

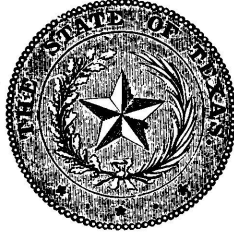
BULLETIN

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AGRICULTURAL AND MECHANICAL COLLEGE
OF TEXAS

N. S. Vol. I

APRIL, 1914

No. 4



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of Texas

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AUSTIN, TEXAS
VON BORCKMANN-JONES CO., PRINTERS
1914

CALENDAR

1914							1915							1916													
JULY							JANUARY							JULY							JANUARY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	1	2	1	2	3	1
5	6	7	8	9	10	11	3	4	5	6	7	8	9	4	5	6	7	8	9	10	2	3	4	5	6	7	8
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19	20	21	22	23	24	25	17	18	19	20	21	22	23	18	19	20	21	22	23	24	16	17	18	19	20	21	22
26	27	28	29	30	31	..	24	25	26	27	28	29	30	25	26	27	28	29	30	31	23	24	25	26	27	28	29
..	31	30	31
AUGUST							FEBRUARY							AUGUST							FEBRUARY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	..	1	2	3	4	5	6	1	2	3	4	5	6	7	1	2	3	4	5
2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14	6	7	8	9	10	11	12
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30	31
SEPTEMBER							MARCH							SEPTEMBER							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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20	21	22	23	24	25	26	21	22	23	24	25	26	27	19	20	21	22	23	24	25	19	20	21	22	23	24	25
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..
OCTOBER							APRIL							OCTOBER							APRIL						
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4	5	6	7	8	9	10	4	5	6	7	8	9	10	3	4	5	6	7	8	9	2	3	4	5	6	7	8
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18	19	20	21	22	23	24	18	19	20	21	22	23	24	17	18	19	20	21	22	23	16	17	18	19	20	21	22
25	26	27	28	29	30	31	25	26	27	28	29	30	..	24	25	26	27	28	29	30	23	24	25	26	27	28	29
..	31	30
NOVEMBER							MAY							NOVEMBER							MAY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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29	30	23	24	25	26	27	28	29	28	29	30	28	29	30	31
..	30	31
DECEMBER							JUNE							DECEMBER							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	1	2	3	4	5	1	2	3	4	1	2	3	
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20	21	22	23	24	25	26	20	21	22	23	24	25	26	19	20	21	22	23	24	25	18	19	20	21	22	23	24
27	28	29	30	31	27	28	29	30	26	27	28	29	30	31	..	25	26	27	28	29	30	..
..

COLLEGE CALENDAR.

1914.

Deficiency Examinations, Monday, Tuesday, September 21, 22.
First term begins Tuesday, September 22.
Registration of new students, September 22.
Entrance Examinations, September 23, 24.
Registration of old students, September 24.
Recitations begin September 25.
National Holiday, Thanksgiving Day.
Christmas Holidays begin Wednesday, December 23.

1915.

Last Day of the Christmas Holidays, Sunday, January 3.
Recitations resumed, Monday, January 4, 8 a. m.
Short Winter Course in Highway and Rural Engineering begins Monday, January 11.
Second Term begins Thursday, February 4.
National Holiday, February 22.
State Holiday, March 2.
State Holiday, April 21.
Commencement Sermon, Sunday, June 6.
Exhibition of Departments and of Work of Students, June 7.
Commencement Day, June 8.

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G. H. BLACKMON, B. S.,
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*On leave of absence.

O. B. WOOTEN, B. S.,
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A. T. POTTS, B. S.,
Assistant Professor of Horticulture.

G. A. GEIST, B. S.,
Assistant Professor of Drawing.

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Instructor in Mathematics.

L. L. CHAPPELLE,
Instructor in Mechanical Engineering.

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W. H. McPHEETERS, B. S.,
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HUGH CASSIDAY, M. A.,
Instructor in Biology.

F. J. SKEELER, B. S.,
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Instructor in Mathematics.

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R. B. PEARCE, B. S.,
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E. E. McADAMS, B. S.,
Instructor in Physics.

*On leave of absence.

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Instructor in Mechanical Engineering.

B. J. MANSFIELD, B. S.,
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F. W. BELL, B. S.,
Instructor in Animal Husbandry.

L. L. CLICK, B. S. E.,
Instructor in English.

C. N. KENNEDY, B. S.,
Instructor in Animal Husbandry.

W. P. POWELL, M. A.,
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C. A. WOOD, B. S.,
Instructor in Agronomy.

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E. L. REED, B. A.,
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M. K. THORNTON, B. S.,
Instructor in Chemistry.

L. B. BURK, B. S.,
Instructor in Animal Husbandry.

C. E. HANSON, A. B., B. S.,
Instructor in Mechanical Engineering.

C. A. NASH, B. S.,
Instructor in Electrical Engineering.

*Resigned December 1, 1913.

*A. E. NICHOLS, B. A.,
Instructor in Biology.

F. STEWART, B. S.,
Instructor in Agronomy.

G. W. HANSON, B. S.,
Instructor in Mechanical Engineering.

J. W. NEWTON, B. S.,
Assistant in Chemistry.

W. T. BRYANT, B. S.,
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A. E. TALBOT, B. S.,
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E. L. AYERS,
dent Assistant in Biology.

E. L. TANNER,
Student Assistant in Biology.

L. G. RICH,
Student Assistant in Agronomy.

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Superintendent Agricultural Extension.

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**O. H. SELLERS, B. S. A.,
In Charge of Correspondence Courses.

D. T. STEVENS, B. S.
Assistant.

*Resigned January 29, 1914.

**Resigned January 1, 1914.

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State Agent in Demonstration Work.

J. L. QUICKSALL,
Assistant State Agent in Demonstration Work.

**T. O. WALTON,
M. T. PAYNE,
WILLIAM GANZER,
G. W. ORMS,**
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H. H. WILLIAMSON,
Assistant State Agent in Boys' and Girls' Clubs.

MISS BERNICE CARTER,
Assistant in Club Work.

TEXAS AGRICULTURAL EXPERIMENT STATIONS.

Main Station, College Station.

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CHAS. A. FELKER, *Chief Clerk.*
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F. B. PADDOCK, B. S., *Entomologist.*

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A. H. LEIDIGH, B. S., *Agronomist in Charge of Soil Improvement.*
H. H. JOBSON, B. S., *Assistant Agronomist.*
R. E. DICKSON, B. S., *Assistant Agronomist.*

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F. H. BLODGETT, Ph. D., *Plant Pathologist and Physiologist in Charge.*

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C. S. SCHARFF, *Acting Superintendent.*

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*In co-operation with the United States Department of Agriculture.

HISTORICAL SKETCH.

The Agricultural and Mechanical College of Texas, like the land grant institutions in other States of the Union, owes its origin to an act of Congress approved July 2, 1862. This act donated public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanic arts, and directed the Secretary of the Interior to issue land scrip to the States in which there was not the requisite quantity of public land. The act further directed that the money derived from this source should constitute a perpetual fund, the principal of which should remain forever undiminished, and the interest of which should be inviolably appropriated by each State to the endowment, support and maintenance of at least one technological college, whose leading object should be, without excluding other scientific and classical studies, and including military tactics, to teach branches of learning pertaining to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life. It was further provided that the provisions of the act should be formally accepted by the State Legislature. By joint resolution approved November 1, 1866, the Legislature of Texas accepted the provisions of the Congressional legislation, and accordingly there was issued to Texas scrip for 180,000 acres of public land, which was sold for \$174,000. This amount was invested in Texas 7 per cent gold frontier bonds. At the time of the opening of the College there was an addition to the fund of accrued interest amounting to \$35,000, which was invested in 6 per cent State bonds.

In an act approved April 17, 1871, the Legislature provided for the establishment of the Agricultural and Mechanical College. By the terms of this act and later acts, appropriations aggregating \$187,000 were made for buildings and equipment. A commission to locate the College was created by the Legislature. After careful investigation, the commission accepted the proposition of the citizens of Brazos county, and located the institution on a tract of 2416 acres of land in that county. Finally, the constitutional convention of 1876 constituted the College a branch of the University of Texas, and, in accordance with the terms of the Federal legislation, designated it as an institution for instruction in agriculture and the mechanic arts and the natural sciences connected therewith. The convention further provided that the Legislature should have the right to levy taxes for the maintenance and support of the Agricultural and Mechanical College.

The College was formally opened for the reception of students October 4, 1876.

GROWTH OF THE COLLEGE.

Since 1876, by means of financial aid voted by Congress and of appropriations made by the State Legislature, there has been developed a considerable foundation at the College for instruction, for investigation, and for experiment. In 1887 Congress voted the sum of \$15,000 a year to each State for the purpose of establishing experiment stations

to conduct original research on the physiology of plants and animals, the diseases of plants and animals, the chemical composition of useful plants, the advantages of rotation of crops, climatology, analyses of soils and waters, the composition of manures, the value of grasses and ferge crops, the composition and digestibility of the different kinds of food for domestic animals, the scientific and economic questions involved in the production of butter and cheese, and such other researches and experiments in agriculture as might be deemed advisable.

In 1890 Congress further appropriated the sum of \$15,000 a year with an annual increase of \$1000 for ten years, and provided that the amount appropriated should be equitably divided between the Agricultural and Mechanical College and an institution intended for the technical education of colored students.

In 1907 Congress appropriated the sum of \$5000, with annual increase of \$5000, for four years.

In 1895 the Legislature made provision for an experiment station at Beeville, and in 1900 for a second experiment station at Troup.

In 1910 eight additional stations were established in different parts of the State.

At College Station there are nine dormitories, an academic building in course of erection for offices and section rooms, a mess hall, an assembly hall, an agricultural and horticultural building, a chemical and veterinary building, a civil engineering building, an electrical engineering building, an experiment station building, a mechanical engineering building, a textile engineering building, a hospital, a veterinary hospital, a farm implement building, a natatorium, a water, ice and light plant, a laundry, a sewerage system, barns and outhouses, and residences for instructors and officers, with a total valuation of approximately \$1,150,000.

GOVERNMENT.

The government of the College is vested in a Board of nine directors, appointed by the Governor for a term of six years.

ADMINISTRATION.

The immediate regulation and direction of the affairs of the College are delegated by the Board of Directors to the President and the Faculty.

ORGANIZATION.

The College comprises the School of Agriculture and the School of Engineering. The Faculty of the School of Agriculture, and the Faculty of the School of Engineering have supervision over the educational work of the respective schools. The Faculty of the College directs the general policy of the institution and has supervision over matters not specifically assigned to the other Faculties.

DEPARTMENTS.

The College has now in operation the following departments of instruction:

Agricultural Education.

Agronomy.

Animal Husbandry.
Architecture.
Biology.
Chemistry and Chemical Engineering.
Civil Engineering.
Dairy Husbandry.
Drawing.
Electrical Engineering.
English.
Entomology.
History and Economics.
Horticulture.
Mathematics.
Mechanical Engineering.
Military Science and Tactics
Physics.
Textile Engineering.
Veterinary Science.

Provision is also made for courses in Agricultural Engineering, in Languages and for correspondence courses.

OBJECTS.

The objects of the College are indicated in the provisions of the laws of Congress and of the State Constitution and statutes. Briefly stated, the College was established for the purpose of furnishing an opportunity to the young men of Texas to qualify themselves to do expert work in all industrial pursuits and professions; to furnish information of a scientific and practical character to the people of the State actually engaged in farming, in horticulture, in dairying, and in stock raising, and in every possible way to advance all industrial interests of the State. To meet the urgent demand for men of industrial skill, the work of the College has been so planned as to train men in the scientific principles of agriculture, horticulture, cattle raising and related pursuits, and in chemical, civil, electrical, mechanical and textile engineering, drawing and architecture. As rapidly as the funds of the College will allow, provision will be made for expert industrial work in all other directions.

The work of the College in behalf of those actually engaged in industrial pursuits is carried on through the experiment stations, including the main station established at College Station and the ten substations, through the divisions of agronomy, animal husbandry, chemistry, entomology, horticulture and veterinary science. Through the experiment stations information is furnished to farmers and others in the form of bulletins and through press notices and correspondence. At present there are 40,000 farmers whose names appear on the regular mailing list of the experiment station. As opportunity permits, the members of the stations and agricultural staffs, the superintendent of the extension department, the professor of highway engineering and the instructor in terracing visit different sections of the State for the purpose of giving institute lectures to various associations and gather-

ings of agriculturists. It will be seen that it is by no means the exclusive mission of the College to furnish instruction to the thousand or more students who matriculate in the institution; a much wider constituency than this is reached through the press, through correspondence, correspondence courses, and lectures.

The military feature, made necessary by the acceptance of the Federal grants, is an important adjunct to the other work of the College. It is conducive to health and to bodily grace and strength, and cultivates habits of strict attention and of obedience, punctuality, neatness and regularity.

METHOD AND SCOPE OF INSTRUCTION.

