A. maintains an employment bureau for men students, and can supply an upperclass student counselor for any freshman who wants one. The permanent secretary is glad to correspond with prospective students and to receive them for interviews.

The Young Women's Christian Association

All women students are invited to become members of the Student Y. W. C. A. The Y. W. C. A. welcomes the new students through its College Sister Program. Several upperclass women students and a town mother plus ten new students make up a College Sister Group whose purpose is to aid new students in becoming acquainted with college life. The Y. W. C. A. program, based on faith in action, includes social affairs, service projects, worship services, and joint activities with the Y. M. C. A. It offers opportunities to all women students for useful service through fun and fellowship. The staff director is glad to correspond with prospective students.

Religious Groups

Each of the following organizations fosters spiritual, cultural, and social activity among its members:

Baptist Youth Fellowship and Theta Epsilon	Baptist
Newman Club	Catholic
Christian Youth Fellowship and Kappa Beta	Christian
Sigma Eta Chi	Congregational
Canterbury Club	Episcopal
B'nai B'rith Hillel Counselorship	Jewish
Lutheran Student Association	Lutheran
Wesley Foundation and Kappa Phi	Methodist
Phi Chi Delta	Presbyterian
Young People's Christian Union	United Presbyterian

Religious Federation

The Religious Federation of Kansas State College is composed of representatives of the College Y. M. C. A. and Y. W. C. A., and students in all church groups that wish to coöperate. Each fall the Federation sponsors Religious Emphasis Week and during the year it sponsors Brotherhood Week and two union meetings of all the coöperative groups. It also promotes many activities of the member groups.

Honor Societies

Phi Kappa Phi. A national fraternity. Membership is open to honor students in all departments, on the basis of scholarship. The Kansas State chapter was installed in 1915.

Sigma Xi. A national fraternity. Members of the faculty and graduate students are eligible for election to active membership on the basis of achievement in original scientific investigation; seniors who have shown excellence in two departments of science are eligible for election to associate membership. The Kansas State chapter was installed in 1928.

Gamma Sigma Delta. A national fraternity. Seniors in agriculture and agricultural engineering, and fourth-year veterinarians are eligible for election by the faculty members of the local chapter on the basis of scholarship. The Kansas State chapter was installed in 1914.

Omicron Nu. A national sorority. A percentage of seniors and juniors in home economics are eligible for election to membership by the active faculty and student members of the local chapter on the basis of scholarship, leadership, and research in home economics. The Kansas State chapter was installed in 1915.

Professional Organizations

Election to membership is based on unusual achievement.

Alpha Zeta	Agriculture
Alpha Kappa Psi	Business Administration
Alpha Mu	Milling
Eta Kappa Nu	Electrical Engineering
K Fraternity	Athletics
Mortar and Ball	Military
Mu Phi Epsilon	Music
Phi Alpha Mu	General, Women
Phi Delta Kappa	Education
Phi Epsilon Kappa	Physical Education
Phi Lambda Upsilon	Chemistry
Pi Kappa Delta	Debating
Pi Mu Epsilon	Mathematics
Pi Tau Sigma	Mechanical Engineering
Quill Club	Writing
Scabbard and Blade	Military
Sigma Delta Chi	Journalism, Men
Sigma Tau	Engineering
Steel Ring	Engineering
Tau Epsilon Kappa	Architecture
Theta Sigma Phi	Journalism, Women

Honorary Organizations

Election to membership is based on leadership in student affairs.

Blue Key	Senior Men
Mortar Board	Senior Women
Prix	Junior Women

Sororities and Fraternities

Sororities and fraternities offer housing and a social program to both members and pledges of these organizations. Lists of fraternities and sororities, giving the street addresses in Manhattan and names of the presidents, may be secured from the Faculty Adviser of Fraternities and the Faculty Adviser of Sororities.

Independent Women's and Men's Organizations

The Independent Coördinating Asembly will aid organizations in providing programs of recreation and activities for the independent student. There are a number of independent women's and men's organized houses. There is also an organization for independent women students who live in unorganized houses.

The Graduate Club

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

Agricultural Societies

The Agricultural Association meets regularly once a month. All students enrolled in the School of Agriculture are members. The objectives of the association are to encourage and support agricultural activities, to correlate the work of various clubs and other organizations of students within the School; and, in general to have leaders elected and authorized to speak for the student body of the school at all times.

Departmental clubs of the School are the Agricultural Economics Club, Agricultural Education Club, Block and Bridle Club (animal husbandry), Dairy Club, Horticultural Club, Klod and Kernel Klub (agronomy), Milling Industry Association, Plow and Pen Club (agricultural journalism), and the Poultry Club. Membership in these clubs is open to students and faculty of the School who are specially interested in the fields represented by the respective clubs.

The object of the clubs is to expand the interest and familiarity of the students in the fields and industries most closely related to the department in which they are majoring. Meetings and social affairs further the acquaintance of faculty and students. Student officers preside at the meetings and plan the programs, many of which are presented by students, though frequently faculty members or other speakers participate. Usually a student belongs to the club representing the department in which he is majoring, while many belong to more than one.

Engineering Societies

All students enrolled in the School of Engineering and Architecture are members of the Engineering Association, which usually meets once each month. The students in agricultural, chemical, civil, electrical, and mechanical engineering are organized as student branches of the American Society of Agricultural Engineers, the American Institute of Chemical Engineers, the American Society of Civil Engineers, the American Institute of Electrical Engineers, and the American Society of Mechanical Engineers, respectively. Students in architecture and architectural engineering are organized as a student branch of the American Institute of Architects.

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

Societies in the School of Arts and Sciences

The Kansas State College section of the American Chemical Society arranges during the school year for monthly meetings which are usually addressed by visiting chemists.

The Business Students Association gives the students in business administration an opportunity to get first-hand information on the problems and the opportunities in the business world by providing for speeches by specialists in business subjects and representative businessmen.

The Geology Club builds up a professional spirit among the students majoring in Geology.

The object of the Medical Technicians Club is to give the students more definite ideas as to the responsibilities and opportunities in this field.

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.

The Mathematics Club meets monthly to listen to talks of mathematical interest.

Home Economics Club

Membership in the Margaret Justin Home Economics Club is open to all students in the School of Home Economics. Its purpose is to promote professional interest by means of contacts and activities of many types. The Club is affiliated with the American Home Economics Association and leads to continued membership in that organization after graduation.

Veterinary Medical Association

The Junior Chapter of the American Veterinary Medical Association is a student organization in affiliation with the American Veterinary Medical Association. The object of the chapter is to promote interest and knowledge in veterinary science. The organization meets on the second and fourth Tuesdays of each month; students present papers, and members of the faculty and outside speakers also appear on the program.

Collegiate 4-H Club

Former 4-H Club members now in College make up the membership of the Collegiate 4-H Club, one of the largest service and social organizations at Kansas State College. The group participates actively in worth-while College activities; sponsors a radio program; publishes the *Who's Whoot,* Kansas 4-H Club annual; maintains a loan fund; assists at Round-up and Rural Life Conference; and has contributed to the building of State 4-H Club Camp and the Student Union.

Normal membership of more than 500 former 4-H boys and girls enables the Collegiate 4-H Club to maintain a strong and effective service program, train and develop leadership and promote the good of the 4-H boys and girls and the entire Extension program. The value of this group is not confined to the Kansas State College campus; the contacts of this active group have caused many more former club members to seek a college education.

The College Bands

The three College bands, the Concert Band, the Varsity Band, and the Football Band, are student organizations, membership in which is voluntary. The Football Band includes all qualified players from both Concert and Varsity Bands. The Concert and Varsity Bands do not function until the end of the football season, when the Football Band is divided into the two units. The Football Band plays for all home games and rallies, and takes one trip each year for an important conference game. The Concert Band plays frequent public concerts and provides music for other formal campus ceremonies. The Varsity Band plays for home basketball games and rallies.

Membership in the bands is determined by competitive tryout. Students not majoring in the Department of Music may enroll in the Football Band, Varsity Band, or Concert Band for one semester hour of credit. Students may also participate in band work on a noncredit basis.

The Military Band is a strictly military organization, made up of R. O. T. C. members who are assigned to Military Band duties in lieu of drill.

The College Orchestra

The Orchestra is an all-College organization under the direction of a member of the music department. Membership is on a voluntary basis and is open to all musically qualified students, college staff, and others interested. The Orchestra library is adequately stocked with standard symphonic works

and lighter classics, and each season's repertoire is selected to fit the capabilities of the ensemble.

The Orchestra plays one or more formal concerts each season, appears informally both on and off the campus, and accompanies the vocal ensembles in the presentation of traditional Christmas and Easter music.

The College Choral Organizations

The A Cappella Choir is an all-College organization conducted by the head of the Department of Music. Membership in this organization is voluntary and is open to faculty, graduate and undergraduate students. It meets three times a week. The best in the unaccompanied choral literature, both sacred and secular music, is sung by the choir. Several performances a year including special Christmas and Easter Vespers are given by this organization. Off-campus concerts are also planned. Credit of one hour a semester is given to students not majoring in the Department of Music.

It is advised that students who have not had considerable training in high school choral groups enroll in the Men's or Women's Glee Clubs.

The Men's and Women's Glee Clubs are all-College organizations conducted by members of the music staff. Membership is voluntary. These groups meet twice a week. Credit of one hour a semester is given to students not majoring in the Department of Music. In addition to performing at college functions throughout the year each organization presents a combined concert once a year. At various times during the college year the glee clubs and the a cappella choir are joined to present one extended choral work with orchestral accompaniment.

Kansas State Players

Membership in the Kansas State Players is open to all students, both men and women, through tryouts and participation. The object of the Players is to afford its members an opportunity to become acquainted with good drama and to take part in the various activities connected with the producing of plays. Regular meetings are held the second Tuesday of each month.

The presentation of sevaral plays a season as part of the drama program of the Department of Speech gives the members of the Players opportunity in practical training and interesting experience in the various phases of dramatic production. When a player reaches his junior year, he is eligible to try for membership in Pi Epsilon Delta, the national dramatic honorary fraternity.

Athletics

Kansas State College is a member in good standing of the Missouri Valley Intercollegiate Athletic Association—otherwise known as the Big Seven Conference. The other members are University of Colorado, Iowa State College, University of Kansas, University of Missouri, University of Nebraska and University of Oklahoma.

Kansas State participates in all intercollegiate sports on the Conference program. Varsity competition is open to all male students and supervised by a staff of coaches who are specialists in their line.

The Department of Physical Education and Athletics also sponsors a broad program of intramural athletics, supplementing intercollegiate athletics. Fraternities and independent clubs play full schedules to decide the championship in the various sports. Appropriate medals, plaques, and sweater awards are presented individual and team winners.

Under the auspices of the Women's Athletic Association, the women students of the College take part in a full intramural athletic program, with competent instruction by the faculty of the Department of Physical Education and Athletics.

Cosmopolitan Club

There is in the College a chapter of the Association of Cosmopolitan Clubs in Universities and Colleges of America. The active membership consists of foreign and American students, both men and women. The objective of the club is to promote international understanding through friendship among students of various nationalities.

Loan Funds

Student loan activities are coördinated in the office of the executive secretary of the Alumni Association of Kansas State College, Anderson Hall. A student wishing to apply for a loan from any fund listed below should address his request to Kenney L. Ford, secretary, K. S. C. Alumni Association.

The State Board of Regents has established rules governing the administration of student loan funds. These rules include the following:

1. A student loan is made only when a note is signed by the borrower and one other responsible person, preferably the borrower's parents or guardian. This endorser must be recommended by his bank as of good financial standing and otherwise satisfactory as an endorser.
2. In general, loans will be made only to juniors, seniors, and graduate students who have attended Kansas State College for at least one semester, and preferably for one year, and who have a scholarship average of at least C.
3. The maximum total amount loaned from all loan funds to one individual usually shall not exceed $250.

The Alumni Association of Kansas State College has created a loan fund and scholarship funds, chiefly from payments for life memberships in the association. Members pay the association $3 a year, but on payment of $50 in one sum they are relieved from further dues. If husband and wife are both eligible for membership, they may obtain joint membership by paying $75. The loan fund so created 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. Interest is charged at the rate of five percent a year.

Other student loan funds are available which are not administered by the College. For women, some funds are provided by the American Association of University Women, the State Federation of Women's Clubs, the Women's Panhellenic, and P. E. O. Applicants for loans from these funds should address the organization from whom they wish to borrow.

For juniors and seniors, the Knights Templar Commandery has established a loan fund. Application should be made through a commandery where the applicant is known. The Order of the Eastern Star has a fund for juniors and seniors who are members or children of members. Applications should be sent to the Grand Secretary, the Order of the Eastern Star, National Reserve Building, Topeka, Kan.

Gifts, Memorials, and Bequests

The Kansas State College Endowment Association is incorporated under the laws of Kansas to accept and administer gifts and bequests to the College. Anyone wishing information about the Association may write to the Secretary of the Association, A. R. Jones, Kansas State College, who will be happy to send a booklet of information and to answer any specific questions that may be asked.

The booklet outlines some of the principal needs of the College, and explains fully how friends of the College may perpetuate their interest in Kansas State by sharing in the activities of the Association.

Scholarships

Agriculture

Borden. The Borden Agricultural Scholarship will be awarded annually by the Borden Company, under normal conditions, and the amount of each annual award will be $300. The scholarship will be presented to the senior in the School of Agriculture who, upon entering his senior year, has achieved the highest average grade of all similarly eligible students in all preceding college work, and who has completed two or more dairy subjects as a part of his col-

lege work. The scholarship is administered by the Head of the Department of Dairy Husbandry.

Carl Raymond Gray. In honor of the late president of the Union Pacific Railroad, who initiated the award in 1921, scholarships of $100 are awarded each year by the Union Pacific Railroad Company to one student in vocational agriculture and one member of a 4-H Club in each of the thirty-six counties in Kansas served by the railroad. Awards are made by a local committee in each county, and are based on quality and quantity of project work, records kept, character, interest, and scholastic standing. The scholarships may be used to enroll for a full-year course in agriculture or home economics at Kansas State College, but not for other courses.

Fulton Bag and Cotton Mills. Beginning with the fall of 1949, a new scholarship will be available to freshmen entering upon curriculums in the Department of Milling Industry. This award will be known as the Fulton Bag and Cotton Mills Scholarship. An award of $250 will be made to the most promising freshman entering the department. He must be a citizen of the United States. If the student continues to maintain a high scholastic rating and shows evidence of leadership ability and extracurricular interests, the scholarship will be available to him throughout his college career and he will receive awards of $250 during each of his sophomore, junior, and senior years. A new freshman award will be made each successive fall.

Kroger. Four scholarships of $150 each are offered annually by the Kroger Company to boys and girls who are high school graduates and who have distinguished themselves in 4-H Clubs, vocational agriculture, or home economics. Two scholarships are available to boys and two to girls who expect to earn a degree either in agriculture or in home economics at Kansas State College. Application is made through the county agent, home demonstration agent, or teacher of vocational agriculture.

Pathfinder Corn Products. This scholarship in the amount of $300 in two installments is awarded by the Pathfinder Corn Products Company to an outstanding junior student majoring in agronomy with emphasis on plant genetics and crop improvement. Under the scholarship the student would undertake special work in the improvement of popcorn. A second award of $300 may be made to the student in his senior year. The Head of the Department of Agronomy administers this scholarship.

Sears, Roebuck. Scholarships of $150 are the annual gift of Sears, Roebuck and Company to leading high school graduates who have distinguished themselves in 4-H Clubs or vocational agriculture, and whose attendance at college is dependent on such an award. Winners of these scholarships must enroll in the School of Agriculture. Application is made through the County Agent, and the Dean of the School of Agriculture administers the scholarship.

Economics and Sociology

American Bankers Association Foundation for Education in Economics. The American Bankers Association, in commemoration of its fiftieth anniversary, created the foundation to establish scholarships in economics and promote economic research, for the purpose of developing a sound public understanding of the business questions which underlie and vitally affect our national welfare and prosperity. The scholarships are administered by George Montgomery and others of the Department of Economics and Sociology.

Engineering

Westinghouse Achievement Scholarship in Electrical Engineering. An annual award of $500 is given by Westinghouse to a junior student on the basis of high academic achievement and leadership. The scholarship is administered by a committee in the office of the Dean of the School of Engineering and Architecture.

Home Economics

Borden. A scholarship of $300 is awarded annually by the Borden Company to the senior student who has taken advanced courses in foods and nutrition and has maintained the highest scholastic rating. Selection is made without application by the committee on scholarships, School of Home Economics, on the records of students.

Carl Raymond Gray. (See *Carl Raymond Gray* under *Agriculture.*)

Home Demonstration Agent Association. One scholarship of $75, the annual gift of the Home Demonstration Agent Association, is given to the farm girl who is the most outstanding student in Home Economics from the county high schools of the state, in those counties where there are Home Demonstration Agents. Applications are submitted through the Home Demonstration Agent in the county of the student's residence. The scholarship may not be held concurrently with any other scholarship.

Kroger. (See *Kroger* under *Agriculture.*)

Sears, Roebuck. Ten scholarships of $200 and five for $100 are the annual gift of the Sears, Roebuck Foundation to leading high school graduates who have distinguished themselves in their high school work and in community services, and whose attendance in college is dependent on such an award. Winners of these scholarships must enroll in the School of Home Economics. Application is made to the Dean, School of Home Economics, and is to be sustained by recommendation from Home Economics teachers and Home Demonstration Agents. Application blanks may be obtained from the Dean, School of Home Economics. Applications are received to Februray 15 and awards announced by March 1.

Industrial Journalism

Fay N. Seaton. A scholarship or scholarships totaling not more than $300 annually, are made available each year to undergraduate or graduate students in the Department of Industrial Journalism and Printing, from funds presented by Fay N. Seaton, Manhattan newspaper publisher. Winners of these "working" scholarships must perform appropriate service for the department in return for the scholarships.

Institute of Citizenship

Citizenship. As many as fifteen scholarships of $200 each are made available to high-school seniors on the basis of scholastic ability, participation and leadership in school and community activities, and faculty recommendation. Applicants are also asked to take a written examination, which may be taken in their own communities. Winners of the scholarships are required to enroll in the Curriculum in Citizenship Education in their freshmen year. The scholarships are administered by the Director of the Institute of Citizenship, Kansas State College.

Music

Katherine Wareham Music Scholarship. A scholarship of $250 given annually for study in music upon satisfactory scholastic and music performance. The scholarship is renewable annually up to four years, administered by the Department of Music.

Presser Foundation Music Scholarship. A $250 scholarship for an out-
The scholarship is renewable annually up to four years. It is administered by the Department of Music.

Veterinary Medicine

Borden. A scholarship of $300 a year is awarded by the Borden Company to a student who has completed the third year of the four-year professional Curriculum in Veterinary Medicine with the highest grades in courses of the first, second, and third years. The award is administered by the School of Veterinary Medicine.

4-H

Capper. Two scholarships of $150 each are given annually by Arthur Capper to a boy and a girl standing high in leadership and general 4-H Club achievement in Kansas.

John Morrell. Two scholarships of $250 each are awarded annually by John Morrell and Company to one outstanding 4-H Club boy and one girl outstanding in 4-H work. Conditions of the award are leadership, ability, project work, and a good club record. These scholarships are administered by the 4-H office.

Spencer Chemical Company. Ten scholarships of $200 each are awarded annually by the Spencer Chemical Company to the 4-H Club members outstanding in soil conservation work. Winners are selected on the basis of general 4-H record, plan for preventing loss of soil and soil fertility, and soil conservation practices performed.

Carl Raymond Gray. (See *Carl Raymond Gray* under *Agriculture.*)

Kroger. (See *Kroger* under *Agriculture.*)

Sears, Roebuck. (See *Sears, Roebuck* under *Agriculture* and *Home Economics.*)

Miscellaneous

LaVerne Noyes. About twenty scholarships annually of $50 each from funds from the estate of LaVerne Noyes are awarded to deserving and necessitous students who served in the Army or the Navy of the United States between April 6, 1917, and September 11, 1918, or are descended by blood from some one who so served. Enlistments must have been previous to May 11, 1918, unless active overseas, prearmistice service was rendered. The student's dean must have all applications by August 1.

Order of Eastern Star. The Grand Chapter of Kansas, Order of the Eastern Star, has made available a scholarship of $100, to be given on merit only to a junior for use in the senior year. The winner is selected by the college and approved by the Scholarship Board of the Grand Chapter. Those eligible are Masons, members of the Order of the Eastern Star, children of Masons of Kansas, and children of members of the Order of the Eastern Star of Kansas.

Prizes and Medals

PRIZES

Klod and Kernel Klub. Cash prizes, trophies, merchandise, and subscriptions to farm papers; for grain judging.

Department of Mechanical Engineering. Payment of the first year's dues, Junior Membership, in the American Society of Mechanical Engineers, for the senior mechanical engineering student of outstanding scholastic and extracurricular attainments.

American Institute of Chemical Engineers. A certificate of merit to the sophomore in chemical engineering ranking highest in his freshman year.

American Society of Civil Engineers. Payment of the initiation fee into the American Society of Civil Engineers; to the civil engineer ranking highest during his senior year.

American Society of Mechanical Engineers. An award for outstanding leadership in the activities of the Student Branch of the Society.

Capper. The leading student in agricultural journalism each year has his name engraved upon one of the several small shields surrounding a larger shield bearing the words: "Recognition for superior attainments in Agricultural Journalism. Presented by Arthur Capper to students in the Department of Industrial Journalism and Printing, Kansas State College."

Journalism Memorial Fund. Each year two or more awards of $25 each are made by the Journalism Memorial Fund Committee of the Department of Industrial Journalism and Printing. These awards are made from funds contributed as memorials to graduates and former students of the Department who are casualties in World War II. Appropriate medals also are presented in connection with these awards.

Chi Omega. By the Kappa Alpha Chapter; $25 to the woman ranking highest in sociology at the end of the first semester.

Margaret Russel Scholarship Award. By Phi Alpha Mu; $25 to the junior woman enrolled in the School of Arts and Sciences ranking highest at the close of the second semester of her sophomore year. To be eligible a student must have done her sophomore work in the School of Arts and Sciences in Kansas State College.

Lorentz Schmidt. An award of a $25 war bond to the student in architecture making the most progress during the freshman year.

Phi Beta Kappa. $10; to the highest ranking eight-semester senior in the Curriculum in Arts and Sciences.

Pi Tau Sigma. An award to the mechanical engineering sophomore who has done the most outstanding work in his freshman year.

Quill Club. $15; for the best short story in annual contest. College Poet Laureate award. Both awards open to undergraduate and graduate students.

Omicron Nu Scholarship Award. $10; to the highest ranking freshman in the School of Home Economics.

American Veterinary Medicine Women's Auxiliary. An annual award of $25 on the basis of creative activity carried on by a veterinary student during his junior or senior year.

MEDALS

Block and Bridle Club. Gold, silver, and two bronze medals; for stock judging.

Student Dairy Club. Gold, silver, and bronze medals; for dairy judging.

Poultry Club. Names of winning students engraved on junior and senior division plaques; cash prizes, merchandise, and subscriptions to farm papers for excellence in judging poultry and poultry products.

Alpha Zeta. A gold medal to the agricultural student ranking highest in scholarship in his freshman year.

Alpha Rho Chi. A bronze medal to the graduating senior in the Department of Architecture selected for leadership and professional merit.

American Institute of Architects. A silver medal to the leading senior architect.

Sigma Tau Scholarship Award. Gold, silver, and bronze medals to three sophomore engineering students ranking highest in their freshman year.

Alpha Kappa Psi. By the Alpha Omega Chapter; a scholarship medallion to the highest ranking junior man enrolled in the curriculum in business administration.

Forensics. By the Missouri Valley Forensic League; cash and medal awards in its annual tournament.
By the Pi Kappa Delta and other forensic groups; awards in their national and district tournaments.
By the Native Sons and Daughters of Kansas; a trophy in the annual Senator Capper Oratorical Contest.

Alpha Mu Award. A gold medal to the sophomore milling student ranking highest in his sophomore year.

United States Coast Artillery Association Medal. Awarded to the outstanding student enrolled in the Artillery Course.

Sons of American Revolution Medal. Awarded for excellence in leadership, military bearing, theoretical and practical ROTC work.

Signal Corps Medal. Awarded to the outstanding student enrolled in the Signal Corps Unit.

Scabbard and Blade Award. To three outstanding Basic ROTC students in their sophomore year.

Distinguished Military Student Badge. Each year the PMS & T, with the concurrence of the College president and the deans, may designate certain outstanding ROTC students as Distinguished Military Students, who are awarded a Distinguished Military Student badge.

Institute of Citizenship

Carl Tjerandsen, Director

The Institute of Citizenship is concerned with the development of active, responsible citizens. It offers the Curriculum in Citizenship Education to promote a sound understandng of the basic ideals and changing issues in a democratic society. It prepares students to take an active and constructive part in dealing with the complex political and social life of their time. The Institute was established under a special grant from the William Volker Foundation in Kansas City, Mo.

Following the pattern of basic college programs now offered by a number of leading colleges and universities, the curriculum has been developed to provide a liberal education in the first two years. It includes work in the major arts and science fields. To assist a student who has not decided upon a course of study to make a wise selection, the four comprehensive courses introduce him to each of the major fields of knowledge. The comprehensive courses cover the field of science, its method, and its major areas of discovery, and they acquaint the student with our cultural heritage, the things that man has done and the civilization which he has created.

The Institute itself teaches two courses in the freshman and sophomore years of the program. These courses, differing from any now in general use among the colleges of the country, study the important books and documents which have influenced and shaped American political and social thought. These are read and discussed in informal class sessions, where a premium is put on individual thinking, expression of ideas, and ready participation in discussion. It is believed that the responsible citizen is the person who is able and willing to participate actively in the discussion and solution of public issues.

During the last two years of the Institute curriculum, all students will take a required minimum of advanced courses in history, government, and economics, with one course each semester in the Institute of Citizenship. Apart from this, however, the student may choose between two alternatives. Those who plan to teach the social studies in the high schools will take fifteen hours of education courses. These, plus three hours of general psycholgy in the sophomore year, make up the eighteen hours of education which the student must have in order to qualify for the State Teacher's Certificate. There still remain, under this program, fourteen hours of free "electives." Courses to meet these elective requirements can be selected from any field in which the student is interested.

If the student does not wish to prepare for a teaching career, the last two years of the Institute curriculum provide an opportunity to do major work in history, government, economics, sociology, or psychology. Such a student would not take the education courses required for a certificate, and consequently his program provides for twenty-nine hours of elective work. The student must select at least fifteen hours in one of the social science fields mentioned above, or, as an alternative, select a minimum of six hours work in any three fields. The remaining electives, in either case, are available for such courses as the student may wish to take.

The advanced Institute courses, which are available to all students in the College, are a continuation of the reading and discussion courses begun in the first and second year. They cover the general fields of law and justice, war and peace, government in economic affairs, and education in a democratic society.

For a minor in the Institute, the student must take Citizenship 110 and 111 (Freedom and Responsibility I and II) and a minimum of nine additional hours elected from the courses offered by the Institute of Citizenship.

Major work leading to the degree Master of Science is offered by the Institute of Citizenship. Prerequisite to graduate work in this field is the completion of a four-year curriculum with such basic work in social science as is necessary to prepare the student for advanced study in citizenship education.

The Graduate School

Harold Howe, *Dean*
James Edward Ackert, *Dean Emeritus*

Admission

Correspondence regarding admission to graduate study should be addressed to the Dean of the Graduate School, who will on request supply the required application blanks. A transcript from each institution attended must be sent direct from the institution to the Dean of the Graduate School. The application and transcript should be filed with the Graduate Office at least one month before the time the student expects to enroll.

Admission to graduate study is granted on two bases: (1) Full standing, and (2) provisional standing. Applicants should submit a statement concerning their qualifications to the Dean of the Graduate School for consideration with the application for admission to the Graduate School. Those who do not meet the standards for admission to full standing will be considered for admission to provisional standings, as set forth below:

Full Standing: For admission to graduate study in full standing the applicant must meet the following requirements:

1. Graduation from an institution whose requirements for the bachelor's degree are substantially equivalent to those of Kansas State College.
2. An undergraduate grade average of B or better in the junior and senior years.
3. Undergraduate training in the subject matter of the field in which the applicant expects to take graduate work, substantially equivalent to the requirements for undergraduate students in the same field at this College. This will be construed to mean that training in closely related or supporting subjects must also be adequate to carry on advanced study in the field of the applicant's choice.

Provisional Standing: The applicant who does not meet all the requirements for admission to full standing in the Graduate School may be admitted to provisional standing. Such admission will be based on written application, setting forth the circumstances involved, and will require recommendation of the head of the department concerned and approval by the Dean of the Graduate School. The student will be advised of any deficiencies or other conditions to be met to attain full standing.

The student admitted to provisional standing shall be admitted to full standing upon meeting the following requirements:

1. The completion of at least nine hours of work for graduate credit with a grade of B or better in three-fourths of such graduate work.
2. The removal of any course or subject-matter deficiencies which were specified at the time of his admission to provisional standing in the Graduate School.

Admission to graduate study does not imply admission to candidacy for an advanced degree. Such candidacy is determined after the student has demonstrated that he has the ability to do work of graduate rank.

Registration and Assignment

Students who have been admitted to graduate study register, obtain their assignments from the Dean of the Graduate School, and pay their fees during the regular registration periods.

Not more than sixteen credit hours, including research, may be assigned in a single semester, nor more than nine hours during a summer session. If a part of the assignment is for undergraduate credit, a student may be assigned to seventeen hours during a semester or nine hours during a summer session.

Full-time staff members may not be assigned to more than five hours in one semester, nor more than three hours in a summer session. (See section on Graduate Assistantships for limitations applying to students holding assistantships.)

These limitations apply to classes audited as well as to classes for which credit is earned.

Fees*

Graduate students are subject to the same fees as other students except that in the first and second semesters they have the choice of paying the student-activity fee and receiving the student-activity benefits or not paying the fee and foregoing these benefits. In the Summer School there is no option; all students pay the activity fee.

Grades†

A candidate for an advanced degree must make a grade of B or higher in three-fourths of the hours taken for the degree, including research. A failure or absence from the examination in any course may prevent the conferring of the degree, and failure in any course in the major field precludes conferring the degree in the same year.

Degrees

Of the advanced academic degrees, the College confers the degrees Master of Science and Doctor of Philosophy. Degrees are conferred at the end of each semester and at the end of the summer session. Candidates for advanced academic degrees are required to be present at commencement exercises in the academic gown and hood appropriate to the degree, unless permission has been granted in advance for the conferring of the degree *in absentia*. Applications for this privilege should be made to the Dean of the Graduate School.

General Requirements for the Degrees Master of Science and Doctor of Philosophy

After choosing a field for study (major subject), the candidate's first step in the work toward an advanced degree is to confer with the head of the department concerned for aid in selecting a major instructor.

Candidates for the degrees Master of Science and Doctor of Philosophy are expected to assume the initiative and the responsibility. It is important to recognize that graduate work does not consist in the fulfillment of routine requirements alone.

Each candidate for a degree is expected to have a wide knowledge of his subject and of related lines of work, which usually is obtained only by a wide range of reading and study outside of 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 necessarily are more restricted in scope, are termed minor subjects.

Approximately two-thirds of the student's time is devoted to his major subject and one-third to one or more minor subjects. (Exception may be made for master's candidates to the extent of twenty-four hours in the major subject for those planning to meet the requirement for the school administrator's certificate.) 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 (program of study) are approved by the Graduate Council, upon the recommendation of the major instructor and the head of the department (M.S.), or of the supervisory committee (Ph.D.).

The approved program of study is the basis of the formal assignment to courses at the beginning of each semester and the summer session.

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* See section headed Fees, under General Information.

† See section headed Grades, under General Information.

Courses numbered in the 200's are open to both graduate and undergraduate students. For graduate credit in such courses, the student must do extra work, the nature and amount of which are determined by the instructor. Courses numbered in the 300's are open only to graduate students.

Requirements for the Degree Master of Science

Major work leading to the degree Master of Science is offered in the following departments or major fields:

School of Agriculture:

Agricultural Economics
Agronomy
Animal Husbandry
Dairy Husbandry
Genetics
Horticulture
Milling Industry
Poultry Husbandry

School of Arts and Sciences:

Bacteriology
Botany and Plant Pathology
Chemistry
Economics
Education
English
Entomology
Geology and Geography
History and Government
Industrial Journalism
Institute of Citizenship
Mathematics
Music
Parasitology
Physical Education (Men)
Physics
Psychology
Sociology
Speech
Zoölogy

School of Engineering and Architecture:

Agricultural Engineering
Applied Mechanics
Architecture
Chemical Engineering
Civil Engineering
Electrical Engineering
Machine Design
Mechanical Engineering
Shop Practice and Industrial Arts

School of Home Economics:

Art
Child Welfare and Euthenics
Clothing and Textiles
Foods and Nutrition
General Home Economics
Household Economics
Institutional Management

School of Veterinary Medicine:

Pathology
Physiology
Surgery and Medicine

Minor graduate work is offered in each of the above departments, and in the departments of Anatomy (Veterinary) and Modern Languages.

Residence and Credit Requirements. Candidates for the degree Master of Science (M. S.) are required to spend one academic year in residence, except under certain special conditions when the residence may be reduced to one and one-half semesters, or three summer schools of full graduate study.

Two plans are available for obtaining the master's degree. Subject to the approval of the major department, the candidate for the master's degree may choose either of the following plans:

Plan 1. With the master's thesis. Requirements: 30 semester hours of graduate credit including a master's thesis of six to ten semester hours; or

Plan 2. Without the master's thesis. Requirements: 32 semester hours of graduate credit including a written master's report of two semester hours of research or problem on a topic in the major field. On completion, the report in duplicate is submitted for approval to the major instructor, the head of the department, and the Graduate Council. (See Graduate Calendar for dates.)

Master's Thesis. Each candidate for the master's degree who chooses Plan 1 is required to present a thesis on a subject approved by the major instructor, the head of the department, and the Graduate Council.

The thesis ordinarily demands one-fourth of the student's time and may not exceed one-third of it. The thesis must be prepared in accordance with specifications to be obtained from the office of the Dean of the Graduate School. On completion, the thesis in triplicate is submitted for approval to the major instructor, the head of the department, and the Graduate Council. (See Graduate Calendar for dates.)

Oral Examination. A candidate for the master's degree is subject to an oral examination covering the major and minor subjects and thesis or report by a committee selected from instructors with whom the major and minor work was taken, the head of the major department, the major instructor, and a member of the Graduate Council as chairman.

Requirements for the Degree Doctor of Philosophy

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

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

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

Supervisory Committee. For each student who contemplates working for the degree Doctor of Philosophy, a supervisory committee is chosen by the Dean of the Graduate School. This committee, consisting of not fewer than five members representing the major and minor fields, aids the student in the preparation of the program of study, which must be approved by the Graduate Council, and has charge of all examinations except the language examinations. The chairman of the preliminary and final examinations is a member of the Graduate Council.

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

Program of Study and Examinations. Students enrolling in graduate study leading to the degree Doctor of Philosophy work on a tentative program of study until approximately two-thirds of the program, including a substantial portion of the thesis, has been completed. Ordinarily at the close of the second year of graduate study, and not later than the beginning of the year in which the student contemplates receiving the degree, the candidate must pass written and oral preliminary examinations over the entire field of study. When the student has passed the language examinations and the preliminary ones, he is recommended by the supervisory committee to the Graduate Council for admission to candidacy for the degree Doctor of Philosophy. The program of study leading to the degree accompanies the recommendation. On completion of three years of graduate study as prescribed in the program of study and on submission of a thesis satisfactory to the supervisory committee, at least one month before commencement, the candidate is given the final examination.

Doctor's Thesis. Early in the graduate work a thesis subject is chosen in the major field and approved by the supervisory committee. The finished thesis must constitute a contribution to knowledge, either presenting conclusions from new material, or reinterpreting previous knowledge. Three complete typewritten copies of the thesis approved by the supervisory committee

shall be submitted to the Dean of the Graduate School at least one month before commencement. On the completion of all requirements for the degree, two copies shall be placed in the College library and the other filed with the head of the department in which the major work is taken.

Before the degree is conferred, the candidate shall guarantee the printing of the doctor's thesis (wholly or in part as determined by the supervisory committee) within three years after the date of the conferring of the degree. This guarantee shall be either a statement from the editor of an appropriate technical serial or publishing company that the thesis has been accepted for publication or shall be in the form of a bond acceptable to the Graduate Council. When the thesis has been published, 25 copies shall be consigned to the College library. If publication of the thesis, entire or in part, is desired before the degree is conferred, permission must be obtained from the Graduate Council.

Graduate Work *in Absentia*

Graduate students may be enrolled, on an hourly basis, for a limited amount of research or problem work *in absentia* on the recommendation of the head of the department and with the approval of the Dean of the Graduate School. The fee is $2.50 a semester hour.

Resident faculty members and students are not eligible to pursue work *in absentia* except during periods when College is not regularly in session.

Not more than three semester hours of graduate credit in problem or research work may be earned between the close of the summer school and the beginning of the first semester, provided that permission to do so is secured in advance from the major instructor and from the Dean of the Graduate School.

Graduate Assistantships

To facilitate research work, teaching, and the acquisition of advanced degrees, the College has established graduate assistantships in most departments. The assistantships which may be graduate assistantships, or graduate research assistantships may be on the nine-months or twelve-months per year basis. They may be of either of two types: (1) Half-time appointments which demand one-half of the time of the student for laboratory or research assistance or teaching during the employment period. The remainder of his time is given to advanced study. No half-time assistant may receive more than ten hours of credit a semester. (2) Two-fifths time appointments which demand approximately 40 percent of the student's time for laboratory, research or teaching work. No two-fifths time assistant may receive more than twelve hours of credit a semester.

The residence requirement for the master's degree may not be satisfied by any assistant in less than two semesters and one nine-week summer school.

One or more graduate assistantships paying a salary fixed each year are maintained in each of the following fields: Agricultural Economics, Agricultural Engineering, Agronomy, Animal Husbandry, Applied Mechanics, Art (Home Economics), Bacteriology, Botany, Chemical Engineering, Chemistry, Child Welfare, Civil Engineering, Clothing and Textiles, Dairy Husbandry, Economics, Education, Electrical Engineering, English, Entomology, Foods and Nutrition, Genetics, Geology, Government, History, Horticulture, Household Economics, Industrial Journalism, Institute of Citizenship, Institutional Management, Machine Design, Mathematics, Mechanical Engineering, Milling Industry, Music, Parasitology, Physical Education (Men), Physics, Poultry Husbandry, Psychology, Shop Practices, Sociology, Speech, and Zoölogy.

Applications for all assistanships should be made annually by April 1, for the following academic year. Students desiring such appointments may obtain application blanks from the Dean of the Graduate School.

Fellowships

A number of industrial fellowships are available each year. A fellow is permitted to carry a full-time assignment. The amounts or manner of payment of the fellowship stipend does not affect the assignment.

Graduate Loans

Graduate students may borrow from loan funds controlled by the College and also from the Alumni Loan Fund. The graduate student should not plan to borrow from these funds until he or she has had an opportunity to demonstrate ability to do satisfactory graduate work at Kansas State College. Loans are made only when a note is signed by the borrower and one other responsible person, preferably the borrower's parent or guardian. This co-signer must be recommended by his bank as of good financial standing and otherwise satisfactory as a co-signer. The maximum loaned to one student shall not exceed $250.

The Manhattan Branch of the American Association of University Women maintains a loan fund which is available to graduate women students enrolled in any department of the Kansas State College that offers graduate work. Application for this loan shall be made to the chairman of the Graduate Loan Fund Committee of the Manhattan Branch of the American Association of University Women.

Seniors and Graduate Study

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

Graduate Work in the Summer School

All schools of the College offer graduate work in the summer school. Only in certain departments, however, can a student complete requirements for the master's degree without spending one or two semesters in residence. For information about these cases, one should address the Dean of the Graduate School.

Full information concerning the courses offered is contained in the Summer School number of the Kansas State College *Bulletin,* which may be obtained upon application to the Director of Admissions of the College.

GRADUATE CALENDAR

(Graduate students should refer also to the Academic and Financial Calendar on page 5.)

FIRST SEMESTER, 1949-1950

September 8, 8:00 a. m., Thursday—Physical examinations for all graduate students enrolling for the first time at Kansas State College.
September 10-13, 8:00 a. m., Friday-Monday—Registration.
September 14, 7:00 a. m., Wednesday—Classes begin.
October 15, Noon, Saturday—Deficiency reports due in deans' offices (5th week).
October 29, Noon, Saturday—Last day for reassignment before midsemester (7th week).
November 12, Noon, Saturday—Midsemester deficiency reports due in deans' offices (9th week).
November 22, 10:00 p. m., Tuesday—Thanksgiving vacation begins.
November 28, 7:00 a. m., Monday—Classes resume.
December 5, Noon, Monday—Tentative copy of doctors' theses due.
December 21, 10:00 p. m., Wednesday—Christmas vacation begins.
December 28, 3:00 p. m., Wednesday—Application for degrees must be made on or before this date.
January 5, 7:00 a. m., Thursday—Classes resume.
January 5, Noon, Thursday—Final copies of doctors' theses due.
January 7, Noon, Saturday—Tentative copy of masters' theses and reports due.
January 13, 4:00 p. m., Friday—Last day subject may be dropped before end of semester.
January 21, Noon, Saturday—Grades to registrar for candidates for degrees.
January 23, Noon, Monday—Final copies of masters' theses and reports due. End of period for masters' oral examinations.
January 23-26, Monday-Thursday—Semester examinations.
January 25, 11:00 a. m., Wednesday—General faculty meeting to approve candidacies for degrees.
January 27, 10:00 a. m., Friday—Commencement. Semester ends.

SECOND SEMESTER, 1949-1950

January 28, 8:00 a. m., Saturday—Physical examinations for all graduate students enrolling for the first time at Kansas State College.
January 30-February 1, 8:00 a. m., Monday-Wednesday—Registration.
February 2, 7:00 a. m., Thursday—Classes begin.
February 22, Wednesday—Holiday, Washington's birthday.
March 4, Noon, Saturday—Deficiency reports due in deans' offices (5th week).
March 18, Noon, Saturday—Last day for reassignment before midsemester (7th week).
April 1, Noon, Saturday—Midsemester deficiency reports due in deans' offices (9th week).
April 6, Noon, Thursday—Tentative copy of doctors' theses due.
April 6, 10:00 p. m., Thursday—Easter vacation begins.
April 11, 7:00 a. m., Tuesday—Classes resume.
April 27, Noon, Thursday—Final copies of doctors' theses due.
April 28, 3:00 p. m., Friday—Applications for degrees must be made on or before this date.
May 1, Noon, Monday—Tentative copy of masters' theses and reports due.
May 17, Noon, Wednesday—Last day subjects may be dropped before end of semester.
May 22, Noon, Monday—Final copies of masters' theses and reports due. End of period for masters' oral examinations.
May 23, Noon, Tuesday—Grades to registrar for all candidates for degrees.
May 22-26, Monday-Friday—Semester examinations.
May 25, 11:00 a. m., Thursday—General faculty meeting to approve candidacies for degrees.
May 27, Saturday—Alumni Day.
May 28, 8:00 p. m., Sunday—Commencement. Semester ends.

SUMMER SCHOOL, 1950

June 5, 8:00 a. m., Monday—Physical examinations for all graduate students enrolling for the first time at Kansas State College.
June 6-7, 8:00 a. m., Tuesday-Wednesday—Registration.
June 8, 7:00 a. m., Thursday—Classes begin.
June 24, Noon, Saturday—Tentative copy of doctors' theses due.
July 1, Noon, Saturday—Last day for reassignment before midsemester.
July 4, Tuesday—Holiday, Independence Day.
July 5, Noon, Wednesday—Final copies of doctors' theses due.
July 6, 3:00 p. m., Thursday—Applications for degrees must be made on or before this date.
July 8, Noon, Saturday—Deficiency reports due in deans' offices.
July 18, Noon, Tuesday—Tentative copies of masters' theses and reports due.
July 31, Noon, Monday—Final copies of masters' theses and reports due. End of period for masters' oral examinations.
July 31, 5:00 p. m., Monday—Grades to registrar for all candidates for degrees.
August 1, 4:00 p. m., Tuesday—Last day subject may be dropped before end of session.
August 2, 4:00 p. m., Wednesday—General faculty meeting to approve candidacies for degrees.
August 4, 5:00 p. m., Friday—Last day of examinations.
August 5, 10:00 a. m., Saturday—Commencement. Session ends.

FIRST SEMESTER, 1950-1951

September 7, 8:00 a. m., Thursday—Physical examinations for all graduate students enrolling for the first time at Kansas State College.
September 9-12, 8:00 a. m., Saturday-Tuesday—Registration.
September 13, 7:00 a. m., Wednesday—Classes begin.
October 14, Noon, Saturday—Deficiency reports due in deans' offices (5th week).
October 28, Noon, Saturday—Last day for reassignment before midsemester (7th week).
November 18, Noon, Saturday—Midsemester deficiency reports due in deans' offices (9th week).
November 21, 10:00 p. m., Tuesday—Thanksgiving vacation begins.
November 27, 7:00 a. m., Monday—Classes resume.
December 4, Noon, Monday—Tentative copy of doctors' theses due.
December 20, 10:00 p. m., Wednesday—Christmas vacation begins.
December 27, 3:00 p. m., Wednesday—Applications for degrees must be made on or before this date.
January 4, 7:00 a. m., Thursday—Classes resume.
January 4, Noon, Thursday—Final copies of doctors' theses due.
January 6, Noon, Saturday—Tentative copy of masters' theses and reports due.
January 12, 4:00 p. m., Friday—Last day subject may be dropped before end of semester.
January 15-18, Monday-Thursday—Examinations for candidates for degrees.
January 20, Noon, Saturday—Grades to registrar for candidates for degrees.
January 22, Noon, Monday—Final copies of masters' theses and reports due. End of period for masters' oral examinations.
January 24, 11:00 a. m., Wednesday—General faculty meeting to approve candidacies for degrees.
January 26, 10:00 a. m., Friday—Commencement. Semester ends.

SECOND SEMESTER, 1950-1951

January 27, 8:00 a. m., Saturday—Physical examination for all graduate students enrolling for the first time at Kansas State College.
January 29-31, 2:15 p. m., Monday-Wednesday—Registration.
February 1, 7:00 a. m., Thursday—Classes begin.
February 22, Thursday—Holiday, Washington's birthday.
March 3, Noon, Saturday—Deficiency reports due in deans' offices (5th week).
March 17, Noon, Saturday—Last day for reassignment before midsemester (7th week).
March 22, 10:00 p. m., Thursday—Easter vacation begins.
March 27, 7:00 a. m., Tuesday—Classes resume.
March 31, Noon, Saturday—Midsemester deficiency reports due in deans' offices (9th week).
April 5, Noon, Thursday—Tentative copy of doctors' theses due.
April 26, Noon, Thursday—Final copies of doctors' theses due.
April 27, 3:00 p. m., Friday—Applications for degrees must be made on or before this date.
April 30, Noon, Monday—Tentative copy of masters' theses and reports due.
May 16, Noon, Wednesday—Last day subject may be dropped before end of semester.
May 21, Noon, Monday—Final copies of masters' theses and reports due. End of period for masters' oral examinations.
May 22, Noon, Tuesday—Grades to registrar for all candidates for degrees.
May 21-25, Monday-Friday—Semester examinations.
May 24, 11:00 a. m., Thursday—General faculty meeting to approve candidacies for degrees.
May 26, Saturday—Alumni Day.
May 27, 8:00 p. m., Sunday—Commencement. Semester ends.

SUMMER SCHOOL, 1951

June 4, 8:00 a. m., Monday—Physical examinations for all graduate students enrolling for the first time at Kansas State College.
June 5-6, 8:00 a. m., Tuesday-Wednesday—Registration.
June 7, 7:00 a. m., Thursday—Classes begin.
June 23, Noon, Saturday—Tentative copy of doctors' theses due.
June 30, Noon, Saturday—Last day for reassignment before midsession.
July 3, Noon, Tuesday—Final copies of doctors' theses due.
July 4, Wednesday—Holiday, Independence Day.
July 7, Noon, Saturday—Deficiency reports due in deans' offices (5th week).
July 17, Noon, Tuesday—Tentative copies of masters' theses and reports due.
July 30, Noon, Monday—Final copies of masters' theses and reports due. End of period for masters' oral examinations.
July 30, 5:00 p. m., Monday—Grades to registrar for all candidates for degrees.
July 31, 4:00 p. m., Tuesday—Last day a subject may be dropped before end of session.
August 1, 11:00 a. m., Wednesday—General faculty meeting to approve candidacies for degrees.
August 3, 5:00 p. m., Friday—Last day of examinations.
August 4, 10:00 a. m., Saturday—Commencement. Session ends.

Undergraduate Degrees

To graduate, a student must complete a prescribed curriculum. Under special conditions such substitutions are allowed as the interests of the student demand. The total requirement for four-year undergraduate curriculums ranges from 120 to 142 semester hours and points, according to the curriculum taken. (A semester hour is one hour of recitation or lecture work, or two or three hours of laboratory a week, for one semester of eighteen weeks. When no ambiguity is involved, the term "hour" is used for "semester hour" in this catalogue.)

To be considered as a candidate for an undergraduate degree, a student must have completed in residence twenty of his last thirty undergraduate hours, with not fewer than thirty hours of resident undergraduate work at this institution. Resident work includes all regularly scheduled class or laboratory instruction given by the regular College faculty, exclusive of extension courses and courses completed by special examination. In special cases, candidates will be considered who have completed three full years of work in this institution and have taken their last year of work in an institution approved by the faculty. A transfer student who completes requirements for senior standing and residence in this College may be considered for a degree on the basis of credits transferred from an accredited school of medicine, dentistry, or law. A student who has advanced credit accepted by this College for the equivalent of three semesters or more must, in order to qualify for the above privilege, maintain a grade point average of 1.75 in the College.

Seniors meeting the graduation requirement in hours but failing to meet it in points must take additional courses designated by the dean of the school in which their major work lies, until the requirement in points is met.

Candidates for degrees must make application to the Registrar and pay the commencement fee at least thirty days before the date of graduation. The candidate is responsible for complying with all requirements.

A candidate for graduation must be present in person, unless he is excused by the faculty on recommendation of his dean, to whom he must apply for the privilege of getting his degree *in absentia.*

Degrees

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

- Bachelor of Science
- Bachelor of Science in Agriculture (Agriculture; Agricultural Administration; Agricultural Education; Dairy Manufacturing; Floriculture and Ornamental Horticulture; Soil Conservation)
- Bachelor of Science in Agricultural Engineering
- Bachelor of Science in Agricultural Journalism
- Bachelor of Science in Architectural Engineering
- Bachelor of Science in Architecture (four-year curriculum for graduates through 1951)
- Bachelor of Science in Business Administration
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Home Economics
- Bachelor of Science in Home Economics and Journalism
- Bachelor of Science in Industrial Arts
- Bachelor of Science in Industrial Chemistry
- Bachelor of Science in Industrial Journalism
- Bachelor of Science in Landscape Design

Bachelor of Science in Mechanical Engineering
Bachelor of Science in Milling Industry (Milling Administration; Milling Chemistry; Milling Technology)
Bachelor of Music
Bachelor of Science in Music Education
Bachelor of Science in Physical Education
Doctor of Veterinary Medicine

The degree Bachelor of Architecture is conferred on those who complete the five-year Curriculum in Architecture, beginning in 1952

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

The degrees Bachelor of Science and Doctor of Veterinary Medicine are conferred on those who complete the six-year combination of the Preveterinary Curriculum and the Curriculum in Veterinary Medicine.

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

The School of Agriculture

Ray Iams Throckmorton, *Dean*
Leland Everett Call, *Dean Emeritus*
Clyde William Mullen, *Assistant Dean*

The successful farmer must have scientific and economic knowledge and training. They are quite as essential as practical knowledge of agriculture in the development of an agricultural state such as Kansas. Soil is most effectively utilized by those who have knowledge of how soils have been formed, how fertility has been stored in them, and how the resources of the soil can be maintained.

The successful farmer also knows what kind of plants to grow and how to improve them. He understands the principles of selection, breeding, and feeding of livestock. He knows how to maintain orchards, gardens, and attractive surroundings. He has an appreciation for good and adequate farm buildings and a farm home equipped with modern conveniences. He is familiar with the best methods of marketing the products of the farm.

Kansas State College gives systematic training in agriculture which fits young men for the farm.

The College also prepares students for the scientific investigation of agricultural problems in state and national institutions, for agricultural extension work, for the teaching of agriculture, for service in industries closely related to agriculture, and for a variety of other public and private services of an agricultural nature.

The College owns 1,428 acres of land which are used for experimental work and instruction, and maintains large and well-equipped laboratories for soil and crop work. There is ample greenhouse space for problems and research work in crops and soil.

The College herds and flocks contain high-class representatives of the important breeds of dairy and beef cattle, poultry, hogs, horses, and sheep. The student becomes familiar with types and breeds by actual work with the stock.

Seven of the four-year curriculums offered in this School lead to the degree Bachelor of Science in Agriculture. The four-year curriculums in Milling Industry lead to the degree Bachelor of Science in Milling Industry.

The four-year Curriculum in Landscape Design leads to the degree Bachelor of Science in Landscape Design.

The Curriculum in Agricultural Journalism leads to the degree Bachelor of Science in Agricultural Journalism.

The Curriculum in Soil Conservation recently has been developed to meet a growing demand on the part of state and federal agencies for men trained in this field. It leads to the degree Bachelor of Science in Agriculture.

The Curriculum in Agricultural Education meets specifically the requirements of men who expect to become teachers of vocational agriculture in Kansas high schools participating in federal funds.

The two-year Curriculum in Agriculture is intended for former servicemen and others who do not wish to take the time to earn a degree in agriculture. Probably the greatest opportunity for those who pursue the two-year curriculum will be on the farms, ranches, and smaller acreages of Kansas and other Midwestern agricultural states. (See page 61.)

Curriculum in Agriculture

Students choosing the Curriculum in Agriculture need not name the department in which they will major before the second semester of the sophomore year. They have their choice of numerous electives in soils, crops, agricultural economics, animal husbandry, dairy husbandry, horticulture, and poultry husbandry.

All electives in any of the departments must be officially approved by the

Dean of the School of Agriculture and the head of the department in which the student majors.

A student may major not only in any department in the School of Agriculture but also in the departments of Botany, Entomology, Zoölogy, Bacteriology, Chemistry, or Agricultural Engineering. Substitutions may be made to meet definite objectives. See "Substitutions to Meet Certain Objectives," following the outline of Curriculum in Agriculture.

Any candidate for a degree in agriculture must have had at least six months of farm experience approved by the Dean of the School of Agriculture. Students in dairy manufacturing, landscape design, or floriculture and ornamental horticulture may substitute practical experience in their respective industries for farm experience.

A formal statement outlining farm experience or substitutions therefor 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 basic studies in soils, farm crops, livestock, dairying, poultry husbandry, horticulture, and agricultural economics, giving him a general knowledge of the whole range of agriculture. More than one third of his time will have been devoted to strictly agricultural courses.

During his junior and senior years, the student continues his studies of fundamental science and begins to learn to apply science to agriculture.

Curriculum in Soil Conservation

The Curriculum in Soil Conservation is planned to meet the needs of students who expect to enter soil conservation work with federal, state, or local agencies and for those men who expect to do soil conservation work with public and private lending agencies. The curriculum is sufficiently broad to enable men who major in the Curriculum in Soil Conservation to receive training for work as county agents or farmers, and in other fields in general agriculture.

Curriculum in Agricultural Education

The Curriclulum in Agricultural Education is intended for those students who are interested in becoming teachers of vocational agriculture in Kansas high schools participating in federal Smith-Hughes and George-Deen funds. The curriculum as outlined on another page meets the requirements for the degree Bachelor of Science in Agriculture and at the same time meets the requirements for the state certificate for teaching vocational agriculture. This curriculum ordinarily may be completed in four years.

Curriculum in Agricultural Administration

The Curriculum in Agricultural Administration is planned to meet the needs of students preparing for industries closely related to farming, which require training in both agriculture and business principles. Among such industries and occupations are agricultural services, rural banking, development and sale of lands, processing and marketing of grains.

There is ample opportunity to elect business subjects such as accounting, business organization, credit and finance, business law, and marketing.

Any student not expecting to make journalism a career may take work in journalism and at the same time major in any of the departments of the School of Agriculture.

Curriculum in Dairy Manufacturing

The Curriculum in Dairy Manufacturing provides special training in the manufacture of dairy products. It affords the student an opportunity to specialize in dairy manufacturing and to select, by means of properly chosen electives, one of the three fields of specialization: (*a*) Dairy plant operator; (*b*) dairy plant manager; and (*c*) dairy products technician. Electives selected by the student must be approved in advance by the head of the Department of Dairy Husbandry and the Dean of the School of Agriculture.

Curriculum in Agricultural Journalism

This curriculum is for those who wish to obtain a broad knowledge of agriculture and the ability to disseminate that knowledge to others. Knowledge is power only as it comes into the possession of those who can use it. This curriculum gives training in the techniques of accurate and effective dissemination of information through newspapers, magazines, radio, speech, and other media of communication.

Graduates find attractive opportunities in the information service of the United States Department of Agriculture, state and federal extension services, state departments of agriculture, farm radio departments, agricultural experiment stations, farm organizations, advertising agencies, livestock publications, and many other agencies which employ information writers who know something about agriculture and who know the basic techniques of writing and editing.

By electing twelve additional hours in any department in the School of Agriculture the student can earn a major in that department.

The Curriculum in Agricultural Journalism meets the requirements of the standards of the American Association of Schools and Departments of Journalism. Students in this curriculum are eligible for professional journalistic organizations.

Pretheological Courses

In coöperation with various theological seminaries, Kansas State College offers an opportunity for students who are preparing for the rural ministry to carry elective courses in the School of Agriculture and in other schools of the College which may be accepted as pretheological courses in a seminary.

Any person desiring to enter the rural ministry should acquaint himself with the requirements of the seminary of his choice. Special attention should be given to any language requirements.

Among the suggested electives that may be taken at Kansas State College would be courses in agricultural economics, economics, English literature, history and government, logic, philosophy, psychology, rural sociology, sociology, citizenship and public speaking.

Persons desiring to prepare for the field of rural ministry will enter the Curriculum in Agricultural Administration. They should use the name of this curriculum in filling out information blanks in anticipation of enrollment in Kansas State College.

Curriculum in Landscape Design

The Curriculum in Landscape Design is planned for students who wish to be employed by professional landscape firms and various other private and public agencies. Special emphasis is given to plant materials, planting design, and the rendering of landscape plans. Those completing the curriculum are eligible to receive the degree of Bachelor of Science in Landscape Design.

Curriculum in Floriculture and Ornamental Horticulture

The Curriculum in Floriculture and Ornamental Horticulture gives training to those who wish to enter one of the several fields of floriculture. There is opportunity to become trained for the improvement of greenhouse and other floricultural plants and for the growing and selling of flowers. Emphasis is placed on the utilization of flowers in floral arrangements.

Those taking ornamental horticulture receive training in landscape design with particular reference to the production and use of landscape materials.

Curriculums in Milling Industry

The College offers three curriculums in the field of milling: (1) Curriculum in Milling Administration, (2) Curriculum in Milling Chemistry, (3) Curriculum in Milling Technology.

Students choosing the field of milling industry must so indicate at the time

of assignment for the second semester of their freshman year in order to be assigned to proper chemistry courses.

Students who bring credits to this College from some other college or university and who choose one of the curriculums in milling, should indicate in which of the three curriculums in milling they expect to major.

Any candidate for a degree in milling industry must have had at least three months' experience in a wheat elevator, flour mill, bakery, or cereal chemistry laboratory, or the equivalent, before obtaining senior classification.

Milling Enrollment Limited

By authority of the State Board of Regents the number of students enrolled in milling industry is limited to 75. Students having their residence in Kansas have first preference. Out-of-state students who have had practical milling experience are given second preference. Selections from either group are further based on scholarship and other evidence of fitness.

Persons wishing to be selected for one of the curriculums in milling industry must apply several weeks before the beginning of the academic year. Applications should be made before July 1. Application blanks may be obtained from the Dean of the School of Agriculture.

State Teacher's Certificate

By selecting the proper electives in the Department of Education and Psychology, the four-year Curriculum in Agriculture may lead to the degree of Bachelor of Science in Agriculture and also qualify the graduate for the three-year Kansas state teacher's certificate, valid in any high school or other public school in the state, and renewable for life. To meet the professional requirements for the three-year Kansas state teacher's certificate and fulfill the requirements of the Curriculum in Agriculture would require time in excess of the usual four years.

State Certificates for Teachers of Vocational Agriculture

The Curriculum in Agricultural Education is designed to meet the needs of persons desiring to teach vocational agriculture in federally aided secondary schools. This curriculum leads to the degree Bachelor of Science in Agriculture and meets the requirements for teaching vocational agriculture in Kansas high schools participating in federal Smith-Hughes and George-Deen funds.

A total of eighteen semester hours in the Department of Education and Psychology is required as follows:

Educ. 184, General Psychology	3
Educ. 109, Educational Psychology	3
Educ. 241, Vocational Education	3
Educ. 255, Technics in Agricultural Education	3
Educ. 136, Methods of Teaching Agriculture	3
Educ. 161, Teaching Participation in Agriculture	3

A total of seventeen semester hours in the School of Engineering and Architecture is included in order to provide mechanical training necessary for the handling of farm shop problems. The mechanical courses together with semester hours follow:

Shop 157, Blacksmithing	1
Shop 166, Welding	1
Agr. Engg. 103, Farm Mechanics	2
Agr. Engg. 106, Farm Power	3
Agr. Engg. 104, Farm Machinery Repair	2
Agr. Engg. 207, Farm Building Construction	3
Agr. Engg. 208, Agricultural Engineering Applications	2
Agr. Engg. 206, Farm Mechanics Methods	3

Upon the completion of the Curriculum in Agricultural Education a person would qualify for the three-year Kansas state teacher's certificate, valid in any high school or other public school in the state. This certificate is valid for three years and may be renewed for life.

Agriculture in the Summer School

All departments in the College usually offer courses in the Summer School. Some are basic college courses, but graduate work particularly suited to high school teachers of vocational agriculture is emphasized. The Summer School number of the Kansas State College *Bulletin* may be obtained upon application to the Director of Admissions.

Home Study in Agriculture

The Department of Home Study of the Division of College Extension offers a number of college courses in agriculture which can be taken by correspondence. Such courses carry the same credit as resident college courses having the same description. These courses will be found especially advantageous to college students who desire to make up deficiencies or to gain certain credits during the summer vacation season. All courses given by correspondence are listed in the latter part of this catalogue under the title "Home Study" in the Division of College Extension.

Two-year Curriculum in Agriculture

Recognizing the desirability for many young men to obtain some college training and then return to the farm or find better employment wherever their additional training and education may lead them, the College has provided a two-year Curriculum in Agriculture. It is intended primarily for former servicemen and others who have attained an advanced age or who for other reasons do not care to take the time to go through college for a degree.

Admission and Graduation

Only students who are high school graduates may enter upon the two-year Curriculum in Agriculture.

Not all courses are of college level. Certain of these courses are offered without the usual prerequisites.

Those who complete the course will be awarded a certificate in recognition of their agricultural accomplishment.

Any student who has done satisfactory work and who at the end of two years may decide to go through for a degree in agriculture may do so by making up all back work required in the regular four-year curriculum of his choice. On this point there will be no exceptions. An outline of required courses in the curriculum may be found following the regular four-year curriculums.

Choice of Electives

The two-year Curriculum in Agriculture provides for sixteen hours of elective courses. It is required that at least six hours out of the sixteen shall be chosen from among cultural or liberalizing courses offered by any of the departments of the College.

The remaining ten hours may be selected from those fields in agriculture where the student may have a special interest. Electives may also be selected from the fields of farm mechanics, machinery repair, and gas and electric welding.

Curriculum in Agriculture

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Geol.	103	Gen. Geology	3	Speech	103	Oral Comm.	2
Chem.	101	Chemistry I	5	Bot.	102	Gen. Botany	5
An. Husb.	126	El. of An. Husb.	2 *and*	Chem.	103	Chem. II Rec.	3
An. Husb.	129	El. of An. Husb. Lab.,	1 *or*	An. Husb.	126	El. of An. Husb.	2 *and*
Dairy Husb.	101	El. of Dairying	3	An. Husb.	129	El. of An. Husb. Lab.,	1 *or*
Mil. Sc.	105	Military I	1	Dairy Husb.	101	El. of Dairying	3
Gen. Agr.	104	Freshman Assembly	R	Mil. Sc.	106	Military II	1
Phys. Ed.	103	Phys. Education M	R	Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
Total			15	Total			16

SOPHOMORE

First Semester				Second Semester†			
Math.	105	Mathematics in Agr.	3	Econ.	101	Economics I	3
Hort.	104	El. of Hort. Rec.	2	An. Husb.	152	Prin. of Feeding	3
Hort.	105	El. of Hort. Lab.	1	Agron.	130	Soils	4 *or*
Chem.	125	Org. Chemistry (Agr.)	3	Agron.	110	Farm Crops	3 *and*
Agron.	130	Soils	4 *or*	Agron.	111	Farm Crops Lab.	1
Agron.	110	Farm Crops	3 *and*	Zoöl.	105	Gen. Zoölogy	5
Agron.	111	Farm Crops Lab.	1	Mil. Sc.	108	Military IV	1
Poul. Husb.	104	Farm Poul. Prod. Rec.	2	Phys. Ed.	103	Phys. Education M	R
Poul. Husb.	105	Farm Poul. Prod. Lab.	1	Gen. Agr.	103	Agr. Seminar*	R
Mil. Sc.	107	Military III	1				
Phys. Ed.	103	Phys. Education M	R				
Gen. Agr.	103	Agr. Seminar*	R				
Total			17	Total			16

JUNIOR

First Semester				Second Semester			
An. Husb.	221	Genetics	3 *or*	Ent.	203	Gen. Econ. Entomol.	3
Bact.	105	Agr. Microbiology§	3	An. Husb.	221	Genetics	3 *or*
Physiol.	131	Anat. and Physiology‡,	3 *or*	Bact.	105	Agr. Microbiology§	3
Bot.	208	Plant Physiology I	3	Ind. Jour.	160	Agr. Journalism	3
Agr. Econ.	106	Farm Organization	3	Gen. Agr.	103	Agr. Seminar*	R
Gen. Agr.	103	Agr. Seminar*	R			Elective	7
Engl.	169	English Proficiency	R				
		Elective	7				
Total			16	Total			16

SENIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
		Elective	12			Elective	12
Total			16	Total			16

Number of hours required for graduation, 128.

* Four meetings each semester.

†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 School of Agriculture, designating the department of the school in which he will major.

‡ Students who do not expect to major in animal husbandry, dairy husbandry, or poultry husbandry may take Plant Physiology I (Bot. 208) instead of Anatomy and Physiology (Physiol. 131).

§ Students expecting to take additional work in bacteriology, either for advanced work in soils or dairying, will take General Microbiology instead of Agricultural Microbiology.

Electives

The electives in the Curriculum in Agriculture are grouped as follows:

	Semester Hours
Major Electives	12
These electives may be taken in any one of the departments of the School of Agriculture. In certain cases also a science department outside of the school 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.	
General Electives	17
These electives should be chosen 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 must include three hours of physics in their electives.	

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

SUBSTITUTION TO MEET CERTAIN OBJECTIVES

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

Curriculum in Agricultural Administration

FRESHMAN

First Semester					Second Semester				
		Course	Sem. Hrs.				Course	Sem. Hrs.	
Engl.	111	Written Comm. I	3		Engl.	112	Written Comm. II	2	
An. Husb.	126	El. of An. Husb.	2	*and*	Speech	103	Oral Comm.	2	
An. Husb.	129	El. of An. Husb. Lab.,	1	*or*	Dairy Husb.	101	El. of Dairying	3	*or*
Dairy Husb.	101	El. of Dairying	3		An. Husb.	126	El. of An. Husb.	2	*and*
Comp.	111	Biol. in Rel. Man. I	4		An. Husb.	129	El. of An. Husb. Lab.	1	
Comp.	101	Man's Phys. World I	4		Comp.	112	Biol. in Rel. Man II	4	
Mil. Sc.	105	Military I	1		Comp.	102	Man's Phys. World II	4	
Gen. Agr.	104	Freshman Assembly	R		Mil. Sc.	106	Military II	1	
Phys. Ed.	103	Phys. Education M	R		Phys. Ed.	103	Phys. Education M	R	
Gen. Agr.	103	Agr. Seminar*	R		Gen. Agr.	103	Agr. Seminar*	R	
Total			15		Total			16	

SOPHOMORE

First Semester					Second Semester				
Econ.	101	Economics I	3		Econ.	104	Economics II	3	
Math.	105	Mathematics in Agr.	3		An. Husb.	152	Prin. of Feeding	3	
Agron.	130	Soils	4	*or*	Agron.	110	Farm Crops	3	*and*
Agron.	110	Farm Crops	3	*and*	Agron.	111	Farm Crops Lab.	1	*or*
Agron.	111	Farm Crops Lab.	1		Agron.	130	Soils	4	
Agr. Econ.	156	Rural Sociology	3		Hort.	104	El. of Hort.	2	
Poul. Husb.	104	Farm Poul. Prod. Rec.	2		Hort.	105	El. of Hort. Lab.	1	
Poul. Husb.	105	Farm Poul. Prod. Lab.	1		Mil. Sc.	108	Military IV	1	
Mil. Sc.	107	Military III	1		Phys. Ed.	103	Phys. Education M	R	
Phys. Ed.	103	Phys. Education M	R		Gen. Agr.	103	Agr. Seminar*	R	
Gen. Agr.	103	Agr. Seminar*	R				Elective	2	
Total			17		Total			16	

JUNIOR

First Semester					Second Semester				
Agr. Econ.	112	Farm Accounting	3		Agr. Econ.	106	Farm Organization	3	
Agr. Econ.	218	Land Economics	3		Agr. Econ.	202	Marketing Farm Prod.	3	
Comp.	131	Man and Cult. World I	4		Comp.	132	Man and Cult. World II	4	
Gen. Agr.	103	Agr. Seminar*	R		Ind. Jour.	160	Agr. Journalism	3	
Engl.	169	English Proficiency	R		Gen. Agr.	103	Agr. Seminar*	R	
		Elective	6				Elective	3	
Total			16		Total			16	

SENIOR

First Semester				Second Semester			
Gen. Agr.	103	Agr. Seminar*	R	Agr. Econ.	215	Agr. Econ. Summary	2
		Elective	16	Gen. Agr.	103	Agr. Seminar*	R
						Elective	14
Total			16	Total			16

Number of hours required for graduation, 128.

Electives

The electives in the Curriculum in Agricultural Administration are grouped as follows:

	Semester Hours
Major Electives — These electives are to be chosen from the courses in the Department of Agricultural Economics.	9
Minor Agricultural Electives — These electives must be chosen from departments in the School of Agriculture and will directly strengthen the student's preparation in agriculture.	15
General Electives — These electives should be chosen to meet individual needs and to round out the preparation provided by the rest of the student's curriculum.	17

All electives must be officially approved before assignment, by both the Dean of the School of Agriculture and the head of the Department of Economics and Sociology.

* Four meetings each semester.

Curriculum in Agricultural Education

(For Vocational Agriculture Teachers)

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Bot.	102	Gen. Botany	5	Chem.	110	Gen. Chemistry	5
Geol.	103	Gen. Geology	3	Dairy Husb.	101	El. of Dairying	3
An. Husb.	126	Elem. of An. Husb.	2	Educ.	184	Gen. Psychology	3
An. Husb.	129	Elem. of An. Husb. Lab.	1	Shop	157	Blacksmithing	1
Mil. Sc.	105	Military I	1	Shop	166	Welding	1
Gen. Agr.	104	Freshman Assembly	R	Mil. Sc.	106	Military II	1
Phys. Ed.	103	Phys. Education M	R	Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
Total			15	Total			16

SOPHOMORE

First Semester				Second Semester			
Chem.	125	Org. Chemistry (Agr.)	3	Agron.	110	Farm Crops Rec.	3
Speech	103	Oral Comm.	2	Agron.	111	Farm Crops Lab.	1
Speech	126	Parl. Law	1	An. Husb.	152	Prin. of Feeding	3
Hort.	104	El. of Horticulture Rec.	2	Econ.	101	Economics I	3
Hort.	105	El. of Horticulture Lab.	1	Educ.	109	Educ. Psychology	3
Agron.	130	Soils	4	Agr. Engg.	106	Farm Power	3
Agr. Engg.	103	Farm Mechanics	2	Mil. Sc.	108	Military IV	1
Mil. Sc.	107	Military III	1	Phys. Ed.	103	Phys. Education M	R
Phys. Ed.	103	Phys. Education M	R	Gen. Agr.	103	Agr. Seminar*	R
Gen. Agr.	103	Agr. Seminar*	R				
Total			16	Total			17

JUNIOR

First Semester				Second Semester			
Agron.	244	Soil Conservation I	3	Agr. Econ.	112	Farm Accounting	3
An. Husb.	171	Livestock Production	3	An. Husb.	169	El. of Meat Processing	2
An. Husb.	141	Prin. of Lvst. Sel.	3	An. Husb.	170	Meat Processing	1
Poul. Husb.	104	Farm Poul. Prod. Rec.	2	Dairy Husb.	108	Milk Production	3
Poul. Husb.	105	Farm Poul. Prod. Lab.	1	Ent.	203	Gen. Econ. Entomology	3
Bot.	205	Plant Pathology I	3	Ind. Jour.	160	Agr. Journalism	3
Educ.	241	Voc. Education	3	Educ.	255	Techniques in Agr. Educ.	3
Gen. Agr.	103	Agr. Seminar*	R	Agr. Engg.	104	Farm Machinery Repair	2
Engl.	169	English Proficiency	R	Gen. Agr.	103	Agr. Seminar*	R
Total			18	Total			17

SENIOR

First Semester				Second Semester			
Agr. Econ.	202	Marketing Farm Prods.	3	An. Husb.	188	An. Husb. Practicums	2
Agr. Econ.	106	Farm Organization	3	Agron.	108	Grain Gradg. and Judg.	2
Educ.	136	Meth. of Teaching Agr.	3	Poul. Husb.	216	Poul. Management	3
Agr. Engg.	207	Farm Bldgs. Constr.	3	Educ.	161	Tchg. Partic. in Agr.	3
Agr. Engg.	208	Agr. Engg. Applications	2	Agr. Engg.	206	Farm Mechanics Meth.	3
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
		Elective†	3			Elective†	3
Total			17	Total			16

Number of hours required for graduation, 132.

* Four meetings each semester.

† Students not offering one unit of high school physics for entrance must include three hours of physics in their electives.

Curriculum in Agricultural Journalism

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Comp.	101	Man's Phys. World I	4	Comp.	102	Man's Phys. World II	4
An. Husb.	126	El. of An. Husb.	2 *and*	Dairy Husb.	101	El. of Dairying	3
An. Husb.	129	El. of An. Husb. Lab.	1	Hort.	104	El. of Hort.	2
Mil. Sc.	105	Military I	1	Hort.	105	El. of Hort. Lab.	1
Ind. Jour.	109	Ind. Jour. Lecture	R	Mil. Sc.	106	Military II	1
Gen. Agr.	104	Freshman Assembly	R	Ind. Jour.	199	Ind. Jour. Lecture	R
Phys. Ed.	103	Phys. Education M	R	Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
Total			15	Total			17

SOPHOMORE

First Semester				Second Semester			
Speech	103	Oral Comm.	2	An. Husb.	152	Prin. of Feeding	3
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Agron.	130	Soils	4	Agr. Engg.	108	Farm Machinery	3
Poul. Husb.	104	Farm Poul. Prod.	2	Ind. Jour.	187	Reporting II	3
Poul. Husb.	105	Farm Poul. Prod. Lab.	1	Ent.	203	Gen. Econ. Entomol.	3
Ind. Jour.	160	Agr. Journalism	3	Mil. Sc.	108	Military IV	1
Mil. Sc.	107	Military III	1	Ind. Jour.	199	Ind. Jour. Lecture	R
Ind. Jour.	199	Ind. Jour. Lecture	R	Phys. Ed.	103	Phys. Education M	R
Phys. Ed.	103	Phys. Education M	R	Gen. Agr.	103	Agr. Seminar*	R
Gen. Agr.	103	Agr. Seminar*	R				
Total			17	Total			17

JUNIOR

First Semester				Second Semester			
Econ.	101	Economics I	3	Agr. Econ.	106	Farm Organization	3
Agron.	110	Farm Crops	3	Agr. Econ.	202	Mktg. Farm Prod.	3
Agron.	111	Farm Crops Lab.	1	Ind. Jour.	149	News Photography	2
Ind. Jour.	269	Magazine Article Wrtng.	2	Ind. Jour.	162	Radio News	2 *or*
Ind. Jour.	177	Prin. of Advertising	3	Ind. Jour.	181	Rural Press	2
Ind. Jour.	199	Ind. Jour. Lecture	R	Ind. Jour.	166	Editing	2
Gen. Agr.	103	Agr. Seminar*	R	Ind. Jour.	199	Ind. Jour. Lecture	R
Engl.	169	English Proficiency	R	Gen. Agr.	103	Agr. Seminar*	R
		Elective†	4			Elective†	4
Total			16	Total			16

SENIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Ind. Jour.	284	Jour. in a Free Soc.	3	Ind. Jour.	285	Interp. of Contemp. Aff.	3
Bot.	205	Plant Pathology I	3	Ind. Jour.	199	Ind. Jour. Lecture	R
Ind. Jour.	199	Ind. Jour. Lecture	R	Gen. Agr.	103	Agr. Seminar*	R
Gen. Agr.	103	Agr. Seminar*	R			Elective†	9
		Elective†	6				
Total			16	Total			16

Number of hours required for graduation, 130.

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* Four meetings each semester.

† At least six additional hours in journalism are to be elected making a total of 27 hours in journalism.

Electives intended to strengthen the student in his fields of greatest interest may be selected from course offerings in agriculture, agricultural engineering, journalism, history and government, economics and sociology, speech and radio, graphic arts, including commercial illustration, and any of the basic or applied sciences relating to agriculture.

Electives are to be chosen with the advice and approval of the Dean of the School of Agriculture and the head of the Department of Industrial Journalism and Printing.

Curriculum in Dairy Manufacturing

FRESHMAN

First Semester

	Course		Sem. Hrs.
Engl.	111	Written Comm. I	3
Comp.	111	Biol. in Rel. to Man I	4
Chem.	101	Chemistry I	5
Dairy Husb.	101	El. of Dairying	3
Mil. Sc.	105	Military I	1
Gen. Agr.	104	Freshman Assembly	R
Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R
Total			16

Second Semester

	Course		Sem. Hrs.
Engl.	112	Written Comm. II	2
Speech	103	Oral Comm.	2
Comp.	112	Biol. in Rel. to Man II	4
Chem.	103	Chemistry II Rec.	3
Chem.	104	Chemistry II Lab.	2 *or*
Dairy Husb.	105	Dairy Cattle Judg.	2
An. Husb.	126	El. of An. Husb.	2
An. Husb.	129	El. of An. Husb. Lab.	1
Mil. Sc.	106	Military II	1
Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R
Total			17

SOPHOMORE

First Semester

Dairy Husb.	107	Fund. Dairy Tech.	2
Math.	105	Mathematics in Agr.	3
Bact.	101	Gen. Microbiology	3
Chem.	125	Organic Chem. (Agr.)	3
Comp.	121	Man and Soc. World I	4
Mil. Sc.	107	Military III	1
Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R
Total			16

Second Semester

Poul. Husb.	104	Farm Poul. Prod. Rec.	2
Poul. Husb.	105	Farm Poul. Prod. Lab.	1
Agron.	110	Farm Crops Rec.	3
Bact.	212	Dairy Bacteriology	3
Dairy. Husb.	108	Milk Production	3
Comp.	122	Man and Soc. World II	4
Mil. Sc.	108	Military IV	1
Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar*	R
Total			17

JUNIOR

First Semester

Econ.	101	Economics I	3
Econ.	136	Prin. of Accounting	3
An. Husb.	221	Genetics	3 *or*
Dairy Husb.	130	Ice Cream Mkg.	3
Dairy Husb.	110	Butter Making	3
Gen. Agr.	103	Agr. Seminar*	R
Engl.	169	English Proficiency	R
		Elective†	5
Total			17

Second Semester

Dairy Husb.	128	Cond. and Pwd. Milk	3 *or*
Dairy Husb.	135	Cheese Making	3
Dairy Husb.	109	Mkt. Milk and Dy. Inspec.	4
An. Husb.	152	Prin. of Feeding	3
Gen. Agr.	103	Agr. Seminar*	R
		Elective	7
Total			17

SENIOR

First Semester

An. Husb.	221	Genetics	3 *or*
Dairy Husb.	130	Ice Cream Making	3
Dairy Husb.	226	Dairy Plant Mgt.	2
Comp.	131	Man and Cult. World I	4
Gen. Agr.	103	Agr. Seminar*	R
		Elective	7
Total			16

Second Semester

Dairy Husb.	128	Cond. and Pwd. Milk	3 *or*
Dairy Husb.	135	Cheese Making	3
Dairy Husb.	202	Dairy Seminar	1
Dairy Husb.	230	Tech. Controls	2
Comp.	132	Man and Cult. World II	4
Gen. Agr.	103	Agr. Seminar*	R
		Elective	6
Total			16

Number of hours required for graduation, 132.

* Four meetings each semester.

† Students not offering one unit of high school physics for entrance must include three hours of physics in their electives.

Curriculum in Floriculture and Ornamental Horticulture

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Bot.	102	Gen. Botany	5	Speech	103	Oral Comm.	2
Hort.	114	Farm Forestry	3	Chem.	101	Chemistry I	5
Geol.	103	Gen. Geology	3	Hort.	104	El. of Hort. Rec.	2
Mil. Sc.	105	Military I (men)	1	Hort.	105	El. of Hort. Lab.	1
Gen. Agr.	104	Freshman Assembly	R	Hort.	127	G. H. Cons. and Mgt.	3
Phys. Ed.	103	Phys. Ed. M	R *or*	Mil. Sc.	106	Military II (men)	1
Phys. Ed.	151	Phys. Education W	R	Phys. Ed.	103	Phys. Ed. M	R *or*
Gen. Agr.	103	Agr. Seminar*	R	Phys. Ed.	151	Phys. Education W	R
				Gen. Agr.	103	Agr. Seminar*	R
Total			14 or 15	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Chem.	103	Chem. II Rec.	3	Agron.	130	Soils	4
Hort.	125	Land. Gardening	3	Chem.	125	Org. Chemistry (Agr.)	3
Hort.	101	Plant Propagation	3	An. Husb.	221	Genetics	3
Math.	105	Mathematics in Agr.	3	Econ.	101	Economics I	3
Bot.	225	Tax. Bot. Flrg. Plts.	3	Bot.	228	Plant Ecology	3
Mil. Sc.	107	Military III (men)	1	Mil. Sc.	108	Military IV (men)	1
Phys. Ed.	103	Phys. Ed. M	R *or*	Phys. Ed.	103	Phys. Ed. M	R *or*
Phys. Ed.	151	Phys. Education W	R	Phys. Ed.	151	Phys. Education W	R
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
Total			15 or 16	Total			16 or 17

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Hort.	102	Plant Materials I	3	Hort.	103	Plant Materials II	3
Bot.	208	Plant Physiology I	3	Econ.	136	Prin. of Acctg.	3
Hort.	140	Comm. Floriculture I	3	Hort.	122	Nursery Practice	3
Gen. Agr.	103	Agr. Seminar*	R	Gen. Agr.	103	Agr. Seminar*	R
Engl.	169	English Proficiency	R			Electives†	3
		Electives†	3				
Total			16	Total			16

SENIOR

First Semester				Second Semester			
Ent.	102	Gen. Entomology	3	Hort.	211	Arboriculture	3
Ent.	104	Gen. Entomology Lab.	1	Hort.	207	Spraying	3
Bot.	205	Plant Pathology I	3	Bot.	204	Hort. Crop Diseases	3
Ind. Jour.	160	Agr. Jour.	3	Hort.	208	Lit. of Hort.	2
Hort.	135	Floral Arrgt. I	2	Hort.	235	Hort. Seminar	1
Hort.	235	Hort. Seminar	1	Gen. Agr.	103	Agr. Seminar*	R
Gen. Agr.	103	Agr. Seminar*	R			Electives†	4
		Electives†	4				
Total			17	Total			16

Suggested Electives

Floriculture				*Ornamental Horticulture*			
Hort.	136	Floral Arrgt. II	2	Mch. Des.	101	Engg. Drawing	2
Hort.	141	Comm. Flori. II	3	Hort.	227	Lands, Constr.	3
Hort.	133	Veg. Gardening	3	Hort.	243	Theo. Lands. Des.	2
Hort.	214	Hort. Cash Crops	2	Hort.	228	Planting Design	2
				Hort.	238	Lands. Design I	3
				Arch.	112	Freehand Drawing I	2

Number of hours required for graduation: Women, 125; men, 129.

* Four meetings each semester.

† Students not offering one unit of high school physics for entrance must include three hours of physics in their electives.

Curriculum in Landscape Design*

FRESHMAN

First Semester					Second Semester				
		Course	*Sem. Hrs.*				*Course*	*Sem. Hrs.*	
Bot.	102	Gen. Botany	5		Hort.	104	El. of Hort. Rec.	2	
Comp.	101	Man's Phys. World I	4		Hort.	105	El. of Hort. Lab.	1	
Engl.	111	Written Comm. I	3		Comp.	102	Man's Phys. World II	4	
Arch.	112	Freehand Draw. I	2		Engl.	112	Written Comm. II	2	
Mach. Des.	101	Engg. Draw.	2		Arch.	113	Freehand Draw. II	2	
Mil. Sc.	105	Military I (men)	1		Mach. Des.	106	Desc. Geom.	2	
Gen. Agr.	104	Freshman Assembly	R		Math.	101	Plane Trig.	3	
Phys. Ed.	103	Phys. Ed. M	R	*or*	Mil. Sc.	106	Military II (men)	1	
Phys. Ed.	151	Phys. Education W	R		Phys. Ed.	103	Phys. Ed. M	R	*or*
Gen. Agr.	103	Agr. Seminar†	R		Phys. Ed.	151	Phys. Education W	R	
					Gen. Agr.	103	Agr. Seminar†	R	
Total			16 or 17		Total			16 or 17	

SOPHOMORE

First Semester					Second Semester				
Hort.	125	Lands. Gardening	3		Geol.	110	Physiographic Geology	3	
Arch.	106	El. of Arch. I	4		Arch.	107	El. of Arch. II	4	
Arch.	103	Shades and Shadows	1		Arch.	104	Perspective Drawing	1	
Arch.	179A	Hist. Paintg. and Sculpt.	3		Arch.	125	Apprec. of Arch.	3	
Bot.	205	Plant Pathology I	3		Bot.	228	Plant Ecology	3	
Bot.	225	Tax. Bot. Flrg. Plts.	3		Sp.	103	Oral Comm.	2	
Mil. Sc.	107	Military III (men)	1		Mil. Sc.	108	Military IV (men)	1	
Phys. Ed.	103	Phys. Ed. M	R	*or*	Phys. Ed.	103	Phys. Ed. M	R	*or*
Phys. Ed.	151	Phys. Education W	R		Phys. Ed.	151	Phys. Education W	R	
Gen. Agr.	103	Agr. Seminar†	R		Gen. Agr.	103	Agr. Seminar†	R	
Total			17 or 18		Total			16 or 17	

JUNIOR

First Semester					Second Semester				
Hort.	243	Theo. Lds. Des.	2	*or*	Hort.	228	Planting Design	2	*or*
Hort.	227	Lands. Constr.	3		Hort.	223	Civic Art	3	
Hort.	102	Plant Materials I	3		Hort.	103	Plant Materials II	3	
Civ. Engg.	102	Surveying I	2		Ent.	203	Gen. Econ. Ent.	3	
Agron.	130	Soils	4		Arch.	118	Water Color I	2	
Arch.	116	Pencil Sketch	2		Civ. Engg.	103	Topo. Surveying	3	
Gen. Agr.	103	Agr. Seminar†	R		Gen. Agr.	103	Agr. Seminar†	R	
Engl.	169	English Proficiency	R				Electives	3	
		Electives	3						
Total			16 or 17		Total			16 or 17	

SENIOR

First Semester					Second Semester				
Hort.	238	Lands. Design I	3		Hort.	246	Lands. Design II	3	
Hort.	227	Lands. Constr.	3	*or*	Hort.	223	Civic Art	3	*or*
Hort.	243	Theo. Lands. Des.	2		Hort.	228	Planting Design	2	
Comp.	121	Man and Soc. World I	4		Comp.	122	Man and Soc. World II	4	
Gen. Agr.	103	Agr. Seminar†	R		Ind. Jour.	160	Agr. Journalism	3	
		Electives	7		Gen. Agr.	103	Agr. Seminar†	R	
							Electives	4	
Total			16 or 17		Total			16 or 17	

Number of hours required for graduation: Women, 131; men, 135.

* See, Entrance to College, Requirements for.

† Four meetings each semester.

Curriculum in Milling Administration

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	101	Chemistry I	5	Chem.	103	Chemistry II Rec.	3
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Speech	103	Oral Comm.	2	Ent.	119	Milling Entomology	4
Mach. Des.	101	Engg. Drawing	2	Hist.	125	Contemp. World Hist.	2
Math.	112	College Algebra	3	Math.	101	Plane Trigonometry	3
Mill. Ind.	102	Surv. of Mill. Ind.	1	Mill. Ind.	101	El. of Milling	2
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
Gen. Agr.	104	Freshman Assembly	R	Phys. Ed.	103	Phys. Education M	R
Phys. Ed.	103	Phys. Education M	R	Mill. Ind.	118	Milling Ind. Seminar*	R
Mill. Ind.	118	Milling Ind. Seminar*	R				
Total			17	Total			17

SOPHOMORE

First Semester				Second Semester			
Bot.	102	Gen. Botany	5	Chem.	125	Organic Chem. (Agr.)	3
Econ.	133	Accounting I	3	Econ.	134	Accounting II	3
Mill. Ind.	103	Flow Sheets	2	Econ.	101	Economics I	3
Phys.	102	Gen. Physics I	4	Mill. Ind.	109	Mill. Practice I	3
Speech	226	Public Discussion	2	Phys.	103	Gen. Physics II	4
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
Phys. Ed.	103	Phys. Education M	R	Phys. Ed.	103	Phys. Education M	R
Mill. Ind.	118	Milling Ind. Seminar*	R	Mill. Ind.	118	Milling Ind. Seminar*	R
Total			17	Total			17

JUNIOR

First Semester				Second Semester			
Agron.	115	Mkt. Grading Cereals	3	Econ.	116	Money and Banking	3
Agr. Econ.	202	Mktg. Farm Prods.	3	Econ.	104	Economics II	3
Agr. Econ.	156	Rural Sociology	3	Hist.	164	Business Law II	3
Educ.	184	Gen. Psychology	3	Mill. Ind.	212	Qual. of Wheat and Flour,	3
Hist.	163	Business Law I	3	Mill. Ind.	118	Milling Ind. Seminar*	R
Mill. Ind.	118	Milling Ind. Seminar*	R			Elective	4
Engl.	169	English Proficiency	R				
		Elective	2				
Total			17	Total			16

SENIOR

First Semester				Second Semester			
Agr. Econ.	203	Grain Marketing	3	Comp.	132	Man and Cult. World II	4
Comp.	131	Man and Cult. World I	4	Econ.	215	Bus. Org. and Fin.	3
Engl.	123	Writ. and Oral Sales	3	Econ.	237	Labor Economics I	3
Mill. Ind.	118	Milling Ind. Seminar*	R	Engl.	122	Compl. Correspondence	3
		Elective	5	Mill. Ind.	118	Milling Ind. Seminar*	R
						Elective	3
Total			15	Total			16

Number of hours required for graduation, 132.

* One meeting each month in addition to Agricultural Seminar (Gen. Agr. 103).

Curriculum in Milling Chemistry

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	101	Chemistry I	5	Chem.	103	Chemistry II Rec.	3
Engl.	111	Written Comm. I	3	Chem.	104	Chemistry II Lab.	2
Speech	103	Oral Comm.	2	Engl.	112	Written Comm. II	2
Mach. Des.	101	Engg. Drawing	2	Ent.	119	Mill. Entomology	4
Math.	112	College Algebra	3	Math.	101	Plane Trigonometry	3
Mill. Ind.	102	Survey of Mill. Ind.	1	Mill. Ind.	101	El. of Milling	2
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
Gen. Agr.	104	Freshman Assembly	R	Phys. Ed.	103	Phys. Education M	R
Phys. Ed.	103	Phys. Education M	R	Mill. Ind.	118	Milling Ind. Seminar*	R
Mill. Ind.	3	Milling Ind. Seminar*	R				
Total			17	Total			17

SOPHOMORE

First Semester				Second Semester			
Bot.	102	Gen. Botany	5	Chem.	215A	Quan. Analysis	4
Chem.	122	Gen. Organic Chem.	5	Math.	120	Plane Anal. Geom.	4
Mill. Ind.	103	Flow Sheets	2	Mill. Ind.	109	Milling Practice I	3
Phys.	102	Gen. Physics I	4	Phys.	103	Gen. Physics II	4
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
Phys. Ed.	103	Phys. Education M	R	Phys. Ed.	103	Phys. Education M	R
Mill. Ind.	118	Milling Ind. Seminar*	R	Mill. Ind.	118	Milling Ind. Seminar*	R
Total			17	Total			16

JUNIOR

First Semester				Second Semester			
Agron.	115	Mkt. Grading of Cereals	3	Chem.	240	General Biochemistry	5
Econ.	101	Economics I	3	Math.	141	Calculus II	4
Bact.	101	Gen. Microbiology	3	Mill. Ind.	212	Qual. of Wheat and Flour	3
Math.	140	Calculus I	4	Mill. Ind.	215	Exptl. Baking I	3
Mill. Ind.	205	Wht. and Flour Testing	3	Mill. Ind.	118	Milling Ind. Seminar*	R
Mill. Ind.	118	Milling Ind. Seminar*	R			Elective	2
Engl.	169	English Proficiency	R				
Total			16	Total			17

SENIOR

First Semester				Second Semester			
Chem.	252	Chem. of Proteins	3	Chem.	261	Phys. Chem. II Rec.	3
Chem.	260A	Physical Chem. I	3	Chem.	262	Phys. Chem. II Lab.	2
Chem.	260B	Phys. Chem. I Lab.	2	Chem.	268A	Colloid Chemistry	3
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Mill. Ind.	118	Milling Ind. Seminar*	R	Mill. Ind.	210	Adv. Wht. and Flour Tstg.,	3
		Elective	3	Mill. Ind.	118	Milling Ind. Seminar*	R
						Elective	2
Total			15	Total			17

Number of hours required for graduation, 132.

* One meeting each month in addition to Agricultural Seminar (Gen. Agr. 103).

Curriculum in Milling Technology

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	101	Chemistry I	5	Chem.	103	Chemistry II Rec.	3
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Speech	103	Oral Comm.	2	Ent.	119	Mill. Entomology	4
Mach. Des.	101	Engg. Drawing	2	Mach. Des.	106	Desc. Geom.	2
Math.	112	College Algebra	3	Math.	101	Plane Trigonometry	3
Mill. Ind.	102	Survey of Mill. Ind.	1	Mill. Ind.	101	El. of Milling	2
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
Gen. Agr.	104	Freshman Assembly	R	Phys. Ed.	103	Phys. Education M	R
Phys. Ed.	103	Phys. Education M	R	Mill. Ind.	118	Milling Ind. Seminar*	R
Mill. Ind.	118	Milling Ind. Seminar*	R				
Total			17	Total			17

SOPHOMORE

First Semester				Second Semester			
Bot.	102	Gen. Botany	5	Chem.	125	Organic Chem. (Agr.)	3
Math.	120	Plane Anal. Geom.	4	Mach. Des.	111	Mach. Drawing I	2
Mill. Ind.	103	Flow Sheets	2	Math.	140	Calculus I	4
Phys.	102	Gen. Physics I	4	Mill. Ind.	109	Mill. Practice I	3
Mil. Sc.	107	Military III	1	Phys.	103	Gen. Physics II	4
Phys. Ed.	103	Phys. Education M	R	Mil. Sc.	108	Military IV	1
Mill. Ind.	118	Milling Ind. Seminar*	R	Phys. Ed.	103	Phys. Education M	R
				Mill. Ind.	118	Milling Ind. Seminar*	R
Total			16	Total			17

JUNIOR

First Semester				Second Semester			
Agron.	115	Mkt. Grading of Cereals	3	Ap. Mech.	202	Applied Mech.	4
Econ.	101	Economics I	3	Elec. Engg.	102	Elec. Engg. C Rec.	2
Mach. Des.	121	Mechanism	3	Elec. Engg.	106	Elec. Engg. C Lab.	1
Math.	141	Calculus II	4	Mech. Engg.	120	Steam and Gas Engg. C	2
Mill. Ind.	211	Mill. Practice II	3	Mill. Ind.	212	Qual. of Wht. and Flr.	3
Shop	166	Welding	1	Mill. Ind.	118	Milling Ind. Seminar*	R
Mill. Ind.	118	Milling Ind. Seminar*	R			Elective	5
Engl.	169	English Proficiency	R				
Total			17	Total			17

SENIOR

First Semester				Second Semester			
Ap. Mech.	212	Mech. of Matl. I Rec.	4	Comp.	132	Man and Cult. World II	4
Comp.	121	Man and Cult. World I	4	Mech. Engg.	135	Air Conditioning A	3
Mill. Ind.	201	Milling Tech. I	2	Mill. Ind.	203	Flour Mill. Const.	3
Shop	168	Gas Welding	1	Mill. Ind.	202	Milling Tech. II	2
Mill. Ind.	118	Milling Ind. Seminar*	R	Mill. Ind.	118	Milling Ind. Seminar*	R
		Elective	4			Elective	4
Total			15	Total			16

Number of hours required for graduation, 132.

* One meeting each month in addition to Agricultural Seminar (Gen. Agr. 103).

Curriculum in Soil Conservation

FRESHMAN

First Semester					Second Semester				
		Course	*Sem. Hrs.*				*Course*	*Sem. Hrs.*	
Engl.	111	Written Comm. I	3		Engl.	112	Written Comm. II	2	
Geol.	103	Gen. Geology	3		Speech	103	Oral Comm.	2	
Chem.	101	Chemistry I	5		Bot.	102	Gen. Botany	5	
An. Husb.	126	El. of An. Husb.	2	*and*	Chem.	103	Chemistry II Rec.	3	
An. Husb.	129	El. of An. Husb. Lab.	1	*or*	An. Husb.	126	El. of An. Husb.	2	*and*
Dairy Husb.	101	El. of Dairying	3		An. Husb.	129	El. of An. Husb. Lab.	1	*or*
Mil. Sc.	105	Military I	1		Dairy Husb.	101	El. of Dairying	3	
Gen. Agr.	104	Freshman Assembly	R		Mil. Sc.	106	Military II	1	
Phys. Ed.	103	Phys. Education M	R		Phys. Ed.	103	Phys. Education M	R	
Gen. Agr.	103	Agr. Seminar*	R		Gen. Agr.	103	Agr. Seminar*	R	
Total			15		Total			16	

SOPHOMORE

First Semester					Second Semester				
Math.	105	Mathematics in Agr.	3		Econ.	101	Economics I	3	
Hort.	104	El. of Horticulture	2		An. Husb.	152	Prin. of Feeding	3	
Hort.	105	El. of Horticulture Lab.	1		Agron.	130	Soils	4	*or*
Chem.	125	Org. Chemistry (Agr.)	3		Agron.	110	Farm Crops	3	*and*
Agron.	130	Soils	4	*or*	Agron.	111	Farm Crops Lab.	1	
Agron.	110	Farm Crops	3	*and*	Zoöl.	105	General Zoölogy	5	
Agron.	111	Farm Crops Lab.	1		Mil. Sc.	108	Military IV	1	
Poul. Husb.	104	Farm Poul. Prod. Rec.	2		Phys. Ed.	103	Phys. Education M	R	
Poul. Husb.	105	Farm Poul. Prod. Lab.	1		Gen. Agr.	103	Agr. Seminar*	R	
Mil. Sc.	107	Military III	1						
Phys. Ed.	103	Phys. Education M	R						
Gen. Agr.	103	Agr. Seminar*	R						
Total			17		Total			16	

JUNIOR

First Semester					Second Semester				
An. Husb.	221	Genetics	3	*or*	An. Husb.	221	Genetics	3	*or*
Bact.	105	Agr. Microbiology	3		Bact.	105	Agr. Microbiology	3	
Agr. Econ.	106	Farm Organization	3		Ent.	203	Gen. Econ. Entomol.	3	
Agron.	203	Pasture Imp. I	3		Ind. Jour.	160	Agr. Journalism	3	
Bot.	208	Plant Physiology I	3		Agron.	244	Soil Conservation I	3	
Gen. Agr.	103	Agr. Seminar*	R		Gen. Agr.	103	Agr. Seminar*	R	
Engl.	169	English Proficiency	R				Elective	4	
		Elective	4						
Total			16		Total			16	

SENIOR

First Semester				Second Semester			
Agron.	231	Soil Conservation II	2	Agr. Engg.	240	Drainage, Erosion Con. and Irrig.	3
Hort.	114	Farm Forestry	3	Agron.	235	Devel. and Classif. of Soils,	3
Zoöl.	249	Wild Life Conservation	3	Comp.	132	Man and Cult. World II	4
Comp.	131	Man. and Cult. World I	4	Gen. Agr.	103	Agr. Seminar*	R
Gen. Agr.	103	Agr. Seminar*	R			Elective	6
		Elective†	4				
Total			16	Total			16

Suggested Electives

First Semester				Second Semester			
Agron.	217	Weed Control	2	Agr. Econ.	156	Rural Sociology	3
Agron.	211	Crop Ecology	2	Agr. Econ.	212	Conservation of Natural Resources	2
Agron.	251	Soil Fertility	3	Physics	151	Photography	2
Physics	102	Gen. Physics I	4				
Physics	146	Intro. Meteorology	3				

Number of hours required for graduation, 128.

* Four meetings each semester.

† All students not offering one unit of high school physics for entrance must include three hours of physics in their electives.

Electives must be approved by both the head of the Department of Agronomy and the Dean of the School of Agriculture.

Two-year Curriculum in Agriculture

FIRST YEAR

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Hort.	104	El. of Hort. Rec.*	2 *and*	Speech	103	Oral Comm.	2
Hort.	105	El. of Hort. Lab.*	1	Agron.	117	Soils and Fertilizers	3
Agron.	116	General Crops*	4	Dairy Husb.	101	El. of Dairying*	3
An. Husb.	126	El. of An. Husb.*	2 *and*	Poul. Husb.	104	Farm Poul. Prod. Rec.*	2
An. Husb.	129	El. of An. Husb. Lab.*	1	Poul. Husb.	105	Farm Poul. Prod. Lab.*	1
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
Gen. Agr.	104	Freshman Assembly	R	Phys. Ed	103	Phys. Education M	R
Phys. Ed.	103	Phys. Education M	R	Gen. Agr.	103	Agr. Seminar†	R
Gen. Agr.	103	Agr. Seminar†	R			Elective‡	2
		Elective‡	2				
Total			16	Total			16

SECOND YEAR

First Semester				Second Semester			
An. Husb.	152	Prin. of Feeding (SC)	3	Ent.	113	Farm Insects	3
Bot.	127	Plant Diseases	3	Agr. Ec.	106	Farm Organization	3
Econ.	101	Economics I	3	Agr. Engg.	108	Farm Machinery	3
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
Phys. Ed.	103	Phys. Education M	R	Phys. Ed.	103	Phys. Education M	R
Gen. Agr.	103	Agr. Seminar†	R	Gen. Agr.	103	Agr. Seminar†	R
		Elective ‡	6			Elective ‡	6
Total			16	Total			16

* If the student has had satisfactory high school work in these courses or related courses and can demonstrate a satisfactory knowledge of the subject, he may substitute other courses with the approval of the head of the department and the Dean of the School of Agriculture.

† Four meetings each semester.

‡ See description of the two-year Curriculum in Agriculture (page 73) for suggestions in the selection of electives.

Agricultural Economics

Section of

Economics and Sociology

George Montgomery, *Head of Department*

Work in economics and sociology is offered in the schools of Agriculture and Arts and Sciences. The more general courses are listed in the Arts and Sciences section of the catalogue. Those courses listed here have a direct bearing on agriculture.

The investigational work in agricultural economics and rural sociology brings together the latest information concerning the business problems of agriculture and the problems of rural life. These data are used in the instructional work of the department. The student has an opportunity to learn of the factors and economic forces involved in farm management, marketing, taxation, land utilization, agricultural finance, rural life, and other closely related subjects.

COURSES IN AGRICULTURAL ECONOMICS

FOR UNDERGRADUATE CREDIT

106. Farm Organization. 3 semester hours. Each semester.
Economic forces affecting the organization and operation of the farm business. Two hours of recitation and three hours of laboratory a week. Prerequisite: Econ. 101, Agron. 130, and An. Husb. 152.

112. Farm Accounting. 3 semester hours. Each semester.
Systems of farm records and accounts. Analysis and utilization of cost of production data. Two hours of recitation and three hours of laboratory a week. Prerequisite: Econ. 101.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Marketing of Farm Products. 3 semester hours. Each semester.
Marketing services and functions and price-making forces. Three hours of recitation a week. Prerequisite: Econ. 101.

203. Grain Marketing. 3 semester hours. First semester.
Price influences and relationships, buying and selling problems, domestic and export trade; grain trade organization and regulation. Three hours of recitation a week. Prerequisite: Econ. 101.

206A. Advanced Farm Organization. 3 semester hours. Second semester.
Advanced studies of factors affecting the successful organization and operation of farms. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ag. Econ. 106.

209. Agricultural Policy. 3 semester hours. First semester.
A study dealing with the economic problems of agriculture with emphasis on the influence of private and governmental policies on such problems. Attention will be directed toward analyzing the effects of different types of private and governmental policies on the agricultural industry. Prerequisite: Econ. 101; senior standing.

211. Agricultural Industries. 2 semester hours. Second semester.
Study of geographic, economic, and social factors controlling the establishment and maintenance of the major agricultural industries. Offered in 1948-'49 and alternate years thereafter. Two hours of recitation a week. Prerequisite: Econ. 101; junior standing.

212. Conservation of Natural Resources. 2 semester hours. Second semester. Offered in 1949-'50 and alternate years thereafter. Two hours of recitation a week. Prerequisite: Econ. 101; junior standing.

213. World Agriculture. 3 semester hours. Second semester.
World production and demand, present and potential, of agricultural commodities. World trade in agricultural products with emphasis upon factors affecting agricultural trade. Special effort will be made to supply information of value to those interested in United States foreign service or in commercial work with agencies engaged in foreign agriculture. Three hours of recitation a week. Prerequisite: Econ. 101 or Compr. 112; senior standing.

215. Agricultural Economics Summary. 2 semester hours. Each semester.
Summarization and correlation of courses pursued in college; problems requiring application of principles and broad understanding of the field; contemporary economic developments. Two hours of recitation a week. Prerequisite: Senior standing.

218. Land Economics. 3 semester hours. First semester.
Relation of population to land supply; land utilization, land tenure, and land valuation. Three hours of recitation a week. Prerequisite: Econ. 101.

219. Economics of Land Utilization. 3 semester hours. Second semester.
An economic analysis of alternative uses and practices for farmland, economics of soil conservation, land classification and its relationship to economic productivity. Three hours of recitation and one or two field trips. Prerequisites: Econ. 101, Agron. 130, and junior standing.

Land Law. See Hist. 276.

225. Agricultural Finance. 3 semester hours. Second semester.
Sources and use of credit for purchase of farm land and to finance farm operations. Three hours of recitation a week. Prerequisite: Econ. 101.

226. Market Prices. 3 semester hours. Second semester.
Explanation of price analysis and forces determining prices. Three hours of recitation a week. Prerequisite: Econ. 101.

227. Farmer Movements. 3 semester hours. Second semester.
Principles underlying successful organization of farmers. Three hours of recitation a week. Prerequisite: Econ. 101.

235. Livestock Marketing. 3 semester hours. Second semester.
Livestock marketing services, functions, and prices. Three hours of recitation a week. Prerequisite: Econ. 101.

240. Principles of Coöperation. 3 semester hours. Second semester.
Principles underlying successful coöperative activities. Three hours of recitation a week. Prerequisite: Econ. 101.

251. Marketing of Dairy Products. 3 semester hours. Second semester.
Factors affecting prices; dairy marketing organizations. Three hours of recitation a week. Prerequisite: Econ. 101.

270. Agricultural Economic Problems. Credit to be arranged. Each semester and summer.
Prerequisite: Consult instructor.

271. Economic Analysis and Interpretation. 3 semester hours. First semester.
Three hours of recitation a week. Prerequisite: Econ. 101.

FOR GRADUATE CREDIT

301. Research in Agricultural Economics. Credit to be arranged. Each semester and summer.
Individual research problems which may be used for a master's degree. Prerequisite: Consult instructor.

COURSES IN RURAL SOCIOLOGY

FOR UNDERGRADUATE CREDIT

156. Rural Sociology. 3 semester hours. First semester and summer.
Three hours of recitation a week. Preferably preceded by a course in sociology.

FOR GRADUATE AND UNDERGRADUATE CREDIT

256. Advanced Rural Sociology. 3 semester hours. Second semester.
A continuation of Econ. 156. Three hours of recitation a week. Prerequisite: Econ. 156.

FOR GRADUATE CREDIT

350. Research in Rural Sociology. Credit to be arranged. Each semester and summer.
Prerequisite: Econ. 156.

Agronomy

HAROLD E. MYERS, *Head of Department*

The farm used by the Department of Agronomy comprises 320 acres of medium rolling upland soil. 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 opportunities for study and investigation.

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. Greenhouse space is provided for problems and research work in crops and soils.

COURSES IN FARM CROPS

FOR UNDERGRADUATE CREDIT

108. Grain Grading and Judging. 2 semester hours. Second semester.
Application of the Federal Standards for grading farm crops and judging of grains and other crop products. Six hours of laboratory a week. Prerequisite: Agron. 110, 111.

110. Farm Crops. 3 semester hours. Each semester.
To be taken concurrently with Agron. 111. Distribution, importance, characteristics and production of the common field crops. Three hours of recitation a week. Prerequisite: Bot. 102 or Compr. 112.

111. Farm Crops Laboratory. 1 semester hour. Each semester.
To be taken concurrently with Agron. 110. Study of species and types of the principal field crops. Three hours of laboratory a week. Prerequisite: Bot. 102 or Compr. 112.

112. Seed Testing. 2 semester hours. First semester.
Offered in 1950-'51 and alternate years thereafter. Laboratory testing of seeds, including identification, purity, and germination. Six hours of laboratory a week. Prerequisite: Bot. 102 or Compr. 112.

114. Advanced Grain Judging. 2 semester hours. First semester.
Commercial grading and judging of field crops and identification of the principal types and varieties. Six hours of laboratory a week. Prerequisite: Agron. 108.

115. Market Grading of Cereals. 3 semester hours. First semester.
Offered in 1950-'51 and alternate years thereafter. Market grades of cereals and factors that influence them. One hour of recitation and six hours of laboratory a week. Prerequisite: Mil. Ind. 101.

116. General Crops. 4 semester hours. First semester.
Importance, distribution, and production of the principal field crops and a study of the species and varietal types that occur in each. Three hours of recitation and three hours of laboratory a week. Prerequisite: Enrollment in the Two-year Curriculum in Agriculture.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Crop Improvement. 2 semester hours. First semester.
Offered 1949-'50 and alternate years thereafter. Methods of pure seed production and breeding of agricultural crops. Two hours of recitation a week. Prerequisite: Agron. 110.

203. Pasture Improvement I. 3 semester hours. Second semester.
Establishment, management, and utilization of tame and native pastures. Three hours of recitation a week. Prerequisite: Agron. 110, 111.

206. Principles of Agronomic Experimentation. 3 semester hours. First semester.
Methods and principles of research and statistical analysis of experimental data. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 110, 111, 130.

207. Methods of Plant Breeding. 3 semester hours. Second semester.
The application of principles and methods of breeding field crops, including laboratory, greenhouse, and field procedures. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 110, An. Husb. 221, Bot. 205.

208. Plant Genetics. 3 semester hours. First semester.
An advanced course dealing with genetic principles as applied to plant species. Offered in 1950-'51 and alternate years thereafter. Three hours of recitation a week. Prerequisite: An. Husb. 221.

210. Crop Problems. Credit to be arranged. Each semester and summer. Prerequisite: Agron. 110, 130.
Studies may be chosen in the fields of:

Genetics
Crop Improvement
Pasture Improvement
Ecology
Weed Control
Physiology
Production

211. Crop Ecology. 2 semester hours. Second semester.
A study of environmental conditions that influence growth of crops; natural and economic factors primarily responsible for the concentration of crop production in different regions and countries. Two hours of recitation a week. Prerequisite: Agron. 110, 111, 130.

214. Advanced Crops. 3 semester hours. First semester.
Growth habits, production methods, classification and grading of forage, fiber, sugar, root, and other crops not considered in previous courses. Offered in 1949-'50 and alternate years thereafter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 110, 111.

217. Weed Control. 2 semester hours. Second semester.
Identification, growth habits, and methods of control of weeds. Two hours of recitation a week. Prerequisite: Agron. 110, 111.

218. Pasture Improvement I Laboratory. 1 semester hour. Each semester.
To be taken concurrently with or subsequent to Agron. 203. Field and laboratory study of range and pasture plants with special emphasis on grasses and their distinguishing characteristics. Three hours of laboratory a week. Prerequisite: Agron. 110, 111.

219. Pasture and Range Surveys. 2 semester hours. Second semester.
A study of the methods of range survey and the evaluation of pasture practices. One hour of recitation and three hours of laboratory a week. Prerequisite: Agron. 203, 218, and Bot. 218 or 225.

220. Agronomy Seminar. 1 semester hour. Each semester.
A discussion of agronomic developments. Prerequitie: Senior standing.

Genetics Seminar. See An. Husb. 227.

FOR GRADUATE CREDIT

301. Research in Crops. Credit to be arranged. Each semester and summer.
Special problems which may extend through the year and furnish data for a master's thesis. Prerequisite: Consult instructor.

COURSES IN SOILS

FOR UNDERGRADUATE CREDIT

117. Soils and Fertilizers. 3 semester hours. Second semester.
A general course in soils dealing with the practical management problems. Three hours of recitation a week. Prerequisite: Enrollment in the Two-year Curriculum in Agriculture.

130. Soils. 4 semester hours. Each semester.
Fundamental principles underlying the formation, fertility, and management of soils. Three hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 101, Geol. 103, or Compr. 102.

FOR GRADUATE AND UNDERGRADUATE CREDIT

231. Soil Conservation II. 2 semester hours. Each semester.
Principles of soil and water conservation, management and use under light rainfall conditions. Two hours of recitation a week. Prerequisite: Agron. 130.

235. Development and Classification of Soils. 3 semester hours. Each semester.
Influence of soil-forming agencies on soil characteristics and methods of classifying and mapping soils. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 130.

236. Soil Problems. Credit to be arranged. Each semester and summer.
Prerequisite depends on the problem assigned.
Studies may be chosen in the fields of :

Chemistry
Physics
Conservation
Fertility
Development and Classification

244. Soil Conservation I. 3 semester hours. Each semester.
Erosion control, nitrogen maintenance, crop rotations, and use of lime, manure, and commercial fertilizer under humid conditions. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 110, 130.

249. Methods of Soil Investigation. 2 semester hours. First semester.
Laboratory procedure for chemical and physical studies of soils. Six hours of laboratory a week. Prerequisite: Agron. 130, Chem. 211, 212, or 215 or concurrent registration.

250. Chemical Properties of Soils. 3 semester hours. First semester.
A study of soils as a chemical and colloidal system, including their chemical and mineralogical composition and reactions occurring in them. Three hours of recitation a week. Prerequisite: Agron. 130.

251. Soil Fertility. 3 semester hours. First semester.
Fundamentals of soil fertility. Three hours of recitation a week. Prerequisite: Agron. 130, Bot. 208.

252. Soil Physics. 3 semester hours. Second semester.
A study of the physical properties of soils, including methods of physical analysis and ways of improving soil tilth. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 130, Math. 104 or 107, Phys. 102.

FOR GRADUATE CREDIT

331. Research in Soils. Credit to be arranged. Each semester and summer.
Special problems which may extend throughout the year and furnish data for a master's thesis. Prerequisite: Consult instructor.

Animal Husbandry

ARTHUR D. WEBER, *Head of Department*

The courses in the Department of Animal Husbandry give the student special instruction in the selection, breeding, feeding, management, and marketing of all classes of livestock.

The animal husbandry farm and pastures consist of 1,767 acres of land which are devoted to the maintenance of herds and flocks of purebred cattle, sheep, hogs, and horses, and to experimental projects with meat animals. All animals maintained by the department are used for class work.

The laboratory of the animal husbandry student is the feed lot, the judging pavilion, and the abattoir, where the animal can be studied from the standpoint of the breeder, the feeder, and the packer.

FOR UNDERGRADUATE CREDIT

126. Elements of Animal Husbandry. 2 semester hours. Each semester and summer.
A survey of the field of animal husbandry, with special emphasis on the importance of livestock as a major phase of agriculture. Two hours of recitation a week.

129. Elements of Animal Husbandry Laboratory. 1 semester hour. Each semester and summer.
Three hours of laboratory a week. A study of market types and classes of livestock.

141. Principles of Livestock Selection. 3 semester hours. First semester.
One hour of recitation and six hours of laboratory a week. Prerequisite: An. Husb. 129. Origin, development, characteristics, and adaptation of different breeds of livestock, with special emphasis on the selection of breeding animals.

144. Judging Farm Animals. 2 semester hours. Second semester. Six hours of laboratory a week.
Advanced work in the judging of beef cattle, sheep, swine, and horses. Prerequisite: An. Husb. 141 or consent of instructor.

146. Form and Function in Livestock. 2 semester hours. First semester.
A detailed study of animal form and type; influence of type upon function; special training in presenting orally the relative merits of animals of all breeds. Six hours of laboratory a week. Prerequisite: An. Husb. 144.

152. Principles of Feeding. 3 semester hours. Each semester and summer.
The digestive system and processes of nutrition; origin, chemical analysis, and feeding values of different feeds; nutritive requirements for maintenance, growth, and production of farm animals. Three hours of recitation a week. Prerequisite: Chem. 125 or equivalent.

154. Beef Cattle Production. 3 semester hours. Second semester and summer.
Three hours of recitation a week. Prerequisite: An. Husb. 152.

157. Swine Production. 3 semester hours. Second semester.
Three hours of recitation a week. Prerequisite: An. Husb. 152.

160. Sheep Production. 3 semester hours. First semester.
Three hours of recitation a week. Prerequisite: An. Husb. 152.

165. Horse Production. 2 semester hours. First semester.
Three hours of recitation a week. Prerequisite: An. Husb. 152.

169. Elements of Meat Processing. 2 semester hours. Each semester and summer.
Meat consumption, principles of processing, curing, and freezing. Two hours of lecture and recitation per week. Prerequisite: An. Husb. 129.

170. Meat Processing. 1 semester hour. Each semester.
Killing, dressing, cutting, curing, packaging, and freezing meat and meat products. Field trip. Three hours of laboratory a week. Prerequisite: An. Husb. 129.

171. Livestock Production. 3 semester hours. First semester and summer.
Open only to juniors and seniors not majoring in animal husbandry. Practical insight into the production of beef cattle, horses, swine, and sheep. Three hours of recitation a week. Prerequisite: An. Husb. 152.

176. Meats H. E. 1 semester hour. Each semester.
For juniors and seniors in home economics. Selecting, cutting, and curing meats; grading carcasses; uses of the various cuts. At least one field trip. Three hours of laboratory a week. Prerequisite: Fds. Nutr. 107.

188. Animal Husbandry Practicums. 2 semester hours. Second semester.
Open only to students majoring in Animal Husbandry and to students pursuing the curriculum in Agricultural Education. Manual phases of livestock management. Six hours of laboratory a week.

190. Livestock Feeding. 3 semester hours. Second semester.
A resumé of digestion and nutrition dealing primarily with practical feeding. Open only to students in the Curriculum of Veterinary Medicine. Three hours of recitation a week. Prerequisite: Chem. 122, Physiol. 222.

FOR GRADUATE AND UNDERGRADUATE CREDIT

221. Genetics. 3 semester hours. Each semester and summer.
Variation, Mendelian inheritance, and related subjects. Three hours of recitation a week. Prerequisite: Zoöl. 105 or Bot. 102.

225. Advanced Genetics. 3 semester hours. Second semester.
Particular attention is given to the relation of chromosomes to heredity. Three hours of recitation a week. Prerequisite: An. Husb. 221.

226. Animal Breeding. 3 semester hours. Second semester.
Physiology of reproduction; present status of livestock improvement; function of purebred livestock; breeding systems and practices; application of principles of genetics to problems of animal breeding. Three hours of recitation a week. Prerequisite: An. Husb. 221.

227. Genetics Seminar. 1 semester hour. Each semester.
Study and criticism of genetic experiments with animals and plants and of the biological and mathematical methods employed. One hour of recitation a week. Prerequisite: An. Husb. 221 or Zoöl 216.

229. Research in Genetics. Credit to be arranged. Each semester.
Problems in which small mammals are used as the experimental animals. Prerequisite: An. Husb. 225.

234. Animal Nutrition. 3 semester hours. First semester.
Science of animal nutrition with special attention to recent discoveries in this field. Three hours of recitation a week. Prerequisite: An. Husb. 152.

244. Animal Husbandry Seminar. 1 semester hour. Second semester.
Open only to senior and graduate students majoring in animal husbandry. One hour of recitation a week. Prerequisite: An. Husb. 152.

245. Animal Husbandry Problems. Credit to be arranged. Each semester and summer.
Prerequisite: An. Husb. 152 and other courses; consult instructor.
Work is offered in:

Animal Breeding
Animal Nutrition
Beef Cattle Production
Horse Production
Livestock Selection
Meats
Sheep Production
Swine Production

260. Livestock and Meat Industry. 3 semester hours. Second semester.
The livestock and meat industry; its organization, operation, and development; relation to the public. Lectures, assigned reading, and reports. Three hours of recitation a week. Prerequisite: An. Husb. 126, 152.

268. Principles of Animal Husbandry Experimentation. 2 semester hours. Second semester.
Conducting and interpreting experiments involving the use of animals. Two hours of recitation a week. Prerequisite: An. Husb. 152, 221

275. Classification and Grading of Meats. 1 semester hour. First semester.
Grading; nutritive values; factors influencing quality; dressing percentages; identification of meats from different animals. Three hours of laboratory a week. Prerequisite: An. Husb. 168.

276. Meat Practicums. 2 semester hours. Second semester.
Includes studies of the correclation of type, degree of finish, and other factors in the live animal, with carcass factors, particularly with reference to muscular development, skeleton, grading, and cutting and boning yields. Six hours of laboratory a week. Prerequisite: An. Husb. 169, 170.

290. Problems in Training Agricultural Judging Teams. 2 semester hours. Summer.
A seminar course in training agricultural judging teams. Ten hours of recitation a week. Prerequisite: An. Husb. 129, Agron. 111, Poult. Husb. 101, Dairy Husb. 101, and one year's teaching experience.

FOR GRADUATE CREDIT

301. Research in Animal Husbandry. Credit to be arranged. Each semester and summer.
Special problems in genetics and in the production of all kinds of livestock except dairy cattle. Prerequisite: Consult instructor.

302. Problems in Beef Cattle Production. 3 semester hours. Summer.
Eighteen hours of recitation a week. Prerequisite: Graduate standing and one year's experience in county agent work or in teaching vocational agriculture. Offered in 1949 and every third year thereafter.

303. Problems in Sheep Production. 3 semester hours. Summer.
Eighteen hours of recitation a week. Prerequisite: Graduate standing and one year's experience in county agent work or in teaching vocational agriculture. Offered in 1950 and every third year thereafter.

304. Problems in Swine Production. 3 semester hours. Summer.
Eighteen hours of recitation a week. Prerequisite: Graduate standing and one year's experience in county agent work or in teaching vocational agriculture. Offered in 1951 and every third year thereafter.

311. The Wool Industry. 3 semester hours. Second semester.
Supply and demand; production; marketing; manufacturing. Two hours of recitation and three hours of laboratory a week. Prerequisite: An. Husb. 160.

Dairy Husbandry

F. W. Atkeson, *Head of Department*

The Department of Dairy Husbandry, with its modern dairy barn and dairy products processing plant, is well equipped to train men for key positions in the dairy industry.

A wider application of science to the problems of milk production and manufacturing of dairy products requires technically trained men. Men who have taken courses in bacteriology, chemistry, mathematics, accounting, and engineering and commercial subjects as a background for the dairy courses have a decided advantage.

The Department of Dairy Husbandry offers instruction in dairy production, which includes dairy cattle feeding, management, breeding, milk production, and judging. Instruction in the dairy products field includes the manufacture of butter, cheese, ice cream, condensed milk, and market milk.

A purebred herd of Holstein, Guernsey, Jersey, and Ayrshire cattle owned by the College provides animals for dairy judging classes and for feeding and breeding experiments. The department also operates a dairy products processing plant where students may get actual experience in the processing of dairy products.

FOR UNDERGRADUATE CREDIT

101. Elements of Dairying. 3 semester hours. Each semester.
Problems of the milk producer and manufacturer; feeding, handling, breeding, and selecting of dairy cattle; composition and properties of milk; manufacture of dairy products. Two hours of recitation and three hours of laboratory a week.

104. Dairy Cattle Judging for Veterinary Students. 1 semester hour. Second semester.
Three hours of laboratory a week.

105. Dairy Cattle Judging. 2 semester hours. Second semester.
Six hours of laboratory a week. Prerequisite: Dairy Husb. 101.

107. Fundamentals of Dairy Technology. 2 semester hours. First semester.
A thorough study of the properties of major milk constituents, methods of analysis, quality tests, standardization, and manufacturing processes. One hour of recitation and three hours of laboratory a week. Prerequisite: Dairy Husb. 101, Chem. 101 and sophomore standing.

108. Milk Production. 3 semester hours. Second semester.
Handling the dairy herd, construction of dairy barns and buildings; other subjects concerning the dairy farmer. Three hours of recitation a week. Prerequisite: Dairy Husb. 101, An. Husb. 152 or 190.

109. Market Milk and Dairy Inspection. 4 semester hours. Second semester.
A study of the problems of the milk plant operator including the production, procurement, processing, selling and quality control. Inspection of farms and milk plants. Two hours of recitation and six hours of laboratory a week. Prerequisite: Dairy Husb. 101, 107.

110. Butter Making. 3 semester hours. First semester.
The butter industry; cream production and care on the farm and in the plant; manufacturing, marketing, and food value of butter. Sampling and grading cream, butter analysis and tests, preparation of cream for churning, manufacturing of butter. Offered in 1949-'50 and alternate years thereafter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Dairy Husb. 101, 107, Bact. 101.

119. Dairy Inspection for Veterinary Students. 2 semester hours. First semester.
Composition and properties of milk; clean milk production; study of state and city ordinances affecting milk and dairy products. Testing of milk and dairy products; preparation and testing of chemical disinfectants; scoring of dairy farms and milk plants. One hour of recitation and three hours of laboratory a week.

120. Advanced Dairy Cattle Judging. 1 semester hour. First semester.
Continuation of Dairy Husb. 105; visits to some of the best farms in the state. Three hours of laboratory a week. Prerequisite: Dairy Husb. 105.

128. Condensed and Powdered Milk. 3 semester hours. Second semester.
History, methods, condensing machinery, and powdered milk industry. Condensing milk in the College plant. Offered in 1950-'51 and alternate years thereafter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Dairy Husb. 101, 107, Bact. 101.

130. Ice Cream Making. 3 semester hours. First semester.
Theory and practice in the manufacture of frozen dairy foods. Offered in 1950-'51 and alternate years thereafter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Dairy Husb. 107, Bact. 101.

135. Cheese Making. 3 semester hours. Second semester.
Theory and practice in the manufacture of various types of cheese. Offered in 1949-'50 and alternate years thereafter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Dairy Husb. 107, Bact. 101.

140. Dairy Products Judging. 1 semester hour. Second semester.
Three hours of laboratory a week. Prerequisite: Dairy Husb. 101.

141. Advanced Dairy Products Judging. 1 semester hour. First semester.
Three hours of laboratory a week. Continuation of Dairy Husb. 140.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Dairy Seminar. 1 semester hour. Second semester.
Study of dairy periodicals, bulletins, books, other dairy literature. One hour of recitation a week. Prerequisite: Dairy Husb. 101, 108.

204. Milk Secretion and Reproduction. 3 semester hours. Second semester.
Study of the physiology of the processes involved in milk secretion and reproduction and the related internal secretions. Managed milking studies, types of milking machines, mastitis preventive practices; breeding efficiency studies, breeding records, systems, and artificial breeding practices. Two hours of recitation and three hours of laboratory a week. Offered in 1950-'51 and alternate years thereafter. Prerequisite: Junior standing.

207. Feeding and Management of Dairy Cattle. 3 semester hours. First semester.
Includes fitting of animals for show and sale. Offered in 1950-'51, and alternate years thereafter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Dairy Husb. 108, An. Hus. 152.

214. Dairy Cattle Breeding and Selection. 3 semester hours. First semester.
History of breeds and families; inheritance of milk secretion; bull indexes; selection of herd sire; systems of breeding. Herdbook studies; pedigree writing and analysis. Two hours of recitation and three hours of laboratory a week. Offered in 1949-'50 and alternate years thereafter.

216. Dairy Production Problems. Credit to be arranged. Each semester and summer.
Prerequisite: Dairy Husb. 101, 105, 108, An. Husb. 152.

221. Dairy Manufacturing Problems. Credit to be arranged. Each semester.
Prerequisite: Dairy Husb. 101, 110.

226. Dairy Plant Management. 2 semester hours. First semester.
Offered in 1950-'51 and alternate years thereafter. Two hours of recitation a week. Prerequisite: Dairy Husb. 107, 110.

230. Technical Control of Dairy Products. 2 semester hours. Second semester.
Coördination of the role of the dairy control laboratory in maintaining constant check in quality, purity and wholesomeness of all dairy products and ingredients most commonly used in their manufacture. Efficiency of sterilizing agents, washing powders, and related materials. Plant sanitation. Two three-hour laboratory periods a week. Required of all students pursuing the Curriculum in Dairy Manufacturing. Prerequisite: Dairy Husb. 107 and senior standing in dairy manufacturing, or graduate standing.

FOR GRADUATE CREDIT

301. Research in Dairy Husbandry. Credit to be arranged. Each semester.
Special investigation in dairy production or manufacturing which may be used as a basis for a master's thesis. Prerequisite: Consult instructor.

Dairy Mechanics. See Agr. Engg. 202.
Dairy Bacteriology, See Bact. 212.
Dairy Chemistry. See Chem. 275.
Marketing of Dairy Products. See Agr. Econ. 251.
Genetics Seminar. See An. Husb. 227.

General Agriculture

RAY IAMS THROCKMORTON, *Dean*

103. Agricultural Seminar. Required. Each semester.
Four meetings each semester. Programs presented by students, members of faculty, invited speakers.

104. Freshman Assembly. Required of freshmen. First semester.
A survey of fields of opportunity in agriculture.

109. Agricultural Student Journalism. 1 semester hour. Each semester.
Maximum, 4 semester hours of credit.

Horticulture

Wm. F. Pickett, *Head of Department*

Instruction offered in the Department of Horticulture includes general horticulture, landscape design, vegetable gardening, floriculture, pomology, and forestry.

Thorough preparation for those interested in professional or commercial fruit growing or vegetable growing is provided through available groups of electives in the Curriculum in Agriculture.

The four-year Curriculum in Landscape Design leads to the degree Bachelor of Science in Landscape Design, and is intended for students who wish training in design and drafting. The four-year Curriculum in Floriculture and Ornamental Horticulture is intended for those who wish to become florists or nurserymen with emphasis on the production and use of landscape materials.

The horticultural farm, the campus, the greenhouses, and the research laboratories provide plant materials and equipment for instructional and research use.

COURSES IN GENERAL HORTICULTURE

FOR UNDERGRADUATE CREDIT

101. Plant Propagation. 3 semester hours. First semester.
Principles and practices of propagating horticultural plants. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bot. 102.

104. Elements of Horticulture Recitation. 2 semester hours. Each semester and summer.
Principles and practices in the several phases of horticulture. Two hours of recitation a week.

105. Elements of Horticulture Laboratory. 1 semester hour. Each semester.
Study of horticultural plants, including identification, propagation, pruning, spraying, transplanting, cover crops, fruit varieties, etc. Three hours of laboratory a week. To be taken concurrently with Hort. 104, if possible.

FOR GRADUATE AND UNDERGRADUATE CREDIT

207. Spraying. 3 semester hours. Second semester.
Spray machinery; chemical properties; insecticides; fungicides; spray dates; fumigation. Two hours of recitation and three hours of laboratory a week. Prerequisite: Junior or senior classification.

208. Literature of Horticulture. 2 semester hours. Second semester.
Books and publications are reviewed and bibliographies prepared. Open only to junior, senior, and graduate students in horticulture. Offered in 1950-'51 and alternate years thereafter. Two hours of recitation a week.

211. Arboriculture. 3 semester hours. Second semester.
Principles and practices of caring for ornamental plantings; transplanting, pruning, tree surgery, fertilizing, diagnosis of pests. Two hours of recitation and three hours of laboratory a week. Prerequisite: Consult instructor.

235. Horticulture Seminar. 1 semester hour. Each semester.
Critical discussion of horticultural publications and of experimental and research projects under way at this and other experiment stations. May not be taken for more than three credit hours. Open only to junior, senior, and graduate students in horticulture. One hour of recitation a week.

244. Horticultural Problems. Credit to be arranged. Each semester and summer.
Investigations and reports in pomology; olericulture; floriculture; forestry; or landscape design. Prerequisite: Consult instructor.

FOR GRADUATE CREDIT

301. Research in Horticulture. Credit to be arranged. Each semester and summer.
Problems in pomology, olericulture, floriculture, or landscape design. Data collected may form basis for a master's thesis. Prerequisite: Consult instructor.

COURSES IN FORESTRY

FOR UNDERGRADUATE CREDIT

114. Farm Forestry. 3 semester hours. First semester.
Management and utilization of woodlots and tree belts. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bot. 102.

121. Forest Ecology. 3 semester hours. First semester.
Forest regions and types. Three hours of recitation a week. Prerequisite: Bot. 102.

122. Nursery Practice. 3 semester hours. Second semester.
Tree seed; planting practice; regeneration. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bot. 102.

COURSES IN LANDSCAPE DESIGN

FOR UNDERGRADUATE CREDIT

102. Plant Materials I. 3 semester hours. First semester.
Perennials and annuals for general ornamental planting; planting plans. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bot. 102.

103. Plant Materials II. 3 semester hours. Second semester.
Trees, shrubs, vines for ornamental planting; planting plans and reports. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bot. 102.

125. Landscape Gardening. 3 semester hours. First semester and summer.
An introductory course in the fundamental principles of landscape design. Three hours of recitation a week.

FOR GRADUATE AND UNDERGRADUATE CREDIT

223. Civic Art. 3 semester hours. Second semester.
Growth and development of cities and towns; land subdivision. Offered in 1949-'50 and alternate years thereafter. One hour of recitation and six hours of laboratory a week. Prerequisite: Hort. 243.

227. Landscape Construction. 3 semester hours. First semester.
Topographic maps; grading plans, structures, sewerage, water supply, lighting, and drainage on the private estate. Offered in 1950-'51 and alternate years thereafter. Two hours of recitation and three hours of laboratory a week.

228. Planting Design. 2 semester hours. Second semester.
The use of plants in landscape composition. Perspective and elevational sketches and plans. Offered in 1950-'51 and alternate years thereafter. Six hours of laboratory a week. Prerequisite: Hort. 103.

238. Landscape Design I. 3 semester hours. First semester.
Elementary designing of the home grounds; country estates; special gardens; sketch problems. One hour of recitation and six hours of laboratory a week. Prerequisite: Hort. 103, 125.

243. Theory of Landscape Design. 2 semester hours. First semester.
The economic and esthetic theory of design; taste, character, historic style, and composition; natural elements in design. Two hours of recitation a week. Offered in 1949-'50 and alternate years thereafter. Prerequisite: Hort. 125.

246. Landscape Design II. 3 semester hours. Second semester.
Advanced course in designing of large parks, cemeteries, golf courses, educational groups; and high-class land subdivisions. Sketch problems. One hour of recitation and six hours of laboratory a week. Prerequisite: Hort. 238, 243.

COURSES IN POMOLOGY

FOR UNDERGRADUATE CREDIT

108. Small Fruits. 2 semester hours. Second semester.
Growing, harvesting, and marketing small fruits. Two hours of recitation a week. Prerequisite: Bot. 102.

111. Systematic Pomology. 3 semester hours. First semester.
Technical study of fruit varieties, varietal relationship, pomological nomenclature, variety description, artificial and natural systems of variety classification, judging. Two hours of recitation and three hours of laboratory a week. Prerequisite: Hort. 104, 105.

112. Preserving Food by Freezing. 3 semester hours. First semester.
Selection and preparation of foods for freezing; managing and operating frozen food locker plants; selecting and using home-frozen food cabinets; judging of frozen foods prepared and stored by various methods. Two hours of recitation and three hours of laboratory a week.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Practical Pomology. 3 semester hours. Second semester.
Applied orcharding; manufacturing products; finances; marketing; grading and packing fruits; identification of fruit plant varieties; advanced pruning. Two hours of recitation and three hours of laboratory a week. Prerequisite: Hort. 111.

205. Advanced Pomology. 3 semester hours. First semester.
A course in the fundamentals of orcharding, advanced judging. Two hours of recitation and three hours of laboratory a week. Prerequisite: Hort. 111.

COURSES IN VEGETABLE GARDENING AND FLORICULTURE

FOR UNDERGRADUATE CREDIT

127. Greenhouse Construction and Management. 3 semester hours. Second semester.
Greenhouse maintenance, heating, ventilation, soils, and water. Three hours of recitation a week.

133. Vegetable Gardening. 3 semester hours. Second semester.
Principles underlying vegetable production for the home or local market, special attention given to farm gardens, varieties, planting schedules, and crop rotations. Two hours of recitation and three hours of laboratory a week.

135. Floral Arrangement I. 2 semester hours. First semester.
Floral arrangement in the home; care and uses of cut flowers and potted plants. Consult instructor for prerequisites. One hour of recitation and three hours of laboratory a week.

136. Floral Arrangement II. 2 semester hours. Second semester.
Floral merchandising, sources of supplies; floral design; the commercial flower shop. One hour of recitation and three hours of laboratory a week. Consult instructor for prerequisites.

140. Commercial Floriculture I. 3 semester hours. First semester.
Principles underlying the culture of greenhouse crops. Two hours of recitation and three hours of laboratory a week.

141. Commercial Floriculture II. 3 semester hours. Second semester.
Two hours of recitation and three hours of laboratory a week. Continuation of Hort. 140. Prerequisite: Hort 140.

FOR GRADUATE AND UNDERGRADUATE CREDIT

210. Market Gardening. 3 semester hours. First semester.
Competitive areas, market requirements, harvesting, grading, packing, sources of market supplies, and prices. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 130, Hort. 133.

214. Horticultural Cash Crops. 2 semester hours. First semester.
Vegetable crops grown in Kansas principally as cash crops; potatoes, sweet potatoes, watermelons, and cantaloupes. Two hours of recitation a week. Prerequisite: Agron. 130, Hort. 133.

Milling Industry

JOHN A. SHELLENBERGER, *Head of Department*

The Department of Milling Industry offers courses to prepare students for work in flour-milling operation, products control, or administration.

The department has a flour mill of 130 sacks daily capacity, equipped as a commercial plant and also with many features designed for research and instruction. For the study of elements of milling and special problems in milling technology, there are several units of experimental mills.

The baking laboratory has dough mixers, proofing cabinets, ovens and other apparatus needed for baking tests in elementary and advanced work. A complete pilot plant bakery is available for student training and research. The chemical laboratory has the usual chemical apparatus for wheat and flour testing, and special equipment for work on advanced problems.

FOR UNDERGRADUATE CREDIT

101. Elements of Milling. 2 semester hours. Each semester.
Elementary milling of wheat. One hour of lecture, two hours of laboratory, and one hour of unassembled laboratory a week.

102. Survey of Milling Industry. 1 semester hour. First semester.
A general survey of the milling industry field. One hour of lecture a week.

103. Flow Sheets. 2 semester hours. First semester.
The construction and assembling of a flowsheet. Six hours of laboratory a week. Prerequisite: Mill. Ind. 101, Mach. Des. 101.

109. Milling Practice I. 3 semester hours. Each semester.
A study of milling machinery and methods of checking flour mill operation. One hour of lecture and six hours of laboratory a week. Prerequisite: Mill. Ind. 103.

118. Milling Industry Seminar. Required. Each semester.
Discussion of problems of general interest to all students in milling industry. One lecture each in milling and in agriculture seminar a month.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Milling Technology I. 2 semester hours. First semester.
Technical study of special phases of wheat conditioning and flour milling. Six hours of laboratory a week. Prerequisite: Mill. Ind. 109.

202. Milling Technology II. 2 semester hours. Second semester.
A study of the physical, chemical and engineering principles used in control of flour mill operation. Six hours of laboratory a week. Prerequisite: Mill. Ind. 111.

203. Flour Mill Construction. 3 semester hours. Second semester.
A study of mill flows and the design of a flour mill. Eight hours laboratory and one hour of unassembled laboratory a week. Prerequisite: Mill. Ind. 111, Mach. Des. 111, 121.

205. Wheat and Flour Testing. 3 semester hours. First semester.
Special quantitative tests of cereals and their products; methods of analysis and interpretation of results. Nine hours of laboratory a week. Prerequisite: Chem. 122, 215.

208. Plant Enzymes. 2 semester hours. First semester.
Theories of enzyme action and the function of enzymes. Commercial methods of manufacture and industrial uses of enzymes with special emphasis on the application of enzymes to the cereal industry. Two hours of lecture a week. Prerequisite: Chem. 122, 240.

209. Advanced Flow Sheets. 2 semester hours. Second semester.
The study of flows of cereal products and the design of flows for different cereal products. Six hours of laboratory a week. Prerequisite: Mill. Ind. 103.

210. Advanced Wheat and Flour Testing. 3 semester hours. Each semester.
Physical and chemical methods used in testing wheat and flour. Three hours of laboratory a week for each semester credit. Prerequisite: Mill. Ind. 205.

211. Milling Practice II. 3 semester hours. First semester.
A study of roll surfaces and their effect on break release, bolting surface in relation to over and under bolting, millwright work, lubrication and power requirements. One hour of lecture and six hours of laboratory a week. Prerequisite: Mill. Ind. 109.

212. The Qualities of Wheat and Flour. 3 semester hours. Second semester.
The qualities of wheat and flour as affected by growth, storage, and physical, chemical, and biological factors. Three hours of lecture and recitation a week. Prerequisite: Chem. 122 or 125.

213. Cereal Products Sanitation. 2 semester hours. First semester.
Technical study of sanitation problems and control methods in the field of cereal technology. One hour lecture and three hours of laboratory a week. Prerequisite: Mill. Ind. 109, Ent. 119.

214. Milling Industry Problems. Credit to be arranged. Each semester and summer.
Prerequisite: Mill. Ind. 212 or such other courses as are necessary for the problem selected.

215. Experimental Baking I. 3 semester hours. First semester.
Practice in laboratory baking tests, comparison of methods, formulas and flours; interpretation of results. One hour of lecture and six hours of laboratory a week. Prerequisite: Chem. 125.

216. Experimental Baking II. 3 semester hours. Second semester.
Practice in bakery methods of handling doughs for bread and pastries. One hour of lecture and six hours of laboratory a week. Prerequisite: Mill. Ind. 215.

FOR GRADUATE CREDIT

301. Research in Milling Industry. Credit to be arranged. Each semester and summer.

Research may be used as basis for the graduate thesis. Prerequisite: Consult staff.

318. Graduate Seminar in Milling Industry. 1 semester hour. Each semester.

Discussion of technical problems in the cereal industry. Required of all graduate students in milling industry. One hour of recitation a week.

Poultry Husbandry

LOYAL F. PAYNE, *Head of Department*

The poultry plant, occupying about thirty acres and situated just north of the northeast corner of the College campus, is devoted to the breeding, rearing, and management of the stock used for class and experimental work.

FOR UNDERGRADUATE CREDIT

104. Farm Poultry Production Lecture. 2 semester hours. Each semester.

An introductory course presenting numerous phases of poultry production, processing, management, marketing. Two hours of recitation a week.

105. Farm Poultry Production Laboratory. 1 semester hour. Each semester.

Practical work, identifying breeds and varieties, judging and selecting laying stock and breeding stock; study of poultry houses and equipment; market dressing. Three hours of laboratory a week.

109. Poultry Judging. 3 semester hours. First semester.

Production characteristics and evolution of present breeds and types. Judging the standard breeds and varieties by comparison; judging hens for egg and meat production on the basis of certain physical characteristics. One hour of recitation and six hours of laboratory a week. Prerequisite: Poul. Husb. 104, 105.

116. Market Poultry and Eggs. 4 semester hours. First semester.

Methods of handling market eggs and live and dressed poultry. Candling, grading, and preservation of eggs; killing, dressing, grading, and packing market poultry. Two hours of recitation and six hours of laboratory a week. Prerequisite: Poul. Husb. 104, 105.

120. Artificial Incubation and Brooding. 3 semester hours. Second semester.

Development of the chick; metabolism; survey of the literature on incubation, brooding, and hatchery management; actual care of an incubator and a brooder. Two hours of recitation and three hours of laboratory. Prerequisite: Poul. Husb. 104, 105.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Nutrition of the Fowl. 3 semester hours. Second semester.

Designed for advanced students. The nutritive requirements of the fowl are considered, together with metabolism of nutrients, respiration, digestion, and excretion. Poultry feeds, the compilation of rations, and feeding practices are discussed. The feeding and care of chicks on deficient diets for a period of several weeks provide practical application of nutrition problems. Two hours of recitation and three hours of laboratory a week. Prerequisite: Poul. Husb. 104, 105, An. Husb. 152.

206. Poultry Problems. 2 semester hours. Each semester.
Investigations of a practical nature which may be continued into the next semester if necessary. The area of study might include incubation, brooding, feeding, management, breeding, survey of literature, or closely related subjects. Prerequisite: Poul. Husb. 104, 105; consult instructors.

207. Poultry Genetics. 2 semester hours. Second semester.
A study of inherited characteristics in poultry. Two hours of recitation a week. Prerequisite: An. Husb. 221.

208. Poultry Genetics Laboratory. 1 semester hour. Second semester.
Exercises in practical poultry breeding problems. Included are analyses of records and selection of breeding stock. Three hours of laboratory a week. Prerequisite: Poul. Husb. 104, 105, An. Husb. 221.

216. Poultry Management. 3 semester hours. Second semester.
A detailed study of all phases of farm and commercial flocks, including cost of production. Three hours of recitation a week. Prerequisite: Poul. Husb. 104, 105; senior or graduate standing.

220. Poultry Seminar. 1 semester hour. First semester.
Required of all juniors majoring in poultry husbandry and continued into the senior year. Also required of graduate students. One hour of recitation or conference a week. Prerequisite: Poul. Husb. 104, 105.

FOR GRADUATE CREDIT

301. Research in Poultry Husbandry. Credit to be arranged. Each semester.
Investigations which may form the basis of a master's or doctor's thesis. Conferences by appointment. Prerequisite: Poul. Husb. 104, 105, 109, 116, 120; consult instructors.

Advanced (Poultry) Farm Organization. See Agr. Econ. 206A.
Poultry Sanitation. See Bact. 218.
Special (Poultry) Anatomy. See Anat. 202.
Genetic Seminar. See An. Husb. 227.

The Agricultural Experiment Station

Ray Iams Throckmorton, *Director*
Leland Everett Call, *Director Emeritus*

The Kansas Agricultural Experiment Station was organized under the provision of an act of congress, approved March 2, 1887, which is commonly known as the Hatch act.

Two days later, March 4, 1887, the legislature of Kansas adopted a resolution accepting the conditions of the Hatch act, and vesting the responsibility of carrying out its provisions in the Board of Regents of Kansas State College.

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, approved March 16, 1906, which provided a sum beginning with $5,000, and increasing each year by $2,000 over the preceding year for five years. Since this time the annual appropriation has been $15,000. Under the Adams act, experiments entered upon must be approved by the Office of Experiment Stations of the United States Department of Agriculture.

The Purnell act, approved February 24, 1925, authorized an appropriation of $20,000 for the fiscal year beginning July 1, 1925, with allotments increasing annually by $10,000 until a total of $60,000 was reached for the fiscal year beginning July 1, 1929. The Purnell act 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.

A fourth act authorizing support for the agricultural experiment stations is the Bankhead-Jones act, approved June 29, 1935. This act authorizes appropriations to the land-grant colleges for research, based upon the rural population of the various states. The amount available to Kansas was approximately $12,000 for the fiscal year, and amounts now to approximately $50,000 annually. The Bankhead-Jones act states specifically that the research authorized shall be in addition to research provided for under existing laws, and that no allotment of funds shall be made to a state for any fiscal year in excess of the amount which the state makes available for such fiscal year out of its own funds for research.

The Research and Marketing act, approved August 14, 1946, is an amendment to the Bankhead-Jones act and places emphasis on research in the marketing of agricultural products. It provides for coöperation in research on regional and national levels. The amount of funds directly available to Kansas was approximately $34,000 for the first fiscal year. Provision is made in the act for this sum to be increased annually for a period of five years. In addition some money is received by Kansas to aid in the support of regional projects.

The station also receives support from funds provided by the Kansas Legislature from fees and from commercial organizations.

The Agricultural Experiment Station is, then, a research agency organized to ascertain facts of value to agriculture. It devotes its attention solely to the solution of problems related to the farm and the farm home.

Farms, livestock, laboratories, and general equipment of the College are all directly available for the use of the station.

More than 200 projects covering practically all phases of agricultural investigation are being studied by the members of the station staff. Results of this work are published in the form of scientific papers and bulletins and circulars intended primarily for the general reader.

All bulletins and other publications from the Agricultural Experiment Station are sent without charge to citizens of the state. Any person in the state may have his name placed on the permanent mailing list of the station.

Letters of inquiry and general correspondence should be addressed to Agricultural Experiment Station, Manhattan, Kan. Special inquiries should be directed, as far as possible, to the head of the department having charge of the matter concerning which information is desired.

Branch Agricultural Experiment Stations

FORT HAYS BRANCH STATION

Land occupied by this station is part of what was originally the Fort Hays military reservation. A bill was approved by congress March 28, 1900, setting aside this reservation for experimental and educational purposes. By act of the state legislature, approved February 7, 1901, the act of congress donating this land and imposing 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 work of this station may be divided into two divisions: (*a*) Experimental projects; (*b*) general farm and livestock work. Investigations are confined primarily to the study of problems peculiar to the western half of the state where rainfall is limited. Facilities of the station are also being used for the growing of large quantities of pure seed of the strains and varieties which are 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. The land has been leased for a term of 99 years to the Kansas Agricultural Experiment Station as an experimental and demonstration farm. In 1937 and 1939 the state purchased 235 acres adjoining the original tract, thus making a total of 555 acres available to the station. Investigations in irrigation, dry-land farming, dairying, and lamb feeding are conducted at this station.

COLBY BRANCH STATION

The legislature of 1913 provided for the establishment of a branch experiment station near Colby, Kan. It is located on a tract of 594 acres. The original tract of land was purchased by Thomas county and deeded to the state. In 1941 the state purchased an additional 320 acres. Operations at the Colby station were begun in March, 1914. Cropping experiments are being conducted under dry-land conditions. The primary purpose of the Colby station is to determine the best methods of developing the agriculture of northwestern Kansas.

TRIBUNE BRANCH STATION

At the Tribune station experimental and demonstration work is conducted for the benefit of the surrounding western territory. Special attention is paid to the problems of producing crops under conditions of limited rainfall.

The School of Arts and Sciences

Rodney W. Babcock, *Dean*
Chester E. Peters, *Assistant Dean*
Orval Ebberts, *Assistant to the Dean*

In the land-grant colleges emphasis is placed on the sciences and professional and vocational subjects. All types of education should also include preparation for the discharge of one's duties to the state and to the community. It is the province of the departments grouped in this School of the College to give this basic scientific and cultural training.

Curriculum in Applied Geology

This curriculum is designed especially for students who expect to become professional geologists in order to work for such organizations as oil companies, the United States Geological Survey, State Geological Surveys, the State Highway Commission, and other agencies which employ applied geologists.

The Curriculum in Physical Science also offers a major in geology; and students who expect to teach or to major in such fields of geology as paleontology, mineralogy, and petrology, should enroll in this curriculum.

Curriculum in Arts and Sciences

The purpose of this curriculum is to provide for the needs of two groups of students. The freshman year is prescribed for both groups. Option A offers opportunity for major work in English, languages, speech (including dramatics and radio), and art. Option B includes major work in economics, sociology, psychology, personnel management and guidance, history and government. In both options there is opportunity for those who wish a diversified major in the natural sciences. By selection of courses in education, the graduate becomes eligible for a three-year renewable-for-life certificate issued by the State Board of Education, valid for teaching in any public school in Kansas.

Curriculum in Biological Science

This curriculum provides for those who wish major work in bacteriology, botany, entomology, and zoölogy. The college training for medical technicians can be obtained in this curriculum, varying from the minimum requirements in two years to a four-year course leading to a degree. Students who desire general work for admission to a school of dentistry or human medicine should enroll in this curriculum. By selection of courses in education, the graduate becomes eligible for a three-year renewable-for-life certificate issued by the State Board of Education, valid for teaching in any public school in Kansas.

Curriculum in Business Administration

The Curriculum in Business Administration is designed to prepare men and women for citizenship and business. The option in accounting provides a sequence of courses which includes all the academic work necessary for the examinations for a Certified Public Accountant.

Curriculum in Citizenship Education

The purpose of the Curriculum in Citizenship Education is to develop active, responsible citizens who have a sound understanding of the basic issues in our free society. To promote this understanding, the curriculum offers a liberal education program.

The courses are designed both for students planning to teach social studies in high schools and for those wishing a sound, liberal education. Citizenship courses study the important books and documents which have influenced and shaped our thinking about freedom and responsibility, democracy in America, law, justice, political economy, and education. Work in all the major arts and science fields is included, and all four of the comprehensive courses are required. The first two years introduce the student to all fields of knowledge and provide the basis for selecting a vocational or special field for later study, if the student is undecided when he enters College. The student must take at least a specified minimum of advanced courses in history, government and economics in the last two years. Those planning to teach must select courses in education necessary to qualify for the state teachers' certificates. Other work in the field of the student's choice is substituted for those not planning to teach.

Curriculum in Industrial Chemistry

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 who desire to specialize in industrial chemistry. The facilities of the Department of Chemistry, reinforced by opportunities for practical work in connection with the research of the experiment stations, provide for this specialized training.

Curriculum in Industrial Journalism

The curriculum presents 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. It offers fundamental studies of literary, social, and scientific character. The student must select 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. Theory and practice of journalism are presented in courses extending through the sophomore, junior, and senior years. Students may take additional electives in journalism.

Students who plan to go into agricultural journalism should enroll in the Curriculum in Agricultural Journalism. Students who plan to go into home economics journalism should enroll in the Curriculum in Home Economics and Journalism.

Curriculum in Industrial Physics

The fundamental importance of physics in modern technical developments is widespread. This curriculum offers professional training for the student who wishes to enter an industrial position or to continue study in a graduate school.

Curriculums in Music

A four-year Curriculum in Music Education is offered, with specialization in voice, instrument, or public school band or orchestra. Students who complete this curriculum are awarded the degree Bachelor of Science in Music Education, and are eligible to receive a special state certificate to teach music and permission to teach any nonmusic subject in which they have completed fifteen or more college hours. If sufficient extra hours are completed so that not more than forty hours in music are submitted to the State Board of Education, the student is eligible to receive the state three-year renewable-for-life certificate.

A four-year curriculum is offered in applied music, which prepares the student with a major in voice, piano, violin, organ, or other instrument, and with a minor in another of these subjects. Students who complete this curriculum are awarded the degree Bachelor of Music, and are eligible to receive a three-year special state certificate in music, renewable for three-year terms, if they have elected the required subjects in education.

Curriculums in Physical Education

The theoretical and practical instruction given in these curriculums prepares students for the teaching of physical and health education and the coaching of athletic games. The curriculums are also planned to enable the student to elect work in some other subject which may be taken in connection with physical education.

Curriculum in Physical Science

This curriculum provides for the needs of students who wish major work in mathematics, statistics, chemistry, physics, or geology. Those who wish more specialized training in chemistry or physics should enroll in one of the industrial curriculums. By selection of courses in education, the graduate becomes eligible for a three-year renewable-for-life certificate issued by the State Board of Education, valid for teaching in any public school in Kansas.

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Curriculum in Arts and Sciences

After the freshman year, the curriculum follows two optional plans. Students must decide, on entering the curriculum, which of the two plans is to be followed.

Option A is for students who intend to major in English, speech, dramatics, modern languages, or art. Students who follow this option are required to attain proficiency equivalent to twelve hours in a modern language, and should start their work in this field in the freshman year.

Option B is for students who intend to major in economics, psychology, history and government, or sociology.

Students who wish to major in science (general) may follow either option.

All students are required to take a laboratory course in physical or biological science subsequently and in addition to the required comprehensives.

Option A (Humanities)

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Sp.	103	Oral Comm.	2	Comp.	102	Man's Phys. World II	4
Comp.	101	Man's Phys. World I	4	Hist.	107	Civilization II	3
Hist.	106	Civilization I	3	Psych.	184	General Psychology	3
		Modern Language	3			Modern Language	3
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Engl.	170	Engl. Literature I	3	Engl.	171	Engl. Literature II	3
		Modern Language	3			Modern Language	3
		Elective and Major	5	Math.	103	Math. of Human Affairs	3
Mil. Sc.	107	Military III	1			Elective and Major	2
		Physical Education	R	Mil. Sc.	108	Military IV	1
						Physical Education	R
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Engl.	173	American Literature I	3	Engl.	174	American Literature II	3
		Elective and Major*	8	Mus.	117	App. of Music	2
Engl.	169	Engl. Proficiency	R			Elective and Major	6
Total			15	Total			15

SENIOR

First Semester				Second Semester	
Arch.	125	App. of Architecture	3 *or*	Elective and Major	15
Arch.	179	Hist. of Pntng. and Sculpt.	3		
		Elective and Major	12		
Total			15	Total	15

Majors, including curricular requirements:

English: 30 hours subsequent to Engl. 111 and 112.
Speech (radio, dramatics): 27 hours subsequent to Sp. 103.
Language: 30 hours.
Art: 30 hours.
Science (biological and physical): 30 hours.
Music: 30 hours.

* To include required science elective.

Curriculum in Arts and Sciences

Option A (Art Adaptation)

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	101	Man's Phys. World I	4	Comp.	102	Man's Phys. World II	4
Hist.	106	Civilization I	3	Hist.	107	Civilization II	3
Arch.	112	Freehand Drawing I	2	Sp.	103	Oral Comm.	2
Arch.	165	Pict. Composition I	2	Arch.	113	Freehand Drawing II	2
Mil. Sc.	105	Military I A	1	Arch.	170	Pict. Composition II	2
		Physical Education	R	Mil. Sc.	106	Military I B	1
						Physical Education	R
Total			14 or 15	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Psych.	184	General Psychology	3	Math.	103	Math. of Human Affairs	3
		Modern Language	3			Modern Language	3
Arch.	118	Water Color I	2	Arch.	119	Water Color II	2
Arch.	121	Life Drawing I	2	Arch.	123	Life Drawing II	2
		Military Science	1			Military Science	1
		Physical Education	R			Physical Education	R
Total			14 or 15	Total			14 or 15

JUNIOR

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Engl.	170	Engl. Literature I	3	Engl.	171	Engl. Literature II	3
		Modern Language	3			Modern Language	3
Arch.	181	Oil Painting I	2	Arch.	183	Oil Painting II	2
		Elective*	4			Elective*	4
Engl.	169	English Proficiency	R				
Total			16	Total			16

SENIOR

First Semester				Second Semester			
Psych.	276	Psychology of Art	3	Engl.	173	American Literature I	3
Arch.	179	Hist. of Pntng. and Sculpt.,	3	Arch.	125	App. of Architecture	3
		Elective	9	Mus.	117	App. of Music	2
						Elective	8
Total			15	Total			16

Electives, if desired, may be chosen from Arch. 116, 117, 133, 134, 137, 172, 174, 201, 217, 231, 233, 236, 238.

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* To include required science elective.

Curriculum in Arts and Sciences

Option B (Social Science)

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Sp.	103	Oral Comm.	2	Comp.	102	Man's Phys. World II	4
Comp.	101	Man's Phys. World I	4	Hist.	107	Civilization II	3
Hist.	106	Civilization I	3	Psych.	184	General Psychology	3
		Option	3			Option	3
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man	4
Econ.	101	Economics I	3	Econ.	104	Economics II	3
Engl.	170	English Literature I	3	Soc.	151	Sociology	3
		American History Elect.	3			History Elective	3
		Option or elective	2			Option	2
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Hist.	151	American Government	3	Engl.	173	American Literature I	3
		Economics Elective	3			Sociology Elective	3
Math.	103	Math. of Human Affairs	3			Elective and Major*	9
		Elective and Major	6				
Engl.	169	English Proficiency	R				
Total			15	Total			15

SENIOR

First Semester		Second Semester	
Elective and Major	15	Elective and Major	15

Option: 8 to 10 hours in a modern language, psychology, philosophy, speech, geography, or history.

Majors:

Economics: Math. 164; Hist. 105; Sp. 108, and 15 hours of economics in addition to curricular requirements.

Psychology: Econ. 258; Hist. 105, 125; Educ. 223, 254, 260, 270, and 12 additional hours in psychology in addition to curricular requirements.

History and Government: 12 hours in addition to curricular requirements.

Sociology: 12 hours in addition to curricular requirements.

Science (biological and physical): 30 hours including curricular requirements.

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* To include required science elective.

Curriculum in Biological Science

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	131	Man and Cult. World I	4	Sp.	103	Oral Comm.	2
Chem.	101	Chemistry I	5 *or*	Comp.	132	Man and Cult. World II	4
Chem.	110	General Chemistry	5	Chem.	122	Gen. Organic Chemistry	5
		Elective and Option	3			Elective and Option	2
Mil. Sc.	105	Military I	1	Mil. Sc	106	Military II	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Bot.	102	General Botany	5	Bact.	102	Bacteriology	5
Zoöl.	105	General Zoölogy	5	Ent.	203	Gen. Econ. Entomology	3
		Elective and Option	1	Geol.	140	Principles of Geography	3
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
An. Husb.	221	Genetics	3			Elective, option, major	15
		Elective, option, major	12				
Engl.	169	English Proficiency	R				
Total			15	Total			15

SENIOR

First Semester		Second Semester	
Elective, option, major	15	Elective, option, major	15
Total	15	Total	15

Option and Majors:

Bacteriology: Math. 101, 112; Chem. 103, 104, 215A, 227, 240; Phys. 102, 103; Bact. 206, 222 or 240, 229, and 13 additional hours of bacteriology.

Botany: 19 hours in 200 group.

Entomology: Math. 101, 112, and 20 hours in the 200 group in entomology.

Medical Technician: See adaptation of curriculum.

Physiological Botany: Math. 101, 112, and 19 hours in the 200 group in botany.

Physiology: Math. 101, 112, and 19 hours in the 200 group in physiology and zoölogy.

Premedical: See adaptation of curriculum.

Zoölogy: 19 hours in 200 group.

Adaptation of Curriculum

in Biological Science for Medical Technicians

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Chem.	101	Chemistry I	5	Chem.	103	Chemistry II Rec.	3
Math.	112	College Algebra	3	Chem.	104	Chemistry II Lab.	2
Mil. Sc.	105	Military I	1	Math.	101	Plane Trig.	3
		Physical Education	R	Sp.	103	Oral Comm.	2
				Mil. Sc.	106	Military II	1
						Physical Education	R
Total			15 or 16	Total			16 or 17

SOPHOMORE

First Semester				Second Semester			
Chem.	227	Organic Chemistry	5	Chem.	115A	Quant. Analysis	4
Phys.	102	General Physics I	4	Phys.	103	General Physics	4
Zoöl.	105	General Zoölogy	5	Bact.	102	Bacteriology	5
		Elective	1	Geol.	140	Prin. of Geography	3
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			16 or 17

JUNIOR

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Bact.	206	Bact. of Human Diseases	5	Bact.	229	Immunology	5
Chem.	240A	Biochemistry	3	Zoöl.	221	Human Physiology	4
Chem.	240B	Biochemistry Lab.	2	Zoöl.	228	Human Parasit. Rec.	3
Bact.	225	Bact. Technic	3	Zoöl.	229	Human Parasit. Lab.	1
Engl.	169	English Proficiency	R				
Total			17	Total			17

SENIOR

First Semester				Second Semester			
Phys.	151	Photography	2	Bot.	272	Bot. for Med. Tech.	2
Zoöl.	206	Zoöl. Technic	2	Phys.	205	Applied X-Ray	3
		Elective	11	Zoöl.	123	Human Anatomy	5
						Elective	5
Total			15	Total			15

Adaptation of Curriculum

in Biological Science for Premedicine

FRESHMAN

First Semester

		Course	Sem. Hrs.
Engl.	111	Written Comm. I	3
Comp.	131	Man and Cult. World I	4
Chem.	101	Chemistry I	5
Math.	112	College Algebra	3
Mil. Sc.	105	Military I	1
		Physical Education	R
Total			15 or 16

Second Semester

		Course	Sem. Hrs.
Engl.	112	Written Comm. II	2
Sp.	103	Oral Comm.	2
Comp.	132	Man and Cult. World II	4
Chem.	103	Chemistry II Rec.	3
Chem.	104	Chemistry II Lab.	2
Math.	101	Plane Trigonometry	3
Mil. Sc.	106	Military II	1
		Physical Education	R
Total			16 or 17

SOPHOMORE

First Semester

Comp.	121	Man and Soc. World I	4
Zoöl.	105	General Zoölogy	5
Phys.	102	General Physics I	4
Mod. Lang.	115	Tech. German I	3
Mil. Sc.	107	Military III	1
		Physical Education	R
Total			16 or 17

Second Semester

Comp.	122	Man and Soc. World II	4
Zoöl.	246	Comp. Anatomy	4
Phys.	103	General Physics II	4
Mod. Lang.	117	Tech. German II	3
Mil. Sc.	108	Military IV	1
		Physical Education	R
Total			15 or 16

JUNIOR

First Semester

Mod. Lang.	120	Tech. German III	3
Chem.	227	Organic Chemistry	5
An. Husb.	221	Genetics	3
Engl.	173	Amer. Literature I	3
		Elective	1
Engl.	169	English Proficiency	R
Total			15

Second Semester

Chem.	215A	Quant. Anal.	4
Zoöl.	219	Embryology	4
Ent.	203	Gen. Econ. Ent.	3
Psych.	184	Gen. Psychology	3
		Elective	1
Total			15

SENIOR

First Semester

Bot.	102	General Botany	5
		Elective	9
Total			14

Second Semester

Bact.	102	Bacteriology	5
Geol.	140	Prin. of Geog.	3
		Elective	6
Total			14

Curriculum in Business Administration

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	101	Man's Phys. World I	4	Comp.	102	Man's Phys. World II	4
Acctg.	133	Accounting I	3	Acctg.	134	Accounting II	3
Math.	151	General Algebra	5	Hist.	105	American Ind. History	3
Mil. Sc.	105	Military I	1			Option*	3
		Physical Education	R	Mil. Sc.	106	Military II	1
						Physical Education	R
Total			15 or 16	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Sp.	103	Oral Comm.	2	Psych.	184	General Psychology	3
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Econ.	101	Economics I	3	Econ.	104	Economics II	3
Engl.	122	Coml. Correspondence	3			Option*	3
Acctg.	280	Valuation Accounting	3 *or*			Elective†	2
Acctg.	287	Cost Accounting	3	Mil. Sc.	108	Military IV	1
Mil. Sc.	107	Military III	1			Physical Education	R
		Physical Education	R				
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Econ.	116	Money and Banking	3	Econ.	215	Bus. Org. and Finance	3
Math.	164	Elements of Statistics	3	Hist.	151	American Government	3
		Option*	3			Elective†	5
		Elective†	2				
Engl.	169	English Proficiency	R				
Total			15	Total			15

SENIOR

First Semester				Second Semester			
Econ.	214	Public Finance	3	Econ.	236	Bus. Adm. Summ.	2
Hist.	163	Business Law I	3	Hist.	164	Business Law II	3
		Elective†	9			Elective†	10
Total			15	Total			15

* Option 1. Accounting sequence: Math. 162, Mathematics of Finance; Acctg. 287, Cost Accounting or Acctg. 280, Valuation Accounting; Acctg. 281, Advanced Accounting. Option 2. Business sequence: Geol. 140, Principles of Geography; Soc. 151, Sociology; Econ. 246, Marketing.

† Elective 1. Accounting majors: Acctg. 294, Specialized Accounting; Acctg. 288, Advanced Cost Accounting; Acctg. 289, Government Accounting; Acctg. 286, Tax Accounting; eighteen hours of elective. Elective 2. Business majors: 10 hours of business courses; 18 hours of elective.

Curriculum in Citizenship Education

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	121	Man and Soc. World I	4	Sp.	103	Oral Comm.	2
Comp.	101	Man's Phys. World I	4	Comp.	122	Man and Soc. World II	4
Cit.	110	Freedom and Responsibility I	3	Comp.	102	Man's Phys. World II	4
Mil. Sc.	105	Military I	1	Cit.	111	Freedom and Responsibility II	3
		Physical Education	R	Mil. Sc.	106	Military II	1
						Physical Education	R
Total			15	Total			16

SOPHOMORE

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Cit.	101	Constitutional Democracy in America I	3	Cit.	102	Constitutional Democracy in America II	3
Econ.	101	Economics I	3	Psych.	184	Gen. Psychology	3
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			15	Total			15

JUNIOR

First Semester				Second Semester			
Educ.*	109	Educ. Psych.	3	*		Education elective	3
Cit.	205	Democ. and Education	3	Cit.	215	Democ., Justice, and the Law	3
		Am. Hist. elective	3	Soc.	151	Sociology	3
Hist.	140	Elementary Logic	3			Am. History elective	3
Hist.**	265	State and Local Politics and Administration	2	Hist.**	263	Federal Politics and Administration	2
		Elective	2			Elective	2
Engl.	169	English Proficiency	R				
Total			16	Total			16

SENIOR

First Semester				Second Semester			
*		Education elective	3	Educ.*	166	Teaching Participation in High School	3
Cit.	220	Pol. Economy and the Democratic State	3	**		History option	3
Cit.	235	Effective Citizenship	2	Cit.	225	War, Peace, and the World Community	3
Educ.	225	Methods in Citizenship Education	3	Govt.	206	Am. Political Parties	2
		Elective	5			Elective	5
Total			16	Total			16

* Those planning to teach will be required to take Education 109 and the additional courses in education, totaling 18 hours, necessary to meet the state requirements for the teaching certificate. Students not planning to teach will select one of the following alternatives:

(*a*) Substitute electives from *one* of the social sciences (history, government, economics, sociology, psychology) for the education courses and the education electives in the last two years. These courses will be selected under the guidance of the head of the department involved.

(*b*) Substitute electives from three fields in the social sciences, electing at least six hours in each of the three fields in addition to curricular requirements.

** History 208, 213, 226, 228, 236, or 256.

Curriculum in Geology (Applied)

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Chem.	101	Chemistry I	5	Chem.	103	Chemistry II Rec.	3
Geol.	103	General Geology	3	Chem.	104	Chemistry II Lab.	2
Math.	112	College Algebra	3	Geol.	203	Historical Geology	4
Mach. Des.	101	Engg. Drawing	2	Mach. Des.	106	Desc. Geometry	2
Mil. Sc.	105	Military I (men)	1	Math.	101	Plane Trigonometry	3
		Physical Education	R	Mil. Sc.	106	Military II (men)	1
						Physical Education	R
Total			16 or 17	Total			16 or 17

SOPHOMORE

First Semester				Second Semester			
Civ. Engg.	102	Surveying I	2	Math.	120	Plane Anal. Geom.	4
Phys.	102	General Physics I	4	Phys.	103	General Physics II	4
Sp.	103	Oral Comm.	2	Comp.	112	Biol. Rel. to Man II	4
Comp.	111	Biol. Rel. to Man I	4	Geol.	220	Invert. Paleontology	4
Geol.	209	Cryst. and Min.	4	Mil. Sc.	108	Military IV (men)	1
Mil. Sc.	107	Military III (men)	1			Physical Education	R
		Physical Education	R				
Total			16 or 17	Total			16 or 17

JUNIOR

First Semester				Second Semester			
Civ. Engg.	125	C. E. Drawing	2	Phys.	217	Geophysics	3
Geol.	230	Field Methods in Geol.	3	Geol.	215	Structural Geology	4
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Geol.	110	Physiographic Geology	3	Geol.	224	Strat. Geology	4
Engl.	169	English Proficiency	R			Elective	2
		Elective	5				
Total			17	Total			17

SENIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Geol.	204	Aerial Phototopography	3	Geol.	245	Applied Geology	3
Civ. Engg.	135	Highway Plans	5	Civ. Engg.	274	Highway Design	3
Ap. Mech.	135	Found. Materials	3			Elective	7
		Elective	2				
Total			17	Total			17

Curriculum in Industrial Chemistry

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Chem.	101	Chemistry I	5	Sp.	103	Oral Comm.	2
Math.	101	Plane Trigonometry	3	Chem.	103	Chemistry II Rec.	3
Math.	112	College Algebra	3	Chem.	105	Qual. Analysis	3
Mach. Des.	101	Engg. Drawing	2	Math.	120	Plane Anal. Geometry	4
Mil. Sc.	105	Military I (men)	1			Elective	2
Chem.	133	Ind. Chem. Seminar	R	Mil. Sc.	106	Military II (men)	1
		Physical Education	R	Chem.	133	Ind. Chem. Seminar	R
						Physical Education	R
Total			16 or 17	Total			16 or 17

SOPHOMORE

First Semester				Second Semester			
Chem.	211A	Quant. Analysis I	4	Chem.	212A	Quant. Analysis II	4
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Phys.	105	Engg. Physics I	5	Phys.	106	Engg. Physics II	5
Mod. Lang.	115	Tech. German I	3	Mod. Lang.	117	Tech. German II	3
Mil. Sc.	107	Military III (men)	1	Mil. Sc.	108	Military IV (men)	1
Chem.	133	Ind. Chem. Seminar	R	Chem.	133	Ind. Chem. Seminar	R
		Physical Education	R			Physical Education	R
Total			16 or 17	Total			16 or 17

JUNIOR

First Semester				Second Semester			
Chem.	223	Organic Chemistry I	5	Chem.	224	Organic Chemistry II	5
Chem.	260A	Phys. Chemistry I Rec.	3	Chem.	261	Phys. Chemistry II Rec.	3
Chem.	260B	Phys. Chemistry I Lab.	2	Chem.	262	Phys. Chemistry II Lab.	2
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Mod. Lang.	120	Tech. German III	3			Elective	3
Chem.	133	Ind. Chem. Seminar	R	Chem.	133	Ind. Chem. Seminar	R
Engl.	169	English Proficiency	R				
Total			17	Total			17

SENIOR

First Semester				Second Semester			
Chem.	216	Ind. Chem. Analysis	3	Chem.	297A	History of Chemistry	2
Comp.	111	Biol. in Rel. to Man I	4 *or*	Chem.	299	Problems in Chemistry	3
Comp.	131	Man and Cult. World I	4	Chem. Engg.	237	Chemical Technology	2
		Chemistry Elective	5	Comp.	112	Biol. in Rel. to Man II	4 *or*
		Elective	5	Comp.	132	Man and Cult. World II	4
Chem.	132	Inspection Trip	R			Elective	6
Chem.	133	Ind. Chem. Seminar	R	Chem.	133	Ind. Chem. Seminar	R
Total			17	Total			17

Curriculum in Industrial Journalism

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Sp.	103	Oral Comm.	2	Comp.	102	Man's Phys. World II	4
Comp.	101	Man's Phys. World I	4	Psych.	184	General Psychology	3
		Mod. Lang. or Soc. Sci.	6			Mod. Lang. or English	3
Mil. Sc.	105	Military I (men)	1			Option	3
Ind. Jour.	199	Ind. Jour. Lecture	R	Mil. Sc.	106	Military II (men)	1
		Physical Education	R	Ind. Jour.	199	Ind. Jour. Lecture	R
						Physical Education	R
Total			15 or 16	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Ind. Jour.	103	Graphic Arts Survey	2	Ind. Jour.	147	Reporting II	3
Ind. Jour.	104	Typography Lab.	1			Option	4
Ind. Jour.	146	Reporting I	3	Mil. Sc.	108	Military IV (men)	1
		Elective	1	Ind. Jour.	199	Ind. Jour. Lecture	R
Mil. Sc.	107	Military III (men)	1			Physical Education	R
Ind. Jour.	199	Ind. Jour. Lecture	R				
		Physical Education	R				
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Engl.	173	American Literature I	3	Ind. Jour.	166	Editing	2
Sp.	172	The Radio Talk	2 *or*	Ind. Jour.	272	History of Journalism	3
Ind. Jour.	162	Radio News	2 *or*	Ind. Jour.	267	The Woman's Page *or*	
Ind. Jour.	181	Rural Press	2 *or*	Ind. Jour.	234	Reporting III	3
Ind. Jour.	283	Pub. Inf. Methods	2			Option and elective	3
		Option	3	Ind. Jour.	199	Ind. Jour. Lecture	R
Ind. Jour.	177	Prin. of Advertising	3				
Ind. Jour.	199	Ind. Jour. Lecture	R				
Engl.	169	English Proficiency	R				
Total			15	Total			15

SENIOR

First Semester				Second Semester			
Ind. Jour.	269	Mag. Writing	2	Ind. Jour.	285	Interp. of Count. Aff.	3
Ind. Jour.	284	The Journ. in a Free Society	3			Option and elective	12
		English elective	3	Ind. Jour.	199	Ind. Jour. Lecture	R
		Option	7				
Ind. Jour.	199	Ind. Jour. Lecture	R				
Total			15	Total			15

Industrial option: 12 hours from one of groups 1 to 7 of elective lists.

Social Science option: In addition to Man and Social World I and II, student must have 15 hours in history, government, citizenship, economics, sociology, education, psychology, geography. See Public Relations (group nine) and Political Writing (group ten), for specialization in those fields.

Curriculum in Industrial Physics

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Chem.	101	Chemistry I	5	Sp.	103	Oral Comm.	2
Math.	101	Plane Trigonometry	3	Chem.	103	Chemistry II Rec.	3
Math.	112	College Algebra	3	Chem.	104	Chemistry II Lab.	2
Mil. Sc.	105	Military I	1	Hist.	105	American Ind. History	3
Phys.	299	Physics Colloquium	R	Math.	120	Plane Anal. Geometry	4
		Physical Education	R	Mil. Sc.	106	Military II	1
				Phys.	299	Physics Colloquium	R
						Physical Education	R
Total			14 or 15	Total			16 or 17

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Econ.	101	Economics I	3	Govt.	151	American Government	3 *or*
Math.	140	Calculus I	4	Psych.	184	General Psychology	3
Phys.	105	Engg. Physics I	5	Math.	141	Calculus II	4
Mil. Sc.	107	Military III	1	Phys.	106	Engg. Physics II	5
Phys.	299	Physics Colloquium	R	Mil. Sc.	108	Military IV	1
		Physical Education	R	Phys.	299	Physics Colloquium	R
						Physical Education	R
Total			16 or 17	Total			16 or 17

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Math.	201	Differential Equations	3	Phys.	227	Mechanics	3
Phys.	243	Light	3	Phys.	251	Elec. and Magnetism	3
Phys.	244	Light Laboratory	1	Phys.	255	Elec. and Magnetism Lab.,	1
Phys.	156	Interm. Phys.	3			Elective	6
		Elective	3	Phys.	299	Physics Colloquium	R
Phys.	299	Physics Colloquium	R				
Engl.	169	English Proficiency	R				
Total			17	Total			17

SENIOR

First Semester				Second Semester			
Math.	210	Adv. Calculus I	3	Math.	213	Adv. Calculus II	3
Phys.	270	Atomic Physics	3	Phys.	238	Heat and Thermo.	3
Phys.	288	Electronic Phys. I	4	Phys.	239	Heat Laboratory	1
Phys.	153	Lab. Technic	1	Phys.	271	Mod. Phys. Lab.	1
		Elective	6			Elective	9
Phys.	299	Physics Colloquium	R	Phys.	299	Physics Colloquium	R
Total			17	Total			17

Students who plan to enter graduate work should elect Mod. Lang. 115, 117, 120.

Curriculum in Music (Applied)

FRESHMAN

First Semester

		Course	Sem. Hrs.
Engl.	111	Written Comm. I	3
Comp.	101	Man's Phys. World I	4 *or*
Comp.	111	Biol. in Rel. to Man I	4
Mus.	125	Theory of Music I	3
		Music Major	4
		Music Minor	2
		Music Org. Option*	R
Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R
Mil. Sc.	105	Military I (men)	1
		Physical Education	R
Total			16 or 17

Second Semester

		Course	Sem. Hrs.
Engl.	112	Written Comm. II	2
Comp.	102	Man's Phys. World II	4 *or*
Comp.	112	Biol. in Rel. to Man II	4
Sp.	103	Oral Comm.	2
Mus.	126	Theory of Music II	3
		Music Major	4
		Music Minor	2
Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R
Mil. Sc.	106	Military II (men)	1
		Physical Education	R
Total			17 or 18

SOPHOMORE

First Semester

Comp.	131	Man and Cult. World I	4
Mod. Lang.	101	German I	3 *or*
Mod. Lang.	151	French I	3
Mus.	127	Theory of Music III	3
		Music Major	4
		Music Minor	2
		Music Org. Option*	R
Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R
Mil. Sc.	107	Military III (men)	1
		Physical Education	R
Total			16 or 17

Second Semester

Comp.	132	Man and Cult. World II	4
Mod. Lang.	102	German II	3 *or*
Mod. Lang.	152	French II	3
Mus.	128	Theory of Music IV	3
		Music Major	4
		Music Minor	2
		Music Org. Option*	R
Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R
Mil. Sc.	108	Military IV (men)	1
		Physical Education	R
Total			16 or 17

JUNIOR

First Semester

Comp.	121	Man and Soc. World I	4
Mod. Lang.	111	German III	3 *or*
Mod. Lang.	161	French III	3
Mus.	112	History of Music I	2
Mus.	137	Counterpoint I	2
Mus.	134	Instrumental Cond.	1
		Music Major	4
		Music Org. Option*	R
Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R
Engl.	169	English Proficiency	R
Total			16

Second Semester

Comp.	122	Man and Soc. World II	4
Psych.	184	General Psychology	3
Mus.	113	History of Music II	2
Mus.	138	Counterpoint II	2
		Music Major	4
Mus.	182	Junior Recital	1
		Music Org. Option*	R
Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R
Total			16

SENIOR

First Semester

Mus.	141	Mus. Form and Analysis	2
Mus.	114	Music Literature I	2
Mus.	143	Composition I	2
Mus.	149	Methods and Materials for the Studio	1
		Music Major	4
Mus.	178	Inst. Ensemble	1 *or*
Mus.	175	Vocal Ensemble	1
		Music Org. Option*	R
Mus.	181	Recital Attendance	R
		Elective	3
Total			15

Second Semester

Mus.	136	Inst. and Orch	3
Mus.	115	Music Literature II	2
Mus.	144	Composition II	2
Mus.	185	Practice Teach. Ap. Mus.,	1
		Music Major	4
Mus.	175	Vocal Ensemble	1 *or*
Mus.	178	Inst. Ensemble	1
Mus.	184	Senior Recital	2
		Music Org. Option*	R
Mus.	181	Recital Attendance	R
Total			15

* Musical organization to be selected on advice of the department.

Curriculum in Music Education

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Comp.	101	Man's Phys. World I	4 *or*	Comp.	102	Man's Phys. World II	4 *or*
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Mus.	125	Theory of Music I	3	Sp.	103	Oral Comm.	2
		Music Major	2	Mus.	126	Theory of Music II	3
		Music Minor	2			Music Major	2
Mus.	146	Orch. Inst. I	1			Music Minor	2
		Music Org. Option*	R	Mus.	147	Orch. Inst. II	1
Mus.	176	Piano Ensemble	R			Music Org. Option*	R
Mus.	181	Recital Attendance	R	Mus.	176	Piano Ensemble	R
Mil. Sci.	105	Military I (men)	1	Mus.	181	Recital Attendance	R
		Physical Education	R	Mil. Sci.	106	Military II (men)	1
						Physical Education	R
Total			15 or 16	Total			16 or 17

SOPHOMORE

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Psych.	184	General Psychology	3	Educ.	109	Educational Psychology	3
Phys.	119	Physics for Musicians	2	Mus.	128	Theory of Music IV	3
Mus.	127	Theory of Music II	3			Music Major	2
		Music Major	2			Music Minor	2
		Music Minor	2	Mus.	150	Orch. Inst. IV	1
Mus.	148	Orch. Inst. III	1			Music Org. Option*	R
		Music Org. Option*	R	Mus.	176	Piano Ensemble	R
Mus.	176	Piano Ensemble	R	Mus.	181	Recital Attendance	R
Mus.	181	Recital Attendance	R	Mil. Sci.	108	Military IV (men)	1
Mil. Sci.	107	Military III (men)	1			Physical Education	R
		Physical Education	R				
Total			17 or 18	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Educ.	139	Principles of Sec. Educ.,	3	Educ.	110	Meth. of Teach. in H. S.	3
Mus.	112	History of Music I	2	Mus.	113	History of Music II	2
Mus.	137	Counterpoint I	2	Mus.	138	Counterpoint II	2
Mus.	134	Inst. Conducting	1	Mus.	133	Choral Conducting	1
		Music Major	2			Music Major	2
Mus.	123	Inst. Methods I *or*		Mus.	124	Inst. Methods II *or*	
Mus.	142	School Music I	2	Mus.	145	School Music II	2
		Music Org. Option*	R			Music Org. Option*	R
Mus.	176	Piano Ensemble	R	Mus.	176	Piano Ensemble	R
Mus.	181	Recital Attendance	R	Mus.	181	Recital Attendance	R
Engl.	169	English Proficiency	R				
Total			16	Total			16

SENIOR

First Semester				Second Semester			
Educ.	129	Teach. Part. in Mus	2	Educ.	129	Teach. Part. in Mus	2
Educ.	202	Extraclass Activities	3 *or*	Educ.	228	Music Supervision	2
Educ.	230	Princ. and Prac. in Guid	3	Mus.	136	Inst. and Orch	3
Mus.	141	Mus. Form and Analysis	2			Music Major	2
Mus.	152	School Music III	2			Music Org. Option*	R
		Music Major	2	Mus.	181	Recital Attendance	R
		Music Org. Option*	R			Elective	7
Mus.	181	Recital Attendance	R				
		Elective	5				
Total			16	Total			16

* Musical organization to be selected on advice of the department.

Curriculum in Physical Education (Men)

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Sp.	103	Oral Comm.	2	Comp.	102	Man's Phys. World II	4
Comp.	101	Man's Phys. World I	4	Phys. Ed.	143	History of Phys. Ed.	2
Psych.	184	Gen. Psychology	3	Phys. Ed.	138	Phys. Ed. Act. II	2
Phys. Ed.	107	Intro. to Phys. Ed.	1	Zoöl.	105	General Zoölogy	5
Phys. Ed.	135	Phys. Ed. Activities I	2	Mil. Sc.	106	Military II	1
Mil. Sc.	105	Military I	1			Physical Education	R
		Physical Education	R				
Total			16	Total			16

SOPHOMORE

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Phys. Ed.	119	Personal Hygiene	2	Phys. Ed.	147	Community Hygiene	2
Phys. Ed.	145	Nat. and Fun. of Play	2	Phys. Ed.	132	Kinesiology	2
Phys. Ed.	139	Phys. Ed. Activities III	2	Zoöl.	221	Human Physiology	4
Zoöl.	123	Human Anatomy	5	Educ.	109	Educ. Psychology	3
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			16	Total			16

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Phys. Ed.	146	Admin. of Health and Phys. Educ.	3	Phys. Ed.	113	Athletic Injuries and First Aid	3
Educ.	139	Prin. of Sec. Educ.	3	Phys. Ed.	120	Swimming	1
		Sports Option*	4	Educ.	110	Meth. Tchg. in H. S.	3
		Elective	3			Sports Option*	2
Engl.	169	English Proficiency	R			Phys. Ed. Option†	2
Total			17	Total			15

SENIOR

First Semester				Second Semester			
Phys. Ed.	124	Health Examinations	3	Educ.	166	Tch. Part. in H. S.	3
Phys. Ed.	134	Pract. Tchg. in Phys. Ed.,	2	Phys. Ed.	142	Pub. Sch. Prog. in Phys. Ed.	2
		Education elective	3	Phys. Ed.	203	Community Recreation	2
		Elective	7			Elective	8
Total			15	Total			15

* Sports Option to be chosen from Physical Education 126, 127, 128, 129.

† Physical Education Option to be chosen from Physical Education 131, 148, 149, and course not selected in Sports Option.

Curriculum in Physical Education (Women)

FRESHMAN

First Semester			
		Course	*Sem. Hrs.*
Engl.	111	Written Comm. I	3
Sp.	103	Oral Comm.	2
Comp.	101	Man's Phys. World I	4
Phys. Ed.	161	Personal Hygiene W	2
Phys. Ed.	158A	Self Testing Activ.	2
Fds. Nutr.	121	Applied Nutrition	2
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

Second Semester			
		Course	*Sem. Hrs.*
Engl.	112	Written Comm. II	2
Comp.	102	Man's Phys. World II	4
Phys. Ed.	191	Rec. Leadership	2
Phys. Ed.	158B	Tumbling Rec. Sports	2
Zoöl.	105	General Zoölogy	5
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

SOPHOMORE

First Semester			
Psych.	184	General Psychology	3
Phys. Ed.	177	Plgnd. Mgmt. and Games,	3
Phys. Ed.	158C	Team Sports I	2
Zoöl.	123	Human Anatomy	5
Phys. Ed.	154	Fund. Rhythms	2
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

Second Semester			
Educ.	109	Educ. Psychology	3
Phys. Ed.	184	Kinesiology	2
Phys. Ed.	158E	Individual Activities	2
Zoöl.	221	Human Physiology	4
Bot.	110	Nat. and Dev. of Plants	3
		Elective	1
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

JUNIOR

First Semester			
Comp.	121	Man and Soc. World I	4
Educ.	139	Prin. of Sec. Educ.	3
Phys. Ed.	174	Health Exam. and First Aid	3
Phys. Ed.	179	Health Tchg. in H. S.	3
Phys. Ed.	158D	Team Sports II	2
Engl.	169	English Proficiency	R
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

Second Semester			
Comp.	122	Man and Soc. World II	4
Educ.	110	Meth. Tchg. in H. S.	3
Phys. Ed.	175	Therap. and Massage	3
Phys. Ed.	158F	Tap and Social Dance	2
Phys. Ed.	162	Prin. and Phil. of Phys. Ed.	3
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

SENIOR

First Semester			
Comp.	131	Man and Cult. World I	4
Phys. Ed.	188	Tchg. and Adapt. of P. E.,	3
Phys. Ed.	158G	Modern Dance	2
		Elective	6
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

Second Semester			
Comp.	132	Man and Cult. World II	4
Phys. Ed.	176	Org. and Adm. of P. E. W.,	2
Phys. Ed.	158H	Swimming and Archery	2
Educ.	166	Tch. Part. in H. S.	3
		Education electives	3
		Elective	1
Phys. Ed.	152	Phys. Ed. W. Lectures	R
		Physical Education	R
Total			15

Curriculum in Physical Science

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Chem.	101	Chemistry I	5	Sp.	103	Oral Comm.	2
Geol.	103	General Geology	3	Chem.	103	Chemistry II Rec.	3
Math.	112	College Algebra	3	Math.	101	Plane Trigonometry	3
		Elective	1			Elective	5
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Psych.*	184	General Psychology	3	Econ.*	101	Economics I	3
Math.*	120	Plane Anal. Geometry	4	Math.*	140	Calculus I	4
Phys.	102	General Phys. I	4	Phys.	103	General Physics II	4
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
		Elective and major	11	Hist.	151	American Government	3
Engl.	169	English Proficiency	R			Elective and major	8
Total			15	Total			15

SENIOR

First Semester		Second Semester	
Elective and major	15	Elective and major	15

Majors:

Geology: Geol. 110, 215, 220, 230, and 7 selected hours.

Mathematics: Math. 141, 201, and 9 hours selected from 210, 240 or 241 or 242, and 253 or 254 or 255 or 256.

Physics: Phys. 220, 227, 238, 240, 243, 244, 251, 255. Seniors enroll for Phys. 299 for two semesters.

Statistics: Math. 201, 210, 268, 269 and 7 hours selected from Math. 213, 241, 261, 262, 267.

Chemistry: Chem. 104, 211A, 212A, 223, 224, 260A, 260B, 261.

A nine hour proficiency in German is urged but not required.

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* Statistics majors replace Psych. 184 by Math. 164. Geology majors replace Math. 120, 140 by Geol. 203, 209.