In all the courses of instruction the fundamental idea is education in practical science, particularly in agriculture and in engineering. With this idea in view, instruction is given in English, history, economics, mathematics, physics, chemistry and in other studies which lie at the foundation of a sound education and furnish the best preparation for the more technical studies of the several courses. Instruction is given by the use of text-books, by lectures and recitations; also by practice in the shop, field, laboratory, and drawing room. These practical exercises have a high educational value, and serve a useful purpose in fixing and rendering clear the ideas presented in the class room; they have also a practical value, for they are, in great measure, examples of just such problems as the scientific agriculturist or engineer will encounter in the pursuit of his calling. For convenience of instruction, the classes are subdivided into sections of suitable size. Unannounced written exercises and tests are given at the discretion of instructors. Regular written examinations are held at the end of each term.

DISCIPLINE.

By reason of its isolated location the College is able to exercise effective oversight over the student body. The authorities do not undertake to restrain the liberty of the student more than is necessary for the securing of good results in scholarship and conduct. Each student is expected at all times to conduct himself as a gentleman, and to attend promptly and faithfully to all his duties.

Students are not allowed to leave the College grounds, either to visit neighboring towns, or their homes, without first securing a furlough from the Commandant of Cadets or from the President.

When a student overstays a furlough which extends through the Christmas holidays or the summer vacation, his name will be dropped from the rolls.

The College encourages the attendance of young men who have a serious purpose and who wish to secure a thorough technological training. The Faculty will do everything in its power to assist every cadet in securing a sound education and in forming correct habits, but will not tolerate the presence of young men who evince a determination not to study and not to comply with reasonable regulations.

For improper conduct or failure to keep up with his studies, a student may at any time be required to withdraw from College.

In order to keep parents systematically informed concerning the progress of their sons, reports, showing class standing and record of conduct, are sent out from the Dean's office at the end of each term.

LOCATION.

The College is situated at College Station, in the county of Brazos, and is 350 feet above sea level. The Houston & Texas Central and the International & Great Northern Railroads run through the grounds, daily trains stopping at the stations, about 650 yards from the academic building. Students and visitors are advised to take trains arriving in the daytime.

POSTOFFICE.

College Station is a money order postoffice. Letters intended for persons at the College should not be directed to Bryan. At College Station there are telegraph and express offices.

HEALTH.

The buildings of the College are situated on the crest of a wide divide, with sufficient slope in every direction to insure proper drainage. The health of the student body, as shown by the daily records of the institution, is all that could be expected at any location in the State.

The work of sanitation is carried on throughout the entire year, with especial reference to the eradication of mosquitoes, flies and other disease-bearing agencies.

Drinking water is supplied by wells varying in depth from 300 feet to 1300 feet.

The barracks are inspected daily, and are kept neat and clean throughout. The rooms are well lighted and comfortable.

Drill, shop and field practice, work and outdoor athletic sports furnish sufficient and varied exercise and contribute very much to the maintenance of health and proper physical development.

There is no endemic disease at the College; most of the sickness is the result of indiscretion on the part of the student, or is due to the introduction of some mild epidemic disease, such as measles or mumps.

HOSPITAL.

The hospital is a two-story frame structure. There are three wards with bath, toilet rooms, etc., capable of accommodating about twenty-five patients, with several small rooms for the isolation of patients suffering from any common epidemic disease, such as mumps or measles. The sick in the hospital are carefully looked after by competent trained nurses under the direction of the College Surgeon. The diet of sick students is a matter of no little concern, and great care is taken to supply such nourishment as is best adapted to the condition of each patient. Convalescent patients after leaving the hospital are given orders by the surgeon for special diet at the mess hall for such time as is found necessary.

INFORMATION CONCERNING ADMISSION.

BEGINNING OF THE SESSION.

The thirty-ninth annual session will open Tuesday, September 22, 1914, and will close Tuesday, June 8, 1915.

Intending students should write to Charles E. Friley, Registrar, for application blanks.

REQUIREMENTS FOR ADMISSION.

To enter the College the applicant must be at least sixteen years old and physically able to perform the duties of a cadet. He must present a satisfactory certificate of good moral character from his last instructor. If he comes from another college he must present a certificate showing that he was in good standing when he left it. He must be free from contagious or infectious disease.

VACCINATION.

Each applicant for admission must present a certificate signed by a physician in one of the forms given below, that he has had smallpox or has been successfully vaccinated:

1., Texas,191....
This is to certify that.....has had smallpox.
(Signed.) M. D.
 2., Texas,..... 191....
This is to certify that.....has been successfully vaccinated at two different times, the dates being.....
.....
(Signed.) M. D.
 3., Texas,191....
This is to certify that.....has been successfully vaccinated within the last five years.
(Signed.) M. D.
 4., Texas191....
This is to certify that I have today vaccinated.....
(Signed.) M. D.
-

Candidates who have complied with the above requirements may be admitted to the Freshman class in one of three ways: (a) by examination, (b) on diploma from an affiliated school, (c) on special approval.

A. ADMISSION BY EXAMINATION.

Candidates for admission to the Freshman class in the session 1914-15 will be examined in the subjects mentioned below. The treatment given in the text-books indicated will suffice for the purpose of these examinations.

1. Algebra through quadratics, including the fundamental operations, factoring, highest common factor, lowest common multiple, fractions, equations of the first degree with one or more unknown quantities, involution, evolution, theory of exponents, radicals, equations containing radicals, quadratics in one unknown quantity. Complete Secondary Algebra, *Fisher & Schwatt*.

2. Plane Geometry. (Not required for admission to the School of Agriculture.)

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

Plane Geometry, *Wentworth-Smith*.

3. Advanced English Grammar and Composition. *Maxwell*.

4. History of the United States. *Cooper, Estill and Lemon*.

5. Ancient History, as treated in *Myers' General History*.

Specimen entrance examination questions may be found in the appendix.

SCHEDULE OF ENTRANCE EXAMINATIONS.

FOR ADMISSION TO THE FRESHMAN CLASS.

	Wednesday, September 23.	
Algebra, 8 a. m.		English, 2 p. m.
	Thursday, September 24.	
Geometry, 8 a. m.		History, 2 p. m.

FOR ADMISSION TO THE TWO-YEAR COURSES.

	Wednesday, September 23.	
Algebra, 8 a. m.		English, 2 p. m.

B. ADMISSION ON DIPLOMA.

Graduates of affiliated schools are admitted to the Freshman class at the beginning of the session without examination. For list of affiliated schools, see page 178.

C. ADMISSION ON SPECIAL APPROVAL.

Young men over eighteen years of age, on presentation of certificates from their last instructors that they have satisfactorily completed the required subjects, may, with the consent of the Dean and professors concerned, be admitted without examination. Such certificates should state how far the several subjects were pursued and what text-books were used.

ADVANCED STANDING.

Applicants for advanced standing and those who come after the time set for the entrance examinations will be examined also upon the work already gone over by the class they propose they enter.

SCHOLARSHIP REQUIREMENTS FOR ADMISSION TO THE FRESHMAN CLASS, EFFECTIVE SEPTEMBER, 1915.

Effective September, 1915, the scholarship requirement for full admission to the Freshman class will be fourteen units of high school work.

Definition of a unit.—A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

This statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than one hundred and twenty sixty-minute hours or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit.

A four years' secondary school curriculum should be regarded as representing not more than sixteen units of work.

A candidate presenting twelve units will be admitted conditionally, the condition to be removed within two years either by examination or by substituting work offered by the College.

PRESCRIBED UNITS.

Of the fourteen units required for full admission the following will be prescribed for all candidates:

Algebra	1½ units
Plane Geometry.....	1 unit
English	3 units

ELECTIVES.

To make up the total of fourteen units the candidate may offer any of the following:

Agriculture	1, 2, 3, or 4 units
American History	½ or 1 unit
Ancient History	1 unit
Bookkeeping	½ unit
Botany	½ or 1 unit
Chemistry	1 unit
Civics	½ unit
Drawing	½ or 1 unit
English	1 unit
English History	1 unit
French	1 or 2 units
German	1 or 2 units

Latin	1, 2, 3 or 4 units
Manual Training	$\frac{1}{2}$ or 1 unit
Medieval and Modern History.....	1 unit
Physics	1 unit
Physiography	$\frac{1}{2}$ unit
Physiology	$\frac{1}{2}$ unit
Spanish	1 or 2 units
Solid Geometry	$\frac{1}{2}$ unit
Stenography	$\frac{1}{2}$ unit
Trigonometry	$\frac{1}{2}$ unit
Typewriting	$\frac{1}{2}$ unit

Candidates for admission to the School of Engineering who do not present Solid Geometry for entrance will be required to take that subject in the first term. Special classes will be formed for this purpose.

No subject presented for admission will be counted toward a degree.

CLASSIFICATION OF STUDENTS.

CANDIDATES FOR DEGREES.

Candidates for degrees are assigned to one of the four classes—Freshman, Sophomore, Junior, Senior, according to prescribed rules. They are further classed as regular or irregular. A regular student is one who takes the work of one of the sections into which the several classes are divided, according to the schedule of that section.

An irregular student is one whose work does not conform to that of any given section. The irregularity may be due to deficiencies, extra work, or other reasons.

Students in the two-year courses are classified in a similar way.

SPECIAL STUDENTS.

Young men over 21 years of age, not candidates for a degree, may upon written application, approved by the Dean, be classed as special students. Young men between the ages of 18 and 21, desiring to be classed as special students must have the written consent of parent or guardian and the approval of the Dean. A special student must take work for which he is qualified, amounting to at least 18 hours a week. In order to be admitted to the work of any department he must have the consent of the head of the department; and his course as a whole is subject to the approval of the Dean.

A special student who may desire to become a candidate for a degree must comply with the requirements for admission to one of the classes of the four-year course and must have the consent of the Dean.

ADVISERS FOR FIRST-YEAR STUDENTS.

Each student on entering College will be assigned to a member of the teaching staff, who will act as his adviser and give him helpful counsel in matters pertaining to his work or to any feature of his college life.

REGISTRATION.

Upon arrival at the College, young men intending to enter will report at once to the Commandant for temporary assignment to quarters, and for full information in regard to registration.

Tuesday, September 22, will be devoted to the registration of new students; Thursday, September 24, to the registration of old students. Recitations will begin Friday, September 25.

REGISTRATION FEE.

Every student is required to register when he first enters College and thereafter at the beginning of each term.

Upon registering for the first time he is charged a registration fee of three dollars. He pays this fee only once unless his connection with the College should later be severed; in that case he must pay the registration fee again in order to re-enter.

LATE REGISTRATION.

All students, except those registering for the first time, who do not complete their registration on the days set for that purpose, will be charged a fee of three dollars for late registration.

In the case of irregular and special students, registration is not complete until their assignment cards are returned, properly signed, to the Registrar.

EXPENSES FOR THE SESSION.

The fixed charges are:

Trust fund, payable on entrance.....	\$ 5 00	
Incidental fee, payable on entrance.....	5 00	
Medical fee, payable on entrance.....	8 00	
Maintenance, First Term, payable on entrance.....	80 00	
Maintenance, Second Term, payable February 4.....	80 00	
Laboratory fee, payable on entrance.....	1 25	
Laboratory fee, payable February 1.....	1 25	
		\$180 50

Other necessary expenses are:

Uniform, payable on entrance, about.....	\$30 00	
Books, from \$15 to.....	20 00	
		\$ 50 00

Total \$230 50

For Freshmen in the engineering courses, drawing instruments, about \$ 10 00

Payment should be made by bank exchange, money order, or in cash. Personal checks will not be accepted.

The trust fund is to pay for property damaged or destroyed, and will be returned to the parent if there is no charge of this kind against the student.

The incidental fee is used for sundry incidental expenses, such as printed forms, examination books, etc.

The medical fee covers the professional services of the College Surgeon and of the hospital staff.

Incidental and medical fees will in no case be refunded.

Maintenance includes board, fuel, washing, lights, room rent, single bedsteads, mattresses, tables, washstands, chairs.

Each student is required to keep on hand a supply of bed clothing for single beds, towels, etc. For winter he should provide himself with an overcoat and a mackintosh.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance. A student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for a term, and having paid for that term, or the balance of it, forfeits all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness disqualifying him for the discharge of his duties for the rest of the term. When such sickness takes place at the College, it must be attested by the College Surgeon before the student can receive the balance of his maintenance fund.

The expenses of a graduate student are \$5.00 for material used in laboratories and practical work, and \$8.00 for medical fee, with charge for maintenance as above.

Day students pay \$18, to cover trust fund, incidental fee, and medical fee, as above.

UNIFORM.

Every cadet must keep on hand in good condition: 1 regulation blouse, 2 pairs regulation gray trousers, 2 pairs regulation white trousers, 1 regulation cap, 1 regulation hat, 6 regulation shirts, 6 standing white collars, 6 turned down white collars, 1 pair black shoes, 4 pairs white gloves, 1 regulation tie, 1 regulation belt, and an ample supply of underwear.

In addition, each student must have, for shop and field practice, a working suit of drilling, which costs from \$1.50 to \$2.50.

The blouses, trousers, caps and hats are made by contract, and students are required to purchase from the contractors, in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons, and may secure the best material for the lowest price. All parts of the equipment are carefully inspected by the Commandant of Cadets, in order that good fits and satisfactory materials may be secured.

By means of the contract system not only is there a saving effected, but there is also furnished a guarantee that the material will be of the requisite pattern and quality. For the efficient enforcement of the arrangements entered into, the College authorities require that each student make his purchases through the machinery provided at the College, and that a deposit sufficient to cover the purchase price of the equipment be placed in the hands of the Treasurer when the cadet matriculates. No suit will be ordered until such deposit has been made.

The other regulation articles may be purchased at the exchange store mentioned below.

It should be distinctly realized that this clothing is not an additional expense, but that it is the cheapest clothing that cadets can wear. It is very neat in appearance, and is serviceable and durable.

CADET EXCHANGE—BOOKS AND OTHER SUPPLIES.

The College runs an exchange store for the purpose of supplying necessary articles to students at the lowest possible cost. The store carries in stock, books, stationery, drawing instruments, regulation articles of the uniform, toilet articles, etc. These goods are sold at prices just sufficient to cover cost and operating expenses.

Text-books cost from \$15 to \$20 a year; drawing instruments for Freshmen in the Engineering courses about \$10. Laboratory fees are from \$2.00 to \$5.00.

STUDENT LABOR.

The Legislature has provided a fund by which a limited number of industrious young men may defray a part of their expenses by working for the College at such times as their regular duties will permit.

The rate of pay is made to depend upon the character of the work, and the manner in which it is performed. A student should not count upon earning more than \$40 a session.

EXPULSIONS.

At a joint session of the Board of Regents of the University of Texas and the Board of Directors of the Agricultural and Mechanical College, held at College Station, Texas, from June 30 to July 1, 1896, the following order was made:

"It is ordered, that hereafter, when any student shall be dismissed or expelled from either of the branches of the University of Texas on account of any immoral or other conduct which shall render him an unfit character to be matriculated in any of such branches, it shall thereupon be the duty of the branch so expelling or dismissing such student to immediately notify the other branches of their action, whereupon such other branches shall refuse to receive such student for matriculation, or even for examination, should he apply therefor, until the branch which has so expelled or dismissed him has rescinded or reconsidered its former action, and recommended such student for admission into such other branch at which he may apply."

COURSES OF STUDY.

There are eight regular courses, extending through four years, and leading to the degree of Bachelor of Science, the particular course pursued being specified in the diploma.

- I. Course in Agriculture.
- III. Course in Mechanical Engineering.
- IV. Course in Civil Engineering.
- V. Course in Electrical Engineering.
- VI. Course in Textile Engineering.
- VII. Course in Architectural Engineering.
- VIII. Course in Chemical Engineering.
- IX. Course in Architecture.

In addition the following courses are offered:

(a) A graduate course in Agriculture, leading to the degree of Master of Science in Agriculture.

(b) Graduate courses leading to the degree of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, Textile Engineer.

- (c) A two-year course in Agriculture.
- (d) A two-year course in Textile Engineering.
- (e) A two-year course for electricians.
- (f) A two-year course for power plant operators.
- (g) A one-year course in telephony.

Note.—In addition to the work in the curricula of the several courses, students taking English are required to attend conferences with their instructors as stated in the description of the courses in English; and all undergraduates have military drill. See Course 3, Military Science, page 164.

The School of Agriculture

FACULTY OF THE SCHOOL OF AGRICULTURE.

CHARLES PURYEAR, M. A., C. E.,
President pro tempore.

E. J. KYLE, M. S. A.,
Dean.

CHARLES PURYEAR, M. A., C. E.,
Dean of the College and Professor of Mathematics.

M. FRANCIS, D. V. M.,
Professor of Veterinary Science.

E. J. KYLE, M. S. A.,
Professor of Horticulture.

C. P. FOUNTAIN, A. M.,
Professor of English.

O. M. BALL, M. A., Ph. D.,
Professor of Biology.

O. F. CHASTAIN,
Professor of History and Economics.

WILMON NEWELL, M. S.,
Professor of Entomology.

J. OSCAR MORGAN, M. S. A., Ph. D.,
Professor of Agronomy.

J. C. BURNS, B. S.,
Professor of Animal Husbandry.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets,

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

M. L. HAYES, A. M.,
Professor of Agricultural Education.

J. W. RIDGWAY, M. S.,
Acting Professor of Dairy Husbandry.

W. T. WRIGHT, A. B.,
Acting Professor of Physics.

R. P. MARSTELLER, D. V. M.,
Associate Professor of Veterinary Science.

C. M. EVANS, M. S. A.,
Superintendent of Agricultural Extension.

COURSES IN THE SCHOOL OF AGRICULTURE.

In the School of Agriculture there is offered a four-year course in agriculture leading to the degree of Bachelor of Science.

It is the object of this course to give young men a thoroughly practical and scientific training in those branches of science which relate to agronomy, animal husbandry, dairy husbandry, horticulture and agricultural engineering. It is also intended that the student's general training shall not be neglected, and to this end he is given instruction in the English language, history and mathematics, in addition to the special instruction in the sciences of chemistry, physics, botany and animal anatomy and physiology.

The twenty-four hundred acres in the farm, one hundred and twenty milch cows (Jersey, Holstein and grades) hogs, work stock, tools and machinery, silos, etc., furnish illustrations of practical value to the student. The dairy is fitted with milk separators, churns, butter-workers and milk-testing machines.

The location of the Texas Agricultural Experiment Station at the College makes it possible to give students the benefit of experiments conducted at the College, and the Experiment Station library forms a valuable adjunct to the regular College library by furnishing the results of valuable tests made along agricultural lines in other States. The library also receives the leading agricultural periodicals, which are available to students.

The studies in the course in Agriculture are divided into five groups: Group A gives prominence to work in soils, farm management, machinery, crops; Group B, to work in horticultural subjects; Group C, to work pertaining to live stock interests; Group D, to dairy farming and creamery management. Group E, to Agricultural Engineering. Group E is announced, subject to favorable action by the Board of Directors.

The choice of the five groups must be made at the beginning of the Junior year. In the Senior year options are offered as shown in the curricula following. The elective subject in each option must be selected under the direction of the head of the department in which the option is taken, and registered with the Dean of the College. In each case the practice must conform to theory. A student who elects language in the Junior year must continue the same language in the Senior year.

In the School of Agriculture is also offered a two-year course, leading to a certificate, and a graduate course, leading to the degree of Master of Science (in Agriculture).

I.—COURSE IN AGRICULTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Biology 1.....	3	Biology 1.....	3
Zoology.		Zoology.	
English 1.....	3	English 1.....	3
Rhetoric and Composition.		Rhetoric and Composition.	
History 1.....	3	History 1.....	3
English.		English.	
Mathematics 11.....	3	Mathematics 11.....	3
Plane Geometry.		Plane Geometry.	
Physics 1.....	3	Physics 1.....	3
General.		General.	
		Dairy Husbandry 1.....	2
		Milk Testing.	
	—		—
	15		17
<i>Agronomy 1.....</i>	2		
<i>Animal Husbandry 1.....</i>	4	<i>Animal Husbandry 2.....</i>	4
<i>Biology 1.....</i>	2	<i>Dairy Husbandry 1.....</i>	2
<i>Drawing 3.....</i>	2	<i>Biology 1.....</i>	2
<i>Mechanical Engineering 13a.....</i>	4	<i>Drawing 31.....</i>	2
<i>Physics 1.....</i>	2	<i>Physics 1.....</i>	2
	—		—
	16		12

SOPHOMORE YEAR.

Agronomy 2a.....	2	Agronomy 2a.....	2
Soils.		Soils.	
Biology 2.....	3	Biology 2.....	2
Botany.		Botany.	
Chemistry 1a.....	3	Chemistry 1a.....	3
Inorganic.		Inorganic.	
English 2.....	2	English 2.....	2
Literature.		Literature.	
Horticulture 1a.....	2	Horticulture 2.....	3
Plant Propagation.		Vegetable Gardening.	
Military Science 1.....	2	Animal Husbandry 3.....	2
Physics 2.....	2	Judging Breeding Types.	
General.		Animal Husbandry 4.....	1
Veterinary Science 1.....	2	Poultry.	
Anatomy and Physiology.			—
	—		—
	18		15
<i>Agronomy 2a.....</i>	2	<i>Agronomy 2a.....</i>	2
<i>Biology 2.....</i>	2	<i>Biology 2.....</i>	2
<i>Chemistry 1a.....</i>	2	<i>Chemistry 1a.....</i>	2
<i>Horticulture 1a.....</i>	2	<i>Horticulture 2.....</i>	2
<i>Physics 2.....</i>	2	<i>Animal Husbandry 3.....</i>	4
<i>Veterinary Science 1.....</i>	2	<i>Animal Husbandry 4.....</i>	2
	—		—
	12		14

GROUP A.—AGRONOMY.

JUNIOR YEAR.

Required.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3.....	3	Agronomy 3.....	3
Farm Crops.		Farm Crops.	
Chemistry 2.....	3	Chemistry 2.....	3
Agricultural.		Agricultural.	
English 4.....	3	English 4.....	3
Advanced Composition.		Advanced Composition.	
Entomology 1.....	2	Entomology 2.....	2
Systematic.		Economic.	
Veterinary Science 2.....	2	Veterinary Science 3.....	2
Pharmacology.		Non-infectious Diseases.	
	—		—
	13		13
<i>Agronomy 3.....</i>	<i>2</i>	<i>Agronomy 3.....</i>	<i>2</i>
<i>Entomology 1.....</i>	<i>2</i>	<i>Agronomy 11.....</i>	<i>2</i>
<i>Chemistry 3.....</i>	<i>4</i>	<i>Entomology 2.....</i>	<i>2</i>
<i>Veterinary Science 2.....</i>	<i>2</i>	<i>Chemistry 3.....</i>	<i>2</i>
	—	<i>Veterinary Science 3.....</i>	<i>2</i>
	10		—
			10

Elective.

One of the following:

Agricultural Education 1.....	3	Agricultural Education 2.....	3
Psychology.		Vocational.	
Agronomy 4.....	2	Biology 3.....	2
Irrigation.		Rural Hygiene.	
Biology 3.....	2	Chemistry 4a.....	2
Rural Hygiene.		Organic.	
Chemistry 4a.....	2	Civil Engineering 2.....	3
Organic.		Surveying, Leveling.	
Language.....	3	Language.....	3
<i>Agronomy 4.....</i>	<i>2</i>	<i>Biology 3.....</i>	<i>2</i>
<i>Biology 3.....</i>	<i>2</i>	<i>Chemistry 4a.....</i>	<i>2</i>
<i>Chemistry 4a.....</i>	<i>2</i>	<i>Civil Engineering 2.....</i>	<i>4</i>

SENIOR YEAR.

Required.

Agronomy 6.....	3	Agronomy 6.....	3
Farm Management.		Farm Management.	
Economics 3,		Economics 3,	
Economic Organization.		Economic Organization.	
or Language.....	3	or Language.....	3
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
		Textile Engineering 5.....	1
		Cotton Classing.	
		Military Science 2.....	1
	—		—
	7		9
<i>Agronomy 6.....</i>	<i>2</i>	<i>Agronomy 6.....</i>	<i>2</i>

Option 1.—Agronomy.

First Term.	Hours per week	Second Term.	Hours per week.
Agronomy 5.....	2	Agronomy 8.....	2
Adv. Soils.....		Plant Breeding.....	
Agronomy 7.....	2	Agronomy 9.....	2
Farm Powers.....		Farm Machinery.....	
Agronomy 8.....	2	Agronomy 10.....	2
Plant Breeding.....		Crop Ecology.....	
Biology 4.....	3	Biology 4.....	3
Plant Diseases.....		Plant Diseases.....	
	—		—
	9		9
<i>Agronomy 5.....</i>	<i>2</i>	<i>Agronomy 8.....</i>	<i>2</i>
<i>Agronomy 7.....</i>	<i>2</i>	<i>Agronomy 9.....</i>	<i>2</i>
<i>Agronomy 8.....</i>	<i>2</i>	<i>Agronomy 10.....</i>	<i>2</i>
<i>Biology 4.....</i>	<i>2</i>	<i>Biology 4.....</i>	<i>2</i>
	—		—
	8		8

Option 2.—Agricultural Chemistry.