Curriculum in Physical Science

Geophysics Option

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Chem.	101	Chemistry I	5	Sp.	103	Oral Comm.	2
Math.	101	Plane Trigonometry	3	Chem.	103	Chem. II Rec.	3
Math.	112	College Algebra	3	Chem.	104	Chem. II Lab.	2
		Elective	1	Mach. Des.	101	Engg. Draw.	2
Mil. Sc.	105	Military I	1	Math.	120	Plane Anal. Geometry	4
		Physical Education	R	Mil. Sc.	106	Military II	1
						Physical Education	R
Total			16	Total			16

SOPHOMORE

First Semester				Second Semester			
Comp.	111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Geol.	103	Gen. Geology	3	Mod. Lang.	176	Spanish I	3
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Phys.	105	Engg. Physics I	5	Phys.	106	Engg. Physics II	5
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
		Physical Education	R			Physical Education	R
Total			17	Total			17

JUNIOR

First Semester				Second Semester			
Geol.	203	Historical Geology	4	Geol.	215	Structural Geology	4
Math.	201	Differential Equations	3	Mod. Lang.	180	Spanish III	3
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Elec. Engg.	102	Elec. Engg. C Rec.	2	Phys.	251	Elec. and Mag.	3
Elec. Engg.	106	Elec. Engg. C Lab.	1	Phys.	255	Elec. and Mag. Lab.	1
Mod. Lang.	177	Spanish II	3	Civ. Engg.	102	Surveying I	2
Engl.	169	English Proficiency	R				
Total			17	Total			17

SENIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Phys.	217	Geophysics	3	Phys.	288	Electronic Physics I	4
Geol.	223	Petroleum Geology	4	Geol.	204	Aerial Phototopography	3
Hist.	167	Law for Engineers	2	Geol.	230	Field Methods	3
		Elective	4			Elective	3
Total			17	Total			17

Preveterinary Curriculum

In the Preveterinary Curriculum the student must select at least eight elective hours from the following courses: Elementary Logic, 3 semester hours; Philosophy of Science I, 3 hours; American Industrial History, 3 hours; Freedom and Responsibility I and II, 3 hours each; Contemporary World History, 2 hours; and Economics I and II, 3 hours each.

For the four professional years, see School of Veterinary Medicine.

FRESHMAN

First Semester

		Course	Sem. Hrs.
Comp.	131	Man and Cult. World I	4
Chem.	101	Chemistry I	5
Engl.	111	Written Comm. I	3
Sp.	103	Oral Comm.	2
Mil. Sc.	105	Military I (men)	1
		Physical Education	R
		Elective	2 or 3
Total			17 or 18

Second Semester

		Course	Sem. Hrs.
Comp.	132	Man and Cult. World II	4
Zoöl.	105	General Zoölogy	5
Chem.	103	Chemistry II Rec.	3
Chem.	104	Chemistry II Lab.	2
Engl.	112	Written Comm. II	2
Mil. Sc.	106	Military II (men)	1
		Physical Education	R
Total			17

SOPHOMORE

First Semester

Comp.	121	Man and Soc. World I	4
Chem.	227	Organic Chemistry	5
Zoöl.	219	Embryology	4 *or*
		Elective	3 or 4
Phys.	124	Descrip. Physics	4 *or*
An. Husb.	221	Genetics	3
Mil. Sc.	107	Military III (men)	1
		Physical Education	R
Total			16 or 17

Second Semester

Comp.	122	Man and Soc. World II	4
Poul. Husb.	104	Fm. Poult. Prod. Rec.	2
Poul. Husb.	105	Fm. Poult. Prod. Lab.	1
Zoöl.	219	Embryology	4 *or*
		Elective	4
Phys.	124	Descrip. Physics	3 *or*
An. Husb.	221	Genetics	3
		Elective	2 or 3
Mil. Sc.	108	Military IV	1
		Physical Education	R
Total			17 or 18

Groups of Electives for Students in the School of Arts and Sciences

1. Applied Science

For industrial option in the Curriculum in Industrial Journalism.

Soils, Agron. 130 4
General Microbiology, Bact. 101 3
Bact. of Hum. Dis., Bact. 206 5
General Botany, Bot. 102 5
Nature and Dev. of Plants, Bot. 110 3
Hort. Fruit Diseases, Bot. 207 3
Plant Pathology I, Bot. 205 3
Plant Ecology, Bot. 229 3
Field Crop Diseases, Bot. 237 3
Gen. Org. Chemistry, Chem. 122 5
Chemistry of Milk, Chem. 275A 3
Gen. Entomology, Ent. 102 3
Hort. Entomology, Ent. 201 2
Gen. Economic Ent., Ent. 203 3
Staple Crop Ent., Ent. 206 3
General Apiculture, Ent. 208 3
Ap. Nutr., Foods and Nutr. 121 2
Physiographic Geol., Geol. 110 3
Prin. of Geography, Geol. 140 3
Historical Geology, Geol. 203 4
Economic Geology, Geol. 207 4
Cryst. and Min., Geol. 209 4
Sedimentary Petrology, Geol. 236 5
Vert. Paleontology, Geol. 255 3
Micropaleontology, Geol. 256 3
El. of Horticulture Rec., Hort. 104 2
El. of Horticulture Lab., Hort. 105 1
Small Fruits, Hort. 108 2
Farm Forestry, Hort. 114 3
Landscape Gardening, Hort. 125 3
Household Physics, Phys. 109 4
Des. Astronomy, Phys. 141 3
Intro. Meteorology, Phys. 146 3
Photography, Phys. 151 2
General Zoölogy, Zoöl. 105 5
Animal Parasitology, Zoöl. 208 3
Embryology, Zoöl. 219 4
Endocrinology, Zoöl. 247 3

2. Home Economics

For industrial option in the Curriculum in Industrial Journalism.

Elementary Design I, Art 150 2
Costume Design I, Art 164 2
Principles of Art I, Art 201 3
Principles of Art II, Art 202 3
Child Guidance I, Child Welf. 201 3
The Family, Child Welf. 220 3
Fund. of Clothing, Clo. and Text. 104 2
App. Dress Des., Clo. and Text. 114 3
Adv. Dress Design, Clo. and Text. 211 3
Foods I, Foods and Nutr. 102 5
App. Nutrition, Foods and Nutr. 121 2
The House, Household Econ. 115 3
Family Finance, Household Econ. 223 2
Econ. Probs. of the Family, Household Econ. 265 2

3. Agriculture

For industrial option in the Curriculum in Industrial Journalism.

Farm Crops, Agron. 110 3
Soils, Agron. 130 4
El. of An. Husb., An. Husb. 126 2
Prin. of Feeding, An. Husb. 152 3
Genetics, An. Husb. 221 3
General Botany, Bot. 102 5
Plant Pathology I, Bot. 205 3
Field Crop Diseases, Bot. 237 3
Gen. Org. Chemistry, Chem. 122 5
El. of Dairy., Dairy Husb. 101 3
Dairy Cattle Judging, Dairy Husb. 105 2
El. of Horticulture Rec., Hort. 104 2
El. of Horticulture Lab., Hort. 105 1
Farm Poultry Prod., Poul. Husb. 104 2
Fm. Poul. Prod. Lab., Poul. Husb. 105 1

4. Drawing and Art

For industrial option in the Curriculum in Industrial Journalism.

Freehand Drawing I, Arch. 112 2
Freehand Drawing II, Arch. 113 2
Pen. Sketch., Arch. 116 2
Still-life Drawing, Arch. 117 2
Water Color I, Arch. 118 2
Water Color II, Arch. 119 2
Life Drawing I, Arch. 121 2
Life Drawing II, Arch. 123 2
Domestic Architecture, Arch. 124 2
Apprec. of Arch., Arch. 125 3
Clay Modeling, Arch. 133 2
Pen and Ink Drawing, Arch. 134 2
Block Prints, Arch. 137 2
Commercial Illus. I, Arch. 165 2
Commercial Illus. II, Arch. 170 2
Hist. Paint. and Sculp., Arch. 179 3
Adv. Freehand Drawing, Arch. 201 ..... Cr. Ar.
Etching, Arch. 217 2
Oil Painting, Arch. 230 ..... Cr. Ar.
Elementary Design I, Art 150 2
Elementary Design II, Art 152 2
Design in Crafts I, Art 183 2
Intermediate Design, Art 154 2
Advanced Design, Art 105 2
Weaving I, Art 189 2
Pottery Design, Art 187 2
Interior Decoration I, Art 169 2
Interior Decoration II, Art 171 2
Interior Decoration III, Art 117 2
Drawing I, Art 178 2
Drawing II, Art 180 2
Lettering, Art 156 2
Costume Design I, Art 164 2
Costume Design II, Art 166 2
Costume Design III, Art 138 2
Principles of Art I, Art 201 3
Principles of Art II, Art 202 3
Costume Illustration, Art 212 2
Problems in Design, Art 217 ..... Cr. Ar.
Probs. in Interior Decoration, Art 232, Cr. Ar.
Historic Textiles Design, Art 234 2
Probs. in Costume Design, Art 235 ..... Cr. Ar.
Arts of Mexico, Art 244 2
Art of Prim. People, Art 245 2

5. Manual and Industrial Arts

For industrial option in the Curriculum in Industrial Journalism.

Farm Building, Agric. Engg. 101	3
Farm Machinery, Agric. Engg. 108	3
Gas Eng. and Tract., Agric. Engg. 130	3
Surveying I, Civ. Engg. 102	2
Engg. Drawing, Mach. Des. 101	2
Des. Geom., Mach. Des. 106	2
Mach. Drawing I, Mach. Des. 111	2
Shop A, Shop 102	2
Elem. Crafts for Teachers, Shop 118	2
Woodwork I, Shop 121	2
Finishing I, Shop 122	2
Woodwork II, Shop 126	2
Woodwork III, Shop 131	2
Woodturning, Shop 135	2
Woodwork IV, Shop 139	2
Carpentry, Shop 147	3
Forging and Heat Treating, Shop 150	1
Blacksmithing, Shop 157	1
Foundry I, Shop 161	1
Metals and Alloys, Shop 165	2
Welding, Shop 166	1
Electric Welding, Shop 167	1
Gas Welding, Shop 168	1
Machine Tool I, Shop 170	2
Sheet Metal I, Shop 173	2
Machine Tool II, Shop 192	2
Machine Tool III, Shop 193	1
Adv. Shop Practice, Shop 261	Cr. Ar.
Metallography I, Shop 262	1

6. Printing

For industrial option in the Curriculum in Industrial Journalism.

Ad Typog. 1, Prtg. 108	2
Ad Typog. II, Prtg. 111	2
Ad Typog. III, Prtg. 112	2
Job Comp. I, Prtg. 114	2
Job Comp. II, Prtg. 118	2
Job Comp. III, Prtg. 120	2
Press Work I, Prtg. 122	2
Press Work II, Prtg. 126	2

7. Radio Broadcasting

For industrial option in the Curriculum in Industrial Journalism.

Radio News, Ind. Jour. 162	2
Radio Advertising, Sp. 179	3
Broadcast, Musical Programs, Mus. 119	2
Apprec. of Music, Mus. 117	2
Survey of Broadcasting, Sp. 163	2
Radio Speech I, Sp. 165	2
Radio Continuity, Sp. 167	3
Radio Program Participation, Sp. 168	1
Radio Production I, Sp. 231	2
Radio Production II, Sp. 233	2
Radio Speech II, Sp. 234	2
Radio Programming, Sp. 240	2
Radio Writing I, Sp. 243	3
Radio Writing II, Sp. 244	3

8. Social Science

For social science option in the Curriculum in Industrial Journalism.

Money and Banking, Econ. 116	3
Business Management, Econ. 126	2
Economic Systems, Econ. 210	2
Public Finance, Econ. 214	3
Bus. Org. and Finance, Econ. 215	3
Investments, Econ. 222	3
Credits and Coll., Econ. 223	2
International Trade, Econ. 224	2
Prin. of Trans., Econ. 230	3
Labor Economics I, Econ. 237	3
Property Insurance, Econ. 242	2
Life Insurance, Econ. 244	2
Marketing, Econ. 246	3
Sales Management, Econ. 247	3
Problems in Economics, Econ. 248	Cr. Ar.
Social Pathology, Soc. 258	3
Com. Org. and Lead., Soc. 267	3
Adv. Sociology, Soc. 273	3
Develop. of Soc. Thought, Soc. 277	3
Problems in Sociology, Soc. 279	Cr. Ar.
Cont. World History, Hist. 125	2
Current History, Hist. 126	1
U. S. Before 1865, Hist. 127	3
U. S. Since 1865, Hist. 128	3
Cont. Govts., Govt. 154	3
Business Law I, Govt. 163	3
Business Law II, Govt. 164	3
Early Americas, Hist. 201	3
New American Nation, Hist. 203	3
American Pol. Parties, Govt. 206	2
Latin-America Nations, Hist. 208	3
World Cultures I, Hist. 209	3
World Cultures II, Hist. 210	3
Modern England, Hist. 211	3
Europe Since 1870, Hist. 212	3
Russia and Soviet Union, Hist. 213	3
History of Marriage and the Family, Hist. 225	3
British Empire, Hist. 226	2
American Dip. History, Hist. 227	3
History of Religion, Hist. 232	3
Far East, Hist. 236	3
Amer. Thgt. and Institutions, Hist. 249	3
Comp. Govt., Govt. 252	2
City Govt., Govt. 253	3
International Law, Govt. 256	2
Govt. and Business, Govt. 260	2
Probs. in Hist. and Govt., Hist. 270	Cr. Ar.
Land Law, Govt. 276	2

9. Public Relations

For social science option in the Curriculum in Industrial Journalism. Students electing the group should take Mathematics in Human Affairs or Elements of Statistics, Public Information Methods, Formation of Public Opinion and 10 additional hours.

Freedom and Respons. I, Cit. 110	3
Amer. Democ. Ideas, Cit. 210	3
Labor Econ. I, Econ. 237	3
Statistic. Meth. in Educ., Educ. 223	3
Oral Enlish, Engl. 232	3
Amer. Govt., Govt. 151	3
Amer. Pol. Parties, Govt. 206	2
Amer. Ind. Hist., Hist. 105	3
U. S. Before 1865, Hist. 127	3
U. S. Since 1865, Hist. 128	3
Elementary Logic, Phil. 140	3
Recent Pol. Philosophies, Phil. 222	2
American Diplomatic Hist., Hist. 227	3
News Photography, Ind. Jour. 149	2
Radio Advertis., Sp. 179	3
Public Inform. Meth., Ind. Jour. 183	2
Form. of Pub. Opinion, Ind. Jour. 230	3
Trade and Tech. Writ., Ind. Jour. 288	2
Math. in Human Affs., Math. 103	3
Elem. of Statistics, Math. 164	3
Psych. of Advertis. and Sell., Psych. 265,	3
Social Psych., Psych. 270	3
Psych. of Personnel Mgt., Psych. 273	3
Social Pathology, Soc. 258	3
Community Organ. and Ldrship., Soc. 267,	3
Develop. of Social Thought, Soc. 277	3
Public Discussion, Sp. 226	2

10. Political Writing

For social science option in Industrial Journalism. Citizenship 110 and 111. Freedom and Responsibility, should be taken before any other course is elected. The student should elect 9 hours in addition to Citizenship 110 and 111.

Const. Dem. in Amer. I, Cit. 101	3
Const. Dem. in Amer. II, Cit. 102	3
Freedom and Respons. I, Cit. 110	3
Freedom and Respons. II, Cit. 111	3
Democracy and Educ., Cit. 205	3
Demo. Justice and Law, Cit. 215	3
Polit. Econ. and Democ. State, Cit. 220	3
War, Peace, and Wld. Comm., Cit. 225	3
Effective Citizenship, Cit. 235	2
Amer. Pol. Parties, Govt. 206	2
Federal Pol. and Admin., Govt. 263	2
State, Local Pol. and Admin., Govt. 265,	2

11. Personnel Management

Economics II, Econ. 104	3
Business Management, Econ. 126	2
Prin. of Accounting, Acct. 136	3
Business Org. and Finance, Econ. 215	3
Labor Economics I, Econ. 237	3
Social Pathology, Soc. 258	3
Com. Org. and Lead., Soc. 267	3
Advanced Sociology, Soc. 273	3
Stat. Meth. App. to Educ., Educ. 223	3
Prin. and Pract. of Guidance, Educ. 230,	3
Vocational Education, Educ. 241	3
Group Psychological Testing, Psych. 260,	3
Individual Psych. Testing, Psych. 261	3
Psych. of Adv. and Selling, Psych. 265	3
Social Psychology, Psych. 270	3
Psych. of Personnel Mgmt., Psych. 273	3
Prin. and Tech. of Counseling, Psych. 271,	3
Pers. Mgt. Practicum, Psych. 280	Cr. Ar.

12. Social Welfare Work

Personal Health, Child Welf. 101	2
Child Guid. I, Child Welf. 201	3
Child Guid. II, Child Welf. 203	3
Family Health, Child Welf. 211	3
The Family, Child Welf. 220	3
Fund. of Clothing, Clo. and Text. 113	2
Economics I, Econ. 101	3
Economics II, Econ. 104	3
Sociology, Soc. 151	3
Rural Sociology, Soc. 156	3
Labor Economics I, Econ. 237	3
Social Pathology, Soc. 258	3
Com. Org. and Lead., Soc. 267	3
Advanced Sociology, Soc. 273	3
General Psychology, Psych. 184	3
Psychology of Childhood and Adoles., Psych. 250	3
Abnormal Psychology, Psych. 254	3
Social Psychology, Psych. 270	3
Psych. and Pers. Mgmt., Psych. 273	3
Foods I, Foods and Nutr. 102	5
The House, Hsld. Econ. 115	3
Home Mgmt., Hsld. Econ. 240	3
Heredity and Eugenics, Zoöl. 216	2

13. Special Business Electives

Investments, Econ. 222	3
Credits and Coll., Econ. 223	2
International Trade, Econ. 224	2
Prin. of Trans., Econ. 230	3
Labor Economics I, Econ. 237	3
Property Insurance, Econ. 242	2
Life Insurance, Econ. 244	2
Problems in Econ., Econ. 248	Cr. Ar.
Social Pathology, Soc. 258	3
Pop. and Human Ecology, Soc. 259	2
Family and Society, Soc. 261	3
Com. Org. and Lead., Soc. 267	3
Adv. Sociology, Soc. 273	3
Develop. of Soc. Thought, Soc. 277	3
Advanced Accounting, Acctg. 281	3
Tax Accounting, Acctg. 286	3
Cost Accounting, Acctg. 287	3
Adv. Cost Accounting, Acctg. 288	2
Govt. Accounting, Acctg. 289	2
Auditing, Acctg. 291	3
C. P. A. Problems, Acctg. 292	3
Spec. Accounting, Acctg. 294	3
Psych. of Adv. and Selling, Psych. 265	3
Writ. and Oral Sales, Engl. 123	3
Adv. Prob. in Coml. Corr., Engl. 223	3
International Law, Govt. 256	2
Govt. and Business, Govt. 260	2
Land Law, Govt. 276	2
Prin. of Adv., Ind. Jour. 177	3
Math. of Finance, Math. 162	3

Comprehensive Courses

101. Man's Physical World I. 4 semester hours. Each semester.
Prerequisite: One unit each of high school algebra and plane geometry.

102. Man's Physical World II. 4 semester hours. Each semester.
Prerequisite: Compr. 101. These courses cover all the nonliving phases of man's total environment. They are designed to provide students with a brief working knowledge of the subject matter of the physical science fields commonly designated as astronomy, geology, physics, and chemistry. The contributions of physical science and mathematics to the development of western civilizations are frequently ignored in the thinking of educated people. Probably the greatest intellectual achievement of the race has been the invention and perfection of the scientific method. To enable students to appreciate what the scientific method is, and what it has done for us philosophically as well as practically, is the chief objective of these courses. Man's application of the scientific method to the study of the physical factors of his environment has released some of the peoples of the earth from the world of superstition, dogmatism, and drudgery of the past. Americans have been leaders in the machine age, in part because they have understood, controlled, and worked with machines rather than being controlled by them. This skill is one of the by-products of the application of the scientific method to daily living. The ultimate goal of these courses is to give a picture of not only the practical and utilitarian achievements of physical science but also its impact on the life of the mind and its repercussion on the social structure.

111. Biology in Relation to Man I. 4 semester hours. Each semester.

112. Biology in Relation to Man II. 4 semester hours. Each semester.
Prerequisite: Compr. 111. Fundamental relationships between plants and animals and other environmental factors. The structure of representative plants and animals, including man, is presented in some detail so that growth, food manufacture and utilization, reproduction, digestion, assimilation, circulation, respiration, and other life processes may be understood and their importance appreciated; also the relationship of structure to heredity and behavior. Principles which govern the classification and identification of various plants and animals are studied. The economic importance, both positive and negative, of plants and animals is considered; the relation of lower plants and animals to food production, food destruction, disease in lower plants and animals, and how these ravages may be controlled; the utilization, propagation, and conservation of plants and animals useful to man; and finally, a detailed study of man himself—his anatomy, functioning, heredity, and future as a member of the community and the nation. Life is interpreted as an integrative process which results in a dynamic whole.

121. Man and the Social World I. 4 semester hours. Each semester.

122. Man and the Social World II. 4 semester hours. Each semester.
Prerequisite: Compr. 121. Fundamental characteristics of the society in which man lives. The courses are intended to give an understanding of the part man plays in his relations with his neighbors and the broad relations among the peoples of his nation and the peoples of the world. Attention is called to the constantly changing relations among individuals and the many ways in which these changes affect individuals. The social, economic, and political institutions and practices of America are presented, and the student has an opportunity to compare them with the institutions and practices found in other parts of the world. The courses are intended to develop a keen sense of the responsibilities and duties of a citizen, and a desire to participate actively in the affairs of the community.

131. Man and the Cultural World I. 4 semester hours. Each semester.

132. Man and the Cultural World II. 4 semester hours. Each semester.
Prerequisite: Compr. 131. An orientation to the world's cultures, approached from the standpoints of each culture's history, philosophy and religion, literature, music, art, and architecture. Emphasis is laid upon the outstanding phases of western culture and civilization from primitives times until the present day. Primary attention is directed to the following phases of culture: (1) Primitive Phase: Simple culture of the Stone Age, and complex cultures of Egyptians, Babylonians, and ancient Americans; (2) Classical Phase: Cultures of Semites, Persians, Indians, Chinese, Greeks and Romans; (3) Post-Classical or Medieval Phase: Cultures of Europeans, Byzantines, Moslems, Hindus, and Confucians; (4) Modern Phase of European Culture: Developments; Renaissance, Reformation, scientific revolution, baroque art, Age of Reason, Romantic Age, and revolutions; industrial, social, and political; (5) Recent and Contemporary Age of Culture: Industry, invention, and science; world contacts; new knowledge, doctrines, policies, philosophies; developments in literature, art, architecture, etc.; cultural interdependence. Three hours of lecture and two of recitation a week each semester.

Bacteriology

PERCY L. GAINEY, *Head of Department*

For a minor, course 102, or equivalent, and 10 semester hours' credit in the 200 course group.

For a major, course 102, or equivalent, and a minimum of 20 semester hours' credit in the 200, or higher, course group.

FOR UNDERGRADUATE CREDIT

101. General Microbiology. 3 semester hours. Each semester and summer.
Morphology, physiology, and biology, classification, culture, and distribution of microörganisms; principles of applied microbiology. One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 103 or 110.

102. Bacteriology. 5 semester hours. Second semester and summer.
General characteristics and methods of cultivation and identification of bacteria and closely related organisms. Three hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 103 or 110.

103. Veterinary Microbiology. 3 semester hours. First semester.
Morphology, physiology, biology, and classification of microörganisms; cultural and staining technic; microbiology in dairy sanitation and inspection. One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 246.

105. Agricultural Microbiology. 3 semester hours. Each semester.
For students in the School of Agriculture. Students who expect to take Bact. 202 or 212 should take Bact. 101 or equivalent. Sterilization and disinfection; microbial analyses of water, milk, and soil. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 103.

112. Pathogenic Bacteriology and Virology. 4 semester hours. Second semester.
Continuation of Bact. 103. Microörganisms and viruses which cause infectious diseases of domesticated animals. Two hours of recitation and six hours of laboratory a week. Prerequisite: Bact. 103.

117. Veterinary Immunology. 3 semester hours. First semester.
Principles of immunology; preparation of antisera, antigens, and vaccines; serodiagnosis of infectious diseases. One hour of recitation and six hours of laboratory a week. Prerequisite: Bact. 112.

126. Water and Sewage Bacteriology. 3 semester hours. First semester.
Water purification, analyses of water supplies, role of microörganisms in sewage disposal. One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 108.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Soil Microbiology. 3 semester hours. Second semester.
Microbial population of the soil and its role in soil fertility. Prerequisite: Bact. 101 or 102.

204. Soil Microbiology Laboratory. 2 semester hours. Second semester.
Laboratory experiments illustrative of theories developed in Bact. 202. Six hours of laboratory a week. Prerequisite: Bact. 202 or concurrent registration.

206. Bacteriology of Human Diseases. 5 semester hours. First semester.
Pathogenic bacteria and their role in human diseases. Three hours of recitation and six hours of laboratory a week. Prerequisite: Bact. 101 or 102.

212. Dairy Bacteriology. 3 semester hours. Second semester.
Bacteriology of milk and milk products. Prerequisite: Bact. 101, 102, or 103.

213. Dairy Bacteriology Laboratory. 2 semester hours. Second semester.
Laboratory experiments illustrative of theories developed in Bact. 212. Six hours of laboratory a week. Prerequisite: Bact. 212 or concurrent registration.

217. Poultry Diseases. 2 semester hours. Second semester.
Anatomy of domestic fowls; poultry sanitation and hygiene; infectious and noninfectious diseases of fowls; parasites; minor surgery. Prerequisite: Bact. 112.

218. Poultry Sanitation. 3 semester hours. Second semester.
Methods of control of poultry diseases. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bact. 101, 102, or 105.

222. Physiology of Microörganisms. 3 semester hours. First semester.
Chemistry and physics of microbial processes. Prerequisite: Bact. 101 or 102 and Chem. 122.

225. Bacteriological Technic. 3 semester hours. First semester.
Technic of laboratory manipulations; fundamental experiments and special experiments selected according to the interest of the student. Nine hours of laboratory a week. Prerequisite: Bact. 101 or 102.

229. Immunology. 5 semester hours. Second semester.
Principles of immunology; preparation, purification and standardization of biological products employed in human and veterinary medicine. Three hours of recitation and six hours of laboratory a week. Prerequisite: Bact. 206.

240. Determinative Bacteriology. 3 semester hours. First semester.
Isolation and identification of unkown bacteria. One hour of recitation and six hours of laboratory a week. Prerequisite: Bact. 101 or 102.

244. Microbial Fermentations. 2 semester hours. Second semester.
Microbiology and chemistry of fermentation processes. Prerequisite: Bact. 101 or 102.

248. Food and Sanitary Bacteriology. 5 semester hours. First semester.
Bacteriology and sanitation of foods, processing, spoilage, poisoning and fermentations; analyses of fresh processed and spoiled foods, water and beverages. Three hours of recitation and six hours of laboratory a week. Prerequisite: Bact. 101 or equivalent.

270. Problems in Bacteriology. Credit to be arranged. Each semester and summer.
Work is offered in: Dairy, foods, poultry diseases, soils, physiology and sanitation. Prerequisite: Bact. 101 or equivalent.

275. Bacteriology Seminar. 1 semester hour. Each semester.
Prerequisite: Consult instructor in charge.

FOR GRADUATE CREDIT

301. Research in Bacteriology. Credit to be arranged. Each semester and summer.
Work is offered in: Dairy, foods, poultry diseases, soils, and physiology. Prerequisite: A minor or equivalent in this department.

Botany and Plant Pathology

LEO E. MELCHERS, *Head of Department*

For a minor, the following courses should be completed: Nine credit hours of courses in the 200 group, in addition to 102.

For a major, in addition to the minor, the following courses should be completed: Ten or more credit hours in the 200 group, subsequent to the minor courses.

FOR UNDERGRADUATE CREDIT

102. General Botany. 5 semester hours. Each semester and summer.
Plant groups and their evolutionary development. Physiology, anatomy, ecology, and identification of seed plants. Economic applications. Three hours of recitation and six hours of laboratory a week.

110. Nature and Development of Plants. 3 semester hours. Second semester and summer.
Structure, life processes, identification, classification, evolutionary development, geographical distribution, and economic importance of plants. Not open to students who have credit in Bot. 102.

126. Medical Botany. 2 semester hours. First semester.
Stock-poisoning plants of the range; habitat, poisonous properties, and methods of control and elimination of native poisonous plants. One hour of recitation and three hours of laboratary a week. Prerequisite: High school botany or equivalent.

127. Plant Diseases. 3 semester hours. First semester.
Symptoms and control of common diseases of garden, orchard, and field crops. Two hours of recitation and three hours of laboratory a week. For students in the Two-year Curriculum in Agriculture.

FOR GRADUATE AND UNDERGRADUATE CREDIT

205. Plant Pathology I. 3 semester hours. First semester and summer.
Important diseases of crops and the organisms which cause them. Two hours of recitation and three hours of laboratory a week. Prerequisite: Bot. 102.

206. Morphology of the Fungi. 3 semester hours. First semester.
Structure of slime molds, moldlike bacteria, and fungi studied to determine taxonomic relationships. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 102.

207. Horticultural Crop Diseases. 3 semester hours. Second semester.
Major diseases of fruit and vegetable crops and ornamental plants; their causes, symptoms, and control. One hour of recitation and six hours of laboratory a week. Prerequisites: Bot. 205.

208. Plant Physiology I. 3 semester hours. First semester.
The plant cell, solutions and membranes in relation to the cell, root systems, intake of water, intake of solutes, elements used, and loss of water. Prerequisite: Bot. 102, Chem. 125 or concurrent registration.

210. Plant Physiology II. 3 semester hours. Second semester.
Methods used to obtain data which concern common functions of plants. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 208.

211. Plant Physiology III. 3 semester hours. Second semester.
Continuation of Bot. 208, including photosynthesis, nitrogen metabolism, fat metabolism, digestion, translocation, respiration, and growth. Prerequisite: Bot. 208.

217. Botanical Microtechnic. 3 semester hours. Second semester.
Preparation of plant materials for histological or cytological study. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 102.

219. Field Botany. 3 semester hours. Summer.
Identification and classification of seed plants. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 102.

220. Botany Seminar. 1 semester hour. Each semester.
Reports of investigational work or other matters of interest in the various branches of botany. Prerequisite: Consult head of department.

225. Taxonomic Botany of the Flowering Plants. 3 semester hours. First semester.
Systems of classification; identification of plants in the field and in the laboratory; orders and families of plants. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 102.

229. Plant Ecology. 3 semester hours. Second semester.
Structure and dynamics of vegetation. Field trips. Prerequisite: Bot. 102.

232. Problems in Botany. Credit to be arranged. Each semester and summer.
Work is offered in: Anatomy, cytogenetics, cytology, ecology, microtechnic, morphology, mycology, pathology, physiology and taxonomy. Prerequisite: Bot. 102 and consent of instructor.

237. Field Crop Diseases. 3 semester hours. Second semester.
Diseases of cereal and forage crops; their causes, life histories, symptoms, and control. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 205.

238. Disease Resistance in Plants. 3 semester hours. Second semester.
Plant pathogens in relation to host plant; the cause of resistance; varieties of cereal, forage crops, fruits, and vegetables resistant to disease; breeding disease-resistant crops. Prerequisite: Bot. 205.

251. Anatomy of Higher Plants. 3 semester hours. Second semester.
Structure and development of the various tissues and organs of seed plants. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 102.

266. Literature of Botany. 2 semester hours. Each semester and summer.
Current botanical publications, together with the classes of botanical literature; historical development of botany. Prerequisite: Bot. 205.

268. Plant Cytology. 3 semester hours. First semester.
Structure, development, and functions of the plant cell, with special reference to chromosome behavior and its bearing on genetic results. One hour of recitation and six hours of laboratory a week. Prerequisite: Bot. 102 or Zoöl. 105.

270. Recent Advances in Cytogenetics. 3 semester hours. Second semester.
Chromosome structure, mechanics, and behavior; their significance for problems of genetics, evolution, and the origin of species. Two hours of recitation and three hours of laboratory a week. Prerequisite: Agron. 208 or Bot. 268 or Zoöl. 214.

272. Botany for Medical Technicians. 2 semester hours. Second semester.
Plants and plant parts concerned with hay fever, allergy, dermatitis, and mycosis. One hour of recitation and three hours of laboratory a week. Prerequisite: Junior standing.

FOR GRADUATE CREDIT

310. Research in Botany. Credit to be arranged. Each semester and summer.
Work is offered in: Anatomy, cytogenetics, cytology, ecology, microtechnic, morphology, mycology, pathology, physiology, and taxonomy. Prerequisite: At least two courses in this department and approval of major adviser or head of department.

Chemistry

RALPH E. SILKER, *Head of Department*

For a minor, the following courses should be completed: 101, 103, 104, 227, and 211A or 212A.
For a major, the student should enroll in the Curriculum in Industrial Chemistry.

FOR UNDERGRADUATE CREDIT

101. Chemistry I. 5 semester hours. Each semester and summer.
Beginning of the study of general chemistry. Three hours of recitation and six hours of laboratory a week. Not open to students who have credit in Chem. 107, 108, or 110.

103. Chemistry II Recitation. 3 semester hours. Each semester and summer.
Completion of the study of general chemistry. Not open to students who have credit in Chem. 108 or 110. Prerequisite: Chem. 101.

104. Chemistry II Laboratory. 2 semester hours. Each semester and summer.
General principles of qualitative analysis. Six hours of laboratory a week. Not open to students who have credit in Chem. 108. Prerequisite: Chem. 103 or concurrent registration.

105. Qualitative Analysis. 3 semester hours. Second semester.
One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 103 or concurrent registration.

107. Chemistry E-I. 4 semester hours. Each semester and summer.
Similar content to Chem. 101, with special emphasis on applications to engineering. Three hours of recitation and three hours of laboratory a week. Not open to students who have credit in Chem. 101.

108. Chemistry E-II. 4 semester hours. Each semester and summer.
Continuation of Chem. 107. Three hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 101 or 107. Not open to students who have credit in Chem. 103, 104.

110. General Chemistry. 5 semester hours. Each semester.
Principal laws and theories of chemistry; important metallic and nonmetallic substances. Three hours of recitation and six hours of laboratory a week. Not open to students who have credit in any college courses in inorganic chemistry.

122. General Organic Chemistry. 5 semester hours. Each semester and summer.
General study of some of the more important classes of organic compounds. Three hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 110.

125. Organic Chemistry (Agr.). 3 semester hours. Each semester and summer.
Fundamentals of organic chemistry, particularly fats, proteins, and carbohydrates. Prerequisite: Chem. 103.

132. Inspection Trip. R credit. First semester.
Manufacturing centers are visited by seniors traveling as a group under faculty supervision.

133. Industrial Chemistry Seminar. R credit. Each semester.
Special topics for undergraduates in the Curriculum in Industrial Chemistry.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Chemistry of the Lipids. 3 semester hours. Second semester.
Properties of fats and oils; distillation of fats; extraction of plant and animal tissues, including phospholipids, cholesterol, etc., chromatographing of plant extracts. Prerequisite: Chem. 122.

202. Inorganic Preparations. Credit to be arranged; one credit for each three hours of laboratory. Each semester and summer.
Preparation and purification of some typical inorganic compounds, of those of more complex composition, and compounds of the rarer elements. Prerequisite: Chem. 211A, 212A.

207. Inorganic Chemistry. 3 semester hours. First semester.
Facts of chemistry and their present theoretical interpretations; properties of elements as a basis for methods of classification; rarer elements and compounds. Students who elect this course are advised to take Chem. 202. Prerequisite: Chem. 104 or 105.

211A. Quantitative Analysis I. 4 semester hours. First semester and summers in even numbered years.
General procedures of volumetric analysis. Two hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 104 or 105.

212A. Quantitative Analysis II. 4 semester hours. Second semester and summers in odd numbered years.
General procedures of gravimetric and colorimetric analyses. Two hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 104 or 105.

214A. Advanced Quantitative Analysis. 3 semester hours. When scheduled or on request of a sufficient number.
Topics from current literature and journals of analytical chemistry. Latest advances in the analyses of complex inorganic and organic materials. Three hours of recitation a week. Prerequisite: Chem. 211A, 212A.

215A. Quantitative Analysis. 4 semester hours. Each semester and summer.
General procedures of volumetric, gravimetric and colorimetric analyses. Two hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 104 or 105.

216. Industrial Chemical Analysis. 3 semester hours. First semester.
One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 211A, 212A.

220. Advanced Qualitative Analysis. 3 semester hours. Each semester.
One hour of recitation and six of laboratory a week. Prerequisite: Chem. 104 or 105.

221A. Food Analysis. 3 semester hours. Second semester and summers in odd numbered years.
Quantitative methods employed in the analysis of foodstuffs; practice in testing for adulterants, preservatives, and coloring materials. One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 122 or 227, 215A.

222. Instrumental Methods in Chemical Analysis. 3 semester hours. Second semester.
Application of the spectograph, spectrophotometer, colorimeter, nephelometer, refractometer, X-ray equipment, and other instruments in the chemical analysis of gases, liquids, and solids. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 260B.

223. Organic Chemistry I. 5 semester hours. First semester.
Three hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 104 or 105.

224. Organic Chemistry II. 5 semester hours. Second semester.
Three hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 223.

227. Organic Chemistry. 5 semester hours. Each semester and summer.
Topics selected from the content of Chem. 223, 224. Three hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 104 or 105.

228. Qualitative Organic Analysis. 3 semester hours. First semester.
One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 224.

229. Quantitative Organic Analysis. 2 semester hours. Each semester and summer.
Combustion analysis of organic compounds for carbon, hydrogen, and nitrogen; halogen and sulfur determination by the Carius method. Six hours of laboratory a week. Prerequisite: Chem. 211A, 212A, 224.

230. Organic Preparations. 1 to 5 hours. First semester.
Prerequisite: Chem. 224.

232A. Stereoisomeric and Tautomeric Compounds. 3 semester hours. Second semester.
Prerequisite: Chem. 224.

233A. Heterocyclic Compounds. 3 semester hours. Second semester.
Prerequisite: Chem. 224.

234A. Advanced Organic Chemistry. 2 semester hours. When scheduled or on request of a sufficient number.
Lectures and assigned reading. Topics presently available: Free radicals; glycosides and alkaloids; linkages in organic compounds; organic nitrogen compounds; relation of properties of structure; starch I; and starch II.

236. Mechanisms of Organic Reactions. 3 semester hours. First semester.
Mechanistic course of organic reactions from the viewpoint of modern theories of organic chemistry. Prerequisite: Chem. 224, 262.

237. Special Reactions of Organic Compounds. 2 semester hours. First semester.
Prerequisite: Chem. 224.

237A. Resonance and Related Phenomena of Organic Compounds. 3 semester hours. Second semester.
Chemical resonance and its relationship to the chemical and physical properties of organic compounds. Prerequisite: Chem. 224, 262.

238. Catalysis in Organic Chemistry. 3 semester hours. Second semester.
Prerequisite: Chem. 260B, 224.

240. General Biochemistry. 5 semester hours. Each semester and summer.
Three hours of recitation and six hours of laboratory a week. Prerequisite: Chem. 122.

240A. Biochemistry. 3 semester hours. Second semester.
Extraction, purification, and assay of enzymes. Prerequisite: Chem. 224, 260A, 260B.

240B. Biochemistry Laboratory. 2 semester hours. Second semester and summer.
Six hours of laboratory a week. Prerequisite: Chem. 240A or concurrent registration.

241. Principles of Animal Nutrition. 3 semester hours. Second semester.
Prerequisite: Chem. 122.

242. Laboratory Technic in Animal Nutrition. 2 semester hours. Each semester.
Preparation of diet and the care of experimental animals used in the study of various nutritional problems. Six hours of laboratory a week. Prerequisite: An acceptable course in nutrition or Chem. 240.

243A. Chemistry of Enzymes. 2 semester hours. Second semester.
Chemical nature of enzymes and their reactions. Prerequisite: Chem. 224, 240A, 240B.

243B. Enzyme Technology. 2 semester hours. Second semester.
Extraction, purification, and assay of enzymes. Six hours of laboratory a week. Prerequisite: Chem. 243A or concurrent registration.

244. Vitamins. 2 semester hours. First or second semester.
Chemistry and functions of vitamins and related compounds. Prerequisite: Chem. 240.

245. Vitamin Analysis. 2 semester hours. Each semester and summer.
Chemical and biological determination of vitamins. Six hours of laboratory a week. Prerequisits: Chem. 240 and 212A or 212B.

246. Physiological Chemistry. 5 semester hours. First semester. Three hours of recitation and six hours of laboratory a week.
For students in School of Veterinary Medicine. Prerequisite: Chem. 227.

247. Biochemical Preparations. 2 to 5 hours. Second semester.
Prerequisite: Chem. 240 and 224.

248. Biochemical Analysis. 2 semester hours. Each semester.
Six hours of laboratory a week. Prerequisite: Chem. 240 and 212A or 212B.

249. General Plant Biochemistry. 3 semester hours. First semester.
Occurrence and function in plants of organic compounds, such as enzymes, plant pigments, vitamins, and plant acids. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 122 or 125.

249A. Plant Biochemistry. 3 semester hours. First semester.
More advanced treatment of the material presented in Chem. 249. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 224.

250. Pathological Chemistry. 2 semester hours.
Prerequisite: Chem. 240.

252. Chemistry of Proteins. 3 semester hours. First semester.
Prerequisite: Chem. 122, 260A, 260B.

254. Intermediary Metabolism of Proteins. 2 semester hours. First semester.
Prerequisite: Chem. 240.

255. Intermediary Metabolism of Carbohydrates and Lipins. 2 semester hours. Second semester.
Prerequisite: Chem. 240.

257. Biochemistry of Internal Secretions. 2 semester hours. First or second semester.
Chemistry of the glands of internal secretions. Prerequisite: Chem. 240.

259. Food Technology. 3 semester hours. First semester.
Chemical composition, production, consumption, statistics, and treatment of food material. Prerequisite: Chem. 122, 125, 227, or 223.

259A. Descriptive Physical Chemistry. 3 semester hours. As scheduled or when requested by a sufficient number.
Elementary principles of physical chemistry without higher mathematical applications. Not open to students majoring in chemistry. Prerequisite: Chem. 110, 125.

260A. Physical Chemistry I Recitation. 3 semester hours. First semester.
Properties of matter in the gaseous, liquid and solid states; elementary thermodynamics, solutions, colloids, surface chemistry and thermochemistry. Prerequisite: Math. 141, Phys. 103 or 106.

260B. Physical Chemistry I Laboratory. 2 semester hours. First semester.
Six hours of laboratory a week. Prerequisite: Chem. 211A and 212A or 215A, 260A, or concurrent registration.

261. Physical Chemistry II Recitation. 3 semester hours. Second semester.
Homogeneous and heterogeneous equilibria, chemical kinetics, electrical conductance, electromotive force, chemical thermodynamics, photochemistry, and atomic and molecular structure. Prerequisite: Chem. 260B.

262. Physical Chemistry II Laboratory. 2 semester hours. Second semester.
Six hours of laboratory a week. Prerequisite: Chem. 261 or concurrent registration.

264A. Advanced Physical Chemistry. 3 semester hours. When scheduled or on request of a sufficient number.
Topics presently available: Valence, chemical kinetics, and entropy and the third law. Prerequisite: Chem. 261.

268A. Colloid Chemistry. 3 semester hours. Second semester.
Properties of colloids, suspensoids, and emulsoids. Prerequisite: Chem. 260A, 260B.

269. Electrochemistry. 3 semester hours. Each semester and summer.
Fundamentals of electrolysis, phenomena of electrolytic dissociation, conductance, transference, electrokinetics, electromotive force of concentration and oxidation-reduction cells, polarization, and depolarization. Practical applications of electrolytic reduction and oxidation. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 261, 262.

270. Chemical Thermodynamics I. 3 semester hours. Second semester.
Thermodynamics particularly applicable to chemistry; the first and second laws of thermodynamics and their application. Prerequisite: Chem. 260A, 260B, Math. 141.

271. Chemical Thermodynamics II. 3 semester hours. Second semester.
Prerequisite: Chem. 270.

272A. Advanced Inorganic Chemistry. 2 semester hours. Each semester and summer.
Topics presently available: Crystal chemistry, liquid ammonia and other solvent systems, phosphorus and related elements, silicon chemistry, and silicones. Prerequisite: Chem. 260A, 260B.

273. Surface Chemistry. 2 semester hours. Each semester.
Methods of measuring surface tension; surface energetics, relation of surface tension to adsorption; and colloidal formation. Prerequisite: Chem. 260A, 260B.

275A. Chemistry of Milk. 3 semester hours.
The composition of milk; methods for separating, determining and characterizing various constituents. Prerequisite: Chem. 125 and 104 or 105 or Dairy Husb. 106.

277. Chemistry of Soils and Fertilizers. 2 semester hours. First semester.
Six hours of laboratory a week. Prerequisite: Chem. 211A.

279. Advanced Soil Chemistry. 3 semester hours. Each semester.
Chemistal phenomena of soils, ionic exchange, electrodialysis, solutions, and colloid phenomena. One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 260A, 260B, and an acceptable course in soils.

281. Chemistry of Crops. 2 semester hours. Second semester.
Six hours of laboratory a week. Prerequisite: Chem. 125, 211A.

285A. Chemical Microscopy. 2 semester hours. When scheduled or on request of a sufficient number.
Use of the microscope in chemical analysis, both qualitative and quantitative, applied to inorganic substances and to vegetable and animal products. One hour of recitation and three hours of laboratory a week. Prerequisite: Chem. 122, 215A.

290. Corrosion. 3 semester hours. Each semester.
Theories and various factors involved in the corrosion of iron, steel, and nonferrous metals; methods of testing for and preventing corrosion. Prerequisite: Chem. 223, 260A, 260B, or concurrent registration.

292. Chemical Toxicology. 3 semester hours. Each semester and summer.
Occurrence, chemical properties and detection of the more common poisons. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 122, 227, or 224.

296A. Chemistry Seminar. 1 semester hour.
Open only to seniors who are majoring in chemistry or graduate students in chemistry.

297A. History of Chemistry. 2 semester hours. Second semester.

298. Chemical Literature. 2 semester hours. Each semester.
Prerequisite: Chem. 224.

299. Problems in Chemistry. Credit to be arranged. Each semester and summer.
Work is offered in: Agricultural chemistry, analytical chemistry, biochemistry, chemical utilization of farm products, food chemistry, general and physical chemistry, industrial chemistry, and organic chemistry.

FOR GRADUATE CREDIT

301. Research in Chemistry. Credit to be arranged. Each semester and summer.

Work is offered in: Agricultural chemistry, analytical chemistry, biochemistry, chemical utilization of farm products, food chemistry, general and physical chemistry, industrial chemistry, and organic chemistry. Prerequisite: At least two courses in this department.

Citizenship

CARL TJERANDSEN, *Head of Department*

FOR UNDERGRADUATE CREDIT

101. Constitutional Democracy in America I. 3 semester hours. First semester.

An introduction to the main currents of thought relating to the origins, nature, and development of democratic institutions in America. The most significant books and documents in the evolution of the American democratic ideal will be read and discussed and emphasis will be placed on developing the arts of reading, discussion, and reasoning which are the fundamental tools of citizenship in a democratic society. Open to freshmen and sophomores only.

102. Constitutional Democracy in America II. 3 semester hours. Second semester.

Continuation of Cit. 101.

110. Freedom and Responsibility I. 3 semester hours. First semester.

A study of the ebb and flow in man's fight for freedom and the relation of freedom to responsibility in a democratic society. The basic ideas of freedom, equality, liberty, tolerance, and justice upon which democratic institutions stand will be examined in the writings of those who have contributed most to their development. Attention will be given to the ethical and moral basis of political responsibility, and its application in the present day.

111. Freedom and Responsibility II. 3 semester hours. Second semester.

FOR GRADUATE AND UNDERGRADUATE CREDIT

205. Democracy and Education. 3 semester hours. Each semester and summer.

A study of the major contributions to the problem of education for citizenship in a democratic society. The effect of contemporary educational trends on preparation for citizenship will be examined in the light of the ideas advanced by outstanding educational thinkers. Prerequisite: Junior standing or consent of instructor.

210. American Democratic Ideas. 3 semester hours. Each semester and summer.

Origins and evolution of the democratic ideal in America. Important contributions to democratic thought will be examined, with special attention to the responsibility of the individual citizen and the organized group in the democratic process.

215. Democracy, Justice, and the Law. 3 semester hours. Each semester and summer.

A study of the evolution of the concept of justice and of the relation of the individual to the law in a free society. Prerequisite: Junior standing or consent of instructor.

220. Political Economy and the Democratic State. 3 semester hours. Each semester and summer.

An examination of the inter-relationships of the individual, the state, and economic institutions. The effect of the changing pattern of these inter-relationships upon democracy will be examined. Prerequisite: Junior standing or consent of instructor.

225. War, Peace, and the World Community. 3 semester hours. Each semester and summer.

A study of causes of war, conditions of peace, and the changing character of the world community. The possibilities and limitations of world government and world citizenship will be considered. Prerequisite: Junior standing or consent of instructor.

231. Workshop in Citizenship Education. Credit to be arranged. Summer. Prerequisite: Graduate standing or consent of the instructor.

235. Effective Citizenship. 2 semester hours.

A study of the ways in which the citizen can most effectively participate in democratic processes, including a study of the programs of typical civic and political organizations. Prerequisite: Junior standing or consent of instructor.

284. The Journalist in Free Society. 3 semester hours. Each semester and summer. (See Ind. Jour. 284.)

Concept of freedom of the press, from the standpoint of the journalist and the citizen in a free society. Meaning of freedom of the press, its importance in a democracy, and responsibilities which it imposes upon the journalist. Prerequisite: Junior standing or consent of instructor.

285. Interpretation of Contemporary Affairs. 3 semester hours. Second semester and alternate summers. (See Ind. Jour. 285.)

Critical questions regarding recent developments in state, national, and international affairs; editorials and interpretive articles which document and analyze the news; introduction to research in public affairs. Prerequisite: For students in the Curriculum of Industrial Journalism, Cit. 284; for other students, consent of instructor.

295. Problems in Citizenship. Credit to be arranged. Each semester and summer.

Prerequisite: Junior standing or consent of instructor.

FOR GRADUATE CREDIT

300. Research in Citizenship. Credit to be arranged. Each semester and summer.

Prerequisite: Consent of instructor.

Economics and Sociology

George Montgomery, *Head of Department*

Work in economics and sociology is offered in the schools of Arts and Sciences and Agriculture. The general courses are listed here. Those which have a direct bearing on agriculture are listed in the agricultural section of the catalogue.

Certificate of Certified Public Accountant

By act of the Kansas legislature, passed March 24, 1915, provision is made for the examination for the certificate of Certified Public Accountant. A candidate, in order to be admitted to the examination, must have completed 60 semester hours of college work, or in lieu thereof submit evidence of the completion of five years of public accounting experience approved by the Board of Examiners, in addition to the completion of a four-year high school course or its equivalent.

The examination is given in auditing, accounting, and business law, and is held in May and November of each year. The questions are supplied by the American Institute of Accountants.

A candidate who passes the examination must furnish evidence of having had three years of public accounting experience satisfactory to the Board of Examiners before the certificate is granted.

COURSES IN ECONOMICS

FOR UNDERGRADUATE CREDIT

(For Econ. 106, see agricultural section.)

101. Economics I. 3 semester horus. Each semester and summer.
Introductory study of the principles of economics.

104. Economics II. 3 semester hours. Each semester and summer.
Application of economic principles to the solution of economic problems. Study of problems such as labor conflict, depressions, monopoly, international economic relations, taxation, public debt, inflation and deflation. Prerequisite: Econ. 101.

108. Personal Finance. 2 semester hours. Each semester.
Finance from the viewpoint of the individual. Principles and practices of credit buying, borrowing, saving and investing; purchase of government bonds, insurance, real estate, and annuities; problems of taxation and wills. Not open to students in curriculum in Business Administration.

116. Money and Banking. 3 semester hours. Each semester and summer.
Nature, history, and functions of money; banking in its modern and historic forms. Prerequisite: Econ. 101.

126. Business Management. 2 semester hours. Each semester and summer.
Analysis of management factors such as personnel, finance, accounting, production, and marketing. Not open to students in curriculum in Business Administration. Prerequisite: Econ. 101.

FOR GRADUATE AND UNDERGRADUATE CREDIT

(For Econ. 202, 203, 206A, 211, 212, 213, 215, 218, 225, 226, 227, 231, 235, 240, 251, 270, and 271, see agricultural section.)

208. Intermediate Economics. 3 semester hours. First semester, summer in odd numbered years.
Review of economic principles; advanced study of value and distribution theory. Prerequisite: Econ. 104.

210. Economic Systems. 2 semester hours. First semester and summer.
Prerequisite: Econ. 101.

214. Public Finance. 3 semester hours. First semester.
Public expenditures and revenues; administration of public funds. Prerequisite: Econ. 101.

215. Business Organization and Finance. 3 semester hours. Each semester.
Organization and classification of business enterprises, their financial structure and internal management. Prerequisite: Econ. 116 and Acctg. 134 or 136.

220. Business Cycles. 2 semester hours. First semester and summer.
Business fluctuations, measurement of business cycles, theories of the business cycle, proposals for stabilizing business activity. Prerequisite: Econ. 101.

222. Investments. 3 semester hours. First semester and summer.
Types of investment securities; investment risks and values; investment banks; investment policies. Prerequisite: Econ. 215, and Acctg. 134 or 136.

223. Credits and Collections. 2 semester hours. Second semester.
Prerequisite: Econ. 101.

224. International Trade. 2 semester hours. Second semester.
Economic principles underlying international trade and finance, international trade policies, technique and mechanics of exports and imports. Prerequisite: Econ. 101.

230. Principles of Transportation. 3 semester hours. Second semester.
Development of transportation; principles involved; public regulations. Prerequisite: Econ. 101.

236. Business Administration Summary. 2 semester hours. Each semester and summer.
Summarization and correlation of business and economics courses pursued in college; problems requiring application of principles and broad understanding of the field; contemporary economic developments. Prerequisite: Senior standing.

237. Labor Economics I. 3 semester hours. Each semester.
Status and trends in industrial relations. Prerequisite: Econ. 101 or Soc. 151.

238. Labor Economics II. 3 semester hours. Second semester and summer.
Economic problems of labor and labor legislation. Prerequisite: Econ. 237.

239. Labor Management. 2 semester hours. Second semester.
Problems of management of foremen or supervisors. Procedures in settling grievances and disputes, handling of employees, and survey of employees' protective legislation. Prerequisite: Junior standing.

242. Property Insurance. 2 semester hours. First semester and summer.
Fire, marine, automobile, title, credit insurance, and corporate bonding; also other forms of property insurance. Prerequisite: Econ. 101.

244. Life Insurance. 2 semester hours. Second semester and summer.
Nature and uses of life insurance, kinds of policies, determination of premiums, reserves, surrender values, and dividends. Prerequisite: Econ. 101.

246. Marketing. 3 semester hours. First semester and summer.
Marketing functions, services, and agencies. Prerequisite: Econ. 101.

247. Sales Management. 3 semester hours. Second semester.
A study of methods of hiring, training, and supervising a sales organization. Prerequisite: Econ. 246.

248. Problems in Economics. Credit to be arranged. Each semester and summer.
Work is offered in banking, finance, business organization and management, general economics, international trade, insurance, investments, accounting, marketing, and public finance. Prerequisite: Senior standing.

FOR GRADUATE CREDIT

(For Econ. 301, see agricultural section.)

302. Research in Economics. Credit to be arranged. Each semester and summer.
Work is offered in banking, finance, business organization and management, general economics, international trade, insurance, investments, accounting, marketing, and public finance. Prerequisite: At least two courses in this department.

306. Advanced Economics. 3 semester hours. First semester and summer.
Advanced study of economic theory. Prerequisite: Econ. 101.

310. History of Economic Thought. 3 semester hours. Second semester.
Development of economics and relation of economic doctrines to conditions existing when they were formulated. Prerequisite: Econ. 101.

COURSES IN SOCIOLOGY

FOR UNDERGRADUATE CREDIT

(For Soc. 156, see agricultural section.)

151. Sociology. 3 semester hours. Each semester and summer.
Fundamental principles of social life as related to other scientific principles. Prerequisite: Sophomore standing.

153. Introduction to Social Work. 3 semester hours. Second semester.
Description and analysis of social work; the family under present conditions. Prerequisite: Soc. 151.

159. Courtship and Marriage. 2 semester hours. Each semester.
Basic principles and problems which pertain to ideal family life.

FOR GRADUATE AND UNDERGRADUATE CREDIT

(For Soc. 256, see agricultural section.)

258. Social Pathology. 3 semester hours. Each semester and summer.
Problems of society, poverty, crime, delinquency, immigration, family discord, group conflict, and population. Prerequisite: Soc. 151.

259. Population and Human Ecology. 2 semester hours. First semester.
Early theories, policies, growth, composition, spatial aspects, movements, and population trends. Prerequisite: Six hours of sociology or economics or history.

261. Family and Society. 3 semester hours. Second semester.
Origin and development of marriage customs and systems of family organizations; the family under present conditions. Prerequisite: Soc. 151.

263. Urban Sociology. 3 semester hours. First semester.
Growth, development and structure of the city as determined by geographical, ecological, and social factors; relation of rural and urban communities; problems of the city and various approaches to their solution. Prerequisite: Soc. 151.

267. Community Organization and Leadership. 3 semester hours. Second semester and summer.
Organizations working in urban and rural fields; principles involved and technic of organization. Prerequisite: Soc. 151.

273. Advanced Sociology. 3 semester hours. Second semester.
Continuation of Soc. 151. Prerequisite: Soc. 151.

277. Development of Social Thought. 3 semester hours. First semester.
Development of social thought from ancient civilization to the present. Prerequisite: Soc. 151.

279. Problems in Sociology. Credit to be arranged. Each semester and summer.
Prerequisite: Soc. 151.

FOR GRADUATE CREDIT

(For Soc. 256, see agricultural section.)

351. Research in Sociology. Credit to be arranged. Each semester and summer.
Prerequisite: At least two courses in sociology.

COURSES IN ACCOUNTING

FOR UNDERGRADUATE CREDIT

(For Acctg. 112, see agricultural section.)

133. Accounting I. 3 semester hours. Each semester and summer.
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. Six hours of recitation and laboratory a week.

134. Accounting II. 3 semester hours. Each semester and summer.
Partnership and corporation accounting and problems; valuation of balance-sheet items, with special reference to depreciation, inventories, and intangibles. Six hours of recitation and laboratory a week. Prerequisite: Acctg. 133.

136. Principles of Accounting. 3 semester hours. Each semester.
Principles of accounting; use of accounting records and statements for individual and corporate business organizations. Not open to students in Curriculum in Business Administration.

140. Intermediate Accounting. 3 semester hours. Each semester and summer.
Application of accounting principles to partnerships and corporations. Working papers, compound interest functions, and basic accounting theory. Prerequisite: Acctg. 134.

FOR GRADUATE AND UNDERGRADUATE CREDIT

280. Valuation Accounting. 3 semester hours. Each semester and summer.
Advanced course in accounting theory; content and analysis of accounting statements. Prerequisite: Acctg. 134.

281. Advanced Accounting. 3 semester hours. First seemster and summer.
Application of accounting principles to partnerships, corporations with subsidiaries and branches, companies in financial difficulties. Prerequisite: Acctg. 280 or concurrent regisistration.

286. Tax Accounting. 3 semester hours. Second semester.
Accounting problems in income, sales, social security, and other taxes. Prerequisite: Acctg. 280 or 287 or concurrent registration.

287. Cost Accounting. 3 semester hours. Each semester and summer.
Allocation of production costs to determine financial results and guide the management of business enterprises. Prerequisite: Acctg. 134 or 136.

288. Advanced Cost Accounting. 2 semester hours. Second semester.
Standard distribution, and estimated costs and miscellaneous items. Prerequisite: Acctg. 287.

289. Governmental Accounting. 2 semester hours. First semester.
State and municipal accounts, and accounts for public institutions. Prerequisite: Acctg. 280 or 287.

291. Auditing. 3 semester hours. First semester.
Audits of accounts of commercial enterprises; attention to balance sheets and detail audits. Prerequisite: Acctg. 280 and consent of instructor.

292. C. P. A. Problems. 3 semester hours. Second semester.
Problems given in various C. P. A. examinations. Prerequisite: Consent of instructor.

293. Institutional Accounting. 2 semester hours. Each semester and summer.
Accounting principles and their application to cafeteria, lunch and tea rooms, restaurants, dormitories, clubs, and other institutions. Two two-

hour recitation and laboratory periods a week. Not open to students in Curriculum in Business Administration. Prerequisite: Inst. Mgt. 109.

294. Specialized Accounting. 3 semester hours. Second semester.
Specialized statements, foreign exchange, estates and trusts, bank accounting, and stock brokerage. Prerequisite: Acctg. 280.

299. Problems in Accounting. Credit to be arranged. Each semester and summer.
Prerequisite: Senior standing.

FOR GRADUATE CREDIT

380. Research in Accounting. Credit to be arranged. Each semester and summer.
Prerequisite: At least three courses in accounting.

COURSES IN TYPEWRITING AND SHORTHAND

FOR UNDERGRADUATE CREDIT

140. Typewriting I. 3 semester hours. Summer.
The technique of touch typewriting, care of the machine, and skill in operation. Ten hours of class and laboratory a week, with additional practice.

141. Typewriting II. 2 semester hours. Summer.
Continuation of Typewriting I. Eight hours of class and laboratory a week, with additional practice. Prerequisite: Econ. 140 or equivalent.

145. Shorthand I. 3 semester hours. Summer.
Introduction to Gregg shorthand. Twelve hours of class and laboratory a week, with additional practice.

146. Shorthand II. 2 semester hours. Summer.
Continuation of Shorthand I. Eight hours of class and laboratory a week, with additional practice. Prerequisite: Econ. 145 or equivalent.

Education and Psychology

H. Leigh Baker, *Head of Department*

TEACHING CERTIFICATES

The Kansas State Board of Education holds colleges responsible for recommending their students who prepare for teaching. Such recommendation will be based on the following factors: Health, both physical and mental; speech habits; general education; preparation in teaching fields; and preparation in professional education courses.

Preparation should begin not later than the sophomore year and should take into account all the above factors. In order to assist students in planning their preparation to teach, special advisers are available according to subject fields, as follows:

Agriculture. Davidson.
Art. Geiger.
Biological Science. Ameel.
English. Ansdell.
Home Economics. Rust.
Industrial Arts. Darby.
Mathematics. Greer.
Music. Leavengood.
Physical Education. Washburn, Lyman.
Physical Science. Homman.
Social Science. Crawford.

Special curriculums preparing for teaching are provided in Agriculture, Home Economics, Industrial Arts, Music, and Physical Education for Men and Women. They are printed in the catalogue under the respective School sections. In the other teaching fields the student should plan a personal curriculum which will give him adequate preparation in a major and two minor teachings fields. In a major teaching field such as social science, it is desirable to have twenty to thirty semester hours in well chosen courses. For the minor teaching fields at least the legal minimum requirement of fifteen semester hours must be met. The advisers can be very helpful in choosing courses which will best meet the needs of high school teaching.

Professional preparation in education and psychology courses must total eighteen semester hours. Both the type and sequence of these courses are important. The following should be included and as nearly as possible in the sequence given:

General Psychology
Educational Psychology
Principles of Secondary Education
Methods of Teaching in High School
Student Participation in Teaching
Elective course in education

Through the Bureau of Teaching Appointments, Kansas State College students and graduates are assisted in finding suitable teaching and administrative positions. A leaflet explaining the nature and requirements of this service is available from the Bureau in Room 102, Education Hall.

COURSES IN EDUCATION

FOR UNDERGRADUATE CREDIT

109. Educational Psychology. 3 semester hours. Each semester and summer.
Growth and development through the school years; the psychology of the learning process with special emphasis on school learning. Should be taken prior to other education courses by students qualifying for degree certificate. Prerequisite: Psych. 184 and sophomore standing.

110. Methods of Teaching in High School. 3 semester hours. Each semester and summer.
General principles of teaching applied to high school instruction; selection and organization of teaching materials, individual adaptation, organization, and management of classroom. Prerequisite: Educ. 109 and junior standing.

113. General Methods for Elementary Teachers. 3 semester hours. Summer.
A course dealing with the fundamentals of teaching and classroom management in elementary schools to meet requirements for emergency and regular elementary certificates. Prerequisite: Psych. 184.

118. Essentials of Reading. 3 semester hours. Summer.
For persons preparing to teach in the elementary schools of Kansas under the sixty-hour certificate. Prerequisite: Educ. 109 and sophomore standing.

120. Teaching Participation in Elementary Schools. Credit to be arranged. Each semester and summer.
Observation and teaching in Manhattan elementary schools under direction of regular teachers, to meet elementary certificate requirements of those who wish to teach before finishing work for a degree from Kansas State College. Appointment must be made at the time of registration. Prerequisite: Psych. 184.

129. Teaching Participation in Music. 1 to 4 semester hours. Each semester and summer.
Observation and teaching under direction in the Manhattan schools. Appointment must be made at the time of registration for the semester and general arrangements made previous to the semester. Prerequisite: Educ. 109, Mus. 145.

132. Methods of Teaching Home Economics. 3 semester hours. Each semester and summer.

The selection, organization, and presentation of courses and lessons in home economics for high school pupils. Prerequisite: Clo. Text. 114; Fds. Nutr. 102, 107; prerequisite or current registration: Educ. 109.

133. Methods of Teaching for Dietetic Students. 3 semester hours. Each semester.

Principles of teaching applied to selection, organization, and development of subject matter for individuals and courses taught by dietitians. Prerequisite: Inst. Mgt. 101 or Fds. Nutr. 206, or concurrent registration.

134. Methods of Teaching Industrial Arts. 3 semester hours. Each semester and summer.

Methods of teaching, lesson planning, organization of subject matter, and class projects applied to general shop work, woodworking, sheet metal, arc and oxyacetylene welding, machine shop practice, motor mechanics, and other industrial arts subjects. Prerequisite: Educ. 139 and consent of instructor.

136. Methods of Teaching Agriculture. 3 semester hours. Each semester.

Lesson plans; organization of materials and direction of class, laboratory, and field instructional work in vocational agriculture. Individual farming programs and class and group activities are studied, as well as the coördination of farm mechanics work. The administration, organization, and coordination of the Future Farmers of America organization with the program of instruction in vocational agriculture. Prerequisite: Educ. 109.

139. Principles of Secondary Education. 3 semester hours. Each semester and summer.

A study of junior and senior high school organization and objectives, their genesis and curriculum trends, characteristics of student population, and Kansas legal status and practice. Prerequisite: Educ. 109.

159. Teaching Participation in Home Economics. 3 to 5 semester hours. Each semester and summer.

Supervised observation and teaching carried on in the Home Economics classes of the Manhattan High School and other selected state high schools. Prerequisite: Completion of one home project and Educ. 132.

161. Teaching Participation in Agriculture. 3 semester hours. Each semester.

Three weeks of observation and directed 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 agriculture teacher. Prerequisite: Educ. 136.

166. Teaching Participation in High School. Credit to be arranged. Each semester and summer.

Observation and teaching under direction of regular teachers in Manhattan junior and senior high schools, in other than vocational fields. Appointments must be arranged at time of registration and general arrangements made previous to semester. Prerequisite: Educ. 139, or consent of instructor.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Extraclass Activities. 3 semester hours. Each semester and summer.

Organization, sponsorship, and objectives of clubs, publications, athletics, dramatics, musical organizations, assemblies, home room, and student council in junior and senior high school. Prerequisite: Six hours of education and senior standing.

206. Philosophy of Education. 3 semester hours. Each semester.

Controlling and unifying philosophy of the American public school system and its European background. Prerequisite: Educ. 109.

209. Audio-Visual Aids in Instruction. 2 or 3 semester hours.
Principles and technics in the use of visual and audio-visual materials, operation and maintenance of equipment, and sources of supply. Prerequisite: Educ. 166 or concurrent registration.

212. Educational Measurement. 3 semester hours. First semester and summer.
Scientific measurement and evaluation of educational outcomes and their use as teaching tools. Prerequisite: Educ. 109, 223.

214. Extension Organization and Policies. 3 semester hours.
Development and objectives of extension work; organization and administration of extension service, with special emphasis on extension service in Kansas. Prerequisite: Senior standing; juniors by consent of instructor.

216. Extension Methods for Home Economists. 3 semester hours. Second semester.
Recommended methods for extension work; application of these methods to subjects in Home Economics. Prerequisite: Senior standing; juniors by consent of instructor.

219. Curriculum Development. 3 semester hours. Summer.
Requirements of modern life upon schools and their objectives; examination of the entire school curriculum. Prerequisite: Twelve hours in education and senior standing.

221. Junior High School. 2 or 3 semester hours. Summer.
Origin, objectives, program, and administration of the junior high school, and relations with lower and higher educational units. Prerequisite: Teaching experience.

223. Statistical Methods in Education and Psychology. 3 semester hours. Each semester and summer.
Nature of measurement in education and psychology, organization of data, computation and interpretation of basic statistics, and sampling methods and theory. Prerequisite: Sophomore standing and six hours of education or psychology. Not open to students who have credit in Math. 126, 261.

225. Methods in Citizenship Education. 3 semester hours. Each semester and summer.
Aims of an educational program for the training of future citizens and methods of carrying it out; selection of material; classroom procedure; use of visual aids; planning related extracurricular activities, observation opportunities; etc. Prerequisite: Junior standing or consent of instructor.

228. Music Supervision. 2 semester hours. (See Mus. 228.)

230. Principles and Practices of Guidance. 3 semester hours. Each semester and summer.
Need and nature of guidance; functions; personnel, their duties and relations; programs and evaluation of results. Prerequisite: Teaching participation or concurrent registration.

233. Vocational Home Economics Curriculum. 3 semester hours. Each semester and summer.
Philosophy and principles of vocational education as applied to home economics; characteristics of the high school vocational home economics curriculum; planning and supervising the home project program; sponsoring the F. H. A. chapter; and developing teaching guides for the various courses. Prerequisite: Educ. 132 or concurrent registration.

234. Methods in Adult Homemaking Classes. 1 to 3 semester hours. Summer.
Principles of teaching applied to adult classes; a demonstration class in one or more phases of homemaking. Prerequisite: Educ. 132 or equivalent.

235. Occupational Information and Guidance. 2 or 3 semester hours. Summer.
Nature and sources of occupational information and means of providing occupational information to youth. Prerequisite: Educ. 230.

239. Educational Sociology. 3 semester hours. Each semester.
Development of the meaning of American democracy; a study of the social and classroom activities of the public schools as a means of building socialized personality traits; development of a workable plan for practicing democracy in the public schools. Prerequisite: Educ. 109 and junior standing.

241. Vocational Education. 3 semester hours. Each semester and summer.
Provision for vocational education in Kansas and other states and countries; principles underlying such education; relation of vocational education to the community, county, state, and nation. Prerequisite: Educ. 109.

244. History of Education. 3 semester hours. Each semester and summer.
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.

248. Problems in Education. Credit to be arranged. Each semester and summer.
Work is offered in: Agricultural education, educational administration, educational measurement, educational psychology, educational sociology, extension education, guidance, home economics education, teaching methods, statistical methods, and vocational education. Prerequisite: Educ. 139 and approval of instructor.

255. Technics in Agricultural Education. 3 semester hours. Each semester and summer.
Emphasis given to teaching in the field of vocational education in agriculture; the agricultural curriculum; courses of study; farming programs and supervision; laboratory and field instruction; sources, selection, preparation, and use of audio-visual instructional material. One hour of recitation and six hours of laboratory a week. Prerequisite: Educ. 241.

256. Teaching Part-time and Adult Classes in Agriculture. 3 semester hours. Second semester.
Organization and preparation of materials, and methods used in teaching part-time and adult classes in vocational education in agriculture for young farmers and adults. Departments are visited for the purpose of evaluating programs and results. Prerequisite: Educ. 241.

FOR GRADUATE CREDIT

302. Problems and Procedures in Educational Research. 2 or 3 semester hours. Summer.
Orientation of the prospective research workers and recognized examples of research and procedure employed. Prerequisite: 9 hours graduate work.

304. Local School Administration. 2 or 3 semester hours. Summer.
Relations of the school administrator with the board of education, teaching staff, and community. Prerequisite: Teaching experience.

306. Advanced Educational Administration. 3 semester hours. Second semester and summer.
The basic philosophy and objectives of education and their application to national, state and local organization; including problems of policy making and general administration. Intended primarily for school administrators.

307. Supervision and Improvement of Instruction. 3 semester hours. Summer.
A professional course primarily for public school superintendents and persons planning to enter that work. Prerequisite: At least one year of teaching experience.

308. School Business and Finance Administration. 3 semester hours. Summer.

Professional preparation primarily for public school superintendents and persons planning to enter that work. Prerequisite: At least one year of teaching experience.

309. The School Plant. 3 semester hours.

Determination and provision of building and other plant needs by the local public school district, including planning, financing, construction and utilization. Prerequisite: Graduate standing and one year of teaching experience.

310. County, State, and Federal School Administration and Support. 3 semester hours.

Problems of school population and relations of county, state, and federal government to school organization, administration and support. Prerequisite: Graduate standing and one year of teaching experience.

311. Secondary School Administration. 3 semester hours.

Aims and functions of junior and senior high schools and junior colleges; problems in the progress of studies, extra-class activities, pupil accounting, community relations and articulation with other schools. Prerequisite: Graduate standing, and one year of teaching experience.

313. Research in Organization and Presentation of Home Economics. Credit to be arranged. Each semester and summer.

Individual research problems in phases of organization and administration for home economics. May be chosen as the basis for thesis for the master's degree. The nature of the problem will depend upon the student's major interest.

314. Organization and Presentation of Home Economics. Credit to be arranged. Each semester and summer.

315. Supervision in Home Economics. 2 semester hours. Second semester and summer.

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; and course of study. Prerequisite: Educ. 159 and experience in teaching home economics.

318. Seminar in Home Economics Education. 2 or 3 semester hours. Second semester and summer.

Recent trends in home economics education. Prerequisite: Educ. 159 and experience in teaching home economics.

325. Research in Education. Credit to be arranged. Each semester and summer.

Work is offered in: Agricultural education, educational administration, educational measurement, educational psychology, educational sociology, guidance, home economics education, teaching methods, statistical methods, and vocational education. Prerequisite: At least two courses in this department and approval of instructor.

COURSES IN PSYCHOLOGY

FOR UNDERGRADUATE CREDIT

151. Psychology of Effective Study. 2 semester hours. Each semester.

Diagnosis of individual difficulties and application of remedial measures. Designed to meet the problems of the individual members of the class. One hour of recitation and three hours of laboratory a week. Prerequisite: Consent of the Dean of the School of Home Economics.

184. General Psychology. 3 semester hours. Each semester and summer.

FOR GRADUATE AND UNDERGRADUATE CREDIT

230. Principles and Practices of Guidance. (See Educ. 230.)

250. Psychology of Childhood and Adolescence. 3 semester hours. Each semester and summer.

Genetic study of the trends in the development of structures, capacities, interests, and personality that facilitate understanding and control of the behavior of childhood and adolescence. Prerequisite: Psych. 184 and sophomore standing.

254. Abnormal Psychology. 3 semester hours. Each semester and summer.

Behavioral and mental disorders; psychoses, psychoneuroses, and psychopathies; and causes and methods of prevention and correction or therapy. Prerequisite: Psych. 184 and sophomore standing.

258. History and Systems of Psychology. 3 semester hours. Second semester.

Primarily for the student who is working toward a master's degree in psychology, but may be taken by the undergraduate major in psychology. Critical evaluation of the principles and facts of general psychology. History, systems, leaders and current trends in the development of psychology as a science. Prerequisite: Psych. 250, 254, 259, 260, 170.

259. Experimental Psychology. 3 semester hours. First semester.

Experimental studies of certain sensory, motor, and perceptual processes and of various forms and levels of learning, including problem solving and generalization; analysis and comparison of results in the literature on related studies. Prerequisite: Psych. 184, Educ. 223.

260. Group Psychological Testing. 3 semester hours. First semester and summer.

Selection of group tests for particular purposes at various age and school levels; administration, scoring, interpretation of test results, and their preparation for use in guidance and counseling and in evaluation of educational procedures. Prerequisite: Psych. 184, Educ. 223.

261. Individual Psychological Testing. 3 semester hours. Second semester.

Origin and development of basic concepts and technics in individual testing with intensive practice in the administration and use of the 1937 Revised Stanford Binet Test and of suitable tests of visual and auditory efficiency. Prerequisite: Psych. 184, Educ. 223.

265. Psychology of Advertising and Selling. 3 semester hours. Second semester.

Psychological principles involved in effective advertising and selling; appropriate technics for the analysis and motivation of buying behavior with special attention to recent experimental findings. Prerequisite: Psych. 184.

266. Psychology of Exceptional Children. 3 semester hours. Second semester and summer.

Major forms of exceptionality such as feeble-mindedness, giftedness, subject disabilities, speech disorders, behavior problems, and delinquency. Emphasis on understanding and behavioral adjustment. Prerequisite: Psych. 184, 250.

269. Animal Psychology. 3 semester hours. First semester.

Animal behavior from the standpoint of sensory capacities, perception, adaptive behavior, learning, insight, and other functions. A survey of psychological apparatus and contributions to animal psychology. Prerequisite: Psych. 184, Educ. 223, Zoöl. 105.

270. Social Psychology. 3 semester hours. Each semester and summer.

A study of the psychology of the interrelations between the individual and groups of people. Prerequisite: Psych. 184 and sophomore standing.

271. Principles and Technics of Counseling. 3 semester hours. First semester.

The use of clinical data in the analysis, diagnosis, prognosis, and treatment of individual problems. Prerequisite: Psych. 230, 260, and senior standing.

272. Mental Hygiene and Personality Adjustment. 3 semester hours. First semester.

Dynamics of personality adjustment; measurement and description of personality; technics of mental hygiene with emphasis on group psychotherapy principles and practices; application of mental hygiene in the family, education, business and industry, social work, and related fields. Prerequisite: Nine semester hours in psychology.

273. Psychology and Personnel Management. 3 semester hours. First semester.

Psychological principles and procedures involved in selection, placement, training, transfer, promotion, and motivation of workers; measurement of achievement and morale. Prerequisite: Psych. 260.

274. Industrial Psychology. 3 semester hours. First semester, odd numbered years.

Public analysis and requirements, employment adjustments, safety factors, and public training efficiency. Prerequisite: Psych. 250, 254, 270 and junior standing.

276. Psychology of Art. 3 semester hours. Each semester and summer.

Includes a brief introduction to the philosophy of art and a study of the facts and principles of psychology used in the production and appreciation of art. Special emphasis is placed on pictorial art. Prerequisite: Psych. 184 and sophomore standing.

277. Psychology of Music. 3 semester hours. Second semester and summer.

Physical and emotional appeal of music; perceptual and musical organization of sound and rhythm; psychology of listening, performing, and composing with a review of experimental studies in these areas; measurement and diagnosis of musical abilities; musical personality. Prerequisite: Psych. 184.

278. Problems in Psychology. Credit to be arranged. Each semester and summer.

Prerequisite: Consult instructor.

279. Guidance Practicum. 3 semester hours. Each semester and summer.

Field practice in the collection of pertinent, objective data; the preparation of such data for use in guidance and counseling; and participation in student guidance and counseling. Prerequisite: Educ. 212, 230, Psych. 260, and senior standing.

280. Personnel Management Practicum. Credit to be arranged. Each semester and summer.

Directed experience in the application of principles and procedures of personnel management. Prerequisite: Senior standing and fifteen hours in courses related to personnel management.

FOR GRADUATE CREDIT

373. Psychology of Learning. 3 semester hours. Second semester and summer.

A critical study of the theoretical and experimental literature on learning; analysis of various forms of learning; principles, procedures, and conditions favorable to acquisition, retention, and effective functioning of knowledge, skills, attitudes, and purposes; problem-solving, generalization, and transfer. Prerequisite: Eighteen hours' credit in psychology.

376. Research in Psychology. Credit to be arranged. Each semester and summer.

COURSES IN AGRICULTURAL EDUCATION

Summer Session

FOR GRADUATE AND UNDERGRADUATE CREDIT

283. Administration and Supervision of Secondary Schools. 2 semester hours. Summer.
Problems of organization, administration, and supervision which cover the complete program of an administrative head of a school system in a small city. Designed for principals of rural high schools and superintendents of small city systems. Prerequisite: Educ. 139.

285. Project Method in Agricultural Education. 2 semester hours. Summer.
Intensive treatment of values, analysis, accounting, supervision, types, results, records, and reports of projects. Conducted on the problem basis. Prerequisite: Educ. 161.

287. Organization and Conduct of Group Activities. 2 semester hours. Summer.
Fundamentals and principles on which productive class projects should be organized; research and field work in class project study. Prerequisite: Educ. 241.

289. Administration and Supervision of Vocational Education. 2 semester hours. Summer.
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 which offers vocational education. Problem basis of treatment is used. Prerequisite: Educ. 139 or 306.

291. Community Problems in Vocational Agriculture. 2 semester hours. Summer.
Methods, organization, and conduct of club work, junior project work, class and community projects in general. Conducted on the problem basis and designed specifically for teachers, supervisors, and directors of agricultural work. Prerequisite: Consult instructor.

293. Problems in Evening School Classes. 2 semester hours. Summer.
Problems in organization, curriculum, and methods of teaching evening schools and classes sponsored by the national Vocational Education Act. Designed for teachers in service. Prerequisite: Graduate standing and one year's experience teaching vocational agriculture.

295. Organization Problems in Teaching Farm Mechanics. 2 semester hours. Summer.
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; determination of objectives. Prerequisite: Educ. 161.

FOR GRADUATE CREDIT

339. Problems in Part-time Classes. 2 semester hours. Summer.
Organization, curriculum, and method of teaching part-time classes sponsored by the national Vocational Education Act. Designed for teachers in service. Prerequisite: One year's experience teaching vocational agriculture.

340. Statistical Methods in Agricultural Education. 2 semester hours. Summer.
Less comprehensive treatment of topics covered in Educ. 223, with emphasis on the special needs of vocational agriculture teachers. Not open to students who have credit in Math. 164, 261, or 262.

English

HALLAM W. DAVIS, *Head of Department*

For a minor, the following courses should be completed in addition to 111 and 112: 170 and 171, or 173 and 174, plus three courses selected from 219, 220, 232, and 243.

For a major, the general requirement is 30 semester hours subsequent to Engl. 111 and 112. These courses should be selected in consultation with the head of the department.

FOR UNDERGRADUATE CREDIT

0. Subfreshman English. No credit. Each semester.

111. Written Communications I. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 0 or satisfactory entrance test.

112. Written Communications II. 2 semester hours. Each semester and summer.
Prerequisite: Engl. 111.

122. Commercial Correspondence. 3 semester hours. Each semester and summer.
Writing of adjustment, credit, collection, and sales letters; principles of effective commercial writing. Prerequisite: Engl. 112.

123. Written and Oral Salesmanship. 3 semester hours. Each semester.
Writing of follow-up systems of sales letters; composition and display of circular material and catalogues; principles of advertising and psychology of selling; sales talks; actual sales practice with commercial concerns. Prerequisite: Engl. 112.

125. Business English and Salesmanship. 3 semester hours. Second semester.
Principles of business letter writing and salesmanship in the field of engineering; writing of business letters; preparation of oral and written sales material. Prerequisite: Engl. 112.

140. Children's Literature. 3 semester hours. Summer.
Planned to meet the needs of teachers of rural and grade schools.

169. English Proficiency. Each semester and summer.
An examination to test the ability of the prospective graduate to write an expository essay logical in form and acceptable in grammar and diction. Required for graduation in all Schools. Prerequisite: Junior standing.

170. English Literature I. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 112.

171. English Literature II. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 112.

173. American Literature I. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 112.

174. American Literature II. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 112.

181. History of English Literature. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 170.

FOR GRADUATE AND UNDERGRADUATE CREDIT

215. Technical Reports. 1 semester hour. Each semester.
Organization and writing of technical reports to accompany certain courses in engineering specified by heads of engineering departments. Prerequisite: Engl. 112.

219. Advanced Composition I. 3 semester hours. First semester.
Subjects selected from the student's particular field of work; exposition of mechanisms, processes, and general expository writing. Prerequisite: Engl. 112.

220. Advanced Composition II. 3 semester hours. Second semester.
Narrative writing both in its relation to the other forms of composition and as an independent form. Direction and criticism of thesis work is offered to graduate students. Prerequisite: Engl. 112.

223. Advanced Problems in Commercial Correspondence. 3 semester hours. Second semester.
Writing adjustment, credit, and collection letters; specialized study and writing sales and business promotion letters; composition of form paragraphs and circular letters; correspondence supervision. Prerequisite: Engl. 122.

226. Scientific Report Writing. 3 semester hours. Each semester.
Preparation of scientific reports in engineering, chemistry, physics, geology, and other technical fields. Letters of authorization and submittal. Adaptation of written reports for oral presentation or for publication in technical journals. Prerequisite: Junior standing in technical field.

228. Short Story I. 3 semester hours. First semester.
The world's best short stories; practice in writing sketches and short stories. Prerequisite: Engl. 170.

230. Short Story II. 3 semester hours. Second semester.
Preparation of the short story for publication; the short story in America; types, characteristics, and tendencies. Prerequisite: Engl. 170.

232. Oral English. 3 semester hours. Each semester and summer.
Oral composition as applied to conversation and informal discussions; correction of errors in grammar, pronunciation, and idiom in everyday speech; a brief history of English sounds. Investigations in phonology for graduate students. Prerequisite: Engl. 112.

234. Scientific Report Writing. 2 semester hours. Each semester.
Organization of research data and report writing on scientific subjects, preparation of material for scientific journals. Not open to students who have credit in Engl. 215. Prerequisite: Engl. 112.

243. Advanced Grammar. 3 semester hours. Each semester and summer.
English etymology, inflections, syntax, and modern English and American usage. For graduate credit, reports on problems in modern English grammar. Prerequisite: Engl. 112.

245. History of the English Language. 1 semester hour.
Nature of language and its development; English language and its use in the United States. Prerequisite: For undergraduates, consent of the instructor; for graduates, Engl. 173.

247. Problems in English. Credit to be arranged. Each semester and summer.
Work offered in: Chaucer and Shakespeare, classical epics, midwestern literature, modern drama and fiction, novel and short story, old and middle English, romantic revival, sketch and column writing, and scientific report writing. Prerequisite: Engl. 112.

252. Children's Readings. 3 semester hours. Second semester.
Literature for children; selection of books for children; training in story telling. For students of child guidance and camp counseling. Prerequisite: Engl. 170.

255. Cultural Reading. 3 semester hours. Each semester.
Not open to students who have credit in Engl. 170, 171, 173, 174, or 181. Reading course in English and American literature, designed for students in agriculture, engineering, and other technical curriculums. Prerequisite: Engl. 112.

260. Chaucer. 3 semester hours. First semester.
Prerequisite: Engl. 170.

262. Milton and the Puritan Revolt. 3 semester hours. Second semester.
Prerequisite: Engl. 170.

268. Midwestern Literature. 3 semester hours. First semester.
Literature of the Middle West, particularly Kansas and the surrounding territory; its background, authors, and literature since the close of the Civil War. Prerequisite: Engl. 170.

271. English Bible. 3 semester hours. Each semester and summer.
Prerequisite: Engl. 170.

273. Shakespearean Drama I. 3 semester hours. First semester.
Life and times of Shakespeare; five of Shakespeare's tragedies: Macbeth or Othello, Hamlet, King Lear, Romeo and Juliet, and Coriolanus. Prerequisite: Engl. 170.

274. Shakespearean Drama II. 3 semester hours. Second semester.
Five of Shakespeare's comedies: The Winter's Tale, As You Like It, Twelfth Night, Cymbeline, and The Tempest; collateral reading of earlier, contemporary, and Shakespearean comedy; present-day criticism of Shakespeare. Prerequisite: Engl. 170.

276. English Essayists. 3 semester hours. Second semester.
Among the authors discussed are Swift, Addison, Steel, Johnson, Burke, Lamb, Hazlitt, DeQuincey, Wilson, Newman, Ruskin, Spencer, Huxley, Pater, and Wilde. Prerequisite: Engl. 170.

278. Wordsworth, Shelley, and Keats. 3 semester hours. First semester.
Prerequisite: Engl. 170.

280. World Classics I. 3 semester hours. First semester.
Literary masterpieces (in translation) of early times, particularly Greek and Latin classics. Prerequisite: Engl. 170.

281. World Classics II. 3 semester hours. Second semester.
Literary masterpieces (in translation) of western Europe, particularly Italian, Spanish, French, and German writings. Prerequisite: Engl. 170.

283. Contemporary Fiction. 3 semester hours. First semester and summer.
The more important British and American fiction since Hardy. Prerequisite: Engl. 170.

284. Contemporary Drama. 3 semester hours. Second semester.
Development of the drama since Ibsen; types of modern drama; works of important English, Irish, and American dramatists. Prerequisite: Engl. 170.

286. Novel I. 3 semester hours. First semester.
Prerequisite: Engl. 170.

287. Novel II. 3 semester hours. Second semester.
Prerequisite: Engl. 170.

288. English Survey I. 2 semester hours. First semester.
History of English literature from Anglo-Saxon times down to the close of the Elizabethan period. Prerequisite: Engl. 173.

290. English Survey II. 2 semester hours. Second semester.
Rise of Puritanism and its influence on English literature; classical movement; romanticism and its development. Prerequisite: Engl. 173.

293. Browning and Tennyson. 3 semester hours. Second semester.
Prerequisite: Engl. 170.

295. Modern Thought in Recent Literature. 3 semester hours. Each semester.
Trends in thought, of especial interest to women, in British and American literature since 1914. Prerequisite: Engl. 170.

297. Contemporary Poetry. 3 semester hours. Second semester and summer.
Prerequisite: Engl. 170.

FOR GRADUATE CREDIT

305. Research in English. Credit to be arranged. Each semester and summer.
Work offered in: Chaucer and Shakespeare, classical epics, midwestern literature, modern drama and fiction, novel and short story, old and middle English, scientific report writing, and sketch and column writing. Prerequisite: At least two courses in this department.

Entomology

ROGER C. SMITH, *Head of Department*

Entomology is the study of insects and their near relatives. Economic entomology stresses the relations to plants and animals including man. The courses in this department fall into two groups: (1) Broad, general, cultural courses suitable for any student, such as 102, 104, 108, 203, and 208; (2) professional courses which include most of the remainder. They provide training in this field for research, resident, and extension teaching, plant and animal inspection, industrial and commercial pest control, and administration in the services of colleges, experiment stations, other agencies of the states and the federal government, industry, and private practice.

For a minor, the following courses should be completed: 102, 104, or 203, and five or six additional credit hours.

For a major, in addition to the minor, professional courses and a broad, basic training in agriculture and the biological and physical sciences are needed to provide a satisfactory foundation for graduate work.

FOR UNDERGRADUATE CREDIT

102. General Entomology. 3 semester hours. Each semester and summer.
A basic study of insects and related arthropods as animals and how they affect plants and animals, including man.

104. General Entomology Laboratory. 1 semester hour. Each semester and summer.
Three hours of laboratory a week. Prerequisite: Ent. 102 or concurrent registration.

108. Household and Garden Insects. 2 semester hours. Second semester.
A study of the elementary structure and physiology of insects complete enough to give a clear understanding of the life history, habits, and control of the principal insect pests of the household, lawn, vegetable and flower gardens.

113. Farm Insects. 3 semester hours. Second semester.
Life history, habits, and control in insects of importance to the farm. In the laboratory, stages of insects, types of injuries, materials, and appliances for insect control will be examined. Two hours of recitation and three hours of laboratory a week. For students in the Two-Year Curriculum in Agriculture.

119. Milling Entomology. 4 semester hours. Each semester.
Elementary structure, life histories, classification and control of insects and their near relatives; insect and rodent pests of flour mills, elevators, granaries, warehouses and bakeries, and with standard methods of dealing with practical mill and granary sanitation problems; laboratory provides opportunities for basic studies and practical experience in mill sanitation. Three hours of recitation and two hours of laboratory a week.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Horticultural Entomology. 2 semester hours. First semester.
Injurious insects of the vegetable garden, shade trees, flowering and greenhouse plants, deciduous and citrus orchards; methods of control; insecticides. Prerequisite: Ent. 104 or 203.

203. General Economic Entomology. 3 semester hours. Each semester.
Elementary anatomy and physiology of insects; the life histories, habits, and control recommendations for the more important insect pests. Two hours of recitation and three hours of laboratory a week. Prerequisite: Zoöl. 105 or Bot. 102; when taken for graduate credit, Zoöl. 105.

206. Staple Crop Entomology. 3 semester hours. Second semester.
Important economic insects of field crops, and methods of dealing with them. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ent. 102, 104, or 203, and Zoöl. 105.

208. General Bee Culture. 3 semester hours. Second semester and summer.
Structure, life history, general behavior, activities, and products of the honeybee; practice beekeeping; bee diseases and their eradication and control; relation of bees to agriculture and horticulture. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ent. 102 and 104, or 203.

211. External Insect Morphology. 3 semester hours. First semester.
External anatomy of representative insects belonging to a number of orders; structure of the exoskeleton; a basis for taxonomy and hexapod morphology. One hour of recitation and six hours of laboratory a week. Prerequisite: Ent. 203.

213. Internal Insect Morphology. 3 semester hours. Second semester.
Internal anatomy of representative insects; plan and structure of the internal systems. One hour of recitation and six hours of laboratory a week. Prerequisite: Ent. 211.

216. Principles of Taxonomy. 1 semester hour. Second semester.
Determination of major orders of insects; taxonomic literature; use of catalogues. Prerequisite: Ent. 203, 211.

217. Taxonomy of Insects I. 2 semester hours. Second semester.
Determination of major orders of insects; taxonomic literature; use of catalogues. Six hours of laboratory a week. Prerequisite: Ent. 203, 211, 216 or concurrent registration.

218. Taxonomy of Insects II. 3 semester hours. Second semester.
Intensive study of a selected group of insects. Nine hours of laboratory a week. Prerequisite: Ent. 217.

221. Advanced General Entomology. 3 semester hours. Second semester.
Broad biological aspects of the subject; understanding of the relation of insects to the complex environmental factors; the various subdivisions of entomology. Prerequisite: Ent. 102, 104, or 203, and Zoöl. 105.

223. Pest Control Technology I. 4 semester hours. First semester.
Commercial control techniques for household pests. Three hours of recitation and three hours of laboratory a week. Prerequisite: Nine hours of entomology and consent of instructor.

224. Pest Control Technology II. 4 semester hours. Second semester.
Commercial control techniques for warehouses and public buildings, public health work, rodent control. Three hours of recitation and three hours of laboratory a week. Prerequisite: Nine hours of entomology and consent of instructor.

226. Medical Entomology. 3 semester hours. First semester.
Insects and other arthropods as parasites and disseminators of disease; life cycles, biology, and control of insect parasites. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ent. 102 and 104 or 203 and Zoöl. 105.

229. Advanced Bee Culture I. 3 semester hours. First semester.
Requeening; wintering; honey extraction and marketing. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ent. 208.

230. Advanced Bee Culture II. 3 semester hours. Second semester.
Honey plant and beekeeping regions; swarm control and colony division; queen rearing and introduction; honey production. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ent. 208.

231. Entomological and Zoölogical Literature. 2 semester hours. First semester.
This course, which presupposes a general knowledge of library methods, is a study of the current and past literature of all types in the zoölogical sciences, and the preparation and publication of technical papers. Especial emphasis is given to the best time-saving aids and methods for all aspects of library work for thesis preparation by members of the class and problem work by undergraduates beginning to specialize in any phase of the animal sciences. Prerequisite: Ent. 102, 104 or 203, and Zoöl. 105.

233. Insect Ecology. 2 semester hours. Second semester.
Influence of light, temperature, pressure, moisture, evaporation, air movements, food relations, biotic and other conditions of soil atmosphere. Prerequisite: Ent. 102, 104, or 203, and Zoöl. 105.

234. Insect Control by Host Plant Resistance. 2 semester hours. First semester.
Offered in 1946-'47 and alternate years thereafter. Resistance of varieties of crop plants to insect attack and their utilization in insect control; insect habits and physiology in relation to the cause of resistance and methods of breeding resistant varieties of crops. Prerequisite: An. Husb. 221 and Ent. 102, 104, or 203, or equivalent.

236. Zoölogy and Entomology Seminar. 1 semester hour. Each semester.
Prerequisite: Consult seminar committee.

238. Problems in Entomology. Credit to be arranged. Each semester and summer.
Work is offered in: Apiculture, economic entomology, and taxonomy and morphology. Prerequisite: Ent. 208 or 217.

240. Insect Physiology. 3 semester hours. Second semester.
Physiology of the cell, respiration, metabolism, reproduction, muscular

action, nervous responses, sense organs and senses, circulation, glandular system, metamorphosis, and effects of insecticides. Prerequisite: Ent. 211, Zoöl. 222.

FOR GRADUATE CREDIT

316. Research in Entomology. Credit to be arranged. Each semester and summer.

Work is offered in: Apiculture, economic entomology, insect physiology, medical entomology, pest control technology, and taxonomy and morphology. Prerequisite: At least two courses in this department.

Geology

ARTHUR B. SPERRY, *Head of Department*

For a minor, the following courses should be completed: 103, 110, 203, and 209.

For a major, in addition to the minor, the following courses should be completed: 215, 220, and 230, and seven additional hours. The student should enroll in the Curriculum in Physical Science.

FOR UNDERGRADUATE CREDIT

102. Engineering Geology. 4 semester hours. Each semester.

General principles of geology and their application to engineering problems. Three hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 110 or equivalent.

103. General Geology. 3 semester hours. Each semester and summer.

Structural and dynamic features of the earth; the rock-forming minerals; the rocks and their decay; a short history of the earth. Three or four field trips during the semester.

110. Physiographic Geology. 3 semester hours. Second semester and summer.

Topography of the earth and forces that have produced it. Origin of the topographic features of North America. Prerequisite: Geol. 102 or 103.