Chemistry 6.....	2	Chemistry 6.....	2
Advanced Agr. Analysis.....		Advanced Agr. Analysis.....	
Chemistry 7.....	2	Chemistry 8.....	2
Physical Chemistry.....		Advanced Agricultural.....	
Elective.....	3	Elective.....	3
	—		—
	7		7
<i>Chemistry 6.....</i>	<i>6</i>	<i>Chemistry 6.....</i>	<i>6</i>
<i>Chemistry 7.....</i>	<i>4</i>	<i>Chemistry 8.....</i>	<i>4</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	—		—
	12		12

Option 3.—Agricultural Botany.

Biology 5.....	2	Biology 5.....	2
Plant Physiology.....		Plant Physiology.....	
Biology 6.....	2	Biology 6.....	2
Bacteriology.....		Bacteriology.....	
Elective.....	3	Elective.....	3
	—		—
	7		7
<i>Biology 5.....</i>	<i>4</i>	<i>Biology 5.....</i>	<i>4</i>
<i>Biology 6.....</i>	<i>6</i>	<i>Biology 6.....</i>	<i>6</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	—		—
	12		12

Option 4.—Agricultural Education.

Agricultural Education 3.....	3	Agricultural Education 5.....	3
School Administration.....		High School Problems.....	
Agricultural Education 4.....	3	Agricultural Education 6.....	3
Methods.....		High School Agriculture.....	
Agronomy 5.....	2	Agronomy 9.....	2
Adv. Soils.....		Farm Machinery.....	
Elective.....	2	Elective.....	2
	—		—
	10		10
<i>Agronomy 5.....</i>	<i>2</i>	<i>Agronomy 9.....</i>	<i>2</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	—		—
	4		4

Option 5.—Farm Management and Marketing.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 12.....	3	Agronomy 12.....	3
Marketing Problems.		Marketing Problems.	
Agronomy 13.....	2	Agronomy 14.....	1
Cost Accounting.		Advanced Farm Management.	
Agronomy 5.....	2	Agricultural Engineering 12.....	1
Advanced Soils.		Repairing.	
Elective.....	2	Elective.....	2
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 9		<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 7
<i>Agronomy 12.....</i>	<i>2</i>	<i>Agronomy 12.....</i>	<i>2</i>
<i>Agronomy 13.....</i>	<i>2</i>	<i>Agronomy 14.....</i>	<i>4</i>
<i>Agronomy 5.....</i>	<i>2</i>	<i>Agricultural Engineering 12.....</i>	<i>4</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 8		<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 12

GROUP B.—HORTICULTURE.

JUNIOR YEAR.

Required.

First Term.	Hours per week	Second Term.	Hours per week.
English 4.....	3	English 4.....	3
Advanced Composition.		Advanced Composition.	
Entomology 1.....	2	Entomology 2.....	2
Systematic.		Economic.	
Chemistry 2.....	3	Chemistry 2.....	3
Agricultural.		Agricultural.	
Horticulture 3.....	3	Horticulture 4.....	2
Tree and Vine Fruits.		Plant Breeding.	
Veterinary Science 2.....	2	Horticulture 5.....	1
Pharmacology.		Spraying.	
or Agronomy 3.....	3	Horticulture 6.....	2
Farm Crops.		Nut Culture.	
	13 or 14		13
<i>Chemistry 3.....</i>	4	<i>Chemistry 3.....</i>	2
<i>Entomology 1.....</i>	2	<i>Entomology 2.....</i>	2
<i>Horticulture 3.....</i>	2	<i>Horticulture 4.....</i>	2
<i>Veterinary Science 2 or</i>		<i>Horticulture 5.....</i>	2
<i>Agronomy 3.....</i>	2	<i>Horticulture 6.....</i>	2
	10		10

Elective.

One of the Following:

Agricultural Education 1.....	3	Agricultural Education 2.....	3
Psychology.		Vocational.	
Agronomy 4.....	2	Biology 3.....	2
Irrigation.		Rural Hygiene.	
Biology 3.....	2	Chemistry 4a.....	2
Rural Hygiene.		Organic.	
Chemistry 4a.....	2	Civil Engineering 2.....	3
Organic.		Surveying, Leveling.	
Language.....	3	Horticulture 12.....	2
		Landscape Art.	
		Language.....	3
<i>Agronomy 4.....</i>	2	<i>Biology 3.....</i>	2
<i>Biology 3.....</i>	2	<i>Chemistry 4a.....</i>	2
<i>Chemistry 4a.....</i>	2	<i>Civil Engineering 2.....</i>	4
		<i>Horticulture 12.....</i>	2

SENIOR YEAR.

Required.

Language or		Language or	
Economics 3.....	3	Economics 3.....	3
Economic Organization.		Economic Organization.	
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
Horticulture 7.....	3	Horticulture 9.....	2
Pomology.		Experimental.	
		Textile Engineering 5.....	1
		Cotton Classing.	
	7	Military Science 2.....	1
<i>Horticulture 7.....</i>	2	<i>Horticulture 9.....</i>	2

Option 1.—Horticulture.

First Term.	Hours per week.	Second Term.	Hours per week.
Biology 4	3	Biology 4	3
Plant Diseases.		Plant Diseases.	
Agronomy 6	3	Agronomy 6	3
Farm Management.		Farm Management.	
Entomology 3	2	Horticulture 10	2
Fruit Insects.		Citrus Fruits.	
Horticulture 8	2	Horticulture 11	2
Forestry.		Floriculture, Landscape Gardening.	
	—		—
	10		10
<i>Agronomy 6</i>	<i>2</i>	<i>Agronomy 6</i>	<i>2</i>
<i>Biology 4</i>	<i>2</i>	<i>Biology 4</i>	<i>2</i>
<i>Entomology 3</i>	<i>2</i>	<i>Horticulture 10</i>	<i>2</i>
<i>Horticulture 8</i>	<i>2</i>	<i>Horticulture 11</i>	<i>2</i>
	—		—
	8		8

Option 2.—Agriculture Chemistry.

Chemistry 6	2	Chemistry 6	2
Advanced Agr. Analysis.		Advanced Agr. Analysis.	
Chemistry 7	2	Chemistry 8	2
Physical Chemistry.		Advanced Agricultural.	
Elective	3	Elective	3
	—		—
	7		7
<i>Chemistry 6</i>	<i>6</i>	<i>Chemistry 6</i>	<i>6</i>
<i>Chemistry 7</i>	<i>4</i>	<i>Chemistry 8</i>	<i>4</i>
<i>Elective</i>	<i>2</i>	<i>Elective</i>	<i>2</i>
	—		—
	12		12

Option 3.—Agricultural Botany.

Biology 5	2	Biology 5	2
Plant Physiology.		Plant Physiology.	
Biology 6	2	Biology 6	2
Bacteriology.		Bacteriology.	
Elective	3	Elective	3
	—		—
	7		7
<i>Biology 5</i>	<i>4</i>	<i>Biology 5</i>	<i>4</i>
<i>Biology 6</i>	<i>6</i>	<i>Biology 6</i>	<i>6</i>
<i>Elective</i>	<i>2</i>	<i>Elective</i>	<i>2</i>
	—		—
	12		12

Option 4.—Agricultural Education.

Agricultural Education 3	3	Agricultural Education 5	3
School Administration.		High School Problems.	
Agricultural Education 4	3	Agricultural Education 6	3
Methods.		High School Agriculture.	
Horticulture 8	2	Horticulture 11	2
Elem. Forestry.		Floriculture.	
Elective	2	Elective	2
	—		—
	10		10
<i>Horticulture 8</i>	<i>2</i>	<i>Horticulture 11</i>	<i>2</i>
<i>Elective</i>	<i>2</i>	<i>Elective</i>	<i>2</i>
	—		—
	4		4

Option 5.—Landscape Art.

First Term.	Hours per week	Second Term.	Hours per week.
Horticulture 13.....	3	Horticulture 13.....	3
Landscape Design.....		Landscape Design.....	
Horticulture 14.....	2	Horticulture 11a.....	2
Hist. of Land. Des.....		Floriculture.....	
Horticulture 8.....	2	Horticulture 16.....	2
Forestry.....		Ornamentals.....	
Elective.....	3	Elective.....	3
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 10		<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 10
<i>Horticulture 13.....</i>	<i>4</i>	<i>Horticulture 13.....</i>	<i>4</i>
<i>Horticulture 8.....</i>	<i>2</i>	<i>Horticulture 11a.....</i>	<i>2</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 8		<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 8

Option 6.—Forestry.

Horticulture 8.....	2	Horticulture 17.....	3
General Forestry.....		Sylviculture.....	
Horticulture 17.....	3	Horticulture 19.....	2
Sylviculture.....		Forest Mensuration.....	
Horticulture 18.....	2	Horticulture 20.....	2
Farm Forestry.....		Wood Preservation.....	
Elective.....	3	Elective.....	3
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 10		<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 10
<i>Horticulture 8.....</i>	<i>2</i>	<i>Horticulture 17.....</i>	<i>2</i>
<i>Horticulture 17.....</i>	<i>2</i>	<i>Horticulture 18.....</i>	<i>2</i>
<i>Horticulture 18.....</i>	<i>2</i>	<i>Horticulture 19.....</i>	<i>2</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 8		<hr style="width: 100%; border: 0; border-top: 1px solid black; margin: 0;"/> 8

GROUP C.—ANIMAL HUSBANDRY.

JUNIOR YEAR.

Required.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3.....	3	Agronomy 3.....	3
Farm Crops.		Farm Crops.	
Animal Husbandry 5.....	2	Animal Husbandry 5.....	2
Breeding.		Breeding.	
Chemistry 2.....	3	Chemistry 2.....	3
Agricultural.		Agricultural.	
English 4.....	3	English 4.....	3
Advanced Composition.		Advanced Composition.	
Veterinary Science 2.....	2	Veterinary Science 3.....	2
Pharmacology.		Non-infectious Diseases.	
		Veterinary Science 4.....	2
		Obstetrics.	
	—		—
	13		15
<i>Agronomy 3.....</i>	<i>2</i>	<i>Agronomy 3.....</i>	<i>2</i>
<i>Animal Husbandry 5.....</i>	<i>2</i>	<i>Animal Husbandry 5.....</i>	<i>2</i>
<i>Chemistry 3.....</i>	<i>4</i>	<i>Chemistry 3.....</i>	<i>2</i>
<i>Veterinary Science 2.....</i>	<i>2</i>	<i>Veterinary Science 3.....</i>	<i>2</i>
	—	<i>Veterinary Science 4.....</i>	<i>2</i>
	10		10

Elective.

One of the Following:

Agricultural Education 1.....	3	Agricultural Education 2.....	3
Psychology.		Vocational.	
Biology 3.....	2	Biology 3.....	2
Rural Hygiene.		Rural Hygiene.	
Chemistry 4a.....	2	Chemistry 4a.....	2
Organic.		Organic.	
Entomology 1.....	2	Entomology 2.....	2
Systematic.		Economic.	
Language.....	3	Language.....	3
<i>Biology 3.....</i>	<i>2</i>	<i>Biology 3.....</i>	<i>2</i>
<i>Chemistry 4a.....</i>	<i>2</i>	<i>Chemistry 4a.....</i>	<i>2</i>
<i>Entomology 1.....</i>	<i>2</i>	<i>Entomology 2.....</i>	<i>2</i>

SENIOR YEAR.

Required.*

Animal Husbandry 7.....	3	Animal Husbandry 7.....	3
Feeding.		Feeding.	
Economics 3		Economics	
Economic Organization.		Economic Organization.	
or Language.....	3	or Language.....	3
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
		Veterinary Science 5.....	2
		Infectious Diseases.	
	—	Military Science 2.....	1
	7		—
			10
<i>Animal Husbandry 7.....</i>	<i>2</i>	<i>Animal Husbandry 7.....</i>	<i>2</i>

*In addition to the required subjects the student may take Textile Engineering 5 (Cotton Classing), 1 hour a week in the Second Term.

Option 1.—Animal Husbandry.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 6.....	3	Agronomy 6.....	3
Farm Management.		Farm Management.	
Agronomy 7.....	2	Agronomy 9.....	2
Farm Powers.		Farm Machinery.	
Animal Husbandry 8.....	1	Animal Husbandry 9.....	2
Advanced Judging.		Live Stock Management.	
Elective.....	2		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	8		7
<i>Agronomy 6.....</i>	<i>2</i>	<i>Agronomy 6.....</i>	<i>2</i>
<i>Agronomy 7.....</i>	<i>2</i>	<i>Agronomy 9.....</i>	<i>2</i>
<i>Animal Husbandry 8.....</i>	<i>4</i>	<i>Animal Husbandry 9.....</i>	<i>2</i>
<i>Elective.....</i>	<i>2</i>		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	10		6

Option 2.—Agricultural Chemistry.

Chemistry 6.....	2	Chemistry 6.....	2
Advanced Agr. Analysis.		Advanced Agr. Analysis.	
Chemistry 7.....	2	Chemistry 8.....	2
Physical Chemistry.		Advanced Agricultural.	
Elective.....	3		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	7		4
<i>Chemistry 6.....</i>	<i>6</i>	<i>Chemistry 6.....</i>	<i>6</i>
<i>Chemistry 7.....</i>	<i>4</i>	<i>Chemistry 8.....</i>	<i>4</i>
<i>Elective.....</i>	<i>2</i>		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	12		10

Option 3.—Veterinary Science.

Veterinary Science 6.....	3	Veterinary Science 6.....	3
Anatomy.		Anatomy.	
Veterinary Science 7.....	3	Veterinary Science 7.....	3
Adv. Lab. Methods.		Adv. Lab. Methods.	
Elective.....	3		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	9		6
<i>Veterinary Science 6.....</i>	<i>6</i>	<i>Veterinary Science 6.....</i>	<i>6</i>
<i>Elective.....</i>	<i>4</i>		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	10		6

Option 4.—Agricultural Education.

Agricultural Education 3.....	3	Agricultural Education 5.....	3
School Administration.		High School Problems.	
Agricultural Education 4.....	3	Agricultural Education 6.....	3
Methods.		High School Agriculture.	
Animal Husbandry 8.....	1	Animal Husbandry 9.....	2
Adv. Judging.		Live Stock Management.	
Elective.....	2		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	9		8
<i>Animal Husbandry 8.....</i>	<i>4</i>	<i>Animal Husbandry 9.....</i>	<i>2</i>
<i>Elective.....</i>	<i>2</i>		
	<hr style="width: 50px; margin-left: 0;"/>		<hr style="width: 50px; margin-left: 0;"/>
	6		2

Option 5.—Poultry Husbandry.

First Term.	Hours per week	Second Term.	Hours per week.
Animal Husbandry 10	2	Animal Husbandry 11.....	2
Poultry Judging.		Poultry Feeding and Management.	
Animal Husbandry 11	2	Animal Husbandry 13.....	1
Poultry Feeding and Management.		Incubation and Brooding.	
Animal Husbandry 8.....	1	Animal Husbandry 9.....	2
Advanced Judging.		Live Stock Management.	
Elective.....	2		
	<hr style="width: 50px; margin-left: auto; margin-right: 0;"/> 7		<hr style="width: 50px; margin-left: auto; margin-right: 0;"/> 5
<i>Animal Husbandry 10.....</i>	<i>2</i>	<i>Animal Husbandry 11.....</i>	<i>2</i>
<i>Animal Husbandry 11.....</i>	<i>2</i>	<i>Animal Husbandry 13.....</i>	<i>4</i>
<i>Animal Husbandry 9.....</i>	<i>4</i>	<i>Animal Husbandry 9.....</i>	<i>2</i>
<i>Elective.....</i>	<i>2</i>		
	<hr style="width: 50px; margin-left: auto; margin-right: 0;"/> 10		<hr style="width: 50px; margin-left: auto; margin-right: 0;"/> 8

GROUP D.—DAIRY HUSBANDRY.

JUNIOR YEAR.

Required.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 3..... Farm Crops.	3	Agronomy 3..... Farm Crops.	3
Chemistry 2..... Agricultural.	3	Chemistry 2..... Agricultural.	3
Chemistry 4a..... Organic.	2	Chemistry 4a..... Organic.	2
English 4..... Advanced Composition.	3	English 4..... Advanced Composition.	3
Dairy Husbandry 2..... Dairy Machinery.	3	Dairy Husbandry 3..... Butter Making.	2
		Veterinary Science 4..... Obstetrics.	2
	14		15
Agronomy 3.....	2	Agronomy 3.....	2
Chemistry 3.....	4	Chemistry 3.....	2
Chemistry 4a.....	2	Chemistry 4a.....	2
Dairy Husbandry 2.....	4	Dairy Husbandry 3.....	2
		Veterinary Science 4.....	2
	12		10

Elective.

One of the following:

Agricultural Education 1..... Psychology.	3	Agricultural Education 2..... Vocational.	3
Language.....	3	Language.....	3
Veterinary Science 2..... Pharmacology.	2	Veterinary Science 3..... Non-infectious Diseases.	2
Veterinary Science 2.....	2	Veterinary Science 3.....	2

SENIOR YEAR.

Agronomy 6..... Farm Management.	3	Agronomy 6..... Farm Management.	3
Animal Husbandry 6..... Breeding and Feeding.	3	Chemistry 9..... Dairy.	2
Biology 7..... Dairy Bacteriology.	2	Biology 7..... Dairy Bacteriology.	2
Dairy Husbandry 4..... Creamery Management.	3	Dairy Husbandry 5..... Ice Cream Making.	3
Economics 3..... Economic Organization.	3	Economics 3..... Economic Organization.	3
or Language.....	3	or Language.....	3
English 6..... Public Speaking.	1	English 6..... Public Speaking.	1
		Veterinary Science 5..... Infectious Diseases.	2
		Military Science 2.....	1
	15		17
Agronomy 6.....	2	Agronomy 6.....	2
Animal Husbandry 6.....	2	Chemistry 9.....	6
Biology 7.....	4	Biology 7.....	4
Dairy Husbandry 4.....	2	Dairy Husbandry 5.....	2
	10		14

GROUP E.—AGRICULTURAL ENGINEERING.

JUNIOR YEAR.

First Term.	Hours per week	Second Term.	Hours per week.
Agronomy 3.....	3	Agronomy 3.....	3
Farm Crops.		Farm Crops.	
Chemistry 2.....	3	Chemistry 2.....	3
Agricultural.		Agricultural.	
Language or		Language or	
English 4.....	3	English 4.....	3
Advanced Composition.		Advanced Composition.	
Agr. Engineering 1.....	2	Agr. Engineering 4.....	2
Farm Surveying.		Irrigation.	
Agr. Engineering 2.....	2	Agr. Engineering 5.....	2
Farm Machinery.		Drainage.	
Agr. Engineering 3.....	2	Agr. Engineering 6.....	2
Farm Buildings.		Gas Engines.	
	—		—
	15		15
<i>Agronomy 3.....</i>	<i>2</i>	<i>Agronomy 3.....</i>	<i>2</i>
<i>Chemistry 3.....</i>	<i>4</i>	<i>Chemistry 3.....</i>	<i>2</i>
<i>Agr. Engineering 1.....</i>	<i>4</i>	<i>Agr. Engineering 4.....</i>	<i>2</i>
<i>Agr. Engineering 2.....</i>	<i>2</i>	<i>Agr. Edgineering 5.....</i>	<i>2</i>
<i>Agr. Engineering 3.....</i>	<i>2</i>	<i>Agr. Engineering 6.....</i>	<i>4</i>
	—		—
	14		12

SENIOR YEAR.

Agronomy 6.....	3	Agronomy 6.....	3
Farm Management.		Farm Management.	
Economics 3.....	3	Economics 3.....	3
Economic Organization.		Economic Organization.	
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
Agr. Engineering 7.....	1	Agr. Engineering 10.....	1
Farm Tractors.		Farm Tractor Problems.	
Agr. Engineering 8.....	1	Agr. Engineering 11.....	2
Concrete on the Farm.		Automobiles.	
Agr. Engineering 9.....	2	Agr. Engineering 12.....	1
Powers and Pumps.		Repairing Farm Machinery.	
Elective.....	2	Military Science 2.....	1
	—	Elective.....	2
	13		—
	14		14
<i>Agronomy 6.....</i>	<i>2</i>	<i>Agronomy 6.....</i>	<i>2</i>
<i>Agr. Engineering 7.....</i>	<i>4</i>	<i>Agr. Engineering 10.....</i>	<i>4</i>
<i>Agr. Engineering 8.....</i>	<i>4</i>	<i>Agr. Engineering 11.....</i>	<i>2</i>
<i>Agr. Engineering 9.....</i>	<i>2</i>	<i>Agr. Engineering 12.....</i>	<i>4</i>
<i>Elective.....</i>	<i>2</i>	<i>Elective.....</i>	<i>2</i>
	—		—
	14		14

GRADUATE COURSE IN AGRICULTURE.

Graduate studies in the Agricultural Course lead to the degree of Master of Science (in Agriculture). It is required for admission to this course that the candidate be a graduate of this College, or of some other institution approved by the Faculty.

The candidate must register with the Dean of the College, and must take the equivalent of 12 hours theory and 18 hours practice a week for one year in two or three of the following departments: Agronomy, Animal Husbandry, Biology, Chemistry, Entomology, Horticulture, Veterinary Science; this course of study to be approved by a committee consisting of the Dean of the College and the heads of departments concerned. Unless he has credit in organic chemistry, he must take it as a part of this course.

He must present as a part of this work a thesis satisfactory to the committee. The thesis must be typewritten on paper $8\frac{1}{2} \times 11$ inches.

In addition to the fees regularly charged, he must pay to the Treasurer a fee of two dollars to cover the cost of binding his thesis.

TWO-YEAR COURSE IN AGRICULTURE.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year course in Agriculture, the candidate must be at least sixteen years of age and must be able to pass entrance examinations in English grammar and composition and in algebra to simultaneous equations of the first degree, or must present satisfactory certificate of proficiency in these subjects.

PLAN OF COURSE.

The two-year course in Agriculture is intended for young men who wish to spend one or two years in preparing to go back to the farm and apply successfully all the more important scientific methods of farming which have been worked out in recent years. To this end the course is made highly practical and technical, including in abbreviated form most of the technical work required in the four-year course. Students who have satisfactorily completed the work of this course and have had approved farm experience will be given a certificate showing the work done.

TWO-YEAR COURSE IN AGRICULTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Agronomy 15.....	3	Agronomy 16.....	3
Soils.		Crop Production.	
Biology 15.....	3	Biology 16.....	3
Zoology.		Botany.	
English 9.....	3	English 9.....	3
Grammar, Composition.		Grammar, Composition.	
Horticulture 15.....	3	Horticulture 2.....	3
Plant Culture and Propagation.		Vegetable Gardening.	
		Animal Husbandry 16.....	2
		Judging Breed Types.	
	—		—
	12		14
<i>Agronomy 15.....</i>	<i>2</i>	<i>Agronomy 16.....</i>	<i>4</i>
<i>Agronomy 16.....</i>	<i>2</i>	<i>Animal Husbandry 16.....</i>	<i>2</i>
<i>Animal Husbandry 15.....</i>	<i>6</i>	<i>Biology 16.....</i>	<i>2</i>
<i>Biology 15.....</i>	<i>2</i>	<i>Horticulture 2.....</i>	<i>2</i>
<i>Horticulture 15.....</i>	<i>2</i>	<i>Dairy Husbandry 1a.....</i>	<i>4</i>
<i>Textile Engineering 17.....</i>	<i>2</i>		
	—		—
	16		14

SECOND YEAR.

Agronomy 17.....	2	Agronomy 18.....	3
Agricultural Engineering.		Farm Eqpt. and Management.	
Chemistry 20.....	3	Animal Husbandry 17.....	1
Practical.		Breeding.	
Dairy Husbandry 16.....	3	Animal Husbandry 18.....	2
Farm Dairying.		Feeding.	
English 10.....	3	Chemistry 20.....	3
Composition.		Practical.	
Horticulture 3.....	3	English 10.....	3
Tree and Vine Fruits.		Composition.	
		Entomology 10.....	2
		Economic.	
		Veterinary Science 16.....	3
		Animal Diseases.	
	—		—
	14		17
<i>Agronomy 17.....</i>	<i>4</i>	<i>Agronomy 18.....</i>	<i>2</i>
<i>Chemistry 20.....</i>	<i>2</i>	<i>Animal Husbandry 17.....</i>	<i>2</i>
<i>Dairy Husbandry 16.....</i>	<i>4</i>	<i>Animal Husbandry 18.....</i>	<i>2</i>
<i>Horticulture 3.....</i>	<i>2</i>	<i>Chemistry 20.....</i>	<i>2</i>
		<i>Entomology 10.....</i>	<i>2</i>
		<i>Veterinary Science 16.....</i>	<i>2</i>
	—		—
	12		12

DEPARTMENT OF AGRICULTURAL EDUCATION.

PROFESSOR HAYES.

The work of this department is based upon text, lectures, assigned readings and problems. The purpose of the courses is two-fold: professional and general.

The great demand for skilled teachers of agriculture in high schools, normal schools and colleges, should appeal to those who are interested in the teaching profession. The primary purpose of the courses offered in this department is to help the student anticipate and solve the problems of teaching.

The rapidly growing work of extension in all its phases is calling for strong, well trained men, who are able to work with all classes of people and especially with teachers and pupils. The students of the agricultural colleges who return to the farm should become leaders in their communities in everything that makes for the improvement of community life. Little progress can be made in these great undertakings unless the problems of the school are solved. The courses offered in this department will serve to give the students a clearer understanding of the principles involved and will prepare them for leadership in their communities.

Under the laws of Texas, graduates of this College who have completed four "full courses" (equivalent to twenty-four credit hours) in Education will be granted a Permanent State Certificate. Those who have completed one "full course" (equivalent to six credit hours) in Education will be given a First Grade Certificate.