140. Principles of Geography. 3 semester hours. Second semester and summer.

Introductory course in college geography; relationships between human activities and environment.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Historical Geology. 4 semester hours. Each semester.

Physical and biological events through which the earth has gone. Three hours of recitation and three hours of laboratory a week. Prerequisite: Geol. 102 or 103.

204. Aerial Photography. 3 semester hours. First semester.

Interpretation and use of aerial photographs; conical perspective; oblique mapping methods; characteristics of vertical photographs; stereoscopic contouring methods; and adjustment of geologic, cultural, and topographic detail. One hour of recitation and six hours of laboratory a week. Prerequisite. Geol. 102 or 103.

207. Economic Geology. 4 semester hours. Second semester.

Origin and mode of occurrence of nonmetallic minerals, including coal and petroleum, and of metallic mineral deposits. Three hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 110, Geol. 203.

209. Crystallography and Mineralogy. 4 semester hours. First semester.
The fundamentals of crystallography and its use in mineral identification; physical and chemical mineralogy. Two hours of recitation and six of laboratory a week. Prerequisite: Chem. 110.

210. Field Geology. Credit to be arranged. Summer.
Opportunity is offered students to do field work in the Rocky Mountains. Students interested should consult the head of the department.

211. Geography of the Western Hemisphere. 3 semester hours. Second semester.
The geography of North America and South America and its European background. Prerequisite: Geol. 140.

212. Geography of the Eastern Hemisphere. 3 semester hours. Second semester.
The geography of Africa, Asia, and Australia. Prerequisite: Geol. 140.

215. Structural Geology. 4 semester hours. Second semester.
Mechanics of the earth's crust, interrelation of structures found in the earth. Three hours of recitation and three hours of laboratory a week. Prerequisite: Geol. 203, 209.

217. Conservation of Mineral and Water Resources. 3 semester hours. Second semester.
Prerequisite: Geol. 102 or 103.

220. Invertebrate Paleontology. 4 semester hours. First semester.
Evolution and geologic history of the invertebrate animals. Three hours of recitation and three hours of laboratory a week. Prerequisite: Geol. 203.

223. Petroleum Geology. 4 semester hours. Second semester.
Origin, migration, and accumulation of petroleum, stratigraphy, and structure of important fields. Three hours of recitation and three hours of laboratory a week. Prerequisite: Geol. 203.

224. Stratigraphic Geology. 4 semester hours. First semester.
Description, classification, and correlation of stratigraphic units, with emphasis on those of Kansas. Three hours of recitation and three hours of laboratory a week. Prerequisite: Geol. 203.

226. Geology of Subsurface Water. 4 semester hours. Second semester.
Three hours of recitation and three hours of laboratory a week. Prerequisite: Geol. 203.

230. Field Methods in Geology. 3 semester hours. First semester.
Construction of geologic maps, including a complete map of the Manhattan area; application of field methods to the problems of geology. One hour of recitation and six hours of laboratory a week. Prerequisite: Geol. 203.

235. Optical Mineralogy. 4 semester hours. First semester.
Polarizing microscope used to identify crystal fragments, powders, sediments, and thin sections; optical methods of microscopic research. Two hours of recitation and six hours of laboratory a week. Prerequisite: Geol. 209.

236. Sedimentary Petrology. 5 semester hours. First semester.
Mineralogy and origin of soils and other sediments, their transportation, deposition, and transformation. Three hours of recitation and six hours of laboratory a week. Prerequisite: Geol. 203, 209.

238. Petrology. 5 semester hours. First semester.
Petrology and petrography of igneous and metamorphic rocks. Three hours of recitation and six hours of laboratory a week. Prerequisite: Geol. 235.

241. Geologic Literature. 3 semester hours. First semester.
Current geologic literature and history of geology. Prerequisite: Geol. 203, 209.

245. Applied Geology. 3 semester hours. First semester.
Geology applied to the science of engineering, particularly highway engineering. Prerequisite: Geol. 230.

255. Vertebrate Paleontology. 3 semester hours. Second semester.
Evolution, geologic history, and classification of the vertebrates. Prerequisite: Geol. 203 or ten hours of zoölogy.

256. Micropaleontology. 3 semester hours. First semester.
Preparation, identification, and use of microscopic fossils. One hour of recitation and six hours of laboratory a week. Prerequisite: Geol. 203 and junior standing.

257. Political Geography. 3 semester hours. First semester and summer.
Natural resources and geographic factors related to the state. Prerequisite: Geol. 140.

275. Problems in Geology. Credit to be arranged. Each semester and summer.
Work is offered in: Mineralogy, paleontology, and sedimentary petrology. Prerequisite: Geol. 203, 209.

FOR GRADUATE CREDIT

301. Research in Geology. Credit to be arranged. Each semester and summer.
Work is offered in: Mineralogy, paleontology, and sedimentary petrology. Prerequisite: At least two courses in this department.

History and Government

Fred L. Parrish, *Head of Department*

For a minor, those planning to teach should complete the following courses: 106, 107, 127, 128, and 151. Those not planning to teach may substitute certain approved courses for the fulfillment of the minor.

For a major, in addition to the minor, twelve hours from the department's 200-course series should be completed.

Students who plan to major in history and government should enroll in the Curriculum in Arts and Sciences, option B. They should select the elective courses in their major, their options in economics and sociology, and their courses in modern language, with the advice of this department.

Students expecting to teach history and government may work out the educational courses required for a state certificate by making use of some of the free electives provided in the Curriculum in Arts and Sciences.

COURSES IN HISTORY

FOR UNDERGRADUATE CREDIT

105. American Industrial History. 3 semester hours. Each semester and summer.
Development of American economic growth from colonial beginnings to the present; manufacturing, commerce, finance, labor, and agriculture.

106. Civilization I. 3 semester hours. Each semester and summer.
Civilizations of the world to 1650 A.D., with emphasis on Western civilization.

107. Civilization II. 3 semester hours. Each semester and summer.
Civilizations of the world since 1650 A.D., with emphasis on Western civilization.

125. Contemporary World History. 2 semester hours. Each semester and summer.
World developments since 1930. Concurrent registration with Hist. 126 not permitted.

126. Current History. 1 semester hour. Each semester and summer.
May not be taken more than four semesters for credit.

127. United States Before 1865. 3 semester hours. Each semester and summer.
Social, economic, political, and international developments of the United States of America from the founding of the Republic through the War of 1861-1865.

128. United States Since 1865. 3 semester hours. Each semester and summer.
Industrial revolution, immigration, imperialism, and the changed national and international setting since the Civil War.

133. History of Kansas. 2 semester hours. Summer.
Land, peoples, problems, and growth of culture in the development of Kansas.

201. Early Americas. 3 semester hours. First semester and summer.
Indians of North, South, and Central America before 1492; impact of Europeans upon aboriginal cultures; rise and development of European institutions in the American environment. Prerequisite: Three hours of American history or junior standing.

203. The New American Nation. 3 semester hours. Each semester and summer.
Recent and contemporary history. Problems of the new nation from the Spanish-American War to the present. Prerequisite: Three hours of American history or junior standing.

207. Representative Americans. 2 semester hours. First semester and summer.
Lives of outstanding Americans. Prerequisite: Hist. 127 or 128 or junior standing.

208. Latin American Nations. 3 semester hours. Second semester and summer.
Economic, social, and political progress of the Latin American nations from the time of independence down to contemporary developments. Prerequisite: Three hours of American history or junior standing.

209. World Cultures I. 3 semester hours. First semester.
Cultures and historical traditions of early and contemporary primitive peoples; the birth, growth, and influence of the classical cultures of the Hebrew, Greek, Iranian, Indian, and Chinese people. Prerequisite: Hist. 106 or Compr. 131, or junior standing.

210. World Cultures II. 3 semester hours. Second semester.
History of the major cultural traditions from the time of the maturity of classical cultures to the culture of modern times; the rise and spread of western culture. Prerequisite: Hist. 106, 107, or Compr. 131, 132, or junior standing.

211. Modern England. 3 semester hours. First semester and summer.
Political, economic, and cultural history of modern and contemporary Britain. Prerequisite: Three hours of European history or junior standing.

212. Europe Since 1870. 3 semester hours. Second semester and summer.
History of the political, social, economic, and international developments. Prerequisite: Three hours of European history or junior standing.

213. Russia and the Soviet Union. 3 semester hours. Each semester and summer.
Imperial Russia and the new regime since the Revolution of 1917. Prerequisite: Three hours of European history or junior standing.

223. Renaissance and Enlightenment. 3 semester hours. Second semester.
Rise of humanism, religious revolt, the Enlightenment, growth of nationalism and European empires from 1600 to 1800. Prerequisite: Hist. 107 or junior standing.

225. History of Marriage and the Family. 3 semester hours. Second semester.
History of marriage and the family from primitive times to the present; marriage customs, position of women, child training; the modern home, recent changes and tendencies. Prerequisite: Three hours of history or junior standing.

226. British Empire. 2 semester hours. Second semester.
British maritime expansion movement; founding of colonies overseas; growth of self-governing dominions and the British Commonwealth. Prerequisite: Three hours of European history or junior standing.

227. American Diplomatic History. 3 semester hours. First semester and summer.
Development of the foreign policy of the United States from 1763 to the present. Prerequisite: Three hours of American history or junior standing.

230. Trans-Mississippi West. 3 semester hours. Second semester and summer.
Environmental factors, peoples, settlements, and institutions of the United States west of the Mississippi River. Prerequisite: Hist. 127 or 128 or junior standing.

232. History of Religions. 3 semester hours. Second semester and summer.
Historical survey of the world's living religions; the relation of each religion to its natural and cultural environment; dominant religious concepts, leaders, and historic developments which characterize each. Prerequisite: Three hours of European or Asiatic history, or junior standing.

233. Advanced Economic History of the United States. 2 semester hours. Second semester.
Analysis of the agricultural and industrial developments in the United States. Prerequisite: Hist. 105 or 128 or junior standing.

235. Revolutionary Europe. 3 semester hours. Second semester.
Industrialism, imperialism, French Revolution, reaction, reform, liberalism, and political unification; covering the period 1789-1870. Prerequisite: Hist. 107 or junior standing.

236. Far East. 3 semester hours. First semester and summer.
Modern and contemporary Chinese, Japanese, and other peoples of Eastern Asia and the western Pacific areas. Internal developments; international relations since the first peace treaties with the Western Powers. Prerequisite: Three hours of European or Asiatic history or junior standing.

237. Medieval and Elizabethan England. 3 semester hours. First semester.
Celtic, Roman, and Teutonic Britain; early monarchies, feudal age, rise of the modern state. Prerequisite: Hist. 106 or junior standing.

238. Sectionalism, War, Reconstruction. 2 semester hours. First semester and summer.
Development of sectionalism in the United States from 1830 to 1890. Prerequisite: Three hours of American history or junior standing.

240. Medieval Europe. 3 semester hours. First semester and summer.
Cultural and historical developments in Europe and the Near East from the decline of the Roman Empire to the Renaissance in Western Europe. Prerequisite: Hist. 106, Compr. 131, or junior standing.

249. American Thought and Institutions. 3 semester hours. First semester.
Cultural traditions, traits, and patterns in the life of Americans of the colonial and republican periods. Prerequisite: Six hours of American history or junior standing.

250. Seminar in History and Government. 2 to 5 semester hours. Each semester and summer.
Prerequisite: Consent of instructor and five hours of history basic to the field involved.

270. Problems in History and Government. Credit to be arranged. Each semester and summer.
Work is offered in: American history, Asiatic history, European history, government and law and philosophy. Prerequisite: Consent of instructor and five hours of history basic to the field involved.

290. Historical Method and Bibliography. 2 semester hours. First semester and summer.
Survey of historical works; methods in writing history, historical articles or theses. Required of graduate majors in history. Prerequisite: Consent of instructor and Hist. 106, 107, 127, 128.

FOR GRADUATE CREDIT

301. Research in History. Credit to be arranged. Each semester and summer.
Work is offered in: American history, Asiatic history, European history and government and law. Prerequisite: Hist. 290 or concurrent registration, and at least two courses in the department.

COURSES IN PHILOSOPHY

FOR UNDERGRADUATE CREDIT

140. Elementary Logic. 3 semester hours. Each semester and summer.
A study of correct thinking, its principles and conditions, in relation to observation, biases, prejudice, scientific induction, systematic deductive inference, sophistry, fallacies, and propaganda.

142. Philosophy of Science I. 3 semester hours. First semester and summer.
A survey of methods, attitudes, and institutions identified with science, together with their implications for a working philosophy of life.

FOR GRADUATE AND UNDERGRADUATE CREDIT

214. Contemporary World-Views. 3 semester hours. Each semester and summer.
Study of representative idealist and naturalist philosophies and examination of their corresponding conflicts in practical affairs. Prerequisite: Junior standing.

216. Early Western Philosophy. 3 semester hours. First semester and summer.
History of and readings in western philosophy from Thales to Thomas Aquinas. Prerequisite: Junior standing.

218. Modern Western Philosophy. 3 semester hours. Second semester and summer.
History of and readings in western philosophy from Francis Bacon to Hegel. Prerequisite: Junior standing.

220. Ethics. 2 semester hours. Second semester and summer.
Theories of conduct; ideas of right and wrong; what makes an act good or bad; the good life. Prerequisite: Junior standing.

221. Contemporary Social Philosophies. 3 semester hours. Each semester and summer.
A comparative study of the principles and practices associated with contemporary economic and social systems. Prerequisite: Junior standing.

222. Recent Political Philosophies. 2 semester hours. Each semester and summer.
Comparative study of the basic philosophical concepts and arguments underlying the political systems of democratic states in relation to the systems of soviet and fascist states. Prerequisite: Junior standing.

COURSES IN GOVERNMENT

FOR UNDERGRADUATE CREDIT

151. American Government. 3 semester hours. Each semester and summer.
State and national government, with emphasis on constitutional principles and on functional activity.

154. Contemporary Governments. 3 semester hours.
Survey of the leading contemporary national governments.

163. Business Law I. 3 semester hours. Each semester and summer.
Contracts, agency, and sales.

164. Business Law II. 3 semester hours. Each semester and summer.
Negotiable instruments, partnerships, and corporations.

167. Law for Engineers. 2 semester hours. Each semester.
Case study of such rules of law as will prove most useful to engineers and architects; law of contracts.

FOR GRADUATE AND UNDERGRADUATE CREDIT

206. American Political Parties. 2 semester hours. Offered in alternate years.
Origin, development, leaders, and functions of political parties in America; issues and results of presidential elections; growth of nationality and development of self-government with special reference to present tendencies. Prerequisite: Govt. 151 or junior standing.

252. Comparative Government. 2 semester hours. First semester and summer.
Principal democracies, including comparisons with the government of the United States; principal dictatorships of Europe. Prerequisite: Govt. 151 or junior standing.

253. City Government. 3 semester hours. Second semester and summer.
Government and administration of American cities. Prerequisite: Govt. 151 or junior standing.

256. International Law. 2 semester hours. Second semester.
Nature and scope of international law; factors which contribute to its growth; tendencies in the development of the law today. Prerequisite: Govt. 151 or junior standing.

258. International Relations. 2 semester hours. First semester and summer.
Recent and contemporary international problems; work of international organizations. Prerequisite: Govt. 151 or junior standing.

260. Government and Business. 2 semester hours.
Constitutional limitations upon the powers of government; laws which affect economic interests such as trade regulations, taxation, labor legislation, legislation for the benefit of debtors, and emergency legislation. Prerequisite: Junior standing.

262. Constitutional Law. 3 semester hours. Each semester and summer.
Development of the government of the United States through judicial interpretation of the Constitution. Case method used. Prerequisite: Comp. 122 or Govt. 151.

263. Federal Politics and Administration. 2 semester hours.
A study of political and administrative processes at the national level with particular attention to the underlying pressures and organizational problems influencing those processes. Prerequisite: Junior standing or consent of instructor.

265. State and Local Politics and Administration. 2 semester hours. Second semester.
A study of political and administrative processes at the state and local levels with particular attention to the problems, attitudes, and pressures affecting those processes. Prerequisite: Junior standing or consent of instructor.

276. Land Law. 2 semester hours. First semester in alternate years.
Interests and rights in land; methods by which such interests and rights are acquired and protected; relation to landlord and tenant and that of mortgagor and mortgagee, developed by study of Kansas cases. Not open to students who have credit in Govt. 175.

FOR GRADUATE CREDIT

351. Research in Government. Credit to be arranged. Each semester and summer.
Work is offered in: Government and law. Prerequisite: At least two courses in government or law.

Industrial Journalism and Printing

RALPH R. LASHBROOK, *Head of Department*

For a major, the student should enroll in the Curriculum in Industrial Journalism.

To be classified as "professionals," students in the Curriculum in Industrial Journalism must attain a typing speed of thirty words a minute and meet other requirements established by the department faculty.

COURSES IN INDUSTRIAL JOURNALISM

FOR UNDERGRADUATE CREDIT

146. Reporting I. 3 semester hours. Each semester and summer.
Introduction to the field of journalism; intensive study of the daily newspaper; news gathering and writing. Prerequisite: Sophomore standing.

147. Reporting II. 3 semester hours. Each semester.
Two hours of recitation and six hours reportorial work on the Kansas State Collegian a week. Prerequisite: Ind. Journ. 146.

149. News Photography. 2 semester hours. Each semester and summer.
Planning and taking news and feature pictures; writing and editing captions. Open to students in curriculums in Agricultural Journalism and Industrial Journalism. Prerequisite: Ind. Journ. 147.

153. Kansas State Collegian Journalism. 1 semester hour. Each semester and summer.
Gathering and writing of news, or advertising practice, on student publications, under the supervision of an instructor. Three hours of laboratory a week. Prerequisite: Consent of instructor.

160. Agricultural Journalism. 3 semester hours. Each semester.
Principles of news writing as applied to agriculture. Two hours of recitation and three hours of laboratory a week.

162. Radio News. 2 semester hours. Each semester and summer.
Processing and broadcasting of radio news. Prerequisite: Ind. Journ. 150. For nonjournalism students, Sp. 167.

166. Editing. 2 semester hours. Each semester and summer.
Six hours of laboratory a week. Prerequisite: Ind. Journ. 147.

177. Principles of Advertising. 3 semester hours. Each semester.
Study of goods to be advertised, analysis of the market, psychology of advertising, preparation of advertising copy. Prerequisite: Junior standing.

180. Broadcasting Station Practice. 1 semester hour. Each semester and summer.
News gathering, writing, and broadcasting, over radio station KSAC. Three hours of laboratory a week. Prerequisite: Ind. Journ. 162.

181. Rural Press. 2 semester hours. Second semester.
Community newspapers; emphasis on presentation of agriculture and rural life. Prerequisite: Ind. Journ. 150.

183. Public Information Methods. 2 semester hours. First semester.
Prerequisite: Ind. Journ. 150.

199. Industrial Journalism Lecture. Required. Each semester.
Addresses by practicing newspaper workers and members of the department. Required of all students in the Curriculum in Industrial Journalism.

FOR GRADUATE AND UNDERGRADUATE CREDIT

229. Supervision of School Publications. 2 semester hours. Second semester and summer.
Prerequisite: For graduate credit, four hours of journalism.

230. Formation of Public Opinion. 3 semester hours. Second semester and summer.
Role of the press and communication agencies in formation of public opinion, work of propagandists and pressure groups. Prerequisite: Junior standing and consent of instructor; for graduate credit, eight hours of social science.

232. Advertising Salesmanship. 2 semester hours. Each semester and summer.
Application of principles of space selling and layout to specific lines of business by work with advertising clients of a daily newspaper. Prerequisite: Junior standing and consent of instructor.

234. Reporting III. 3 semester hours. Second semester.
Reporting news of local, state, and national affairs. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ind. Journ. 147.

267. The Woman's Page. 3 semester hours. Each semester and summer.
Writing and editing materials for a woman's page in a local newspaper; supervision of photography for that page. Prerequisite: For students in Curriculum in Industrial Journalism, Ind. Journ. 166; for other students, Ind. Journ. 146 and consent of instructor.

269. Magazine Article Writing. 2 semester hours. Each semester and summer.
Study of technical, trade, and general publications; writing for general magazines, agricultural and business publications, and women's departments. Prerequisite: For students in curriculum in Industrial Journalism, senior

standing or consent of instructor; for students in curriculum in Home Economics and Journalism, Ind. Journ. 267; for other students, consent of instructor.

270. Advanced Magazine Writing and Editing. 2 semester hours. Each semester and summer.
Content of the course varied to suit the needs and desires of the students. Prerequisite: Ind. Journ. 269.

272. History of Journalism. 3 semester hours. Second semester.
Prerequisite: Junior standing.

281. Critical Writing. 2 semester hours. Second semester.
Prerequisite: Engl. 112.

284. The Journalist in Free Society. 3 semester hours. Each semester and summer. (See Cit. 284.)
Concept of freedom of the press, from the standpoint of the journalist and the citizen in a free society. Meaning of freedom of the press, its importance in a democracy, and responsibilities which it imposes upon the journalist. Prerequisite: Junior standing or consent of instructor.

285. Interpretation of Contemporary Affairs. 3 semester hours. Second semester, and alternate summers.
Critical questions regarding recent developments in state, national, and international affairs; editorials and interpretive articles which document and analyze the news; introduction to research in public affairs. Prerequisite: For students in curriculum in Industrial Journalism, Ind. Journ. 284; for other students, consent of instructor.

288. Trade and Technical Writing. 2 semester hours. Second semester.
Theory and practice of writing which pertains to the special interests of industry, trade, and business. Prerequisite: Ind. Journ. 177.

289. Newspaper Management. 2 semester hours. First semester.
Relations of departments of a newspaper to one another; costs, statistics, advertising news, and business methods in publishing. Prerequisite: Ind. Journ. 177.

293. Readings in Journalism. 2 semester hours. Each semester.
Investigation of the literature of journalism. Prerequisite: Junior standing and consent of instructor.

295. Problems in Industrial Journalism. Credit to be arranged. Each semester and summer.
Work is offered in: Advertising, agriculture, current newspapers and periodicals, high school journalism, history and ethics, home economics. news photography, radio and science. Prerequisite: Consent of instructor.

FOR GRADUATE CREDIT

351. Research in Industrial Journalism. Credit to be arranged. Each semester and summer.
Work is offered in: Advertising, agriculture, current newspapers and periodicals, high school journalism, history and ethics, home economics, news photography, and radio. Prerequisite: At least two courses in this department.

COURSES IN PRINTING

103. Graphic Arts Survey. 2 semester hours. Each semester.
History and art of printing; typography of advertisements and headline display; principles of effective makeup. Prerequisite: Sophomore standing and concurrent registration in Prtg. 104.

104. Typography Laboratory. 1 semester hour. Each semester.
Typesetting, proofreading, correction of forms as a background for journalism. Three hours of laboratory a week. Prerequisite: Sophomore standing and concurrent registration in Prtg. 103.

108. Ad Typography I. 2 semester hours. Each semester.
Principles of display and design as applied to advertisements. Six hours of laboratory a week. Prerequisite: Prtg. 104.

111. Ad Typography II. 2 semester hours. Each semester.
Continuation of Prtg. 108. Six hours of laboratory a week. Prerequisite: Prtg. 108.

112. Ad Typography III. 2 semester hours. Each semester.
Continuation of Prtg. 111. Six hours of laboratory a week. Prerequisite: Prtg. 111.

114. Job Composition I. 2 semester hours. Each semester.
Differences in requirements for job composition and ad composition. Six hours of laboratory a week. Prerequisite: Prtg. 104.

118. Job Composition II. 2 semester hours. Each semester.
Color work, tabular forms, and other job work. Six hours of laboratory a week. Prerequisite: Prtg. 114.

120. Job Composition III. 2 semester hours. Each semester.
Continuation of Prtg. 118. Six hours of laboratory a week. Prerequisite: Prtg. 118.

122. Presswork I. 2 semester hours. Each semester.
Practical platen presswork under printing-office conditions. Six hours of laboratory a week. Prerequisite: Prtg. 108 or 114.

126. Presswork II. 2 semester hours. Each semester.
Continuation of Prtg. 122; mixing inks; color work. Six hours of laboratory a week. Prerequisite: Prtg. 122.

Library Economics

WILLIAM BAEHR, *Head of Department*

FOR UNDERGRADUATE CREDIT

104. Introduction to Bibliography. 1 semester hour. First semester.
Principles and content of general and special bibliography. Prerequisite: Junior standing.

Mathematics

RALPH G. SANGER, *Head of Department*

The regulations concerning proficiency tests in mathematics are as follows:

I. In all curriculums in which college algebra is required, students take a proficiency test in algebra within the first two weeks of their enrollment in any course in algebra. Results of this test determine whether a student shall be required to take intermediate algebra to qualify for college algebra.

II. In all other curriculums which contain a required course in mathematics, students take a proficiency test in mathematics. Results of this test determine whether a student may be required to take remedial work in mathematics. The test is given during the first two weeks of each semester and taken at the first opportunity after the student has satisfied entrance requirements in mathematics and is in residence.

For a minor in mathematics, the following courses should be completed: 101, 104, 110, 114, 115, and preferably 201.

For a major in mathematics, in addition to the minor, the following courses should be completed: 102 and 201, and three additional courses (not statistics) chosen from the 200 group, which normally include 210, one of 240, 241, 242, and one of 253, 254, 255, 256. For a major in statistics, the following courses should be completed: 201, 210, 268, 269, and six semester hours from among Mathematics 128, 213, 241, 261, 262, and 264.

FOR UNDERGRADUATE CREDIT

1. Elementary Algebra. 1 entrance unit credit. Each semester. Four hours of recitation a week.

3. Plane Geometry. 1 entrance unit credit. Each semester. Four hours of recitation a week.

20. Intermediate Algebra. No credit. Each semester and summer.
Review of elementary algebra; topics preparatory to Math. 104, 107, or 108. Three hours of recitation a week.

101. Plane Trigonometry. 3 semester hours. Each semester and summer.
Prerequisite: Plane geometry and one and one-half units of high school algebra.

102. Solid Geometry. 2 semester hours. Each semester and summer.
Prerequisite: Plane geometry and one unit of high school algebra.

103. Mathematics in Human Affairs. 3 semester hours. Each semester and summer.
A general cultural course for students who do not take formal mathematics.

105. Mathematics in Agriculture. 3 semester hours. Each semester.
A course designed for students in the School of Agriculture.

112. College Algebra. 3 semester hours. Each semester and summer.
Prerequisite: Plane geometry and satisfactory placement test score in algebra. Students with one and one-half entrance units of algebra should normally be eligible for this course.

120. Plane Analytic Geometry. 4 semester hours. Each semester and summer.
Prerequisite: Math. 101, 112.

131. Analytic Geometry and Calculus I. 4 semester hours. Second semester.
Analytic geometry, differential and integral calculus of polynomials. Prerequisite: Math. 101, 112.

132. Analytic Geometry and Calculus II. 4 semester hours. First semester and summer.
Continuation of Math. 131, to include transcendental functions. Prerequisite: Math. 131.

133. Analytic Geometry and Calculus III. 4 semester hours. Each semester.
Continuation of Math. 132, to include functions of more than one variable; series. Prerequisite: Math. 132.

140. Calculus I. 4 semester hours. Each semester and summer.
Prerequisite: Math. 120.

141. Calculus II. 4 semester hours. Each semester and summer.
Prerequisite: Math. 140.

151. General Algebra. 5 semester hours. Each semester and summer.
Prerequisite: Plane geometry and one unit of high school algebra. Not open to students with credit in Math. 112. For students in the Curriculums in Business Administration.

162. Mathematics of Finance. 3 semester hours. Second semester.
Prerequisite: Acct. 133, Math. 151.

164. Elements of Statistics. 3 semester hours. Each semester.
A basic course in probability and statistics for students of economics, biology, and science. Not open to students who have credit in Educ. 223.

168. Applied Elementary Statistics. 2 semester hours.
Continuation of Math. 154, with introduction to sampling techniques and theory; introductory multiple and curvilinear correlation, and applications in biology, psychology, economics and engineering. Prerequisite: Math. 164.

170. Differential Equations for Engineers. 2 semester hours. Each semester and summer.
Prerequisite: Math. 141.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Differential Equations. 3 semester hours. First semester.
Prerequisite: Math. 141.

210. Advanced Calculus I. 3 semester hours. First semester.
Partial differentiation with applications to the geometry of three dimensions, envelopes, maxima and minima of functions of several variables. Line integrals and allied topics with their relations to multiple integrals. Prerequisite: Math. 141.

213. Advanced Calculus II. 3 semester hours. Second semester.
Improper integrals, beta and gamma functions; integrals dependent on a parameter, elliptic integrals, uniform convergence of series and integrals. Prerequisite: Math. 141 and preferably Math. 170 or 201.

233. Fourier's Series. 3 semester hours. Second semester.
Prerequisite: Math. 201.

234. Vector Analysis. 3 semester hours. Each semester.
Methods of vector algebra and geometry, with applications, and the elements of tensors. Prerequisite: Math. 141.

238. Elementary Partial Differential Equations. 3 semester hours. First semester.
Solution of partial differential equations; applications to problems of physics and engineering. Prerequisite: Math. 201.

239. Differential Equations of Mathematical Physics. 3 semester hours.
Solution of Legendre's, Bessel's and other differential equations including the properties and uses of the solutions. Prerequisite: Math. 170 or 201.

240. Higher Algebra. 3 semester hours. Each semester and summer.
Prerequisite: Math. 141.

241. Theory of Equations. 3 semester hours. First semester.
Prerequisite: Math. 141.

242. Introduction to Theory of Matrices. 3 semester hours.
Matrices and application to geometry and differential equations. Prerequisite: Math. 201.

243. Theory of Numbers. 3 semester hours.
Prerequisite: Math. 141.

253. Solid Analytic Geometry. 3 semester hours. Second semester.
Prerequisite: Math. 141.

254. Modern Plane Geometry. 3 semester hours. Second semester.
Properties of a triangle and its circles, harmonic ranges and pencils, inversion, poles and polars. Prerequisite: Math. 120.

255. Analytic Projective Geometry. 3 semester hours. Second semester.
Linear dependence, homogeneous coördinates, cross ratio, properties of conics, elements of projective geometry. Prerequisite: Math. 141.

256. Synthetic Projective Geometry. 3 semester hours.
Prerequisite: Math. 141.

258. Probability. 3 semester hours.
Basic laws and concepts; mathematical expectation; distribution functions for normal, binomial, and Poisson populations; and applications. Prerequisite: Math. 141.

259. Finite Differences. 3 semester hours.
Application of the calculus of finite differences to problems in interpolation and mechanical quadrature. Construction of some important mathematical tables will be discussed. Prerequisite: Math. 141.

261. Statistical Methods I. 3 semester hours. First semester.
Development of proficiency in statistical technics appropriate to sampling studies; the chi-square test, confidence intervals, t-test linear regression, and analysis of variance. Prerequisite: Junior standing.

262. Statistical Methods II. 3 semester hours. Second semester.
Further study of analysis of variance; technic and applications of covariance, multiple and curvilinear regression and introduction to designing of experiments. Prerequisite: Math. 261 or consent of the instructor.

264. Sampling Methods. 3 semester hours. Second semester.
Design, mechanics, and analysis of sampling investigations in the fields of economics and biology; stratification; estimation of population values; accuracy of sampling estimates. Prerequisite: Math. 261.

267. Designing Experiments. 3 semester hours.
The planning of experiments in the fields of biological science so they will be efficient and will yield data which can be analyzed statistically. Randomized blocks, Latin squares, split-plots, and lattices. Prerequisite: Math. 261.

268. Mathematical Statistics I. 3 semester hours.
Mathematical discussion of statistical methods, frequency distributions; mean values; moments; normal, binomial, and Poisson distributions. Topics in large sample theory, two variable frequency distributions, linear correlation and regression. Prerequisite: Math. 141.

269. Mathematical Statistics II. 3 semester hours.
Curvilinear and multiple correlation; small sample theory; chi-squared, t, and F distributions; testing statistical hypotheses. Prerequisite: Math. 268.

270. Statistical Quality Control. 3 semester hours.

271. Theory of Functions of a Complex Variable I. 3 semester hours.
Prerequisite: Math. 201.

272. Theory of Functions of a Complex Variable II. 3 semester hours. Second semester.
Prerequisite: Math. 271.

275. Advanced Differential Equations I. 3 semester hours. First semester.
Special topics, such as the equations of Legendre, Bessel, and Ricatti, with applications. Prerequisite: Math. 201.

276. Advanced Differential Equations II. 3 semester hours.
Boundary value problems associated with differential equations; their relations to integral equations. Prerequisite: Math. 275.

278. Calculus of Variations. 3 semester hours. Second semester and summer.
Necessary and sufficient conditions for an extreme value; applications to geometry and mechanics. Prerequisite: Math. 201, 213.

281. Integral Equations and Green's Functions. 3 semester hours. Second semester.
Solutions of boundary problems, particularly in elasticity and aerodynamics, by means of integral equations, Green's functions, and partial differential equations. Prerequisite: Math. 201.

282. Tensor Analysis. 3 semester hours.
Introduction to theory of tensors with applications to geometry, relativity, and applied mathematics. Prerequisite: Math. 201, 210, 234.

283. Operational Methods. 3 semester hours.
Selected topics from Heaviside's operational calculus, Laplace transforms. Prerequisite: Math. 170 or 201, and preferably Math. 210.

290. Foundations of Mathematics. 3 semester hours.
Postulates used in development of geometry and algebra. Prerequisite: Math. 141.

298. History of Mathematics. 3 semester hours. Each semester and summer.
Prerequisite: Math. 120.

299. Topics in Mathematics. Credit to be arranged. Each semester and summer.
Prerequisite: Math. 141.

FOR GRADUATE CREDIT

331. Research in Mathematics. Credit to be arranged. Each semester and summer.
Prerequisite: At least two courses in this department subsequent to Math. 141.

Military Science and Tactics

Colonel Mark Gerald Brislawn, *Commandant*

Col. Mark Gerald Brislawn, Professor of Military Science and Tactics
Lt. Col. Dean H. Eshelman, Professor of Air Science and Tactics

All regularly enrolled male students who are citizens of the United States and not physically disqualified are required to take military training three hours a week during their freshman and sophomore years or the equivalent. Students who enter with twenty-five hours of advanced credit are excused from the second year of military training; those who enter with fifty-nine hours of advanced credit are excused from all military requirements.

The president of the College acts on all requests for excuse from military training or its postponement. Students excused from military training are assigned an equivalent amount of other college work.

Students who have had military training in a school or college offering military training under an officer of the Army of the United States or Air Force of the United States detailed as professor of military science and tactics or professor of air science and tactics may be granted advanced standing in basic R. O. T. C. courses in Kansas State College. No credit will be given for

military training taken by a student under fourteen years of age. All transfers of credit for military training are subject to the approval of the professor of military science and tactics, or the professor of air science and tactics.

Anti-aircraft Artillery, Infantry, Signal and Veterinary Army units and Air Force Administration and Aircraft Engineering Maintenance Air Force units of the Reserve Officers Training Corps have been established at Kansas State College.

PERTINENT REGULATIONS OF THE R. O. T. C

1. Returning Servicemen. The granting of appropriate credit for military or naval service, to be applied in lieu of military training required by the institution as a result of the Act of July 2, 1862 (Morrill or Land-Grant Act), is a matter to be decided entirely by the school or state authorities concerned.

Credit toward fulfillment of prerequisites for the Advanced Course R. O. T. C. is prescribed by the Departments of Army and Air Force, and will be adjusted by the Professor of Military Science and Tactics, or the Professor of Air Science and Tactics. Credit for previous R. O. T. C. training in the Junior Division (High Schools and Preparatory Schools) toward fulfillment of College and Departments of Army and Air Force requirements will be determined by the president of the College and the commandant. To be eligible to enroll in the advanced course, students are required to complete Military IA and IB (which is common to both Air Force and Army) and the Military II course of the branch, force, or service, in which they wish to enroll for the advanced course. For example, students desiring to enroll in the advanced Signal R. O. T. C. must complete Military IA and IB and Signal IIA and IIB.

2. Signal Corps. Applicants for admission to the advanced course of the Signal Corps must be enrolled in academic fields leading to a degree in engineering, electronics, or physics; however, students enrolled in courses other than these may be admitted as a second priority.

3. Veterinary Corps. To be eligible for enrollment in the Veterinary Corps R. O. T. C., students must be enrolled in the School of Veterinary Medicine. Regardless of the prior R. .O. T. C. training which a student has had in other branches of the service, he must complete the two years of basic Veterinary R. O. T. C. before he becomes eligible to enroll in advanced Veterinary Corps R. O. T. C. One hour of recitation per week for four years is required to complete the entire course. No drill or uniforms are required. The advanced pay is the same as is prescribed for other branches. Attendance at one Medical Department summer camp of six weeks' duration is required for those students who pursue the advanced course. Those students who successfully complete the course will be commissioned as second lieutenants in the Veterinary Corps Reserve of the U. S. Army.

4. Basic Course (freshmen, sophomores). Each student in these classes will be furnished complete equipment for his use in the course. The articles remain the property of the United States and must be turned in by each student at the close of each College year or upon withdrawal from the R. O. T. C.

5. Advanced Course. A. All students formally enrolled in the advanced course R. O. T. C. must:

(1) Not have reached 27 years of age at the time of initial enrollment.
(2) Successfully complete such survey and general screening tests as may be prescribed.
(3) Be selected by the Professor of Military Science and Tactics or the Professor of Air Science and Tactics and the head of the institution.
(4) Execute a written agreement with the government to complete the Advanced Course, contingent upon remaining in school; and to attend the Advanced Camp of not less than six weeks at the time and place specified during which period clothing and subsistence will be furnished and the student will be paid at the rate of $75 per month.
(5) Have completed the basic course of the Senior Division R. O. T. C. or receive credit in lieu thereof.

B. A formally enrolled advanced course student will receive: Commutation of subsistence at the rate designated annually by the President of the United States. Upon completion of the Advanced Course and upon graduation from the institution he will be eligible for a commission in the Organized Reserve Corps or United States Air Force Reserve or may be commissioned in the Regular Army or the Regular Air Force. If upon completion of the Advanced Course he has not received a degree from College or has not reached the age of 21, he will be given a certificate of eligibility and will be commissioned when he receives his degree and/or becomes 21 years of age.

C. Because of limitations in electives, the maximum number of hours in advanced R. O. T. C. available toward an undergraduate degree in the several schools is Agriculture 12; Engineering and Architecture 8; Arts and Sciences 12; Veterinary Medicine 2 or 3.

The corps of cadets at present is organized as one regiment with a military band.

FOR UNDERGRADUATE CREDIT

SENIOR DIVISION R. O. T. C.

BASIC COURSES

105. Military IA. 1 semester hour.
Military organization; military policy of the United States; National Defense Act and R. O. T. C.; evolution of warfare; maps and aerial photographs; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work.

106. Military IB. 1 semester hour.
Military psychology and personnel management; first aid and hygiene; geographical foundations of national power; military problems of the United States; military mobilization and demobilization; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 105.

121. Air Administration IIA. 1 semester hour.
Orientation, aerodynamics, and propulsion; weather and navigation; applied air power; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 106.

122. Air Administration IIB. 1 semester hour.
Air force administration; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 121.

123. Air Maintenance IIA. 1 semester hour.
Orientation, aerodynamics, and propulsion; weather and navigation; applied air power; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 106.

124. Air Maintenance IIB. 1 semester hour.
Aircraft maintenance and inspection procedure, leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 123.

129. Anti-aircraft Artillery IIA. 1 semester hour.
Introduction to anti-aircraft artillery automatic weapons; characteristics, capabilities, and limitations of anti-aircraft artillery automatic weapons; service of the piece—automatic weapons fire unit; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 106.

130. Anti-aircraft Artillery IIB. 1 semester hour.
Introduction to anti-aircraft artillery guns; characteristics, capabilities, and limitations of 90-mm. anti-aircraft artillery guns; service of the piece—

90-mm. anti-aircraft artillery guns; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 129.

131. Infantry IIA. 1 semester hour.
Organization and equipment of an infantry division, regiment, battalion, and company; weapons study covering description, characteristics, limitations of Browning automatic rifles, machine guns, carbines, rocket launchers; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 106.

132. Infantry IIB. 1 semester hour.
Principles of marksmanship of M-1 rifle and range firing with .22 rifle; technique of fire of rifle squad; scouting and patroling, day and night; combat formations in squad combat; employment of rifle squad in attack defense and security; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 131.

137. Signal IIA. 1 semester hour.
Introduction to signal communications; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 106.

138. Signal IIB. 1 semester hour.
Organization and missions of Signal Corps; organization and signal communication practices of infantry, armored and airborne divisions; leadership, drill, and exercise of command. Two hours of recitation and one hour of practical work. Prerequisite: Mil. Sc. 137.

ADVANCED COURSES

142. Air Administration IIIA. 3 semester hours.
Orientation; logistics; air operations; Air Force administration; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 122.

143. Air Administration IIIB. 3 semester hours.
Air Force administration; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 142.

144. Air Administration IVA. 3 semester hours.
Orientation; military administration; Inspector General; military law; military teaching methods; Air Force management; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 143.

145. Air Administration IVB. 3 semester hours.
Air Force administration; Air Force management; career management; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 144.

147. Air Maintenance IIIA. 3 semester hours.
Orientation, logistics, air operations; aircraft maintenance engineering; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 124.

148. Air Maintenance IIIB. 3 semester hours.
Aircraft maintenance and inspection procedure; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 147.

149. Air Maintenance IVA. 3 semester hours.
Orientation; military administration; Inspector General; military law; military teaching methods; Air Force management; leadership, drill, and

exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 148.

150. Air Maintenance IVB. 3 semester hours.
Aircraft maintenance and inspection procedure; Air Force management; career management; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 149.

162. Anti-aircraft Artillery IIIA. 3 semester hours.
Organization of anti-aircraft artillery guns, automatic weapons and self-propelled batteries and battalions; basic gunnery (anti-aircraft guns); individual weapons and marksmanship; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 130.

163. Anti-aircraft Artillery IIIB. 3 semester hours.
Basic gunnery (automatic weapons); communications, anti-aircraft guns and automatic weapons, battery and battalion, telephone and radio communications systems; motors and transportation—maintenance, operation, and tactical use of transportation within the 90-mm antiaircraft gun battalion and the antiaircraft automatic weapons battalion troop movements; anti-aircraft artillery tactics; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 162.

164. Anti-aircraft Artillery IVA. 3 semester hours.
Anti-aircraft artillery material; gunnery (advanced antiaircraft artillery); supply and evacuation; military administration and personnel management; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sci. 163.

165. Anti-aircraft Artillery IVB. 3 semester hours.
Command and staff; military teaching methods; psychological warfare; combat intelligence; military team; anti-aircraft artillery tactics (advanced); new development; field artillery capabilities and employment; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 164.

167. Infantry IIIA. 3 semester hours.
Review organization of the infantry division; weapons study covering description, characteristics, nomenclature of machine guns, mortars, rocket launchers, recoilless rifles; gunnery technique of fire of the rifle platoon and crew served weapons; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil Sc. 132.

168. Infantry IIIB. 3 semester hours.
Intelligence agencies and importance of combat intelligence; communications within infantry battalion; estimate of situation and combat orders; tactical employment of infantry rifle and heavy weapons platoons in normal offensive, defensive, and security missions; field fortifications; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 167.

169. Infantry IVA. 3 semester hours.
Organization; equipment and duties of personnel of division and regiment; continuation of communication in Infantry III; motors and transportation with respect to vehicle nomenclature and characteristics; combat supply and evacuation; administrative and tactical troop movements and bivouacs; military administration and military law and boards; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 168.

170. Infantry IVB. 3 semester hours.
Military teaching methods to include educational, psychological, and instructional technique; psychological warfare; origin and purpose of the

staff, using division staff as model; new developments in tactics, technique, and equipment; composition and mission of various military teams from a patrol to a regimental combat team; continued study of infantry battalion in attack and defense; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 169.

172. Signal IIIA. 3 semester hours.
Communication security; field wire communication fundamentals; message center and communications center procedure; weapons and marksmanship; career guidance; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 138.

173. Signal IIIB. 3 semester hours.
Signal orders; applied signal communication; signal supply and repair; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 172.

174. Signal IVA. 3 semester hours.
Military administration and personnel management; command and staff; post signal operations and administrative procedure; darkroom technique and photographic practices; wire communication materiel; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 173.

175. Signal IVB. 3 semester hours.
Military teaching methods; psychological warfare; combat intelligence; career guidance; radio communication materiel; higher echelon signal communication equipment; leadership, drill, and exercise of command. Three hours of recitation and two hours of practical work. Prerequisite: Mil. Sc. 174.

181. Veterinary IA. 1 semester hour.
Organization of the Army; national defense and R. O. T. C.; organization of the Medical Department. Prerequisite: Enrollment in School of Veterinary Medicine.

182. Veterinary IB. 1 semester hour.
Military law; veterinary military history; military administration. Prerequisite: Mil. Sc. 181.

183. Veterinary IIA. 1 semester hour.
World situation; national defense and R. O. T. C.; veterinary service; zone of interior and communications. Prerequisite: Mil. Sc. 182.

184. Veterinary IIB. 1 semester hour.
Medical supply; veterinary administration; map reading; care and management of animals. Prerequisite: Mil. Sc. 183.

185. Veterinary IIIA. 1 semester hour.
Subsistence procurement and the quartermaster market center system; veterinary meat and dairy hygiene; general. Prerequisite: Mil. Sc. 184.

186. Veterinary IIIB. 1 semester hour.
Procurement and physical examination of animals; movement of animals by rail, water, and air. Prerequisite: Mil. Sc. 185.

187. Veterinary IVA. 1 semester hour.
Veterinary military preventive medicine; veterinary medical aspects of atomic and chemical warfare; inspection of foods of animal origin. Prerequisite: Mil. Sc. 186.

188. Veterinary IVB. 1 semester hour.
Inspection of foods of animal origin; veterinary military research development, organized reserve corps; mobilization. Prerequisite: Mil. Sc. 187.

Modern Languages

FRITZ MOORE, *Head of Department*

For a minor, 15 hours in a single language should be completed.

For a major, 30 hours in a single language should be completed, or 27 hours in one language and six in a second language.

Students who have had German, French, or Spanish in high school may not duplicate that work for college credit. One year of a language in high school is, as a rule, equivalent to one semester in college. In doubtful cases, the head of the department should be consulted.

FOR UNDERGRADUATE CREDIT

101. German I. 3 semester hours. Each semester and summer.

102. German II. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 101 or equivalent.

111. German III. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 102 or equivalent.

112. German IV. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 111 or equivalent.

113. German V. 3 semester hours. First and second semester.
Prerequisite: Mod. Lang. 112 or equivalent.

115. Technical German I. 3 semester hours. Each semester.

117. Technical German II. 3 semester hours. Each semester.
Prerequisite: Mod. Lang. 115 or equivalent.

120. Technical German III. 3 semester hours. Each semester.
Prerequisite: Mod. Lang. 102 or 117 or equivalent.

140. Russian I. 3 semester hours. First semester.
Prerequisite: Six hours of some other foreign language.

141. Russian II. 3 semester hours. Second semester.
Prerequisite: Mod. Lang. 140.

151. French I. 3 semester hours. Each semester and summer.

152. French II. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 151 or equivalent.

161. French III. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 152 or equivalent.

162. French IV. 3 semester hours. Each semester.
Prerequisite: Mod. Lang. 161 or equivalent.

163. French Composition and Conversation. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 162.

164. Advanced French Composition and Conversation. 3 semester hours. Second semester.
Prerequisite: Mod. Lang. 163 or equivalent.

166. French V. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 162 or equivalent.

176. Spanish I. 3 semester hours. Each semester and summer.

177. Spanish II. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 176 or equivalent.

180. Spanish III. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 177 or equivalent.

181. Spanish IV. 3 semester hours. Each semester and summer.
Prerequisite: Mod. Lang. 180 or equivalent.

182. Spanish V. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 181 or equivalent.

194. Spanish Composition and Conversation. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 181 or equivalent.

195. Advanced Spanish Composition and Conversation. 3 semester hours. Second semester.
Prerequisite: Mod. Lang. 194 or equivalent.

197. Portuguese I. 3 semester hours. First semester.
Prerequisite: Fifteen hours of Spanish or senior standing.

198. Portuguese II. 3 semester hours. Second semester.
Prerequisite: Mod. Lang. 197.

FOR GRADUATE AND UNDERGRADUATE CREDIT

209. Schiller. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 112 or equivalent.

213. Goethe. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 112 or equivalent.

253. French Novel. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 166 or equivalent.

255. French Drama. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 166 or equivalent.

277. Spanish Novel. 3 semester hours. First or second semester.
Prerequisite: Fifteen hours of college Spanish or equivalent.

279. Spanish Drama. 3 semester hours. First or second semester.
Prerequisite: Mod. Lang. 182 or equivalent.

282. Spanish-American Literature. 3 semester hours. First or second semester.
Prerequisite: Eighteen hours of college Spanish or equivalent.

299. Problems in Modern Languages. Credit to be arranged. Each semester and summer.

Music

LUTHER O. LEAVENGOOD, *Head of Department*

For a minor, the following courses are required: Mus. 118, 125, 126, 123, 134, 145, 146, 147, 153, or 156 (2 hours), 161 (2 hours), and 176 (2 semesters).

For the thirty-hour major in the Curriculum in Arts and Sciences, Option A, the student is required to take the following courses: Instrument or Voice, six hours; Mus. 125, 126, 127, 128, twelve hours; 130, 131, four hours; electives, eight hours.

Students intending to be certified to teach music in the public schools of Kansas must take the following courses: For grade supervisors and choral directors, Mus. 142, 145, and two years in a choral organization; for band and orchestra directors, Mus. 123, 124, and two years in band or orchestra.

Prerequisites for students taking a thirty-hour major in music in the Cur-

riculum in Arts and Sciences, Option A, are the same as for candidates for the Bachelor of Science in Music Education.

Courses in music are available to any student enrolled in the College, subject to the prerequisites listed under course descriptions. Courses in applied music do not require prerequisites for the nonmusic major, but such students should have some knowledge of notation and fundamentals of music. This elective credit in applied music, however, can not be used later toward a music degree unless it meets the requirements of that course. (See course requirements.) No more than two credits a semester will be granted for applied music as an elective.

Requirements for Entrance and Graduation

Students planning to major in the curriculums in music education or applied music must take an examination for musical aptitude.

Preliminary examinations in piano must be taken by all students majoring in music regardless of what curriculum is selected.

The above examinations are compulsory before any enrollment is made. For dates of examinations, consult the Calendar.

General Information

Regular attendance at student and faculty recitals, choral and orchestral concerts, and the artist series is required of all music majors. Recital cards are kept, and seventy-five percent attendance is required for graduation.

All students enrolled in music must have the consent of their instructor in order to perform in public or on the radio.

Practice room privileges are covered by the fees. Only students who are regularly enrolled in the College and paying the special fees for private lessons will be assigned practice rooms.

The various courses in Voice or Instrument are divided into grades. Students majoring in either the Curriculum in Applied Music or the Curriculum in Music Education must satisfy the following requirements for entrance in order to receive credit for the work and complete the grade indicated under each major before graduation.

Curriculum in Applied Music

Piano Majors: Students majoring in piano must pass grade 6 upon entrance and complete grade 10 by the end of the senior year.

Voice Majors: Students majoring in voice must pass grade 2 of the voice curriculum and grade 2 of the piano curriculum upon entrance and complete grade 6 in voice and grade 4 in piano by the end of the senior year.

Organ Majors: Students majoring in organ must pass grade 6 of the piano curriculum upon entrance and complete grade 4 of the organ curriculum by the end of the senior year.

String Majors: Students majoring in stringed instruments must pass grade 6 upon entrance and complete grade 10 by the end of the senior year.

Woodwind and Brass Majors: Students majoring in woodwind or brass instruments must pass grade 4 upon their major instrument upon entrance and complete grade 8 by the end of the senior year. In addition, all instrumental majors must pass grade 1 in piano for entrance and complete grade 3 by the end of the senior year.

Curriculum in Music Education

Piano Majors: Students majoring in piano must pass grade 3 in the piano upon entrance and complete grade 7 by the end of the senior year.

Voice Majors: No specific entrance requirement. However, a student should possess the ability to sing in time and in tune. Students majoring in voice must pass grade 2 in piano. For graduation voice majors must complete grade 4 of the voice curriculum and grade 4 of the piano curriculum.

Organ Majors: Students majoring in organ must pass grade 6 of the piano curriculum upon entrance and complete grade 2 of the organ curriculum by the end of the senior year.

String Majors: Students majoring in stringed instruments must pass grade 3 upon their major instrument and grade 1 of the piano curriculum upon entrance. They must complete grade 7 of the major instrument and grade 3 of the piano curriculum by the end of the senior year.

Woodwind and Brass Majors: Students majoring in woodwind or brass instruments must pass grade 1 upon their major instrument and grade 1 of the piano curriculum upon entrance. They must complete grade 5 of the major instrument and grade 3 of the piano curriculum by the end of the senior year.

Outlines of each of the curriculums in music may be secured upon request from the head of the Department of Music. In each case, the major instrument should be specified.

COURSES IN THE THEORY OF MUSIC

FOR UNDERGRADUATE CREDIT

112. History of Music I. 2 semester hours. First semester and summer.
Chronological study of significant musical trends; the influence of cultural forces upon musical developments; the contributions of individual composers.

113. History of Music II. 2 semester hours. Second semester and summer.
Continuation of Mus. 112. Prerequisite: Mus. 112.

114. Music Literature I. 2 semester hours. First semester and summer.
Style characteristics of music as revealed through a careful analysis of the music of different periods.

115. Music Literature II. 2 semester hours. Second semester and summer.
Continuation of Music 114. Prerequisite: Mus. 114.

117. Appreciation of Music. 2 semester hours. Second semester and summer.
A study of musical materials, forms, and styles that will enable the listener to enjoy more fully the music which he may hear at concerts, in broadcasts, and on records. Not open to music majors. For students in Curriculum in Arts and Sciences Option A.

118. Music Fundamentals. 2 semester hours. Each semester and summer.
Elementary instruction in the theory of music. Three hours of recitation a week. Not open to students in music curriculums.

119. Broadcast Musical Programs. 2 semester hours. Each semester and summer.
Planning and arranging broadcasts of musical programs; copyright law as applied to musical broadcasts; theme, transitional, background, and incidental music; microphone technic applied to music. Three hours of recitation a week. Prerequisite: Sp. 163 or equivalent.

123. Instrumental Methods I. 2 semester hours. Each semester and summer.
Organization and maintenance of the band; relationship and responsibilities of the school music program to the community; literature for junior and senior high school bands.

124. Instrumental Methods II. 2 semester hours. Each semester and summer.
Organization of beginning string classes in the grades; relationship of the ensemble program to junior and senior high school orchestra.

125. Theory of Music I. 3 semester hours. Each semester and summer.
Harmony, ear training, and sight singing. Six hours of recitation a week.

126. Theory of Music II. 3 semester hours. Each semester and summer.
Continuation of Mus. 125. Six hours of recitation a week. Prerequisite: Mus. 125.

127. Theory of Music III. 3 semester hours. First semester and summer.
Continuation of Mus. 126. Six hours of recitation a week. Prerequisite: Mus. 126.

128. Theory of Music IV. 3 semester hours. Second semester and summer.
Continuation of Mus. 127. Six hours of recitation a week. Prerequisite: Mus. 127.

133. Choral Conducting. 1 semester hour. Each semester and summer. Two hours of recitation a week.
Prerequisite: Mus. 118 or equivalent.

134. Instrumental Conducting. 1 semester hour. Each semester and summer. Two hours of recitation a week.
Prerequisite: Mus. 128, 133.

136. Instrumentation and Orchestration. 3 semester hours. Each semester and summer.
Instruments of the band and orchestra studied with relation to tone, color, range, and function; simple and familiar compositions scored for ensemble, including full orchestra. Prerequisite: Mus. 128.

137. Counterpoint I. 2 semester hours. First semester and summer.
Devices of counterpoint and imitation leading to the writing of short contrapuntal compositions in two voices. Analysis of choral preludes and inventions. Prerequisite: Mus. 128.

138. Counterpoint II. 2 semester hours. Second semester and summer.
A continuation of Mus. 137. Contrapuntal composition in three and four voices. Analysis of the fugue. Prerequisite: Mus. 137.

139. Methods and Materials in School Music for Elementary Teachers. Credit to be arranged. Summer.
Methods of teaching music through the primary and intermediate grades, in rural and two- and three-room schools; elementary sight-seeing, music appreciation using materials from various texts of state adoption.

141. Musical Form and Analysis. 2 semester hours. Each semester and summer.
Forms used in composition; the music of Bach, Haydn, Mozart, Beethoven, Schumann, Chopin, Brahms, Wagner, and others. Prerequisite: Mus. 140.

142. School Music I. 2 semester hours. First semester and summer.
Methods and materials for teaching music in kindergarten. Adaptation is made in summer school to meet the needs of rural and small-city schools. Prerequisite: Mus. 126 or consent of instructor.

143. Composition I. 2 semester hours. First semester and summer.
Composition in the small forms for piano, voice and instruments. Development of style conception. Prerequisite: Mus. 138 and concurrent enrollment in Mus. 141.

144. Composition II. 2 semester hours. Second semester and summer.
Continuation of Mus. 143 with emphasis on more complex treatment of the small forms and compound forms. Prerequisite: Mus. 143.

145. School Music II. 2 semester hours. Second semester and summer.
Methods and materials for primary grades. Prerequisite: Mus. 142.

146. Orchestral Instruments I. 1 semester hour. Each semester and summer.
Methods of tone production of instruments of the orchestra. Two hours of recitation and one hour of laboratory a week.

147. **Orchestral Instruments II.** 1 semester hour. Each semester and summer.
Continuation of Mus. 146. Two hours of recitation and one hour of laboratory a week.

148. **Orchestral Instruments III.** 1 semester hour. Each semester and summer.
Continuation of Mus. 147. Two hours of recitation and one hour of laboratory a week.

149. **Methods and Materials for the Studio.** 1 semester hour. Each semester.
Methods of teaching fundamentals technic; selection of teaching materials, and outlining of courses of study. For students in the Curriculum in Music, Applied; taught in separate divisions for voice, piano, organ, and violin. Two hours of recitation a week.

150. **Orchestral Instruments IV.** 1 semester hour. Each semester and summer.
Continuation of Mus. 148. Two hours of recitation and one hour of laboratory a week.

152. **School Music III.** 2 semester hours. Each semester and summer.
Methods and teaching materials suitable for junior and senior high school. Prerequisite: Mus. 145 or consent of instructor.

COURSES IN APPLIED MUSIC

153. **Instrument.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

156. **Voice.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

158. **Violin.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

161. **Piano.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

163. **Violoncello.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

167. **Double Bass.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

172. **Organ.** 0 to 2 semester hours; maximum of 16 hours allowed. Each semester and summer.
For fees, see table following Mus. 301.

175. **Vocal Ensemble.** 1 semester hour. Each semester and summer. Two hours of laboratory a week.
Elective for students of superior vocal talent.

176. **Piano Ensemble.** R credit. Each semester. One hour of recitation a week.
Required of students enrolled in the music curriculums.

178. **Instrumental Ensemble.** 1 semester hour. Each semester and summer. Three hours of laboratory a week.
Elective for selected students.

181. Recital Attendance. R credit. Each semester.

182. Junior Recital. 1 semester hour. Second semester.
A joint solo recital appearance. For students in the Curriculum in Applied Music.

184. Senior Recital. 2 semester hours. Second semester.
An individual solo recital appearance. For students in the Curriculum in Applied Music.

185. Practice Teaching in Applied Music. 1 semester hour. Second semester.
Practice teaching in private classes for students in the Curriculum in Applied Music.

188. A Cappella Choir. R in curriculums in music; 1 semester hour in other curriculums. Each semester.
Membership by tryouts open to all students.

189. Men's Glee Club. R in curriculums in music; 1 semester hour in other curriculums. Each semester.
Membership by tryouts open to all students.

190. Women's Glee Club. R in curriculums in music; 1 semester hour in other curriculums. Each semester.
Membership by tryouts open to all students.

193. College Chorus. R in curriculums in music; 1 semester hour in other curriculums. Each semester and summer.
Preparation and performance of oratorio and octavo music. Prerequisite: Voice of good quality, ability to read musical notation.

196. Orchestra. R in curriculums in music; 1 semester hour in other curriculums. Each semester.
Membership by tryouts open to all students.

197. Band. R in curriculums in music; 1 semester hour in other curriculums. Each semester.
Membership by tryouts open to all students.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Organ Registration. 2 semester hours. First semester.
Study of organ specifications and construction as they apply to the practice of the combination of tone. Four hours of recitation a week. Prerequisite: Two semesters of Organ or equivalent playing ability.

204. Service Playing. 2 semester hours. Second semester.
Problems in playing services in the various liturgical and nonliturgical churches. Four hours of recitation a week. Prerequisite: Two semesters of Organ or equivalent playing ability.

208. The Opera. 2 semester hours. First semester.
Survey of the history of opera from 1600 to the present, with a detailed study of a number of the most important operas. Prerequisite: Mus. 131 or Compr. 132 or equivalent.

209. Baroque Music: Bach and Handel. 2 semester hours. Second semester.
Study of the music of the Baroque period, c. 1600-1750, with emphasis on the music of Bach and Handel. Prerequisite: Mus. 131 or Compr. 132 or equivalent.

211. Choral Problems. Credit to be arranged. Summer.
Sight reading, octavo, cantata, and operetta literature for junior and senior high school; problems concerned with the production and staging of choral programs and operettas. Prerequisite: Senior standing.

215. Introduction to Musicology. 3 semester hours. Second semester.
A survey of the various musical fields in which scientific investigations have been carried on, designed to assist the student in broadening his horizons and developing a well-rounded philosophy of music. Prerequisite: Junior standing, Mus. 130, 131, Compr. 131, 132 or Hist. 106, 107.

225. Applied Music. Credit to be arranged. Each semester and summer.
Prerequisite: Junior standing and consent of instructor.

228. Music Supervision. 2 semester hours. (See Educ. 228.)
Second semester and summer.
Organization, administration, and supervision of music in public schools; materials, methods, organizations, public performances, and festivals. Prerequisite: Mus. 152.

233. Advanced Instrumental Methods. 2 semester hours. Second semester and summer.
Methods, repertoire, conducting, contest, interpretation, individual instruction, and ensembles. Prerequisite: Mus. 123, 124, and 134.

240. Music in America. 2 semester hours. Each semester and summer.
Music of the colonist, singing school, folk song, ballad, spiritual, revival song, heart song, minstrel, ragtime, jazz, swing, concert and theater music. Prerequisite: Senior standing.

243. Eighteenth and Nineteenth Century Music. 2 semester hours. Summer.
Music which serves as a background and culminates in contemporary musical art; madrigal, art song, cantata, orations, opera, symphony, concerts, and the symphonic poem. Prerequisite: Senior standing.

246. Music in History. 3 semester hours. First semester and summer.
Historical developments of music; its relationship to architecture, painting, sculpture, fine arts; its relationship to political, economic, social, and religious life. Prerequisite: Senior standing.

258. Ensemble. 1 semester hour. Each semester and summer.
A graduate course in ensemble techniques and materials. Prerequisite: Consent of instructor.

260. Marching Band. 1 or 2 semester hours. First semester.
Band instrumentation; problems of the band on the field, the drum major. Prerequisite: Mus. 123, 124.

263. Studies in Music Education. 3 semester hours. First semester.
Special phases of music education adapted to needs of the student enrolled. Prerequisite: Mus. 152.

275. Advanced Theory I. 3 semester hours. First semester.
Combination of harmony, counterpoint, and form as used in compositions in their historical setting. Prerequisite: Mus. 140, 141.

276. Advanced Theory II. 3 semester hours. Second semester.
Modern chord structures, atonality, polytonality, form used in contemporary compositions. Prerequisite: Mus. 140, 141.

277. Psychology of Music. 3 semester hours. (See Psych. 277.)

299. Problems in Music. Credit to be arranged. Each semester and summer.
Prerequisite: Senior standing and consent of instructor.

FOR GRADUATE CREDIT

301. Research in Music. Credit to be arranged. Each semester and summer.
Prerequisite: Graduate standing and consent of instructor.

FEES IN MUSIC

Enrolled College Students

Voice, Piano, Organ, Violin, Violoncello, and other instruments:
Two 30-minute lessons each week for a semester including two hours practice room daily—$35.
One 30-minute lesson each week for a semester including one hour practice room daily—$17.50.
Single lesson rate—$1.50.

Persons Not College Students

Voice, Piano, Organ, Violin, Violoncello, and all other instruments:
Two 30-minute lessons each week for a semester—$42.
One 30-minute lesson each week for a semester—$23.
Single lesson rate—$2.
Practice room, one hour daily for a semester—$3.
Practice room, two hours daily for a semester—$5.
Practice room, per additional hour daily for a semester—$2.50.
Organ rent, one hour daily for a semester—$10.

Lessons scheduled on legal holidays which are observed by the College will not be made up.

Lessons which fall on school holidays will be made up at the convenience of the teacher.

Instructors are not required to arrange to make up lessons missed by students. In cases of illness or other physical disabilities, however, the instructor may arrange for the make up of lessons.

Lessons missed because of the instructor's absence will be made up.

Physical Education and Athletics

THURLO E. MCCRADY, *Head of Department*

Each student receives a physical examination before enrollment in courses in the Department of Physical Education and Athletics. Students should take courses 103 for men and 151 for women to satisfy the physical education requirement. Transfer students who enter this college with 15, 25, 44, or 59 hours of credit are excused from one, two, three, or four semesters, respectively, of Phys. Ed. 103 or 151.

For a major, a student should enroll in one of the curriculums in Physical Education.

COURSES IN PHYSICAL EDUCATION FOR MEN

FOR UNDERGRADUATE CREDIT

103. Physical Education M. No credit. Each semester and summer.
Activities offered: Athletic sports, apparatus work, boxing, calisthenics, individual physical education, swimming, tumbling, and wrestling.

107. Introduction to Physical Education. 1 semester hour. First semester
Introductory survey of the field and study of the principles of health and physical education.

113. Athletic Injuries and First Aid. 3 semester hours. Second semester and summer.
Standard and advanced Red Cross First Aid certificates given for successful completion of work. Principles and practice of massage, taping, and care of minor athletic injuries. Prerequisite: Zoöl. 123.

118. Community Health. 1 semester hour. Summer.
The control of communicable disease; food. water, waste, and other sanitary problems; ventilation, heating, and lighting; public health procedures.

119. Personal Hygiene. 2 semester hours. First semester and summer.

120. Swimming M. 1 semester hour. Second semester and summer.
Theory and practice of various swimming strokes, diving, treading water, and floating. Methods of teaching swimming. Three hours of laboratory a week. Prerequisite: One semester of swimming or passing Red Cross intermediate swimmer's test.

124. Health Examinations. 3 semester hours. First semester.
Methods of giving health examinations; postural deviations; corrective exercise. Prerequisite: Phys. Ed. 132.

126. Technics of Football. 2 semester hours. Second semester.
Study of rules, theory and practice; methods of coaching.

127. Technics of Basketball. 2 semester hours. First semester.
Study of rules, theory and practice; methods of coaching.

128. Technics of Baseball. 2 semester hours. First semester.
Study of rules, theory and practice; methods of coaching.

129. Technics of Track and Field. 2 semester hours. Second semester.
Study of rules, theory and practice; methods of coaching.

131. Tennis and Golf. 1 semester hour. Second semester.
Study of rules, theory and practice; methods of coaching.

132. Kinesiology M. 2 semester hours. Second semester.
Body movements analyzed; principles involved applied to teaching of physical education. Prerequisite: Zoöl. 123.

134. Practice Teaching in Physical Education. 2 semester hours. Second semester.
Supervised students assist in physical education classes and officiate in intramural games. Six hours of laboratory a week.

135. Physical Education Activities I. 2 semester hours. First semester.
Practice and teaching methods of soccer, volleyball, gymnasium games; boxing and wrestling. Six hours of laboratory a week.

138. Physical Education Activities II. 2 semester hours. Second semester.
Theory and practice of calisthenics, the gymnastic lesson, and tumbling. Six hours of laboratory a week.

139. Physical Education Activities III. 2 semester hours. First semester.
Graded exercises on gymnasium apparatus, rhythms, and pyramids. Six hours of laboratory a week.

142. Public School Program in Physical Education. 2 semester hours. Second semester.
Educational, health, and recreative significance and content of the school program; types of activities to be used in grades and high school. Prerequisite: Senior standing.

143. History of Physical Education. 2 semester hours. First semester.
Prerequisite: Phys. Ed. 107.

145. Nature and Function of Play. 2 semester hours. First semester.
Theoretical explanations of play; age and sex characteristics which influence play; values of play to individual and community. Prerequisite: Psych. 184.

146. Administration of Health and Physical Education. 3 semester hours. First semester.
Prerequisite: Junior standing.

147. Community Hygiene. 2 semester hours. Second semester.
Production, improvement, maintenance, and defense of public health. Prerequisite: Phys. Ed. 119.

148. Sports Officiating. 1 semester hour. First semester.
Principles and practices of officiating athletic games.

149. Teaching Health. 2 semester hours. Second semester.
Materials and methods of teaching health at the junior and senior high school level. Prerequisites: Phys. Ed. 147, Zoöl. 123, 221.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Community Recreation. 2 semester hours. Second semester and summer.
A study of the organization and activities of club work for youth, camping, playgrounds, and indoor recreation centers. Prerequisite: Phys. Ed. 145, Psych. 184.

205. Tests and Measurements in Physical Education. 3 semester hours. First semester and summer.
A study of capacity, achievement, knowledge, and skill tests, for purposes of classification and measurement of school progress. Prerequisite: Educ. 223.

207. Physiology of Exercise. 2 semester hours. First semester and summer.
Effects of exercise on the tissues, systems, and organs of the body. Prerequisite: Zoöl. 221.

211. Advanced Methods of Teaching Physical Education. 2 semester hours. Second semester and summer.
Prerequisite: Phys. Ed. 142 or equivalent.

213. Administration of Physical Education in Colleges and Universities. 2 semester hours. First semester and summer.

217. Curriculum Construction in Physical Education. 2 semester hours. Second semester and summer.
A study of materials, problems, and guiding principles involved in curriculum construction. Prerequisite: Phys. Ed. 142 or equivalent.

240. Seminar in Physical Education. Credit to be arranged.
Recent trends and problems in Physical Education. Prerequisite: Senior standing and consent of instructor.

245. Seminar in Health Education. Credit to be arranged.
Recent trends and problems in Health Education. Prerequisite: Phys. Ed. 146 and consent of instructor.

FOR GRADUATE CREDIT

302. Research in Physical Education. Credit to be arranged.
Prerequisite: Variable, depending on problem chosen.

305. Supervision of Physical Education. 2 semester hours. Second semester and summer.
A study of the objectives, organization, and methods of supervision for elementary and secondary schools. Prerequisite: Phys. Ed. 146, Educ. 163.

307. Administration of School Health Education Program. 2 semester hours. First semester and summer.
A study of the organization and administration of health service, health instruction, and health environment for primary and secondary schools; health councils. Prerequisite: Phys. Ed. 149.

COURSES IN PHYSICAL EDUCATION FOR WOMEN

Recreational swimming is offered on Tuesdays and Thursdays at 5 o'clock for those who are registered in the College.

FOR UNDERGRADUATE CREDIT

151. Physical Education W. No credit. Required. Each semester and summer.
Activities offered: Archery, basketball, bowling, folk and tap dancing, golf, hockey, individual and Danish gymnastics, modern dance; recreational sports, rifle, soccer, softball, social dancing, swimming, and tennis.

152. Physical Education W Lectures. Required credit. Each semester.
Required of women enrolled in the curriculum in Physical Education for Women. Orientation and general survey of the field, health, physical education, and recreation.

154. Fundamental Rhythms. 2 semester hours. First semester.
Body rhythm, fundamentals of music, and percussion accompaniment for rhythmic activities. One hour of recitation and three hours of laboratory a week.

158A. Self-testing Activities. 2 semester hours. First semester.
The practice of self-testing activities, motor ability tests, and the administration of related knowledge tests for the purpose of determining student exemption from service courses in soccer, softball, volleyball, basketball, swimming, tennis and rhythms. One hour of recitation and three hours of laboratory a week.

158B. Tumbling and Recreational Sports. 2 semester hours. Second semester.
Theory and practice of tumbling and recreational sports. One hour of recitation and three hours of laboratory a week.

158C. Team Sports I. 2 semester hours. First semester.
Methods of teaching softball, hockey, and volleyball. One hour of recitation and three hours of laboratory a week. Prerequisite: Ability to play softball, volleyball, and hockey.

158D. Team Sports II. 2 semester hours. First semester.
Methods of teaching soccer, speedball, and basketball. One hour of recitation and three hours of laboratory a week. Prerequisite: Ability to play soccer or speedball and basketball.

158E. Individual Activities. 2 semester hours. Second semester.
Methods of teaching tennis, badminton, and body conditioning exercises. One hour of recitation and three hours of laboratory a week. Prerequisite: Ability to play tennis.

158F. Folk, Tap, and Social Dance. 2 semester hours. Second semester.
Methods of teaching folk, tap, and social dance to all age levels. Six hours of laboratory a week. Prerequisite: Phys. Ed. 154 and one semester of Phys. Ed. 151 in folk, tap, and social dance.

158G. Modern Dance. 2 semester hours. First semester.
History of the dance, methods of teaching modern dance. One hour of recitation and three hours of laboratory a week. Prerequisite: Semester each of beginning and intermediate modern dance.

158H. Swimming and Archery. 2 semester hours. Second semester.
Methods of teaching swimming and archery. One hour of recitation and three hours of laboratory a week. Prerequisite: Semester each of beginning and intermediate swimming and archery.

159. First Aid. 2 semester hours. Each semester and summer.
Prevention of accidents and the treatment of injuries in an emergency. Upon satisfactory completion of this course, a certificate is awarded by the American Red Cross and the holder is in line for consideration as an instructor in first aid. Not open to students in the curriculums in Physical Education.

160. Dance Composition. 1 semester hour. Each semester.
Advanced modern dance technique, composition and accompaniment. Participation in one studio production. Three hours of laboratory a week. Prerequisite: Phys. Ed. 151, one semester of modern dance, or consent of instructor. May not be taken more than four semesters for credit.

161. Personal Hygiene W. 2 semester hours. First semester.
Not open to students who have credit in Ch. Welf. 101.

162. Principles and Philosophy of Physical Education. 3 semester hours. First semester.
Aims and objectives of physical education, historical development, relation to general education, analysis of programs and methods. Prerequisite: Sophomore standing.

168. Games for Grades and High School. 2 semester hours. Summer.
Methods of teaching games in public schools suitable for recess, noon and after-school periods. Two hours of recitation and six hours of laboratory a week.

174. Health Examinations and First Aid. 3 semester hours. First semester.
Methods of giving health examinations, analysis of normal body mechanics, postural deviations; first aid emergency treatment. Two hours of recitation and three hours of laboratory a week. Prerequisite: Phys. Ed. 184, Zoöl. 123, 221.

175. Therapeutics and Massage. 3 semester hours. Second semester.
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. Two hours of recitation and three of laboratory a week. Prerequisite: Phys. Ed. 174, 184, Zoöl. 123.

176. Organization and Administration of Physical Education W. 2 semester hours. Second semester.
Administrative policies of departments of physical education; the staff, activities, basic principles; construction, equipment and care of plant. Prerequisite: Phys. Ed. 157A to 157G, 179, 188.

177. Playground Management and Games. 3 semester hours. First semester.
Organization and administration of playground activities and equipment; history of the playground movement; types of games suitable for different age periods; practice teaching in elementary schools. Two hours of recitation and three hours of laboratory a week.

179. Health Teaching in High School. 3 semester hours. First semester,
Subject matter and methods of presentation of health education; integration with general courses. Prerequisite: Child Welf. 101.

181. Health and Safety Education W. 2 semester hours. Summer.
Organization of material pertaining to health and hygiene, safety, and accident prevention, as recommended for the schools of Kansas.

184. Kinesiology W. 2 semester hours. Second semester.
Mechanics of movement; body movements analyzed and principles involved applied to the teaching of physical education. Prerequisite: Zoöl. 123.

188. Teaching and Adaptation of Physical Education. 3 semester hours. First semester.
Organization of physical education material for a progressive program in elementary schools, and junior and senior high schools; teaching methods to achieve desired aims of education. Prerequisite: Phys. Ed. 157A to 157F, 177.

191. Recreational Leadership W. 2 semester hours. Second semester.
Principles and methods of organizing communities for leisure activities.

COURSES FOR MEN AND WOMEN

FOR GRADUATE AND UNDERGRADUATE CREDIT

298. Problems in Physical Education. Credit to be arranged.
Prerequisite: Variable, depending on problem chosen.

Physics

ALVIN B. CARDWELL, *Head of Department*

For a minor, the following courses should be completed: Phys. 102, 103 (or 105, 106), 243, 244, 251, and 255.

For a major, the student should enroll in the Curriculum in Industrial Physics, and prospective teachers should enroll in the Curriculum in Physical Science.

FOR UNDERGRADUATE CREDIT

102. General Physics I. 4 semester hours. Each semester and summer.
Mechanics, heat, and sound. Three hours of recitation and three hours of laboratory a week. Prerequisite: Math. 101.

103. General Physics II. 4 semester hours. Each semester and summer.
Magnetism, electricity, and light. Three hours of recitation and three hours of laboratory a week. Prerequisite: Phys. 102.

105. Engineering Physics I. 5 semester hours. Each semester and summer.
Mechanics, heat, and sound for technical students. Four hours of recitation and three hours of laboratory a week. Prerequisite: Math. 101.

106. Engineering Physics II. 5 semester hours. Each semester and summer.
Magnetism, electricity and light for technical students. Four hours of recitation and three hours of laboratory a week. Prerequisite: Physics 105.

109. Household Physics. 4 semester hours. Each semester and summer.
Physical laws and principles involved in household appliances. Three hours of recitation and three hours of laboratory a week.

119. Physics for Musicians. 2 semester hours. Each semester.
Selected topics applied to the physics of music and musical instruments.

124. Descriptive Physics. 3 semester hours. Each semester.
Two hours of recitation and three hours of laboratory a week. For students in the School of Veterinary Medicine.

134. Agricultural Physics. 3 semester hours. Each semester and summer.
Fundamental principles as related to agriculture. Required of students in agriculture who enter without high school physics.

141. Descriptive Astonomy. 3 semester hours. Each semester.

146. Introductory Meteorology. 3 semester hours. Each semester.
Weather phenomena and principles of forecasting; climatic factors; relation of weather studies to agriculture, general science, and physiography.

151. Photography. 2 semester hours. Each semester and summer.
Chemical and physical principles involved in photography; practice in making good negatives and prints. One hour of recitation and three hours of laboratory a week.

153. Laboratory Technic. 1 semester hour. Each semester.
Glass blowing and special shop work, primarily for major students in physics. Three hours of laboratory a week.

156. Intermediate Physics. 3 semester hours. First semester.
Prerequisite: Phys. 103 or 106, Math. 141.

FOR GRADUATE AND UNDERGRADUATE CREDIT

206. Synoptic Meteorology. 3 semester hours. Each semester and summer.
Prerequisite: Math. 141, Phys. 103 or 106, 146.

209. X-Ray and Crystal Physics. 4 semester hours.
Three hours of recitation and three hours of laboratory a week. Prerequisite: Phys. 103 or 106.

217. Geophysics. 3 semester hours.
Theory of the field work in gravitational, magnetic, electrical, seismic, radioactive, and temperature surveys. Prerequisite: Physics 103 or 106.

220. Applied Spectroscopy. 3 semester hours. Second semester.
Spectographic methods for detecting, qualitatively and quantitatively, chemical constituents of minerals, metals, and biological specimens. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 104 or 110 and Physics 103 or 106.

227. Mechanics. 3 semester hours. Second semester.
Theoretical mechanics by methods of the calculus with an introduction to generalized coördinates. Prerequisite: Phys. 156.

228. Mechanics Laboratory. 1 or 2 semester hours.
Prerequisite: Physics 227 or concurrent registration.

238. Heat and Thermodynamics. 3 semester hours. Second semester and and alternate summers. Prerequisite: Math. 141, Phys. 103 or 106.

239. Heat Laboratory. 1 semester hour. Prerequisite: Phys. 238 or concurrent registration.

240. Sound. 3 semester hours. Prerequisite. Math. 141, Phys. 103 or 106.

243. Light. 3 semester hours. First semester. Prerequisite: Math. 141, Phys. 103 or 106.

244. Light Laboratory. 1 semester hour.
Prerequisite: Phys. 243 or concurrent registration.

251. Electricity and Magnetism. 3 semester hours. Second semester.
Electricity and magnetism by methods of calculus. Prerequisite: Phys. 156 or consent of instructor.

255. Electricity and Magnetism Laboratory. 1 semester hour.
Prerequisite: Phys. 251 or concurrent registration.

270. Atomic Physics. 3 semester hours. First semester.
Contemporary theories and problems. Prerequisite: Math. 141, Phys. 103 or 106.

271. Modern Physics Laboratory. 1 semester hour.
Prerequisite: Phys. 270 or concurrent registration.

273. **Nuclear Physics.** 3 semester hours. Second semester.
Modern theories of nuclear physics. Prerequisite: Phys. 270 or consent of instructor.

288. **Electronic Physics I.** 4 semester hours. First semester.
Three hours of recitation and three hours of laboratory a week. Prerequisite: Math. 141, Phys. 251, 255.

293. **Electronic Physics II.** 3 semester hours.
Prerequisite: Phys. 288.

294. **Advanced Electronic Physics Laboratory.** 1 semester hour.
Prerequisite: Phys. 288.

297. **Problems in Physics.** Credit to be arranged.
Work is offered in: Electricity, electronics, heat, light, mechanics, nuclear physics, sound and vibrations, spectroscopy, and X-ray. Prerequisite: Phys. 103 or 106.

299. **Colloquium in Physics.** R.
Required of graduate majors and undergraduate majors.

FOR GRADUATE CREDIT

302. **Introduction to Theoretical Physics I.** 3 semester hours. First semester.
Prerequisite: Math. 201, 210 or concurrent registration.

303. **Introduction to Theoretical Physics II.** 3 semester hours. Second semester.
Prerequisite: Phys. 302, Math. 213 or concurrent registration.

305. **Quantum and Wave Mechanics I.** 3 semester hours. First semester.
Prerequisite: Phys. 302 or concurrent registration.

306. **Quantum and Wave Mechanics II.** 3 semester hours. Second semester.
Prerequisite: Phys. 305.

313. **Kinetic Theory and Statistical Physics.** 3 semester hours.
Prerequisite: Math. 201, 213, Phys. 238.

317. **X Ray.** 3 semester hours.
Prerequisite: Math. 201, Phys. 209.

319. **Atomic Spectra.** 3 semester hours. First semester.
Prerequisite: Math. 201, Phys. 270 or consent of instructor.

321. **Molecular Spectra.** 3 semester hours. Second semester.
Prerequisite: Phys. 319 or consent of instructor.

324. **Advanced Nuclear Physics.** 3 semester hours.
Prerequisite: Math. 213, Phys. 273, 305.

390. **Research in Physics.** Credit to be arranged.
Work is offered in: Electricity, electronics, light, nuclear physics, sound, spectroscopy, thermodynamics, theoretical physics, and X-ray. Prerequisite: At least two courses in this department.

Speech

Howard T. Hill, *Head of Department*

For a major in general speech, the following courses should be completed: Sp. 103, 108, 110, 114, 117, 121, 126, 137, 145, 165, 207 or 209, 222, 225, 226, and Educ. 202.

For a major in radio, the following courses should be completed: 163, 165, 167, 231, 240, 243, five hours from 170, 172, 179, 233, 244, and 290; Ind. Jour. 162. Option for radio majors, for women: Gen. Home Econ. 145 or 146, and five hours from Group 8; for men: Nine hours from Group 8. Radio majors substitute Mus. 119 for Mus. 131.

For a major in dramatics, the following courses should be completed: Sp. 114, 145, 147, 207, 208, 209, 210, 213, 215, 231, 290, and six additional hours.

COURSES IN SPEECH

FOR UNDERGRADUATE CREDIT

103. Oral Communication. 2 semester hours. Each semester and summer.
Selection and outlining of material with special emphasis on logic and with oral presentation practice. Coördinated with Written Comm. I and II.

108. Oral Communication II. 2 semester hours. Each semester and summer.
Sp. 103 continued, with special attention to illustrative material. Prerequisite: Sp. 103.

110. Elements of Phonetics. 2 semester hours. First semester.

117. Oral Interpretation. 2 semester hours. Each semester and summer.
Attainment of some proficiency in the art of reading aloud.

119. Dramatic Reading. 2 semester hours. Second semester.
Advanced study and application of the principles of oral interpretation to platform reading. Prerequisite: Sp. 117.

121. Argumentation and Debate. 2 semester hours. Second semester.
Prerequisite: Sp. 103.

123. Intercollegiate Debate I. 2 semester hours. Each semester.
Open only to members of the intercollegiate debate squads. Prerequisite: Sp. 121.

124. Intercollegiate Debate II. 2 semester hours. Each semester.
Open only to members of the intercollegiate debate squads. Prerequisite: Sp. 123.

126. Parliamentary Law. 1 semester hour. Second semester.

137. Speech for Teachers. 1 to 3 semester hours. Second semester and summer.

142. Oratorical Contest. 2 semester hours. Each semester.

144. Dramatic Participation. 1 or 2 semester hours. Each semester and summer.
Prerequisite: Junior standing.

145. Acting and Rehearsal I. 2 semester hours. First semester and summer.
Fundamentals of acting, using Kansas State Players productions as laboratory. One hour of recitation and three hours of laboratory a week.

147. Elementary Stagecraft and Lighting. 2 semester hours. First semester and summer.
Function and operation of scenery; study and applications of stage lighting.

FOR GRADUATE AND UNDERGRADUATE CREDIT

207. Dramatic Production I. 2 semester hours. Each semester and summer.
Theory of and practice in fundamentals of acting and direction. One hour of recitation and three hours of laboratory a week. Prerequisite: Sp. 114.

208. Dramatic Production II. 2 semester hours. Each semester and summer.
Projects in direction and stagecraft. Six hours of laboratory a week. Prerequisite: Sp. 207.

209. Acting and Rehearsal II. 2 semester hours. Second semester and summer.
Characterization, interpretation, voice, pantomime, and ensemble. One hour of recitation and three hours of laboratory a week. Prerequisite: Sp. 145.

211. Scenic Design. 2 semester hours. Each semester.
Application of principles of design of stage settings; scenic design for plays utilizing sketches, diagrams, plates and models; work in productions of the Kansas State Players. Prerequisite: Sp. 147.

212. Stage Lighting. 2 semester hours.
History, problems of application, design of lighting for various types of plays and styles of production. One hour of recitation and three hours of laboratory a week. Prerequisite: Sp. 147.

213. Development of the Theater I. 2 semester hours. First semester.
The theater to the end of the nineteenth century.

215. Development of the Theater II. 2 semester hours. Second semester.
The modern and the contemporary theater.

222. Advanced Debate. 2 semester hours. Second semester.
Advanced study of and participation in the methods of persuasion in public discussion. Prerequisite: Sp. 121.

225. Public Program. 2 semester hours. Second semester and summer.
Planning, building, and presenting nonradio public programs. Prerequisite: Sp. 103.

226. Public Discussion. 2 semester hours. Each semester.
Symposiums, forums, roundtables, panel discussions of political, social, and economic trends.

228. Speech Recital. Credit to be arranged. Each semester.
Special work for qualified students. Prerequisite: Sp. 103 and 117.

290. Problems in Speech. Credit to be arranged. Each semester and summer.
Work is offered in: Debate, oratory, phonetics, radio, and theater. Prerequisite: Sp. 108 or 167.

FOR GRADUATE CREDIT

303. Research in Speech. Credit to be arranged. Each semester and summer.
Work is offered in: Debate, oratory, phonetics, radio, and theater. Prerequisite: Graduate standing and consent of instructor.

COURSES IN RADIO

FOR UNDERGRADUATE CREDIT

163. Survey of Broadcasting. 2 semester hours. Each semester and summer.
Survey of radio industry; social importance of broadcasting.

165. Radio Speech I. 2 semester hours. Each semester and summer.
Training in voice and diction for broadcasting. One hour of recitation and three hours of laboratory a week. Prerequisite: Sp. 103.

167. Radio Continuity. 3 semester hours. Each semester.
Preparation of introductions to musical shows, talks, programs, and news rewriting. Prerequisite: Sp. 163.

168. Radio Program Participation. 1 semester hour. Each semester and summer.
Three hours of laboratory a week. Prerequisite: Sp. 165 or consent of the instructor. May not be taken for more than four semesters for credit.

170. Radio Dramatics. 2 semester hours. Each semester.
Use of dramatic principles on the radio. Four hours of recitation and laboratory a week. Prerequisite: Sp. 103.

172. Radio Talk. 2 semester hours. Each semester.
Training in writing informative and persuasive material, practical delivery of radio talks. Four hours of recitation and laboratory a week. Prerequisite: Sp. 103.

179. Radio Advertising. 3 semester hours. Second semester and summer.
Broadcasting station management, principles and practice in radio advertising. Prerequisite: For students in curriculum in Industrial Journalism, Ind. Journ. 177; for other students, Sp. 167.

FOR GRADUATE AND UNDERGRADUATE CREDIT

231. Radio Production I. 2 semester hours. Each semester and summer.
Basic program production. One hour of recitation and three hours of laboratory. Prerequisite: Mus. 130, Sp. 163 and Sp. 167.

233. Radio Production II. 2 semester hours. Each semester.
Continuation of Sp. 231. Prerequisite: Sp. 231 and consent of instructor.

234. Radio Speech II. 2 semester hours. Each semester and summer.
Advanced commercial announcing including sports, news, and commercials. Prerequisite: Sp. 165 and consent of instructor.

240. Radio Programming. 2 semester hours. First semester.
Planning and development of radio programs and schedules. Prerequisite: Sp. 163.

243. Radio Writing I. 3 semester hours. First semester.
Preparation of dramatized programs. Prerequisite: Sp. 167.

244. Radio Writing II. 3 semester hours. Second semester and summer.
Continuation of Sp. 243. Prerequisite: Sp. 243 and consent of instructor.

246. Introduction to Television. 2 semester hours. Each semester.
Growth and expansion of television; its impact on society, and its relation to other media of communications; economic and sociological implications. Prerequisite: Sp. 170.

248. Television Programming. 2 semester hours. Each semester.
History of television programming; analysis of existing types of programs; study of audience measurements to determine program trends; problems and developments of programming at a station. Four hours of recitation and laboratory a week. Prerequisite: Sp. 240, 246.

250. Television Acting. 2 semester hours. Each semester.
Limitations of the medium; projection; make up, colors, and rehearsal schedules and performance. Four hour of recitation and laboratory a week. Prerequisite: Sp. 170, 234.

290. Problems in Speech (Radio). Credit to be arranged. Each semester and summer.
Prerequisite: Sp. 108 or 167.

Student Health

BENJAMIN W. LAFENE, *Head of Department*

FOR UNDERGRADUATE CREDIT

101. Preventive Medicine and Public Health. 2 semester hours. Each semester.
Communicable diseases and their control; factors involved in healthful living. Prerequisite: Sophomore standing.

Zoölogy

DONALD J. AMEEL, *Head of Department*

The courses in zoölogy, which give fundamental knowledge of the structures, functions, development, and relations of animals to man, afford training that is basic for professional workers in agriculture, home economics, veterinary medicine, and the arts and sciences and their applied fields.

For a major, the student should complete at least nineteen credit hours chosen from the 200 group.

For a minor, the student should take Zoöl. 105 and nine credit hours chosen from the 200 group.

FOR UNDERGRADUATE CREDIT

105. General Zoölogy. 5 semester hours. Each semester and summer.
Three hours of recitation and six hours of laboratory a week.

123. Human Anatomy. 5 semester hours. First semester.
General anatomy studied by means of dissectable models, skeletons, and charts. Three hours of recitation and six hours of laboratory a week. Prerequisite: Zoöl. 105.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Problems in Zoölogy. Credit to be arranged. Each semester and summer school.
Work is offered in: Bird study, cytology and embryology, ecology, endocrinology, heredity, histology, parasitology, physiology, protozoölogy, wild life conservation, and zoölogical technic.

205. Field Zoölogy. 2 or 3 semester hours. Second semester and summer.
Habitat, distribution, and relationship of animals. One hour of recitation and three hours of laboratory a week or one hour of recitation and six hours of laboratory a week. Prerequisite: Zoöl. 105.

206. Zoölogical Technic. 1 or 2 semester hours. Each semester and summer school.
Methods and processes in preparation of microscopical slides; principles of photomicrography. Prerequisite: Zoöl. 105.

208. Animal Parasitology. 3 semester hours. First semester.
Biology, pathology, and prophylaxis of the principal external and internal parasites of the domestic animals. Two hours of recitation and three hours of laboratory a week. Prerequisite: Zoöl. 105.

209. Principles of Parasitology. 2 seemster hours. First semester.
Principles, origin, history, and theories of animal parasitism. Prerequisite: Zoöl. 105.

210. Invertebrate Zoölogy. 3 semester hours. First semester and summer.
Essentials of structure, function, classification, and phylogeny of the invertebrates. One hour of recitation and six hours of laboratory a week. Prerequisite: Zoöl. 105.

214. Cytology. 4 semester hours. First semester.
Cells, chromosomes, and heredity. Two hours of recitation and six hours of laboratory a week. Prerequisite: Zoöl. 105.

216. Heredity and Eugenics. 2 semester hours. Each semester.
Human inheritance and the interactions of nature and heredity. Prerequisite: Zoöl. 105.

219. Embryology. 4 semester hours. Each semester and summer.
Physiology of reproduction and developmental anatomy of mammals, with special reference to man. Three hours of recitation and three hours of laboratory a week. Prerequisite: Zoöl. 105.

220. Advanced Embryology. 4 semester hours. Second semester and summer.
Two hours of recitation and six hours of laboratory a week. Prerequisite: Zoöl. 219.

221. Human Physiology. 4 semester hours. Each semester and summer.
Functions of various organ systems of the body. Three hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 101 or 110 and Zoöl. 105.

222. General Physiology. 3 semester hours. First semester and summer.
A study of the nature and mechanism of living matter. Two hours of recitation and three hours of laboratory a week. Prerequisite: Chem. 122 and Zöol. 105.

223. Protozoölogy. 3 semester hours. Second semester.
Taxonomy, morphology, and biology of the free-living and parasitic protozoa. Two hours of recitation and three hours of laboratory a week. Prerequisite: Zöol. 105.

225. Zoölogy and Entomology Seminar. 1 semester hour. Each semester.
Prerequisite: Zoöl. 105.

228. Human Parasitology Recitation. 3 semester hours. Second semester.
Prerequisite: Zoöl. 105.

229. Human Parasitology Laboratory. 1 semester hour. Second semester.
Three hours of laboratory a week. Prerequisite: Zoöl. 228.

240. Taxonomy of Parasites. 2 semester hours. Second semester and summer.
One hour of recitation and three hours of laboratory a week. Prerequisite: Zoöl. 208 or 218.

244. Bird Study. 3 semester hours. Second semester, or 2 semester hours, summer.
Lecture, laboratory, and field studies in identification and adaptations of birds. Two hours of recitation and three hours of laboratory a week the

second semester or one hour of recitation and three hours of laboratory a week in summer school. Prerequisite: Zoöl. 105.

246. Comparative Anatomy of Vertebrates. 4 semester hours. Second semester.

Two hours of recitation and six hours of laboratory a week. Prerequisite: Zoöl. 105.

247. Endocrinology. 3 semester hours. First semester and summer.

Prerequisite: Zoöl. 105 and consent of instructor.

249. Wild-life Conservation. 3 semester hours. First semester and summer.

Methods and techniques in the management and propagation of wild life. Prerequisite: Zoöl. 105 or equivalent.

250. Social Behavior in Vertebrates. 2 semester hours. Second semester or summer.

Animal behavior from the viewpoint of social dominance and group organization; contributions of social behavior in the classes of vertebrates Prerequisite: Zoöl. 105 or equivalent and junior standing.

FOR GRADUATE CREDIT

301. Research in Zoölogy. Credit to be arranged. Each semester and summer.

Work is offered in: Bird study, cytology and embryology, ecology, endocrinology, heredity, histology, parasitology, physiology, protozoölogy, and wild-life conservation. Prerequisite: At least two courses in this department.

(For Genetics Seminar, see An. Husb. 227.)

The School of Engineering and Architecture

Merrill Augustus Durland, *Dean*
Roy Andrew Seaton, *Dean Emeritus*
Richard C. Potter, *Assistant Dean*
Gerald Carl Kolsky, *Assistant to the Dean*

The School of Engineering and Architecture offers four-year curriculums in Agricultural Engineering, Architectural Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial Arts, and Mechanical Engineering, each leading to the degree Bachelor of Science in the particular branch of the profession selected, and, in addition, offers a five-year Curriculum in Architecture, leading to the degree Bachelor of Architecture.

The curriculums as tabulated give fundamental preparation for entering upon work in the several branches of the professions, with some opportunity for specialization through options and electives. To a limited extent substitutions may be made for certain of the courses listed as required when there appears to be a good reason for them, but each such substitution must have the approval of the head of the department in which the curriculum is administered, the head of the department giving the course which is displaced, and the dean of the school. In no case will the substitution of an additional amount of technical work for any of the cultural work be permitted.