This department is co-operating with numerous high schools and teachers of Agriculture throughout the State and assisting them in the organization of courses of study, the planning of laboratory and field work, and the introduction of extension work in the community. An effort will be made to visit at least once during the year each high school in the State teaching Agriculture. The department offers its services to the teachers and schools of the State.

The courses are as follows:

1. Educational Psychology. Junior. First term, 3 hours a week.

This is a beginning course in Psychology with especial emphasis on its applications to the problems of teaching. Stress will be placed upon instincts, habit formation, memory, attention, and the psychological principles of industrial subjects in the curriculum.

2. Vocational Education. Junior. Second term, 3 hours a week.

This course is a brief study of vocational education in general and of agricultural education in particular. The progress in the movement for industrial, trade, and continuation schools will be traced briefly. The history of agricultural education, its present status, and typical agricultural schools and departments will be studied at greater length.

3. School Administration. Senior. First term, 3 hours a week.

This course deals with the organization and management of State, county, and city school systems; the qualification, duties and relations of school boards, superintendents, principals and teachers; school finances; school architecture and equipment; school curricula; formation, enlargement and consolidation of school districts; certification of teachers; and the interpretation and application of the Texas School Law.

4. Methods of Teaching. Senior. First term, 3 hours a week.

The fundamental principles of the aims and methods of the recitation are considered with their application to the conditions of the high school.

5. High School Problems. Senior. Second term, 3 hours a week.

This course is a study of the relation of the high school to elementary school, college and community; reorganization of curriculum with special attention to vocational subjects; equipment; discipline; daily schedules; records, and high school activities.

6. High School Agriculture. Senior. Second term, 3 hours a week.

This course is a study of the specific problems that confront the teacher of Agriculture in the high school. Among the topics discussed are: the selection of subject matter suited to local conditions; the organization of courses of study; equipment; management of field plots; student agricultural organizations; extension work; and community interest.

Prerequisite, *Agricultural Education* 5.

7. Practice Teaching. Senior. Time and credits to be arranged.

Opportunity is offered to a limited number to get experience in teaching under the direction of a critic teacher. Lesson plans are submitted for approval in advance of the recitation. A conference is held after each recitation for discussion and criticism of the methods of teaching. Experience is given for short periods in several different subjects and classes.

Prerequisite, *Agricultural Education* 5.

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSISTANT PROFESSOR S. A. McMILLAN, MR. WOOD,
MR. GEE, MR. STEWART.

Agronomy comprises the theory and practice of the production of field crops. In this department instruction is given in those subjects which relate especially to the field and its affairs, such as soils, farm crops, seed selection, farm management, plant breeding, irrigation and drainage, farm powers, farm motors, farm machinery, crop ecology, etc.

These subjects are presented by means of lectures, recitations, laboratory exercises, collateral readings, farm excursions, etc. To the equipment and facilities which the department possesses for giving this instruction, is also added the opportunity for contact with the research work of the Experiment Station, especially along the lines of soil fertility and crop production.

The present day farmer must have a knowledge of the fundamental principles underlying soil management and crop production, regardless of the system of farming to be followed, as these are basic. To produce maximum crops and at the same time keep the soil permanently productive, requires both theoretical and practical knowledge. It is the purpose of this department to train the student along both of these lines.

The courses are as follows:

1. Seed Selection. Freshman. First term, 2 hours a week. Practice.

This course gives the student a practical knowledge of the best methods of seed selection with reference to all important field crops. Emphasis is placed upon the importance of field selection as a basis of plant improvement. The student is familiarized with the points that go to constitute an ideal seed plant. The seed itself is also studied and practice work in judging and scoring grain is given.

No text. (Required in Course I.)

2a. Soils. Sophomore. First and second terms, 2 hours a week, with practice.

This course gives the student a rather comprehensive knowledge of the soil and its management. It is given according to the following outline:

- (a) The soil as a medium for Root Development, including a study of rock and its products, the soil mass, together with the physical properties of the soil and their modification; the organic contents of the soil.
- (b) The soil as a Reservoir for water, including the functions of water in plant growth; the amount of water in the soil; the movement of soil water, and the control of soil water.
- (c) Plant Nutrients in the soil, including a careful study of both micro-organisms and macro-organisms, as they influence soil productiveness.
- (d) The Soil Air; composition and functions of.

- (e) Heat of the Soil; comprising a study of the sources, functions and means of modifying soil temperature.
- (f) External factors in soil management; tillage, crop adaptation, etc.

Text: Soils, *Lyon & Fippin*.

Practice, 2 hours a week.

The student, working in the laboratory, applies the principles learned in the class room, to the actual management of soils.

(Required in Course I.)

3. Farm Crops. Junior. First and second terms, 3 hours a week; with practice.

In this course, all the leading field crops are studied with regard to structure, composition, races and varieties, breeding or improvement, soils, rotations, and fertilizers, together with tillage operations, harvesting and marketing.

Texts: Southern Field Crops, *Duggar*.

Forage and Fibre Crops, *Hunt*.

Practice, 2 hours a week.

In the laboratory the student makes a careful study of the leading characteristics of the different crops; seeds are studied as regards purity, and other points that determine value.

(Required in Groups A, C, D; optional in Group B, first term.)

4. Irrigation and Drainage. Junior. First term, 2 hours a week; with practice.

The water requirements of the common crops, duty of water and factors modifying same, the different methods of applying water to land, irrigation reservoirs and ditches, the alkali problem and its control, a brief survey of the water supply of Texas and the principles of economic conservation, and State and national water-right regulations will be studied. Drainage will be studied from the viewpoint of soil physics and soil moisture control. The movement of ground water, tile and open drains will be treated in detail.

Lectures, recitations and individual reports.

(Optional in Groups A, B.)

Texts: Irrigation, *Wilcox*.

Engineering for Land Drainage, *Elliott*.

Station and Government Bulletins and Reports.

Practice, 2 hours a week.

Ditch and dam site surveys, land leveling and the laying of tile drains.

5. Advanced Soils. Senior. First term, 2 hours a week; with practice.

This course is intended for the student who wishes to make a specialty of soil study. It deals especially with systems of soil management with reference to permanent soil productiveness. Recent literature bearing on the subject is discussed and the results of some of the leading soil investigations studied.

Text: Soil Fertility and Permanent Agriculture, *Hopkins*.

Practice, 2 hours a week.

Laboratory studies of soil with special reference to the fertility problem.

(Options 1 and 4, Group A.)

6. Farm Management. Senior. First and second terms, 3 hours a week; with practice.

The application of all the principles taught in the various agricultural subjects to the business management of the farm. Farm problems and farm bookkeeping are featured. Different systems of farming are studied as regards the equipment in land, labor, and capital for each, also crop rotations best suited to the different systems.

Practice, 2 hours a week.

Practice work comprises a field study of available farms, planning and outlining systems of management best adapted to each. Attention is given to the general lay-out of farm, size and shape of fields, condition of buildings, ditches, roadways, etc., and the necessary improvements are suggested.

(Required in Groups A, D; option 1, Groups B, C.)

7. Farm Powers. Senior. First term, 2 hours a week; with practice.

A brief review of the principles of energy, work and power; the simple machines and elementary mechanics; animal power as a prime mover and its application to the operations of the farm; windmills; water wheels; steam engines and boilers, especially the portable types; fuels; gas engines; gas tractors and their use on a farm.

Texts: Farm Machinery and Farm Motors, *Davidson & Chase*.

The Gas Engine Handbook, *Roberts*.

Practice, 2 hours a week.

Laboratory and field studies in farm mechanics. Comparisons of the power required to operate the various farm implements; a study of the gas engine and its parts; the practical operation of gas engines and the more common difficulties encountered in their use will occupy a most important place in the practice.

(Option 1, Groups A, C.)

8. Plant Breeding. Senior. First and second terms, 2 hours a week; with practice.

A course dealing with the improvement of field crops. The methods of breeding applicable to each crop are discussed in detail. The relative merits of selecting fluctuating variations, selecting mutations, and the isolation of elementary species, are given special consideration.

Largely a lecture course.

Practice, 2 hours a week.

Students will study the different forms of variation in the field and laboratory and will have practice work in making selections relative to plant improvement.

(Option 1, Group A.)

9. Farm Machinery. Senior. Second term, 2 hours a week; with practice.

A history of development of agricultural machinery in America; detailed studies of the principal appliances used in the tillage, seeding,

cultivation and harvesting of field crops; points to be observed in the selection of farm machinery for any given purpose, will be stressed in class.

Lectures, recitations and reports.

Texts: Farm Machinery and Farm Motors, *Davidson & Chase*.

Practice, 2 hours a week.

As many of the types of machines studied in class as are available will be taken apart, reassembled and operated in the field. Calibration of planters and seeders will receive attention. A portion of the time will be devoted to the practical use of concrete for farm structures.

(Option 1, Groups A, C.)

10. Crop Ecology. Senior. Second term, 2 hours a week; with practice.

A course dealing with the effect of such climatic factors as temperature, rainfall, atmosphere, humidity, etc., upon the yield; and the physical and chemical development of our ordinary field crops.

Students will make a careful study of crops and grain grown under varying climatic conditions; familiarizing themselves with such modifications as have been produced as a result of the different conditions.

(Option 1, Group A.)

11. Soil Mapping. Junior. Second term, 2 hours a week. Practice.

A detailed study of soil types accompanied by field work and soil maps. Prerequisite, *Agronomy 2a*.

12. Marketing Problems. Senior. First and second terms, 3 hours a week with practice.

This course deals with special problems pertaining to the marketing of all forms of farm products. Some of the factors considered are the ease, cost and methods of marketing different products; the cost of holding products; the relative price of products in different months, and the relation of co-operation to the solution of marketing problems.

Practice, 2 hours a week.

Practice consists of a farm marketing seminar in which certain phases of the work are taken up for special consideration. The instructor will lead in the discussion or designate a student as leader.

(Option 5, Group A.)

13. Cost Accounting. Senior. First term, 2 hours a week; with practice.

In this course special attention is given to farm inventories, work reports, animal records, milk records, egg records, crop reports, and general methods of cost accounting as they apply to the different farm enterprises.

Practice, 2 hours a week.

Practice work will comprise the preparation of the various kinds of work, crop and animal records and the preparation of complete sets of cost accounts.

(Option 5, Group A.)

14. Advanced Farm Management. Senior. Second term, 1 hour a week; with practice.

Comprises a discussion of efficiency factors on farms, with special reference to the farms visited in practice.

Practice, 4 hours a week.

Practice work comprises field trips to study neighboring farms from the standpoint of organization, equipment and management for general efficiency.

(Option 5, Group A.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Soils and Soil Management. First term, 3 hours a week; with practice.

A study of the origin, composition, structure, texture and crop adaptations of agricultural soils. Soil fertility and its maintenance; manures, fertilizers, cover crops, fallowing, fall and spring plowing, crop rotations, diversification and the renovation of worn-out soils will receive attention in the proper order. This course is designed to meet the more practical needs of the two-year student.

Recitations and lectures.

Texts: Soils, *Fletcher*.

Farm Manures and Fertilizers, *Brooks*.

Practice, 2 hours a week.

Laboratory and field studies on the water-holding capacity of soils, capillarity, the influence of organic matter on the physical properties, and lime and its effects.

16. Crop Production. Second term, 3 hours a week; with practice.

Beginning with laboratory instruction on the use of the score card and the judging of corn and cotton, this course will include a thorough treatment of all the principal grain, forage and fibre crops grown on the farms of this State. The best methods for the planting, tilling, harvesting and storing of the crops will be taught. The principal diseases and insect enemies will receive careful attention.

Recitations and lectures.

Texts: Southern Field Crops, *Duggar*.

Forage and Fibre Crops, *Hunt*.

Practice, first term 2 hours; second term, 4 hours a week.

Laboratory and field practice in the selection of seed for the various crops studied; seed testing; plot studies of the plants of the field.

Second Year.

17. Agricultural Engineering. First term, 2 hours a week; with practice.

A general course in irrigation, drainage, farm powers, farm machinery and practical cement construction. The limited time allowed for this course will permit only an abbreviated treatment of each subject, but the fundamental principles and facts will be presented.

Practice, 4 hours a week.

Field work with level and rod; surveys of irrigation and drainage ditches; simple dams and reservoirs; the operating of gas engines; laboratory and field practice with tillage, seeding and harvesting implements; concrete and cement mixing; concrete posts, floors and tanks.

18. Farm Equipment and Management. Second term, 3 hours a week; with practice.

A comprehensive study of the farm from an economic and business standpoint. Such topics as the planning and organizing of the farm with respect to available resources; farm labor; wages; rents and lease systems; contracts; farm accounts; farm advertising and salesmanship; efficiency; and the principal rural problems will be studied.

Practice, 2 hours a week.