Curriculum in Agricultural Engineering

The field of the agricultural engineer includes research, sales, or advertising in the farm-machinery and farm-motor industry; farm structure design, or promotional work with the building materials industry; soil erosion prevention with the federal and state agencies; rural electric service with electric power companies; management of farms where drainage, irrigation, or power-farming methods are of major importance; and engineering in agricultural development.

The curriculum includes all basic courses which are common to the other engineering curriculums, such as mathematics, physics, and mechanics. Courses in agriculture are also included in order to familiarize the student with the modern methods of agriculture. Training along engineering lines includes farm machinery, farm power, farm structures, drainage, irrigation, soil-erosion control; and modern farm and home equipment.

Curriculum in Architectural Engineering

The Curriculum in Architectural Engineering emphasizes the structural and mechanical phases of architecture. The field of the architectural engineer comprises the superintending of building construction, general contracting, structural design, estimating construction costs, and specification writing.

Students should get practical experience during the summer vacations in the building industry, either on construction projects or in the office of an architect, construction engineer, or contractor.

Curriculum in Architecture

The Curriculum in Architecture, while stressing architectural design, includes also training in building construction, properties and uses of building materials, professional practice, and other phases important to the architectural profession. The aim is to train students for efficient service as draftsmen and designers in an architectural organization and provide them with the necessary foundation for future independent practice.

Students should get practical experience during the summer vacations in the building industry, either on construction projects or in the office of an architect.

Curriculum in Chemical Engineering

The aim of the Curriculum in Chemical Engineering is to prepare the student for work in the design, construction, and operation of chemical plants. The scope of chemical engineering includes the strictly chemical industries, such as those manufacturing acids, alkalis, lacquer solvents, dyes, explosives, metals, and like materials, and also the process industries; for instance, those processing petroleum, rubber, foods, leather, and those manufacturing cement, glass, soap, paints and varnishes, pulp and paper.

Curriculum in Civil Engineering

The first and second years are devoted largely to general cultural studies and the sciences, including mathematics. An introduction to the technical work is given in these years through courses in drawing, surveying, and the elementary phases of engineering.

The last two years are devoted largely to technical work. Provision is made for class and laboratory work in mechanical and electrical engineering. Because of the growing importance of municipal problems, such as paving, sewerage, and water supply, the curriculum 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 graduate from the Curriculum in Electrical Engineering may enter either the power or the communication field of electrical engineering, and he may engage in such lines as research, design, application, business management, or plant operation.

The student must 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, English, history, and economics. Technical training begins with a course in the second year, and is completed by several courses extending through the junior and senior years. The curriculum provides, in addition, elective work, giving the student opportunity for the selection of extra work along cultural, economic, or technical lines.

Special laboratories are provided for research in television and other electrical engineering fields.

Curriculum in Industrial Arts

The Curriculum in Industrial Arts is designed to prepare students for positions as supervisors and directors of training schools in industry, or as teachers in colleges, high schools, and trade schools; also to give some technical training and experience in shop work and drafting, preparatory to entering industrial shops.

By the selection of proper electives, the four-year curriculum in Industrial Arts may lead to the degree of Bachelor of Science in Industrial Arts and also qualify the graduate for the three-year Kansas state teachers' certificate, valid in any high school or other public school in the state, and renewable for life. The curriculum has the necessary amount of chemistry and physics to meet the same requirements for teaching physical science. Five additional hours of mathematics will qualify for Class A high schools in Kansas.

Curriculum in Mechanical Engineering

The Curriculum in Mechanical Engineering is designed to prepare students for research, design, production, operation, and sales positions in industries that produce or use power and machinery. The field of mechanical engineering is necessarily very broad, including practically every industry. To permit specialization by students in particular phases of mechanical engineering, the

curriculum provides optional and elective courses in the junior and senior years, covering industrial engineering, power production, air conditioning, petroleum production, aeronautical engineering, and machine design.

Students should spend at least two summers in some shop or commercial plant.

Engineering and Architecture in the Summer School

The school offers summer courses in freehand and mechanical drawing, water-color and oil painting, manual training and shop practice for high school and grade school teachers, as well as various courses required in the several curriculums. Therefore teachers who wish to take an engineering or architectural curriculum can get a considerable start on the work during their summer vacations, and College students who are irregular may make up courses.

Full information concerning the courses offered is contained in the Summer School number of the Kansas State College *Bulletin,* which may be obtained upon application to the Director of Admissions of the College.

Curriculum in Agricultural Engineering

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	107	Chemistry E-I	4	Chem.	108	Chemistry E-II	4
Math.	112	College Algebra*	3	Math.	120	Plane Analytic Geom.	4
Math.	101	Plane Trigonometry	3	Engl.	112	Written Comm. II	2
Engl.	111	Written Comm. I	3	Mach. Des.	106	Descr. Geometry	2
Mach. Des.	101	Engg. Drawing	2	Civ. Engg.	102	Surveying I	2
Shop	102	Shop A	2	Sp.	111	Oral Comm.	2
Mil. Sc.	105	Military I	1	Shop	166	Welding	1
Gen. Engg.	101	Engg. Lectures	R	Mil. Sc.	106	Military II	1
Phys. Ed.	103	Phys. Educ. M	R	Gen. Engg.	101	Engg. Lectures	R
				Phys. Ed.	103	Phys. Educ. M	R
Total			18	Total			18

SOPHOMORE

First Semester				Second Semester			
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Phys.	105	Engg. Physics I	5	Phys.	106	Engg. Physics II	5
Agr. Engg.	102	El. of Agr. Engg.	3	Mach. Des.	111	Mach. Drawing I	2
Comp.	121	Man and Soc. World I	4	Shop	165	Metals and Alloys	2
Mil. Sc.	107	Military III	1	Comp.	122	Man and Soc. World II	4
Gen. Engg.	105	Engg. Assembly	R	Mil. Sc.	108	Military IV	1
Phys. Ed.	103	Phys. Educ. M	R	Gen. Engg.	105	Engg. Assembly	R
				Phys. Ed.	103	Phys. Educ. M	R
Total			17	Total			18

JUNIOR

First Semester				Second Semester			
Ap. Mech.	202	Applied Mechanics	4	Ap. Mech.	212	Mech. of Matls. I Rec.	4
Mech. Engg.	208	Engg. Thermodynamics	4	Ap. Mech.	220	Mech. of Matls. Lab.	1
Agr. Engg.	111	Field and Power Mach.	4	Ap. Mech.	228	Fluid Mechanics A	4
Agr. Engg.	204	Agricultural Hydrology	3	Agr. Engg.	225	Farm Motors	4
Geol.	103	General Geology	3	Agron.	110	Farm Crops Rec.	3
Gen. Engg.	105	Engg. Assembly	R	Agron.	111	Farm Crops Lab.	1
Engl.	169	English Proficiency	R	Engl.	215	Technical Reports	1
				Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			18

SENIOR

First Semester				Second Semester			
Agr. Engg.	203	Farm Structures	4	Agr. Engg.	211	Mod. Fm. & Hm. Equip.,	4
Agron.	130	Soils	4	Agr. Engg.	245	Soil and Water Conserv.	4
Bact.	126	Water and Sewage Bact.	3	Elec. Engg.	102	Elec. Engg. C Rec.	2
Mach. Des.	230	Patents and Inventions	2	Elec. Engg.	106	Elec. Engg. C Lab.	1
Comp.	131	Man and Cult. World I	4	Agr. Econ.	106	Farm Organization	3
Agr. Engg.	140	Inspection Trip	R	Comp.	132	Man and Cult. World II	4
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Total			17	Total			18

Number of hours required for graduation, 142.

* Students who offer but on unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing both college algebra and plane trigonometry to the second semester.

Curriculum in Architectural Engineering

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	107	Chemistry E-I	4	Chem.	108	Chemistry E-II	4
Math	112	College Algebra*	3	Math.	120	Plane Analytic Geom	4
Math.	101	Plane Trigonometry	3	Engl.	112	Written Comm. II	2
Engl.	111	Written Comm. I	3	Sp.	111	Oral Comm.	2
Mach. Des.	101	Engg. Drawing	2	Mach. Des.	106	Descr. Geometry	2
Civ. Engg.	102	Surveying I	2	Arch.	112	Freehand Drawing I	2
Mil. Sc.	105	Military I (Men)	1	Mil. Sc.	106	Military II (Men)	1
Gen. Engg.	101	Engg. Lectures	R	Gen. Engg.	101	Engg. Lectures	R
Phys. Ed.	103	Phys. Educ. M	R	Phys. Ed.	103	Phys. Educ. M	R
Total			18	Total			17

SOPHOMORE

First Semester				Second Semester			
Phys.	105	Engg. Physics I	5	Phys.	106	Engg. Physics II	5
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Arch.	116	Pencil Sketching	2	Arch.	129	El. of Arch. II	4
Arch.	127	El. of Arch. I	4	Arch.	103	Shades and Shadows	1
Arch.	154A	Hist. of Arch. I	2	Arch.	104	Perspective Drwg.	1
Mil. Sc.	107	Military III (Men)	1	Arch.	157A	Hist. of Arch. II	2
Gen. Engg.	105	Engg. Assembly	R	Mil. Sc.	108	Military IV (Men)	1
Phys. Ed.	103	Phys. Educ. M	R	Gen. Engg.	105	Engg. Assembly	R
				Phys. Ed.	103	Phys. Educ. M	R
Total			18	Total			18

JUNIOR

First Semester				Second Semester			
Ap. Mech.	202	Applied Mechanics	4	Ap. Mech.	212	Mech. of Mtls. I Rec	4
Arch.	187A	Bldg. Mtls. and Constr	3	Arch.	191	Working Drawings	3
Arch.	139	Arch. Design I	5	Arch.	160A	Hist. of Arch. IV	2
Arch.	158A	Hist. of Arch. III	2	Arch.	188	Building Equipment	2
Comp.	111	Biol. Rel. to Man I	4	Comp.	112	Biol. Rel. to Man II	4
Gen. Engg.	105	Engg. Assembly	R			Elective†	3
Engl.	169	English Proficiency	R	Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			18

SENIOR

First Semester				Second Semester			
Civ. Engg.	202	Stress Anal. I Rec	4	Civ. Engg.	208	Stress Analysis II	3
Civ. Engg.	205	Stress Anal. I Lab	2	Civ. Engg.	257	Reinf. Conc. Des. Rec	2
Civ. Engg.	249	Foundations	2	Civ. Engg.	258	Reinf. Conc. Des. Lab	2
Ap. Mech.	290	Soil Mechanics	2	Civ. Engg.	246	Des. of Framed Struct	3
Ap. Mech.	220	Mech. of Mtls. Lab	1	Mech. Engg.	135	Air Conditioning A	3
Elec. Engg.	116	Illumination A	2	Comp.	122	Man and Soc. World II	4
Comp.	121	Man and Soc. World I	4	Gen. Engg.	105	Engg. Assembly	R
		Elective†	1				
Gen. Engg.	105	Engg. Assembly	R				
Arch.	199	Inspection Trip	R				
Total			18	Total			17

Number of hours required for graduation, 142.

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* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing both college algebra and plane trigonometry to the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Architecture

FIRST YEAR

First Semester

	Course		Sem. Hrs.
Comp.	121	Man and Soc. World I	4
Engl.	111	Written Comm. I	3
Mach. Des.	101	Engg. Drawing	2
Math.	112	College Algebra*	3
Arch.	112	Freehand Drawing I	2
Mil. Sc.	105	Military I (men)	1
Phys. Ed.	103	Phys. Ed. M or	
Phys. Ed.	151	Phys. Ed. W	R
Gen. Engg.	101	Engg. Lectures	R
Total			15

Second Semester

	Course		Sem. Hrs.
Comp.	122	Man and Soc. World II	4
Engl.	112	Written Comm. II	2
Sp.	111	Oral Comm.	2
Mach. Des.	106	Descr. Geometry	2
Math.	101	Pl. Trigonometry	3
Arch.	113	Freehand Drawing II	2
Mil. Sc.	106	Military II (men)	1
Phys. Ed.	103	Phys. Ed. M or	
Phys. Ed.	151	Phys. Ed. W	R
Gen. Engg.	101	Engg. Lectures	R
Total			16

SECOND YEAR

First Semester

Phys.	102	Gen. Physics I	4
Arch.	116	Pencil Sketching	2
Arch.	187A	Bldg. Matls. and Const.	3
Arch.	103	Shades and Shadows	1
Arch.	127	Elements of Arch. I	4
Arch.	154A	Hist. of Arch. I	2
Mil. Sc.	107	Military III (men)	1
Phys. Ed.	103	Phys. Ed. M or	
Phys. Ed.	151	Phys. Ed. W	R
Gen. Engg.	105	Engg. Assembly	R
Total			17

Second Semester

Phys.	103	Gen. Physics II	4
Arch.	118	Water Color I	2
Arch.	104	Perspective Drawing	1
Arch.	129	Elements of Arch. II	4
Arch.	188	Bldg. Equipment	2
Arch.	157A	Hist. of Arch. II	2
Mil. Sc.	108	Military IV (men)	1
Phys. Ed.	103	Phys. Ed. M or	
Phys. Ed.	151	Phys. Ed. W	R
Gen. Engg.	105	Engg. Assembly	R
Total			16

THIRD YEAR

First Semester

Ap. Mech.	102	Applied Mechanics A	3
Arch.	158A	Hist. of Arch. III	2
Arch.	139	Arch. Design I	5
Arch.	191	Working Drawings	3
Arch.	121	Life Drawing I	2
		Elective †	1
Gen. Engg.	105	Engg. Assembly	R
Engl.	169	English Proficiency	R
Total			16

Second Semester

Ap. Mech.	116	Str. of Matls. A Rec.	3
Ap. Mech.	121	Str. of Matls. A Lab.	1
Arch.	160A	Hist. of Arch. IV	2
Arch.	141	Arch. Design II	5
Arch.	123	Life Drawing II	2
		Elective†	3
Gen. Engg.	105	Engg. Assembly	R
Total			16

FOURTH YEAR

First Semester

Comp.	111	Biol. in Rel. to Man I	4
Elec. Engg.	116	Illumination A	2
Arch.	145	Arch. Design III	5
Arch.	192	Theory of Struct. I	4
Arch.	199	Inspection Trip	R
Gen. Engg.	105	Engg. Assembly	R
Total			15

Second Semester

Comp.	112	Biol. in Rel. to Man II	4
Arch.	147	Arch. Design IV	5
Arch.	194A	Theory of Struct. II	5
		Elective†	3
Gen. Engg.	105	Engg. Assembly	R
Total			17

FIFTH YEAR

First Semester

Arch.	179	Hist. Paint. and Sculp.	3
Arch.	254	Arch. Design V	7
Arch.	196	Theory of Struct. III	4
		Elective †	3
Total			17

Second Semester

Arch.	257	Arch. Design VI	7
Arch.	195	Professional Practice	2
Mech. Engg.	135	Air Conditioning A	3
		Elective †	3
Total			15

Number of hours required for graduation, 160.

* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing college algebra to the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Curriculum in Chemical Engineering

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	101	Chemistry I	5	Chem.	103	Chemistry II Rec.	3
Math.	112	College Algebra*	3	Chem.	104	Chemistry II Lab.	2
Math.	101	Plane Trigonometry	3	Math.	120	Plane Analytic Geom.	4
Engl.	111	Written Comm. I	3	Mach. Des.	106	Descr. Geometry	2
Mach. Des.	101	Engg. Drawing	2	Engl.	112	Written Comm. II	2
Mil. Sc.	105	Military I	1	Sp.	111	Oral Comm.	2
Gen. Engg.	101	Engg. Lectures	R	Chem. Engg.	201	Chem. Engg. Materials	2
Phys. Ed.	103	Phys. Education M	R	Mil. Sc.	106	Military II	1
				Gen. Engg.	101	Engg. Lectures	R
				Phys. Ed.	103	Phys. Education M	R
Total			17	Total			18

SOPHOMORE

First Semester				Second Semester			
Phys.	105	Engg. Phys. I	5	Phys.	106	Engg. Phys. II	5
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Chem.	215A	Quan. Analysis	4	Chem. Engg.	206	Ind. Stoich	3
		Social Sc. Elective†	4			Social Sc. Elective†	4
Mil. Sc.	107	Military III	1	Mach. Des.	111	Mach. Drawing I	2
Phys. Ed.	103	Phys. Education M	R	Mil. Sc.	108	Military IV	1
Gen. Engg.	105	Engg. Assembly	R	Phys. Ed.	103	Phys. Education M	R
				Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			19

JUNIOR

First Semester				Second Semester			
Chem.	260A	Phys. Chem. I Rec.	3	Chem.	261	Phys. Chem. II Rec.	3
Chem.	260B	Phys. Chem. I Lab.	2	Chem.	262	Phys. Chem. II Lab.	2
Chem.	223	Org. Chemistry I	5	Chem.	224	Org. Chemistry II	5
Chem. Engg.	221	Unit Ops. I Rec.	3	Chem. Engg.	226	Unit Ops. II Rec.	3
Chem. Engg.	223	Unit Ops. I Lab.	1	Chem. Engg.	228	Unit Ops. II Lab.	1
		Humanities Elective†	4			Humanities Elective†	4
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Engl.	169	English Proficiency	R				
Total			18	Total			18

SENIOR

First Semester				Second Semester			
Chem. Engg.	229	Chem. Engg. Thermo.	4	Chem. Engg.	246	Chem. Engg. Pl. Design	4
Chem. Engg.	235	Unit Ops. III Lab.	1	Chem. Engg.	257	Org. Technology	3
Chem. Engg.	237	Chem. Technology	2	Mech. Engg.	204	Heat Pwr. Engg. A	3
Chem. Engg.	240	Unit Proc. Lab.	2	Mech. Engg.	206	Heat Power Lab.	1
Ap. Mech.	202	App. Mechanics	4	Elec. Engg.	110	Elec. Engg. A-II	2
Elec. Engg.	108	Elec. Engg. A-1	3	Elec. Engg.	106	Elec. Engg. C-Lab.	1
Chem. Engg.	150	Inspec. Trip	R	Ap. Mech.	212	Mech. of Mtls. I Rec.	4
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Total			16	Total			18

Number of hours required for graduation, 142.

* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing both college algebra and plane trigonometry to the second semester.

† 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			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	107	Chemistry E-1	4	Chem.	108	Chemistry E-II	4
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Math.	112	College Algebra*	3	Sp.	111	Oral Comm.	2
Math.	101	Plane Trigonometry	3	Math.	120	Plane Analytic Geom.	4
Mach. Des.	101	Engg. Drawing	2	Mach. Des.	106	Descr. Geometry	2
Mil. Sc.	105	Military I	1	Civ. Engg.	102	Surveying I	2
Phys. Ed.	103	Phys. Ed. M	R	Mil. Sc.	106	Military II	1
Gen. Engg.	101	Engg. Lectures	R	Phys. Ed.	103	Phys. Ed. M	R
				Gen. Engg.	101	Engg. Lectures	R
Total			16	Total			17

SOPHOMORE

First Semester				Second Semester			
Phys.	105	Engg. Phys. I	5	Phys.	106	Engg. Phys. II	5
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Civ. Engg.	114	Surveying II	5	Civ. Engg.	125	C. E. Drawing	2
Mil. Sc.	107	Military III	1	Mach. Des.	111	Machine Drawing I	2
Phys. Ed.	103	Phys. Ed. M	R	Mil. Sc.	108	Military IV	1
Gen. Engg.	105	Engg. Assembly	R	Phys. Ed.	103	Phys. Ed. M	R
				Gen. Engg.	105	Engg. Assembly	R
Total			19	Total			18

JUNIOR

First Semester				Second Semester			
Ap. Mech.	202	Applied Mechanics	4	Ap. Mech.	212	Mechs. of Matls. I Rec.	4
Shop	165	Metals and Alloys	2	Ap. Mech.	220	Mechs. of Matls. Lab.	1
Mech. Engg.	120	Steam and Gas Engg. C.	2	Ap. Mech.	250	Hwy. & Airpt. Mtls. Lab.	1
Ent.	101	Gen. Entomology	3	Ap. Mech.	290	Soil Mechanics	2
Bact.	126	Water and Sewage Bact.	3	Ap. Mech.	228	Fluid Mechanics A	4
Civ. Engg.	219	Photogrammetry	4	Ap. Mech.	235	Hydraulics Lab.	1
Gen. Engg.	105	Engg. Assembly	R	Geol.	103	General Geology	3
Engl.	169	English Proficiency	R	Mech. Engg.	206	Heat Power Lab.	1
				Engl.	215	Technical Reports	1
				Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			18

SENIOR

First Semester				Second Semester			
Civ. Engg.	202	Stress Analysis I Rec.	4	Civ. Engg.	208	Stress Analysis II	3
Civ. Engg.	205	Stress Analysis I Lab.	2	Civ. Engg.	257	Reinf. Conc. Des. Rec.	2
Civ. Engg.	222	Sanitary Engg.	4	Civ. Engg.	258	Reinf. Conc. Des. Lab.	2
Civ. Engg.	233	Transportation Engg.	5	Civ. Engg.	246	Des. of Framed Struc.	3
Elec. Engg.	102	Elec. Engg. C Rec.	2	Civ. Engg.	217	Astronomy and Geodesy	3
Elec. Engg.	106	Elec. Engg. C Lab.	1	Civ. Engg.	236	Applied Hydrology	3
Civ. Engg.	180	Inspection Trip	R	Civ. Engg.	249	Foundations	2
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			18

Number of hours required for graduation, 142.

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* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing both college algebra and plane trigonometry to the second semester.

Curriculum in Electrical Engineering

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	107	Chemistry E-I	4	Chem.	108	Chemistry E-II	4
Math.	112	College Algebra*	3	Math.	120	Plane Analytic Geom.	4
Math.	101	Plane Trigonometry	3	Mach. Des.	106	Descriptive Geometry	2
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Mach. Des.	101	Engg. Drawing	2	Shop	102	Shop A	2
Shop	166	Welding	1	Sp.	111	Oral Comm.	2
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
Gen. Engg.	101	Engg. Lectures	R	Gen. Engg.	101	Engg. Lectures	R
Phys. Ed.	103	Phys. Ed. M	R	Phys. Ed.	103	Phys. Ed. M	R
Total			17	Total			17

SOPHOMORE

First Semester				Second Semester			
Phys.	105	Engg. Physics I	5	Phys.	106	Engg. Physics II	5
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Civ. Engg.	102	Surveying I	2	Elec. Engg.	201	Prin. of Elec. Engg.	2
Shop	165	Metals and Alloys	2	Mach. Des.	111	Mach. Drawing I	2
Mil. Sc.	107	Military III	1	Mil. Sc.	108	Military IV	1
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Phys. Ed.	103	Phys. Ed. M	R	Phys. Ed.	103	Phys. Ed. M	R
Total			18	Total			18

JUNIOR

First Semester				Second Semester			
Elec. Engg.	209	A. C. Circuits	4	Ap. Mech.	202	Applied Mechanics	4
Elec. Engg.	203	D. C. Machinery Rec.	4	Elec. Engg.	227	Elec. Meas. Rec.	2
Elec. Engg.	204	D. C. Machinery Lab. I	1	Elec. Engg.	230	Elec. Meas. Lab.	1
Elec. Engg.	220	Electronics I	2	Elec. Engg.	222	Electronics II Rec.	4
Comp.	131	Man and Cult. World I	4	Elec. Engg.	223	Electronics II Lab.	2
Math.	170	Diff. Equa. for Engrs.	2	Elec. Engg.	205	D. C. Machinery Lab. II.	1
Engl.	215	Technical Reports	1	Comp.	132	Man and Cult. World II	4
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Engl.	169	English Proficiency	R				
Total			18	Total			18

SENIOR

(Except in Communication and Electronics Option.)

First Semester				Second Semester			
Elec. Engg.	210	A. C. Mach. I Rec.	3	Elec. Engg.	212	A. C. Mach. II Rec.	3
Elec. Engg.	211	A. C. Mach. I Lab.	2	Elec. Engg.	213	A. C. Mach. II Lab.	2
Elec. Engg.	244	Wire Commun.	3 *or*	Mech. Engg.	204	Heat Power Engg. A	3
Elec. Engg.	290	Econ. of El. Engg.	3	Mech. Engg.	206	Heat Power Lab.	1
Ap. Mech.	212	Mech. of Matls. I Rec.	4			Nontechnical Elective†	3
Mech. Engg.	208	Engg. Thermodynamics	4			Technical Elective†	6
		Elective†	2	Gen. Engg.	105	Engg. Assembly	R
Gen. Engg.	105	Engg. Assembly	R				
Elec. Engg.	190	Inspection Trip	R				
Total			18	Total			18

Number of hours required for graduation, 142.

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* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing both college algebra and plane trigonometry to the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Communication and Electronics Option

Freshman, sophomore, junior years same as preceding page.

SENIOR

First Semester

		Course	Sem. Hrs.
Elec. Engg.	242	Elec. Engg. M-II Rec.	3
Mech. Engg.	208	Engg. Thermodynamics	4
Elec. Engg.	244	Wire Communication	3
Elec. Engg.	254	Radio Commun. Rec.	3
Elec. Engg.	256	Radio Commun. Lab.	1
Elec. Engg.	263	Commun. Networks Rec.	3
Elec. Engg.	264	Commun. Networks Lab.	1
Gen. Eng.	105	Engg. Assembly	R
Elec. Engg.	190	Inspection Trip	R
Total			18

Second Semester

		Course	Sem. Hrs.
Ap. Mech.	212	Mech. of Matl. I Rec.	4
Mech. Engg.	206	Heat Power Lab.	1
Elec. Engg.	257	Ultra-High Freq. Rec.	3
Elec. Engg.	258	Ultra-High Freq. Lab.	1
Elec. Engg.	216	A. C. Mach. E Lab.	2
		Technical elective	4
		Nontechnical elective	3
Gen. Engg.	105	Engg. Assembly	R
Total			18

Suggested Electives

Students who elect either the general curriculum or the communication and electronics option are free to choose electives from college courses in business administration, language, physics, mathematics, geology, music, advanced R. O. T.C. (eight credits only to apply toward degree), communication and electronic subjects, electric power subjects, mechanical engineering subjects, or combinations from such groups, provided the selection meets the approval of the head of department and the dean.

Students interested in electric power should select technical electives from the following:

Elec. Engg.	272	Illuminating Engineering Recitation	3
Elec. Engg.	280	Transmission and Distribution of Electrical Energy	3
Elec. Engg.	284	Transient Electrical Phenomena	3
Elec. Engg.	226	Industrial Electronics and Control Rec.	2
Elec. Engg.	225	Industrial Electronic Laboratory	1

Electrical Engineering and Business Administration

Students may secure the two degrees, B. S. in Electrical Engineering and B. S. in Business Administration, by taking the electrical engineering curriculum or the communication and electronics option plus the following courses:*

Econ.	101	Economics I	3
Econ.	116	Money and Banking	3
Econ.	214	Public Finance	3
Econ.	246	Marketing	3
Educ.	184	General Psychology	3
Econ.	133	Accounting I	3
Hist.	163	Business Law I	3
Econ.	104	Economics II	3
Econ.	134	Accounting II	3
Econ.	215	Bus. Org. and Finance	3
Hist.	164	Business Law II	3
Econ.	236	Bus. Admin. Survey	2
Engl.	122	Commercial Corres.	3

* Some of these additional courses may be substituted for the electives in the Curriculum in Electrical Engineering. A minimum of 30 additional semester hours of credit is required for the second bachelor's degree.

Curriculum in Industrial Arts

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	107	Chemistry E-I	4	Chem.	108	Chemistry E-II	4
Math.	112	College Algebra*	3	Math.	101	Plane Trig.	3
Engl.	111	Written Comm. I	3	Engl.	112	Written Comm. II	2
Mach. Des.	101	Engg. Drawing	2	Mach. Des.	106	Descr. Geometry	2
Shop	102	Shop A	2	Shop	121	Woodwork I	2
Shop	135	Wood Turning	2	Shop.	173	Sheet Metal I	2
Mil. Sc.	105	Military I (Men)	1	Shop	166	Welding	1
Phys. Ed.	103	Phys. Ed. M	R	Mil. Sc.	106	Military II (Men)	1
Gen. Engg.	101	Engg. Lectures	R	Phys. Ed.	103	Phys. Ed. M	R
				Gen. Engg.	101	Engg. Lectures	R
Total			17	Total			17

SOPHOMORE

First Semester				Second Semester			
Phys.	102	General Physics I	4	Phys.	103	General Physics II	4
Educ.	184	General Psychology	3	Mach. Des.	118	Machine Drawing II	2
Mach. Des.	111	Machine Drawing I	2	Engl.	125	Bus. Engl. and Sales	3
Sp.	111	Oral Comm.	2	Shop	147	Carpentry	3
Civ. Engg.	102	Surveying I	2	Shop	157	Blacksmithing	1
Comp.	111	Biol. in Rel. to Man I	4 *or*	Comp.	112	Biol. in Rel. to Man II	4 *or*
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Mil. Sc.	107	Military III (Men)	1	Mil. Sc.	108	Military IV (Men)	1
Phys. Ed.	103	Phys. Ed. M	R	Phys. Ed.	103	Phys. Ed. M	R
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			18

JUNIOR

First Semester				Second Semester			
Econ.	136	Prin. of Account	3	Econ.	101	Economics I	3
Mach. Des.	121	Mechanism	3	Ap. Mech.	102	Applied Mech. A	3
Shop	167	Elec. Welding	1	Hist.	163	Business Law I	3 *or*
Shop	168	Gas Welding	1	Educ.	109	Educ. Psychology	3
Shop	122	Finishing I	2	Agr. Engg.	130	Gas Eng. and Tractors	3
Shop	170	Machine Tool I	2	Shop	126	Woodwork II	2
Shop	250	Time and Motion	2	Shop	161	Foundry I	1
Shop	165	Metals and Alloys	2	Shop	262	Metallography I	1
Shop	180	Gaging	1	Sp.	108	Extempore Speech II	2
Engl.	215	Technical Reports	1	Gen. Engg.	105	Engg. Assembly	R
Gen. Engg.	105	Engg. Assembly	R				
Engl.	169	English Proficiency	R				
Total			18	Total			18

SENIOR

First Semester				Second Semester			
Ap. Mech.	116	Str. of Mtls. A Rec	3	Elec. Engg.	102	Elec. Engg. C Rec	2
Ap. Mech.	121	Str. of Mtls. A Lab	1	Elec. Engg.	106	Elec. Engg. C Lab	1
Mech. Engg.	120	Steam and Gas Engg. C	2	Shop	111	Refrig. Servicing	4
Shop	192	Machine Tool II	2	Shop	174	Safety	2
Shop	104	Auto Mechanics I	4	Gen. Engg.	105	Engg. Assembly	R
Shop	194	Inspection Trip	R				
Gen. Engg.	105	Engg. Assembly	R				
		Factory Option				*Factory Option*	
Shop	246	Indus. Management	3	Hist.	105	Am. Ind. History	3
		Elective†	3	Shop	255	Factory Design	2
						Elective†	4
		Teaching Option‡				*Teaching Option‡*	
Educ.	236	Prin. of Secondary Educ.	3	Educ.	163	Teach. Part. in H. S.	3
Educ.	134	Meth. of Teach. Ind. Arts,	3	Educ.	239	Educ. Sociology	3
						Elective†	3
Total			18	Total			18

Number of hours required for graduation, 142.

* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing college algebra to the second semester.

† Electives are to be chosen with the advice and approval of the head of the department of shop practice and the dean.

‡ The teaching option in Industrial Arts meets the Kansas requirements for teaching science, woodwork, machine shop, metal shop, auto mechanics, aero mechanics and mechanical drawing. Those desiring to teach mathematics may elect 3 hours in this field.

Curriculum in Mechanical Engineering

FRESHMAN

(For all options)

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Chem.	107	Chemistry E-I	4	Chem.	108	Chemistry E-II	4
Math.	112	College Algebra*	3	Math.	120	Plane Analytic Geom.	4
Math.	101	Plane Trigonometry	3	Engl.	112	Written Comm. II	2
Engl.	111	Written Comm. I	3	Sp.	111	Oral Comm.	2
Mach. Des.	101	Engg. Drawing	2	Mach. Des.	106	Descr. Geometry	2
Shop	166	Welding	1	Shop	102	Shop A	2
Mil. Sc.	105	Military I	1	Mil. Sc.	106	Military II	1
Gen. Engg.	101	Engg. Lectures	R	Gen. Engg.	101	Engg. Lectures	R
Phys. Ed.	103	Phys. Educ. M	R	Phys. Ed.	103	Phys. Educ. M	R
Total			17	Total			17

SOPHOMORE

(For all options)

First Semester				Second Semester			
Phys.	105	Engg. Physics I	5	Phys.	106	Engg. Physics II	5
Math.	140	Calculus I	4	Math.	141	Calculus II	4
Mach. Des.	121	Mechanism	3	Shop	165	Metals and Alloys	2
Mach. Des.	111	Mach. Drawing I	2	Shop	262	Metallography I	1
		Humanities Elective†	3	Mach. Des.	118	Mach. Drawing II	2
Mil. Sc.	107	Military III	1			Humanities Elective†	3
Gen. Engg.	105	Engg. Assembly	R	Mil. Sc.	108	Military IV	1
Phys. Ed.	103	Phys. Educ. M	R	Gen. Engg.	105	Engg. Assembly	R
				Phys. Ed.	103	Phys. Educ. M	R
Total			18	Total			18

JUNIOR

(For all options except Aeronautical-B)

First Semester				Second Semester			
Ap. Mech.	202	Applied Mechanics	4	Ap. Mech.	212	Mech. of Mtls. I Rec.	4
Mech. Engg.	208	Engg. Thermodynamics	4	Elec. Engg.	242	Elec. Engg. M-II Rec.	3
Elec. Engg.	237	Elec. Engg. M-I Rec.	4	Elec. Engg.	243	Elec. Engg. M-II Lab.	1
Elec. Engg.	238	Elec. Engg. M-I Lab.	1			Soc. Science Elective†	2
Econ.	101	Economics I	3			Option 7 or	8
		Option 2 or	3	Gen. Engg.	105	Engg. Assembly	R
Gen. Engg.	105	Engg. Assembly	R				
Engl.	169	English Proficiency	R				
Total			18 or 19	Total			17 or 18

SENIOR

(For all options except Aeronautical-B)

First Semester				Second Semester			
Ap. Mech.	220	Mech. of Mtls. Lab.	1	Mach. Des.	204	Mach. Des. I Rec.	3
Shop	246	Industrial Management	3			Restricted Elective‡	3
Mech. Engg.	242	Mech. Engg. Lab. I	2			Option 11 or	12
Mech. Engg.	204	Heat Power Engg. A	3	Gen. Engg.	105	Engg. Assembly	R
Mech. Engg.	196	Prof. Development	1				
		Restricted Elective‡	3				
		Option 5 or	6				
Gen. Engg.	105	Engg. Assembly	R				
Mech. Engg.	180	Inspection Trip	R				
Total			18 or 19	Total			17 or 18

Number of hours required for graduation, 142.

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* Students who offer but one unit of algebra for admission take a three-hour course in intermediate algebra, Math. 0, postponing both college algebra and plane trigonometry to the second semester.

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

‡ To be chosen from the fields of Social Science, Humanities, or Biology with the approval of the head of the department and the dean.

Options: Curriculum in Mechanical Engineering

Aeronautical Option—A

JUNIOR

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
Math.	170	Diff. Equa. for Engrs.	2	Ap. Mech.	231	Fluid Mechanics B	3
				Mach. Des.	206	Aerodynamics I Rec.	3
				Mach. Des.	207	Aerodynamics I Lab.	1
Total			2	Total			7

SENIOR

First Semester				Second Semester			
Ap. Mech.	286	Airpl. Stress Anal. I	4	Mech. Engg.	251	Heat Transf. and Fl. Flow,	4
		Tech. Elective†	2	Mech. Engg.	246	Aero. Engg. Lab.	2
				Mech. Engg.	231	Int. Comb. Engines	3
				Mach. Des.	260	Airpl. Des. and Const.	3
Total			6	Total			12

Students majoring in Mechanical Engineering who desire more specialized training in aeronautical engineering may pursue the following adaptation of the Curriculum in Mechanical Engineering.

Aeronautical Option—B

JUNIOR

First Semester				Second Semester			
Ap. Mech.	202	Applied Mechanics	4	Ap. Mech.	212	Mech. of Mtls. I Rec.	4
Mech. Engg.	208	Engg. Thermodynamics	4	Ap. Mech.	220	Mech. of Mtls. I Lab.	1
Elec. Engg.	102	Elec. Engg. C Rec.	2	Ap. Mech.	231	Fluid Mechanics B	3
Elec. Engg.	106	Elec. Engg. C Lab.	1	Mech. Engg.	231	Int. Comb. Engines	3
Math.	170	Diff. Equa. for Engrs.	2	Shop	246	Industrial Management	3
Shop	264	Aircr. Mtls. and Fabric.	3	Mach. Des.	206	Aerodynamics I Rec.	3
		Elective†	2	Mach. Des.	207	Aerodynamics I Lab.	1
Gen. Engg.	105	Engg. Assembly	R	Gen. Engg.	105	Engg. Assembly	R
Engl.	169	English Proficiency	R				
Total			18	Total			18

SENIOR

First Semester				Second Semester			
Mach. Des.	218	Prop. Theory and Des.	2	Mech. Engg.	245	Airplane Instruments	2
Mach. Des.	216	Aerodynamics II Rec.	3	Mech. Engg.	248	Aircraft Power Plants	2
Mach. Des.	217	Aerodynamics II Lab.	1	Mech. Engg.	246	Aero. Engg. Lab.	2
Mach. Des.	221	Airplane Design I	3	Mach. Des.	222	Airplane Design II	3
Ap. Mech.	286	Airpl. Stress Anal. I	4	Ap. Mech.	287	Airpl. Stress Anal. II	2
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Mech. Engg.	206	Heat Power Lab.	1	Elec. Engg.	269	Airp. Elec. Equip. Lab.	1
Mech. Engg.	180	Inspection Trip	R			*and*	
Gen. Engg.	105	Engg. Assembly	R	Elec. Engg.	271	Airp. Elec. Equip. Rec.	2
						or	
				Mech. Engg.	196	Prof. Development	1
						and	
						Elective†	2
				Gen. Engg.	105	Engg. Assembly	R
Total			18	Total			18

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Industrial Option

JUNIOR

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
Shop	170 Machine Tool I	2	Ap. Mech.	228 Fluid Mechanics A	4
			Shop	250 Time and Motion	2
			Shop	192 Machine Tool II	2
Total		2	Total		8

SENIOR

First Semester			Second Semester		
Mech. Engg.	288 Air Conditioning	3	Mech. Engg.	243 Mech. Engg. Lab. II	2
	Tech. Elective†	3	Mach. Des.	205 Machine Design I Lab.	2
			Shop	174 Safety	2
			Shop	255 Factory Design	2
				Tech. Elective†	3
Total		6	Total		11

Petroleum Production Option

JUNIOR

First Semester			Second Semester		
Geol.	103 General Geology	3	Ap. Mech.	228 Fluid Mechanics A	4
			Geol.	203 Historical Geology	4
Total		3	Total		8

SENIOR

First Semester			Second Semester		
Mech. Engg.	270 Petroleum Prod. I	3	Mech. Engg.	271 Petroleum Prod. II	3
Civ. Engg.	102 Surveying I	2	Mech. Engg.	243 Mech. Engg. Lab. II	2
			Mach. Des.	205 Machine Design I Lab.	2
			Geol.	223 Petroleum Geology	4
Total		5	Total		11

Technical Option

JUNIOR

First Semester			Second Semester		
Math.	170 Diff. Equa. for Engrs.	2	Ap. Mech.	231 Fluid Mechanics B	3
			Mech. Engg.	251 Heat Transf. and Fl. Flow,	4
Total		2	Total		7

SENIOR

First Semester			Second Semester		
Mech. Engg.	228 Air Conditioning	3	Ap. Mech.	213 Mech. of Materials II	2
	Tech. Elective†	3	Mech. Engg.	243 Mech. Engg. Lab. II	2
			Mech. Engg.	220 Power Plant Design	3
			Mach. Des.	205 Machine Design I Lab.	2
				Tech. Elective†	3
Total		6	Total		12

† Electives are to be chosen with the advice and approval of the head of the department and the dean.

Agricultural Engineering

FREDERICK C. FENTON, *Head of Department*

FOR UNDERGRADUATE CREDIT

101. Farm Buildings. 3 semester hours. Second semester and summer in alternate years.

Requirements, details of arrangements, and materials of construction for farm buildings; preparation of plans, bills of material, and estimates of costs; water supply, sewage disposal, lighting, and other modern equipment for the farmstead. Two hours of recitation and three hours of laboratory a week.

102. Elements of Agricultural Engineering. 3 semester hours. First semester.

Survey of the field of agricultural engineering, power in agriculture, power transmission, belts, gears, mechanisms, bearings, gages and measurements, shop skills. One hour of recitation and six hours of laboratory a week.

103. Farm Mechanics. 2 semester hours. First semester.

Shop skills for teachers of vocational agriculture including pipe fitting, plumbing repairs, taps and dies, drilling, soldering, babbitting, use of hand tools and sharpening. Special lathe work and welding with direct application to the repair of farm machinery. Six hours of laboratory a week. For students in the Curriculum in Agricultural Education. Prerequisite: Shop 157, 167.

104. Farm Machinery Repair. 2 semester hours. Second semester.

Construction, repair, operation, adjustment, calibration, and maintenance of farm machinery and equipment. Six hours of laboratory a week. For students in the Curriculum in Agricultural Education. Prerequisite: Agr. Engg. 103.

106. Farm Power. 3 semester hours. Second semester.

Selection, operation and maintenance of engines, tractors and electric motors; principles of valve timing, ignition, carburetion, cooling, lubrication, and fuels; with special emphasis on repair and reconditioning. One hour of recitation and six hours of laboratory a week. For students in the Curriculum in Agricultural Education.

108. Farm Machinery. 3 semester hours. Each semester and summer.

Construction, operation, adjustment, power requirements, use, service, and repair of farm machinery. Two hours of recitation and three hours of laboratory a week. For agricultural students.

111. Field and Power Machinery. 4 semester hours. First semester.

A comprehensive study of the development, design, construction, economics, power requirements, use and servicing of farm machinery. Two hours of recitation and six hours of laboratory a week. Prerequisite: Phys. 106.

130. Gas Engines and Tractors. 3 semester hours. Each semester and summer.

Principles of the internal combustion engine; carburetion, valve timing, ignition, cooling, lubrication, and fuels; the servicing and repair of farm engines and the selection of power for agriculture. Two hours of recitation and three hours of laboratory a week. For agricultural students.

140. Inspection Trip. Required; no credit. First semester.

A trip of three to five days for the purpose of studying farm machinery production and other projects of special interest to agricultural engineers. Cost of trip, $25 to $50. Prerequisite: Senior classification.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Power and Machinery in Agriculture. 2 semester hours. First semester.
History and development of machinery in agriculture; the application, selection, management, and cost of machines; future development; a survey course dealing with the mechanization of agriculture. Open to all students who have not taken Agr. Engg. 108 or 130. Two hours of recitation a week. Prerequisite: Junior or senior classification.

202. Dairy Mechanics. 3 semester hours. Second semester.
Installation, adjustment and operation of dairy plant equipment; boilers, engines, motors, pumps, refrigeration machinery; water supply, waste disposal. Two hours of recitation and three hours of laboratory a week.

203. Farm Structures. 4 semester hours. First semester.
Design of farm structures; details and materials of construction; specifications and estimates. Two hours of recitation and six hours of laboratory a week. Prerequisite: Ap. Mech. 212.

204. Agricultural Hydrology. 3 semester hours. First semester.
The hydrologic cycle, rainfall, runoff, soil and water relationships affecting crop production, drainage, irrigation and erosion. Watershed surveys. Two hours of recitation and three hours of laboratory a week.

205. Agricultural Engineering Problems. Credit to be arranged. Each semester and summer.
Problems in the design, construction, or application of machinery or power in agriculture, structures, modern conveniences, rural electrification. Prerequisite: Permission of instructors.

206. Farm Mechanics Methods. 3 semester hours. Second semester.
Methods of teaching farm mechanics in vocational agriculture, including the organization and equipment of the farm shop; preparation and use of job sheets and instruction sheets; practice in the demonstration of shop skills and in the construction of farm mechanics projects. For students in the Curriculum in Agricultural Education. One hour of recitation and six hours of laboratory a week. Prerequisite: Agr. Engg. 103, 106.

207. Farm Building Construction. 3 semester hours. First semester.
Planning and construction of buildings and equipment for the farm; concrete and masonry, farm carpentry, painting, new building materials; blueprint reading, bills of materials, and cost estimates. For students in the Curriculum in Agricultural Education. One hour of recitation and six hours of laboratory a week. Prerequisite: Agr. Engg. 103.

208. Agricultural Engineering Applications. 2 semester hours. First semester.
Practical laboratory exercises, surveying, terracing, contouring, drainage, irrigation, fencing, electric wiring, farm water supply, sewage disposal, heating, lighting, refrigeration, etc. For students in the Curriculum in Agricultural Education. Six hours of laboratory a week. Prerequisite: Junior standing.

211. Modern Farm and Home Equipment. 4 semester hours. Second semester.
Water supply, sewage disposal, lighting, heating, and ventilation of farm buildings; refrigeration; rural electrification. Two hours of recitation and six hours of laboratory a week. Prerequisite: Ap. Mech. 228, 235.

215. Tractor Research. Credit to be arranged. First semester.
Research studies relating to tractor construction and operation. Prerequisite: Agr. Engg. 225 or equivalent.

225. Farm Motors. 4 semester hours. Second semester.
Theory, design, operation, and adjustment of the internal combustion

engine and a comprehensive study of power and its application to agriculture. Two hours of recitation and six hours of laboratory a week. Prerequisite: Phys. 106, Mech. Engg. 208.

240. Drainage, Erosion Control, and Irrigation. 3 semester hours. Second semester.
Principles and practices of land improvement by terracing and other methods of erosion control; drainage, irrigation, and land clearing. Two hours of recitation and three hours of laboratory a week. For agricultural students. Prerequisite: Agron. 130.

245. Soil and Water Conservation. 4 semester hours. Second semester.
Principles and methods of land drainage, soil and water conservation, and irrigation. Two hours of recitation and six hours of laboratory a week. Prerequisite: Ap. Mech. 228, Agr. Engg. 204, Agron. 130.

FOR GRADUATE CREDIT

301. Research in Agricultural Engineering. Credit to be arranged. Each semester and summer.
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 investigation, if suitable, may be incorporated in bulletins of the Engineering Experiment Station or furnish material for the master's thesis. Prerequisite: Agron. 130, Phys. 106 or equivalent.

Applied Mechanics

CHARLES H. SCHOLER, *Head of Department*

FOR UNDERGRADUATE CREDIT

102. Applied Mechanics A. 3 semester hours. Second semester.
A study of statics, with applications to stress in structure; center of gravity; moment of inertia. Three hours of recitation a week. Prerequisite: Math. 101, Phys. 102.

116. Strength of Materials A Recitation. 3 semester hours. First semester.
Behavior of materials subjected to tension, compression, shear, and bending; designs of beams of wood, steel, and reinforced concrete; design and investigation of columns; practice in the use of a handbook. Three hours of recitation a week. Prerequisite: Ap. Mech. 102.

121. Strength of Materials A Laboratory. 1 semester hour. First semester.
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. Three hours of laboratory a week. Prerequisite or concurrent: Ap. Mech. 116.

135. Foundation Materials. 3 semester hours. Second semester.
The properties and testing of natural materials, including soils, commonly used for foundations. Three hours of recitation a week. Prerequisite: Geol. 215.

150. Thesis. Credit to be arranged. Each semester and summer.
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 semester hours. Each semester and summer.
Composition, resolution, and conditions of equilibrium of concurrent and noncurrent forces; center of gravity; friction; laws of rectilinear and curvi-

linear motion of material points; moment of inertia; relations between forces acting on rigid bodies and the resulting motions; work, energy, and power. Four hours of recitation a week. Prerequisite: Math. 141, Phys. 105.

212. Mechanics of Materials I Recitation. 4 semester hours. Each semester and summer.

Behavior of materials subject to tension, compression, and shear; riveted joints; torsion; shafts and the transmission of power; strength and stiffness of simple and continuous beams; bending and shear in beams; design of beams; stresses in columns and hooks. Four hours of recitation a week. Prerequisite: Ap. Mech. 202.

213. Mechanics of Materials II Recitation. 2 semester hours. Second semester.

An extension of Ap. Mech. 212 with special reference to the needs of students in Mechanical Engineering. Two hours of recitation a week. Prerequisite: Ap. Mech. 212.

220. Mechanics of Materials Laboratory. 1 semester hour. Each semester and summer.

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. Three hours of laboratory a week. Prerequisite or concurrent: Ap. Mech. 212.

221. Experimental Stress Analysis. 1 semester hour. First semester.

A study of methods and apparatus for experimental determination of stresses, including photoelasticity, brittle models, brittle coatings, electric strain gages, and strain rosettes. Three hours of laboratory a week. Prerequisite: Ap. Mech. 220; prerequisite or concurrent: Ap. Mech. 213.

228. Fluid Mechanics A. 4 semester hours. Each semester and summer.

Fluid pressures, center of pressure, immersion and flotation; Bernoulli's Theorem for compressible and incompressible fluids; the principle of similarity, the Reynold's and Froude numbers; flow of fluids through orifices, nozzles, pipes; flow of water over weirs and in open channels; elements of water power, impulse wheels, reaction turbines, and centrifugal pumps. Four hours of recitation a week. Prerequisite: Ap. Mech. 202.

231. Fluid Mechanics B. 3 semester hours. Second semester.

An optional course for mechanical engineering students, in which both gaseous and liquid fluids are treated. Three hours of recitation a week. Not open to students with credit in Ap. Mech. 228. Prerequisite: Ap. Mech. 202, Mech. Engg. 208.

235. Hydraulics Laboratory. 1 semester hour. Each semester and summer.

Tests to determine the coefficients of weirs and orifices, loss of head in pipes, water wheels, water turbines, rams and pumps. Three hours of laboratory a week. Prerequisite or concurrent: Ap. Mech. 228 or 231.

250. Highway and Airport Materials Laboratory. 1 semester hour. Each semester.

A comprehensive course in the examination and testing of materials used in the construction of highways and airports. Three hours of laboratory a week. Prerequisite: Ap. Mech. 220.

268. Elastic Energy Theory. 3 semester hours. First semester.

The elastic energy theory applied to trusses, frames, beams, and curved beams. Three hours of recitation a week. Prerequisite: Ap. Mech. 212.

270. Hydraulic Machinery. 2 semester hours. First semester.

Characteristics and applications of water wheels, turbines, pumps, and other hydraulic machinery. Two hours of recitation a week. Prerequisite: Ap. Mech. 228.

275. Advanced Highway and Airport Materials. 2 semester hours. Second semester.

An advanced course in the properties and testing of the various materials used in the construction of highways and airports. One hour of recitation and three hours of laboratory a week. Prerequisite: Ap. Mech. 250.

276. Design of Concrete Mixtures. 3 semester hours. First semester.

Practical applications of the fundamental principles of concrete making, using various kinds of cement and placing special emphasis on the proper designing, mixing, and placing of concrete mixtures to meet certain strength and durability requirements. One hour of recitation and six hours of laboratory a week. Prerequisite: Ap. Mech. 220.

280. Elastic Stability. 3 semester hours. First semester.

Bending of prismatic bars under simultaneous action of axial and lateral loads; buckling of centrally compressed bars; buckling of compressed rings and curved bars; lateral buckling of beams. Three hours of recitation a week. Prerequisite: Ap. Mech. 212.

282. Mathematical Methods in Engineering Research. 3 semester hours. First semester.

The application of the methods of Euler, Lagrange, Ritz, Southwell, Timoshenko, Runge, Heaviside and Kron to problems in various fields in engineering. Three hours of recitation a week. Prerequisite: Math. 210 or equivalent.

286. Airplane Stress Analysis I. 4 semester hours. First semester.

Analysis of stress and stability problems in the structural elements of airplanes. Three hours of recitation and three hours of laboratory a week. Prerequisite: Math. 170, Ap. Mech. 212.

287. Airplane Stress Analysis II. 2 semester hours. Second semester.

A continuation of Airplane Stress Analysis I. Two hours of recitation a week. Prerequisite: Ap. Mech. 286.

290. Soil Mechanics. 2 semester hours. Each semester.

The physical properties of soil which govern its behavior as a material for highway surfaces or foundations; the behavior of soil when used as a material of construction in fills and dams. Six hours of laboratory a week. Prerequisite or concurrent: Ap. Mech. 212.

295. Cement and Concrete Technology. 2 semester hours. First semester.

History of calcareous cements; a survey of raw materials and processes; cement components, constitution and cementing value; special cements and their concrete-making properties; resistance of concrete to natural destructive agencies. Prerequisite: Ap. Mech. 220.

FOR GRADUATE CREDIT

301. Research in Materials of Construction. Credit to be arranged. Each semester and summer.

Many poblems related to materials used in engineering construction offer attractive fields of 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, or furnish materials for the master's thesis. Prerequisite: Consult instructors.

302. Problems in Elasticity. Credit to be arranged. Each semester and summer.

308. Theory of Elasticity I. 2 semester hours. Second semester.

Equations of elasticity in two and three dimensions; two-dimensional problems in rectangular and in polar coördinates; torsion of shafts of noncircular section. Prerequisite: Ap. Mech. 213, Math. 210 or equivalent.

309. Theory of Elasticity II. 2 semester hours. First semester.
Bending of prismatic bars and circular plates; stresses around cavities; stresses within soils; thermal stresses. Prerequisite: Ap. Mech. 308.

311. Theory of Plates and Slabs. 3 semester hours. Second semester.
Equations for bending of thin plates; symmetrical bending of circular plates; simply supported rectangular plates. Rectangular plates or slabs with various edge conditions. Plates or slabs of various shapes. Three hours of recitation a week. Prerequisite: Ap. Mech. 213, Math. 210 or equivalent.

312. Vibration of Elastic Bodies. 3 semester hours. First semester.
Longitudinal, torsional and lateral vibration of bars; testing of samples of material by dynamic methods; the Ritz method; vibration of membranes and plates; waves in isotropic elastic mediums; vibrations of pavement slabs. Three hours of recitation a week. Prerequisite or concurrent: Ap. Mech. 308, Mach. Design 215.

315. Rheology I. 2 semester hours. First semester.
Torsion, bending and buckling of metal bars beyond the elastic limit; creep; plastic flow in two dimensions; elastic and viscous elements in series and in parallel. Prerequisite: Ap. Mech. 213, Math. 210 or equivalent.

316. Rheology II. 3 semester hours. Second semester.
Cohesion, adhesion; flocculation; dispersion; structural viscosity; use and theory of capillary, efflux, immersion, Couette and Pochettino viscometers for non-newtonian fluids; rheological properties of two-phase systems. Prerequisite: Ap. Mech. 315.

Architecture

Paul Weigel, *Head of Department*

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

FOR UNDERGRADUATE CREDIT

103. Shades and Shadows. 1 semester hour. Each semester and summer.
A fundamental course in shades and shadows. Three hours of laboratory a week. Prerequisite: Mach. Des. 101 or equivalent.

104. Perspective Drawing. 1 semester hour. Each semester and summer.
The principles of perspective drawing. Three hours of laboratory a week. Prerequisite: Mach. Des. 101 or equivalent.

112. Freehand Drawing I. 2 semester hours. Each semester and summer.
A basic course in the fundamentals of freehand drawing. Six hours of laboratory a week.

113. Freehand Drawing II. 2 semester hours. Each semester and summer.
A continuation of Arch. 112. Six hours of laboratory a week. Prerequisite: Arch. 112.

116. Pencil Sketching. 2 semester hours. Each semester and summer.
Six hours of laboratory a week. Prerequisite: Arch. 112.

117. Still-life Drawing. 2 semester hours. First semester and summer.
Sketches in various media of still-life groups in the studio and out-of-doors. Six hours of laboratory a week. Prerequisite: Arch. 112.

118. Water Color I. 2 semester hours. Each semester and summer.
Rudiments of water-color painting; translation and theory of color.

Sketching of simple objects and groups of objects; includes both studio and outdoor sketching. Six hours of laboratory a week. Prerequisite: Arch. 116 or approval of instructor.

119. Water Color II. 2 semester hours. Each semester and summer.
Advanced study in the technique of the medium. Includes both studio work and outdoor sketching. Six hours of laboratory a week. Prerequisite: Arch. 118.

120. Interior Design. 2 semester hours. First semester and summer.
A study of the principle of interior architecture. Six hours of laboratory a week. Prerequisite: Arch. 118, 125, and 145.

121. Life Drawing I. 2 semester hours. Each semester and summer.
Six hours of laboratory a week. Prerequisite: Arch. 118.

123. Life Drawing II. 2 semester hours. Each semester and summer.
A continuation of Arch. 121. Six hours of laboratory a week. Prerequisite: Arch. 121.

124. Domestic Architecture. 2 semester hours. Second semester.
A study of the design and planning problems of the small home. Two hours of recitation a week. An elective course intended for students not enrolled in the Department of Architecture.

125. Appreciation of Architecture. 3 semester hours. Second semester.
A survey of the history of architecture. Three hours of recitation a week. An elective course intended for students not enrolled in the Department of Architecture.

127. Elements of Architecture I. 4 semester hours. Each semester and summer.
A study of the fundamentals of architectural design by their application in the original solution and presentation of simple architectural problems. Twelve hours of laboratory a week.

129. Elements of Architecture II. 4 semester hours. Each semester and summer.
A continuation of Arch. 127. Twelve hours of laboratory a week. Prerequisite: Arch. 127.

133. Clay Modeling. 2 semester hours. First semester and summer.
The making of clay models, plaster casts of simple decorative fragments and anatomical forms; and construction of relief maps. Six hours of laboratory a week. Prerequisite: Arch. 117.

134. Pen and Ink Drawing. 2 semester hours. Each semester and summer.
Six hours of laboratory a week. Prerequisite: Approval of instructor.

137. Block Prints. 2 semester hours. First semester and summer.
The carving of original compositions in linoleum and wood blocks. Six hours of laboratory a week. Prerequisite: Arch. 113 or approval of instructor.

139. Architectural Design I. 5 semester hours. Each semester.
A continuation of Arch. 129. Fifteen hours of laboratory a week. Prerequisite: Arch. 129.

141. Architectural Design II. 5 semester hours. Each semester.
A continuation of Arch. 139. Fifteen hours of laboratory a week. Prerequisite: Arch. 139.

145. Architectural Design III. 5 semester hours. Each semester.
Continuation of Arch. 144; time problems and rapid design sketches required at frequent intervals. Fifteen hours of laboratory a week. Prerequisite: Arch. 144.

147. Architectural Design IV. 5 semester hours. Each semester.
Continuation of Arch. 145. Fifteen hours of laboratory a week. Prerequisite: Arch. 145.

154A. History of Architecture I. 2 semester hours. First semester.
Preclassical and classical architecture. Two hours of recitation a week.

157A. History of Architecture II. 2 semester hours. Second semester.
Medieval architecture. Two hours of recitation a week. Prerequisite: Arch. 154A.

158A. History of Architecture III. 2 semester hours. First semester.
Italian and French Renaissance architecture. Two hours of recitation a week. Prerequisite: Arch. 157A.

160A. History of Architecture IV. 2 semester hours. Second semester.
Continuation of Arch. 158A through modern architecture. Two hours of recitation a week. Prerequisite: Arch. 158A.

165. Commercial Illustration I. 2 semester hours. Each semester and summer.
The principles of advertising arrangements making various types of advertising design, 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. Six hours of laboratory a week.

170. Commercial Illustration II. 2 semester hours. Each semester and summer.
Continuation of Arch. 165. Six hours of laboratory a week. Prerequisite: Arch. 165.

172. Commercial Illustration III. 3 semester hours. Each semester and summer.
Continuation of Arch. 170 with particular emphasis upon the perfecting of professional techniques employed in advertising work. Nine hours of laboratory a week. Prerequisite: Arch. 170.

174. Commercial Illustration IV. 3 semester hours. Each semester and summer.
Continuation of Arch. 172. Nine hours of laboratory a week. Prerequisite: Arch. 172.

179. History of Painting and Sculpture. 3 semester hours. First semester.
The appreciation and development of painting and sculpture. Three hours of recitation a week. A required course for students in architecture and a recommended elective for other students.

181. Oil Painting I. 2 semester hours. Each semester and summer.
Principles of oil painting with emphasis on technical aspects of the medium; theory of color and composition; both studio and outdoor work. Six hours of laboratory a week. Prerequisite: Arch. 112 or approval of instructor.

183. Oil Painting II. 2 semester hours. Each semester and summer.
A continuation of Arch. 181. Six hours of laboratory a week. Prerequisite: Arch. 181 or approval of instructor.

187A. Building Materials and Construction. 3 semester hours. First semester.
An introduction to the properties and uses of the materials of construction, construction methods; occasional visits to buildings under construction. Three hours of recitation a week.

188. Building Equipment. 2 semester hours. Second semester.
A study of plumbing, sanitation systems, and mechanical equipment of buildings. Two hours of recitation a week. Prerequisite: Arch. 187A.

191. Working Drawings. 3 semester hours. Second semester.
Preparing working drawings for a residence. Nine hours of laboratory a week. Prerequisite: Arch. 139, 187A.

192. Theory of Structures I. 4 semester hours. Second semester.
Mathematical and graphical solutions of stresses in framed structures under static loading; practical problems in the design of wood, steel, and masonry construction; occasional inspection trips to buildings under construction. Two hours of recitation and six hours of laboratory a week. Prerequisite: Ap. Mech. 116, 121.

194A. Theory of Structures II. 5 semester hours. First semester.
A continuation of Arch. 192. Three hours of recitation and six hours of laboratory a week. Prerequisite: Arch. 192.

195. Professional Practice. 2 semester hours. Second semester.
The preparation of building documents; interpretation of building codes and analysis of documents of American Institute of Architects; office organization; client and contractor relationships. Six hours of laboratory a week. Prerequisite: Arch. 144, 191.

196. Theory of Structures III. 4 semester hours. Second semester.
A continuation of Arch. 194A, including design of reinforced concrete building frames; footings, columns, and floor systems, attention being given to costs and economical design. Two hours of recitation and six hours of laboratory a week. Prerequisite: Arch. 194A.

199. Inspection Trip. Required; no credit. First semester.
An inspection trip is made to one of the larger cities of the Middle West, usually Chicago, by the senior students in Architectural Engineering and the fourth year students in 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. Prerequisite: Senior classification. Approximate cost of trip, $50.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Advanced Freehand Drawing. Credit to be arranged. Each semester and summer.
Prerequisite: Arch. 117, 118, and approval of instructor.

217. Etching. 2 semester hours. Each semester and summer.
Technical principles and practice of etching on copper and zinc plate. Six hours of laboratory a week. Prerequisite: Arch. 117 and 134.

221. Problems in Architectural Development. Credit to be arranged. Each semester and summer.
Under direct supervision of some member of the departmental staff, study of specific architectural problems. Prerequisite: Approval of instructor.

231. Oil Painting III. 2 semester hours. Each semester and summer.
Work in the various methods and historical technics of painting. Six hours of laboratory a week. Prerequisite: Arch. 183 or approval of instructor.

233. Oil Painting IV. 2 semester hours. Each semester and summer.
A continuation of Arch. 231 with a selected study and practice of mural painting. Six hours of laboratory a week. Prerequisite: Arch. 231 or approval of instructor.

236. Portraiture I. 2 semester hours. Each semester and summer.
Principles and elements of portrait drawing. Various media may be

employed. Six hours of laboratory a week. Prerequisite: Arch. 123 or approval of instructor.

238. Portraiture II. 2 semester hours. Each semester and summer.
A continuation of Arch. 236. Six hours of laboratory a week. Prerequisite: Arch. 236 or approval of instructor.

249. City Planning. 3 semester hours. Second semester.
A study of city planning, including transportation and street systems, parks and recreation facilities, public buildings and civic centers, subdivisions of land, restrictions and zoning. Nine hours of laboratory a week. Prerequisite: Arch. 144.

254. Architectural Design V. 7 semester hours. Each semester.
A continuation of Arch. 147. Twenty-one hours of laboratory a week. Prerequisite: Arch. 147.

257. Architectural Design VI. 7 semester hours. Each semester.
A continuation of Arch. 254. Twenty-one hours of laboratory a week. Prerequisite: Arch. 254.

FOR GRADUATE CREDIT

301. Advanced Architectural Design I. Credit to be arranged. Each semester and summer.
A study of the planning of important buildings and groups of buildings. Prerequisite: Arch. 257.

304. Advanced Architectural Design II. Credit to be arranged. Each semester and summer.
A continuation of Arch. 301; may furnish material for the master's thesis. Prerequisite: Arch. 301.

Chemical Engineering

HENRY T. WARD, *Head of Department*

The instruction in the Department of Chemical Engineering deals primarily with those unit physical operations and unit chemical processes which, when coördinated and in their proper sequence, constitute a physical or chemical process as conducted on an industrial scale. Chemistry, physics, and mathematics are the underlying sciences of chemical engineering, and economics its guide in practice.

FOR UNDERGRADUATE CREDIT

150. Inspection Trip. Required; no credit. First semester.
Inspections are made of chemical industries in Kansas by visits to plants making chemicals such as ammonia, methanol, soap, glass, cement, petroleum products, fertilizers, etc. Approximate cost to student, $30.

FOG GRADUATE AND UNDERGRADUATE CREDIT

201. Chemical Engineering Materials. 2 semester hours. Each semester.
Manufacture, use, and properties of metallic and nonmetallic materials of construction. Two hours of recitation a week. Prerequisite or concurrent: Chem. 103, 104.

206. Industrial Stoichiometry. 3 semester hours. Each semester and summer.
Calculation of material and energy balances in industrial chemical reactions. Three hours of recitation a week. Prerequisite: Chem. 215A.

221. Unit Operations I Recitation. 3 semester hours. Each semester.
Class and problem work on fluid flow, heat transfer and evaporation. Three hours of recitation a week. Prerequisite: Chem. Engg. 206, Math. 141; prerequisite or concurrent: Chem. 260A, 260B.

223. Unit Operations I Laboratory. 1 semester hour. Each semester.
Laboratory work in fluid flow and heat transfer. Three hours laboratory a week. Prerequisite or concurrent: Chem Engg. 221.

226. Unit Operations II Recitation. 3 semester hours. Each semester.
Class and problem work on humidification, drying, absorption, distillation, crystallization, and filtration. Three hours of recitation a week. Prerequisite: Chem. Engg. 221.

228. Unit Operations II Laboratory. 1 semester hour. Each semester.
Laboratory work in evaporation, humidification, drying and distillation. Three hours laboratory a week. Prerequisite: Chem. Engg. 223; prerequisite or concurrent: Chem. Engg. 226.

229. Chemical Engineering Thermodynamics. 4 semester hours. Each semester and summer.
Thermodynamics in chemical engineering. Four hours of recitation a week. Prerequisite: Chem. Engg. 226.

232. Advanced Chemical Engineering Thermodynamics. 3 semester hours. Second semester.
The application of thermodynamic principles to solutions and to complex physical and chemical equilibria. Three hours of recitation a week. Prerequisite: Chem. Engg. 229.

235. Unit Operations III Laboratory. 1 semester hour. Each semester.
Continuation of courses I and II with studies of extraction, absorption, filtration, crystallization and crushing and grinding. Three hours laboratory a week. Prerequisite: Chem. Engg. 223, 226.

237. Chemical Technology. 2 semester hours. Each semester and summer.
Study of applications of physical chemistry, unit operations, and economics to the inorganic chemical process industries. Two hours of recitation a week. Prerequisite: Chem. 224, 260.

240. Unit Process Laboratory. 2 semester hours. Each semester and summer.
Investigation of important unit processes. Six hours of laboratory a week. Prerequisite or concurrent: Chem. Engg. 226, 237.

246. Chemical Engineering Plant Design. 4 semester hours. Second semester.
A study of the practical aspects and economics of designing a chemical process. Three hours of recitation and three hours of laboratory a week. Prerequisite: Senior standing.

250. Problems in Chemical Engineering. Credit to be arranged. Each semester.
An introduction to chemical engineering research.

255. Chemical Engineering Analysis. 3 semester hours. First or second semester.
Graphical methods and dimensional analysis applied to chemical engineering problems. Three hours of recitation a week. Prerequisite: Chem. 261, Chem. Engg. 229.

257. Organic Technology. 3 semester hours. Each semester.
A study of industrial organic processes and of the heavy organic chemical industries. Three hours recitation a week. Prerequisite: Chem. Engg. 237, Chem. 224.

265. Distillation. 3 semester hours. First or second semester.
Advanced study of distillation. Three hours of recitation a week. Prerequisite: Chem. Engg. 229.

270. Absorption and Extraction. 3 semester hours. First or second semester.
Advanced study of absorption and extraction. Three hours of recitation a week. Prerequisite: Chem. Engg. 229.

275. Ceramic Engineering. 3 semester hours. Second semester.
A study of the utilization of clays and siliceous materials in the manufacture of glass, refractories, building materials and other ceramic products. Three hours of recitation a week. Prerequisite: Chem. Engg. 226, 237.

280. Petroleum Refining Engineering I. 3 semester hours. First semester.
Properties of hydrocarbon mixtures; separation by distillation and extraction; cracking, polymerization, hydrogenation, and alkylation. Three hours of recitation a week. Prerequisite or concurrent: Chem. Engg. 226; senior standing.

285. Petroleum Refining Engineering II. 3 semester hours. Second semester.
Methods for the design and analysis of equipment and processes for the production and utilization of petroleum hydrocarbons. Prerequisite: Chem. Engg. 229, 280.

290. Process Development. 2 semester hours. First or second semester.
Principles involved in the development of a chemical process from laboratory to completed plant. Two hours of recitation a week. Prerequisite: Chem. Engg. 240, 246.

FOR GRADUATE CREDIT

301. Research in Chemical Engineering. Credit to be arranged. Each semester and summer.
Original investigations in the fields of unit operations, unit processes, petroleum refining, and industrial utilization of Kansas raw materials. Work is usually correlated with the research projects of the engineering or agricultural experiment stations. Satisfactory results may be used for the master's thesis. Prerequisite: Consent of head of department.

305. Unit Process Design. 3 semester hours. First semester.
Design of reaction equipment. Three hours of recitation a week. Prerequisite: Chem. Engg. 246 or equivalent.

Civil Engineering

Reed F. Morse, *Head of Department*

FOR UNDERGRADUATE CREDIT

102. Surveying I. 2 semester hours. Each semester and summer.
Care and use of engineer's surveying instruments. Six hours of laboratory a week. Prerequisite or concurrent: Math. 101.

103. Topographic Surveying. 3 semester hours. Second semester every other year.
Topographic surveying with transit and plane table; grading plans for walks, roads, and areas; staking out buildings. Prerequisite: Civ. Engg. 102. (For students taking the Curriculum in Landscape Design.)

114. Surveying II. 5 semester hours. First semester and summer.
Land and topographic surveying, curves and earthwork; mine, city and hydrographic surveying. Two hours of recitation and nine hours of laboratory a week. Prerequisite: Civ. Engg. 102.

125. Civil Engineering Drawing. 2 semester hours. Second semester.
Stereotomy, shades and shadows, isometric and perspective and the conventional methods of making drawings of structures. Six hours of laboratory a week. Prerequisite or concurrent: Mach. Des. 111.

135. Highway Plans. 5 semester hours. First semester.
Preparation of highway plans based on field surveys to be made by the class. Three hours of recitation and six hours of laboratory a week. Prerequisite: Civ. Engg. 102, 114 or Geol. 230. (For students enrolled in Geology.)

170. Thesis. Credit to be arranged. Each semester.

180. Inspection Trip. Required; no credit. First semester.
A trip of four to six days to one or more industrial centers. Approximate cost to student, $60. Prerequisite: Senior classification.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Stress Analysis I Recitation. 4 semester hours. Each semester and summer.
Stresses in simple beams and framed structures with an introduction to deflections and redundants. Four hours of recitation a week. Prerequisite: Ap. Mech. 212.

205. Stress Analysis I Laboratory. 2 semester hours. Each semester and summer.
Graphical determination of stresses and deflections. Six hours of laboratory a week. Prerequisite or concurrent: Civ. Engg. 202.

208. Stress Analysis II. 3 semester hours. Second semester and summer.
Theory of statically indeterminate structures, secondary stresses, and stressed-skin structures; stresses in continuous, movable, cantilever, suspension and steel-arch bridges, rigid and space frames. Three hours of recitation a week. Prerequisite: Civ. Engg. 202, 205.

217. Astronomy and Geodesy. 3 semester hours. Second semester.
The elements of astronomy; precise methods of surveying and leveling. Two hours of recitation and three hours of laboratory a week. Prerequisite: Civ. Engg. 219.

219. Photogrammetry. 4 semester hours. First semester and summer.
Construction of mosaics and contour maps from aerial photographs. Two hours of recitation and six hours of laboratory a week. Prerequisite: Civ. Engg. 114.

222. Sanitary Engineering. 4 semester hours. First semester and summer.
Design, construction, and operation of water supply and sewage systems. Three hours of recitation and three hours of laboratory a week. Prerequisite: Ap. Mech. 228, Bact. 126.

228. Sanitary Engineering Design. 2 semester hours. Second semester and summer.
A continuation of Civ. Engg. 222 with emphasis on cost, estimates and methods of financing. Six hours of laboratory a week. Prerequisite: Civ. Engg. 222.

233. Transportation Engineering. 5 semester hours. First semester and summer.
The design, construction and maintenance of railroads, highways and airports. Three hours of recitation and six hours of laboratory a week. Prerequisite: Civ. Engg. 114, Ap. Mech. 290.

236. Applied Hydrology. 3 semester hours. Second semester and summer.
A study of the sources of supply, amount and movement of underground and surface waters; their collection, control and utilization. Three hours of recitation a week. Prerequisite: Ap. Mech. 228.

246. Design of Framed Structures. 3 semester hours. Second semester and summer.
Designs and general drawings of highway and railroad truss and girder bridges. Nine hours of laboratory a week. Prerequisite: Civ. Engg. 202.

248. Economics of Design and Construction. 3 semester hours. First semester.
A study of methods, construction equipment, and economic factors affecting engineering projects. Three hours of recitation a week. Prerequisite: Senior or graduate classification.

249. Foundations. 2 semester hours. Each semester and summer.
Design and construction of foundations for pavements, bridges and buildings. Two hours of recitation a week. Prerequisite: Ap. Mech. 290.

256. Reinforced Concrete Arches. 3 semester hours. Second semester and summer.
The elastic theory applied to the design of reinforced concrete arches for bridges, buildings, and dams. Three hours of recitation a week. Prerequisite: Civ. Engg. 202.

257. Reinforced Concrete Design Recitation. 2 semester hours. Second semester and summer.
A study of the characteristics of concrete as a building material and the design of reinforced concrete structures. Two hours of recitation a week. Prerequisite: Civ. Engg. 202.

258. Reinforced Concrete Design Laboratory. 2 semester hours. Second semester and summer.
Design drawings of reinforced concrete structures. Six hours of laboratory a week. Prerequisite or concurrent: Civ. Engg. 257.

267. Airport Design. 3 semester hours. First semester.
An advanced study of the problems encountered in the design, construction and maintenence of large airports. Two hours of recitation and three hours of laboratory a week. Prerequisite: Civ. Engg. 233.

274. Highway Design. 3 semester hours. Second semester.
Survey and preparation of highway plans based on economic studies. Two hours of recitation and three hours of laboratory a week. Prerequisite: Civ. Engg. 233.

275. Advanced Structural Design A. 3 semester hours. First semester and summer.
The design of statically indeterminate reinforced concrete structures. Three hours of recitation a week. Prerequisite: Civ. Engg. 208, 257, 258.

276. Advanced Structural Design B. 3 semester hours. Second semester and summer.
The design of statically indeterminate steel structures. Three hours of recitation a week. Prerequisite: Civ. Engg. 208, 246.

FOR GRADUATE CREDIT

304. Research in Civil Engineering. Credit to be arranged. Each semester and summer.
Original investigation or advanced study in some field related to the practice of civil engineering. Prerequisite: Consult instructors.

Electrical Engineering

ROYCE G. KLOEFFLER, *Head of Department*

FOR UNDERGRADUATE CREDIT

102. Electrical Engineering C Recitation. 2 semester hours. Each semester and summer.
The fundamental principles of direct-current and alternating-current circuits and machinery. For nonelectrical students. Two hours of recitation a week. Prerequisite: Phys. 106.

106. Electrical Engineering C Laboratory. 1 semester hour. Each semester and summer.

Experiments covering characteristics and applications of direct-current and alternating-current machinery. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 102 or 108.

108. Electrical Engineering A-I. 3 semester hours. First semester.

The fundamental principles of direct-current and alternating-current circuits and machines. For nonelectrical students. Three hours of recitation a week. Prerequisite: Phys. 106, Math. 140.

110. Electrical Engineering A-II. 2 semester hours. Second semester.

Industrial wiring, heating, and lighting. Two hours of recitation a week. Prerequisite: Elec. Engg. 108.

116. Illumination A. 2 semester hours. First semester.

Systems, calculations, and specifications of interior wiring; principles of illumination. Two hours of recitation a week. Prerequisite: Phys. 103 or 106.

190. Inspection Trip. Required; no credit. First semester.

A trip of two to six days to St. Louis, Chicago, and other cities for the purpose of making inspections of power plants and various industries illustrating the application of electrical engineering principles. Approximate cost of trip, $50. Prerequisite: Senior classification.

195. Thesis. Credit to be arranged. Each semester.

A subject for thesis work is selected in consultation with the department head at the beginning of the senior year. Every opportunity is given to work out original ideas as to design and operation of electrical apparatus and machinery.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Principles of Electrical Engineering. 2 semester hours. Each semester and summer.

Principles of magnetic, electric, and electrostatic circuits. Two hours of recitation a week. Prerequisite or concurrent: Phys. 106, Math. 141.

203. Direct-current Machinery Recitation. 4 semester hours. Each semester and summer.

Principles of operation and the characteristics of direct-current generators and motors. Four hours of recitation a week. Prerequisite or concurrent: Elec. Engg. 201; prerequisite: Phys. 106.

204. Direct-current Machinery Laboratory I. 1 semester hour. Each semester and summer.

Characteristics of direct-current machines. Three hours of laboratory. Prerequisite or concurrent: Elec. Engg. 203.

205. Direct-current Machinery Laboratory II. 1 semester hour. Each semester and summer.

Characteristics of direct-current machines. Three hours of laboratory a week. Prerequisite: Elec. Engg. 204.

209. Alternating-current Circuits. 4 semester hours. Each semester and summer.

A mathematical treatment of alternating-current phenomena in single and polyphase circuits. Four hours of recitation a week. Prerequisite: Elec. Engg. 201; prerequisite or concurrent: Math. 170.

210. Alternating-current Machinery I Recitation. 3 semester hours. Each semester and summer.

Principles of design, construction, and operation of transformers, alternating-current generators, and polyphase induction motors. Three hours of recitation a week. Prerequisite: Elec. Engg. 209.

211. Alternating-current Machinery I Laboratory. 2 semester hours. Each semester and summer.
Experiments illustrating the characteristics of alternating-current circuits and transformers. Six hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 210.

212. Alternating-current Machinery II Recitation. 3 semester hours. Each semester and summer.
Continuation of Elec. Engg. 210, including synchronous motors, parallel operation of alternators, converters, induction and commutator alternating-current motors, rectifiers, and accessory apparatus. Three hours of recitation a week. Prerequisite: Elec. Engg. 210, 211.

213. Alternating-current Machinery II Laboratory. 2 semester hours. Each semester and summer.
Continuation of Elec. Engg. 211 with experiments on machines listed in Elec. Engg. 212. Six hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 212.

216. Alternating-current Machinery E Laboratory. 2 semester hours. Second semester.
Experiments illustrating the characteristics of alternating-current circuits and machines. For electrical engineering students in the communication or electronics option. Six hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 242.

220. Electronics I. 2 semester hours. Each semester.
The fundamental principles of electron tubes. Two hours of recitation a week. Prerequisite: Phys. 106, Elec. Engg. 201.

222. Electronics II Recitation. 4 semester hours. Each semester.
A study of basic electronic circuits, amplifiers and oscillators. Four hours of recitation a week. Prerequisite: Elec. Engg. 209, 220.

223. Electronics II Laboratory. 2 semester hours. Each semester.
Basic electronic circuits and characteristics. Six hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 222.

224. Industrial Electronics Recitation. 3 semester hours. Second semester.
Fundamental principles of electron tubes and circuits and applications in industry. Three hours of recitation a week. Prerequisite: Elec. Engg. 102, 209, or 242.

225. Industrial Electronics Laboratory. 1 semester hour. Second semester.
Industrial electronic equipment. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 224 or 226.

226. Industrial Electronics and Control Recitation. 2 semester hours. Second semester.
Applications and circuits of electronics in industry. Servomechanisms and other control devices. Two hours of recitation a week. Prerequisite: Elec. Engg. 222.

227. Electrical Measurements Recitation. 2 semester hours. Each semester.
Methods for electric and magnetic measurements; resistance, quantity, current, electromotive force, capacity inductance. Two hours of recitation a week. Prerequisite or concurrent: Elec. Engg. 209.

230. Electrical Measurements Laboratory. 1 semester hour. Each semester.
Measurements of resistance, current, electromotive force, capacity, inductance, watts, energy. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 227.

237. Electrical Engineering M-I Recitation. 4 semester hours. Each semester and summer.

Theory of direct-current circuits and machines, magnetic circuits, and alternating-current circuits. Four hours of recitation a week. Prerequisite: Phys. 106; prerequisite or concurrent: Math. 141.

238. Electrical Engineering M-I Laboratory. 1 semester hour. Each semester and summer.

Experiments on measurement of resistance and study of direct-current machine characteristics. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 237.

242. Electrical Engineering M-II Recitation. 3 semester hours. Each semester.

Theory of alternating-current machinery. Three hours of recitation a week. Prerequisite: Elec. Engg. 237, 238 or 203, 204.

243. Electrical Engineering M-II Laboratory. 1 semester hour. Each semester.

Experiments on alternating-current circuits and alternating-current machinery characteristics. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 242.

244. Wire Communication. 3 semester hours. Each semester.

Principles of wire communication; telephone and telegraph switching systems, line loading, repeaters, and carrier currents. Three hours of recitation a week. Prerequisite: Elec. Engg. 209.

254. Radio Communication Recitation. 3 semester hours. First semester.

Radio-frequency amplifiers and oscillators, modulation; application to transmitter circuits; antennae and wave propagation. Three hours of recitation a week. Prerequisite: Elec. Engg. 222, 223.

256. Radio Communication Laboratory. 1 semester hour. First semester.

Experiments on modulation, demodulation; fundamental design of receivers and transmitters; and antennae measurements. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 254.

257. Ultra-high Frequency Recitation. 3 semester hours. Second semester.

Principles of microwave communication with emphasis on generation, propagation, and reception. Three hours of recitation a week. Prerequisite: Elec. Engg. 222, 263.

258. Ultra-high Frequency Laboratory. 1 semester hour. Second semester.

Experiments on the generation and application of microwaves outlined in Elec. Engg. 257. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 257.

263. Communication Networks Recitation. 3 semester hours. First semester.

Network theorems, infinite line, wave filters, equalizers, impedance matching. Three hours of recitation a week. Prerequisite: Elec. Engg. 209.

264. Communication Networks Laboratory. 1 semester hour. First semester.

Communication circuits and equipment. Three hours of laboratory a week. Concurrent: Elec. Engg. 263.

266. Television Recitation. 3 semester hours. Second semester.

Theory of scanning, television, cathode-ray tubes, pulse generators, video amplifiers and circuits, television transmitters and receivers. Three hours of recitation a week. Prerequisite or concurrent: Elec. Engg. 257, 263.

267. Television Laboratory. 1 semester hour. Second semester.

Television circuits and equipment. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 266.

269. Airplane Electrical Equipment Laboratory. 1 semester hour. Second semester.

Study of electrical equipment for airplanes. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 268.

271. Airplane Electrical Equipment Recitation. 2 semester hours. Second semester.

Electric control equipment and instruments for airplanes. Two hours of recitation a week. Prerequisite: Either Elec. Engg. 102, 209, or 242.

272. Illuminating Engineering Recitation. 3 semester hours. Second semester.

Photometry, light standards, principles of illumination and illumination design. Three hours of recitation a week. Prerequisite: Math. 141, Phys. 106.

280. Transmission and Distribution of Electrical Energy. 3 semester hours. Second semester.

Transmission line design, economic and technical features; and properties of cables and insulators. Three hours of recitation a week. Prerequisite: Elec. Engg. 210.

284. Transient Electrical Phenomena. 3 semester hours. Second semester.

Two phases of electrical phenomena: (a) Transients in time, and (b) transients in space. Three hours of recitation a week. Prerequisite: Elec. Engg. 209, Math 170.

290. Economics of Elcetrical Engineering. 3 semester hours. Second semester.

The problems of depreciation, finance, rates, and public regulation in gas, electric, and telephone properties. Three hours of recitation a week. Prerequisite: Compr. 121, 122, or Econ. 101, Elec. Engg. 209.

FOR GRADUATE CREDIT

301. Advanced Electric Circuits I. 3 semester hours. First semester.

Short-circuit currents in networks; equivalent impedance of multi-circuit transformers; analysis of unbalanced polyphase circuits and analysis of induction motor performance on unbalanced voltages; short transmission lines in steady state. Three hours of recitation a week. Prerequisite: Elec. Engg. 212.

304. Advanced Electric Circuits II. 3 semester hours. Second semester.

Long transmission lines in steady state with various terminal conditions; transmission charts; harmonics in circuits; general circuit constants; charts and transmission problems involving synchronous machines. Three hours of recitation a week. Prerequisite: Elec. Engg. 301.

313. High-frequency Measurements Recitation. 2 semester hours. Second semester.

Theory of measurement at radio frequencies of current, voltage, frequency, modulation; antenna and transmission line characteristics. Two hours of recitation a week. Prerequisite: Elec. Engg. 209, 254.

314. High-frequency Measurements Laboratory. 1 semester hour. Second semester.

Applications of high-frequency measurements. Three hours of laboratory a week. Prerequisite or concurrent: Elec. Engg. 313.

316. Advanced Electrical Theory. Credit to be arranged. Each semester. Prerequisite: Elec. Engg. 222.

336. Research in Electrical Engineering. Credit to be arranged. Each semester and summer.

Special investigations adapted to the needs of individual students. The laboratory work is correlated with the work of the Engineering Experiment Station and may be used as the basis of a master's thesis. Prerequisite: Elec. Engg. 222.

General Engineering

MERRILL AUGUSTUS DURLAND, *Dean*

101. Engineering Lectures. Required; no credit. Each semester.
Designed to acquaint freshman engineers and architects with fundamental principles of their profession and to give a general survey of the field. One hour of lecture a week, entire freshman year. Dean Durland, other members of the engineering faculty, and visiting practicing engineers.

105. Engineering Assembly. Required; no credit. Each semester.
Presentation by students of abstracts and reviews of articles in the journals of their respective societies or in the technical press of their profession, and reports of engineering projects, industrial experiences, and original investigations; as far as possible conducted by the student branches of the professional engineering societies. Occasionally two or more of these individual groups unite for lectures by practicing engineers and by members of the engineering and college faculties. One hour of lecture a week, sophomore, junior, and senior years. Members of the engineering faculty.

Machine Design

CLINTON E. PEARCE, *Head of Department*

The courses in 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 courses in machine design deal with mechanical transmission of power, analysis of the action of machine parts, design of machine elements and of complete machines, aërodynamic forces, and airplane structures. Additional courses in actual flight are offered, with the flight instruction handled under contract by a recognized flight school.

FOR UNDERGRADUATE CREDIT

101. Engineering Drawing. 2 semester hours. Each semester and summer.
The selection and use of drawing instruments; construction of geometrical figures; lettering; orthographic projections and sections; pictorial methods of representation. Six hours of laboratory a week.

106. Descriptive Geometry. 2 semester hours. Each semester and summer.
Problems 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. Six hours of laboratory a week. Prerequisite: Math. 102 or equivalent and Mach. Des. 101.

111. Machine Drawing I. 2 semester hours. Each semester and summer.
Conventional representation; working drawings; dimensioning; the reproduction of drawings; checking for errors; arrangement of title and notes; sheet and metal drafting; simple perspective. Six hours of laboratory a week. Prerequisite: Mach. Des. 101.

118. Machine Drawing II. 2 semester hours. Each semester and summer.
Machine sketching from parts of actual machines; complete working and assembly drawings; tracing and blueprinting. Six hours of laboratory a week. Prerequisite: Mach. Des. 111, 121.

121. Mechanism. 3 semester hours. Each semester and summer.
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. Three hours of recitation a week. Prerequisite: Math. 101, Mach. Des. 106.

122. Aviation Ground Instruction I. 3 semester hours. Each semester and summer.

Civil air regulations, simple avigation, simple meteorology and general service of aircraft. Three hours of recitation a week. Prerequisite: Math. 101 or approval of head of department.

124. Aviation Ground Instruction II. 4 semester hours. Each semester and summer.

Advanced avigation, aeronautical meteorology, aircraft engines, aerodynamics and aircraft construction. Four hours of recitation a week. Prerequisite: Mach. Des. 122 or private pilot certificate.

127. Flight Instruction I. 2 semester hours. Each semester and summer.

Actual flight instruction of 35 to 50 hours, dual and solo as required for the private pilot certificate, taught under contract by a flight school; and 25 hours of ground-school instruction as required for a private pilot's certificate.

The College furnishes the medical examination without extra charge but a special charge is made to cover student insurance and flight instruction.

FOR GRADUATE AND UNDERGRADUATE CREDIT

204. Machine Design I Recitation. 3 semester hours. Each semester.

The straining actions in machine elements; friction and lubrication; problems arising in the transmission of power and in the design of high-speed machinery; fastenings. Three hours of recitation a week. Prerequisite: Ap. Mech. Des. 111, 121.

205. Machine Design I Laboratory. 2 semester hours. Each semester.

Riveted joints designed in conformity to the A.S.M.E. Boiler Code; calculations for a number of simple machines and machine parts, paralleling the recitation class assignments. Six hours of laboratory a week. Prerequisite or concurrent: Mach. Des. 204, 121.

206. Aerodynamics I Recitation. 3 semester hours. Second semester.

A general introduction to aerodynamics. Three hours of recitation a week. Prerequisite: Ap. Mech. 202.

207. Aerodynamics I Laboratory. 1 semester hour. Second semester.

Operation of wind tunnel. Three hours of laboratory a week. Prerequisite or concurrent: Mach. Des. 206.

210. Machine Design II. 2 semester hours. Second semester.

Complete design of a small power shear with a graphical analysis of the shaft; the rotative diagram and balancing of an engine. Six hours of laboratory a week. Prerequisite: Mach. Des. 204, 205.

215. Machine Vibration. 3 semester hours. Second semester.

A general consideration of free and forced vibration in machines for various degrees of freedom; critical speed; vibration isolation. Three hours of recitation a week. Prerequisite: Ap. Mech. 202, Math. 170.

216. Aerodynamics II Recitation. 3 semester hours. First semester.

A continuation of Aerodynamics I. Three hours of recitation a week. Prerequisite: Mach. Des. 206, Ap. Mech. 231.

217. Aerodynamics II Laboratory. 1 semester hour. First semester.

Determination of performance curves and stability of an airplane. Prerequisite or concurrent: Mach. Des. 216.

218. Propeller Theory and Design. 2 semester hours. First semester.

Theory of air screw, effect of propeller characteristics on airplane performance, and calculation of stresses. Prerequisite: Ap. Mech. 231, Mach. Des. 206.

220. Kinematics and Kinetics. 2 semester hours. Second semester.
A study of the velocities and accelerations in mechanisms and machines, and of the forces resulting therefrom. Two hours of recitation a week. Prerequisite: Mach. Des. 121, Ap. Mech. 202.

221. Airplane Design I. 3 semester hours. First semester.
A study of the general principles of airplane design. One hour of recitation and six hours of laboratory a week. Prerequisite: Ap. Mech. 212 and Mach. Des. 206, 207.

222. Airplane Design II. 3 semester hours. Second semester.
The design of an airplane, including performance calculations. One hour of recitation and six hours of laboratory a week. Prerequisite: Mach. Des. 221.

225. Graphics of Engineering Formulas. 2 semester hours. Second semester.
Simple empirical equations; diagramming of formulas; monographic or alignment charts; special slide rules. Two hours of recitation a week. Prerequisite: Math. 120.

230. Patents and Inventions. 2 semester hours. First semester.
A brief consideration of the fundamental principles of United States patents and their reltaionship to the engineer; the inception and development of inventions. Two hours of recitation a week. Prerequisite: Junior or senior standing.

260. Airplane Design and Construction. 3 semester hours. Second semester.
The structure and rigging of aircraft, the design directive of a small plane, the general layout and weight analysis. One hour of recitation and six hours of laboratory a week. Prerequisite: Mach. Des. 206, Ap. Mech. 212.

FOR GRADUATE CREDIT

301. Advanced Machine Design. Credit to be arranged. Each semester.
At the option of the student this course may include a study of some advanced subject related to courses in this department. Prerequisite: Consult instructors.

310. Research in Design. Credit to be arranged. Each semester and summer.
Original investigation in some advanced subject related to courses in this department. This work may furnish material for the master's thesis. Prerequisite: Consult instructors.

Mechanical Engineering

LINN HELANDER, *Head of Department*

The instruction in the Department of Mechanical Engineering covers courses in thermodynamics, heat transfer, heat power engineering, air conditioning, refrigeration, and petroleum production. Additional courses closely allied to and a part of mechanical engineering are given in the departments of Machine Design and Shop Practice.

In addition to the equipment installed especially for experimental purposes, all the heating, power, ventilating, and pumping equipment of the College subserves the further purposes of experimental work.

FOR UNDERGRADUATE CREDIT

120. Steam and Gas Engineering C. 2 semester hours. Each semester.
Steam boilers, steam engines, steam turbines, internal combustion engines and auxiliaries. Two hours of recitation a week. Prerequisite: Phys. 102 or 105.

135. Air Conditioning A. 3 semester hours. Second semester.
Principles of heating, cooling, and ventilating; heat transmission; equipment used for heating, cooling, and ventilating. Three hours of recitation a week. Primarily for students who have not had engineering thermodynamics. Prerequisite: Phys. 102 or 105.

180. Inspection Trip. Required; no credit. First semester.
A trip of three to six days to industrial centers for the purpose of inspecting industrial plants of special interest to mechanical engineering students. Prerequisite: Senior classification.

195. Thesis. Credit to be arranged. Each semester.
Subject for investigation to be selected in consultation with the department head at the beginning of the senior year.

196. Professional Development. 1 semester hour. First semester.
The social and professional aspects of engineering. One hour of recitation a week. Prerequisite: Senior standing.

FOR GRADUATE AND UNDERGRADUATE CREDIT

204. Heat Power Engineering A. 3 semester hours. Each semester.
Power-plant equipment, fuels, and combustion. Three hours of recitation a week. Prerequisite: Mech. Engg. 208.

206. Heat Power Laboratory. 1 semester hour. Each semester.
Laboratory course in heat-power equipment for nonmechanical engineering students. Three hours of laboratory a week. Prerequisite: Mech. Engg. 120; prerequisite or concurrent: Mech. Engg. 120 or 208.

208. Engineering Thermodynamics. 4 semester hours. Each semester.
Laws of the conversion of heat energy into mechanical energy; properties of fluids; gases, vapors, and gas vapor mixtures; flow and nonflow processes; power generating cycles; air compression; refrigeration. Four hours of recitation a week. Prerequisite: Math. 141, Phys. 105.

220. Power Plant Design. 3 semester hours. Second semester.
Economic and thermodynamic factors in the design and selection of equipment. One hour of recitation and six hours of laboratory a week. Prerequisite: Mech. Engg. 204.

221. Refrigeration. 2 semester hours. First semester.
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. Two hours of recitation a week. Prerequisite: Mech. Engg. 208.

228. Air Conditioning. 3 semester hours. Each semester.
Psychrometry; heat transmission; air-conditioning equipment and systems; design problems. Two hours of recitation and three hours of laboratory a week. Prerequisite: Mech. Engg. 208.

231. Internal Combustion Engines. 3 semester hours. Second semester.
Three hours of recitation a week. Prerequisite: Mech. Engg. 208.

232. Advanced Thermodynamics. 3 semester hours. First semester.
Three hours of recitation a week. Prerequisite: Mech. Engg. 208.

242. Mechanical Engineering Laboratory I. 2 semester hours. Each semester.
Laboratory course in heat-power equipment for mechanical engineering students. Six hours of laboratory a week. Prerequisite or concurrent: Mech. Engg. 204.

243. Mechanical Engineering Laboratory II. 2 semester hours. Each semester.
Power-generating equipment, fans, air-conditioning equipment, internal combustion engines, steam engines, turbines, and auxiliaries. Six hours of laboratory a week. Prerequisite: Mech. Engg. 242.

245. Airplane Instruments. 2 semester hours. Second semester.
Instruments and controls for the airplane. Two hours of recitation a week. Prerequisite: Elec. Engg. 102 and Mach. Des. 206.

246. Aeronautical Engineering Laboratory. 2 semester hours. Second semester.
Aircraft engines, propellers, engine accessories, and instruments. Six hours of laboratory a week. Prerequisite: Mech. Engg. 206 or 242.