Students will be required to work out a problem consisting of the planning, equipping and managing of a given farm on an ideal plan for a period of several years. Excursions to representative farms, and agricultural surveys will be undertaken as opportunity may permit.

DEPARTMENT OF ANIMAL HUSBANDRY.

PROFESSOR BURNS, MR. KENNEDY, MR. BELL, MR. BURK.

The courses in the Department of Animal Husbandry may be grouped under the four main heads:

- (1) The Judging of Live Stock.
- (2) The Breeding of Live Stock.
- (3) The Feeding of Live Stock.
- (4) The Management of Live Stock.

These are arranged to follow each other in proper order so that they may be best understood by the student, and most clearly taught by the instructor. Every effort is made to make every course in Animal Husbandry contribute to the better understanding of the others, and all unite in embracing the subject completely. Special efforts are made in every course to present the useful side, and also to devote as much time as possible to the practices. The courses are designed to give the student a thorough understanding of the live stock business in all its phases and to better fit him for work in this line, whether it be stock farming, ranching, teaching or investigation. Students intending to specialize in Animal Husbandry are required to take the studies under Group C.

The courses are as follows:

1. Judging Market Types of Cattle and Sheep. Freshman. First term, 4 hours a week. Practice.

The lectures are explanatory of the various classes and grades of cattle and sheep recognized in the leading stock markets. The points of these and their value to stockmen, butcher and consumer are fully discussed. The practice embraces a thorough training in the scoring of fat cattle and fat sheep; supplemented by the study of dressed carcasses as far as possible. In this course lectures are also given on the type and function of the dairy cow and thorough training is given in the scoring of dairy cattle. Comparative judging constitutes an important part of the work.

Text: Judging Live Stock, *Craig*.

(Required in Course I.)

2. Judging Market Types of Horses and Swine. Freshman. Second term, 4 hours a week. Practice.

The classes and grades of horses and swine recognized in the leading markets are discussed fully. The distinction of classes, and their importance, is made clear by the further use of the score card. Comparative judging is also an important feature in this course.

(Required in Course I.)

3. Judging Breed Types of Horses, Cattle, Sheep and Swine. Sophomore. Second term, 2 hours a week; with practice.

The lectures in this course treat of the origin, history, characteristics and adaptability of the various breeds of live stock. As far as the equipment in live stock will permit, the student is shown by means of

representative animals the best type of the breeds of horses, cattle, sheep and swine.

Text: Types and Breeds of Farm Animals, *Plumb*.

Practice, 4 hours a week.

The score cards of the different breed associations are used in determining the merits of the animals and these are further explained in the lectures. An important part of the practice consists of comparative judging similar to that of the show ring.

Prerequisite, *Animal Husbandry*, 1, 2.

(Required in Course I.)

4. Poultry Judging and Management. Sophomore. Second term, 1 hour a week; with practice.

Lectures are given on the origin, history and classification of the various breeds of poultry. A thorough study is made of poultry feeding and breeding. Houses, yards, diseases, incubation, brooding and marketing of poultry products receive careful consideration. The interests of both the fancier and of the producer of market poultry are kept in mind.

Practice, 2 hours a week.

Instruction is given in scoring market types and breeds of poultry, and when the student has attained proficiency in this, comparative judging is introduced. Some practice periods are devoted to studying the anatomy of birds; and some to studying incubators and brooders.

(Required in Course I.)

5. The Breeding of Live Stock and the Study of Pedigrees. Junior. First and second terms, 2 hours a week; with practice.

The lectures of this course embrace a presentation of the principles and methods of breeding, involving a further study of the origin, history and characteristics of the breeds of live stock. Heredity and variation, and allied topics are included in the lectures on the principles, while the subjects of inbreeding, line breeding, and balanced breeding are among those relating to the methods of breeding. The practices of breeding live stock are treated fully, including the business of producing pure-bred stock, as well as those for the common market.

Text: Breeding Farm Animals, *Marshall*.

Practice, 2 hours a week.

During the practice periods the study of pedigrees is given especial attention. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, *Animal Husbandry* 3.

(Required in Group C.)

6. The Breeding and the Feeding of Dairy Cattle. Senior. First term, 3 hours a week; with practice.

This course is designed especially for students specializing in Dairy Husbandry. The lectures on breeding treat of the principles and methods of breeding with special reference to dairy cattle. The business of breeding dairy cattle is fully discussed. The lectures on feeding

cover the principles of animal nutrition and treat specifically the feeding of dairy cattle.

Practice, 2 hours a week.

A part of the practice work will consist of a study of the pedigrees of some of the more noted animals of each of the dairy breeds in order that the student may become familiar with the best blood lines. The practice in feeding will consist largely of calculating rations for dairy cows, special attention being given to a study of Texas grown feeding stuffs and their value for milk production.

Prerequisite, *Animal Husbandry* 3.

(Required in Group D.)

7. The Feeding of Live Stock. Senior. First and second terms, 3 hours a week; with practice.

The subject of animal nutrition, the composition of available feeding stuffs, and the calculating of rations are treated fully. The course embraces a thorough study of the feeding of all classes of farm animals, horses, cattle, sheep and swine.

Texts: Profitable Stock Feeding, *Smith*.

Feeds and Feeding, *Henry*.

Practice, 2 hours a week.

The practice consists in part of the making of rations for different classes of stock from limited selections of feeding stuffs. The student is required to make abstracts of Experiment Station bulletins, and to keep fully informed as to the latest publications relating to the subject of feeding.

(Required in Group C.)

8. Advanced Judging. Senior. First term, 1 hour a week; with practice.

The lectures of this course treat further of the most approved types of pure-bred animals and of those used for the common market.

Practice, 4 hours a week.

The work of competitive judging is given prominence. Classes of the different kinds of live stock are selected as similar as possible to those which came together in the show rings of exhibitions.

Prerequisite, *Animal Husbandry* 3.

(Options 1, 4, Group C.)

9. Live Stock Management. Senior. Second term, 2 hours a week; with practice.

The raising of horses, cattle, sheep, and swine, as a business, is discussed in full detail, covering all features of management in production and marketing. The management of stock farms and ranches is fully treated. A study is made of the methods used by some of the most successful stock farmers and ranchers of Texas and other States. Special attention is given to the management of pure-bred herds and flocks and to the keeping of private herd and flock records.

Practice, 2 hours a week.

The practice in live stock management consists of actual work in preparing different classes of stock for show and sale. The student is given

instruction in trimming sheep, washing and curling the coats of cattle and polishing horns and hoofs. The work on horses consists of grooming, fitting of harness and decoration of manes and tails. Practice in filling out registration blanks for pure-bred stock, and the use of transfer blanks is also given.

Prerequisite, *Animal Husbandry* 5, 7.
(Options 1, 4, Group C.)

10. Poultry Judging. Senior. First term, 2 hours a week; with practice.

This course includes a study of the origin, history and classification of the various breeds and varieties of poultry, and the scoring and judging of the most important varieties in accordance with the American Standard of Perfection.

Text: American Standard of Perfection.

Practice, 2 hours a week.

Practice will be given in the study of feather markings, and in the judging of birds under show yard conditions, both by means of the score card and comparison.

11. Poultry Feeding and Management. Senior. First and second terms, 2 hours a week; with practice.

This course includes a study of poultry houses, arrangement of buildings and yards, feeds and feeding, poultry diseases, caponizing, killing, dressing and marketing of poultry products.

Practice, 2 hours a week.

The student will be given charge of a pen of fowls and will be required to keep a record of the amount and cost of food consumed, gains made and eggs produced, and to calculate the profit or loss. This work will cover periods of 3 weeks and the student must be present morning, noon and afternoon, the time to be arranged by appointment with the Instructor.

12. Incubation and Brooding. Senior, 1 hour a week; with practice.

Lectures will be given in regard to the principles involved and the methods pursued in incubation and brooding of chickens.

Practice, 4 hours a week.

Each student will be given charge of one or more incubators for the period of one hatch and required to keep record of the fuel consumed, temperatures, infertile eggs, dead germs, dead in shells, chickens hatched and total cost of incubation. Each student will also be given charge of chickens in a brooder for 4 weeks from the time of hatching and will be required to keep record of temperature, fuel and food consumed, gains made and mortality and to calculate the total cost of brooding. Students will be required to be present morning, noon and afternoon, the time to be arranged by appointment with the Instructor.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

- 15. Judging Market Types of Horses, Cattle, Sheep and Swine. First term, 6 hours a week. Practice.**

In this course students are given thorough training in scoring and judging market types of horses, cattle, sheep and swine. The points of these and their value to stockmen, butcher and consumer are fully discussed. A study of dressed carcasses is made.

Text: Judging Live Stock, *Craig*.

- 16. Judging Breed Types of Horses, Cattle, Sheep and Swine. Second term, 2 hours a week; with practice.**

A modification of *Animal Husbandry 3*.

Text: Types and Breeds of Farm Animals, *Plumb*.

Practice, 2 hours a week.

Prerequisite, *Animal Husbandry 15*.

- 17. The Breeding of Live Stock and the Study of Pedigrees. Second term, 1 hour a week; with practice.**

Second Year.

The lectures in this course treat of the principles of breeding and the methods used in the practice of breeding horses, cattle, sheep, and swine,—pure-bred animals, as well as those for the common market.

Text: Breeding Farm Animals, *Marshall*.

Practice, 2 hours a week.

The practice consists principally of the study of pedigrees. Students are required to trace out the blood lines of some of the most noted animals of each breed of live stock in order that they may obtain a knowledge of the combinations that have produced the best results.

Prerequisite, *Animal Husbandry 16*.

- 18. The Feeding of Live Stock. Second term, 2 hours a week; with practice.**

This course embraces a study of the feeding of all classes of farm animals, horses, cattle, sheep and swine. The subject of animal nutrition, the composition of available feedstuffs and the calculating of rations, are treated fully.

Text: Elementary Treatise on Stock Feeds and Feeding, *Halligan*.

The practice consists largely of calculating rations for different classes of farm animals, special attention being given to the study of Texas grown feed stuffs.

DEPARTMENT OF BIOLOGY.

PROFESSOR BALL, ASSISTANT PROFESSOR HAYDEN, MR. CASSIDY,
MR. REED.

The work of this department is designed to furnish the student with that accurate and thorough knowledge of the structure and functions of plants and of animals which is essential for those who purpose engaging in the arts of agriculture and horticulture.

Instruction is given by lecture and text, but especial emphasis is laid upon the work of the laboratory, where every effort is made to induce in the student habits of independent observation and thought.

The courses are as follows:

1. Zoology. Freshman. First and second terms, 3 hours a week; with practice.

A study of the animal kingdom with especial emphasis upon the physiology of animals is presented in this course. The habits and modes of life are studied and some attention is given to the development of animal life upon the earth. The text is used mainly as a book of reference, the student being encouraged to gain his knowledge from his own observations made in the laboratory and not from accounts in the text-book. Since the animal and plant worlds are closely related in many respects, a foundation is laid in this year for the more advanced study of plants in the Sophomore year.

Text: College Zoology, *Hegner*.

Practice, 2 hours a week.

In the laboratory typical representatives of the various groups of animals are studied. As far as possible economic or commercial forms are chosen, and the chief emphasis is laid on the physiological side of the study.

(Required in Course I.)

2. Botany. Sophomore. First term, 3 hours, second term, 2 hours a week; with practice.

The morphology and systematic relations of plants are studied in this course, which begins with an outline of the external and internal form and structure necessary to the more extended work in the physiology of the plant. The second term is devoted to systematic and ecologic botany in which the student is trained to identify plants, using as a basis his knowledge of their structure, and to apply both structure and function in accounting for their life relationships. Especial attention is given to plants of economic importance.

Texts: College Botany, *Atkinson*.

Flora of the Southern States, *Chapman*.

Practice, 2 hours a week.

The laboratory work is planned to illustrate the lectures, but more especially to train the student to acquire facts of structure and function by direct observation. In order to insure careful and correct interpre-

tation of what is seen, each student is required to keep a notebook in which he records by drawings and notes the results of his work.

(Required in Course I.)

3. Rural Hygiene. Junior. First and second terms, 2 hours a week; with practice.

This course presents an outline of the relation of bacteria to every-day life, at home and on the farm. The rationale of sanitation, personal and general; the construction and operation of sewage disposal plants suitable for use in villages and in the country; the relation of insects, vermin, etc., to the health of man and of animals; sanitary milk and dairy processes, and the general relations of bacteria to soil fertility are carefully considered.

Text: Principles of Hygiene, *Bergey*.

Practice, 2 hours a week. Laboratory study of bacteria and of their activities; methods of disinfection, etc.

(Optional in Groups A, B, C.)

4. Plant Diseases. Senior. First and second terms, 3 hours a week; with practice.

The structure, physiology and classification of fungi are studied in the first term; in the second, types of the most important plant diseases occurring in the State are selected for study and the student is trained to identify the cause of the trouble and is shown the methods of spraying and of other corrective measures. Plant diseases due to other causes receive attention within the limits of time and material.