248. Aircraft Power Plants. 2 semester hours. Second semester.
Design and performance characteristics of airplane power plants. Two hours of recitation a week. Prerequisite: Mech. Engg. 231.

251. Heat Transfer and Fluid Flow. 4 semester hours. Second semester.
Particular reference to heat exchanges, air preheaters, economizers, boilers, condensers, evaporators, and similar equipment. Three hours of recitation and three hours of laboratory a week. Prerequisite: Mech. Engg. 208.

260. Advanced Power-plant Engineering. Credit to be arranged. Second semester.
An advanced course in the economic problems met with in the design of power plants and in the generation of power. Selection of equipment, choice of station heat balances, generation of by-product power in industries, and interconnections between utilities and industrial plants for the economical interchange of power. Prerequisite: Mech. Eng. 220.

270. Petroleum Production I. 3 semester hours. First semester.
Properties of petroleum; exploration methods, field developments; drilling; oil field hydrology; casing and well completion; and fishing tools and methods. Three hours of recitation a week. Prerequisite: Senior standing in Department of Mechanical Engineering or permission of head of department.

271. Petroleum Production II. 3 semester hours. Second semester.
Prime movers and fuels; production methods; methods of flowing and pumping wells; refining; storage; transportation. Two hours of recitation and three hours of laboratory a week. Prerequisite: Mech. Engg. 270.

FOR GRADUATE CREDIT

305. Research in Mechanical Engineering. Credit to be arranged. Each semester and summer.
The laboratory work is correlated with the work of the Engineering Experiment Station. Research in any field pertinent to subjects taught in the Department of Mechanical Engineering. Prerequisite: Consult instructors.

Shop Practice

GABE A. SELLERS, *Head of Department*

The work in the Department of Shop Practice is planned to meet the needs of two classes of students: (1) Those who are preparing for the teaching field and need a general knowledge of the principles of industrial arts work in metal and wood, of the materials and equipment used, including their control and arrangement, and of methods of handling work and students in the laboratory, together with sufficient skill in the performance of the various tool operations to be able to instruct others; and (2) those in the courses in engineering who need to secure a general knowledge of machine operations and methods used

in job shops and mass-production factories, and of the economical selection and control of the materials, machinery, buildings, and personnel used in the manufacturing industries.

FOR UNDERGRADUATE CREDIT

102. Shop A. 2 semester hours. Each semester and summer.
An introductory course in forging and heat treating, foundry practice and machine shop work. Six hours of laboratory a week.

104. Auto Mechanics I. 4 semester hours. First semester.
A study of the automobile, its construction and maintenance. Two hours of recitation and six hours of laboratory a week.

110. Aero Mechanics I. 4 semester hours. Second semester.
A study of the airplane and its maintenance. Two hours of recitation and six hours of laboratory a week.

111. Refrigeration Servicing. 4 semester hours. Second semester.
A study of the basic principles of servicing, operation, and repair of household and small commercial refrigeration units, with supplemental laboratory exercises to illustrate these principles. Two hours of recitation and six hours of laboratory a week.

118. Elementary Crafts for Teachers. 2 semester hours. Summer.
Exercises and projects suitable for pupils from the primary to eighth grade. Special instruction in methods of teaching, materials, and equipment. Six hours of laboratory a week.

121. Woodwork I. 2 semester hours. First semester and summer.
Elementary woodwork. Six hours of laboratory a week.

122. Finishing I. 2 semester hours. Second semester and summer.
A study of materials, processes, methods of applications of finishes for both wood and metal. Brush and spray equipment used. Six hours of laboratory a week. Prerequisite: Shop 121.

126. Woodwork II. 2 semester hours. Second semester and summer.
Continuation of Shop 121. Six hours of laboratory a week. Prerequisite: Shop 121.

131. Woodwork III. 2 semester hours. First semester and summer.
Advanced woodwork and cabinetmaking. Six hours of laboratory a week. Prerequisite: Shop 126.

134. Methods of Teaching Industrial Arts. 3 semester hours. Each semester and summer.
See Department of Education, School of Arts and Sciences. One hour of recitation and six hours of laboratory a week. Prerequisite or concurrent: Educ. 139 and approval of instructor.

135. Wood Turning. 2 semester hours. Each semester and summer.
Practice in handling the lathe and turning tools. Six hours of laboratory a week.

139. Woodwork IV. 2 semester hours. Second semester and summer.
An opportunity to specialize in wood finishing, carpentry work, cabinet work, or some other work of special interest to the student. Six hours of laboratory a week. Prerequisite: Shop 131.

147. Carpentry. 3 semester hours. Second semester.
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. One hour of recitation and six hours of laboratory a week. Prerequisite: Shop 121.

150. Forging and Heat Treating. 1 semester hour. Each semester.
(a) Forging of iron and steel; (b) production equipment as used in the commercial forge shop; (c) operation of gas, oil, and electric furnaces, and the heat treatment of steel. Two hours of laboratory and one hour of outside preparation a week. Prerequisite: Shop 102.

152. Heat Treating I. 2 semester hours. Second semester.*
A continuation of the heat treating phase of Shop A with special emphasis upon the heat treatment of auto and aeroplane parts. Laboratory exercises in the heat treating of certain ferrous and nonferrous construction materials. Six hours of laboratory a week. Prerequisite: Shop 102.

157. Blacksmithing. 1 semester hour. Each semester and summer.
Exercises closely related to work on the farm; designed to train teachers for work in rural communities. Three hours of laboratory a week.

161. Foundry I. 1 semester hour. Each semester and summer.
(a) Bench, floor and pit molding, use of molding and core machines, operating nonferrous furnaces and cupola; (b) study of commercial foundry equipment and the operation and control of the foundry. Three hours of laboratory a week. Prerequisite: Shop 102.

165. Metals and Alloys. 2 semester hours. Each semester.
The manufacture and use of iron, steel, copper, aluminum and their alloys. Two hours of recitation a week. Prerequisite or concurrent: Chem. 108.

166. Welding. 1 semester hour. Each semester and summer.
The theory and practice of fusion welding, covering gas and electric welding. Three hours of laboratory a week.

167. Electric Welding. 1 semester hour. Each semester and summer.
The theory and practice of electric welding, including inspection methods. Three hours of laboratory a week. Prerequisite: Shop 166.

168. Gas Welding. 1 semester hour. Each semester and summer.
The theory and practice of gas welding, including inspection methods. Three hours of laboratory a week. Prerequisite: Shop 166.

170. Machine Tool I. 2 semester hours. Each semester and summer.
A continuation of the machine shop phase of Shop 102. Six hours of laboratory a week. Prerequisite: Shop 102.

173. Sheet Metal I. 2 semester hours. First semester and summer.
Covers developments, the use of templets, practice in soldering, folding, wiring, flanging, seaming, rolling, and the more common operations on sheet metal. Six hours of laboratory a week. Prerequisite: Mach. Des. 101 or equivalent.

174. Safety. 2 semester hours. Second semester.
Fundamentals of accident analysis and prevention. One hour of recitation and three hours of laboratory a week.

176. Sheet Metal II. 2 semester hours. Second semester.*
A continuation of Shop 173, with welding of sheet metal. Six hours of laboratory a week. Prerequisite: Shop 167, 168.

180. Gaging. 1 semester hour. First semester.
Systems of measurements and the use of various types of gages and devices for checking industrial products. Three hours of laboratory a week.

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* If demand exists and facilities are available.

181. Inspection. 2 semester hours. Second semester.*
Tools, instruments, and equipment used in the inspection of materials commonly used in production plants and in maintenance of equipment. Specifications and related information. Six hours of laboratory a week.

182. Industrial Control. 2 semester hours. First semester.*
Supervisory and administrative problems essential in the control of industrial production. Two hours of recitation a week.

183. Shop Management. 3 semester hours. First semester.*
Problems of the supervisory staff of an industrial enterprise, such as selection, installation, and arrangement of equipment. Consideration is given to standardization, routing and dispatching, wage and cost systems and many other factors closely allied to production as well as job shop. Three hours of recitation a week.

191. Pattern Making. 2 semester hours. First semester.*
A series of exercises embodying the principles and practice of plain and split pattern, including core prints and core boxes. A limited number of actual patterns are also made. Six hours of laboratory a week.

192. Machine Tool II. 2 semester hours. Each semester and summer.
Progressive problems in turning, 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. Six hours of laboratory a week. Prerequisite: Shop 170.

193. Machine Tool III. 1 semester hour. Each semester and summer.
Work on the turret lathe, boring mill, hand and automatic screw machines, and grinders, practical work with jigs and fixtures and a study of rapid production of duplicate parts. Three hours of laboratory a week. Prerequisite: Shop 192.

194. Inspection Trip. Required; no credit. First semester.
A trip of three to six days to industrial centers for inspection of establishments of special interest to industrial art students. Prerequisite: Senior classification.

195. Thesis. Credit to be arranged. Each semester.

FOR GRADUATE AND UNDERGRADUATE CREDIT

246. Industrial Management. 3 semester hours. First semester.
Problems of the industrial executive, such as plant location, selection and arrangement of buildings and equipment, production, planning and control, simplification and standardization, time and motion study, job and methods of standardization, control of inventory and costs. Three hours of recitation a week. Prerequisite: Shop 102 and junior standing.

250. Time and Motion. 2 semester hours. Second semester.
The principles and practice of time and micro-motion analysis of work in the shop for the purpose of setting standards of performance and of improving methods of production. One hour of recitation and three hours of laboratory a week. Prerequisite or concurrent: Shop 170 and junior standing in engineering or industrial arts.

255. Factory Design. 2 semester hours. Second semester.
Knowledge gained in shops and laboratories and in Shop 246 is used in the design of a factory. Six hours of laboratory a week. Prerequisite: Shop 246.

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* If demand exists and facilities are available.

261. Advanced Shop Practice. Credit to be arranged. Each semester and summer.

Opportunity is offered to specialize to a limited degree along certain lines such as heat treatment of steel, oxyacetylene and arc welding, jig fixtures and die work, metallography, pattern making, 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. Prerequisite: Consult instructor.

262. Metallography I. 1 semester hour. Each semester.

The microscopic constituents of the different grades of iron and steel; changes in the structure and properties as produced by heat treatment, mechanical working, and composition. Three hours of laboratory a week. Prerequisite or concurrent: Shop 165.

263. Physical Metallurgy. 2 semester hours. Second semester and summer.

An advanced study of the structure, properties, and uses of the more common metals and alloys involving heat and mechanical treatment and casting. Two hours of recitation a week. Prerequisite: Shop 262.

264. Aircraft Materials and Fabrication. 3 semester hours. First semester.

Materials and methods employed in fabricating airplanes. One hour of recitation and six hours of laboratory a week. Prerequisite or concurrent: Ap. Mech. 202, Shop 165, 262.

265. Metallograpy II. 2 semester hours. Each semester and summer.

A continuation of Shop 262, nonferrous metals, with special attention to photomicrographic analysis. Six hours of laboratory a week. Prerequisite: Shop 262.

274. General Shop Organization. 3 semester hours. Second semester and summer.

A course covering the organization, methods of teaching, and equipment for the general shop. One hour of recitation and six hours of laboratory a week. Prerequisite: Shop 102, 147, 157, 166, 173.

286. Shop Practice Teaching. Credit to be arranged. Each semester and summer.

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 consideration. Insofar as possible the course is adapted to the particular needs of the student. All assignments must be approved by the Head of the Department of Shop Practice. Prerequisite: Consult instructor.

FOR GRADUATE CREDIT

301. Research in Shop Practice. Credit to be arranged. Each semester and summer.

Investigations of interest to the individual student. May be used as the basis of the master's thesis, and is usually correlated with the work of the Engineering Experiment Station. Prerequisite: Consult instructors.

The Engineering Experiment Station

MERRILL AUGUSTUS DURLAND, *Director*
LELAND S. HOBSON, *Assistant Director and Industrial Engineer*

The Engineering Experiment Station was established March 24, 1910, by the Board of Regents 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 industries and the people of the state. All the work of the Experiment Station is intended to be of direct importance to Kansas.

All the equipment of the engineering and scientific laboratories and shops are available for the work, while the personnel of the station consists of members of the teaching staff from the departments of the School of Engineering and Architecture and from other scientific departments whose work is directly related to the work of this school, and other persons employed especially for the work of the station.

The Engineering Experiment Station conducts projects in both fundamental and applied research. Many of the researches on specific problems are supported in whole or in part by funds from industrial or commercial organizations, or by various agencies of the federal and state government. Companies interested in utilizing the services and facilities of the Engineering Experiment Station are invited to communicate with the director.

Among the investigations now being carried on are: Study of Portland cements; stabilization of soil particles in asphalts; Kansas airport problems; deterioration of concrete; farm refrigeration; agricultural machinery design; soil and water conservation; early Kansas church architecture; irrigation; spraying equipment for weed control; the farm shop; rural electrification; visual aids for instruction in drawing; starch production from sorghum grains; electrolytic polishing and etching of metals; television; electronic equipment analysis; radiant heating and cooling; projection of heated and cooled air streams; condition of highway concrete pavements as affected by component materials; a study of causes of surface tension and swelling pressure as a means of improvement of concrete; processing of magnesium base alloys; production of mashed potato powder; study of factors affecting the stability of highly unsaturated acids directed toward improvement of paint; concrete materials for Missouri River Basin dams; design of rigid airport pavements; stresses in continuous span bridges under moving loads; utilization of liquified gases; and heat-pump studies.

As an additional service to Kansas industries, two consultants in the field of industrial management have been employed by the Engineering Experiment Station. Their services are available to all industries of the state.

The testing laboratories of this station have been made available by law for the use of the State Highway Commission and the state highway engineer, and the road materials for use in state road construction are tested in these laboratories.

Some of the results of the investigations are published as bulletins of the Engineering Experiment Station, which are sent free to any citizen of the state upon request. Fifty-four such bulletins have been published. Besides issuing these bulletins, the station answers yearly many hundreds of requests for information upon matters coming within its field.

Requests for bulletins and general correspondence should be addressed to Engineering Experiment Station, Manhattan, Kan. Requests for information in specific matters should be addressed, as far as possible, to the heads of departments in whose fields the particular matters lie.

The School of Home Economics

Margaret M. Justin, *Dean*
Martha M. Kramer, *Assistant Dean*
Margaret E. Raffington, *Assistant to the Dean*

The program in home economics is directed toward two major objectives. The first of these is that of making a worthy and significant contribution to the general education of the student through a sequence of courses required of all and sometimes designated as "the core curriculum" or "the curriculum provisions for common learnings." These courses have for their goal helping the student become a well-adjusted person, who understands and employs health practices that provide maximum physical and mental fitness for herself and for others, and who has a philosophy for personal, family, and community living that is both sound and satisfying. They are further directed toward helping her develop sane and creative attitudes toward social problems, to use personal, family and community resources effectively, and to appreciate the aesthetic in daily living. With such a background, with guidance, the student is helped to choose a vocation in home economics for which she is suited and in which she is interested. The second major objective, then, is that of providing effective preparation for the student to enter and advance in one of the various professions in home economics with assurance and competence.

The curriculums as outlined below are flexible enough to meet the needs of those who plan to enter their own home, those who wish to teach, engage in social welfare, enter some aspect of the business field, engage in dietetics or institutional management, become nurses or technicians, and those who wish to prepare for graduate study in phases of home economics. The four-year curriculums in this School lead to the degree Bachelor of Science in Home Economics and the five-year curriculum leads to the degree Bachelor of Science in Home Economics and Nursing.

Many students who feel sure their interest is in home economics are at a loss on entering college to know which curriculum to choose. Hence, guidance plans are included in the home economics program to help the student determine the special phase in which her individual interests and abilities may best function. In order that vocational choices may be made without loss, the courses for the first two years have been so selected that transfer from one curriculum to another, within the School of Home Economics, may be managed with a minimum of inconvenience. However, it is well to note that for those considering dietetics, nursing, or research and technical work in foods, nutrition, medicine, and textiles as possible vocational choices, the freshman science should be chemistry, and the sophomore science should usually include zoölogy and physiology.

Curriculum in Home Economics

This curriculum is recommended to those who wish to follow a broad, well-grounded program in home economics, those who plan to teach or to enter the home demonstration service, and those who have not yet determined the special fields in which they wish to major. There is opportunity for inclusion of the courses required for a teacher's certificate or for preparation for other phases of work through the elective hours available in the junior and senior years. Groups of electives are chosen during the first semester, sophomore year, in conference with staff members.

Curriculum in Home Economics, with Provision for Specialization

This curriculum is offered for students wishing specialization in one or another of the newer areas of interest in home economics. The student selects groups of courses as indicated by her own aptitudes and inclinations. She may thus plan for specialization in art, child development and guidance, clothing, household management, and the like. She may prepare for home economics in business or for technical work and research in equipment, textiles, foods, nutrition, or medicine.

Curriculum in Dietetics and Institutional Management

This curriculum is designed to meet the needs of students who wish to become dietitians or directors of food services in college residence hall, school lunch rooms, cafeterias, tea rooms, restaurants, or hotels. After graduation, students usually accept appointments to internships accredited by the American Dietetic Association to which satisfactory completion of the year's training makes them eligible for membership. A similar plan for internships is available through the American Restaurant Association.

Curriculum in Home Economics and Journalism

This curriculum is much like that with Provision for Specialization, but includes courses in the Department of Journalism, sufficient to make a major sequence. The student acquires insight into the whole field of home economics, and in the sophomore year chooses electives in some one area. This means that she comes to understand journalism as related to home economics, and in addition is thoroughly prepared to handle material in her chosen area, such as foods, child guidance, interior decoration and housing, or costume and design.

Curriculum in Home Economics and Nursing

The five-year curriculum is offered in affiliation with the University of Kansas Medical Center. The first two and one-half years are spent in the College. The last two and one-half years are spent in the school of nursing of the hospitals, where theoretical instruction and practical experience in nursing are given. Upon completion of the work at the hospitals, the student presents her application for graduation to the registrar of Kansas State College.

Home Economics in the Summer School

In addition to the regular instruction in home economics, the School offers numerous courses in the Summer School. These courses apply directly on the curriculums in Home Economics, or on graduate credit.

Full information concerning the courses offered is contained in the Summer School Catalogue of the Kansas State College *Bulletin,* which may be obtained upon application to the Director of Admissions of the College.

All new students at the freshman level in the School of Home Economics are required at the time of entrance to take a proficiency test in mathematics. Those enrolled in the Curriculum in Home Economics or the Curriculum in Dietetics and Institutional Management who fail the test, will be required to take the three-hour course, Mathematics in Human Affairs, in freshman year. Advanced credit in college mathematics exempts students from the course, Mathematics in Human Affairs.

Curriculum in Home Economics

Effective for graduation in 1950 and thereafter.

FRESHMAN

First Semester

	Course	Sem. Hrs.
Engl.	111 Writ. Comm. I	3
Comp.	101 Man's Phys. World I	4 *or*
Chem.	110 Gen. Chem.	5
Art	150 El. Des. I	2
Fds. Nutr.	102 Foods I	5
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		14 or 15

Second Semester

	Course	Sem. Hrs.
Engl.	112 Writ. Comm. II	2
Sp.	103 Oral Comm.	2
Comp.	102 Man's Phys. World II	4 *or*
Chem.	122 Gen. Org. Chem.	5
Art	164 Cost. Des. I	2
Clo. Text.	104 Fund. of Clothing	2 *or*
Clo. Text.	107 Selection of Clothing	2
Ch. Welf.	101 Personal Health	2
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		14 or 15

SOPHOMORE

First Semester

Comp.	111 Biol. in Rel. to Man I	4
Phys.	109 Hhld. Physics	4
Hhld. Econ.	102 Family Finance	2
Fds. Nutr.	107 Foods II	3
	Elective	2 *or* 3
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		15 or 16

Second Semester

Comp.	112 Biol. in Rel. to Man II	4
Art.	169 Int. Dec. I	2
Clo. Text.	114 Applied Dress Des.	3
	Elective	6 *or* 7
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		15 or 16

JUNIOR

First Semester

Comp.	121 Man and Soc. World I	4
Hhld. Econ.	115 The House	3
Clo. Text.	117 Textiles	2
	Elective	6
Gen. H. E.	122 H. E. Lect.	R
Engl.	169 English Proficiency	R
Total		15

Second Semester

Comp.	122 Man and Soc. World II	4
Ch. Welf.	211 Family Health	3
Ch. Welf.	218 Family Relationships	2
	Elective	6
Gen. H. E.	122 H. E. Lect.	R
Total		15

SENIOR

First Semester

Comp.	131 Man and Cult. World I	4
Fds. Nutr.	206 Nutrition and Dietetics	5 *or*
Fds. Nutr.	208 General Nutrition	3
Fds. Nutr.	207 Nutrition and Diet. Lab.	1
	Elective	5 *or* 7
Gen. H. E.	122 H. E. Lect.	R
Total		15

Second Semester

Comp.	132 Man and Cult. World II	4
	Elective	11
Gen. H. E.	122 H. E. Lect.	R
Total		15

Number of hours required for graduation, 120.

Curriculum in Home Economics

With Provision for Specialization

Effective for graduation in 1950 and thereafter.

FRESHMAN

First Semester

		Course	Sem. Hrs.
Engl.	111	Writ. Comm. I	3
Comp.	101	Man's Phys. World I	4 *or*
Chem.	110	Gen. Chem.	5
Art	150	El. Des. I	2
Fds. Nutr.	102	Foods I	5
Gen. H. E.	122	H. E. Lect.	R
Phys. Educ.	151	Phys. Educ. W	R
Total			14 or 15

Second Semester

		Course	Sem. Hrs.
Engl.	112	Writ. Comm. II	2
Sp.	103	Oral Comm.	2
Comp.	102	Man's Phys. World II	4 *or*
Chem.	122	Gen. Org. Chem.	5
Art	164	Cost. Des. I	2
Clo. Text.	104	Fund. of Clothing	2 *or*
Clo. Text.	107	Selection of Clothing	2
Ch. Welf.	101	Personal Health	2
Gen. H. E.	122	H. E. Lect.	R
Phys. Educ.	151	Phys. Educ. W	R
Total			14 or 15

SOPHOMORE

First Semester

Comp.	*†111	Biol. in Rel. to Man I	4
Comp.	†121	Man and Soc. World I	4
Fds. Nutr.	121	Applied Nutrition	2 *or*
Fds. Nutr.	107	Foods II	3
Hhld. Econ.	102	Family Finance	2
		Elective	2 *to* 4
Gen. H. E.	122	H. E. Lect.	R
Phys. Educ.	151	Phys. Educ. W	R
Total			15 or 16

Second Semester

Comp.	*112	Biol. in Rel. to Man II	4
Comp.	122	Man and Soc. World II	4
Clo. Text.	117	Textiles	2 *or*
Clo. Text.	114	Applied Dress Des.	3
		Elective	4 *to* 6
Gen. H. E.	122	H. E. Lect.	R
Phys. Educ.	151	Phys. Educ. W	R
Total			15 or 16

JUNIOR

First Semester

Hhld. Econ.	115	The House	3
Art	169	Int. Dec. I	2
		Elective	10
Gen. H. E.	122	H. E. Lect.	R
Engl.	169	English Proficiency	R
Total			15

Second Semester

Ch. Welf.	218	Family Relationships	2 *or*
Ch. Welf.	211	Family Health	3
		Elective	12 *or* 13
Gen. H. E.	122	H. E. Lect.	R
Total			15

SENIOR

First Semester

Comp.	131	Man and Cult. World I	4
		Elective	11
Gen. H. E.	122	H. E. Lect.	R
Total			15

Second Semester

Comp.	132	Man and Cult. World II	4
		Elective	11
Gen. H. E.	122	H. E. Lect.	R
Total			15

Number of hours required for graduation, 120.

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* Or substitute, such as Zoölogy, Physiology.

† One comprehensive course may be deferred to the junior year.

Graduate nurses, who are graduates of school of nursing recommended by the Director of Nursing Education, Kansas State College, may be allowed thirty hours of credit toward the degree Bachelor of Science in Home Economics (with specialization in nursing). In the ninety hours of work remaining for the degree, at Kansas State College, candidates must include those courses listed in the Curriculum in Home Economics with Provision for Specialization.

An Example of Specialization

An example of an application of the Curriculum in Home Economics with Provision for Specialization in a given field is shown by this presentation of the courses to be taken for specialization in Interior Decoration.

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Writ. Comm. I	3	Engl.	112	Writ. Comm. II	2
Comp.	101	Man's Phys. World I	4 *or*	Sp.	103	Oral Comm.	2
Chem.	110	Gen. Chem.	5	Comp.	102	Man's Phys. World II	4 *or*
Art	150	El. Des. I	2	Chem.	122	Gen. Org. Chem.	5
Fds. Nutr.	102	Foods I	5	Art	164	Costume Des. I	2
Gen. H. E.	122	H. E. Lect.	R	Clo. Text.	104	Fund. of Clo.	2 *or*
Phys. Educ.	151	Phys. Educ. W	R	Clo. Text.	107	Selection of Clo.	2
				Ch. Welf.	101	Personal Health	2
				Gen. H. E.	122	H. E. Lect.	R
				Phys. Educ.	151	Phys. Educ. W	R
Total			14 or 15	Total			14 or 15

SOPHOMORE

First Semester				Second Semester			
Comp.	*†111	Biol. in Rel. to Man I	4	Comp.	*112	Biol. in Rel. to Man II	4
Comp.	*121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Fds. Nutr.	121	Applied Nutrition	2	Clo. Text	117	Textiles	2
Hhld. Econ.	102	Family Finance	2	Art	169	Int. Dec. I	2
Art	178	Drawing I	2	Art	180	Drawing II	2
Art	152	El. Des. II	2	Art	183	Design in the Crafts I	2
Gen. H. E.	122	H. E. Lect.	R	Gen. H. E.	122	H. E. Lect.	R
Phys. Educ.	151	Phys. Educ. W	R	Phys. Educ.	151	Phys. Educ. W	R
Total			16	Total			16

JUNIOR

First Semester				Second Semester			
Hhld. Econ.	115	The House	3	Ch. Welf.	218	Family Relationships	2 *or*
Art	171	Int. Dec. II	2	Ch. Welf.	211	Family Health	3
Art	156	Lettering	2	Art	205	Advanced Des.	2
Art	234	Historic Textile Des.	3	Art	231	Int. Dec. III	2
Art	154	Intermediate Des.	2	Art	248	Historic Furn. Des.	3
Art	173	Home Furnishing	2	Art	189	Weaving I	2
Art	187	Pottery Design	2	Art	215	Drawing III	2
Gen. H. E.	122	H. E. Lect.	R			Other electives	2 *or* 3
Engl.	169	English Proficiency	R	Gen. H. E.	122	H. E. Lect.	R
Total			16	Total			16

SENIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Art	201	Prin. of Art I	3	Art	202	Prin. of Art II	3
Art	232	Prob. in Int. Dec.	2	Art	175	Window Display	3
		Other elective	6			Other elective	5 *or* 6
Gen. H. E.	122	H. E. Lect.	R	Gen. H. E.	122	H. E. Lect.	R
Total			15	Total			15 or 16

Number of hours required for graduation, 120.

* Or substitute, such as Zoölogy, Physiology.

† One comprehensive course may be deferred to the junior year.

Curriculum in Dietetics and Institutional Management

Effective for graduation in 1950 and thereafter.

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Writ. Comm. I	3	Engl.	112	Writ. Comm. II	2
Chem.	110	Gen. Chem.	5	Chem.	122	Gen. Org. Chem.	5
Art	150	Elem. Design I	2	Art	164	Cost. Des. I	2 *or*
Psych.	184	Gen. Psychology	3	Art	169	Int. Dec. I	2
Ch. Welf.	101	Personal Health	2	Fds. Nutr.	102	Foods I	5
Gen. H. E.	122	H. E. Lect.	R	Gen. H. E.	122	H. E. Lect.	R
Phys. Educ.	151	Phys. Educ. W.	R	Phys. Educ.	151	Phys. Educ. W.	R
Total			15	Total			14

SOPHOMORE

First Semester				Second Semester			
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Zoöl.	105	Gen. Zoölogy	5	Zoöl.	221	Human Physiology	4
Fds. Nutr.	107	Foods II	3	Phys.	109	Household Physics	4
Clo. Text.	104	Fund. of Clothing	2 *or*	Inst. Mgmt.	107	Quant. Food Prep. I	2
Clo. Text.	107	Selection of Clothing	2			Elective	1
Sp.	103	Oral Comm.	2	Gen. H. E.	122	H. E. Lect.	R
Gen. H. E.	122	H. E. Lect.	R	Phys. Educ.	151	Phys. Educ. W.	R
Phys. Educ.	151	Phys. Educ. W.	R				
Total			16	Total			15

JUNIOR

First Semester				Second Semester			
Fds. Nutr.	206	Nutr. and Dietetics	5	Chem.	240	General Biochem.	5
Fds. Nutr.	207	Nutr. and Dietetics Lab.	1	Fds. Nutr.	255	Exp. Cookery	2
Inst. Mgmt.	109	Quant. Food Prep. II	3	Bact.	101	Gen. Micro.	3
Inst. Mgmt.	111	Inst. Purchasing	3	Acctg.	293	Inst. Accounting	2
An. Husb.	176	Meats H. E.	1			Elective	3
		Elective	2	Gen. H. E.	122	H. E. Lect.	R
Gen. H. E.	122	H. E. Lect.	R				
Engl.	169	English Proficiency	R				
Total			15	Total			15

SENIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Inst. Mgmt.	203	Org. and Mgmt. of Inst.	3	Fds. Nutr.	205	Diet. for Abn. Cond.	2
Inst. Mgmt.	204	Org. and Mgmt. of Inst. Lab.	2	Ch. Welf.	201	Child Guid. I	3
Educ.	133	Meth. of Tchg. for Diet. Stu.	3			Elective	6
		Elective	3	Gen. H. E.	122	H. E. Lect.	R
Gen. H. E.	122	H. E. Lect.	R				
Total			15	Total			15

Number of hours required for graduation, 120.

It is suggested that students consider the following possibilities in choosing electives: Advanced courses in foods, nutrition and institutional management, social studies and contemporary affairs.

Curriculum in Home Economics and Journalism

Effective for graduation in 1950 and thereafter.

FRESHMAN

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Engl.	111	Writ. Comm. I	3	Engl.	112	Writ. Comm. II	2
Comp.	101	Man's Phys. World I	4 *or*	Sp.	103	Oral Comm.	2
Chem.	110	Gen. Chem.	5	Comp.	102	Man's Phys. World II	4 *or*
Art	150	El. Des. I	2	Chem.	122	Gen. Org. Chem.	5
Fds. Nutr.	102	Foods I	5	Art	164	Cost. Des. I	2
Gen. H. E.	122	H. E. Lect.	R	Clo. Text.	104	Fund. of Clothing	2 *or*
Phys. Educ.	151	Phys. Educ. W	R	Clo. Text.	107	Selection of Clo.	2
				Hhld. Econ.	102	Family Finance	2
				Ind. Jour.	199	Ind. Jour. Lect.	R
				Phys. Educ.	151	Phys. Educ. W	R
Total			**14 or 15**	Total			14 or 15

SOPHOMORE

First Semester				Second Semester			
Comp.	*111	Biol. in Rel. to Man I	4	Comp.	112	Biol. in Rel. to Man II	4
Comp.	*121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
Fds. Nutr.	121	Applied Nutrition	2 *or*	Clo. Text.	117	Textiles	2 *or*
Fds. Nutr.	107	Foods II	3	Clo. Text.	114	Applied Dress Design	3
Ind. Jour.	146	Reporting I	3	Ind. Jour.	147	Reporting II	3
		Elective	1 *to* 3			Elective	1 *to* 3
Gen. H. E.	122	H. E. Lect.	R	Ind. Jour.	199	Ind. Jour. Lect.	R
Phys. Educ.	151	Phys. Educ. W	R	Phys. Educ.	151	Phys. Educ. W	R
Total			15 or 16	Total			15 or 16

JUNIOR

First Semester				Second Semester			
Comp.	131	Man and Cult. World I	4	Comp.	132	Man and Cult. World II	4
Ch. Welf.	218	Family Relationships	2 *or*	Ch. Welf.	218	Family Relationships	2 *or*
Ch. Welf.	201	Child Guidance I	3	Ch. Welf.	211	Family Health	3
Hhld. Econ.	115	The House	3 *or*	Ind. Jour.	166	Editing	2
Hhld. Econ.	272	Cons. and the Mkt.	3	Art	169	Int. Dec. I	2
Sp.	172	The Radio Talk	2 *or*			Elective	4 *or* 5
Ind. Jour.	183	Publ. Infm. Methods	2	Gen. H. E.	122	H. E. Lect.	R
		Elective	3 *or* 4				
Engl.	169	English Proficiency	R				
Ind. Jour.	199	Ind. Jour. Lect.	R				
Total			15	Total			15

SENIOR

First Semester				Second Semester			
Ind. Jour.	232	Advertising Salesmanship	2 *or*	Ind. Jour.	269	Magazine Article Writ.	2
Ind. Jour.	177	Prin. of Advertising	3	Ind. Jour.	285	Int. of Cont. Affairs	3
Ind. Jour.	267	The Woman's Page	3			Elective	10
Ind. Jour.	284	Jour. in Free Society	3	Gen. H. E.	122	H. E. Lect.	R
		Elective	6 *or* 7				
Ind. Jour.	199	Ind. Jour. Lect.	R				
Total			15	Total			15

Number of hours required for graduation, 120.

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* One comprehensive may be deferred to junior year.

Electives will be distributed as follows: Approximately 50 percent to social studies, journalism, and English; approximately 50 percent to courses in home economics and related areas.

Curriculum in Home Economics and Nursing

FRESHMAN

First Semester

	Course	Sem. Hrs.
Engl.	111 Writ. Comm. I	3
Chem.	110 Gen. Chem.	5
Fds. Nutr.	102 Foods I	5
Psych.	184 Gen. Psych.	3
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		16

Second Semester

	Course	Sem. Hrs.
Engl.	112 Writ. Comm. II	2
Chem.	122 Gen. Org. Chem.	5
Zoöl.	105 Gen. Zoöl.	5
Ch. Welf.	101 Personal Health	2
Sp.	103 Oral Comm.	2
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		16

SOPHOMORE

First Semester

	Course	Sem. Hrs.
Comp.	181 Man and Cult. World I	4
Fds. Nutr.	107 Foods II	3
Zoöl.	123 Human Anatomy	5
Soc.	151 Sociology	3 *or*
Psych.	254 Abnormal Psychology	3
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		15

Second Semester

	Course	Sem. Hrs.
Comp.	132 Man and Cult. World II	4
Ch. Welf.	201 Child Guid. I	3
Zoöl.	221 Human Phys.	4
Bact.	101 Gen. Micro.	3
Ch. Welf.	218 Family Relationships	2
Gen. H. E.	122 H. E. Lect.	R
Phys. Educ.	151 Phys. Educ. W	R
Total		16

JUNIOR

First Semester

	Course	Sem. Hrs.
Chem.	240 General Biochem.	5
Fds. Nutr.	206 Nutr. and Diet.	5
Fds. Nutr.	207 Nutr. and Diet. Lab.	1
Ch. Welf.	110 Introd. to Nursing Arts	3
Ch. Welf.	105 Hist. of Nursing	2
Engl.	169 English Proficiency	R
Gen. H. E.	122 H. E. Lect.	R
Total		16

Second Semester

Second semester of this year and the senior year to be replaced by two and one-half years at the University of Kansas hospitals.

Number of semester hours required for graduation, 79, plus two and one-half years of acceptable work at the University of Kansas Medical Center in the following fields:

Theoretical Work

Professional Adjustments I and II
Nursing Arts II
Materia Medica
Medical Nursing (including specialties)
Surgical Nursing (including specialties)
Dietotherapy
Obstetrical Nursing
Pediatric Nursing
Principles of Public Health Nursing
Principles of Public Hygiene and Sanitation
Social Aspects of Nursing

Practical Work

Medicine
Surgery (including operating room)
Pediatrics
Nursery
Obstetrics
Dispensary
Tuberculosis
Public Health

Groups of Electives Suggested for Students, School of Home Economics

Lists of courses suggested below have been compiled with the idea of providing for professional competence in areas where home economics functions. Other combinations may be worked out to meet the needs of the individual. Choice of electives is made in conference with a faculty adviser, and is subject to approval by the Dean of the School of Home Economics.

EDUCATIONAL WORK

1. Teaching Home Economics in High Schools

The student who wishes to obtain the degree Bachelor of Science and to prepare for the teaching of home economics in Kansas high schools, should choose the Curriculum in Home Economics. Electives are selected with the advice of a professor in Home Economics Education and the approval of the Dean of the School of Home Economics. Electives must include courses considered essential in preparing for teaching high school home economics, as follows:

Courses in Education and Psychology		Courses in Home Economics	
General Psychology, Psych. 184	3	Design in Crafts I, Art 183	2
Educational Psychology, Educ. 109	3	Child Guidance I, Ch. Welf. 201	3
Principles of Sec. Educ., Educ. 139	3	Home Management, Hhld. Econ. 240	3
Methods of Teaching Home Econ., Educ. 132	3	Advanced Dress Design, Clo. Text. 211	3
Tchg. Partic. in Home Econ., Educ. 159,*	3	*or*	
Vocational Home Econ. Cur., Educ. 233,	3	Problems in Clo. Design, Clo. Text. 214	3
		School Food Service, Inst. Mgmt. 221	3

Completion of the requirements of the Curriculum in Home Economics, including courses listed above, entitles the individual to the three-year certificate, renewable for life, issued by the State Board of Education, and to approval for teaching in a reimbursed high school home economics department, often called a vocational homemaking department.

2. Teaching Art in High Schools

The student who desires to obtain the degree Bachelor of Science with a major in art and to qualify for the three-year Kansas state teacher's certificate, renewable for life and valid in any high school in the state, should enroll in the Curriculum in Home Economics with Provision for Specialization, and elect certain courses in the Department of Education and Psychology and certain courses in the Department of Art. These are:

Courses in Education and Psychology		Courses in Art	
General Psychology, Psych. 184	3	Costume Design I, Art 164	2
Educational Psychology, Educ. 109	3	Interior Decoration I, Art 169	2
Methods of Teaching Home Econ., Educ. 132	3	Elem. Design II, Art 152	2
Vocational Home Econ. Curriculum, Educ. 233	3	Intermediate Design, Art 154	2
Tchg. Partic. in Home Econ., Educ 159, or Tchg. Partic. in High School, Educ. 163	3	Advanced Design, Art 205	2
And one other 3-sem. hour course in Education		Lettering, Art 156	2
		Drawing I, Art 178	2
		Drawing II, Art 180	2
		Drawing III, Art 215	2
		Design in Crafts I, Art 183	2
		Design in Crafts II, Art 185	2
		Metal Crafts, Art 193	2
		Puppetry, Art 195	3
		Weaving I, Art 189	2
		Pottery Design, Art 187	2
		Principles of Art I, Art 201	3
		Principles of Art II, Art 202	3
		Problems in Tchg. Art, Art 230	2

* Each student completes a home project previous to taking this course. The project adviser, who has assisted with the planning of the project, must report a project grade before credit for this course can be sent to the College Registrar for the permanent records.

3. Child Welfare and Nursery School Teaching

The following courses of study are suggested for students interested in professional and vocational work in child development and family relationships. A fifth year of specialization is usually necessary for professional placement.

Child Guidance II, Ch. Welf. 203	3
Development and Guidance of Youth, Ch. Welf. 204	3
Seminar in Child Development, Ch. Welf. 245	2
Family Relationships, Ch. Welf. 218	2
The Family, Ch. Welf. 220	3
Seminar in the Family, Ch. Welf. 246	2
Parent Education, Ch. Welf. 303	2
Nursery School Procedures, Ch. Welf. 205	3
Nursery School Administration, Ch. Welf. 305	2
Literature and Music for the Preschool Child, Ch. Welf. 207	3
Play Act. and Materials, Ch. Welf. 208,	3
Puppetry, Art 195	3
Children's Readings, Engl. 252	3
Problems in Ch. Welf. and Euth., Ch. Welf. 221	1 to 3
Nutrition of Develop., Fds. Nutr. 210	2
Home Management, Hhld. Econ. 240	3
Mental Hygiene and Personality Adjustment, Psych. 272	3
Prin. and Technics of Counseling, Psych. 271	3
Psych. of Childhood and Adoles., Psych. 250	3
Psych. of Exceptional Children, Psych. 266	3
Abnormal Psychology, Psych. 254	3
Social Psychology, Psych. 270	3

4. Child Welfare with Community Services

Child Guidance I, Ch. Welf. 201	3
Child Guidance II, Ch. Welf. 203	3
Family Relationships, Ch. Welf. 218	2
The Family, Ch. Welf. 220	3
Family Health, Ch. Welf. 211	3
Seminar in Child Develop., Ch. Welf. 245,	2
Seminar in the Family, Ch. Welf. 246	2
Parent Education, Ch. Welf. 303	2
Home Management, Hhld. Econ. 240	3
Economic Problems of the Family, Hhld. Econ. 265	2
Prin. and Technics of Counseling, Psych. 271	3
Mental Hygiene and Personality Adj., Psych. 272	3
Sociology, Soc. 151	3
Social Pathology, Soc. 258	3
Com. Org. and Leadership, Soc. 267	3
Democracy and Education, Cit. 205	3
General Psychology, Psych. 184	3
Psych. of Childhood and Adoles., Psych. 250	3
Abnormal Psychology, Psych. 254	3
Social Psychology, Psych. 270	3
Psych. of Exceptional Children, Psych. 266	3

5. Home Demonstration Work

Students interested in becoming home demonstration agents should enroll in the Curriculum in Home Economics. They should plan for summer experience as junior assistants before the beginning of senior year, to observe and gain experience under supervision in the home economics extension program. After graduation, apprenticeship for at least three months as an assistant home demonstration agent may precede appointment to a county position. Electives are selected with the advice of the State Home Demonstration Leader and the approval of the Dean of the School of Home Economics. Electives should include courses from the following list:

General Psychology, Psych. 184	3
Extension Organization and Policies, Educ. 214	3
Extension Methods for Home Economists, Educ. 216	3
Home Management, Hhld. Econ. 240	3
Freedom and Responsibility I, Cit. 110	3
Freedom and Responsibility II, Cit. 111,	3
Problems in Clothing Design, Clo. Text. 214	3
Child Guidance I, Ch. Welf. 201	3
Consumer and the Market, Hhld. Econ. 272	3
Household Equipment, Hhld. Econ. 105,	2
Meats, H. E., An. Husb. 176	1
Design in the Crafts I, Art 183	2
Home Furnishing, Art 173	2
Landscape Gardening, Hort. 125	3
Vegetable Gardening, Hort. 133	3
Household and Garden Insects, Ent. 108,	2
Radio Speech, Radio 165	2
Reporting I, Ind. Jour. 146	3
Recreational Leadership W, Phys. Educ. 191	2
Rural Sociology, Ag. Econ. 156	3
Children's Readings, Engl. 252	3
Cultural Reading, Engl. 255	3

RESEARCH AND TECHNICAL WORK

Students desiring to major in food or nutrition research should choose the Curriculum in Home Economics, with Provision for Specialization, selecting the alternates for Man's Physical World I and II. Chemistry I, 5 hours, should be substituted for General Chemistry, 5 hours, and Organic Chemistry I, 5 hours, for General Organic Chemistry, 5 hours. Foods II should be selected rather than Applied Nutrition. Electives should be selected from the courses listed below:

1. Food

Chemistry II, Chem. 103, 104	5	Experimental Cookery, Fds. Nutr. 255	2
Organic Chemistry II, Chem. 224	5	Problems in Foods, Fds. Nutr. 245	2
Quant. Analysis, Chem. 215A	4	Food Technology, Chem. 259	3
Gen. Biochemistry, Chem. 240	5	Food Analysis, Chem. 221A	3
College Algebra, Math. 112	3	Experimental Baking, Mill. Ind. 215	3
Elements of Statistics, Math. 164	3	Seminar in Foods, Fds. Nutr. 253	2
Plane Trigonometry, Math. 101	3	Nutrition and Dietetics, Fds. Nutr. 206, 207	6
Household Physics, Phys. 109	4	Adv. Foods I, Fds. Nutr. 270	3
Philosophy of Science I, Hist. 142	3		
Meats, H. E., An. Husb. 176	1		

2. Nutrition

Chemistry II, Chem. 103, 104	5	Field Work in Nutr., Fds. Nutr. 215	3
Organic Chemistry II, Chem. 224	5	College Algebra, Math. 112	3
Gen. Biochemistry, Chem. 240	5	Plane Trigonometry, Math. 101	3
Biochemical Analysis, Chem. 248	2	Elements of Statistics, Math. 164	3
Quant. Analysis, Chem. 215A	4	General Microbiology, Bact. 101	3
General Zoölogy, Zoöl. 105	5	Bact. of Human Diseases, Bact. 206	5
Human Physiology, Zoöl. 221	4	Immunology, Bact. 229	5
Nutr. and Dietetics, Fds. Nutr. 206, 207,	6	Bacteriological Technic, Bact. 225	3
Problems in Nutrition, Fds. Nutr. 258	2	General Physics I, Phys. 102	4
Seminar in Nutrition, Fds. Nutr. 254	2	General Physics II, Phys. 103	4
Advanced Nutrition, Fds. Nutr. 261	3	Philosophy of Science I, Hist. 142	3
Nutr. of Development, Fds. Nutr. 210	2		

3. Medical Technology

Students desiring to become medical technicians should choose the Curriculum in Home Economics with Provision for Specialization, selecting the alternates for Man's Physical World I and II and omitting Biology in Relation to Man I and II. Chemistry I, 5 hours, should be substituted for General Chemistry. Foods II should be selected rather than Applied Nutrition. Electives should include the courses listed below which are approved by the Registry of Medical Technologists:

General Zoölogy, Zoöl. 105	5	General Physics I, Phys. 102	4
Human Physiology, Zoöl. 221	4	General Physics II, Phys. 103	4
Chemistry II, Chem. 103, 104	5	General Microbiology, Bact. 101	3
Gen. Biochemistry, Chem. 240	5	Bact. of Human Diseases, Bact. 206	5
Quant. Analysis, Chem. 215A	4	Immunology, Bact. 229	5
Nutr. and Dietetics, Fds. Nutr. 206, 207,	6	Bacteriological Technic, Bact. 225	3
College Algebra, Math. 112	3	Zoölogical Technic, Zoöl. 206	2
Plane Trigonometry, Math. 101	3		

4. Household Economics: Home, Equipment, or Budget Adviser

Students interested in this area should choose the Curriculum in Home Economics, with Provision for Specialization. Students interested in becoming home or equipment advisers should substitute Chemistry I and Household Physics for Man's Physical World I and II. Students interested in becoming budget advisers should substitute Economics I, Sociology, and one other course for Man and the Social World I and II.

Twenty to twenty-five semester hours, which approximates 50 percent of the elective hours, should be chosen from the courses listed below:

Household Equipment, Hhld. Econ. 105, 2
Advanced Household Equipment, Hhld. Econ. 274 3
Home Management, Hhld. Econ. 240 3
Consumer and the Market, Hhld. Econ. 272 3
Economic Problems of the Family, Hhld. Econ. 265 2
Problem in Household Economics, Hhld. Econ. 243 ..... 2 to 4
Experimental Cookery, Fds. Nutr. 255 ... 2
Fundamentals of Demonstration, Fds. Nutr. 256 2
Family Health, Ch. Welf. 211* 3
or
Family Relationships, Ch. Welf. 218* ... 2
Child Guidance I, Ch. Welf. 201 3
Methods of Teaching Home Economics, Educ. 132 3
Reporting I, Ind. Jour. 146 3
The Woman's Page, Ind. Jour. 267 3
Radio Speech, Radio 165 2
Radio Continuity, Radio 167 3
Building Materials and Construction, Arch. 187a 3
Landscape Gardening, Hort. 125 3

5. Textile

General Chemistry, Chem. 110 5
General Organic Chemistry, Chem. 122 .. 5
Quantitative Analysis, Chem. 215A 4
Physical Chemistry I, Chem. 260A and B, 5
Colloid Chemistry, Chem. 268A 3
Chemical Microscopy, Chem. 285A 2
Clothing Economics, Clo. Text. 201 3
Advanced Textiles, Clo. Text. 205 3
Experimental Textiles, Clo. Text. 255 2
Marketing, Econ. 246 3
Plane Trigonometry, Math. 101 3
College Algebra, Math. 112 3
Plane Analytic Geometry, Math. 120 4
Calculus I, Math. 140 4
Calculus II, Math. 141 4
Statistical Methods I, Math. 261 3
Statistical Methods II, Math. 262 3
General Physics I, Phys. 102 4
General Physics II, Phys. 103 4

HOME ECONOMICS IN BUSINESS

1. Clothing Retailing

Mathematics in Human Affairs, Math. 103 3
Interior Decoration II, Art 171 2
Costume Design II, Art 166 2
Drawing I, Art 178 2
Historic Textile Design, Art 234 3
Clothing Economics, Clo. Text. 201 3
Intermediate Textiles, Clo. Text. 204 2
Adv. Dress Design, Clo. Text. 211 3
Prob. in Clothing Design, Clo. Text. 214, 3
History of Costume, Clo. Text. 226 3
Economics I, Econ. 101 3
Principles of Accounting, Acctg. 136 3
Sociology, Soc. 151 3
Business Management, Econ. 126 2
Marketing, Econ. 246 3
Gen. Psychology, Psych. 184 3
Psychology of Adv. and Selling, Psych. 265 3
Social Psychology, Psych. 270 3
Commercial Correspondence, Engl. 122 .. 3
Advanced Grammar, Engl. 243 3
Oral English, Engl. 232 3
World Cultures I, Hist. 209 3
Reporting I, Ind. Jour. 146 3
The Woman's Page, Ind. Jour. 267 3
Advertising Salesmanship, Ind. Jour. 232, 2
Prin. of Advertising, Ind. Jour. 177 3
Oral Communications II, Sp. 108 2
Radio Talk, Radio 172 2
Radio Advertising, Radio 179 3

2. Clothing and Costume Designing

Elementary Design II, Art 152 3
Drawing I, Art 178 2
Drawing II, Art 180 2
Costume Design II, Art 166 2
Costume Design III, Art 210 2
Principles of Art I, Art 201 3
Principles of Art II, Art 202 3
Costume Illustration, Art 212 2
Historic Textile Design, Art 234 3
Problems in Costume Design, Art 235 ... 2
Textiles, Clo. Text. 117 2
Intermediate Textiles, Clo. Text. 204 2
Clothing Economics, Clo. Text. 201 3
Applied Dress Design, Clo. Text. 114 3
Advanced Dress Design, Clo. Text. 211 .. 3
Prob. in Clothing Design, Clo. Text. 214, 3
Prob. in Clothing and Textiles, Clo. Text. 215 3
History of Costume, Clo. Text. 226 3
Clothing and Textiles Summary, Clo. Text. 250 2
General Psychology, Psych. 184 3
Psychology of Art, Psych. 276 3
Social Psychology, Psych. 270 3
World Cultures I, Hist. 209 3
Oral English, Engl. 232 3
Advanced Grammar, Engl. 243 3
Contemporary Fiction, Engl. 283 3

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* Whichever was not taken in the basic curriculum.

3. Food Demonstrating

Students desiring to become food demonstrators in the commercial field should choose the Curriculum in Home Economics, with Provision for Specialization. Electives should be selected from the courses listed below:

Mathematics in Human Affairs, Math. 103	3
General Psychology, Psych. 184	3
Household Physics, Phys. 109	4
Household Equipment, Hhld. Econ. 105,	2
Adv. Household Equipment, Hhld. Econ. 274	3
Nutrition and Dietetics, Fds. Nutr. 206, 207	6
Experimental Cookery, Fds. Nutr. 255	2
Field Work in Nutrition, Fds. Nutr. 215,	3
Seminar in Foods, Fds. Nutr. 253	2
Problems in Foods, Fds. Nutr. 245	1
Fundamentals of Demonstration, Fds. Nutr. 256	2
Quantity Food Preparation I, Inst. Mgmt. 107	2
Home Management, Hhld. Econ. 240	3
Oral Communications II, Sp. 108	2
Reporting I, Ind. Jour. 146	3
Reporting II, Ind. Jour. 147	3
The Woman's Page, Ind. Jour. 267	3
Radio Speech, Radio 165	2
Radio Writing, Radio 167	3
Radio Program Partic., Radio 168	1
Floral Arrangement I, Hort. 135	2
Methods of Teaching Home Economics, Educ. 132	3
Meats, H. E., An. Husb. 176	1

4. Art and Costume Designing

Lettering, Art 156	2
Drawing I, Art 178	2
Drawing II, Art 180	2
Drawing III, Art 215	2
Metal Crafts, Art 193	2
Window Display, Art 175	3
Elementary Design II, Art 152	2
Intermediate Design, Art 154	2
Advanced Design, Art 205	2
Costume Design II, Art 166	2
Costume Design III, Art 210	2
Costume Illustration, Art 212	2
Problems in Costume Design, Art 235	2
Advanced Dress Design, Clo. Text. 211	3
Prob. in Clothing Design, Clo Text. 214,	3
History of Costume, Clo. Text. 226	3
Principles of Art I, Art 201	3
Principles of Art II, Art 202	3
Historic Textile Design, Art 234	3
Design in the Crafts I, Art 183	2
Photography, Phys. 151	2
Principles of Advertising, Ind. Jour. 177,	3

5. Art and Interior Decorating

Window Display, Art 175	3
Elementary Design II, Art 152	2
Intermediate Design, Art 154	2
Advanced Design, Art 205	2
Problems in Design, Art 217	2
Drawing I, Art 178	2
Drawing II, Art 180	2
Drawing III, Art 215	2
Lettering, Art 156	2
Design in the Crafts I, Art 183	2
Weaving I, Art 189	2
Pottery Design, Art 187	2
Home Furnishing, Art 173	2
Problems in Interior Dec., Art 232	2
Interior Decoration II, Art 171	2
Interior Decoration III, Art 231	2
Historic Furniture Design, Art 248	3
Historic Textile Design, Art 234	3
Principles of Art I, Art 201	3
Principles of Art II, Art 202	3
Landscape Gardening, Hort. 125	3
Reporting I, Ind. Jour. 146	3
The Woman's Page, Ind. Jour. 267	3
Principles of Advertising, Ind. Jour. 177,	3
Photography, Phys. 151	2

GENERAL

1. Homemaking

Child Guidance I, Ch. Welf. 201	3
Com. Org. and Lead., Soc. 267	3
Problems in Foods, Fds. Nutr. 245	1
Home Management, Hhld. Econ. 240	3
Nutr. of Development, Fds. Nutr. 210	2
Consumer and the Market, Hhld. Econ. 272	3
Child Guidance II, Ch. Welf. 203	3
Principles of Art I, Art 201	3
Meats, H. E., An. Husb. 176	1
Hist. of Engl. Literature, Engl. 181	3
Psychology of Childhood and Adolescence, Psych. 250	3
Economic Problems of the Family, Hhld. Econ. 265	2
Food and Sanitary Bacteriology, Bact. 248	5
Advanced Dress Design, Clo. Text. 211	3

2. Citizenship and Public Service

Women are becoming increasingly active in civic affairs and public life, and many of the vocational opportunities for home economics graduates are found in public agencies. This option is designed for students who wish to prepare themselves for a more active and intelligent role in the civic affairs of their community, and for students who may enter public service. Citizenship 110 and 111, Freedom and Responsibility, should be taken first in all cases and in the freshman year if possible. Both Citizenship 110 and 111 and Citizenship

101 and 102, Constitutional Democracy in America, are required. An additional 9 or 10 hours will be elected from the courses in the following list:

Democracy and Education, Cit. 205	3
Democracy, Justice, and the Law, Cit. 215	3
Political Economy and the Democratic State, Cit. 220	3
War, Peace, and the World Community, Cit. 225	3
Effective Citizenship, Cit. 235	2
Federal Politics and Administration, Govt. 263	2
State and Local Politics and Administration, Govt. 265	2

Art

Dorothy Barfoot, *Head of Department*

Specialization in Art is designed to provide a background for homemaking or other professional work. Depending upon their interests, the undergraduate students may specialize in design, interior decoration, costume design, or teaching of art. Major work leading to the degree Master of Science is offered in costume design and interior decoration and related phases of the department's work.

FOR UNDERGRADUATE CREDIT

150. Elementary Design I. 2 semester hours. Each semester and summer.
An introduction to the arts and application of their principles to daily living. Four hours of recitation and laboratory a week.

152. Elementary Design II. 2 semester hours. Each semester and summer.
Theory of design and color continued and a practical application of it made to functional items in the home. Prerequisite: Art 150.

154. Intermediate Design. 2 semester hours. First semester.
Theory of color and design. Special emphasis on abstractions and nonsubjective motifs and their influence in modern design. Prerequisite: Art 152.

156. Lettering. 2 semester hours. First semester.
Creative design in the field of lettering in relation to historic and modern forms. Prerequisite: Art 150.

159. Elementary School Art. 2 semester hours. Summer.
A course in color and form with methods and materials for teaching art at different grade levels in the elementary schools. This course is not to be substituted for Elementary Design I. Staff.

161. Crafts for Elementary School Teachers. 2 semester hours. Summer.
A course in crafts emphasizing design with methods and materials for different grade levels in the elementary schools. This course is not to be substituted for Design in the Crafts I or II. Prerequisite: Art 159.

164. Costume Design I. 2 semester hours. Each semester and summer.
Line, form, color, texture in costume design and selection as related to the requirements of the individual. This course is a design basis for garment selection and construction. Four hours of recitation and laboratory a week. Prerequisite: Art 150.

166. Costume Design II. 2 semester hours. First semester.
Problems in creative designing for the fashion figure. Prerequisite: Art 164, 178.

169. Interior Decoration I. 2 semester hours. Each semester and summer.
The design and furnishing of the modern interior. Prerequisite: Art 150.

171. Interior Decoration II. 2 semester hours. First semester.
Interior design in its relation to house types, period furniture and fabrics. Prerequisite: Art 169, 180 or permission of instructor.

173. Home Furnishing. 2 semester hours. Each semester or summer.
Refinishing and restyling furniture; designing and executing draperies, slip-covers, and lamp shades. Prerequisite: Art 169.

175. Window Display. 3 semester hours. Each semester or summer.
Three dimensional designing. Experiments in a variety of materials such as paper sculpture, wire mesh, papier-maché, and plastics. Practical experience is gained through the coöperation of local stores. Prerequisite: Art 205, 180, and senior standing.

178. Drawing I. 2 semester hours. Each semester or summer.
Representative and creative sketching in which a variety of media and techniques are employed. Prerequisite: Art 150.

180. Drawing II. 2 semester hours. First or second semester.
Creative work in oils, water colors, pen and ink, and lithograph crayon. The student works both in the studio and outdoors. Prerequisite: Art 178 and junior standing.

183. Design in the Crafts I. 2 semester hours. Each semester and summer.
Basic craft experiences with various methods and techniques such as leatherwork, wood carving, decorative stitchery, cord knotting, glass etching, batik, and tie-dye. Prerequisite: Art 150 or permission of instructor.

185. Design in the Crafts II. 2 semester hours. Second semester or summer.
Further experience in the basic principles and techniques of crafts, with special emphasis on plastics, bookbinding, and new materials. Prerequisite: Art 150; junior standing.

187. Pottery Design. 2 semester hours. Each semester or summer.
Creative design in the production of pottery, its formation, firing, and decoration. Prerequisite: Art 150 or permission of instructor.

189. Weaving I. 2 semester hours. Each semester or summer.
A study of the principles of design, color and texture applied to textile construction. Prerequisite: Art 150 or permission of instructor.

191. Weaving II. 2 semester hours. Each semester and summer.
Experimentation with emphasis on original woven designs. Prerequisite: Art 189.

193. Metal Crafts. 2 semester hours. Second semester or summer.
Basic principles and techniques of metal work and jewelry. Prerequisite: Art. 183.

195. Puppetry. 3 semester hours. Each semester or summer.
Creating both hand puppets and marionettes. Puppet shows are produced at the end of the course. Prerequisite: Art 150.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Principles of Art I. 3 semester hours. First semester or summer.
The culture of various peoples and their homes as shown by their use of color, line, and form in architecture and sculpture. Prerequisite: Art 150.

202. Principles of Art II. 3 semester hours. Second semester or summer.
The culture of various peoples as expressed in historic painting. Prerequisite: Art 201.

205. Advanced Design. 2 semester hours. Second semester or summer.
Special emphasis on art structure. Designs for textiles using modern commercial repeats. Prerequisite: Art 154.

210. Costume Design III. 2 semester hours. Second semester.
Design and drawing of the costumed figure with reference to historic and modern dress styles. Prerequisite: Art 166, 180.

212. Costume Illustration. 2 semester hours. Second semester or summer.
Costume figures for fashion illustration rendered in various media suitable for reproduction. Prerequisite: Art 210.

215. Drawing III. 2 semester hours. Each semester and summer.
Creative work in watercolor, silk screen printing, oil and lithograph crayon. Prerequisite: Art 180.

217. Problems in Design. Credit to be arranged. Each semester or summer.
Problems in design planned to meet the particular needs of the student. Prerequisite: Ten credit hours in art or permission of instructor and senior standing.

230. Problems in Teaching Art. Credit to be arranged. Each semester or summer.
For the high school teacher who is correlating art with home economics, particularly for the teacher of art connected with the vocational home economics program. Lectures and class discussions of methods, consideration of suitable laboratory equipment, use of illustrative material, and preparation of course of study. Prerequisite: Art 152, Educ. 132 or equivalent; twelve credit hours in Art.

231. Interior Decoration III. 2 semester hours. Second semester.
Originality, functionalism, and beauty in the styling of interiors is stressed. Prerequisite: Art 171.

232. Problems in Interior Decoration. Credit to be arranged. Each semester or summer.
Problems planned with the students to meet their particular needs. Prerequisite: Art 231 or permission of instructor.

234. Historic Textile Design. 3 semester hours. Each semester or summer.
Design employed in fabrics in each of the great art periods. Prerequisite: Art 150, Clo. Tex. 117.

235. Problems in Costume Design. Credit to be arranged. First semester or summer.
Problems planned with the students to meet their particular needs. Prerequisite: Art 210 or permission of instructor.

243. Arts of Mexico. 3 semester hours. Each semester or summer.
A survey of the arts of pre-Spanish, colonial, and modern Mexico, their origins and developments. Prerequisite: Art 150.

245. Art of Primitive People. 3 semester hours. Second semester.
A study of the local art styles of various groups of primitive people, stressing their skills in designing for everyday living. Prerequisite: Art 150.

248. Historic Furniture Design. 3 semester hours. Each semester or summer.
Design expressed in furniture in each of the great art periods. Prerequisite: Art 150.

FOR GRADUATE CREDIT

302. Advanced Costume Design. Credit to be arranged. Each semester and summer.
Individual research problems which may form the basis for the master's thesis. Prerequisite: Consult instructors.

304. Advanced Interior Decoration. Credit to be arranged. Each semester and summer.
Individual research problems which deal with the various phases of dethesis. Prerequisite: Consult instructors.

306. Problems in Advanced Design. Credit to be arranged. Each semester and summer.
Individual research problems which deal with the various phases of design may be chosen by the student (with the aid of the instructor) which may form the basis of a master's thesis. Prerequisite: Consult instructors.

Child Welfare and Euthenics

Lois R. Schulz, *Head of Department*

The Department of Child Welfare and Euthenics offers opportunities for study of the child and his family with a nursery school as a laboratory of human development. For the student interested in homemaking, the courses are planned to create an awareness of the child as a developing personality and to promote an understanding of the dynamics of family relationships. Many of the courses will be of value to prospective teachers, nurses, dietitians, extension workers, and others, in helping them understand human needs and relationships. For the student interested in professional opportunities such as nursery school teaching, child guidance clinics, family life programs in the public schools, college teaching, child welfare with community agencies, or research in child development and family life, the department offers work toward the degree Master of Science.

The curriculum for students in Home Economics and Nursing is under the supervision of the Director of Nursing Education, who is a member of the Department of Child Welfare and Euthenics. Courses in basic nursing skills meet the requirements of the School of Nursing at the University of Kansas Medical Center.

FOR UNDERGRADUATE CREDIT

101. Personal Health. 2 semester hours. Each semester.
Orientation to college living through study of social, mental, and physical health. Open to freshmen only.

105. History of Nursing. 2 semester hours. Second semester.
The origin of nursing and its development from ancient to modern times.

110. Introduction to Nursing Arts. 3 semester hours. First semester.
Techniques and skills employed in nursing with consideration of the principles underlying these procedures. One hour of recitation and six hours of laboratory a week.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Child Guidance I. 3 semester hours. Each semester and summer.
Study of the developmental characteristics of young children, adaptation of the environment to meet their needs, and principles involved in the guidance of children at the preschool age. Two hours of recitation and three hours of laboratory a week. Prerequisite: Junior standing or consent of head of department. Additional charge for luncheon.

203. Child Guidance II. 3 semester hours. First semester and summer.
Study of the growth sequence in relation to behavior and to the young child's process of adjustment. Two hours of recitation and three hours of laboratory a week. Prerequisite: Ch. Welf. 201, 211, or concurrent; and consent of head of department.

204. Development and Guidance of Youth. 3 semester hours. Second semester and summer.
Study of the developmental characteristics of later childhood as a basis for guidance. Field work arranged. Prerequisite: Ch. Welf. 201.

205. Nursery School Procedures. 3 semester hours. Second semester.
Supervised participation in the nursery school with opportunity for planning and directing the program. Six hours of laboratory and one hour of conference. Prerequisite: Ch. Welf. 203.

207. Literature and Music for the Preschool Child. 3 semester hours. Second semester and alternate summers (Summer, 1951).
Children's creative experiences with stories, songs, records and dramatized play. Two hours of recitation and three hours of laboratory. Prerequisite: Ch. Welf. 201.

208. Play Activities and Materials. 3 semester hours. First semester and alternate summers (Summer, 1950).

The young child's use of space and equipment, toys, plastic and graphic materials, with emphasis upon play experiences which will contribute to the needs of individual children. Two hours of recitation and three hours of laboratory. Prerequisite: Ch. Welf. 201.

211. Family Health. 3 semester hours. Each semester and summer.

Factors conducive to family and community health; physical development from prenatal period through infancy; care of the well and ill child. Simple first aid and home nursing procedures. Prerequisite: Junior standing.

218. Family Relationships. 2 semester hours. Each semester and summer.

Effects of family interaction upon individual development; consideration of premarital, marital, and parent-child relationships. Prerequisite: Junior standing.

220. The Family. 3 semester hours. Each semester and alternate summers (Summer, 1951).

Contemporary social conditions affecting family functions; the culture and individual development; application of democratic philosophy to family relationships. Prerequisite: Ch. Welf. 218.

221. Problems in Child Welfare and Euthenics. Credit to be arranged. Each semester and summer.

Students writing a master's report enroll in this course. Prerequisite: Consult head of department.

245. Seminar in Child Development. 2 semester hours. First semester and alternate summers (Summer, 1950).

Interpretation and evaluation of research relating to the field of child development. Intended primarily for graduate students but open to others with consent of head of department. Prerequisite: Ch. Welf. 203.

246. Seminar in the Family. 2 semester hours. Second semester and alternate summers (Summer, 1951).

Interpretation and evaluation of research relating to interaction of family members. Intended primarily for graduate students but open to others with consent of head of department. Prerequisite: Ch. Welf. 220.

FOR GRADUATE CREDIT

301. Research in Child Welfare and Euthenics. Credit to be arranged. Each semester and summer.

Individual research problems which may form the basis for the master's thesis. Consult head of department.

303. Parent Education. 2 semester hours. Second semester and alternate summers (Summer, 1951).

Summary of principles in child development and family relationships; application of these principles to group and individual work with parents; organization of materials in a resource unit. Prerequisite: Ch. Welf. 203, 220.

305. Nursery School Administration. 2 semester hours. First semester and alternate summers (Summer, 1950).

Survey of development of the nursery school; consideration of administrative problems, such as physical plant, equipment, records, standards and personnel in relation to the objectives of the nursery school. Prerequisite: Ch. Welf. 203 or concurrent.

Clothing and Textiles

ALPHA C. LATZKE, *Head of Department*

The Department of Clothing and Textiles offers courses designed to furnish essential knowledge concerning consumer problems in clothing and textiles. Instruction is provided for students who wish to prepare for vocational, professional, and business positions, such as teachers, extension workers, research workers, textile chemists, clothing consultants, and purchasing agents for institutions and department stores.

FOR UNDERGRADUATE CREDIT

104. Fundamentals of Clothing. 2 semester hours. Each semester.
A study of commercial patterns and principles of garment construction. Six hours of laboratory a week.

107. Selection of Clothing. 2 semester hours. Each semester.
Selection of clothing with personal analysis as the basis; wardrobe planning and buying procedures. Prerequisite or parallel: Art 164.

114. Applied Dress Design. 3 semester hours. Each semester and summer.
Application of design principles to dress. Development of foundation pattern; flat pattern designing; construction of a dress. Nine hours of recitation and laboratory a week. Prerequisite: Clo. Text. 104 or 107, Art 164.

117. Textiles. 2 semester hours. Each semester and summer.
Fundamentals of textiles as related to the problems of the consumer. One hour of recitation and three hours of laboratory a week. Prerequisite: Chem. 122 or Compr. 102.

FOR GRADUATE AND UNDERGRADUATE CREDIT

201. Clothing Economics. 3 semester hours. Second semester and summer.
The organization of textile industries and markets; consumer problems in relation to market conditions. Prerequisite: Compr. 122 or equivalent.

204. Intermediate Textiles. 2 semester hours. Second semester and alternate summers.
Nontechnical study of current developments in textiles. Prerequisite: Clo. Text. 117.

205. Advanced Textiles. 3 semester hours. First semester and summer.
Physical, chemical and optical testing of textiles, emphasis placed on research techniques. One hour of recitation and six hours of laboratory a week. Prerequisite: Clo. Text. 117, Chem. 122.

211. Advanced Dress Design. 3 semester hours. Each semester and summer.
Social significance of fashion; application of design to dress. Designs draped in cotton and then completed in suitable material. Nine hours of recitation and laboratory a week. Prerequisite: Clo. Text 114.

214. Problems in Clothing Design. 3 semester hours. Each semester and summer.
Design as related to the coat or suit; techniques of tailoring; construction of coat or suit. Nine hours of recitation and laboratory a week. Prerequisite: Completion of Clo. Text. 114 with at least a grade of C; Clo. Text. 211 recommended.

215. Problems in Clothing and Textiles. 1 to 5 semester hours. Each semester and summer.
Consult instructor. Prerequisite: Senior or graduate standing.
Work is offered in: Garment designing; construction techniques, textiles, history of costume, clothing economics.

226. History of Costume. 3 semester hours. Each semester and alternate summers.

Aspects of the culture of various countries and periods of history as reflected in costume. Prerequisite: Compr. 131, Hist. 106 or equivalent.

250. Clothing and Textiles Summary. 2 semester hours. Second semester and alternate summers.

Summarization and correlation of information from courses in Clothing and Textiles and their application to the family's clothing needs. One hour of recitation and three hours of laboratory a week. Prerequisite: Clo. Text. 117, 211 or consult instructor.

255. Experimental Textiles. 2 to 5 semester hours. Each semester and summer.

Prerequisite: Clo. Text. 205.

FOR GRADUATE CREDIT

301. Research in Clothing and Textiles. 1 to 6 semester hours. Each semester and summer.

Research in clothing or in textiles which may form the basis for the master's thesis. Consult instructor for time of meeting. Prerequisite: Graduate standing.

304. Clothing and Textiles Seminar. 1 semester hour. Second semester and alternate summers (1950).

Discussion of current developments in the field. Prerequisite: Graduate standing.

Foods and Nutrition

GLADYS E. VAIL, *Head of Department*

The Department of Foods and Nutrition provides specialized instruction for homemakers, teachers of foods, and dietitians, and for commercial, extension, and research workers. It also gives courses designed for those whose major interest is outside the field of home economics.

FOR UNDERGRADUATE CREDIT

102. Foods I. 5 semester hours. Each semester and summer.

Elementary nutrition, principles of food preparation and food economics. Experience in food preparation and meal service. Three hours of recitation and six hours of laboratory a week.

103. Meal Planning, Preparation, and Service. 3 semester hours. Spring semester.

Consideration given to problems involved in the selection of foods and the planning, preparation and serving of meals. Emphasis on organization, management of time, money and energy. Not open to students having credit in Foods and Nutrition 102. Two hours of recitation and three hours of laboratory a week. Prerequisite: Three hours credit in food preparation. Consult instructor.

107. Foods II. 3 semester hours. Each semester and summer sessions in odd numbered years.

Chemical and physical properties of food related to preparation and preservation. One hour of recitation and six hours of laboratory a week. Prerequisite: Chem. 122 or Compr. 102 and Fds. Nutr. 102 or 103.

121. Applied Nutrition. 2 semester hours. Each semester and summer.

Practical nutrition including food requirements, food selection, and food habits. Also open to men and women students not majoring in home economics.

176. Meats H. E. 1 semester hour. Each semester.
See An. Husb. 176, Department of Animal Husbandry, School of Agriculture.

FOR GRADUATE AND UNDERGRADUATE CREDIT

205. Dietetics for Abnormal Conditions. 2 semester hours. Each semester and summer sessions in even numbered years.
Food requirements in pathological conditions. Special diets, preparation of trays, computation of dietaries, consideration of costs. One hour of recitation and three hours of laboratory a week. Prerequisite: Fds. Nutr. 206.

206. Nutrition and Dietetics. 5 semester hours. Each semester.
Chemistry of foods and nutrition; emphasizing food nutrients, digestion, and metabolism. Food requirements during normal infancy, childhood, adolescence, adult life, and old age. Adequate diets at different economic levels. Prerequisite: Fds. Nutr. 107, Zoöl. 219 or 221,* or Compr. 112. Not open to students having credit in Fds. Nutr. 208.

207. Nutrition and Dietetics Laboratory. 1 semester hour. Each semester and summer.
Energy, protein, mineral, and vitamin computations. Normal diets for infants, children, and adults. Three hours of laboratory a week. Concurrent: Fds. Nutr. 206 or 208.

208. General Nutrition. 3 semester hours. Spring semester and summer.
Digestion, metabolism, and nutritive value of foods. Protein, mineral, vitamin, and energy needs of the body. Also open to men and women students not majoring in home economics. Prerequisites: Chem. 122 or 125, or Fds. Nutr. 107, Zoöl. 221 or 222,* or Compr. 112. Not open to students having credit in Fds. Nutr. 206.

210. Nutrition of Development. 2 semester hours. Second semester and summer sessions in odd numbered years.
Nutrition in pregnancy and lactation. Food requirements of fetus, infant, preschool and through adolescence. Prerequisite: Fds. Nutr. 206, 208, or consent of head of department.

215. Field Work in Nutrition. 3 semester hours. Each semester.
Survey of field of child nutrition, field work with school children, special work with individual children. Two hours of recitation and three hours of laboratory a week. Prerequisite: Fds. Nutr. 206, 208 or consent of head of department.

245. Problems in Foods. Credit to be arranged. Each semester and summer.
Problems dealing with preparation and preservation of food. Three hours of laboratory a week for each hour of credit. Prerequisite: Senior or graduate standing. Consult head of department.

253. Seminar in Foods. 2 semester hours. First semester and summer sessions in even numbered years.
Individual reports and discussion of topics in fields of foods, food economics, and food research. Prerequisite or concurrent: Fds. Nutr. 255.

254. Seminar in Nutrition. 2 semester hours. Each semester and summer sessions in odd numbered years.
Individual reports and discussion of topics in field of nutrition. Prerequisite: Fds. Nutr. 206 or 208.

255. Experimental Cookery. 2 semester hours. Each semester and summer sessions in odd numbered years.
Food preparation from the experimental standpoint. Six hours of laboratory a week. Prerequisite: Fds. Nutr. 107 and at least second semester junior standing.

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* Students from other schools in the College may substitute an equivalent number of hours in other science for these prerequisites.

256. **Fundamentals of Demonstrations.** 2 semester hours. Second semester.
Objectives and techniques of demonstrations in foods with emphasis upon their use in the business field. Six hours of laboratory a week. Prerequisites: Fds. Nutr. 255, Hhld. Econ. 105, or Inst. Mgmt. 111, and Educ. 132, 133, or 216.

258. **Problems in Nutrition.** Credit to be arranged. Each semester and summer.
Problems dealing with the nutritive value of foods, animal experimentation, dietary studies, practice in methods commonly used in simple experiments in nutrition. Three hours of laboratory a week for each hour of credit. Prerequisite: Senior or graduate standing; consult instructor.

261. **Advanced Nutrition.** 3 semester hours. First semester and summer sessions in even numbered years.
A study of the more complex phases of the metabolism of food within the body. Prerequisites: Chem. 240, Zoöl. 221,* Fds. Nutr. 206 or equivalent; senior or graduate standing.

270. **Advanced Foods I.** 3 semester hours. First semester.
Fundamental principles and practices of food preparation approached through applied organic and colloidal chemistry. Egg cookery, emulsions, freezing, batters and doughs will be considered. Two hours of recitation and 3 hours of laboratory a week. Prerequisite: Fds. Nutr. 107. Chem. 224 or 240; senior or graduate standing.

FOR GRADUATE CREDIT

305. **Research in Foods and Nutrition.** Credit to be arranged. Each semester and summer.
Individual research problem which may be the basis for a master's thesis. Three hours a week for each hour of credit. Prerequisite: Consult instructor.

307. **Advanced Foods II.** 3 semester hours. Second semester.
A continuation of Advanced Foods I. Starches, protein cookery, fats, and oils will be considered. Two hours of recitation and 3 hours of laboratory a week. Prerequisite: Fds. Nutr. 270.

308. **Research Technics in Nutrition.** 3 semester hours. First semester.
Fundamental technics relating to energy, protein, mineral, and vitamin metabolism. One hour of recitation and 6 hours of laboratory a week. Prerequisite: Fds. Nutr. 261.

309. **Graduate Seminar in Foods and Nutrition.** 1 semester hour. Each semester.
Discussion of investigations and other matters of interest in foods and nutrition. Required of all graduate students in foods and nutrition. May be taken for four semesters for credit.

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* Students from other schools in the College may substitute an equivalent number of hours in other science for these prerequisites.

Courses in Home Economics Education*

LUCILE O. RUST, *Head of Department*

FOR UNDERGRADUATE CREDIT

132. Methods of Teaching Home Economics. 3 semester hours. Each semester and summer.
Prerequisite: Clo. Text. 114, Fds. Nutr. 102, 107; prerequisite or concurrent: Educ. 109.

133. Methods of Teaching for Dietetic Students. 3 semester hours. Each semester.
Prerequisite: Inst. Mgmt. 101 or Fds. Nutr. 206 or concurrent registration.

159. Teaching Participation in Home Economics. 3 to 5 semester hours. Each semester and summer.
Prerequisite: Completion of one home project and Educ. 132.

FOR GRADUATE AND UNDERGRADUATE CREDIT

233. The Vocational Home Economics Curriculum. 3 semester hours. Each semester and summer.
Prerequisite: Educ. 132 or concurrent registration.

234. Methods in Adult Homemaking Classes. 1 to 3 semester hours. Summer.
Prerequisite: Educ. 132 or equivalent.

248. Problems in Education. Credit to be arranged. Each semester and summer.
Prerequisite: Educ. 139 and approval of instructor. Work is offered in Home Economics Education.

FOR GRADUATE CREDIT

313. Research in Organization and Presentation of Home Economics. Credit to be arranged. Each semester and summer.

314. Organization and Presentation of Home Economics. Credit to be arranged. Each semester and summer.

315. Supervision in Home Economics. 2 semester hours. Second semester and summer.
Prerequisite: Educ. 159 and experience in teaching home economics.

318. Seminar in Home Economics Education. 2 or 3 semester hours. Second semester and summer.
Prerequisite: Educ. 159 and experience in teaching home economics.

325. Research in Education. Credit to be arranged. Each semester and summer.
Prerequisite: At least two courses in this department and approval of instructor. Work is offered in Home Economics Education.

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* The eleven courses named here are given by the Department of Education and Psychology for the School of Home Economics. The staff is appointed coöperatively by that department and the School of Home Economics.

General Home Economics

MARGARET M. JUSTIN, *Head of Department*

FOR UNDERGRADUATE CREDIT

122. Home Economics Lectures. R (meetings by appointment).
Required each semester of students enrolled for ten or more credit hours. Students meet for orientation, for vocational guidance, for consideration of professional opportunities and responsibilities, and for special interest programs, in groups arranged according to classification and curriculum.

135. Guidance of Freshmen. 1 semester hour. First semester.
Instruction in counseling techniques employed in freshman orientation in the School of Home Economics. Prerequisite: Junior or senior standing and special permission from the dean. Application for enrollment in this class must be made in the preceding spring semester.

138. Introduction to Home Economics. 4 semester hours.
Consideration of adjustment to college living, including aspects of health, personal appearance, human relationships and management of time and money. Open only to freshmen in School of Home Economics. Credit not available for those who have had Ch. Welf. 101 or Clo. Text. 113.

143. Home and Family Life. 4 semester hours. Each semester.
Consideration of certain aspects of family living including personality development, family relationships and the development of a sound philosophy of dress. Three hours of recitation and three hours of laboratory a week. No prerequisite. For nonmajors.

146. Home and Family Life II. 4 semester hours. Each semester.
Consideration of problems in the selection and management of the home and its decoration; health; nutrition; food preparation including meal planning and service. Two hours of recitation and six hours of laboratory a week. No prerequisite. A general course for nonmajors.

Household Economics

FLORENCE E. MCKINNEY, *Head of Department*

Through the courses in the Department of Household Economics an opportunity is offered to study the management of family resources—personal qualities, time, energy, money, house furnishings, equipment, and others—in the attainment of family goals, and to consider the effect of social and economic forces on the home and its management. Graduate students preparing to become advisers in home management houses, home management specialists in extension, teachers and research workers in these fields, and homemakers find suitable courses in this department.

FOR UNDERGRADUATE CREDIT

102. Family Finance. 2 semester hours. Each semester and summer.
Financial problems involved in the effective management of the family's resources.

105. Household Equipment. 2 semester hours. Each semester.
Selection, use, and care of certain furniture and equipment used in the home. Four hours of recitation and laboratory a week. Prerequisite: Fds. Nutr. 102.

115. The House. 3 semester hours. Each semester and summer.
A consideration of dwellings, their environment, plans, and space requirements, which promote effective utilization of family resources. Six hours of recitation and laboratory a week. Prerequisite: Sophomore standing.

FOR GRADUATE AND UNDERGRADUATE CREDIT

240. Home Management. 3 semester hours. Each semester and summer.
The application of principles related to satisfying home life. Opportunity is provided for experience in group living and for management in houses operating on two different income levels. The period of residence in home management houses is one-half of a semester, the equivalent of one hour of recitation and six hours of laboratory a week for one semester. Arrangements must be made in advance for living in the house. Prerequisite: Senior standing, or consult instructor.

243. Problems in Household Economics. Credit to be arranged. Each semester and summer.
Individual investigation in standards of living and family expenditures; housing and household equipment; time and motion study; and use of family resources. Prerequisite: Consult instructor.

257. Time and Motion in Household Tasks. 2 semester hours. Second semester and alternate summers.
The application of the principles of motion economy in the performance of certain household tasks to promote the more effective use of time and energy. One hour of recitation and two hours of laboratory a week. Prerequisite: Junior standing.

265. Economic Problems of the Family. 2 semester hours. First semester and alternate summers.
Study of incomes, investments, and debts, factors determining cost of living; economic problems requiring social action; criteria for appraising plans for improvement of levels of living. Prerequisite or parallel: Compr. 122 or consult instructor.

272. Consumers and the Market. 3 semester hours. First semester and summer.
Problems of the consumer in the present market, market practices, aids toward intelligent buying of commodities, and the types of protection, including legislation. Field trip out of town. Prerequisite or parallel: Compr. 122 and junior standing.

273. Housing Requirements of Families. 2 semester hours. First semester and alternate summers.
Housing requirements of families as influenced by their interests, activities, and socio-economic status; effective ways of meeting these requirements in homes in this area. Six hours of recitation and laboratory a week. Field trips. Prerequisite: Hhld. Econ. 105, 115; senior or graduate standing.

274. Advanced Household Equipment. 3 semester hours. Second semester and atlernate summers.
Fundamental principles underlying the operation and construction of certain household equipment; demonstrations of the practical use of equipment. Six hours of recitation and laboratory a week. Prerequisite: Hhld. Econ. 105, Phys. 109, senior or graduate standing.

276. Home Management Summary. 2 semester hours. Each semester and alternate summers.
Investigations of the use of family resources in phases of home administration, directed toward integration of acquired knowledge, understandings, and appreciation, and the application of the unified concepts to current management problems. Prerequisite: Senior or graduate standing.

281. Seminar in Household Economics. 1 to 3 semester hours. Each semester and summer.

A review of research literature; trends in the field of household economics; the contribution of the area to the family and community. Prerequisite: Senior or graduate standing.

FOR GRADUATE CREDIT

305. Economics of Consumption. 2 semester hours. Second semester and alternate summers (1951).

A study of consumption from the point of view of human welfare. Prerequisite: Compr. 122, Hhld. Econ. 102 and/or 265.

310. Researcsh in Household Economics. Credit to be arranged. Each semester and summer.

Individual research problems which may form the basis for the master's thesis. Prerequisite: Consult instructor.

Institutional Management

Bessie B. West, *Head of Department*

The Department of Institutional Management provides instruction for those preparing to become school lunchroom managers, or to become dietitians in hospitals, college residence halls, or college, school, commercial, or industrial food service units.

FOR GRADUATE CREDIT

107. Quantity Food Preparation I. 2 semester hours. Each semester and summer.

Introduction into various areas of institutional management. Food problems of institutions including preparation and serving foods in large quantity. The campus food units will be used as laboratories for this course. One hour of recitation and four hours of laboratory a week. Prerequisite: Fds. Nutr. 107.

109. Quantity Food Preparation II. 3 semester hours. Each semester and summer.

Food problems of institutions including preparation and serving foods in large quantity, menu planning, and food costs. The campus food units will be used as laboratories for this course. One hour of recitation and six hours of laboratory a week. Prerequisite: Inst. Mgmt. 107.

111. Institutional Purchasing. 3 semester hours. Each semester and summer.

Selection, arrangement, installation, and care of various types of equipment for institutional food service departments. Selection and methods of purchasing foods in large quantities. Prerequisite or concurrent: Inst. Mgmt. 109.

FOR GRADUATE AND UNDERGRADUATE CREDIT

203. Organization and Management of Institutions. 3 semester hours. Each semester.

Problems involved in the organization and management of food service units. Women's residence hall or equivalent facilities are used for observation and study. Residence in the hall concurrent with this course is required unless a satisfactory substitute can be arranged with the Committee on Dietetic Education. Prerequisite (or concurrent for graduate students): Inst. Mgmt. 109.

204. Organization and Management of Institutions Laboratory. 2 semester hours. Each semester.

Women's residence hall to be used as laboratory. Six hours of laboratory a week. Prerequisite (or concurrent for graduate students): Inst. Mgmt. 109.

210. Problems in Institutional Management. Credit to be arranged. Each semester and summer.

Individual investigation of problems in institutional management. Conferences and reports at appointed hours. Prerequisite or concurrent: Inst. Mgmt. 203, 204. Consult instructor.

214. Institutional Purchasing II. 3 semester hours. Alternating semesters and summer school.

Advanced studies of the principles of purchasing equipment and food for institutions. Two hours of recitation and three hours of laboratory a week. Prerequisite: Inst. Mgmt. 111 or 221.

221. School Food Service. 3 semester hours. Each semester and summer.

Consideration given to problems of the school lunch and special meals, including the organization, administration, purchase of food and equipment, food costs, and menu planning. Two hours of recitation and three hours of laboratory a week. Not open to students with credit in Institutional Management 107 or 109. Prerequisite: Fds. Nutr. 107.

226. Tea Room Management Recitation. 1 semester hour. First or second semester.

Problems involved in organization and management of tea room food service. One hour of recitation each week. Prerequisite or concurrent: Inst. Mgmt. 203, 204.

227. Tea Room Management Laboratory. 2 semester hours. First or second semester.

Practical experience in preparing and serving food to the public. The College Tea Room serves as a laboratory for this course. Six hours of laboratory a week. Prerequisite or concurrent: Inst. Mgmt. 203, 204.

250. Seminar in Institutional Management. 2 semester hours. Alternating semesters and summer school.

A review of literature and trends in institutional management as applied to various types of institutions. Prerequisite: Senior or graduate standing.

FOR GRADUATE CREDIT

301. Research in Institutional Management. Credit to be arranged. Each semester and summer.

Prerequisite: Consult instructor.

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 in 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, foods, food economics, household administration, institutional management, human nutrition, dietetics, and public health.

The laboratories of the School 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 schools of the College advise or collaborate with officers of the bureau on problems of related interest.

Among the investigations in progress are the following:

**The Effect of Different Frozen Storage Temperatures upon Certain Characteristics of Meat. I. Pork.

**The Utilization of Dried and Frozen Egg Products in Foods.

*Meat Investigations. Subproject. Factors Influencing the Vitamin-B-complex Content of Meat.

*Factors Affecting the Quality and Nutritive Value of Fruits and Vegetables Preserved by Freezing.

*The Nutritional Status of College Women as Related to Their Dietary Habits: Subproject II. A Study of the Basal Metabolism of Women and Girls of Varying Ages in Kansas.

*Subproject VI. A Study of the Vitamin C Status of College Women.

**The Effect of Freezing and Refrigerated Storage on the Quality of Precooked Foods. I. Meat.

*Vitamin Content of Foods in Relation to Human Nutrition.

*An Investigation of the Effect upon the Animal Body of Varying the Amount of Vitamin in the Diet.

*The Influence of Electromagnetic Radiation on the Ascorbic Acid Content of Plants.

*Nutritional Status and Dietary Needs of Population Groups in North Central Region: Subproject. Nutritional Status of School Children as Influenced by the School Lunch Program.

*Factors Influencing the Keeping Quality and Nutritional Value of Frozen Meat: Subproject I. Methods of Handling Pork prior to Storage. Subproject II. The Relation of Packaging Material to the Keeping Quality of Frozen Pork.

**The Utilization of Turkey and Turkey Products as Food.

**The Performance of Eggs and Egg Products and Their Use in Foods.

**The Nutritional Significance of the Use of Enriched Flour and Cereals.

*The Serviceability of a Cotton Fabric Used for Utility Garments as Affected by Laundering with Certain Detergents.

*Effect on the Service Qualities of Cloth of Insecticides Recommended for Protection Against Clothing Pests or Insects and Mites That Attack People.

Expenditure for Clothing by College Women.

*Service Qualities of Household Fabrics.

Studies on Group Relationships.

Parents' Attitudes and Practices in Relation to Their Children.

Case Studies of Children and Adults.

Principles of Guidance Based on Situational Analysis.

*Studies of Income and Living Costs of Certain Kansas Families.

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* Projects supported by funds from the Agricultural Experiment Station.

** Projects supported by either commercial or industrial funds.

The School of Veterinary Medicine

Elden E. Leasure, *Dean*
Ralph R. Dykstra, *Dean Emeritus*
Maxine Caley, *Assistant to the Dean*

VETERINARY ENROLLMENT LIMITED

By authority of the State Board of Regents, enrollment in the Curriculum in Veterinary Medicine is limited to a total of 200 students. Persons wishing to enter this curriculum should apply for admission to the Dean of the School in Veterinary Medicine is limited to a total of 200 students. Persons wishing years is based on the applicant's scholarship record and other evidence of his fitness. When all other factors are equal, first preference is given to applicants who are residents of Kansas, and second preference to applicants who are residents of those states having no standard college of veterinary medicine. In general, no requests for admission will be approved after June 15. Application blanks may be obtained from the Dean of the School of Veterinary Medicine after February 15.

The College is authorized to require each nonresident of Kansas filing an application for selection as a student in the School of Veterinary Medicine to deposit the amount of the nonresident matriculation fee, which at present is $20. If the application for selection is approved by the Committee on the Selection of Veterinary Students, the deposit is to be applied when the student enrolls as payment of the usual matriculation fee required of non-residents, or in the case of those non-residents who have been previously enrolled in the College—though not as students of Veterinary Medicine—is to be applied on other fees. If the applicant is not approved by the Committee on the Selection of Veterinary Students, the deposit is to be returned to him in full. If an approved nonresident applicant does not present himself for registration within ten days after the opening of the next semester following the date of the receipt of the application, 50 percent of the deposit will be forfeited to the College.

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Applicants must offer: (1) The high school units required for admission to the preveterinary adaptation of the freshman year of the Curriculum in Arts and Science; (2) sixty-seven hours of college work as prescribed in or equivalent to the two preveterinary years in the School of Arts and Sciences. This work may be done here or in any approved junior college, college, or university, although it is preferred that the second preveterinary year be completed at this college.

VETERINARY READING ROOM

As a result of generous contributions from alumni and friends of the School of Veterinary Medicine, the veterinary school has a well equipped reading room consisting of approximately 4,500 volumes which deal with all phases of veterinary medical literature and many allied fields. Veterinary students are permitted admission to the reading room at any hour during the day.

FEES

	Kansas residents and staff members	*Nonresidents*
1. *Assessments:*		
A. Matriculation	$10.00	$20.00
B. A Semester:		
Student Health	7.50	7.50
Student Union	5.00	5.00
Summer Session, Recreation Fee	2.00	2.00
C. Incidental Fee:		
Veterinary Medicine Students	60.00	110.00

2. *Refund Policy:*
See General Statement, p. 24
3. *Other Fees:*
See General Statement, pp. 22-25

CURRICULUM IN VETERINARY MEDICINE

The Curriculum in Veterinary Medicine in Kansas State College was established to give the young men of this state an opportunity to pursue these studies in an agricultural environment, where the facilities offered by other branches of the College would be at their command. Better to fit the veterinarian to deal wisely with the livestock problems which he has to meet, he is required to take the work in livestock feeding, breeding, and judging, in milk inspection, and in zoölogy, in addition to his purely professional work.

Work must be taken as prescribed, except that certain courses may be selected from the list of extracurricular electives if the student has the prerequisites.

Curriculum in Veterinary Medicine

Effective for graduation in 1950, 1951, and 1952 only.

FIRST YEAR

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Comp.	121	Man and Soc. World I	4	Comp.	122	Man and Soc. World II	4
P. H.	101	Fm. Poul. Prod.	2	Anat.	114	Anatomy II	6
Anat.	113	Anatomy I	6	Path.	106	Histology II	3
Path.	104	Histology I	3	Physiol.	222	Comp. Physiol I	4
Chem.	243	Physiol. Chem.	3	Mil. Sc.	104	Infantry IV	1
Mil. Sc.	103	Infantry III	1	Phys. Ed.	103	Physical Education	R
Phys. Ed.	108	Physical Education	R				
Total			19	Total			18

SECOND YEAR

First Semester				Second Semester			
Bact.	103	Vet. Microbiology	3	Bact.	112	Path. Bact. and Virology	4
Physiol.	227	Comp. Physiol. II	4	Path.	208	Pathology II	4
Path.	203	Pathology I	5	Physiol.	230	Pharmacodynamics	3
Zoöl.	208	Animal Parasitology	3	Surg.	158	Mat. Medica	4
A. H.	126	El. of Animal Husb.	2	A. H.	190	Livestock Feeding	3
A. H.	127	Livestock Judging	1	D. H.	104	Dairy Cat. Judg. for Vet. Stud.	1
Total			18	Total			19

THIRD YEAR

First Semester				Second Semester			
Path.	235	Applied Vet. Paras.	3	Path.	211	Pathology III	3
Bact.	117	Vet. Immunology	3	Surg.	109	Surgery II	4
Bot.	126	Med. Botany	2	Surg.	130	Obst. and Breed. Dis.	5
Surg.	108	Surgery I	4	Surg.	142	Clinics II	1
Surg.	163	Therapeutics	3	Surg.	111	Dis. of Lrg. Animals I	4
Surg.	139	Clinics I	1	Anat.	115	Topographic Anatomy	1
Surg.	110	Diagnosis	2	V. M.	102	Jr.-Sr. Conf.	R
V. M.	101	Jr.-Sr. Conf.	R				
Total			18	Total			18

FOURTH YEAR

First Semester				Second Semester			
Surg.	112	Surg. Exercises	1	Surg.	181	Inf. Dis. of Lrg. Animals	5
Surg.	113	Dis. of Lrg. Animals II	4	Bact.	217	Poultry Diseases	2
D. H.	119	Dairy Insp. for Vet. Stu.	2	Path.	218	Food Hyg. and Pub. Health	5
Path.	215	Pathology IV	3	Surg.	191	Med. Econ. and Law	2
Surg.	114	Sm. Animal Surgery	2	Surg.	147	Clinics IV	4
Surg.	144	Clinics III	4	Path.	226	Clinical Path. II	R
Surg.	186	Dis. of Small Animals	2	Surg.	132	Gynecology (½ class)	R
Path.	225	Clinical Path. I	R	V. M.	104	Jr.-Sr. Conf.	R
Surg.	132	Gynecology (½ class)	R				
V. M.	103	Jr.-Sr. Conf.	R				
Total			18	Total			18

Number of hours required for graduation: Women, 144; men, 146.

Curriculum in Veterinary Medicine

Effective for graduation in 1953 and thereafter.

For admission requirements to this curriculum consult the "Preveterinary Curriculum," page 116.

The two-year Preveterinary Curriculum (page 116) and this curriculum lead to the two degrees Bachelor of Science and Doctor of Veterinary Medicine.

FIRST YEAR

First Semester				Second Semester			
		Course	*Sem. Hrs.*			*Course*	*Sem. Hrs.*
Bact.	103	Vet. Microbiology	3	Bact.	112	Path. Bact. and Virology	4
Anat.	109	Anatomy I	7	Anat.	114	Anatomy II	6
Path.	104	Histology I	3	Path.	106	Histology II	3
A. H.	126	Els. of A. H. Rec.	2	Phys.	222	Comp. Physiol. I	4
A. H.	129	Els. of A. H. Lab.	1	D. H.	104	Dairy Cattle Judg.	1
		Electives	2 *or* 3				
Engl.	169	English Profic.	R				
Total			18 or 19	Total			18

SECOND YEAR

First Semester				Second Semester			
Bact.	117	Vet. Immunology	3	Phys.	201	Special Physiology	2
Phys.	227	Comp. Physiol. II	4	Path.	203	Pathology I	5
Zoöl.	208	Ani. Parasitology	3	Phys.	230	Pharmacodynamics	3
Bot.	126	Medical Botany	2	Surg.	158	Materia Medica	4
Chem.	246	Physiological Chem.	5	A. H.	190	Livestock Feeding	3
Total			17	Total			17

THIRD YEAR

First Semester				Second Semester			
Path.	208	Pathology II	4	Path.	211	Pathology III	3
Path.	235	App. Vt. Parasitology	3	Surg.	109	Surgery II	4
Surg.	108	Surgery I	4	Surg.	130	Obst. and Breed. Dis.	5
Surg.	163	Therapeutics	3	Surg.	142	Clinics II	1
Surg.	139	Clinics I	1	Surg.	111	Dis. of Lrg. Animals I	4
Surg.	110	Diagnosis	2	Anat.	115	Topographic Anatomy	1
V. M.	101	Jr.-Sr. Conf.	R	V. M.	102	Jr.-Sr. Conf.	R
Total			17	Total			18

FOURTH YEAR

First Semester				Second Semester			
Surg.	112	Surg. Exercises	1	Surg.	181	Inf. Dis. of Lrg. Animals	5
Surg.	113	Dis. of Lrg. Animals II	4	Bact.	217	Poultry Diseases	2
D. H.	119	Dairy Inspection for Vet. Students	2	Path.	218	Food Hygiene and Pub. Health	5
Path.	215	Pathology IV	3	Surg.	191	Med. Econ. and Law	2
Surg.	114	Sm. Animal Surgery	2	Surg.	147	Clinics IV	4
Surg.	144	Clinics III	4	Path.	226	Clinical Path. II	R
Surg.	186	Dis. of Sm. Animal	2	V. M.	104	Jr.-Sr. Conf.	R
Path.	225	Clinical Path. I	R				
V. M.	103	Jr.-Sr. Conf.	R				
Total			18	Total			18

Number of hours required for graduation, 141-142.

Extracurricular Electives

FIRST OR SECOND SEMESTER

Anat.	206	Applied Anatomy	1 semester hour
Anat.	202	Special Anatomy	2-4 semester hours
Physiol.	215	Problems in Physiology	Credit to be arranged
Physiol.	228	Urine Analysis	1 semester hour
Path.	222	Pathological Technic and Diagnosis I	2 to 5 semester hours
Path.	223	Pathological Technic and Diagnosis II	2 to 5 semester hours
Path.	302	Research in Pathology	Credit to be arranged
Surg.	150	Extra Clinics	1 semester hour
Surg.	301	Research in Surgery	Credit to be arranged
Surg.	310	Research in Medicine	Credit to be arranged
Mil. Sc.	154-161	Mil. I-VIII (Vet. Med.)	1-8 semester hours

VETERINARY R. O. T. C.

Students in Veterinary Medicine may elect to take the Veterinary R. O. T. C. program consisting of four hours' basic credit and four hours' advanced credit. Those students electing the advanced courses will be compensated by the U. S. Government at the rate of 90 cents per day for the period beginning with the third year and ending at graduation. Each student will also receive a daily allowance of $2.50 for the required attendance at a six weeks' summer camp. All expenses incident to attendance at the camp including travel, board, and lodging will be defrayed by the Army. Upon satisfactory completion of the advanced courses, at graduation each student will be commissioned an officer in the U. S. Army Veterinary Corps Reserve. See Department of Military Science and Tactics, p. 166.

Anatomy

WILLIAM M. MCLEOD, *Head of Department*

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.

FOR UNDERGRADUATE CREDIT

***109. Anatomy I.** 7 semester hours. First semester.
A brief study of descriptive terms and osteology of the domestic animals. Dissection of either the thoracic limb and thorax or the pelvic limb and abdomen of the horse. Three hours of recitation and twelve hours of laboratory a week.

113. Anatomy I. 6 semester hours. First semester.
A brief study of descriptive terms and osteology of the domestic animals. Dissection of either the thoracic limb and thorax or the pelvic limb and abdomen of the horse. Three hours of recitation and nine hours of laboratory a week.

114. Anatomy II. 6 semester hours. Second semester.
Dissection of either the thoracic limb and thorax or the pelvic limb and abdomen and head and neck of the horse. Dissection and demonstration of the body cavities and certain superficial regions of other domestic animals. Two hours of recitation and twelve hours of laboratory a week. Prerequisite: Anat. 113.

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* Course 109 replaces course 113 for 1953 and later graduation.

115. Topographic Anatomy. 1 semester hour. Second semester.
Dissection and demonstration of regions of diagnostic and surgical importance of the domestic animals. Three hours of laboratory a week. Prerequisite: Junior standing in Veterinary Medicine. Staff.

FOR GRADUATE AND UNDERGRADUATE CREDIT

202. Special Anatomy. 2 to 4 semester hours. Each semester and summer.
The study of any part of the horse (as the digestive or reproductive system), ox, sheep, pig, dog, cat, or poultry. Prerequisite: Anat. 113, 114, Physiol. 131 or equivalent. Staff. Adapted to the work in which the student is specializing.

206. Applied Anatomy. 1 semester hour. First semester.
Dissection of certain areas embraced in performing the various surgical operations, and the study of all the structures in each area and their relation to one another as they would present themselves during an operation. Three hours of laboratory a week. Prerequisite: Anat. 114.

Physiology

GRAVERS K. L. UNDERBJERG, *Head of Department*

The Department of Physiology presents courses in comparative physiology, problems in physiology, urine analysis, pharmacodynamics, and anatomy and physiology. Instruction is by lectures, recitation, laboratory work, and demonstrations. The department is especially well equipped for resident instruction and research.

FOR UNDERGRADUATE CREDIT

131. Anatomy and Physiology. 3 semester hours. First semester.
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. Two hours of recitation and three hours of laboratory a week. Adapted to students majoring in Animal Husbandry.

FOR GRADUATE AND UNDERGRADUATE CREDIT

***201. Special Physiology.** 2 semester hours. Second semester.
The study of special phases of the physiology of domestic animals, especially reproduction, endrocrine function, nutrition and senses. Prerequisite: Physiol. 227.

215. Problems in Physiology. Credit to be arranged. Each semester.
Individual investigational problems in the physiology of digestion, reproduction, endocrine glands, etc. Prerequisite: Physiol. 131 or 222 or 227.

222. Comparative Physiology I. 4 semester hours. Second semester.
Physiology of the domestic animal; the blood, heart, and blood vessels, the ductless glands and internal secretions, respiration, digestion and absorption. The laboratory exercises consist of a practical application of the knowledge derived in the classroom. Laboratory directions furnished the student. Three hours of recitation and three hours of laboratory a week. Prerequisite: For veterinary students, Anat. 113, Chem. 122, 243; for others, an approved course in organic chemistry.

227. Comparative Physiology II. 4 semester hours. First semester.
The urine and urinary system, nutrition, animal heat, muscular and nervous systems, locomotion, generation and development, growth and decay, and selected physiological experiments. Three hours of recitation and three hours of laboratory a week. Prerequisite: Same as for Physiol. 222.

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* For 1953 and later graduation.

228. Urine Analysis. 1 semester hour. Second semester.
A laboratory course devoted to the comparative study of human urine and the urine of domestic animals, especially the horse, cow, and dog. A microscopic study of urinary deposits will be carried out also. Prerequisite: Physiol. 227. Class limited to ten students.

230. Pharmacodynamics. 3 semester hours. Second semester.
The study of the physiological and therapeutic action of substances other than foodstuffs in the living structures. Substances to be studied will include drugs, poisons, and hormones used in the practice of veterinary medicine. One hour of recitation and six hours of laboratory a week. Prerequisite: Physiol. 227.

Pathology

Lee M. Roderick, *Head of Department*

The Department of Pathology presents courses in histology, pathology, and meat inspection. Instruction is by lecture, recitation, laboratory work, and demonstrations with the aid of lantern slides and autopsies.

COURSES IN HISTOLOGY

FOR UNDERGRADUATE CREDIT

104. Histology I. 3 semester hours. First semester.
Origin, development, structure, and appearance of the various cells and tissues of the animal body. Particular attention is paid to the relationships between structure and function and to the fundamental similarities and differences of cells and tissues. One hour of recitation and six hours of laboratory a week.

106. Histology II. 3 semester hours. Second semester.
Origin, development, structure, and microscopic appearance of the various organs and systems of the animal body. Particular emphasis is laid on the correlation of tissue distribution and regional function. One hour of recitation and six hours of laboratory a week. Prerequisite: Path. 104.

FOR GRADUATE AND UNDERGRADUATE CREDIT

252. Special Histology. 3 semester hours. Each semester.
Fundamental histological technics studied by means of problems. Nine hours of laboratory a week. Prerequisite: Path. 106.

COURSES IN PATHOLOGY

FOR GRADUATE AND UNDERGRADUATE STUDY

203. Pathology I. 5 semester hours. First semester.
General pathology deals with the etiology, course and termination of disease. Three hours of recitation and six hours of laboratory a week. Prerequisite: Physiol. 222, Path. 106, Chem. 243.

208. Pathology II. 4 semester hours. Second semester.
Special pathology, study of specific pathological processes occurring in the various organs of the body. Three hours of recitation and three hours of laboratory a week. Prerequisite: Path. 203.

211. Pathology III. 3 semester hours. Second semester.
Special pathology continued. The pathology of infectious diseases. Two hours of recitation and three hours of laboratory a week. Prerequisite: Path. 208.

215. Pathology IV. 3 semester hours. First semester.
The epidemiology and differential diagnosis of infectious diseases. Three hours of recitation and demonstration a week. Prerequisite: Path. 211.

218. Food Hygiene and Public Health. 5 semester hours. Second semester.
A study of the procedures and regulations covering the ante-mortem and post-mortem inspection of food animals, sanitation, and the inspection of food products of animal origin. The place and work of a veterinarian in a public health organization. Five hours of recitation a week. Prerequisite: Path. 215.

222, 223. Pathological Technic and Diagnosis I and II. 2 to 5 semester hours each. Each semester.
Pathological technic, collecting, fixing, embedding in paraffin, and sectioning of tissues, methods of preserving gross specimens, practice in post-mortem and laboratory diagnosis. Prerequisite: For I, Path. 203; for II, Path. 211, 222.

225, 226. Clinical Pathology I and II. Credit in Clinics III and IV. Each semester.
The unification and practical application of the various laboratory test procedures to clinical diagnosis. Pathological examinations will include autopsies, biopsies, and hematological, bacteriological, seriological, chemical, pathological, and parasitological diagnosis. Prerequisite: Surg. 139, 142. Open only to senior students in veterinary medicine and graduate students.

235. Applied Veterinary Parasitology. 3 semester hours. First semester.
The identification of parasites and the diagnosis of parasitoses. A consideration of the important parasitic diseases of livestock. Two hours of recitation and three hours of laboratory a week. Prerequisite: Zoöl. 208. Limited to veterinary students.

FOR GRADUATE CREDIT

302. Research in Pathology. Credit to be arranged. Each semester.
Individual research in the pathology of an animal diseases problem. Prerequisite: Path. 215, 222. This work may form the basis for the master's thesis.

Surgery and Medicine

EDWIN J. FRICK, *Head of Department*

The veterinary hospital is equipped with every modern appliance for surgical operations and treatment of animal diseases. The hospital has a capacity for more than fifty horses or cattle, and in addition it can accommodate fifty small animals, such as sheep, swine, cats, dogs, etc. Members of the clinical staff, accompanied by students, make trips into the surrounding country to treat patients. In this way the student comes into contact every year with the diseases of animals and their treatment. More than 25,000 clinical cases a year are treated.

COURSES IN SURGERY

FOR UNDERGRADUATE CREDIT

108. Surgery I. 4 semester hours. First semester.
Lectures, recitations, and demonstration on the fundamental principles of surgery, methods of restraint, asepsis, and antisepsis, anethesia, division of tissues, union of tissues, control of hemorrhage, neoplasms, and animal dentistry. Four hours of recitation a week. Prerequisite: Junior standing in veterinary medicine.

109. Surgery II. 4 semester hours. Second semester.
Lectures, recitations, and demonstration on the surgical diseases of domestic animals; horseshoeing is included. Four hours of recitation and demonstration a week. Prerequisite: Surg. 108.

112. Surgical Exercises. 1 semester hour. First semester.
Surgery on anesthetized animals, and on cadavers; fractures, dressings, X-ray technics. Three hours of laboratory a week. Prerequisite: Surg. 109.

114. Small Animal Surgery. 2 semester hours. First semester.
Description and application of practical surgery on small animals; including anesthesia. Two hours of recitation a week. Prerequisite: Junior or senior standing in veterinary medicine.

FOR GRADUATE CREDIT

301. Research in Surgery. Credit to be arranged. Each semester.
The purpose of this course is to attempt to solve many of the surgical problems confronting the average veterinary practitioner. Prerequisite: Anat. 113, 114, 115, Surg. 108, 109, 163. Offered especially for graduates in veterinary medicine.

COURSES IN OBSTETRICS

FOR UNDERGRADUATE CREDIT

130. Obstetrics and Breeding Diseases. 5 semester hours. Second semester.
Physiology of reproduction, principles of normal and abnormal parturition, special attention given to handling of reduced fertility. Five hours of recitation a week. Prerequisite: Junior standing in veterinary medicine.

***132. Gynecology.** Required. Each semester one half of class.
Practical exercises in diagnosing and treating sterility, abortion, and dystocia, and the insemination of large animals. Three hours of laboratory a week. Prerequisite: Senior standing in veterinary medicine.

COURSES IN CLINIC

FOR UNDERGRADUATE CREDIT

139, 142. Clinics I and II. 1 semester hour each. First and second semesters, respectively.
All species of domestic animals are treated at clinic. Students assist in the restraint of animals, in bandaging, in compounding prescriptions, and in preparing antiseptics and other medicinal agents. Six hours of laboratory a week. Prerequisite: Junior or senior standing in veterinary medicine.

144, 147. Clinics III and IV. 4 semester hours each. First and second semesters, respectively.
Diagnosis and treatment of hospital patients, including keeping clinical records, administering medicines, changing dressings on surgical wounds, X-ray technic, etc.; assisting clinicians in out-clinic work. Twelve hours of laboratory a week. Prerequisite: Junior or senior standing in veterinary medicine.

150. Extra Clinics. 1 semester hour. Each semester and summer.
A course in clinics intended for those undergraduate students desiring clinical training in addition to that offered in the curriculum in veterinary medicine. Three hours of laboratory a week. Prerequisite: Surg. 141 or 147.

COURSES IN MATERIA MEDICA

FOR UNDERGRADUATE CREDIT

158. Materia Medica. 4 semester hours. Second semester.
A detailed study of important drugs; their origin, properties, and classification; their physiological actions, clinical administration, and dosage; metrology, prescription writing, pharmaceutical processes, and pharmaceutical

* Not required for 1953 and later graduation.

preparations; compounding of prescriptions. Three hours of recitation and three hours of laboratory a week. Prerequisite: Sophomore standing in veterinary medicine.

163. Therapeutics. 3 semester hours. First semester.
History of therapeutics; healing methods; types of therapy, including mechanical, chemical, electrical, biological, dietetic, and thermal; toxicology as encountered in veterinary practice. Three hours of recitation a week. Prerequisite: Surg. 158.

COURSES IN MEDICINE

FOR UNDERGRADUATE CREDIT

110. Diagnosis. 2 semester hours. First semester.
Differential diagnostic methods employed for the detection of disease. Two hours of recitation a week. Prerequisite: Junior standing in veterinary medicine.

111, 113. Diseases of Large Animals I and II. 4 semester hours each. Second semester and first semester, respectively.
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, the organs and locomotion, the skin, and the eye.
Four hours of recitation a week each semester. Prerequisite: Surg. 158; junior or senior standing in veterinary medicine.

181. Infectious Diseases of Large Animals. 5 semester hours. Second semester.
Five hours of recitation a week. Prerequisite: Surg. 113; senior standing in veterinary medicine.

186. Diseases of Small Animals. 2 semester hours. First semester.
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. Two hours of recitation a week. Prerequisite: Surg. 158, 163; senior standing in veterinary medicine.

191. Medical Economics and Law. 2 semester hours. Second semester.
The veterinarian's legal responsibilities; national and state livestock laws; quarantine regulations; principles of business law. Two hours of recitation a week. Prerequisite: Senior standing in veterinary medicine.

FOR GRADUATE CREDIT

310. Research in Medicine. Credit to be arranged. Each semester and summer.
An attempted solution of some of the medical and parasitological problems confronting the practitioner of veterinary medicine. Prerequisite: Surg. 111, 113, 158, 181. Offered especially for graduates in veterinary medicine.

General Veterinary Medicine

V. M. 101, 102, 103, 104. Junior-Senior Conference. Required. Each semester.
A faculty-junior-senior conference for the purpose of reviewing all factors concerned in the diagnosis of animal ailments. One hour a week. Prerequisite: Junior or senior standing in veterinary medicine.

The Division of College Extension

L. C. Williams, *Dean and Director*
H. J. C. Umberger, *Dean and Director Emeritus*

The Division of College Extension offers the benefits of the College to Kansas farm and urban people. It is active in every county. By means of demonstrations, institutes, training schools, publications, correspondence courses, and radio programs, information on agriculture, home economics, and engineering extension is made readily available to all. 4-H club work is a major phase of the Extension Service program.

In the beginning, this work was informal. Members of the College staff answered inquiries by mail and occasionally met with small groups at various places in the state. The exchange of information thus made possible proved valuable both to the citizens of the state and to the college investigators. In 1914, with the passage of the Smith-Lever Act, this type of work became a coöperative undertaking of the federal and state governments, through the United States Department of Agriculture and the agricultural colleges.

There now are nine major departments in the Division, each with its own head and staff. Coöperatively employed extension agents are located in 103 counties. The extension organization, which reaches more Kansas people each year, still serves its original function of a two-way communication system between the College and the general public. Extension workers take to the people of the state information developed by the experiment stations, by the United States Department of Agriculture, and by the experience of the best farmers and homemakers. They bring to the state and federal research workers information concerning problems that are of immediate general interest. Their goal is to assist in making agriculture more prosperous and rural living more satisfying.

Extension Information

Lisle L. Longsdorf, *Head of Department*

It is the objective of this department to acquaint the peoples of Kansas with the research findings of this land-grant College, its branch experiment stations, and the United States Department of Agriculture, through the mediums of communication. It also has the responsibility of reporting the progress being made, especially by rural people, in the adoption of recommended scientific methods of farming and homemaking for an improved agricultural industry. All means of communication are utilized in the dissemination of information for the benefit of both rural and towns people.

Scientific information, as written in popular version by the departmental staff, is channelled through all practical means of communication, including newspapers, printed publications, circulars and posters, printed annual reports, exhibits, motion pictures, 2 x 2 slides, and radio.

Each week some 400 weekly newspapers of the state, the farm press, and daily newspaper outlets are provided with news stories on research work of the Kansas Agricultural Experiment Station and the extension service.

County agents are provided a weekly press service and are given special training throughout the year in utilizing to the maximum a balanced information program. The department coöperates with all agents in the 103 organized Extension Service counties, as well as central office staff workers, in planning and executing information programs that will acquaint people of Kansas with the projects being carried.

Each year more than 500,000 timely, popular extension service publications are printed and distributed. In addition, there are distributed nearly 200,000 United States Department of Agriculture publications.

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A limited library of motion pictures and 2 x 2 slides for visual instruction is maintained for use by county agents, field workers, vocational education instructors, and personnel of coöperating agencies of government. Providing exhibits and other visual aids materials represent an important phase of work in the department.

Radio is divided into two phases: (*a*) Broadcasting of programs over KSAC, an institution-owned, noncommercial, educational station, and (*b*) broadcasting script and recorded services and live programs over nearly fifty coöperating commercial radio stations in Kansas and on our borders.

Station KSAC, the College-owned radio station, is used exclusively for the dissemination of information from this institution. Engineering data would indicate that there is a potential audience of approximately five million listeners when the station is on the air. Three and one-half hours a day is devoted to the broadcasting of programs originating from within all schools of the College and the Division of College Extension. Approximately fifty percent of the broadcast time is devoted to all-College programs, while fifty percent is devoted to programs originating from within the extension service. The College radio station is also used as a "proving ground" for students enrolled in radio courses.

Daily scripts are mailed to coöperating commercial radio stations, and county agents are given assistance in planning local radio programs. Numerous live programs are arranged for extension service and College staff members to broadcast over these stations when the personnel are in the field.

Agricultural Specialists

Paul W. Griffith, *Head of Department*

This department includes those members of the extension staff who conduct and supervise programs in agricultural education throughout the state. The programs are developed in coöperation with the residents of the counties through their designated leaders. The department has charge of the program and arrangements for Farm and Home Week, annual state-wide farmers' meetings, and the scheduling of judges for county and local fairs.

FARM AND HOME INSTITUTES

A farm and home institute is an association of farmers and farm homemakers with regular officers, constitution, and bylaws. Some organizations hold six or more meetings during the year, and no institute can obtain state aid unless, in addition to the annual meeting at which representatives of the College must be present, it also holds at least three local meetings. It is the plan of the College to send two specialists, one in agriculture and one in home economics, to the annual meetings to present certain well-defined lessons and to give the results of demonstration work for the county or locality. The specialists and their subjects are chosen because of known need of interest of a particular community, or because of a plan to start or encourage certain definite lines of work.

EXTENSION SCHOOLS

Extension schools are meetings, of one- or two-day duration, conducted for the purpose of giving practical instruction in agriculture, engineering, and home economics. Most of these schools are organized on a project basis, and they are an important feature in the yearly program of work conducted by each specialist. Results of demonstrations and experiments are given at these meetings, and suggestions are made for their practical application under local conditions.

Extension schools are classified according to the subject matter presented. Each year schools are held in horticulture, animal husbandry, veterinary medicine, entomology, poultry husbandry, dairying, agronomy, engineering, marketing, farm management, plant pathology, and farm forestry. In addition to

these specialized meetings, schools of a more general character are held, designed to present the extension program best suited to the communities of the county. Home economics and 4-H Club work have an important place on the program of the schools.

EXTENSION PROJECTS

The specialists of the Division work in extension schools and institutes during the winter months only, and a portion of this time is devoted to coöperative demonstration work in agriculture and home economics. During the remainder of the year, they conduct special extension programs in soil management and crop production, plant pathology, horticulture, animal husbandry, dairying, veterinary medicine, poultry husbandry, entomology, farm management, marketing, agricultural planning, and farm forestry. This phase of the work of the extension specialists is supplemented by coöperative demonstration work. In much of the coöperative work, each specialist has from 10 to 100, or more, coöperators in each county. These men and women work under the direction of the specialist and the county agent. They keep records of the work, and demonstration meetings are held at their farms.

The extension specialist takes to the farm and the farm home the results of research work of the Agricultural Experiment Station and the United States Department of Agriculture in a practical, effective, and usable form. He brings back reports of the progress of demonstration work in the field. He seldom makes a trip without coming in contact with agricultural problems requiring the attention of research workers.

COUNTY AND LOCAL FAIRS

The agricultural specialists devote some time each year to judging livestock and agricultural products at state, county, and local fairs. An excellent opportunity for lectures and demonstration work is furnished, and each specialist endeavors to make his judging work as instructive as possible.

FARM AND HOME WEEK

The purpose of Farm and Home Week is to interest the farmers of the state in methods of production and management that will increase farm profits, to demonstrate to farm women methods of home 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. The United States Department of Agriculture, the Agricultural Experiment Station, the extension service, agricultural specialists, and leading farmers bring to those in attendance the latest results of investigations in agriculture, home economics, and engineering extension. 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 other interesting features.

County Agent Work

Harry C. Baird, *District Agent—Northwest*
Frank Blecha, *District Agent—Eastern*
E. H. Teagarden, *District Agent—Southwest*

County agent work is an organized activity of Kansas State College to develop and carry out the extension program as stated in national and state legislation. The Smith-Lever Act passed by Congress in 1914 defines extension work as follows:

"The coöperative agricultural extension work shall consist of the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in State Colleges in the several communities and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise; and this work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State Agricultural College or colleges receiving the benefits of this Act."

Under the Smith-Lever Act the funds appropriated therein must be matched by the state expecting to obtain any part of the federal funds. To that end the legislature of the state of Kansas, in 1915, enacted a law authorizing county appropriations to county farm bureaus "having a membership of 25 percent of the bona fide farmers of the county, or as many as 250 farmers, and having for its purpose the giving of instruction in agriculture and home economics to the people of said county through practical demonstrations and otherwise, and the employment of a county agricultural agent or agents to prosecute this work . . ."

On October 1, 1948, 103 out of 105 counties in Kansas employed county agricultural agents and assistant agents.

Home Economics

Georgiana H. Smurthwaite, *Head of Department*

Extension work in home economics is carried on in counties through organized study groups and press and radio. Definite programs are pursued throughout the year by the home demonstration units, 4-H clubs, and special interest groups. Material furnished by the specialists and by home demonstration agents is used by local leaders in their respective communities.

Home demonstration work was made possible in August, 1917, when congress provided funds for the employment of emergency home demonstration agents. The work was instituted under the auspices of city or county organizations, but after a short time the placing of home demonstration agents was deferred until the counties were properly organized for this specific purpose. Since August, 1918, the organization of a county farm bureau, providing membership for women as well as for men, has been required; and since July 1, 1921, a county desiring a home demonstration agent has had to provide a well-equipped office with adequate stenographic help, transportation facilities, and a county appropriation toward the salaries and expenses of the agents.

The program of work for the various study groups in the county is based on the local situation in the communities in the county. It is evolved through community and committee meetings and includes the development of activities pertaining not only to the home and to the community but also to international problems. On January 1, 1949, 92 counties had appropriations for home demonstration work, and in addition three counties have appropriations for associate agents.

Engineering Extension

John M. Ferguson, *Head of Department*

The function of the Department of Engineering Extension is to carry on an educational program throughout the state dealing with the application of engineering principles to various phases of agriculture. The work of this department is carried to every county in the state by means of demonstrations, institutes, training schools, publications, news releases, radio programs, and personal contacts.

When the department was first started in 1910, it dealt chiefly with drainage and irrigation. Other subjects have been added, including the control of soil erosion, water conservation, farm structures, farm machinery, conveniences for the farm home, and farm electrification. Much of the work is conducted in coöperation with the county agricultural agent's office in each county. Some work is done in coöperation with various government agencies, some with commercial farm equipment companies, some with structural supply and appliance companies, some with REA coöperatives, and some with public utilities.

All counties in the state are coöperating with the department in demonstration work involving drainage, irrigation, water conservation, and the control of erosion. Standardized plans for hundreds of farm buildings are furnished to farm operators each year. Advice and suggestions for remodeling farm buildings is furnished upon request to several hundred farm families each year. Recommendations are made for the selection, installation, and operation of practical and efficient systems of water supply, sewage disposal, wiring, lighting, insulation, air conditioning, and heating for the rural home. A program on the selection, use, adjustment, and cost of operation of farm machinery is conducted each year for the rural people. A planned program of 4-H Club work is conducted on many of the engineering phases of agriculture.

Farm safety and the prevention of farm fires is a definite part of the overall engineering extension program.

Boys' and Girls' Club Work

J. Harold Johnson, *Head of Department*

4-H Club work is conducted by the College in coöperation with the county farm bureaus and the United States Department of Agriculture. Community 4-H clubs are open to all young people between the ages of 10 and 20 years, inclusive. They work under the direction of the county extension agents with the help of local volunteer 4-H Club leaders. County 4-H councils assist the county agents in the supervision and promotion of the 4-H program. 4-H Club members receive valuable help from their county agents and from their local leaders; subject matter material is prepared by specialists and sent out by the state club leader to give members definite information and suggestions on farm and home practices recommended by the College.

The origin of 4-H Club work is obscure. Shortly after 1900, farmers' institutes, farm leaders, and educators, in various parts of the country, made efforts to bring about a more definite connection between real life and school life. They assisted boys and girls to conduct, at home, various educational demonstrations or contests centered around improved agricultural practices.

It became evident that the educational development of boys and girls was of greater importance than the spread of improved farm and home practices; hence, the 4-H Club program was broadened to include not only projects of a farm and home nature, but many activities such as health, music, conservation of wild life and natural resources, recreation, parliamentary practices, and art.

The present 4-H Club program is designed to develop citizenship and leadership among rural young people and to provide opportunity for them to participate with their parents and friends in the adoption of better farm and home practices. Coöperation with the group is promoted, leadership is encouraged, exhibitions and contests are conducted, accurate records and reports are required, and achievements are suitably recognized. Wholesome recreation is promoted, and county and state-wide round-ups, camps, and conferences are arranged.

Home Study

JESSE M. SCHALL, *Head of Department*

The Deartment of Home Study is a member of the National University Extension Association, comprising 51 leading universities in America with whom extension credits are interchangeable. The members of the department devote their entire time to work of teaching by correspondence. They advise with the various departments of the College, and all credit courses that are offered by correspondence must first meet the requirements of the regular College departments handling the courses in residence.

There are many people in Kansas and elsewhere who cannot attend classes on the College campus, but who can use the facilities of the College to advantage. The Department of Home Study is designed through correspondence courses to enable the College to go to those who cannot come to it. The gross time required to complete correspondence courses is practically the same as is necessary for the same courses in residence.

FOR WHOM INTENDED

Though credit courses offered by the Department of Home Study are limited, 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 are unable to attend high school.
2. High school graduates who are unable to attend college.
3. Students who 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. Aggressive students who do not wish to have their progress retarded by vacations and other interruptions.
6. High school and grade-school classes in practical courses that need supplementing and enrichment.
7. Teachers who wish further 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 work usually takes the form of assigned readings, studies, problems, and investigations, together with a list of questions and directions for a written report. The correspondence lesson is usually much longer than the common lesson in resident class work, eight such lessons being the equivalent of one semester hour of college credit. When necessary, the lessons are supplemented by lectures prepared by the instructor. These lectures contain outlines and explanations, additional subject matter, and such special directions as seem desirable.

As soon as an enrollment card and fee are received at the Department of Home Study, the first assignments are sent out. As reports are received, additional assignments are mailed. The plan keeps work always at hand for the student, making it possible for the instructor to study the student's progress and to offer suggestions to guide the student in his work. 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. In general, 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, provided 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 is required to write his manuscript, answering the questions carefully and concisely. The manuscript is then mailed to the Department of Home Study, 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. Each student is invited to ask questions, relate his personal experience, and in every way possible seek the advice of his instructors.

The department spares no effort to bring about the nearest possible approach to personal acquaintanceship between each instructor and his students. To this end the student is required to fill out and mail to the department, with his first lesson, a personal acquaintance blank giving full information about himself, his aims, ambitions, and previous experience and education, as well as the conditions of his daily work that necessarily affect his responses to the lessons. This information enables the instructor to enter at once into cordial, sympathetic, and helpful relations with the student.

EXAMINATIONS

At the close of each course, before a grade is issued, a final examination is necessary. The final examination may be taken in the office of the Department of Home Study 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 first-class 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

(Subject to Change)

The following schedule of home study fees shall apply to anyone enrolling in home study courses:

	Kansas residents and staff members	*Nonresidents*
A. College-level Courses:		
Registration (paid only once and not subject to refund, not required of previously matriculated students)	$2.50	$5.00
Enrollment, each semester hour (8 assignments)	4.00	6.00
Study Center classes, each semester hour	5.00	7.00
B. High School-level Courses:		
Registration (paid only once and not subject to refund)	2.00	4.00
Enrollment, each one-half unit, high school credit	5.00	7.00

REFUND POLICY

Registration fees shall not be subject to refund. Enrollment fees are refundable as follows:

a. If application for withdrawal and refund is received by the College within two weeks after the date of enrollment and prior to the grading of any assignments, the enrollment fees shall be refunded.

b. If application for withdrawal and refund is received by the College within one year from date of enrollment and prior to issuance of one-third of the assignments, a 50 percent refund shall be made.

c. If application for withdrawal and refund is received by the College after one-third or more of the assignments have been issued by the Home Study Department, or after one year has passed from date of enrollment, then no refund is due.

d. Students now enrolled in residence at the College, or who have previously been enrolled, are not required to pay the registration fee; the enrollment fee, however, is collected to cover cost of grading papers and individual instruction. The refund policy as stated above is applicable.

Each student pays the postage on his lessons, manuscripts, and communications sent to the department. The department pays the postage for the return of all such papers to students.

REGULATIONS

1. Enrollments for correspondence study will be received at any time during the year, and students may continue their work throughout the entire year.
2. Correspondence students are expected to complete any course for which they are enrolled within 12 months from date of enrollment.
3. Not more than two courses are advised 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 will be permitted to complete a three-hour course in less than three weeks, a two-hour course in less than two weeks, or a one-hour course in less than one week.
8. The student is urged to use every source available for securing information, such as outside texts, family discussions, and discussions with other students taking the course or who have previously taken the course, but copying of papers is not accepted. Lending of papers to be copied is also forbidden. Any student found guilty of either discrepancy will have this fact placed upon his record at Kansas State College.
9. The final grade for credit is determined by the quality of the lesson papers and the examination.

STUDY-CENTER EXTENSION CLASSES

Study-center classes conducted by regular instructors from the College may be organized if the demand is sufficient. Regulations concerning such classes are obtainable from the Department of Home Study.

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 can attend high school should do so, for in such attendance they will have the benefits to be derived from association with fellow students, as well as many other advantages that will be helpful to immature students of high school age.

These courses are offered as an aid to those who may be temporarily out of high school, who may not find the work that they desire offered locally, or who wish to 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 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 course 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 5.	American History I	20	½
PCH 6.	American History II	20	½
PCH 7.	Community Civics	20	½
PCH 8.	Constitution of United States	20	½
PCH 9.	World History I	20	½
PCH 10.	World History II	20	½
	MATHEMATICS		
PCM 1.	Algebra I	20	½
PCM 2.	Algebra II	20	½
PCM 3.	Algebra III	20	½
PCM 4.	Plane Geometry I	20	½
PCM 5.	Plane Geometry	20	½
PCM 6.	Solid Geometry	20	½
PCM 7.	Bookkeeping	20	½
	SCIENCE		
PCS 1.	Physical Geography	20	½
PCS 2.	Botany	20	½
PCS 4.	Physiology	20	½
PCS 5.	General Science	20	½
PCC 1.	Commercial Geography	20	½
PCC 2.	Elementary Economics	20	½
PCC 3.	Elementary Sociology	20	½
PCC 4.	Elementary Psychology	20	½

COLLEGE COURSES

Numerous college courses paralleling resident courses and carrying the same credit are offered through the Department of Home Study. These will be found especially advantageous for college students who desire to make up deficiencies or to gain credits during the vacation season, for teachers who wish to further their professional training, and for men and women who wish to promote their culture, technical, or vocational interests. The prerequisites are the same as for corresponding courses in resident instruction.

The following course is available through resident enrollment for graduate and undergraduate credit. Graduates may be enrolled for from one to six hours of research or problem work *in absentia,* on the recommendation of a member of the graduate faculty and with the approval of the Dean of the Graduate School.

Educ. 249. Problems in Extension Education. Credit to be arranged.
Problems in extension met by director, supervisor, county agricultural agent, county home demonstration agent, 4-H Club leader, or specialist. Prerequisite: Econ. 151 or CS 3, and Educ. 184 or CP 8.

List of College Courses

SCHOOL OF AGRICULTURE

Course No.		AGRONOMY	*Assignments*	*Semester hours of credit*
CA	3.	Farm Crops	20	3
		ANIMAL HUSBANDRY		
CL	2.	History of Breeds	16	2
		HORTICULTURE		
CH	1.	Elements of Horticulture	16	2
CH	2.	Vegetable Gardening	16	2
CH	3.	Floriculture	16	2
CH	6.	Small Fruits	16	2
CH	7.	Landscape Gardening	16	2
		POULTRY HUSBANDRY		
CPP	1.	Farm Poultry Production	8	1

SCHOOL OF ENGINEERING

		MACHINE DESIGN		
CE	2.	Engineering Drawing	16	2
CE	4.	Mechanism	24	3
CE	6.	Machine Drawing I	16	2
CE	11.	Descriptive Geometry	16	2
		SHOP PRACTICE		
CE	7.	Metals and Alloys	16	2
		AGRICULTURAL ENGINEERING		
CE	3.	Gas Engines and Tractors	16	2
		MECHANICAL ENGINEERING		
CE	9.	Steam Turbines	16	2

SCHOOL OF ARTS AND SCIENCES

		ECONOMICS AND SOCIOLOGY		
CEc	1.	Economics I	24	3
CS	2.	Rural Sociology	24	3
CS	3.	Sociology	24	3
CS	4.	Community Leadership	16	2

Course No.			*Assignments*	*Semester hours of credit*
		EDUCATION (Professional)		
CP	2.	Educational Psychology	24	3
CP	3.	Educational Sociology	24	3
CP	4.	History of Education	24	3
CP	5.	School Management	24	3
CP	6G.	Methods of Teaching in Elementary Graded Schools and Rural Schools	24	3
CP	6H.	Methods of Teaching in the High School	24	3
CP	7.	Educational Administration	24	3
CP	8.	General Psychology	24	3
CP	14.	Vocational Education	24	3
CP	17.	Introduction to Philosophy	24	3
CP	19.	Essentials of Reading	24	3
CP	21.	Child Psychology	16	2
		ENGLISH		
CCE	1.	Written Communications I	24	3
CCE	2.	Written Communications II	16	2
CCE	3.	Commercial Correspondence	24	3
CCE	4.	The Short Story	24	3
CCE	6a.	English Literature I	24	3
CCE	6b.	English Literature II	24	3
CCE	7a.	American Literature I	24	3
CCE	7b.	American Literature II	24	3
CCE	8.	Children's Literature	24	3
		JOURNALISM		
CCJ	1.	Agricultural Journalism	24	3
		PHYSICAL EDUCATION		
CPE	1.	Personal and Community Hygiene	24	3
CPE	2.	Community Health	8	1
CPE	3.	Playground Activities	16	2
		GEOLOGY		
CG	1.	Geology	24	3
CG	2.	Principles of Geography	24	3
		HISTORY AND CIVICS		
CHC	1.	Community Civics	16	2
CHC	106.	Survey of World Civilizations I	24	3
CHC	107.	Survey of World Civilizations II	24	3
CHC	151.	American Government	24	3
CHC	127.	Survey of American History I	24	3
CHC	128.	Survey of American History II	24	3
CHC	7.	History of Latin America	24	3
		MATHEMATICS		
CM	6.	Solid Geometry	16	2
CM	7.	Plane Trigonometry	24	3
CM	8.	College Algebra	24	3
CM	9.	College Algebra A	40	5

Officers of Administration, Instruction, and Research

ADMINISTRATIVE AND SERVICE OFFICES

William Frederick Baehr, Professor and College Librarian (1943).*
B. S. in L. S., M. A., University of Illinois.

Mabel G. Baxter, Instructor and Continuations Assistant, College Librarian (1916, 1947).

Mildred Camp, Assistant Professor and Head of Circulation Department, College Library (1927).
A. B., Eureka College; B. L. S., University of Illinois.

Elizabeth Hamilton Davis, Associate Professor and Head of Reference Department, College Library (1920, 1947).
A. B., MacMurray College for Women; B. L. S., University of Illinois.

Irene Lenore Davis, Instructor and Catalogue Assistant, College Library (1947, 1948).
A. B., Colorado State College of Education; B. S., University of Denver School of Librarianship.

Kenneth S. Davis, Assistant Professor of Journalism (1947).
B. S., Kansas State College; M. S., University of Wisconsin.

Grace Emily Derby, Professor and Associate Librarian, College Library (1911, 1947).
A. B., Western College.

Aubrey Thornton Edwards, Associate Professor of Psychology and Director of Housing (1946).
B. S., M. S., Kansas State College.

Joe Eisenbach, Jr., Instructor in Education and Psychology, and Assistant to the Director of Housing (1948).
B. S., A. B., Kansas State Teachers College (Emporia).

Milton Stover Eisenhower, President of the College (1943).
B. S., Kansas State College; LL. D., University of Wichita; D. Sc., Colorado Agricultural Mechanical College; L. H. D., University of Nebraska.

Mildred M. Eshnaur, Instructor and General Assistant, College Library (1947, 1948).
B. S., Kansas State Teachers College (Emporia).

Kenney Lee Ford, Alumni Secretary (1928).
B. S., M. S., Kansas State College.

Randolph Forney Gingrich, Maintenance Superintendent (1923, 1945).
B. S., University of Nebraska; M. S., Kansas State College.

Charles Jerome Glotzbach, Counselor and Instructor, Counseling Bureau (1947).
B. S., Kansas State College.

Dorothy May Hamer, Assistant Dean of Women (1941, 1946).
A. B., University of Illinois; M. A., Columbia University.

Fern O. Hathaway, Instructor and Loan Assistant, College Library (1948, 1949).
A. B., Denver University.

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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, the first date indicates when services with the College began, the second when present office was assumed.

HAROLD HOWE, Dean of Graduate School; Professor of Agricultural Economics; Agricultural Economist, Agricultural Experiment Station (1925, 1945).
B. S., Kansas State College; M. S., University of Maryland; Ph. D., University of Wisconsin.

ARNOLD R. JONES, Comptroller and Professor of Accounting (1929, 1945).
B. S., University of Kansas; C. P. A., University of Kansas.

WENDELL R. KERR, Instructor; Veterans Service Officer (1947).
B. S., Kansas State College.

MARY KIMBALL, Assistant Registrar (1918, 1946).
B. S., Kansas State College.

RICHARD CLOGHER MALONEY, Registrar (1946, 1948).
A. B., Dartmouth College; M. S., Kansas State College.

HELEN MOORE, Dean of Women (1940).
A. B., University of Kansas; A. M., Columbia University.

MILDRED ALLEN MOORE, Instructor and Reference Assistant, College Library (1947, 1948).
A. B., University of Kentucky; B. S., George Peabody College for Teachers.

VIVIAN M. MOSS, Research Assistant in Counseling Bureau (1947).
B. S., Kansas State College.

CAROL OWSLEY, Instructor and Class Reserves Assistant, College Library (1939, 1947).
B. S., M. S., Kansas State College.

BILLIE E. PARKINS, Y. W. C. A. Executive Director (1946).
B. S., University of Iowa.

BERNICE H. PATON, Assistant Professor and Head of Catalogue Department, College Library (1947).
A. B., University of Oklahoma; B. S., Columbia University; M. A. in L. S., University of Michigan.

RALPH HAMILTON PERRY, Assistant to the Comptroller (1946, 1947).
B. S., Kansas State College.

CLARENCE OSBORN PRICE, Assistant to the President (1920).

ALBERT L. PUGSLEY, Dean of Administration and Director of Summer School (1943, 1946).
B. S., South Dakota State College; M. Arch., Harvard University.

EDITH M. RIDGEWAY, Instructor and Assistant Reference Librarian, College Library (1943).
A. B., College of Emporia; B. S., University of Illinois.

MARY EILLEEN ROBERTS, Assistant Professor and Head of Documents Department, College Library (1938, 1947).
B. S., Kansas State College; B. S., University of Illinois; M. A., University of Michigan.

NANCY D. ROOT, Assistant to the Dean of Women (1948).
B. S., Kansas State College.

ANNABEL LUCILE SMITH, Instructor and Assistant Documents Librarian, College Library (1946).
B. S., Kansas State Teachers College (Emporia); B. S., M. A., University of Illinois.

ARTHUR BOURNE SMITH, Professor and College Librarian, Emeritus (1911).
B. L. S., University of Illinois; Ph. B., Wesleyan University.

ELIZABETH RICHARD STANLEY, Instructor and Loan Assistant, College Library (1947, 1948).
A. B., Washburn University; B. S. in L. S., Denver University.

Eric T. Tebow, Director of Admissions (1947, 1948).
B. S., Kansas State College; A. M., Columbia University.

Julius Terrass Willard, Professor of Chemistry, Emeritus; Dean of the School of Arts and Sciences, Emeritus; College Historian, Emeritus (1883, 1948).
B. S., M. S., Sc. D., Kansas State College.

Robert Seth Wilson, Instructor and Counselor, Counseling Bureau (1948).
A. B., M. S., University of Oklahoma.

Maurice D. Woolf, Dean of Students; Professor of Psychology (1945, 1949).
B. S., Northeast Missouri State Teachers College; M. S., Ed. D., University of Missouri.

SCHOOL OF AGRICULTURE

Erwin Abmeyer, Assistant Professor of Horticulture (1936).
B. S., Kansas State College.

Louis Cornelius Aicher, Superintendent, Fort Hays Branch Agricultural Experiment Station (1921).
B. S., Kansas State College.

R. Chase Allred, Graduate Assistant in Agronomy (1948).
B. S., Brigham Young University.

Kling LeRoy Anderson, Professor of Agronomy (1936, 1946). On leave.
B. S., University of California; M. S., Kansas State College.

Floyd Warnich Atkeson, Professor and Head of Department of Dairy Husbandry; Dairy Husbandman, Agricultural Experiment Station (1935).
B. S. in Agr., University of Missouri; M. S., Kansas State College.

C. Harry Atkinson, Associate Professor of Agronomy (1949).
B. S., M. S., Pennsylvania State College.

Cliff Errett Aubel, Professor of Animal Husbandry (1919, 1938).
B. S., Pennsylvania State College; M. S., Kansas State College; Ph. D., University of Minnesota.

Thomas B. Avery, Associate Professor of Poultry Husbandry (1945).
B. S., M. S., Kansas State College.

Milburne Clinton Axelton, Assistant in Agronomy, Southwest Kansas Experiment Fields (1929, 1946).
B. S., Kansas State College.

Harold Nathan Barham, Jr., Industrial Research, Milling Industry (1949).

Robert John Barnett, Professor of Horticulture, Emeritus (1907, 1944).
B. S., M. S., Kansas State College.

James C. Bates, Associate Professor of Horticulture (1935, 1946).
A. B., M. A., Ph. D., University of Kansas.

William M. Baxter, Assistant to the Superintendent, Fort Hays Branch Experiment Station (1949).
B. S. in Bus. Admin., Kansas State College.

Glenn Hanse Beck, Associate Professor of Dairy Husbandry (1937, 1946).
B. S. in Agr., University of Idaho; M. S., Kansas State College.

Floyd W. Bell, Professor of Animal Husbandry (1918, 1921).
B. S., Cornell University.

Ballard K. Bennett, Assistant Professor of Dairy Husbandry (1947).
B. S. in Agr., Oklahoma Agricultural and Mechanical College.

Russell L. Berry, Assistant Professor of Economics (1948).
B. S. in Agr., University of Illinois; M. S., Michigan State College.

Charles Frederick Bortfeld, Associate Professor of Agricultural Economics (1948).
B. S., M. A., University of Nebraska.

Stanley N. Brooks, Graduate Research Assistant in Agronomy (1948).
B. S., Colorado Agricultural and Mechanical College.

Paul L. Brown, Associate Agronomist, Bureau of Plant Industry, U. S. D. A.; Fort Hays Branch Experiment Station (1946, 1948).
B. S., Kansas State College.

Leland Everett Call, Dean and Director Emeritus; Professor of Rural Investigations (1907, 1946).
B. S., M. S., Ohio State University.

Ronald Wayne Campbell, Assistant Professor of Horticulture; Assistant Horticulturist, Agricultural Experiment Station (1946).
B. S., M. S., Kansas State College.

Alfred Jackson Casady, Graduate Research Assistant in Agronomy (1948).
B. S. in Agr., Kansas State College.

Emery Neal Castle, Instructor in Agricultural Economics (1948).
B. S., Kansas State College.

Ralph Boyd Cathcart, Associate Professor of Animal Husbandry (1935, 1948).
B. S., Kansas State College; M. S., University of Nebraska.

William S. Chepil, Professor of Soils (1948).
B. S. in Agr., M. S., University of Saskatchewan; Ph. D., University of Minnesota.

Alfred L. Clapp, Professor of Agronomy (1915, 1939).
B. S., M. S., Kansas State College.

Thomas J. Claydon, Associate Professor of Dairy Husbandry (1946).
B. S., University of Saskatchewan; M. S., Ph. D., Iowa State College.

Embert Harvey Coles, Superintendent, Colby Branch Experiment Station (1922, 1929).
B. S. in Agr., Kansas State College.

Laurence L. Compton, Professor of Agronomy (1930, 1947).
B. S. in Agr., M. S., Kansas State College.

James Fred Conn, Industrial Research Fellow in Milling Industry (1948).
B. S., Kansas State College.

Rufus Francis Cox, Professor of Animal Husbandry (1930, 1942).
B. S., Oklahoma Agricultural and Mechanical College; M. S., Iowa State College; Ph. D., Cornell University.

Don Eldon Crumbaker, Assistant Agronomist, Colby Branch Experiment Station (1941, 1946).
B. S., Kansas State College; M. S., Iowa State College.

Floyd Ewing Davidson, Assistant in Agronomy (1934).
B. S., M. S., Kansas State College.

Charles DeForest Davis, Associate Professor of Agronomy (1921, 1940).
B. S., M. S., Kansas State College.

William Woodrow Dodge, Industrial Research Fellow in Milling Industry (1947).
B. S., Oklahoma Agricultural and Mechanical College.

RAYMOND J. DOLL, Associate Professor of Agricultural Economics (1935, 1947).
B. S., M. S., Kansas State College; Ph. D., University of Minnesota.

JOHN A. DOTSON, Graduate Assistant in Agricultural Economics (1948).
B. S. in Agr., Kansas State College.

RICHARD CHANNON EATON, Graduate Assistant in Poultry Husbandry (1948).
B. S., Kansas State College.

FRANKLIN ELMER ELDRIDGE, Associate Professor of Dairy Husbandry (1948).
B. S. in Agr., University of Idaho; M. S., Kansas State College; Ph. D., Cornell University.

ROSCOE ELLIS, JR., Graduate Assistant in Agronomy (1948).
B. S. in Agr., Kansas State College.

ANDREW BRYAN ERHART, Superintendent, Garden City Branch Experiment Station (1936, 1948).
B. S. in Agr., Kansas State College.

FRANCIS DAVID FARRELL, President, Emeritus; Professor of Rural Institutions (1918, 1943).
B. S., Utah State College; Agr. D., University of Nebraska; LL. D., Washburn University.

GEORGE ALBERT FILINGER, Professor of Horticulture; Pomologist, Agricultural Experiment Station (1931, 1946).
B. S., M. S., Kansas State College; Ph. D., Ohio State University.

WILLIAM RAY FINDLEY, JR., Graduate Research Assistant in Agronomy (1949).
B. S., Kansas State College.

DEANE WARD FINNERTY, Graduate Assistant in Agronomy (1948).
B. S., Colorado Agricultural and Mechanical College.

KARL FREDERICK FINNEY, Professor of Milling Industry; Chemist, Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. D. A. (1938, 1948).
A. B., Kansas Wesleyan University; B. S., M. S., Kansas State College.

ALMON SUTPHEN FISH, JR., Graduate Assistant in Horticulture (1948).
A. B., Bates College.

DONALD EDWIN FLEMING, Instructor in Milling Industry (1947).
B. S., Kansas State College.

CLAUDE L. FLY, State Soil Scientist (1937).
B. S., M. S., Oklahoma Agricultural and Mechanical College; Ph. D., Iowa State College.

CHARLES FREDERICK FOREMEN, Graduate Assistant in Dairy Husbandry (1948).
B. S. in Agr., Kansas State College.

FORREST CHARLES FOUNTAINE, Professor of Dairy Husbandry (1947).
B. S., University of Wisconsin; M. S., Ph. D., University of Minnesota.

ROY DALE GEAR, Assistant Professor of Agricultural Economics (1949).
B. S. in Agr., Kansas State College.

DONALD WAYNE GEORGE, Graduate Research in Assistant Agronomy (1948).
B. S., Kansas State College.

CLEVELAND JOSEPH GERARD, Graduate Assistant in Agronomy (1948).
B. S., Southwestern Louisiana Institute.

CLARENCE LEE GISH, Assistant Professor of Poultry Husbandry (1947).
B. S., M. S., Kansas State College.

DON L. GOOD, Instructor in Animal Husbandry (1947).
B. S., Ohio State University.

John Alan Goodding, Instructor in Agronomy (1948).
B. S., University of Nebraska.

Clarence Owen Grandfield, Agronomist, Bureau of Plant Industry; Soils and Agricultural Engineering, U. S. D. A. (1927, 1948).

Roger Dale Hamilton, Graduate Assistant in Agronomy (1947).
B. S., M. S., Kansas State College.

Alice Georgia Hartley, Instructor in Seed Analysis (1948).

Robert Lee Henrickson, Instructor in Animal Husbandry (1947, 1948).
B. S. in Agr., M. S., Kansas State College.

Elmer G. Heyne, Professor of Agronomy (1938, 1947).
B. S. in Agr., University of Nebraska; M. S., Kansas State College.

Julian Adair Hodges, Professor of Agricultural Economics (1932, 1941).
B. S., in Agr., M. S., University of Kentucky; M. A., Ph. D., Harvard University.

Leo Michael Hoover, Instructor in Agricultural Economics (1947).
B. S., Kansas State College; M. S., Iowa State College.

Heman L. Ibsen, Professor of Genetics (1919, 1924).
B. S., M. S., Ph. D., University of Wisconsin.

John Alexander Johnson, Associate Professor of Milling Industry (1940, 1947).
B. S., North Dakota Agricultural College; M. S., Kansas State College.

Charles Wilbur McCampbell, Professor of Animal Husbandry; Special Research, Agricultural Experiment Station (1910, 1918).
B. S., D. V. M., Kansas State College.

John Henry McCoy, Assistant Professor of Agricultural Economics (1947, 1948).
B. S., M. S., Kansas State College.

David Leslie Machintosh, Professor of Animal Husbandry; Meat Specialist, Agricultural Experiment Station (1921, 1947).
B. S., University of Minnesota; M. S., Kansas State College.

Elbert Bonebrake Macy, Assistant Professor of Journalism; Editor, Agricultural Experiment Station (1943, 1946).
B. S., M. S., Kansas State College.

Ernest Lee Mader, Associate Professor of Agronomy (1948).
B. S., M. S., Oklahoma Agricultural and Mechanical College.

Milton Lloyd Manuel, Instructor in Agricultural Economics (1945). On leave.
B. S., M. S., Kansas State College.

Willard Hungate Martin, Professor of Dairy Husbandry; Dairy Husbandman, Agricultural Experiment Station (1925, 1927).
B. S., Purdue University; M. S., Pennsylvania State College.

Samuel Adam Matz, Industrial Research Fellow in Milling Industry (1949).
B. A., Evansville College.

Friedrich E. Meenen, Forage Crops Specialist, Fort Hays Branch Experiment Station (1941, 1945).
B. S. in Agr., M. S., Kansas State College.

Walter R. Meyer, Irrigation Engineer, Soil Conservation Service, U. S. D. A. (1948).
B. S., Kansas State College.

Byron Sloane Miller, Associate Professor of Milling Industry; Associate Chemist, Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. D. A. (1946, 1948).
B. S., University of Nebraska; M. S., Purdue University; Ph. D., Kansas State College.

Gerald Dale Miller, Assistant Professor of Milling Industry (1946, 1948).
B. S., University of Nebraska.

Max Milner, Professor of Milling Industry (1947).
B. S., University of Saskatchewan; M. S., Ph. D., University of Minnesota.

Walter Ashton Moore, Assistant in Agronomy, South Central Kansas Experiment Fields (1943, 1944).
B. S., Kansas State College.

Clyde D. Mueller, Professor of Poultry Husbandry (1948).
B. S. in Agr., Kansas State College; M. S., Ph. D., Cornell University.

Clyde William Mullen, Associate Professor of Agronomy; Assistant Dean,; Assistant to the Director, Agricultural Experiment Station (1937).
B. S., Oklahoma Agricultural and Mechanical College; M. S., Kansas State College.

Harold Edwin Myers, Professor and Head of Department of Agronomy; Agronomist, Agricultural Experiment Station (1929, 1946).
B. S., Kansas State College; M. S., University of Illinois; Ph. D., University of Missouri.

David D. Neher, Instructor in Soils (1948).
B. S., M. S., Kansas State College.

R. Shannon Nickelson, Instructor in Agronomy (1948, 1949).
B. S., M. S., Kansas State College.

Lewis Bertie Olmstead, Physicist, Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. D. A. (1944).
B. S., M. A., University of Nebraska; Ph. D., American University.

Raymond V. Olson, Associate Professor of Soils (1947).
B. S., North Dakota State Agricultural College; M. S., Ph. D., University of Wisconsin.

Merton Louis Otto, Associate Professor of Agricultural Economics; Livestock Marketing, Agricultural Station (1939, 1947).
B. S., M. S., Kansas State College.

Carl B. Overley, Instructor in Agronomy (1946, 1947).
B. S., Kansas State College.

John Lawrence Parsons, Assistant Professor of Agronomy (1948).
B. S., Kansas State College.

Loyal Frederick Payne, Professor and Head of Department of Poultry Husbandry; Poultry Husbandman, Agricultural Experiment Station (1921, 1923).
B. S., Oklahoma Agricultural and Mechanical College; M. S., Kansas State College.

Wayne Alan Pearce, Graduate Assistant in Agricultural Economics (1948).
B. S., Kansas State College.

Royce Owen Pence, Sr., Associate Professor of Milling Industry; Milling Technologist, Agricultural Experiment Station (1927, 1939).
B. S., M. S., Kansas State College.

Verlin H. Peterson, Research Assistant in Agronomy (1948).
B. S., Kansas State College.

William M. Phillips, Assistant Agronomist, Fort Hays Branch Experiment Station (1947, 1948).
B. S., M. S., Kansas State College.

A. G. Pickett, Associate Professor of Animal Husbandry (1935, 1946).
A. B., College of Emporia; B. S., Kansas State College.

William Francis Pickett, Professor and Head of Department of Horticulture; Horticulturist, Agricultural Experiment Station (1917, 1936).

Wilfred Harold Pine, Associate Professor Agricultural Economics (1934, 1948).
B. S., M. S., Kansas State College; Ph. D., University of Minnesota.

Marion Edgar Postlethwaite, Graduate Assistant in Agronomy (1948).
B. S., Kansas State College.

Leon Reed Quinlan, Professor of Horticulture; Ornamental Horticulturist, Agricultural Experiment Station (1927, 1931).
B. S., Colorado Agricultural and Mechanical College; M. L. A., Harvard University.

Robert Fielding Randle, Jr., Graduate Assistant in Agronomy (1948).
B. S., Kansas State College.

Howard Eugene Ray, Graduate Research Assistant in Agronomy (1949).
B. S., Kansas State College.

Fletcher E. Riggs, Graduate Assistant in Agricultural Economics (1948).
B. S., Kansas State College.

Harold Marvin Riley, Instructor in Agricultural Economics (1948).
B. S., M. S., Kansas State College.

William Lowell Rock, Junior Agronomist (1948).
B. S., Kansas State College.

Floyd Earl Rolf, Graduate Assistant in Agricultural Economics (1948).
B. S., Kansas State College.

William D. Rutz, Graduate Assistant in Department of Dairy Husbandry (1948).
B. S., Oklahoma Agricultural and Mechanical College.

Harold Gary Safrin, Assistant Professor of Soils (1948).
B. S., Rutgers University.

Dean Louis Schowengerdt, Graduate Assistant in Farm Accounting (1949).
B. S., Kansas State College.

Orlin James Scoville, Agricultural Economist, Bureau Agricultural Economics, U. S. D. A. (1948).
B. S., M. S., Colorado State College; Ph. D., Harvard University.

Kwong Shue Shan, Research Assistant in Horticulture (1948).
B. S., Lingnan University (China).

John Alfred Shellenberger, Professor and Head of Department of Milling Industry; Cereal Chemist, Agricultural Experiment Station; in coöperation with U. S. D. A. (1944, 1945).
B. S., University of Washington; M. S., Kansas State College; Ph. D., University of Minnesota.

Charles Abraham Simkins, Instructor in Soils (1948).
B. S. in Biol. Sc., B. S. in Agr., Kansas State College.

Robert Fred Sloan, Assistant in Agronomy (1938, 1942).
B. S., M. S., Kansas State College.

Edgar F. Smith, Assistant Professor of Animal Husbandry (1948).
B. S., Agricultural and Mechanical College of Texas; M. S., Kansas State College.

Floyd William Smith, Associate Professor of Agronomy (1946, 1948). On leave.
B. S., Kansas State College; M. S., Michigan State College.

Herman D. Smith, Research Assistant in Poultry Husbandry (1946).
B. S., University of Illinois.

Walter Henry Smith, Graduate Assistant in Animal Husbandry (1948).
B. S., Kansas State College.

Thomas Bruce Stinson, Superintendent, Tribune Branch Experiment Station (1924).
B. S., Kansas State College.

Arthur F. Swanson, Agronomist, U. S. D. A.; in charge, cereal investigations, Fort Hays Branch Experiment Station (1919).
B. S., Kansas State College; M. S., University of Minnesota.

Eugene Douglas Swenson, Industrial Research Fellow in Milling Industry (1949).

Loyd Allen Tatum, Associate Agronomist, U. S. D. A.; Plant Breeder, Agricultural Experiment Station (1946).
B. S., University of Arizona; M. S., Ph. D., Iowa State College.

Ray Iams Throckmorton, Dean; Director of Agricultural Experiment Station (1911, 1946).
B. S., Pennsylvania State College; M. S., Kansas State College.

Howard Henry Voelker, Graduate Assistant in Dairy Husbandry (1948).
B. S., Iowa State College.

Arlin Bruce Ward, Assistant Professor of Milling Industry (1946, 1948).
B. S., Kansas State College.

Desmond Burke Watt, Graduate Assistant in Animal Husbanry (1948).
B. S., University of Alberta.

Arthur D. Weber, Professor and Head of Department of Animal Husbandry; Assistant Director of Agricultural Experiment Station (1931, 1948).
B. S., M. S., Kansas State College; Ph. D., Purdue University.

Dale E. Weibel, Assistant Agronomist, U. S. D. A. (1947).
B. S., M. S., University of Nebraska.

Frank Wellington Wichser, Associate Professor of Milling Industry (1946).
B. S., M. S., Kansas State College.

William Keith Wieland, Assistant Agronomist, U. S. D. A. (1948).
B. S., Kansas State College; M. S., Pennsylvania State College.

William Wayne Willis, Assistant Professor of Horticulture; Florist, Agricultural Experiment Station (1944, 1946).
A. B., College of Emporia.

Charles Peairs Wilson, Associate Professor of Agricultural Economics; Assistant Agricultural Economist, Agricultural Experiment Station (1944, 1946).
B. S., M. S., Kansas State College.

Robert Lee Wilson, Assistant Professor of Horticulture (1948).
A. B., State University of Iowa; M. F., Colorado Agricultural and Mechanical College.

Ellis R. Wise, Graduate Assistant in Poultry Husbandry (1948).
B. S., Kansas State College.

Vernon Winfield Woestemeyer, Assistant in Agronomy, Bindweed Experiment Field, Canton, Kansas (1947).
B. S., Kansas State College.

James Walter Zahnley, Professor of Agronomy; Associate Agronomist, Agricultural Experiment Station (1915, 1947).

Austin W. Zingg, Project Supervisor Wind Erosion Research, U. S. D. A. (1947).
B. S., Iowa State College.

SCHOOL OF ARTS AND SCIENCES

Nellie Aberle, Professor of English (1921, 1948).
B. S., M. S., Kansas State College.

James Edward Ackert, Dean of the Graduate School, Emeritus; Professor of Zoölogy (1913, 1923).
A. B., A. M., Ph. D., Universiy of Illinois.

Wilbur C. Addison, Instructor in English (1947).
A. B., Emory and Henry College.

Jean L. Aiken, Instructor in History (1947).
B. S., University of Nebraska; A. M., Columbia University.

Vera Carney Alden, Instructor in Education and Psychology (1949).
B. S., Greenville College; M. S., Kansas State College.

Robert R. Allen, Research Assistant in Chemistry (1947).
B. S., M. S., Kansas State College.

Oscar W. Alm, Professor of Psychology (1929, 1933).
A. B., University of Nebraska; A. M., Columbia University; Ph. D., University of Minnesota.

Inez Alsop, Associate Professor of History (1923, 1941).
B. S., Kansas State Teachers College (Emporia); M. S., University of Kansas.

Malcolm L. Alsop, Assistant Profesor of Physics (1947).
B. S., M. S., Kansas State College.

Donald Jules Ameel, Professor and Head of Department of Zoölogy; Curator of Natural History Museum (1937, 1945).
A. B., Wayne University; M. A., Sc. D., University of Michigan.

Edgar McCall Amos, Associate Professor of Industrial Journalism and Printing (1920, 1936).
B. S., Kansas State College.

Arthur Clinton Andrews, Associate Professor of Chemistry (1926, 1947).
B. S., Ph. D., University of Wisconsin; M. S., Kansas State College.

Joye Ansdell, Instructor in English (1946).
B. S., Kansas State College; M. A., University of Michigan; B. L. S., University of Chicago.

George Lyman Arms, Jr., Associate Professor of Speech (1948).
B. S., M. A., Ohio State University.

Robert George Arnold, Instructor in Speech (1947).
A. B., College of Wooster.

Madalyn Avery, Associate Professor of Physics (1924, 1946).
B. S., M. S., Kansas State College.

Rodney Whittemore Babcock, Dean (1930).
A. B., University of Missouri; A. M., Ph. D., University of Wisconsin.

Ruth Bachelder, Assistant Professor of English (1947).
B. S., Kansas State College; M. S., Northwestern University.

HANNAH L. BACON, Instructor in English (1946, 1947).
B. S., M. S., Kansas State College.

JOANN SCHEU BADLEY, Instructor in Speech (1948).
B. S., Kansas State College.

EDGAR SYDNEY BAGLEY, Associate Professor of Economics (1940, 1947).
A. B., A. M., University of California.

HARRY LEIGH BAKER, Professor and Head of Department of Education and Psychology (1946).
A. B., Baker University; B. S., Kansas State College; A. M., University of Chicago; Ph. D., Yale University.

WILLIAM JOSEPH BARBER, Instructor in Economics (1949).
A. B., Harvard University.

HAROLD NATHAN BARHAM, Professor of Chemistry (1929, 1943).
A. B., Bethany College; M. S., Ohio State University; Ph. D., University of Kansas.

LAURA FALKENRICH BAXTER, Associate Professor of Home Economics Education (1927, 1941).
B. S., M. S., Kansas State College.

OLGA WAUNETA BAYS, Graduate Assistant in History (1947).
A. B., B. S., Kansas State Teachers College (Emporia).

HENRY VOOHEES BACK, Instructor in Geology (1946, 1947).
B. S., M. S., Kansas State College.

RUSSELL J. BEERS, Assistant Professor of Chemistry (1935, 1948).
B. S., M. S., University of Nebraska.

CHARLES ARTHUR BELL, Instructor in Agricultural Education (1947).
B. S., Kansas State College.

ESTHER E. BENEDICT, Instructor in Mathematics (1946).
A. B., B. S., M. S., Kansas State Teachers College (Emporia).

MARY PRUDENCE BENNETT, Graduate Assistant in English (1948).
B. S., Kansas State College.

DENZIL WALLACE BERGMAN, Instructor in Geology (1948).
B. S., Kansas State College.

ETCYL H. BLAIR, Research Assistant in Chemistry (1948).
A. B., Southwestern College.

VERNON BERNELL BLY, Graduate Assistant in Mathematics (1948).
A. B., Lutheran College.

PHILIP FREDERIC BONHAG, Assistant Professor of Entomology (1948).
B. S., Long Island University; M. S., Pennsylvania State College; Ph. D., Cornell University.

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

DOROTHY MARY BRADLEY, Instructor in Economics (1947).
B. S., Northwestern University.

E. LOWELL BRANDNER, Assistant Professor of Industrial Journalism (1947).
A. B., B. S., Kansas State Teachers College (Emporia).

BETTIE JEANE BRASS, Instructor in Bacteriology (1947).
B. S., Kansas State College; M. S., Wayne University.

AUGUSTIN WILBER BREEDEN, Associate Professor of English, Emeritus (1926, 1949).
B. Ph., M. A., University of Chicago.

EMMETT N. BREEN, Instructor in Physical Education (1948).
B. S., Kansas State College.

TRAVIS EPPS BROOKS, Assistant Professor of Botany; Mycologist, Agricultural Experiment Station (1947).
B. S., M. S., Kansas State College.

EVERETT L. BROSIUS, Instructor in Chemistry (1946).
B. S., Kansas State College.

HOWARD W. BRUBAKER, Professor of Chemistry, Emeritus (1913, 1922).
B. S., Carleton College; Ph. D., University of Pennsylvania.

HARRY R. BRYSON, Associate Professor of Entomology; Associate Entomologist, Agricultural Experiment Station (1924, 1941).
B. S., M. S., Kansas State College.

WILLIAM BOONE BUNGER, Instructor in Chemistry (1946, 1947).
B. S., Washburn University; M. S., Kansas State College.

LELAND DAVID BUSHNELL, Professor of Bacteriology (1908, 1946).
B. S., Michigan Agricultural College; M. S., University of Kansas; Ph. D., Harvard University.

FRANK EDWARD BYRNE, Professor of Geology (1930, 1946).
B. S., Ph. D., University of Chicago.

JAMES PHILLIP CALLAHAN, Professor of English (1924, 1946).
B. S., Fort Hays State College; A. M., University of Kansas.

CYNTHIA CANNON, Graduate Research Assistant in Chemistry (1947).
B. S., Wilson College.

ALVIN BOYD CARDWELL, Professor and Head of Department of Physics (1936, 1937).
B. S., University of Chattanooga; M. S., Ph. D., University of Wisconsin.

JAMES C. CAREY, Assistant Professor of History (1948).
A. B., Nebraska State Teachers College; M. A., Ph. D., University of Colorado.

VIRGINIA M. CAREY, Research Assistant in Chemistry (1948).
B. S., Illinois Wesleyan University

IDA ALFREDA CARLSON, Instructor in Mathematics (1939, 1946).
B. S., M. S., Kansas State College.

LENORE L. CARLSON, Instructor in English (1947).
A. B., Ottawa University.

LOIS E. CARPER, Graduate Assistant in Mathematics (1948).
A. B., MacAlester College.

ROBERT FRANKLIN CELL, Graduate Assistant in Mathematics (1948).
B. S., Kansas State College.

SZU SHIANG CHANG, Graduate Research Assistant in Chemistry (1948).
B. S., National Chi-nan University (China).

ERNEST KNIGHT CHAPIN, Associate Professor of Physics (1923, 1932).
A. B., M. S., University of Michigan.

VIRGINIA L. CHATELAIN, Instructor in Mathematics (1947).
B. S., M. S., Kansas State Teachers College (Emporia).

JOSEPH R. CHELIKOWSKY, Professor of Geology (1937, 1947).
A. B., A. M., Ph. D., Cornell University.

WU-CHIEH CHENG, Research Assistant in Chemistry (1948).
B. S., St. John's University (China).

Louis Watts Clark, Assistant Chemist (1948).
B. S., M. S., University of Oklahoma.

William James Clark, Associate Professor of Accounting (1948).
B. S., Kansas State Teachers College (Pittsburg); M. A., State University of Iowa.

William Kline Clark, Graduate Assistant in Geology (1949).
B. S., University of Notre Dame.

Robert Edward Clegg, Associate Professor of Chemistry (1948).
B. S., Rhode Island State College; B. S., North Carolina State College; Ph. D., Iowa State College.

Charles William Colyer, Professor of Chemistry (1919, 1925).
B. S., M. S., University of Idaho; Ph. D., University of Illinois.

Elizabeth L. Conrad, Instructor in Chemistry (1942).
A. B., Carleton College; M. A., Smith College; Ph. D., State University of Iowa.

Eleanor H. Conn, Instructor in Speech (1947).
B. S. E., Arkansas State Teachers College.

Robert Warren Conover, Professor of English (1915, 1920).
A. B., M. A., Wesleyan University.

Charles Meclain Correll, Professor of History (1922, 1934).
B. S., Kansas State College; Ph. B., Ph. M., University of Chicago.

Wayne Russell Cowell, Graduate Assistant in Mathematics (1948).
B. S., Kansas State College.

William Wallace Cook, Associate Professor of Economics and Sociology (1946).
A. B., Drury College; M. B. A., Ohio State University.

Golda M. Crawford, Instructor in History (1946).
B. S., M. S., Kansas State College.

Naomi Zimmerman Crawford, Instructor in Chemistry (1922, 1946).
B. S., M. S., University of Nebraska.

Peggy Keller Cruse, Graduate Research Assistant in Chemistry (1948).
B. A., Ohio Wesleyan University.

Theodore Louis Cruse, Graduate Research Assistant in Zoölogy (1948).
A. B., Ohio Wesleyan University.

Erma Evangeline Currin, Instructor in English (1947).
B. S., M. S., Kansas State College.

Paul A. Dahm, Assistant Professor of Entomology (1947).
A. B., A. M., Ph. D., University of Illinois.

Ralph Eugene Dakin, Assistant Professor of Sociology (1948).
B. F. A., M. A., University of Colorado.

Harold Ernest Dale, Graduate Assistant in Physics (1947).
B. S., McPherson College.

Robert Dodds Daugherty, Assistant Professor of Mathematics, Emeritus (1930, 1948).
Ph. B., Iowa Wesleyan College; M. S., University of Iowa.

Myrtle Eva Daum, Instructor in English (1947).
A. B., Baker University; A. M., University of Kansas.

Hallam Walker Davis, Professor and Head of Department of English (1913, 1921).
A. B., Indiana University; A. M., Columbia University.

Allan Park Davidson, Professor of Vocational Education (1919, 1930).
B. S., M. S., Kansas State College.

George Adam Dean, Professor of Entomology, Emeritus (1902, 1943).
B. S., M. S., Kansas State College; Sc. D., Southwestern College.

Donald Frank DeCou, Associate Professor of Economics and Sociology (1947).
B. S., Kansas State Teachers College (Pittsburg); M. B. A., Northwestern University.

John Wesley DeMand, Assistant Professor of Psychology (1940, 1946).
A. B., University of Kansas; M. S., Kansas State College.

Lawrence Edward Dennis, Associate Professor of Journalism (1948).
B. A., Iowa State Teachers College; M. S., University of Minnesota.

John E. DeVries, Associate Professor of Chemistry (1946, 1948).
A. B., Hope College; Ph. D., University of Illinois.

Leonard Wesley Dewhirst, Research Assistant in Zoölogy, Agricultural Experiment Station (1946).

Laurel A. Dirks, Graduate Assistant in Mathematics (1947).
A. B., Behel College.

Theodore O. Dodge, Assistant Professor of Accounting (1946).
B. S., Kansas State College.

Esther Beachel Dominick, Instructor in English (1948).
A. B., Kansas Wesleyan University; M. S., Kansas State College.

Carl A. Dorf, Assistant Professor of Chemistry (1931, 1948).
A. B., Bethany College; M. S., Kansas State College.

Russell Dean Dragsdorf, Assistant Professor of Physics (1948).
B. S., Ph. D., Massachusetts Institute of Technology.

Verlin Robert Easterling, Assistant Professor of History (1946).
A. B., Northwestern State Teachers College; M. A., University of Colorado.

George Orval Ebberts, Assistant Professor; Assistant to Dean (1946, 1949).
B. S., Kansas State College.

Helen Elizabeth Elcock, Professor of English (1920, 1948).
A. B., College of Emporia; A. M., University of Chicago.

Alice Elliott, Instructor in Zoölogy (1946, 1947).
B. S., Kansas State Teachers College (Emporia); M. S., Kansas State College.

Louis D. Ellsworth, Associate Professor of Physics (1946).
B. S., Case Institute of Technology; M. S., Ph. D., Ohio State University.

Otto Herman Elmer, Associate Professor of Botany; Associate Plant Pathologist, Agricultural Experiment Station (1927, 1937).
B. S., M. S., Oregon Agricultural College; Ph. D., Iowa State College.

Conrad J. K. Ericksen, Associate Professor of Economics (1946, 1947).
A. B., University of Kansas; M. B. A., Harvard University.

Lester Edgar Erwin, Assistant Professor of Bacteriology (1946).
B. S., Kansas State College; M. S., Ph. D., Iowa State College.

Elbert L. Eshbaugh, Instructor in Entomology, Agricultural Experiment Station (1945, 1947).
B. S., Kansas State College.

Charles Clifford Eustace, Assistant Professor of Agricultural Education (1946).
B. S., Kansas State College.

Thomas M. Evans, Assistant Professor of Physical Education (1942, 1948).
B. S., Kansas State College; M. S., University of Michigan.

Gordon E. Fairchild, Graduate Assistant in Zoölogy (1948).
A. B., Morningside College.

Jacob Olin Faulkner, Professor of English (1922, 1927).
A. B., Washington and Lee University; M. A., Pennslyvania State College.

Hurley Fellows, Pathologist, U. S. D. A., Cereal Investigations, Agricultural Experiment Station (1925, 1947).
B. S., Oregon State College; M. S., Ph. D., University of Wisconsin.

Doris Hays Fenton, Instructor in English (1945, 1946).
A. B., Swarthmore College; M. S., Kansas State College.

Glenn Leroy Fickel, Instructor in English (1947).
A. B., Adrian College; S. T. B., Westminster Theological Seminary.

Roland L. Fischer, Graduate Assistant in Entomology (1948).
B. S., University of Michigan; M. S., Michigan State College.

William Robert Fischer, Associate Professor of Music (1948).
B. M., M. M., Northwestern University.

Eustace V. Floyd, Professor of Physics, Emeritus (1911, 1948).
B. S., Earlham College.

Vernon Daniel Foltz, Professor of Bacteriology (1929, 1946).
B. S., M. S., Kansas State College.

Woodrow Wilson Franklin, Instructor in Entomology, Agricultural Experiment Station (1948).
B. S., McPherson College.

John Carroll Frazier, Professor of Botany and Plant Pathology; Plant Pathologist, Agricultural Experiment Station (1926, 1947).
A. B., DePauw University; M. A., University of Nebraska; Ph. D., University of Chicago.

Harold M. Froslie, Assistant Professor of Physics (1947).
B. A., Augustana College; M. S., State University of Iowa; Ph. D., University of Wisconsin.

Holly Claire Fryer, Professor of Mathematics; Statistician, Agricultural Experiment Station (1940, 1945).
B. S., University of Oregon; M. S., Oregon State College; Ph. D., Iowa State College.

Albert Furman, Assistant Professor of Mathematics (1947).
A. B., M. S., University of New Hampshire.

Viola G. Furumoto, Instructor in Zoölogy (1947, 1948).
B. S., University of Minnesota.

Gordon George Gabel, Graduate Assistant in Chemistry (1948).
B. S., Wisconsin State Teachers College.

Percy Leigh Gainey, Professor and Head of Department of Bacteriology; Bacteriologist, Agricultural Experiment Station (1914, 1946).
B. S., M. S., North Carolina State College; A. M., Ph. D., Washington University.

James Hamlin Gardner, Professor of Physical Education (1939, 1948).
B. S., M. S., University of Southern California.

Dell Edward Gates, Research Assistant in Entomology (1948).
B. S., Kansas State College.

Frank Caleb Gates, Professor of Botany and Plant Pathology (1919, 1928).
A. B., University of Illinois; Ph. D., University of Michigan.

Janis M. George, Research Assistant in Chemistry (1948).

David F. Geppert, Assistant Professor of Music (1946, 1948).
B. M., M. M., Northwestern University.

Katherine Geyer, Professor and Head of Department of Physical Education for Women (1927, 1945).
B. S., Ohio State University; M. A., Columbia University.

Herschel Thomas Gier, Associate Professor of Zoölogy (1947).
A. B., Kansas State Teachers College (Pittsburg); Ph. D., Indiana University.

Blaine L. Glendening, Instructor in Chemistry (1947).
A. B., M. A., Kansas State Teachers College (Pittsburg).

Arthur Leonard Goodrich, Professor of Zoölogy (1929, 1947).
B. S., College of Idaho; M. S., University of Idaho; Ph. D., Cornell University.

Ira Jay Gordon, Assistant Professor of Psychology (1948).
B. B. A., City College of New York; M. A., Columbia University.

Roy H. Goss, Instructor in English (1947, 1949).
A. B., Washburn Municipal University; M. S., Kansas State College.

Gladys Brandt Gough, Assistant Professor of Speech (1945, 1948).
B. S., Northwestern University; M. S., Kansas State College.

Ralph Melvin Graham, Professor of Physical Education (1948).
B. S., Kansas State College; M. S., Indiana University.

Finis M. Green, Associate Professor of Education (1948).
B. S., Kansas State Teachers College (Pittsburg); M. S., University of Kansas.

Mary Margaret Green, Instructor in Bacteriology (1946).
B. S., Kansas State College.

Edison Greer, Associate Professor of Mathematics (1936, 1946).
B. S., Kansas State Teachers College (Emporia); M. S., Kansas State College; Ph. D., University of Kansas.

Hilda R. Grossmann, Assistant Professor of Music (1927, 1933).
B. M., Chicago Music College; B. S., Kansas State College; M. A., Stanford University.

Dorothy Belle Gudgell, Instructor in Economics and Accounting (1943, 1946).
B. S., M. S., Kansas State College.

Ralph E. Guerrant, Assistant Professor of Chemistry (1946).
A. B., Westminster College; M. S., Ph. D., University of Missouri.

Merle Edwin Gugler, Assistant Professor of Accounting (1947, 1948).
B. S., Kansas State Teachers College (Emporia); M. S., Kansas State College.

Alphaeus Matthew Guhl, Associate Professor of Zoölogy (1943, 1947).
B. A., North Central College; M. S., Ph. D., University of Chicago.

Charles Carson Halbower, Instructor in Psychology (1948).
B. S., Kansas State College.

Howard Laird Hall, Graduate Assistant in Economics and Sociology (1949).
B. S., Kansas State College.

J. L. Hall, Assistant Professor of Chemistry; Physical Chemical Investigations in Meat, Agricultural Experiment Station (1922, 1923).
B. S.,, M. S., Ph. D., University of Illinois.

Lawrence F. Hall, Associate Professor of Vocational Education (1926, 1941).
B. S., M. S., Kansas State College.

Mina G. Hall, Instructor in Chemistry (1933, 1942).
B. S., University of Nebraska; M. S., Ph. D., State University of Iowa.

Earl Dahl Hansing, Professor of Botany and Plant Pathology; Plant Pathologist, Agricultural Experiment Station (1940, 1947).
B. S., University of Minnesota; M. S., Kansas State College; Ph. D., Cornell University.

Murville Jennings Harbaugh, Professor of Zoölogy (1929, 1945).
A. B., A. M., University of Montana; Ph. D., University of Nebraska.

Mary Theresa Harman, Professor of Zoölogy, Emeritus (1912, 1947).
B. S., M. S., Ph. D., Indiana University.

John Orville Harris, Assistant Professor of Bacteriology (1942, 1946).
B. S., Ph. D., Kansas State College; M. S., University of Hawaii.

Stella Maude Harriss, Assistant Professor of Chemistry (1916, 1927).
B. S., M. S., Kansas State College.

Lois Meisner Hartley, Instructor in Chemistry (1946).
B. S., M. S., Kansas State College.

Ruth F. Hartman, Assistant Professor of Music (1924).
B. S., Columbia University.

Ward Hillman Haylett, Associate Professor of Physical Education (1928, 1939).
A. B., Doane College.

Herbert Henley Haymaker, Professor of Botany and Plant Pathology (1917, 1927).
B. S., Kansas State College; M. S., Ph. D., University of Wisconsin.

Robert Wilson Hays, Assistant Professor of Music (1946).
A. B., B. M., Carroll College; M. Sac. Mus., Union Theological Seminary.

Harry Jean Hedlund, Assistant Professor of Music (1946, 1948).
B. M., M. M., State University of Iowa.

Donald Francis Hermes, Instructor in Speech (1948).
B. F. A., College of William and Mary.

Earl Howard Herrick, Professor of Zoölogy; Mammalogist, Agricultural Experiment Station (1935, 1941).
B. S., M. S., Kansas State College; Ph. D., Harvard University.

Howard M. Hickman, Graduate Assistant in Chemistry (1949).
B. A., Southwestern College.

Howard Templeton Hill, Professor and Head of Department of Speech (1920, 1921).
B. S., Iowa State College; J. D., University of Chicago.

Randall Conrad Hill, Professor of Sociology (1929, 1935).
B. S., M. S., Kansas State College; Ph. D., University of Missouri.

James Robert Hoath, Graduate Assistant in Economics and Sociology (1947).
B. S., M. S., Kansas State College.

Henry A. Hoffman, Research Assistant in Chemistry (1948).
A. B., M. A., University of Kansas.

James F. Holland, Graduate Assistant in Physics (1948).
B. S., University of Oklahoma.

Ina Emma Holroyd, Assistant Professor of Mathematics, Emeritus (1899, 1948).
B. S., Kansas State College; B. S., Kansas State Teachers College (Emporia); A. M., Columbia University.

Carvel James Holt, Graduate Research Assistant in Zoölogy (1948).
B. S., York College.

Edwin Lee Holton, Dean of Summer School, Emeritus; Professor of Education (1910, 1947).
A. B., Indiana University; Ph. D., Columbia University.

Adrian A. Holtz, Professor of Economics and Sociology (1919, 1942).
A. B., Colgate University of Chicago; Ph. M., B. D., Ph. D., University of Chicago.

Guy B. Homman, Instructor in Chemistry (1948).
B. S., Kansas State College.

Earl G. Hoover, Professor of Speech (1943, 1947).
A. B., Illinois College; A. M., State University of Iowa.

Helen Pansy Hostetter, Professor of Journalism and Director of Home Economics Journalism (1926, 1946).
A. B., University of Nebraska; M. S., Northwestern University.

F. Virginia Howe, Assistant Professor of Speech (1947).
B. A., Elmira College.

Barbara Fennema Howell, Instructor in Chemistry (1946).
B. A., University of Minnesota; M. S., Kansas State College.

Yao Hsing, Research Assistant in Chemistry (1949).
B. S., M. S., Catholic University (China).

J. S. Hughes, Professor of Chemistry; in charge of Animal Nutrition, Agricultural Experiment Station (1910, 1920).
B. S., M. S., Ohio Wesleyan University; M. S., Ph. D., Ohio State University.

Emma S. Hyde, Associate Professor of Mathematics (1920, 1926).
A. B., University of Kansas; A. M., University of Chicago.

Ernest A. Ikenberry, Graduate Assistant in Chemistry (1948).
A. B., McPherson College.

Iver Victor Iles, Professor of Government (1911, 1920).
A. B., A. M., University of Kansas.

Betty Hulson Irish, Instructor in English (1946).
B. S., West Illinois State Teachers College.

Glen A. Jacobson, Graduate Assistant in Chemistry (1948, 1949).
B. S., Kansas State College.

William Charles Janes, Associate Professor of Mathematics (1922, 1946).
B. S., Northwestern University; M. A., University of Nebraska.

Wendell Berdette Johnson, Graduate Assistant in Geology and Geography (1948).
B. S., Kansas State College.

Charles Otis Johnston, Pathologist, U. S. D. A., Cereal Investigations, Agricultural Experiment Station (1919, 1941).
B. S., M. S., Kansas State College.

Dale V. Jones, Assistant Professor of English (1946, 1948).
B. S., M. S., Kansas State College.

Jack Cutler Keir, Instructor in Economics (1948).
A. B., Middlebury College; M. A., Tufts College

Allis Ashton Keith, Graduate Assistant in Bacteriology (1947).
A. B., University of Kansas City; M. S., Kansas State College.

John Gilbert Kenyon, Assistant Professor of Economics and Sociology (1948).
A. B., M. A., State University of Iowa.

Patricia Elizabeth Kirkeminde, Graduate Assistant in English (1949).
B. S., Kansas State College.

Marion Gibbonney Kirkpatrick, Instructor in English (1946).
B. S., M. S., Kansas State College.

Ruth Ella Kindred, Instructor in Economics and Sociology (1947, 1948).
B. S., Kansas State College.

Stanley M. Knedlik, Graduate Assistant in History (1948).
B. S., Kansas State College.

Fritz G. Knorr, Assistant Professor of Physical Education (1942, 1948).
B. S., M. S., Kansas State College.

Dorothy I. Knouse, Instructor in Mathematics (1947).
B. S., Kansas State Teachers College (Pittsburg).

William E. Koch, Assistant Professor of English (1946, 1948).
B. A., North Dakota State Teachers College; M. S., Kansas State College.

Anna E. Kohler, Graduate Assistant in History (1947).
B. S., Missouri State Teachers College (Kirksville).

James Burton Kring, Graduate Assistant in Entomology (1948).
B. S., Rockhurst College; M. S., Kansas State College.

Fred A. Kummerow, Associate Professor of Chemistry (1945, 1948).
B. S., M. S., Ph. D., University of Wisconsin.

Donald G. Kundinger, Assistant Professor of Chemistry (1941, 1948).
B. S., Ph. D., University of Wisconsin.

Russell Laman, Assistant Professor of English (1936).
B. S., Kansas State College; M. A., State University of Iowa.

Roy Clinton Langford, Professor of Psychology (1926, 1941).
B. S., M. S., Kansas State College; Ph. D., Stanford University.

Arthur L. Langvardt, Assistant Professor of English (1947).
A. B., B. S., Kansas State Teachers College (Emporia).

William James Langworthy, Instructor in Economics and Accounting (1947).
B. S., Kansas State College.

Francis C. Lanning, Assistant Professor of Chemistry (1942, 1946).
B. S., M. S., University of Denver; Ph. D., University of Minnesota.

Sara C. Larson, Instructor in Geography (1946).
A. B., Knox College; B. E., Illinois Normal College; M. S., University of Chicago.

Mendel E. Lash, Professor of Chemistry (1922, 1947).
A. B., M. A., Ph. D., Ohio State University.

Ralph Richard Lashbrook, Professor and Head of Department of Industrial Journalism and Printing (1934, 1943).
B. S., Kansas State College; M. S., University of Wisconsin.

Boris Leaf, Associate Professor of Physics (1946).
B. S., University of Washington; Ph. D., University of Illinois.

Luther Leavengood, Professor and Head of Department of Music (1945).
B. M., University of Kansas; M. M., University of Michigan.

Milford Ray Lee, Graduate Assistant in Physics (1949).
B. S., Kansas State College.

Harry Ralph Westly Lenhoff, Graduate Assistant in Music (1948).
B. M., University of Miami.

Clarence Flavius Lewis, Associate Professor of Mathematics (1920, 1926).
A. B., University of Denver; M. S., Kansas State College.

L. Rhodes Lewis, Graduate Assistant in Music (1948).
B. M., Baker University.

Louis H. Limper, Professor of Modern Languages, Emeritus (1914, 1944).
A. B., Baldwin Wallace College; A. M., University of Wisconsin; Ph. D., State University of Iowa.

William Lindquist, Professor of Music (1921, 1927).
B. M., Cosmopolitan School of Music.

Doris Adriana Lloyd, Instructor in Mathematics (1946).
S. B., University of Chicago.

Charles Howard Lockhart, Assistant Professor of Zoölogy (1940, 1947).
B. S., M. S., Kansas State College.

Kenneth L. Loewen, Graduate Assistant in Mathematics (1948).
A. B., Tabor College.

Marguerite E. Lofink, Assistant Professor of Education (1944, 1946).
B. S., M. S., University of Nebraska.

Calvin Gene Logerman, Graduate Assistant in Accounting (1948).
B. S., Kansas State College.

Roberta C. Logerman, Graduate Assistant in History (1948).
A. B., University of California.

Glenn Wesley Long, Assistant Professor of Sociology (1938, 1945).
A. B., Baker University; M. S., Kansas State College.

Thomas Henry Lord, Assistant Professor of Bacteriology (1941, 1946).
B. S., Massachusetts State College; M. S., Ph. D., University of Illinois.

Ralph A. Loyd, Instructor in English (1946, 1947).
B. S., Fort Hays Kansas State College.

Eva Caroline Lyman, Associate Professor of Physical Education for Women (1943, 1946).
B. S., Battle Creek College; M. A., University of Iowa.

Eric Ross Lyon, Associate Professor of Physics (1921, 1928).
A. B., M. S., Phillips University.

George A. McCaskill, Assistant in Chemistry (1948).
B. S., Kansas State College.

Elizabeth Unger McCracken, Assistant Professor of Botany (1938, 1946).
B. A., M. A., Wellesley College; Ph. D., University of California.

Thurlo E. McCrady, Professor of Athletics and Physical Education; Director of Athletics (1947).
A. B., Hastings College; M. S., University of Southern California.

Maynard Lee McDowell, Assistant Professor of Chemistry (1926, 1945).
A. B., Central College; M. A., University of Missouri; Ph. D., State University of Iowa.

Robert H. McFarland, Associate Professor of Physics (1946, 1947).
A. B., B. S., Kansas State Teachers College (Emporia); Ph. M., Ph. D., University of Wisconsin.

Vernon Ray McGuire, Assistant Professor of Speech (1947).
B. A., Wichita University.

Katheryn Ann McKinney, Assistant Professor of Physical Education for Women (1946).
B. S., Kansas State College; M. A., George Peabody College for Teachers.

Mildred M. McMullen, Instructor in English (1946).
B. S., Kansas State College; M. A., University of Kansas.

Leona I. Maas, Instructor in English (1947).
B. M., B. S., M. S., Kansas State College.

Santiago Pedro Macario, Instructor in Economics (1948).
B. C., University of Cordoba (Argentina).

Richard M. Mall, Associate Professor of Speech (1946, 1947). On leave.
B. S., Kansas State College; M. A., Ohio State University.

Mary Louise Markley, Graduate Assistant in Psychology (1948).
B. S., Kansas State College.

Shirley Ann Marnix, Graduate Assistant in Sociology (1948).
A. B., Phillips University.

Charles Walton Matthews, Professor of English (1920, 1925).
B. S., Kansas State Teachers College (Pittsburg); M. A., University of Chicago.

Claude Willard Matthews, Instructor in Geology (1946, 1948).
B. S., Kansas State College.

George Willard Maxwell, Assistant Professor of Physics (1928, 1929).
A. B., M. S., University of Michigan.

Calvin J. Medlin, Associate Professor of Journalism; Graduate Manager of Student Publication (1934, 1948).
B. S., M. S., Kansas State College.

Leo Edward Melchers, Professor and Head of Department of Botany and Plant Pathology; Plant Pathologist, Agricultural Experiment Station (1913, 1919).
B. S., M. S., Ohio State University.

Joseph F. Merrill, Assistant Chemist (1921).
B. S., University of Maine.

Allen David Miller, Associate Professor of Government (1946).
A. B., University of Kansas; M. A., University of Texas.

Cecil H. Miller, Associate Professor of Philosophy (1945).
A. B., University of Kansas; A. M., University of California.

Edsel L. Miller, Graduate Assistant in Chemistry (1948).
B. S., Kansas State College.

William Arthur Miller, Assistant Professor of Bacteriology (1947).
B. S., Ph. D., University of Illinois; M. S., University of Pennsylvania

Howard L. Mitchell, Assistant Professor of Chemistry; Assistant Chemist, Agricultural Experiment Station (1946, 1948).
B. S., Oklahoma Agricultural and Mechanical College; Ph. D., Purdue University.

Maurice Charles Moggie, Professor of Education (1930, 1945).
B. S., M. S., Kansas State College; Ph. D., Ohio State University.

Conrad Stephen Moll, Associate Professor of Physical Education (1929, 1947).
B. P. E., George Williams College; M. S., Kansas State College.

George Montgomery, Professor and Head of Department of Economics and Sociology; Agricultural Economist, Agricultural Experiment Station (1925, 1941).
B. S., M. S., Kansas State College.

Mary Ann Montgomery, Instructor in Journalism (1947, 1948).
B. S., Kansas State College.

Fritz Moore, Professor and Head of Department of Modern Languages (1934).
A. B., University of Akron; A. M., Ph. D., University of Illinois.

Sabrina Morlan, Instructor in Mathematics (1946).
A. B., Kansas State Teachers College (Pittsburg); M. S., University of Michigan.

Thirza Adaline Mossman, Associate Professor of Mathematics (1922, 1946).
A. B., University of Nebraska; A. M., University of Chicago.

Gene C. Mount, Instructor in Accounting (1946).
B. S., Kansas State College.

Alvin Edgar Mulanax, Instructor in Economics (1947).
B. S., Kansas State College.

Mary Jean Mulvaney, Instructor in Physical Education for Women (1948).
B. S., University of Nebraska.

Donald F. Munro, Associate Professor of Modern Languages (1940).
B. S., M. A., Acadia University; Ph. D., University of Illinois.

Frank L. Myers, Assistant Professor of Physical Education (1926, 1947).
B. M., Kansas State College.

Robert Kirkland Nabours, Professor of Zoölogy; Geneticist, Agricultural Experiment Station (1910, 1912).
B. Ed., Ph. D., University of Chicago.

Margaret Alice Newcomb, Associate Professor of Botany (1925, 1941).
B. S., M. S., Kansas State College.

John Patrick Noonan, Instructor in English (1947, 1948).
B. S., Rockhurst College; M. S., Kansas State College.

Jack Irwin Northam, Assistant Professor of Mathematics (1947).
A. B., New York University; M. A., Michigan State College.

Carroll Frank Oakley, Associate Professor of Physics (1948).
A. B., Milton College; M. A., University of Michigan.

Thomas Joseph O'Boyle, Instructor in Physical Education (1949).
B. E., Tulane University.

Merlin E. Olmstead, Graduate Assistant in Physics (1947).
B. S., Kansas State College.

Emil H. Otto, Research Assistant in Chemistry (1949).
B. S., Platteville State Teachers College (Wisconsin).

Rosemary Jane Owens, Instructor in Speech (1947).
B. S., University of Nebraska; M. A., University of Denver.

Clarice M. Painter, Assistant Professor of Music (1924).
Diploma, Hardin College; Diploma, New England Conservatory of Music.

Reginald H. Painter, Professor of Entomology; Entomologist, Agricultural Experiment Station (1926, 1941).
A. B., A. M., University of Texas; Ph. D., Ohio State University.

Ralph Langley Parker, Professor of Apiculture and Entomology; State Apiculturist; Apiculturist and Entomologist, Agricultural Experiment Station (1925, 1930).
B. S., Rhode Island State College; Sc. M., Brown University; Ph. D., Cornell University; M. S., Iowa State College.

S. Thomas Parker, Associate Professor of Mathematics (1947, 1948).
B. A., M. A., University of British Columbia; Ph. D., University of Cincinnati.

Clyde W. Parkert, Research Assistant in Chemistry (1948).
B. S., Iowa State College; B. S., Iowa State Teachers College.

Fred M. Parris, Instructor in Journalism (1944).
B. S., Kansas State College.

Donald B. Parrish, Assistant Chemist (1943).
B. S., M. S., Ph. D., Kansas State College.

Fred Louis Parrish, Professor and Head of Department of History and Government (1927, 1942).
A. B., M. A., Northwestern University; B. D., Garrett Institute; Ph. D., Yale University.

Lucille Annette Paslay, Graduate Assistant in Botany (1947).
A. B., University of Kansas; M. S., Kansas State College.

Lucille Moore Patten, Instructor in Department of English (1946).
B. S., Kansas State Teachers College (Emporia).

Leo Wesley Patton, Research Assistant in Chemistry (1949).
A. B., Southwestern College; M. A., Kansas University.

Helen Lawson Patty, Graduate Assistant in Bacteriology (1947).
B. S., Kansas State College.

Richard Earl Patty, Graduate Assistant in Bacteriology (1946).
B. S., Kansas State Teachers College (Pittsburg); M. S., Kansas State College.

Caroline Frances Peine, Graduate Assistant in English (1948).
A. B., Carleton College.

Milton Pelischek, Graduate Assistant in English (1948).
B. S., Kansas State College.

Marion Herfort Pelton, Assistant Professor of Music (1928, 1931).
B. M., University of Wisconsin; B. S., Kansas State College.

Alfred T. Perkins, Professor of Chemistry (1925, 1938).
B. S., Pennsylvania State; M. S., Ph. D., Rutgers University.

Chester Evan Peters, Assistant Professor; Assistant Dean (1947, 1948).
B. S., Kansas State College.

Helen I. Peterson, Instructor in Physics (1947).
B. S., M. S., Kansas State College.

John Christian Peterson, Professor of Psychology (1917, 1920). On leave.
A. B., University of Utah; Ph. D., University of Chicago.

Leo Henry Petri, Instructor; Technician in Zoölogy (1941).
A. B., Peru State Teachers College (Nebraska); M. A., University of Nebraska.

Dorothy Bradford Pettis, Associate Professor of Modern Languages (1927, 1937).
A. B., A. M., University of Nebraska; Diploma, Sorbonne, Paris; Diploma, Institut de Phonetique, Paris.

Byron Blake Phillips, Instructor in Physics (1947, 1948).
B. S., Kansas State College.

GAYTHER L. PLUMMER, Graduate Assistant in Botany (1948).
B. S., Butler University.

MARY ELIZABETH PORTER, Graduate Assistant in Bacteriology (1948).
B. S., Oklahoma Agricultural and Mechanical College.

GEORGE CHRISTIAN POTTER, Graduate Research Assistant in Chemistry (1948).
B. S., Kansas State College.

ISABEL M. POWERS, Assistant Instructor in English (1947).
B. S., M. S., Kansas State College.

ROBERT EMMETT PYLE, Assistant Professor of Modern Languages (1947).
A. B., A. M., University of Kansas.

GEORGE E. RABURN, Professor of Physics, Emeritus (1910, 1940).
A. B., M. S., University of Michigan.

MANUEL D. RAMIREZ, Assistant Professor of Modern Languages (1946).
B. A., M. A., University of Florida.

MARGARET ANN RAMSDALE, Graduate Assistant in Home Economics Education (1948).
B. S., M. S., Kansas State College.

ESTHER CATHERINE RELIHAN, Graduate Assistant in Chemistry (1946).
B. S., Kansas State College.

LEON MERLE REYNARD, Instructor in Physical Education (1948).
B. S., Kansas State College.

NYDIA JOAN REYNOLDS, Instructor in Speech (1947).
A. B., Adams State College; M. A., University of Washington; A. B., West Texas State College.

ADA RICE, Professor of English, Emeritus (1899, 1927).
B. S., M. S., Kansas State College.

HAZEL M. RIGGS, Assistant Professor of History (1945).
A. B., A. M., University of Kansas.

LOUIS RISEMAN, Assistant Professor of Geology (1946, 1947).
B. S., M. S., Tufts College.

NOBLE WARREN ROCKEY, Professor of English, Emeritus (1921).
A. B., A. M., Ohio State University.

FRANCES R. ROGERS, Instructor in Speech (1945).
Graduate, Emerson College.

RICHARD DEAN ROGERS, Instructor in Government (1948).
B. S., Kansas State College; LL. B., University of Kansas.

SAMUEL NICHOLAS ROGERS, JR., Assistant Chemist (1947).
B. S., Kansas State College.

MARCIA M. ROTHROCK, Instructor in Physical Education for Women (1948, 1949).
A. B., B. S., Texas State College for Women.

LUCILE OSBORNE RUST, Professor of Home Economics Education (1924, 1929).
B. S., Kansas State Teachers College (Pittsburg); M. S., Kansas State College.

ADELBERT BOWER SAGESER, Professor of History (1938, 1941).
A. B., Nebraska State Teachers College (Wayne); M. A., Ph. D., University of Nebraska.

RALPH CRAFTON SANGER, Professor and Head of Department of Mathematics (1946).
B. S., M. S., Ph. D., University of Chicago.

John Sanik, Jr., Research Assistant in Chemistry (1949).
B. S., M. S., Rhode Island State College.

Duane L. Sawhill, Instructor in Chemistry (1946).
B. S., M. S., Kansas State College.

Lewis Allen Schafer, Assistant Professor of Botany (1947, 1948).
B. S., M. S., Kansas State College.

William George Schrenk, Associate Professor of Chemistry (1938, 1947).
A. B., Western Union College; M. S., Ph. D., Kansas State College.

Myra Edna Scott, Assistant Professor of English (1928, 1937).
B. S., Kansas State College; A. M., Stanford University.

Huber Self, Instructor in Geography (1947).
B. S., Central State College; M. S., Oklahoma Agricultural and Mechanical College.

Dexter B. Sharp, Assistant Professor of Chemistry (1947).
A. B., Carleton College; M. A., Ph. D., University of Nebraska.

Donald F. Showalter, Assistant Professor of Psychology (1928, 1947).
A. B., M. A., University of Nebraska; Ph. D., University of Kansas.

Euniece Reddick Skinner, Instructor in Zoölogy (1947).
B. S., Kansas State College.

Ralph E. Silker, Professor and Head of Department of Chemistry; Chemist, Agricultural and Engineering Experiment Station (1941, 1948).
B. A., University of Dubuque; M. S., Ph. D., State University of Iowa.

Charles Mervyn Slagg, (Temporary) Assistant Professor of Botany (1946).
B. S., M. S., University of Wisconsin.

Floyd B. Sloat, Assistant Professor of Mathematics (1946, 1947).
A. B., Ouachita College; M. A., University of Arkansas.

Francis M. Smith, Instructor in Chemistry (1945, 1947).
B. S., M. S., Kansas State College.

Howard W. Smith, Assistant Professor of Entomology and Plant Pathology (1947).
B. S., M. S., University of New Hampshire.

Margaret Harrison Smith, Instructor in Geography (1946).
A. B., Randolph Macon College; M. A., University of North Carolina; M. S., University of Chicago.

Robert Baldwin Smith, Graduate Assistant in Music (1947).
B. A., St. Norbert College.

Roger Cletus Smith, Professor and Head of Department of Entomology; Entomologist, Agricultural Experiment Station (1920, 1943).
A. B., Miami University; A. M., Ohio State University; Ph. D., Cornell University.

Benjamin L. Smits, Assistant Professor of Chemistry; Associate Food Chemist, Agricultural Experiment Station (1926, 1948).
B. S., M. S., Ph. D., Michigan State College.

Margaret Massengill Smull, Instructor of Bacteriology (1948).
B. S., M. S., Kansas State College.

Veryle Edwin Snyder, Graduate Assistant in Physical Education (1948, 1949).
B. S., Kansas State College.

Homer Edward Socolofsky, Instructor in History (1946, 1947).
B. S., M. S., Kansas State College.

Marilynn Spanglet, Instructor in Mathematics (1947).
A. B., Hunter College; M. A., University of California.

Arthur Bradley Sperry, Professor and Head of Department of Geology (1921, 1946).
B. S., University of Chicago.

Karl Stacey, Associate Professor of Geography (1943, 1948).
B. A., M. A., University of Colorado.

Robert G. Stanley, Instructor in the English Department (1948, 1949).
B. S., M. S., Kansas State College.

Florence Margaret Stebbins, Assistant in Genetics, Agricultural Experiment Station (1931).
B. S., M. S., Kansas State College.

Thomas B. Steunenberg, Professor of Music Theory; Director, Graduate Study in Music (1947).
B. S., Northwestern University; M. S., University of Michigan.

Carrol Harvey Stevens, Graduate Assistant in Physics (1948).
B. A., Hastings College.

James G. Steward, Graduate Assistant in Mathematics (1947).
B. S., Lawrence College.

Harry Martin Stewart, Professor of Accounting (1926, 1941).
A. B., M. B. A., C. P. A., University of Kansas.

Edward S. Stickley, Assistant Chemist (1941, 1943).
B. S., Washburn College; M. S., Kansas State College.

Charles William Stratton, Professor of Music (1927, 1948).
B. S., M. S., Kansas State College.

William Timothy Stratton, Professor of Mathematics (1910, 1923).
A. B., A. M., Indiana University; Ph. D., University of Washington.

Vivian Lewis Strickland, Professor of Education (1917, 1922).
A. B., A. M., Ph. D., University of Nebraska.

Anna Marie Sturmer, Professor of English (1920, 1921).
A. B., M. A., University of Nebraska.

Verne S. Sweedlun, Professor of History (1941, 1947).
A. B., Bethany College; A. M., University of Kansas; Ph. D., University of Nebraska.

Wayne Edwards Testerman, Instructor in Sociology (1947).
A. B., A. M., B. D., Phillips University.

William Wilson Thomas, Assistant Professor of Botany (1947).
B. Ed., Eastern Illinois State Teachers College; M. S., University of Illinois.

Frank J. Thompson, Instructor in Physical Education and Athletics (1937)
B. Ed., Minnesota State Teachers College; M. Ed., M. Ph. Ed., Springfield College.

Neil Baird Thompson, Graduate Assistant in History (1948).
B. S., Kansas State College.

Otto William Tiemeier, Assistant Professor of Zoölogy (1947, 1949).
A. B., M. A., University of Kansas; Ph. D., University of Illinois.

Lansford Elmer Trapp, Graduate Assistant in Mathematics (1948).
B. S., South Dakota State College.

Howard Wayne Trimm, Graduate Assistant in Zoölogy (1948).
A. B., Augustana College.

Robert Lee Tugwell, Graduate Assistant in Zoölogy (1946, 1947).
B. S., University of Florida; M. S., University of Alabama.

Lois B. Turner, Instructor in History (1946).
B. S., M. S., Kansas State College.

W. A. Van Winkle, Associate Professor of Chemistry (1922, 1932).
B. S., University of Michigan; B. S., M. S., Ph. D., University of Illinois.

Rosemary Garnet Wade, Instructor in Speech (1947).
A. B., University of Kansas.

Donald C. Walker, Assistant Research Chemist (1948).
B. S., Kansas State College.

Paul K. Walker, Instructor in Physical Education (1947, 1948).
A. B., Wichita University.

Warren Vincent Walker, Instructor in Music (1948).
B. A., University of Washington; M. M., Cincinnati Conservatory of Music.

Charles Philip Walters, Assistant Professor of Geology (1948).
B. S., M. S., Kansas State College.

Kenneth M. Warren, Instructor in Physical Education (1948).
B. S., Kansas State College.

Louis P. Washburn, Professor of Physical Education (1926, 1930).
B. S., Carleton College; B. P. E., M. P. E., Springfield College.

Elaine H. Watt, Instructor in Speech (1946).
A. B., Park College.

John David Wells, Graduate Assistant in Geology (1948).
B. S., Kansas State College.

William E. West, Y. M. C. A. Secretary; Instructor in Psychology (1946, 1948).
B. S., M. S., Kansas State College.

Loren E. Whipps, In-Service Teacher Trainer for Agricultural Education (1947).
B. S., Kansas State College.

Stuart E. Whitcomb, Professor of Physics (1941, 1947).
B. S., Antioch College; M. S., Syracuse University; Ph. D., Ohio State University.

Alfred Everett White, Professor of Mathematics (1909, 1918).
B. S., M. S., Kansas State College.

Mary Frances White, Instructor in English (1947).
B. S., M. S., Kansas State College.

Carrell H. Whitnah, Assistant Professor of Chemistry; Dairy Chemist, Agricultural Experiment Station (1929).
A. B., Ph. D., University of Nebraska; M. S., University of Chicago.

James R. Wick, Graduate Assistant in Entomology (1948).
B. S., Iowa Wesleyan College.

Donald Alden Wilbur, Associate Professor of Entomology; Associate Entomologist, Agricultural Experiment Station (1928, 1941).

George Dent Wilcoxon, Jr., Professor of History (1946, 1948).
A. B., M. A., Ph. D., University of California.

Dwight Williams, Professor of Government (1926, 1939).
A. B., LL. B., M. S., University of Minnesota.

Edward Joseph Wimmer, Professor of Zoölogy (1928, 1941).
A. B., A. M., Ph. D., University of Wisconsin.

Winston Harold Wingerd, Graduate Research Assistant in Chemistry (1948).
B. S., Kansas State College.

Morice Fredrick Winter, Instructor in Physical Education (1947).
B. S., University of Southern California.

Grace Shaw Woldt, (Temporary) Instructor in Mathematics (1946).
A. B., Ohio Wesleyan University.

William Thomas Wright, Jr., Graduate Assistant in Education and Psychology (1949).
A. B., Southwestern College; M. S., Kansas State College.

Mary Catherine Young, Graduate Assistant in Music (1947).
B. M., Bethany College.

Paul McClure Young, Associate Professor of Mathematics (1947).
A. B., Miami University; M. A., Ph. D., Ohio State University.

Robert W. Ziem, Graduate Assistant in Chemistry (1948).
B. S., St. Louis University.

SCHOOL OF ENGINEERING AND ARCHITECTURE

Carl Anton Arnbal, Instructor in Mechanical Engineering (1948).
B. S., University of Minnesota.

Charles Pipkin Ballard, Instructor in Shop Practice (1946).

Leonard Francis Banowetz, Graduate Research Assistant in Chemical Engineering (1949).
B. S., Kansas State College.

Don Methven Beardsley, Instructor in Architecture (1948).
B. F. A., Rhode Island School of Design.

Morris Henry Beckman, Assistant Professor of Architecture (1948).
B. S., Armour Institute of Technology.

Irwin Arthur Benjamin, Instructor in Civil Engineering (1947).
B. S., Illinois Institute of Technology.

Kenneth Henry Bischel, Instructor in Chemical Engineering (1948).
B. S., South Dakota School of Mines and Technology.

James Marston Bowyer, Jr., Instructor in Mechanical Engineering (1948, 1949).
B. S., Kansas State College.

Dean Eugene Braden, Assistant Professor of Chemical Engineering (1947).
B. S., M. S., Kansas State College.

Boyd Bertrand Brainard, Professor of Mechanical Engineering (1923, 1938).
B. S., University of Colorado; M. S., Massachusetts Institute of Technology.

Richard Harold Breckenridge, Instructor in Industrial Engineering (1948, 1949).
B. S., Kansas State College.

Frederick Simmons Burrell, Instructor in Applied Mechanics (1947).
B. S., Kansas State College.

John Merrill Bushnell, Jr., Graduate Assistant in Electrical (1949).
B. S., Kansas State College.

Earle Conrad Byers, Instructor in Shop Practice (1946).
A. B., Greenville College.

Norman Rodman Byers, Instructor in Machine Design (1947).
B. S., Kansas State College.

Walter William Carlson, Professor of Shop Practice (1910, 1917).
B. S., M. E., Kansas State College.

Dale Ringwalt Carver, Instructor in Applied Mechanics (1947).
B. S., Kansas State College.

Theodore Avery Chadwick, Professor of Architecture (1927, 1947).
B. S., North Dakota State College.

Edwin Richard Chubbuck, Instructor in Agricultural Engineering (1948).
B. S., Kansas State College.

John Grafton Chubbuck, Instructor in Electrical Engineering (1948).
B. S., University of Oklahoma.

John Paul Clifton, Assistant Professor of Shop Practice (1947).
B. S., University of Kansas.

Howell Edward Cobb, Assistant Profesor of Architecture (1946).
B. S., B. Arch., Georgia Institute of Technology.

Jean Washburn Cobb, Assistant Professor of Architecture (1944, 1947).
B. S., Kansas State College; M. Arch., Syracuse University.

Robert Ray Coder, Instructor in Shop Practice (1947).

Lowell Edwin Conrad, Professor of Civil Engineering (1908, 1909).
B. S., C. E., Cornell College; M. S., Lehigh University.

Allan Neil Cowles, Assistant Instructor in Electrical Engineering (1947).

Robert Eugene Crank, Instructor in Mechanical Engineering (1947).
B. S., Kansas State College.

James Fred Crary, Instructor in Applied Mechanics (1947).
B. S., Kansas State College.

William Wesley Crawford, Associate Professor of Civil Engineering (1923, 1942).
B. Di., M. Di., Iowa State Teachers College; A. B., State University of Iowa; B. S., Iowa State College.

Robert James Culbertson, Graduate Assistant in Mechanical Engineering (1948).
B. S., Kansas State College.

Durward Clair Danielson, Instructor in Chemical Engineering (1947, 1948).
B. S., Kansas State College.

Earl Gilbert Darby, Assistant Professor of Shop Practice (1941, 1946).
B. S., M. S., Kansas State College.

Robert Courtland Dennison, Instructor in Electrical Engineering (1947, 1948).
B. S., M. S., Kansas State College.

Howard Herbert Depew, Graduate Assistant in Electrical Engineering (1948).
B. S., Kansas State College.

Harvey Frederick Dietrich, Instructor in Shop Practice (1948).

Merle Riley Dodge, Instructor in Shop Practice (1943).

MERRILL DALE DRONBERGER, Instructor in Architecture (1949).
B. S., Kansas State College.

ALLEY HUGH DUNCAN, Assistant Professor of Mechanical Engineering (1943, 1948).
B. S., M. S., Kansas State College.

MERRILL AUGUSTUS DURLAND, Dean; Professor of Machine Design; Director, Engineering Experiment Station (1919, 1949).
B. S., M. S., M. E., Kansas State College.

GUSTAVE EDMUND FAIRBANKS, Assistant Professor of Agricultural Engineering (1941, 1947).
B. S., Kansas State College.

FREDERICK CHARLES FENTON, Professor and Head of Department of Agricultural Engineering; Agricultural Engineer, Agricultural Experiment Station (1928).
B. S., M. S., Iowa State College.

ARTHUR ORAN FLINNER, Professor of Mechanical Engineering (1929, 1948).
B. S., M. S., Kansas State College; S. M., Massachusetts Institute of Technology.

WILLIAM ROY FORD, Instructor in Electrical Engineering (1947, 1948).
B. S., M. S., Kansas State College.

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

KENNETH EUGENE FULTZ, Graduate Assistant in Electrical Engineering (1948).
B. S., Kansas State College.

JOHN WILLIAM FUNK, Instructor in Agricultural Engineering (1947, 1948).
B. S., Kansas State College.

PAUL SANDERS GIOVAGNOLI, Instructor in Mechanical Engineering (1948).
B. S., Kansas State College.

ALFRED GREIF, Instructor in Civil Engineering (1947).
B. S., Vanderbilt University.

JAMES FRANKLIN HADLEY, Graduate Assistant in Electrical Engineering (1947).
B. S., Kansas State College.

CHARLES LOUIS HAFERMEHL, Instructor in Drawing and Painting (1947).
B. F. A., Bethany College.

MARK DALE HEALD, Instructor in Shop Practice (1946).

LESTER ORNAN HECKETHORN, Instructor in Machine Design (1947).
B. S., Kansas State Teachers College (Pittsburg).

JOHN CRANSTON HEINTZELMAN, Associate Professor of Architecture (1947, 1948).
B. Arch., Massachusetts Institute of Technology; M. Arch., Columbia University.

LINN HELANDER, Professor and Head of Department of Mechanical Engineering; Engineering Experiment Station (1935).
B. S., University of Illinois.

JOHN FREDERICK HELM, JR., Professor of Drawing and Painting (1924, 1938).
B. D., Syracuse University.

FREDERICK GEORGE HERRING, Graduate Assistant in Electrical Engineering (1948).
B. S., University of New Hampshire.

Kenneth Dean Hewson, Instructor in Electrical Engineering (1945).
B. S., Kansas State College.

Jerome Chauncey Hill, Instructor in Electrical Engineering (1947, 1948).
B. S., Purdue University.

Leland Stanford Hobson, Professor of Industrial Engineering; Assistant Director, Engineering Experiment Station (1946, 1947).
B. S., Kansas State College.

John James Hoefer, Graduate Assistant in Electrical Engineering (1948).
B. S., B. S. in Bus. Admin., Kansas State College.

Harry Richard Holmes, Instructor in Mechanical Engineering (1948).
B. S., Kansas State College.

William Henry Honstead, Associate Professor of Chemical Engineering (1943, 1947).
B. S., M. S., Kansas State College.

John Lester Hooper, Instructor in Shop Practice (1946).
B. S., Kansas State College.

Abram Eldred Hostetter, Associate Professor of Shop Practice (1934, 1945).
B. S., McPherson College; M. S., Ph. D., Kansas State College.

Harry Earl House, Jr., Instructor in Mechanical Engineering (1948, 1949).
B. S., University of Wyoming.

Orville Don Hunt, Professor of Electrical Engineering (1923, 1947).
B. S., State College of Washington; M. S., Kansas State College.

Don James Jacks, Instructor in Mechanical Engineering (1949).
B. S., University of Oklahoma.

Edgar Burton Johnson, Instructor in Civil Engineering (1947).
B. S., Kansas State College.

Edward C. Jones, Assistant Professor of Shop Practice (1916, 1920).
B. S., M. E., Iowa State College; M. S., Kansas State College.

Louis Mark Jorgenson, Associate Professor of Electrical Engineering (1925, 1935).
B. S., M. S., Kansas State College.

Russell Marion Kerchner, Professor of Electrical Engineering (1922, 1934).
B. S., University of Illinois; M. S., Kansas State College.

William Robert Kimel, Assistant Professor of Machine Design (1946, 1947).
B. S., Kansas State College.

Daniel Allen Kitchen, Graduate Research Assistant in Agricultural Engineering (1948).
B. S., Kansas State College.

Royce Gerald Kloeffler, Professor and Head of Department of Electrical Engineering (1916, 1927).
B. S., University of Michigan; S. M., Massachusetts Institute of Technology.

Gerald Carl Kolsky, Instructor in Machine Design (1946, 1947).
B. S., Kansas State College.

Frederick Lee Kramer, Graduate Assistant in Civil Engineering (1948).
B. S., Kansas State College.

Harold LeRoy Kugler, Associate Professor of Agricultural Engineering (1946).
B. S., M. S., Kansas State College.

George Herbert Larson, Associate Professor of Agricultural Engineering (1939, 1946).
B. S., M. S., Kansas State College.

Earl Drais Layman, Instructor in Architecture (1947).
B. S., B. Arch., University of Oregon.

Ralph Iden Lipper, Assistant Professor of Agricultural Engineering (1946).
B. S., Kansas State College.

Daniel Emmett Lynch, Assistant Professor of Shop Practice; Foreman of Blacksmith Shop (1914, 1920).

William John McClure, Instructor in Shop Practice (1946).

Frank James McCormick, Professor of Applied Mechanics (1939, 1948).
B. S., M. S., Iowa State College.

John Gerald McEntyre, Instructor in Civil Engineering (1946).
B. S., M. S., Kansas State College.

William Howard McVey, Instructor in Applied Mechanics (1947).
B. S., Kansas State College.

Melville Jones Marnix, Jr., Assistant Instructor in Chemical Engineering (1949).
B. S., Kansas State College.

Louis Glaser Martsolf, Instructor in Drawing and Painting (1947).
B. F. A., A. M., Cornell University.

Richard Phillip Medlin, Graduate Research Assistant in Chemical Engineering (1948).
B. S., Kansas State College.

George Atholstone Mellard, Instructor in Machine Design (1947).
B. S., B. S. in E. E., Kansas State College.

Alva Donald Messenheimer, Instructor in Machine Design (1947).
B. S., Kansas State College.

Alva Ernest Messenheimer, Assistant Professor of Machine Design (1942, 1946).
B. S., Kansas State College.

Ward McClellan Miller, Instructor in Applied Mechanics (1947).
B. S., Kansas State College.

Reed Franklin Morse, Professor and Head of Department of Civil Engineering (1929, 1947).
B. A., Cornell College; B. S., Iowa State College; M. S., Kansas State College; Ph. D., Cornell University.

Donald George Moss, Instructor in Electrical Engineering (1947, 1948).
B. S. in E. E., B. S. in Bus. Admin., Kansas State College.

Harold Hawley Munger, Assistant Professor of Applied Mechanics (1939, 1947).
B. S., M. S., Kansas State College.

Kermit Beard Myers, Instructor in Mechanical Engineering (1947).
B. S., State Teachers College (Wisconsin); B. S. in M. E., Kansas State College.

Clarence Leslie Nelson, Instructor in Shop Practice (1943).

Dwight Alvin Nesmith, Instructor in Mechanical Engineering (1948).
B. S., Northwestern University.

Ralph Griffith Nevins, Jr., Instructor in Mechanical Engineering (1948).
B. S. in Naval Tech., B. S. in M. E., M. S., University of Minnesota.

Huo-hsi Pan, Graduate Assistant in Mechanical Engineering (1949).
B. S., National Southwest Associated University (China); M. S., Agricultural and Mechanical College of Texas.

Ross Irwin Pauli, Instructor in Machine Design (1947).
A. B., Western Union College; M. S., Kansas State Teachers College (Pittsburg).

Clinton Ellicott Pearce, Professor and Head of Department of Machine Design (1917, 1923).
B. S., Massachusetts Institute of Technology; M. S., Cornell University.

Gerald Pickett, Professor of Applied Mechanics (1929, 1945).
B. S., Oklahoma Agricultural and Mechanical College; M. S., Kansas State College; Ph. D., University of Michigan.

Marlan Richards Pollock, Graduate Assistant in Chemical Engineering (1948).
B. S., Kansas State College.

John Emmett Postlethwaite, Graduate Assistant in Mechanical Engineering (1948).
B. S., Kansas State College.

Milton Edward Raville, Instructor in Applied Mechanics (1947).
B. S., Norwich University; M. S., Kansas State College.

Marvin Emor Reinecke, Instructor in Machine Design (1946, 1947).
B. S., Kansas State College.

Charles Jay Riggs, Instructor in Agricultural Engineering (1945, 1946).

Oliver Virgil Riley, Assistant Professor of Electrical Engineering (1947).
B. S., Kansas State College.

Jules Henry Robert, Professor of Applied Mechanics (1916, 1925).
B. S., University of Illinois.

Jerzy Wawtzyniec Roman, Assistant Professor of Electrical Engineering (1948).
M. S., Technical University of Warsaw (Poland).

Harve Dewey Rose, Assistant Instructor in Mechanical Engineering (1947).

Leon Washington Schindler, Instructor in Mechanical Engineering (1947).
B. S., Kansas State College; M. S., Iowa State College.

Charles Henry Scholer, Professor and Head of Department of Applied Mechanics; Materials Testing Engineer, Engineering Experiment Station (1919, 1923).
B. S., Kansas State College.

Harry William Schultz, Jr., Research Assistant in Electrical Engineering (1948).
B. S., Kansas State College.

Leslie Ashton Scott, Instructor in Shop Practice (1947).

Roy Andrew Seaton, Dean and Director, Emeritus (1904, 1949).
B. S., M. S., Kansas State College; S. B., Massachusetts Institute of Technology; Sc. D., Northeastern University.

Ernest Edwin Sellers, Graduate Assistant in Electrical Engineering (1948).
B. S., Kansas State College.

Gabe Alfred Sellers, Professor and Head of Department of Shop Practice (1919, 1946).
B. S., M. S., Kansas State College.

Jack Pearson Shedd, Instructor in Civil Engineering (1947).
B. S., M. S., University of Wyoming.

Saba George Shiber, Instructor in Architecture (1948).
B. A., American University of Beirut; B. Arch., Egyptian University of Cairo; M. Arch., M. C. P., Massachusetts Institute of Technology.

John Wallace Shupe, Instructor in Applied Mechanics (1947, 1948).
B. S., Kansas State College.

Wayne Delbert Sieh, Instructor in Machine Design (1946).

John William Simmons, Graduate Assistant in Mechanical Engineering (1948).
B. S., Kansas State College.

Earl LeRoy Sitz, Professor of Electrical Engineering (1927, 1948).
B. S., Iowa State College; M. S., Kansas State College.

Charles James Slawson, Instructor in Electrical Engineering (1948).
B. S., Kansas State College.

Jacob Jay Smaltz, Assistant Professor of Shop Practice (1940, 1946).
B. S., Bradley Polytechnic Institute; M. S., Kansas State College.

Howard Dewight Smethers, Instructor in Shop Practice (1947).
B. S., Kansas State Teachers College (Emporia); M. S., Kansas State College.

Bobby Lee Smith, Instructor in Applied Mechanics (1947, 1948).
B. S., Kansas State College.

Gerald Max Smith, Instructor in Applied Mechanics (1947, 1948).
B. S., Kansas State College.

Neil Harrison Smull, Instructor in Architecture (1947).
B. S., M. S., Kansas State College.

Floyd Alonzo Smutz, Professor of Machine Design (1918, 1934).
B. S., Kansas State College.

Merline Nutter Snyder, Assistant Librarian Architecture (1948).
B. S., Kansas State College.

Harvey George Spencer, Graduate Assistant in Chemical Engineering (1948).
B. S., Kansas State College.

Joe Cannon Staff, Instructor in Agricultural Engineering (1946).

Waldo Edmund Starr, Jr., Instructor in Mechanical Engineering (1948, 1949).
B. S. in M. E., B. S. in E. E., University of New Mexico.

Richard Segur Swanson, Graduate Assistant in Architecture (1949).
B. S., Kansas State College.

Rollin George Taecker, Associate Professor of Chemical Engineering (1947).
B. S., South Dakota School of Mines and Technology; M. S., Ph. D., University of Wisconsin.

Delos Clifton Taylor, Associate Professor of Applied Mechanics (1931, 1947).
B. S., M. S., Kansas State College.

Ingolf Eugene Thorson, Assistant Professor of Chemical Engineering (1948).
B. S., University of Washington.

George Graydon Timmons, Instructor in Shop Practice (1946).

Elmer John Tomasch, Instructor in Architecture (1947).
B. S., Western Reserve University.

Warren C. Trent, Associate Agricultural Engineer, Department of Agricultural Engineering (1948).
B. S., Oklahoma Agricultural and Mechanical College; M. S., Purdue University.

Wilson Tripp, Professor of Mechanical Engineering (1936, 1947).
B. S., M. S., University of California.

Joseph Evans Ward, Jr., Associate Professor of Electrical Engineering (1940, 1947).

Henry Tibbels Ward, Professor and Head of Department of Chemical Engineering (1948).
B. S., Ph. D., University of Michigan; M. S., University of Wyoming.

Rees Conway Warren, Instructor in Shop Practice (1946).
B. S., Kansas State College.

Paul Weigel, Professor and Head of Department of Architecture (1921, 1924).
B. Arch., Cornell University.

John Elwood Wherry, Instructor in Applied Mechanics (1946).
B. S., Colorado State College; M. S., Kansas State College.

Leon Vincent White, Professor of Civil Engineering (1918, 1942).
B. S., M. S., C. E., Kansas State College.

Ronald Whiteley, Assistant Professor of Architecture (1947).
B. Arch., University of Manitoba.

Keith Gordon Wikle, Assistant Professor of Shop Practice (1947).
B. S., South Dakota School of Mines and Technology; M. S., University of Minnesota.

Leo Andrew Wirtz, Instructor in Electrical Engineering (1947).
B. S., Kansas State College.

Ronald Cameron Wishart, Instructor in Shop Practice (1948).

J. Edmond Wolfe, Associate Professor of Electrical Engineering (1946, 1947).
B. S., M. S., Kansas State College.

Joe Nate Wood, Professor of Machine Design (1936, 1947).
B. S., State University of Iowa.

Leonard Eugene Wood, Graduate Research Assistant in Chemical Engineering (1948).
B. S., Kansas State College.

Phineas Skinner Woods, Assistant Professor of Mechanical Engineering (1949).
B. S., M. S., Stanford University.

John Delves Woodward, Instructor in Applied Mechanics (1949).
B. S., Kansas State College.

Dah Chang Wu, Graduate Research Assistant in Agricultural Engineering (1948).
B. S., National Tsing Hua University (China); B. S. in Agr. E., University of Illinois.

Allen Roy Yowell, Instructor in Shop Practice (1947).

Dale Edwin Zabel, Instructor in Shop Practice (1946).
B. S., Kansas State College.

SCHOOL OF HOME ECONOMICS

ANNA TESSIE AGAN, Associate Professor of Household Economics (1930, 1944).
B. S., University of Nebraska; M. S., Kansas State College.

CORAL K. ALDOUS, Associate Professor of Child Welfare and Euthenics (1940, 1947).
B. S., Utah State College; M. S., Columbia University.

JESS McF. ALEXANDER, Assistant Professor of Art (1946).
A. B., Winthrop College; M. A., Columbia University.

ELINOR MURPHY ANDERSON, Assistant in Household Economics (1948).
B. S., Kansas State College.

LEAH ASCHAM, Professor of Foods and Nutrition; Food Economist, Agricultural Experiment Station (1927, 1943).
A. B., Ohio Northern University; B. S., Ohio State University; Ph. D., Yale University.

DOROTHY BARFOOT, Professor and Head of Department of Art (1930, 1935).
B. A., State University of Iowa; M. A., Columbia University.

MARJORIE B. BARGER, Research Assistant, Agricultural Experiment Station (1949).
B. S., University of Nebraska.

JANE WILSON BARNES, Assistant Professor of Household Economics (1939, 1945).
B. S., M. S., Kansas State College.

JACQUELINE McCALLA BOWEN, Instructor in Child Welfare and Euthenics (1948).
B. S., M. S., Ohio University.

NINA M. BROWNING, Associate Professor of Foods and Nutrition (1930, 1939).
B. S., M. S., Kansas State College.

IDA CHITWOOD BUNGER, Instructor in Foods and Nutrition (1946).
B. S., M. S., Kansas State College.

TE-CHIN CHOU, Graduate Research Assistant in Foods and Nutrition (1948).
B. S., Yenching University (China).

ESTHER E. CHRISTENSEN, Instructor in Institutional Management (1946).
B. S., Kansas State College.

ESTHER MARGARET CORMANY, Associate Professor of Clothing and Textiles (1936, 1941).
B. S., M. S., Kansas State College.

INA FOOTE COWLES, Associate Professor of Clothing and Textiles, Emeritus (1920, 1944).
B. S., Kansas State College; M. S., University of Wisconsin.

MARY ELLA CROZIER, Instructor in Child Welfare and Euthenics (1948).
B. S., University of Texas.

ANNIE G. CUNNINGHAM, Instructor in Institutional Management (1948).
B. S., Kansas State College.

CAROL A. DORNAN, Instructor in Institutional Management (1946).
B. S., Indiana University.

NINA EDELBLUTE, Instructor in Institutional Management (1940, 1945).
B. S., M. S., Kansas State College.

LEOTA SHIELDS EVANS, Instructor in Art (1943).
B. S., M. S., Kansas State College.

Ruth E. Franzen, Instructor in Clothing and Textiles (1948).
B. S., Bethel College.

Elva C. Frazier, Instructor in Institutional Management (1947).
B. S., Fort Hays Kansas State College.

Alice Louise Geiger, Assistant Professor of Art (1945).
A. B., B. F. A., University of Kansas; A. M., Colorado State College.

Myrtle Annice Gunselman, Associate Professor of Household Economics; Associate Household Economist, Agricultural Experiment Station (1926, 1937).
B. S., Kansas State College; A. M., University of Chicago.

Kathleen Petterson Hale, Research Assistant in Foods and Nutrition (1947).
B. S., Kansas State College.

Vida A. Harris, Associate Professor of Art (1923, 1941).
B. S., Kansas State College; A. M., University of Chicago.

Dorothy Lucile Harrison, Assistant Professor of Foods and Nutrition; Assistant Home Economist, Agricultural Experiment Station (1947).
B. S., Dakota Wesleyan University; M. S., Ph. D., Iowa State College.

Katharine Paddock Hess, Associate Professor of Clothing and Textiles; Associate in Clothing and Textile Investigation, Agricultural Experiment Station (1925, 1931).

Opal Brown Hill, Instructor in Art (1944, 1945).
B. S., Kansas State College.

Hazel Dell Howe, Associate Professor of Clothing and Textiles (1936, 1947).
B. S., M. S., Kansas State College.

Margaret M. Justin, Dean; Professor of Home Economics, Agricultural Experiment Station (1923).
B. S., Kansas State College; B. S., Columbia University; Ph. D., Yale University.

June Kniskern Kalen, Assistant in Foods, Agricultural Experiment Station (1945, 1948).
B. S., Carnegie Institute of Technology; M. S., Kansas State College.

Rosamond H. Kedzie, Associate Professor of Art (1938, 1946).
B. S., Michigan State College; M. A., University of California.

Leone Bower Kell, Professor of Child Welfare and Euthenics (1927, 1947).
B. S., M. S., Kansas State College.

Martha Morrison Kramer, Professor; Assistant Dean (1922, 1925).
B. S., University of Chicago; M. S., Ph. D., Columbia University.

Alpha Corinne Latzke, Professor and Head of Department of Clothing and Textiles (1929, 1935).
B. S., M. S., Kansas State College.

Cleone C. Lewis, Agent, Bureau of Human Nutrition and Home Economics (1947, 1948).
B. S., Utah State Agricultural College.

Gertrude Elise M. Lienkaemper, Associate Professor of Clothing and Textiles (1941, 1948).
B. S., Oregon State College; A. M., University of Washington.

Louise Liggett, Graduate Research Assistant in Foods, Agricultural Experiment Station (1948).
B. S., University of Tennessee.

Madeline Millard Lind, Field Agent, Bureau of Human Nutrition and Home Economics, U. S. D. A. (1948).
B. S., Boston University.

Lorine F. Lindholm, Field Agent, Bureau of Human Nutrition and Home Economics, U. S. D. A. (1949).
B. S., Kansas State College.

Thelma Frances Long, Instructor in Clothing and Textiles (1948).
B. A., M. A., State University of Iowa.

Florence Elizabeth McKinney, Professor and Head of Department of Household Economics (1937, 1949).
B. S., Kansas State College; M. S., Iowa State College; Ph. D., Ohio State University.

Eva Myrtle McMillan, Associate Professor of Foods and Nutrition (1930, 1939).
Ph. B., M. S., University of Chicago.

Mary Briles McNeil, Instructor in Institutional Management (1946).
B. S., Kansas State College; M. S., University of Iowa.

Abby L. Marlatt, Associate Professor of Foods and Nutrition; Associate Food Economist, Agricultural Experimental Station (1945).
B. S., Kansas State College; Ph. D., University of California.

L. Catherine Marsh, Associate Professor of Institutional Management (1943, 1946).
B. S., Kansas State College; M. S., Syracuse University.

Elsie Lee Miller, Assistant Professor of Foods and Nutrition (1942, 1947).
B. S., M. S., Kansas State College.

Merna B. Miller, Associate Professor of Institutional Management (1939, 1947).
B. S., M. S., Kansas State College.

Iva Manilla Mullen, Assistant Profesor of Foods and Nutrition (1936, 1947).
B. S., Kansas State College; M. S., Iowa State College.

Hazel Margaret Molzen, Instructor in Household Economics (1948).
B. S., Bethel College; M. S., Kansas State College.

Maria Morris, Associate Professor of Art (1925, 1941).
B. S., M. S., Kansas State College.

Helen Perkins Radke, Instructor in Institutional Management (1946).
B. S., Kansas State College.

Margaret E. Raffington, Assistant Professor of Child Welfare and Euthenics; Assistant to the Dean (1938).
B. S., M. S., Kansas State College.

Anne Katherine Renz, Graduate Research Assistant in Foods, Agricultural Experiment Station (1948).
B. S., Kansas State College.

Ada May Ridgway, Instructor in Foods and Nutrition (1948).
B. S., M. S., University of Arizona.

Lois R. Schulz, Professor and Head of Department of Child Welfare and Euthenics (1947).
Ph. B., University of Chicago; M. A., University of Michigan; Ed. D., University of California.

Eleanor Helen Schupbach, Research Assistant in Nutrition, Agricultural Experiment Station (1948).
B. S., Kansas State College.

Elna Yowell Smith, Research Assistant in Household Economics (1948).
B. S., Kansas State College.

Mary L. Smull, Professor of Institutional Management (1939, 1946).
B. S., M. S., University of Southern California.

Miriam Colyer Stone, Research Assistant in Nutrition, Agricultural Experiment Station (1947).
B. S., Kansas State College.

Frances Louise Templeton, Research Assistant in Nutrition, Agricultural Experiment Station (1947).

Gwendolyn LaVerne Tinklin, Instructor in Food and Economic Nutrition; Assistant in Home Economics, Agricultural Experiment Station (1943, 1945).
B. S., M. S., Kansas State College.

Irene Ruth Turner, Graduate Assistant in Child Welfare and Euthenics (1947).
B. A., Friends University.

Gladys Ellen Vail, Professor and Head of Department of Food Economics and Nutrition; Food Economist, Agricultural Experiment Station (1927, 1946).
A. B., Southwestern College; M. S., University of Chicago; Ph. D., University of Minnesota.

Armetta L. Watson, Research Assistant, Agricultural Experiment Station; Agent, Bureau of Human Nutrition and Home Economics (1949).
B. S., Kansas State College.

Dorcas Ruth Weltmer, Assistant in Nutrition, Agricultural Experiment Station (1949).
B. S., Kansas State College.

Alice T. West, Agent, Bureau of Human Nutrition and Home Economics, U. S. D. A. (1949).
B. S., Kansas State College.

Bessie Brooks West, Professor and Head of Department of Institutional Management (1928).
A. B., M. A., University of California.

Beulah Dorothea Westerman, Professor of Food Economics and Nutrition; Associate Food Economist, Agricultural Experiment Station (1941, 1946).
B. S., University of Missouri; M. S., University of Chicago; Ph. D., University of Illinois.

Evelyn Smith Wheeler, Research Assistant in Foods, Agricultural Experiment Station (1947).
B. S., Kansas State College.

Dorothy Ann White, Graduate Assistant in Child Welfare and Euthenics (1948).
B. S., Montana State College.

Martha E. White, Instructor in Clothing and Textiles (1948).
B. S., Baldwin-Wallace College; M. S., Cornell University.

Jennie Williams, Professor of Child Welfare and Euthenics (1932, 1947).
B. S., M. S., Kansas State College; R. N., University of Michigan

Jo Eloise Williams, Instructor in Foods and Nutrition (1947).
B. S., M. S., University of Texas.

Victoria H. J. Wilson, Instructor in Child Welfare and Euthenics (1947).
B. S., Kansas State College; Master of Nursing, Western Reserve University.

Ruth P. Wise, Assistant Instructor in Art (1947).
B. S., Kansas State College.

INSTITUTE OF CITIZENSHIP

EARL E. EDGAR, Associate Professor of Philosophy (1946).
A. B., DePauw University; A. M., University of Nebraska; Ph. D., University of Cincinnati.

ALBERT COOLIDGE ELDRIDGE, Assistant Professor of Government (1948).
A. B., University of Massachusetts; A. M., University of Chicago.

CAROL B. STENSLAND, (Temporary) Assistant in Education (1948).
A. B., Fresno State College.

PER GUSTAF STENSLAND, Associate Professor of Education (1948).
M. A., University of Stockholm.

CARL TJERANDSEN, Director; Professor of Economics (1945, 1948).
A. B., State College of Washington; M. B. A., University of Washington.

ELDON G. WHEELER, Assistant Professor of Education (1948).
A. B., Wooster College; A. M., University of Chicago.

SCHOOL OF VETERINARY MEDICINE

RALPH DAVID BARNER, Assistant Professor of Pathology (1946).
D. V. M., M. S., Ohio State University.

AUGUST RUSSELL BORGMANN, Assistant Professor of Surgery and Medicine (1947, 1948).
B. S., Colorado State College; M. S., D. V. M., Kansas State College.

JAMES H. BURT, Professor of Veterinary Medicine and Anatomy, Emeritus (1909, 1946).
V. S., Ontario Veterinary College; D. V. M., Ohio State University.

MAXINE Z. CALEY, Assistant to the Dean (1946).
B. S., Kansas State College.

RALPH R. DYKSTRA, Dean, Emeritus; Professor of Surgery (1911, 1949).
D. V. M., Iowa State College.

EDWARD R. FRANK, Professor of Surgery (1926, 1935).
B. S., D. V. M., M. S., Kansas State College.

EDWIN JACOB FRICK, Professor and Head of Department of Surgery and Medicine (1919, 1926).
D. V. M., Cornell University.

ARCHIE LEROY GOOD, Assistant Professor of Physiology (1946).
D. V. M., University of Pennsylvania.

ROSS LYMAN JEWELL, Assistant Professor of Pathology (1944, 1947).
D. V. M., Kansas State College; M. S., Ohio State University.

ALICE D. KIMBALL, Instructor in Pathology (1935, 1948).
B. S., Kansas State College.

CHARLES HOWARD KITSELMAN, Professor of Pathology; Pathologist, Agricultural Experiment Station (1919, 1932).
D. V. M., University of Pennsylvania; M. S., Kansas State College.

ELDEN E. LEASURE, Dean; Professor of Physiology; Veterinarian, Agricultural Experiment Station (1926, 1949).
M. S., D. V. M., Kansas State College.

JOHN WALLACE LUMB, Associate Professor of Anatomy (1924, 1947).
D. V. M., M. S., Kansas State College.

WILLIAM M. MCLEOD, Professor and Head of Department of Anatomy (1919, 1944.).
D. V. M., Iowa State College.

Fayne Higgins Oberst, Associate Professor of Surgery and Medicine (1943, 1948).
D. V. M., Kansas State College.

Carl Ernest Rehfeld, Assistant Professor of Pathology (1948).
B. S., South Dakota State College; D. V. M., Kansas State College.

Edward A. Rhode, Jr., Instructor in Surgery and Medicine (1948).
D. V. M., Cornell University.

Lee Miles Roderick, Professor and Head of Department of Pathology; Pathologist, Agricultural Experiment Station (1938).
B. S., M. S., North Dakota State College; Ph. D., University of Chicago; D. V. M., Ohio State University.

Earl J. Splitter, Assistant Professor of Pathology (1946).
D. V. M., Kansas State College.

Gravers K. L. Underbjerg, Professor and Head of Department of Physiology (1948).
B. S., Royal Veterinary and Agricultural College; D. V. M., Ph. D., Iowa State College.

John Donald Wheat, Instructor in Surgery and Medicine (1948).
D. V. M., Cornell University.

DIVISION OF COLLEGE EXTENSION

Henry Joseph Adams, Agricultural Agent, Republic County (1934). Belleville.
B. S., Kansas State College.

William G. Amstein, Professor of Horticulture (1927, 1944).
B. S., Massachusetts Agricultural College; M. S., Kansas State College.

Joan M. Amstutz, Home Demonstration Agent, Washington County (1948, 1949). Washington.
B. S., Kansas State College.

Kate C. Archer, Instructor in Home Furnishings (1948).
B. S., Kansas State College.

Floyd A. Bacon, County Club Agent (1946).
B. S., Kansas State College.

Harry Charles Baird, Associate Professor and District Agent (1919, 1947).
B. S., Kansas State College.

Evans Eugene Banbury, Agricultural Agent, Sherman County (1940). Goodland.
B. S., Kansas State College.

Margaret G. Barger, Home Demonstration Agent, Pottawatomie County (1949). Westmoreland.
B. S., Kansas State College.

Ellen M. Batchelor, Assistant in Home Economics (1917, 1942).
B. S., Kansas State College.

Clifford Bechwith, Temporary County Club Agent (1948).

Frank Gearhart Bieberly, Associate Professor of Agronomy (1941, 1949).
B. S., M. S., Kansas State College.

Ada Grace Billings, Professor of History and Government (1921, 1946).
B. S., M. S., Kansas State College.

Juanita Irene Billington, Home Demonstration Agent, Crawford County (1948). Girard.
B. S., Kansas State College.

JULIUS FLOYD BINDER, Agricultural Agent, Rush County (1948). La Crosse.
B. S., Kansas State College.

RUTH HELEN BISHOP, Home Demonstration Agent, Nemaha County (1947). Seneca.
B. S., Kansas State College.

CORA A. BLACKWILL, Home Demonstration Agent, Rawlins County (1948). Atwood.
B. S., Fort Hays State College.

FRANK OTTO BLECHA, Professor of Agricultural Extension; District Agricultural Agent; State Supervisor of Farm Labor (1919, 1947).
B. S., M. S., Kansas State College.

WILLIS LEE BLUME, Agricultural Agent, Haskell County (1948). Sublette.
B. S., Texas Agricultural and Mechanical College.

EDWIN R. BONEWITZ, Assistant Professor of Dairy Husbandry (1949).
B. S., Kansas State College.

RALPH EDWIN BONEWITZ, Agricultural Agent, Woodson County (1943). Yates Center.
B. S., Kansas State College.

MARY ELSIE BORDER, Associate Professor of Junior Extension; Assistant State Club Leader (1927, 1944).
B. S., Ohio State University; M. A., Columbia University.

WILLIAM SAMUEL BORK, Agricultural Agent, Hamilton County (1948). Syracuse.
B. S., Kansas State College.

LEE JUSTIN BREWER, Agricultural Agent, Riley County (1936). Manhattan.
B. S., Kansas State College.

VIVIAN B. BRIGGS, Instructor in Family Life, Specialist (1946).
B. S., University of Nebraska.

GRACE D. BRILL, Home Demonstration Agent, Harvey County (1936, 1937). Newton.
B. S., M. S., Kansas State College.

MARTHA ESTHER BRILL, Assistant Professor of College Extension (1946, 1948).
B. S., Kansas State College.

BLANCHE BROOKS, Home Demonstration Agent, Pratt County (1941, 1942). Pratt.
B. S., Kansas State College.

ARLO ALLEN BROWN, Agricultural Agent, Stafford County (1942). St. John.
B. S., Kansas State College.

ROBERT W. BRUSH, County Club Agent (1948).
B. S., Kansas State College.

MARGARET KIRBY BURTIS, Associate Professor, District Home Demonstration Agent (1943, 1947).
B. S., M. S., Kansas State College.

GLENN M. BUSSET, Assistant Professor of Junior Extension; Assistant State Club Leader (1941, 1948).
B. S., Kansas State College.

ELGIN R. BUTTON, Agricultural Agent, Harper County (1943). Anthony.
B. S., Kansas State College.

Walter W. Campbell, Agricultural Agent, Osage County (1942). Lyndon.
B. S., Colorado Agricultural College.

Dallas Cantwell, Assistant Agricultural Agent, Sedgwick County (1948). Wichita.
B. S., University of Tennessee.

Frederick Wainwright Carey, Agricultural Agent, Wallace County (1944). Sharon Springs.

Mary Susan Carl, Home Demonstration Agent, Rush County (1947). La Crosse.
B. S., Kansas State College.

Anna Grace Caughron, Home Demonstration Agent, Lyon County (1944). Emporia.
B. S., Kansas State College.

James R. Childers, County Club Agent (1944).
B. S., Oklahoma Agricultural and Mechanical College.

Joseph Burbank Chilen, Agricultural Agent, Grant County (1947, 1948). Ulysses.
B. S., Kansas State College.

Samuel E. Claar, County Club Agent (1949).
B. S., Kansas State College.

Marvin Brown Clark, Agricultural Agent, Miami County (1947). Paola.
B. S., Kansas State College.

Eugene Arthur Cleavinger, Professor of Agronomy (1931, 1946).
B. S., Kansas State College.

Frederick Monroe Coleman, Agricultural Agent, Kearny County (1939). Lakin.
B. S., Kansas State College.

John H. Coolidge, Professor of Agricultural Economics (1926, 1949).
B. S., M. S., Kansas State College.

Jess R. Cooper, Agricultural Agent, McPherson County (1942). McPherson.
B. S., Kansas State College.

Louis Wilton Cooper, Agricultural Agent, Ottawa County (1945, 1947). Minneapolis.

Mabel Coverdill, Home Demonstration Agent, Decatur County (1947). Oberlin.
A. B., College of Emporia; M. S., University of Wisconsin.

Manford Lester Cox, Agricultural Agent, Chautauqua County (1945). Sedan.
B. S., Kansas State College.

Berniece S. Crandall, Home Demonstration Agent, Johnson County (1935). Olathe.
B. S., M. S., Kansas State College.

Vernon S. Crippen, Agricultural Agent, Seward County (1920). Liberal.
B. S., Kansas State College.

Dalena A. Currier, Home Demonstration Agent, Wabaunsee County (1948, 1949). Alma.
B. S., Kansas State College.

Robert Danford, County Club Agent (1947).
B. S., Kansas State College.

Laurence Robert Daniels, Agricultural Agent, Greeley County (1934). Tribune.
B. S., Kansas State College.

Paul F. DeWeese, Instructor in Journalism and Assistant Program Supervisor (1948).
B. S., Kansas State College.

Miriam L. Dexter, Assistant Professor of Journalism and Assistant Editor (1944, 1947).
B. S., M. S., Kansas State College.

Darrell Dean Dicken, Agricultural Agent, Lincoln County (1942). Lincoln.
B. S., Kansas State College.

Annabelle J. Dickinson, Home Demonstration Agent, Barton County (1940, 1941). Great Bend.
B. S., Fort Hays.

Joe Bender Divine, Agricultural Agent, Elk County (1944). Howard.
B. S., Oklahoma Agricultural and Mechanical College.

Isabel N. Dodrill, Home Demonstration Agent, Finney County (1941, 1942). Garden City.
B. A., Fort Hays; B. S., Kansas State College.

Harry G. Duckers, Jr., Agricultural Agent, Wyandotte County (1943, 1944). Kansas City.
B. S., Kansas State College.

Wilbur William Duitsman, Agricultural Agent, Brown County (1941, 1942). Hiawatha.
B. S., Kansas State College.

Miriam P. Dunbar, Home Demonstration Agent, Atchison County (1947, 1948). Effingham.
B. S., Kansas State College.

Dale H. Edelblute, Agricultural Agent, Crawford County (1947). Girard.
B. A., Kansas State College.

Carl G. Elling, Professor of Animal Husbandry (1907, 1944).
B. S., Kansas State College.

Carl M. Elling, Agricultural Agent, Marion County (1938). Marion.
B. S., Kansas State College.

Roland Baker Elling, Agricultural Agent, Franklin County (1938). Ottawa.
B. S., Kansas State College.

Vera M. Ellithorpe, Associate Professor and Specialist in Home Management (1939, 1947).
B. S., M. S., Kansas State College.

Kermit Vernon Engle, Agricultural Agent, Ellsworth County (1936). Ellsworth.
B. S., Kansas State College.

Lyle Leroy Engle, Agricultural Agent, Jackson County (1947). Holton.
B. S., Kansas State College.

Frederick Dale Engler, Agricultural Agent, Clark County (1941). Ashland.
B. S., Kansas State College.

Hoy B. Etling, Agricultural Agent, Pratt County (1941). Pratt.
B. S., Kansas State College.

Cecil L. Eyestone, County Club Agent (1946).
B. S., Kansas State College.

Merle L. Eyestone, County Club Agent (1947).
B. S., Kansas State College.

John M. Ferguson, Professor and Head of Department of Engineering Extension (1937, 1945).
B. S., Kansas State College.

Raymond E. Fincham, Agricultural Agent, Stevens County (1943, 1946). Hugoton.
B. S., Kansas State College.

Mary G. Fletcher, Associate Professor of Foods and Nutrition (1936, 1947).
B. S., M. S., Kansas State College.

Bessie M. Flick, Home Demonstration Agent, Morton and Stanton Counties (1948). Elkhart.

Charles Frederick Foreman, Assistant Professor of Dairy Husbandry (1948, 1949).
B. S., M. S., Kansas State College.

Leslie Pearl Frazier, Agricultural Agent, Lane County (1943, 1946). Dighton.
B. S., Oklahoma Agricultural and Mechanical College.

HoBart W. Frederick, Agricultural Agent, Summer County (1941). Wellington.
B. S., Kansas State College.

Dell E. Gates, Instructor in Entomology (1948, 1949).
B. S., Kansas State College.

Jewell Oliver Gebhart, Agricultural Agent, Ellis County (1945). Hays.
B. S., Oklahoma Agricultural and Mechanical College.

Vernon Victor Geissler, Agricultural Agent, Wilson County (1947). Fredonia.
B. S., Kansas State College.

George Albert Gemmell, Professor of Education (1918, 1922).
B. S., Kansas State Teachers College (Pittsburg); B. S., M. S., Kansas State College; Ph. D., University of Missouri.

George Willis Gerber, Agricultural Agent, Cowley County (1936, 1937). Winfield.
B. S., Kansas State College.

Alma H. Giles, Home Demonstration Agent, Scott and Wichita (1949). Scott City.
B. S., M. S., Kansas State College.

Paul Gilpin, Agricultural Agent, Smith County (1946). Smith Center.
B. S., Kansas State College.

Otis Benton Glover, District Supervisor and Associate Professor (1929, 1947).
B. S., Kansas State College.

Harvey E. Goertz, Agricultural Agent, Pottawatomie County (1937, 1943). Westmoreland.
B. S., Kansas State College.

W. Allan Goodbary, Agricultural Agent, Allen County (1941, 1942). Iola.
B. S., Oklahoma Agricultural and Mechanical College.

Joe Myron Goodwin, Agricultural Agent, Linn County (1919). Mound City.
B. S., Kansas State College.

EYLEEN GRAHAM, Home Demonstration Agent, Marshall County (1944). Marysville.
B. S., Kansas State College.

ELMER OSCAR GRAPER, Agricultural Agent, Thomas County (1929). Colby.
B. S., Kansas State College.

JEAN R. GREENAWALT, Home Demonstration Agent, Kiowa County (1946, 1947). Greensburg.
B. S., Kansas State College.

PAUL WILSON GRIFFITH, Professor of Agricultural Economics (1935, 1949).
B. S., M. S., Kansas State College.

WAYA GRIGSBY, Home Demonstration Agent, Graham County (1945, 1946). Hill City.
B. S., Kansas State Teachers College, Pittsburg.

PAUL B. GWIN, Agricultural Agent, Geary County (1921). Junction City.
B. S., Kansas State College.

FRANK ALEXANDER HAGANS, Associate Professor of Agricultural Extension; District Supervisor (1930, 1947).
B. S., Kansas State College.

CHARLES ADRIAN HAGEMAN, Agricultural Agent, Reno County (1936). Hutchinson.
B. S., Kansas State College.

PRESTON ORIN HALE, Agricultural Agent, Shawnee County (1929). Topeka.
B. S., Kansas State College.

CHARLES THOMAS HALL, Agricultural Agent, Johnson County (1934). Olathe.
B. S., Kansas State College.

JOHN B. HANNA, Assistant Professor of Junior Extension; Assistant State Club Leader (1934, 1947).
B. S., Kansas State College.

HAROLD B. HARPER, Assistant Professor of Agronomy (1932, 1946).
B. S., Kansas State College.

A. EUGENE HARRIS, Agricultural Agent, Meade County (1938). Meade.
B. S., Kansas State College.

NORTON LEWIS HARRIS, Agricultural Agent, Leavenworth County (1943). Leavenworth.

EARL L. HART, County Club Agent (1947).
B. S., Kansas State College.

EDWIN HEDSTROM, Agricultural Agent, Jewell County (1935). Mankato.
B. S., Kansas State College.

MARIE HENDERSHOT, Home Demonstration Agent, Norton County (1944, 1945). Norton.
B. S., Kansas State College.

ROGER L. HENDERSHOT, County Club Agent (1946).
B. S., Kansas State College.

ADELINE HENDERSON, Assistant County Club Agent (1949).
B. S., Pennsylvania State College.

JOHN ALBERT HENDRIKS, Agricultural Agent, Anderson County (1920). Garnett.
B. S. A., Iowa State College.

Ida Hildibrand, Home Demonstration Agent, McPherson County (1940). McPherson.
B. A., Friends University.

Robert Donald Hilgendorf, Instructor in Journalism and Radio Program Supervisor (1947).
B. S., M. S., Kansas State College.

Arthur L. Hjort, Assistant Professor (1947, 1948).

Clarence Athel Hollingsworth, Agricultural Agent, Bourbon County (1937, 1939). Fort Scott.
B. S., Kansas State College.

Arliss E. Honstead, Home Demonstration Agent, Jackson County (1946). Holton.
B. S., Kansas State College.

Ray M. Hoss, Assistant Professor of Agricultural Economics (1935, 1946).
B. S., Kansas State College.

Willa J. Huddleston, Home Demonstration Agent, Pawnee County (1948). Larned.
B. S., Kansas State College.

Ruth K. Huff, Home Demonstration Agent, Sumner County (1931). Wellington.
B. S., Kansas State College.

Donna O. Hunt, Home Demonstration Agent, Butler County (1944, 1945). El Dorado.
B. A., Kansas University.

Velma G. Huston, Assistant Professor and District Home Demonstration Agent (1935, 1947).
B. S., M. S., Kansas State College.

Donald Walter Ingle, Agricultural Agent, Sedgwick County (1930). Wichita.
B. S., University of Missouri.

Clarence Roy Jaccard, Professor of Agricultural Economics (1922, 1947).
B. S., Kansas State College.

Marion E. Jackson, Assistant Professor of Poultry Husbandry (1945).
B. S., Purdue University.

Bernard Robert Jacobson, Agricultural Agent, Russell County (1947). Russell.
B. S., Kansas State College.

Helen D. Jenkins, Home Demonstration Agent, Hamilton and Kearny Counties (1946). Lakin.
B. S., Kansas State College.

Harold Dean Johnson, Agricultural Agent, Scott County (1944). Scott City.
B. S., Kansas State College.

J. Harold Johnson, Professor of Junior Extension; State Club Leader (1927, 1945).
B. S., Kansas State College; M. S., George Washington University.

Malvin G. Johnson, County Club Agent (1946).
B. S., Kansas State College.

Naomi Marie Johnson, Assistant Professor of Clothing and Textiles (1938, 1947).
B. S., M. S., Kansas State College.

Mildred F. Jones, Home Demostration Agent, Cowley County (1948). Winfield.
B. S., McPherson College.

Oralee Moore Jones, Home Demonstration Agent, Hodgeman County (1947). Jetmore.
B. S., Kansas State College.

Bertha E. Jordan, Home Demonstration Agent, Seward County (1944, 1947). Liberal.

Oda D. Keeney, Home Demonstration Agent, Bourbon County (1944, 1945). Fort Scott.
B. S., Kansas State College.

Eula Mae Kelly, Instructor in Journalism and Assistant Editor (1942).
B. S., M. S., Kansas State College.

Donna J. Kempton, Home Demonstration Agent, Jefferson County (1948, 1949). Oskaloosa.
B. S., Kansas State College.

Claude Lewis King, Assistant Professor of Plant Pathology (1934, 1946).
B. S., Kansas State College.

Russell Charles Klotz, Agricultural Agent, Jefferson County (1943). Oskaloosa.
B. S., Kansas State College.

Wilbur S. Kraisinger, Agricultural Agent, Stanton County (1947). Johnson.
B. S., Kansas State College.

Lucille M. Lambert, Home Demonstration Agent, Harper County (1948). Anthony.
B. S., Kansas State College.

Ada Clare Latta, Home Demonstration Agent, Meade County (1947). Meade.
B. S., Kansas State College.

Donald Lawrence, County Club Agent (1949).
B. S., Kansas State College.

James W. Leathers, County Club Agent (1949).
B. S., Kansas State College.

Alice L. Leland, Home Demonstration Agent, Stafford County (1947). St. John.
B. S., Kansas State College.

Reuben C. Lind, Associate Professor of Agronomy (1943, 1947).
B. S., Kansas State College.

Nellie M. Lindsay, Home Demonstration Agent, Osage County (1941). Lyndon.
B. S., Pittsburg State College.

James W. Linn, Professor of Dairy Husbandry (1924, 1944).
B. S., Kansas State College.

Lisle L. Longsdorf, Professor of Journalism and Extension Editor; Radio Program Director (1927, 1943).
B. S., M. S., University of Wisconsin.

Helen M. Loofburrow, Home Demonstration Agent, Ellsworth County (1942). Ellsworth.
B. S., Kansas State College.

Harold C. Love, Assistant Professor and Extension Economist in Farm Management (1935, 1948).
B. S., Kansas State College.

Donald G. Loyd, County Club Agent (1949).
B. S., Kansas State College.

Charles Enoch Lyness, Agricultural Agent, Doniphan County (1923). Troy.
B. S., Kansas State College.

Verl Ephraim McAdams, Agricultural Agent, Dickinson County (1934). Abilene.
B. S., Kansas State College.

Elizabeth M. McCall, Home Demonstration Agent, Cloud County (1928). Concordia.
B. S., Kansas State College; M. S., Iowa State College.

Hugh Anderson McCandless, Agricultural Agent, Hodgeman County (1948). Jetmore.
B. S., Kansas State College.

Everett Lynn McClelland, Agricultural Agent, Washington County (1936, 1937). Washington.
B. S., Kansas State College.

Luroy Albert McDougal, Agricultural Agent, Lyon County (1948, 1949). Emporia.
B. S., Kansas State College.

Velma M. McGaugh, Assistant Professor of Junior Extension; Assistant State Club Leader (1944, 1948).
B. S., Kansas State College.

Kenneth E. McGinness, County Club Agent (1949).
B. S., Kansas State College.

William Lawrence McKnight, Agricultural Agent, Nemaha County (1949). Seneca.
B. S., Kansas State College.

Kenneth E. Makalous, Agricultural Agent, Marshall County (1943). Marysville.
B. S., Kansas State College.

E. Clifford Manry, Agricultural Agent, Pawnee County (1940, 1942). Larned.
B. S., Oklahoma Agricultural and Mechanical College.

Florence E. Markee, Home Demonstration Agent, Riley County (1949). Manhattan.
B. S., Framingham State Teachers College.

Jean M. Martin, Home Demonstration Agent, Reno County (1947, 1949). Hutchinson.
B. S., Kansas State College; M. S., Colorado State College.

Margaret N. Mauk, Home Demonstration Agent, Saline County (1944, 1945). Salina.
B. S., Kansas State College.

Margaret Ann Mehlinger, Home Demonstration Agent, Marion County (1946, 1947). Marion.
B. S., Kansas State College.

Klarbel K. Meade, Home Demonstration Agent, Rice County (1946, 1947). Lyons.
B. S., Kansas State College.

Ella M. Meyer, Assistant Professor and District Home Demonstration Agent (1925, 1940).
B. S., Kansas State College.

Helen Ruth Meyer, Home Demonstration Agent, Dickinson County (1943, 1944). Abilene.
B. S., Kansas State College.

Frieda Middendorf, Home Demonstration Agent, Lane County (1948, 1949). Dighton.
A. B., University of Kansas.

Franklin Xaverius Miller, Agricultural Agent, Ness County (1947, 1948). Ness City.
B. S., Kansas State College.

Max B. Miller, Instructor in Agriculture (1946).
B. S., Kansas State College.

Eileen Mooney, Home Demonstration Agent, Kingman County (1948). Kingman.
A. B., University of Kansas.

Lucille Erna Mordy, Instructor in Education (1947).
B. S., Emporia State Teachers College.

Elinor Louise Mosier, Home Demonstration Agent, Rooks County (1948, 1949). Stockton.
B. S., Kansas State College.

Wendell Austin Moyer, Agricultural Agent, Mitchell County (1941, 1942). Beloit.
B. S., Kansas State College.

Faye G. Mullikin, Home Demonstration Agent, Haskell and Grant Counties (1948). Sublette.

Harold Lewis Murphey, Agricultural Agent, Comanche County (1930). Coldwater.

Gladys Myers, Associate Professor and Home Management Specialist (1930, 1947).
B. S., Kansas State College; M. S., Cornell University.

Leonard Fay Neff, Associate Professor and District Supervisor (1924, 1947).
B. S., Purdue University.

Helen D. Neighbor, Associate Home Demonstration Agent, Barton County (1948, 1949). Great Bend.
B. S., Kansas State College.

Joseph P. Neill, Agricultural Agent, Morris County (1946). Council Grove.
B. S., Kansas State College.

Russell Carl Nelson, Agricultural Agent, Harvey County (1941, 1948). Newton.
B. S., Kansas State College.

Beth K. Newell, Home Demonstration Agent, Russell County (1949). Russell.
B. S., Kansas State College.

Jean G. Newkirk, Home Demonstration Agent, Kiowa County (1947). Greensburg.
B. S., Kansas State College.

Isabel F. Nixon, Home Demonstration Agent, Greenwood County (1944). Eureka.
B. S., Kansas State College.

Oscar Woodrow Norby, Agricultural Agent, Finney County (1942, 1948). Garden City.
B. S., Kansas State College.

Robert Fred Nuttelman, Agricultural Agent, Montgomery County (1942). Independence.
B. S., Kansas State College.

Lynndel Old, County Club Agent (1947).
B. S., Kansas State College.

Rachel F. Palmer, Associate Home Demonstration Agent, Sedgwick County (1941). Wichita.
B. S., Kansas State College.

Rodney Lewis Partch, Agricultural Agent, Decatur County (1944). Overland.
B. S., Kansas State College.

Inez Pass, Home Demonstration Agent, Ottawa County (1947). Minneapolis.
B. S., Oklahoma Agricultural and Mechanical College.

Floyd Pattison, Professor of Mechanical Engineering (1920, 1930).
B. S., Kansas State College; M. S., Massachusetts Institute of Technology.

Victor Eugene Payer, Agricultural Agent, Butler County (1939, 1941). El Dorado.
B. S., Kansas State College.

Charles William Pence, Agricultural Agent, Saline County (1941, 1948). Salina.
B. S., Kansas State College.

Edward Wilson Pitman, Agricultural Agent, Kingman County (1938, 1941). Kingman.
B. S., Kansas State College.

Richard Bohumil Poch, Agricultural Agent, Osborne County (1945). Osborne.
B. S., University of Nebraska.

Herman Albert Praiger, Jr., Agricultural Agent, Gray County (1948). Cimarron.
B. S., M. S., Kansas State College.

Ethan Quakenbush, County Club Agent (1948).
B. S., Kansas State College.

Carol D. Ramsey, Home Demonstration Agent, Leavenworth County (1947, 1948). Leavenworth.
B. S., Kansas State College.

Harold H. Ramsour, Instructor in Engineering Extension (1948).
B. S., Kansas State College.

Helen K. Ramsour, Home Demonstration Agent, Anderson County (1945). Garnett.
B. S., Kansas State College.

Kathryn Elizabeth Randle, Assistant Professor of Foods and Nutrition Specialist (1925, 1947).
B. S., Kansas State College.

Leon G. Randolph, County Club Agent (1949).
B. S., Kansas State College.

Clayre D. Ratzlaff, Home Demonstration Agent, Cherokee County (1948) Columbus.
B. S., Kansas State Teachers College, Pittsburg.

Harold A. Ray, County Club Agent (1948).
B. S., Kansas State College.

Lucy E. Reardon, Home Demonstration Agent, Wyandotte County (1948). Kansas City.
B. S., Kansas State College.

David Vernon Rector, Agricultural Agent, Grant County (1948). Hill City.
B. S., Kansas State College.

Mary B. Reed, Home Demonstration Agent, Osborne County (1944, 1946). Osborne.
B. S., Kansas State College.

Margaret J. Rees, Home Demonstration Agent, Morris County (1946). Council Grove.
B. S., Kansas State Teachers College, Emporia.

Roger Eli Regnier, Associate Professor of Junior Extension; Assistant State Club Leader (1934, 1944).
B. S., M. S., Kansas State College.

Billie D. Reid, County Club Agent (1948).
B. S., Kansas State College.

Ralph Warren Rhodes, Agricultural Agent, Wabaunsee County (1941, 1942). Alma.
B. S., Kansas State College.

Brace Donald Rowley, Agricultural Agent, Clay County (1941). Clay Center.
B. S., Kansas State College.

Jesse McKinley Schall, Professor of Education and Head of Department of Home Study (1930, 1948).
A. B., Southeast Missouri Teachers College; A. M., University of Missouri.

Margaret Schul, Home Demonstration Agent, Elk County (1947, 1949). Howard.

Martine A. Seaton, Professor of Poultry Husbandry (1928, 1947).
B. S., University of Missouri.

Walter E. Selby, Assistant Professor of Engineering Extension (1944, 1947).
B. S., Kansas State College.

Ethel W. Self, Instructor in Home Management (1943, 1946).
B. S., Kansas State College.

Harold G. Shankland, Assistant Professor of Journalism and Associate Editor (1943, 1945).
A. B., College of Emporia.

Deborah Sharp, Home Demonstration Agent, Ford County (1946). Dodge City.
B. S., Kansas State College.

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

Margery E. Shideler, Home Demonstration Agent, Brown County (1944). Hiawatha.
B. S., Kansas State College.

Glen LeRoy Shriver, Agricultural Agent, Edwards County (1947). Kinsley.
B. S., Kansas State College.

Leatha L. Shroyer, Home Demonstration Agent, Gray County (1944, 1947). Cimarron.

Harold Davis Shull, Agricultural Agent, Cheyenne County (1939). St. Francis.
B. S., Kansas State College.

George W. Sidwell, Agricultural Agent, Rice County (1918, 1919). Lyons.
A. B., Fairmont College.

Deal D. Six, Agricultural Agent, Douglas County (1935). Lawrence.
B. S., Kansas State College.

John E. Sloup, Agricultural Agent, Phillips County (1948). Phillipsburg.
B. S., Oklahoma Agricultural and Mechanical College.

John Frederick Smerchek, Agricultural Agent, Kiowa County (1942). Greensburg.
B. S., Kansas State College.

Virginia Jean Smith, Home Demonstration Agent, Miami County (1948). Paola.
B. S., Kansas State College.

Georgiana H. Smurthwaite, Professor and State Home Demonstration Leader (1924, 1937).
B. S., Utah State College; M. S., Kansas State College.

Arnold Dean Spencer, Agricultural Agent, Coffey County (1948). Burlington.
B. S., Kansas State College.

Wilma M. Staehli, Home Demonstration Agent, Clay County (1945, 1947). Clay Center.
B. S., Kansas State College.

Beverly David Stagg, Agricultural Agent, Norton County (1940, 1941). Norton.
B. S., Kansas State College.

Winona M. Starkey, Home Demonstration Agent, Franklin County (1944, 1947). Clay Center.
B. S., Kansas State College.

Virginia Lee Stewart, Home Demonstration Agent, Clark County (1947). Ashland.
B. S., Kansas State College.

Beth R. Stockwell, Home Demonstration Agent, Montgomery County (1943, 1944). Independence.
B. S., Kansas State College.

Harold E. Stover, Associate Professor of Engineering Extension (1936, 1946).
B. S., Kansas State College.

Vadaline A. Strobel, Home Demonstration Agent, Comanche County (1948). Coldwater.
B. S., Kansas State College.

Frank B. Stuckey, Agricultural Agent, Cherokee County (1947). Columbus.
B. S., Kansas State College.

James Wadell Sturdevant, Agricultural Agent, Chase County (1948). Cottonwood Falls.
B. S., Kansas State College.

Lot F. Taylor, Associate Professor of Animal Husbandry (1935, 1949).
B. S., M. S., Kansas State College.

Earl Hicks Teagarden, Associate Professor and District Agent (1929, 1947).
B. S., Kansas State College.

Warren C. Teel, Agricultural Agent, Labette County (1939). Altamont.
B. S., Kansas State College.

Marjorie Ann Tennant, Home Demonstration Agent, Geary County (1946, 1947). Junction City.
B. S., Kansas State College.

Wilton Bradley Thomas, Agricultural Agent, Cloud County (1946). Concordia.
B. S., Kansas State College.

Alonzo Franklin Turner, Professor; Field Agent (1917, 1947).
B. S., Kansas State College.

Harry John Charles Umberger, Dean, Emeritus (1911, 1947).
B. S., Kansas State College.

Joseph E. Van Cleve, County Club Agent (1948).
B. S., Kansas State College.

Mary Ruth Vanskike, Home Demonstration Agent, Neosho County (1943, 1947). Erie.
B. S., Kansas State College.

Clarence William Vetter, Agricultural Agent, Atchison County (1918). Effingham.
B. S., Iowa State College.

Faye E. Vice, Home Demonstration Agent, Labette County (1946, 1947). Altamont.
B. S., Kansas State College.

Eugene D. Warner, Associate Professor of Journalism and Associate Extension Editor (1935, 1946).
B. S., Kansas State College.

Leo T. Wendling, Instructor in Engineering Extension (1947).
B. S., Kansas State College.

Willis Raymond Wenrich, Agricultural Agent, Barber County (1939). Medicine Lodge.
B. S., Kansas State College.

Herman W. Westmeyer, Agricultural Agent, Ford County (1936, 1937). Dodge City.
B. S., University of Missouri.

Wilma Weyrich, Home Demonstration Agent, Wilson County (1948). Fredonia.

Wilbur Waldo White, Agricultural Agent, Morton County (1942, 1943). Elkhart.
A. B., Southwestern College; B. S., Kansas State College.

Norman Vincent Whitehair, Agricultural Agent, Rawlins County (1946). Atwood.
B. S., Kansas State College.

Louis Coleman Williams, Dean and Director (1915, 1947).
B. S., Kansas State College.

Laura B. Willison, Home Demonstration Agent, Sedgwick County (1937). Wichita.
B. S., Kansas State College.

Luther Earl Willoughby, Professor of Agronomy (1917, 1942).
B. S., Kansas State College.

Paul Henry Wilson, Agricultural Agent, Barton County (1946, 1947). Great Bend.
B. S., Kansas State College.

Richard W. Winger, County Club Agent (1949).
B. S., Kansas State College.

John Stanley Winter, Agricultural Agent, Sheridan County (1948, 1949). Hoxie.
B. S., Kansas State College.

Jack D. Wise, Agricultural Agent, Wichita County (1948). Leoti.
B. S., Kansas State College.

William Alexander Wishart, Agricultural Agent, Greenwood County (1936, 1940). Eureka.
B. S., Kansas State College.

Ralph Wittmeyer, County Club Agent (1947).
B. S., Missouri University.

Thurman S. Wren, Temporary County Club Agent (1949).

Mary D. Ziegler, Home Demonstration Agent, Shawnee County (1928). Topeka.
B. S., Kansas State College.

Statistical Summary for 1947-1948

Students by States, Foreign Countries, and Kansas Counties

State

Alabama	2
Arizona	1
Arkansas	19
California	28
Colorado	17
Connecticut	5
Delaware	2
District of Columbia	3
Florida	5
Georgia	3
Illinois	55
Indiana	16
Iowa	16
Kansas	7,288
Kentucky	5
Louisiana	7
Maryland	7
Maine	1
Massachusetts	12
Michigan	12
Minnesota	11
Mississippi	6
Missouri	253
Montana	4
Nebraska	48
New Hampshire	1
New Jersey	34
New Mexico	6
New York	69
North Carolina	2
North Dakota	3
Ohio	6
Oklahoma	35
Oregon	5
Pennsylvania	20
Rhode Island	1
South Carolina	2
South Dakota	14
Tennessee	11
Texas	38
Utah	4
Virginia	4
West Virginia	4
Wisconsin	14
Wyoming	2
Washington	2
Total	8,103

Foreign Countries

Africa	2
Argentina	1
Bolivia	4
Brazil	1
Canada	4
China	10
Colombia	1
Egypt	1
Hawaii	10
India	3
Iraq	3
Mexico	3
Nicaragua	2
Palestine	6
Panama	3
Peru	3
Puerto Rico	4
Syria	2
Total	63
Grand total	8,166

Kansas Counties

Allen	54
Anderson	39
Atchison	66
Barber	33
Barton	104
Bourbon	21
Brown	99
Butler	136
Chase	41
Chautauqua	25
Cherokee	29
Cheyenne	24
Clark	21
Clay	117
Cloud	127
Coffey	54
Comanche	21
Cowley	86
Crawford	62
Decatur	24
Dickinson	164
Doniphan	28
Douglas	28
Edwards	38
Elk	17
Ellis	27
Ellsworth	30
Finney	37
Ford	59
Franklin	54
Geary	132
Gove	4
Graham	27
Grant	6
Gray	16
Greeley	13
Greenwood	66
Hamilton	13
Harper	46
Harvey	86
Haskell	7
Hodgeman	8
Jackson	72
Jefferson	39
Jewell	43
Johnson	111
Kearny	16
Kingman	46
Kiowa	29
Labette	58
Lane	17
Leavenworth	48
Lincoln	48
Linn	26
Logan	11
Lyon	77
McPherson	98
Marion	51
Marshall	165
Meade	16
Miami	38
Mitchell	53
Montgomery	111
Morris	52
Morton	3
Nemaha	77
Neosho	47
Ness	37
Norton	58
Osage	52
Osborne	36
Ottawa	62
Pawnee	43
Phillips	43
Pottawatomie	110
Pratt	28
Rawlins	15
Reno	185
Republic	85
Rice	87
Riley	1,176
Rooks	39
Rush	25
Russell	52
Saline	169
Scott	5
Sedgwick	399
Seward	20
Shawnee	303
Sheridan	19
Sherman	19
Smith	59
Stafford	44
Stanton	5
Stevens	9
Sumner	99
Thomas	30
Trego	18
Wabaunsee	66
Wallace	13
Washington	106
Wichita	14
Wilson	48
Woodson	20
Wyandotte	249
Total	7,288

Record of Enrollment and Degrees Conferred, 1863-1948

Year	Summer school	Housekeepers' short course	Dairy Mfg. short 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	....	....	....	....	....	....	....	92	....	....	14	....	....	....	....	....	106	....	....
1864-'65	....	....	....	....	....	....	....	91	....	....	14	8	1	....	....	....	114	....	....
1865-'66	....	....	....	....	....	....	....	99	....	....	21	3	5	....	....	....	127	....	....
1866-'67	....	....	....	....	....	....	....	118	....	....	11	7	1	5	....	....	142	5	....
1867-'68	....	....	....	....	....	....	....	103	....	....	6	5	1	....	....	....	115	....	1
1868-'69	....	....	....	....	....	....	....	137	....	....	10	10	2	....	1	....	160	....	....
1869-'70	....	....	....	....	....	....	....	119	....	....	10	12	1	....	....	....	142	....	....
1870-'71	....	....	....	....	....	....	....	118	....	....	13	5	4	5	....	....	145	5	5
1871-'72	....	....	....	....	....	....	....	129	....	....	20	11	3	5	2	2	168	3	1
1872-'73	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	173	2	1
1873-'74	....	....	....	....	....	....	....	137	....	....	24	14	3	6	....	....	184	5	....
1874-'75	....	....	....	....	....	....	....	103	....	....	26	10	2	2	....	....	143	2	1
1875-'76	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	238	5	....
1876-'77	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	232	9	1
1877-'78	....	....	....	....	....	....	....	75	....	....	42	23	5	5	....	....	152	4	....
1878-'79	....	....	....	....	....	....	1	....	....	....	89	89	16	12	....	....	214	9	2
1879-'80	....	....	....	....	....	....	1	....	....	....	166	61	35	11	2	....	276	7	2
1880-'81	....	....	....	....	....	....	6	....	....	....	178	48	24	9	2	....	267	8	....
1881-'82	....	....	....	....	....	....	5	....	....	....	227	50	19	11	....	....	312	9	2
1882-'83	....	....	....	....	....	....	4	....	....	....	241	60	30	12	....	....	347	12	3
1883-'84	....	....	....	....	....	....	2	....	....	....	255	92	26	18	2	....	395	17	....
1884-'85	....	....	....	....	....	....	2	....	....	....	271	71	36	16	5	....	401	14	1
1885-'86	....	....	....	....	....	....	1	....	....	....	273	91	35	24	4	....	428	21	2
1886-'87	....	....	....	....	....	....	....	....	....	....	303	100	44	24	10	....	481	21	5
1887-'88	....	....	....	....	....	....	....	....	....	....	305	92	46	27	2	....	472	22	1
1888-'89	....	....	....	....	....	....	....	....	....	....	266	103	41	28	7	....	445	25	1
1889-'90	....	....	....	....	....	....	1	....	....	....	307	105	63	28	10	....	514	27	2
1890-'91	....	....	....	....	....	....	....	....	....	....	343	135	50	53	12	....	593	52	2
1891-'92	....	....	....	....	....	....	....	....	....	....	336	139	62	37	10	....	584	35	....
1892-'93	....	....	....	....	....	....	....	....	....	....	339	110	66	43	29	....	587	39	9
1893-'94	....	....	....	....	....	....	....	....	....	....	275	141	72	42	25	....	555	39	6
1894-'95	....	....	....	....	....	....	5	....	....	....	276	108	89	64	39	....	572	57	3
1895-'96	....	....	....	....	....	....	3	....	....	....	353	121	67	71	32	....	647	66	5
1896-'97	....	....	....	....	....	....	6	67	....	....	321	163	69	62	46	....	734	55	8
1897-'98	....	....	....	6	....	9	15	77	....	....	316	174	77	82	57	10	803	69	10
1898-'99	....	....	....	26	....	35	40	110	....	....	306	177	92	65	40	21	871	53	10
1899-1900	....	24	....	57	47	50	32	162	....	....	376	163	109	69	27	22	1,094	58	3
1900-'01	....	47	....	72	109	79	23	318	....	....	348	183	80	74	40	52	1,321	60	9
1901-'02	....	41	....	66	125	87	19	298	....	....	396	206	120	65	32	59	1,396	52	3
1902-'03	....	63	....	38	123	78	36	342	....	....	471	229	141	86	24	57	1,574	55	....
1903-'04	17	51	....	16	122	72	33	443	....	....	403	206	161	114	20	36	1,605	102	1
1904-'05	15	88	....	24	99	12	30	500	....	....	289	198	122	117	26	43	1,462	107	2
1905-'06	18	92	....	28	118	....	46	598	....	....	373	214	145	110	30	64	1,690	96	4
1906-'07	18	134	....	23	179	Engineering short course	48	144	511	....	411	269	149	133	24	88	1,937	119	5
1907-'08	29	188	....	26	173		42	134	528	....	450	357	202	148	26	82	2,192	116	4
1908-'09	25	168	....	18	197		42	134	521	....	491	381	243	171	28	86	2,308	139	12
1909-'10	22	152	4	111	124		87	89	453	....	456	417	286	170	26	70	2,305	144	2
1910-'11	31	160	9	26	285		107	Milling short course	364	....	533	412	288	248	34	59	2,407	205	2
1911-'12	94	160	14	Lunch room mgt.	280		85		580	....	337	461	288	261	44	81	2,523	230	6
1912-'13	282	175	11		289		129		654	....	444	432	355	268	55	166	2,928	230	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	48	200	3,089	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	172			422	693	471	378	282	68	279	3,339	197	13
1917-'18	481	84	....	8	119	135	138			231	483	349	294	238	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	362	271			224	894	400	297	273	44	167	3,376	260	11
1920-'21	604	30	10	....	96	278	270	8		280	878	602	318	273	42	294	3,395	249	14
1921-'22	820	19	10	....	59	173	221	....		297	931	628	422	296	125	813	3,560	272	28
1922-'23	884	19	8	....	55	83	163	12		220	1004	656	460	401	118	457	3,626	341	31
1923-'24	978	12	7	....	43	57	161	3		167	1160	657	458	413	171	475	3,812	342	43
1924-'25	1120	14	14	....	55	54	139	5		47	1391	679	467	347	185	486	4,031	335	53
1925-'26	947	12	11	....	41	29	89	....		....	1494	725	512	344	182	384	4,019	341	51

RECORD OF ENROLLMENT AND DEGREES CONFERRED, 1863-1918—Concluded

Year	Summer school	Housekeepers' short course	Dairy Mfg. short 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
1926-'27	959	....	18	....	52	....	71	....	19	....	1311	854	509	411	179	300	4,083	357	77
1927-'28	966	....	20	....	57	....	88	....	7	....	1039	819	584	500	167	418	3,878	428	70
1928-'29	920	....	18	....	51	....	57	....	9	....	1084	743	584	537	197	321	3,879	461	84
1929-'30	902	....	13	....	59	....	70	....	9	....	1128	787	581	554	†432	548	3,987	469	91
1930-'31	995	....	24	....	52	....	50	....	7	....	1077	790	605	528	506	589	4,045	424	91
1931-'32	1059	....	12	....	29	....	54	....	....	....	933	752	633	572	572	688	3,928	486	119
1932-'33	995	....	....	....	....	....	72	....	....	....	666	596	552	590	518	630	3,359	523	118
1933-'34	655	....	....	....	....	....	61	....	....	....	707	558	520	522	327	422	2,928	423	70
1934-'35	722	....	....	....	....	....	52	....	....	....	1081	616	548	557	316	456	3,436	470	52
1935-'36	989	....	....	....	....	....	69	....	....	....	1330	820	660	574	391	572	4,261	478	72
1936-'37	917	....	....	....	....	....	64	....	....	....	1326	947	774	623	440	634	4,457	521	90
1937-'38	890	....	....	....	....	....	67	....	....	....	1297	972	810	787	409	537	4,695	637	92
1938-'39	911	....	....	....	....	....	61	....	....	....	1246	959	864	855	463	559	4,800	720	86
1939-'40	920	....	....	....	....	....	61	....	....	....	1306	958	926	871	490	622	4,910	710	79
1940-'41	935	....	....	....	....	....	40	....	....	....	1284	969	905	900	524	655	4,902	734	85
1941-'42	880	....	....	....	....	....	17	....	....	....	1274	926	807	748	417	590	4,479	617	68
1942-'43	1178	....	....	....	....	....	21	....	....	....	1234	717	587	717	253	846	3,861	646	28
1943-'44*	1181	....	....	....	....	....	21	....	....	....	1234	717	587	717	217	888	3,786	....	....
1943-'44	911	....	....	....	....	....	18	....	....	....	483	371	312	440	193	619	2,109	390	28
1944-'45	881	....	....	....	....	....	48	....	....	....	601	383	289	260	196	594	2,064	261	27
1945-'46	2785	....	....	....	....	....	227	....	....	....	1730	771	524	468	331	1784	5,052	464	55
1946-'47	2859	....	....	....	....	....	183	....	....	....	3453	1910	1019	856	383	2849	7,814	779	102
1947-'48	2446	....	....	....	....	....	97	....	....	....	2100	2325	1595	1123	456	1976	8,166	988	118

† Figures above this column include neither graduate students in summer session, nor undergraduate students pursuing graduate work.

* Beginning with this year this summary is made at the close of the summerr session instead of at the close of the sprirng semester as before.

College Registration, 1947-1948

SCHOOL	Men	Women	Total
School of Agriculture	1,469	15	1,484
Graduate students	92	.....	92
Seniors	176	2	178
Juniors	248	6	254
Sophomores	443	2	445
Freshmen	493	4	497
Special students	17	1	18
School of Arts and Sciences	2,121	751	2,872
Graduate students	145	71	216
Seniors	278	150	428
Juniors	366	141	507
Sophomores	598	169	767
Freshmen	716	209	925
Special students	18	11	29
School of Engineering and Architecture	2,609	23	2,632
Graduate students	77	3	80
Seniors	404	2	406
Juniors	621	2	623
Sophomores	935	7	942
Freshmen	526	9	535
Special students	46	.....	46
School of Home Economics	4	779	783
Graduate students	.....	67	67
Seniors	.....	135	135
Juniors	1	168	169
Sophomores	1	196	197
Freshmen	2	209	211
Special students	.....	4	4
School of Veterinary Medicine	203	2	205
Graduate students	1	.....	1
Seniors	.....	.....	.....
Juniors	61	2	63
Sophomores	75	.....	75
Freshmen	66	.....	66
Totals	6,406	1,570	7,976
Counted twice	295	36	331
Net totals	6,111	1,534	7,645
Summer Schools, 1948	1,944	524	2,468
Totals	8,055	2,058	10,113
Counted twice	1,715	232	1,947
*Net grand totals	6,340	1,826	8,166
Graduate School	379	209	588
Graduate students in regular sessions	315	141	456
Graduate students in summer schools	244	128	372
Counted twice	180	60	240
Net in summer schools only	64	68	132
Graduate students in absentia	(5)	(3)	(8)
Undergraduate students carrying graduate work	(43)	(8)	(51)

* This total does not include 54 men and 48 women in Work Shops.

Degrees Conferred in the Year 1948

SCHOOL AND CURRICULUM (or Major Study)	Men	Women	Total
School of Agriculture (B. S.)	156	.....	156
Agriculture	130	.....	130
Agricultural Journalism	4	.....	4
Landscape Design	3	.....	3
Milling Industry	19	.....	19
School of Arts and Sciences (B. S.)	255	140	395
General Curriculum	89	98	187
Business Administration	110	18	128
Industrial Chemistry	14	3	17
Industrial Journalism	23	6	29
Music	.....	1	1
Music Education	.....	9	9
Physical Education	19	5	24
School of Engineering and Architecture (B. S.)	298	2	300
Agricultural Engineering	12	.....	12
Architecture	9	1	10
Architectural Engineering	24	.....	24
Chemical Engineering	35	.....	35
Civil Engineering	46	.....	46
Electrical Engineering	69	.....	69
Industrial Arts	8	.....	8
Mechanical Engineering	95	1	96
School of Home Economics (B. S.)	1	136	137
Home Economics	1	129	130
Home Economics and Nursing	.....	7	7
Total of undergraduate degrees	710	278	988
Graduate School (M. S.)	90	25	115
Agricultural Economics	10	.....	10
Agricultural Engineering	1	.....	1
Agronomy	9	.....	9
Animal Genetics	1	.....	1
Animal Husbandry	2	.....	2
Architecture	1	.....	1
Bacteriology	2	1	3
Botany	1	.....	1
Chemical Engineering	2	.....	2
Chemistry	10	.....	10
Child Welfare and Euthenics	.....	1	1
Civil Engineering	1	.....	1
Clothing and Textiles	.....	4	4
Dairy Husbandry	2	.....	2
Economics and Sociology	3	1	4
Education	1	.....	1
Education and Psychology	8	.....	8
Electrical Engineering	3	.....	3
English	4	1	5
Entomology	2	.....	2
Foods and Nutrition	.....	5	5
Genetics	1	.....	1
Geology	1	.....	1
History	.....	2	2
History and Government	1	1	2
General Home Economics	.....	3	3
Household Economics	.....	2	2
Industrial Arts	1	.....	1
Institute of Citizenship	1	.....	1
Institutional Management	.....	3	3
Machine Design	1	.....	1
Mathematics	2	1	3
Mechanical Engineering	1	.....	1
Milling Industry	2	.....	2
Physics	7	.....	7
Poultry Husbandry	4	.....	4
Shop Practice	1	.....	1
Surgery and Medicine	1	.....	1
Zoölogy	3	.....	3
Graduate School (Ph. D.)	2	.....	2
Chemistry	2	.....	2
Honorary Degree	1	.....	1
Doctor of Laws	1	.....	1
Total degrees conferred in 1948	803	303	1,106

Certificates Conferred in the Year 1948

SCHOOL AND CURRICULUM	Men	Women	Total
School of Agriculture	8	.....	8
Agriculture (Two-year)	8	.....	8
School of Engineering and Architecture	2	1	3
Commercial Art	.....	1	1
Industrial Technology	2	.....	2
Total certificates conferred in 1948	10	1	11

GENERAL INDEX