Text: Fungous Diseases of Plants, *Duggar*.

Practice, 2 hours a week.

In the first term the student will become acquainted with the form and structure of selected fungi, and will learn the routine methods of cultivation, experimentation, etc. In the second term, diseased plants are placed before him, and he is instructed in the diagnosis of each with its appropriate treatment.

(Option 1, Groups, A, B.)

5. Plant Physiology. Senior. First and second terms, 2 hours a week; with practice.

An advanced course in physiology is here offered in which the functions of respiration, assimilation and nutrition receive especial attention. The course is designed for those who wish to pursue work of higher character in the field of general agricultural botany and at the same time to give, in the practical work, an introduction to the methods of research.

Text: Vegetable Physiology, *Green*.

Practice, 4 hours a week.

Laboratory manual, Practical Physiology of Plants, *Darwin & Acton*.

(Option 3, Groups A, B.)

6. Bacteriology. Senior. First and second terms, 2 hours a week; with practice.

In this course the general nature and relations of bacteria are considered in the first term, as exhibited by the study of selected types. In the second term the relations of bacteria to agricultural pursuits are examined; their activities in soil-building, dairy processes, various fermentations, such as of foliage, curing and manufacture of farm products, etc.

Text: General Bacteriology, *Jordan*.

Practice, 6 hours a week.

Preparation of culture media, of pure cultures, staining and microscopical technique; methods of identification, etc., occupy the time allotted in the first term. In the second term the student makes analyses of water, milk, sewage, etc., and continues methods of identification of commoner forms.

Manual, Laboratory Bacteriology, *Frost*.

(Option 3, Groups A, B.)

7. Dairy Bacteriology. Senior. First and second terms, 2 hours a week; with practice.

This course is designed for students electing work in Dairy Husbandry. In the first term a rapid outline of the general nature and relations of bacteria is given, followed by a study of those forms which are directly related to changes in milk and other dairy products, dairy management and hygiene, etc. Methods of pure culture, analysis of milk, butter, etc., and of control of undesirable forms are studied in the second term.

Text to be selected.

Practice, 4 hours a week. First term, preparation of culture media; technique of dairy bacteriology; identification, etc. Second term, analysis of milk, cream, etc.

Manual, Outlining of Dairy Bacteriology, *Russell & Hastings*.

(Group D.)

8. Sanitary Water Analysis. Junior. Second term, 1 hour a week; with practice.

In this course the relations of bacteria to water and water supplies are considered. The latter part of the term will be devoted to the study of sewage and sewage disposal.

Text: Elements of Sanitary Engineering, *Merriman*.

Practice, 4 hours a week. The preparation of culture media; quantitative and qualitative analysis of water and sewage.

Text to be selected.

(Option, Course IV.)

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

15. Zoology. First term, 3 hours a week; with practice.

A study of the familiar forms of animal life. The development of animal life, the life-histories of various animals, their habits and

especially their relation to man are studied. Their behavior is also noted, as illustrating human physiology.

Text: General Zoology, *Linville & Kelley*.

Practice, 2 hours a week.

The laboratory work consists of the dissection of a few familiar forms, and observations on their behavior and mode of life. As in the Freshman course, the student is urged to depend upon his own observations rather than on the text, and to learn to understand and to be able to describe what he sees.

16. Botany. Second term, 3 hours a week; with practice.

Students in this course are offered work designed to present a clear outline of the fundamental facts of plant life upon which the intelligent handling and care of farm crops are based. The term opens with a study of the plant as a whole and this leads to the systematic and ecologic relationships especially of those used as cultivated crops.

Text: A Practical Course in Botany, *Andrews*.

Practice, 2 hours a week.

The student is required to work out for himself and to make notes upon the structure of the plant and to use this knowledge in the systematic study of selected plants.

GRADUATE COURSES.

Students who have taken preliminary degrees at this institution, or at some other of equivalent rank, or those who may for special reasons desire advanced work in the biological sciences, will be admitted to graduate work in any one or more of the following courses:

In zoology—comparative anatomy and embryology of the vertebrates.

In botany—ecologic study of any family well represented in this vicinity; investigation of an assigned topic in plant physiology; monographic study of a pathogenic or non-pathogenic fungus; methods of research and technique in bacteriology, or research work in agricultural bacteriology, or plant pathology.

In each case, courses of advanced reading will be assigned and a thesis required.

DEPARTMENT OF DAIRY HUSBANDRY.

ACTING PROFESSOR RIDGWAY, MR. CLUTTER, MR. TALBOT.

The courses of study offered in this department are for the purpose of giving special training in the manufacture and handling of dairy products.

These courses may be divided as follows:

- (1) The Care and Handling of Milk.
- (2) The Manufacturing of Products from Milk.
- (3) The Management and Operation of Creameries.

Special importance is given to the laboratory work in connection with these courses, as the necessity of practical training along these lines is fully appreciated. The College creamery, which is run in connection with this department, affords laboratory facilities for working out the practical problems involved in these courses.

1. Milk Testing. Freshman. Second term, 2 hours a week; with practice.

A brief course in the composition of milk and the testing of milk and its products for the percentage of butterfat with special reference to herd testing and record keeping.

Text: Milk and Its Products, *Wing*.

Practice, 2 hours a week.

The estimation of the percentage of butterfat in milk and its products by the Babcock method and the use of the lactometer.

(Required in Course I.)

2. Dairy Machinery and Dairy Buildings. Junior. First term, 3 hours a week; with practice.

Lectures and recitations on the care and handling of dairy machinery and on the construction of creamery and dairy buildings, including the silo.

Practice, 4 hours a week.

All machinery in the College creamery will be studied regarding its cost, installation and operation.

(Required in Group D.)

3. Butter Making. Junior. Second term, 2 hours a week; with practice.

A course dealing with butter-making in the creamery and on the farm, and the marketing and judging of butter.

Practice, 2 hours a week.

(Required in Group D.)

4. Creamery Management. Senior. First term, 3 hours a week; with practice.

Lectures and recitations on the organization and management of creameries, dealing especially with creamery bookkeeping.

Practice, 2 hours a week.

Library work on the creamery organizations and creamery literature.

(Required in Group D.)

5. City Milk Inspection and Ice Cream Making. Senior. Second term, 3 hours a week; with practice.

This course deals first, with the problems of the city milk supply, the methods of producing certified milk and the determination of adulterations or the use of preservatives in milk; and, second, the composition and manufacture of ice cream on a commercial basis.

Practice, 2 hours a week.

Text: Jensen's Milk Hygiene, *Pearson*.

(Required in Group D.)

6. Advanced Dairying. Senior. First and second terms, 2 hours a week; with practice.

Farm butter-making, clean milk production, and ice cream making. An elective course designed especially for students in Group C.

Practice, 2 hours a week.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

1a. Milk Testing. Second term, 4 hours a week. Practice.

A modification of the practice of course 1. The practice will occasionally be supplemented by a lecture.

Second Year.

16. Farm Dairying. First term, 3 hours a week; with practice.

The use and care of cream separators, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care of dairy cows and the raising of dairy calves.

Practice, 4 hours a week.

DEPARTMENT OF ENTOMOLOGY.

PROFESSOR NEWELL, MR. BILSING.

The courses in Entomology are so arranged as to give the students in Agriculture a practical knowledge of the lives, habits and economic importance of insects. The department is equipped with models showing the external and internal anatomy of various insects, with dissecting tools and microscopes, compound microscopes, apparatus for histological work, a collection of insects for reference and a good entomological library for students' use. The department also has a building, 38x46 feet, well equipped with spraying machinery and insecticides for practice work and experiments.

The courses are as follows:

1. Systematic Entomology. Junior. First term, 2 hours a week; with practice.

In this course the student is taught the anatomy and physiology of insects as a basis for the development of practical measures of control. The various Orders of insects are studied, particular attention being given the forms that are decidedly injurious or beneficial. Considerable time is given to the biological aspect of the subject. The student also becomes familiar with entomological literature and with the methods by which insects are identified and classified.

Text: Entomology, Its Biological and Economic Aspects, *Folsom*.

Practice, 2 hours a week.

In the laboratory the student studies both external and internal anatomy of insects, aided by the models and by actual dissection. Drawings are made of insect structures and of specimens typical of the various Orders.

(Required in Course 1, Groups A, B; optional in Group C.)

2. Economic Entomology. Junior. Second term, 2 hours a week; with practice.

This course is the logical continuation of course 1 and is open only to students who have successfully completed that course. The student, having become familiar with insect anatomy and physiology, here takes up the applied aspects of the subject. Special attention is given to the life history of the insects that are injurious to staple crops, fruit and truck crops, live stock, etc., together with measures for their control by means of intelligent farm practice and the use of insecticides. In connection with the practice work the student is required to make a collection of local insects, consisting of at least fifty specimens, all of which must be properly pinned, labeled and correctly named. The importance of parasites and diseases and their utilization is also taught.

Text: Economic Entomology, *Smith*.

Practice, 2 hours a week.

In the practice the student prepares various insecticides for use, learns how to handle spraying machinery and, so far as opportunities permit, tests the effect of various control measures upon injurious insects.

Methods of fumigation for the destruction of insects infesting nursery stock, buildings and stored products are put in practice. Field trips are made to study injurious insects and for observing the effects of cultural methods or climatic conditions upon the destructiveness of insects.

Prerequisite, *Entomology 1*.

(Required in Course 1, Groups A, B; optional in Group C.)

3. Fruit Insects. Senior. Elective. First term, 2 hours a week; with practice.

This course is especially designed for students who are specializing in horticulture and wish more definite information concerning the insect pests of the fruit and truck crops. In this course a detailed study is made of the life history, habits and control of the pests of these crops. Special attention is given to control measures adapted to Texas conditions, and to the value of parasites and orchard management in the practical control of pests.

Text: *Insect Pests of Farm, Garden and Orchard, Sanderson.*

Practice, 2 hours a week.

In the practice the student is taught the identification of scale-insects and other fruit pests of importance. Particular attention is given to those fruit-insects which occur in Texas. Each student is required to make a detailed study of some horticultural pest from available literature, with a view of becoming familiar with all the current information thereon.

Prerequisite, *Entomology 2*.

(Option 1, Group B.)

4. Advanced Entomology. Senior. Elective.

This course is designed for students who elect special work in Entomology and will be outlined according to the needs of each individual student.

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

10. Economic Entomology. Second term, 2 hours a week; with practice.

A general outline of the classification of insects is here offered, together with a sufficient study of anatomy and biology for the understanding of control measures. Particular attention is given to injurious insects of field, garden and orchard, together with the methods and insecticides by which they may be controlled.

Text: *Elementary Entomology, Sanderson & Jackson.*

Practice, 2 hours a week.

The practice consists of sufficient dissection and study in the laboratory to familiarize the student with the different Orders of insects. This is supplemented by field studies of injurious forms, together with the preparation of various insecticides and their use.

DEPARTMENT OF HORTICULTURE.

PROFESSOR KYLE, ASSISTANT PROFESSOR BLACKMON, ASSISTANT PROFESSOR A. T. POTTS.

The aim of this department is twofold: First, to develop scientific horticulturists; second, to turn out practical fruit and truck growers. This statement does not mean there are two distinct courses, but that when a student finishes the course he is prepared to engage in either the scientific or the practical side of horticulture. The course of study covers somewhat fully the different lines of horticulture and embraces the following subjects: Nursery methods, truck gardening, orchard culture, nut culture, plant breeding, viticulture, spraying, citrus fruits, experimental horticulture, besides work in landscape gardening, floriculture and general forestry. The student is taught these subjects by means of text-books and lectures. In order to develop the practical side of the student, he is given from two to four hours a week in outdoor work, which comprises practice in budding, grafting, pruning, thinning fruit, spraying, setting out orchards and planting vegetables. He is taught how to mix and apply fertilizers, and he is also shown the best methods of cultivating the different horticultural crops. The department now has growing on the College grounds a commercial orchard of peaches, thirty varieties of paper-shell pecans, twenty varieties of grapes, a persimmon, pear and fig orchard, and small fruits consisting of blackberries and dewberries.

Besides the theoretical and practical work given at the College, the student is sent out during the summer to work in the orchards and truck farms of the largest growers, not only in this but in several of the other leading fruit States. Excursions are arranged during the school year for visiting the largest and most successful fruit and truck farms in the State. This not only gives the young man a good knowledge of the horticultural work done in his own State, but also enables him to become personally acquainted with some of the best practical horticulturists of the United States, and at the same time to familiarize himself with the methods used by such men.

1a. Plant Propagation. Sophomore. First term, 2 hours a week; with practice.

Lectures and recitations are given on the fundamental principles and methods of plant propagation, including both vegetables and fruits.

Text: The Nursery Book, *Bailey*.

Practice, 2 hours a week.

Practice in propagation of plants from seed, budding, grafting, etc., both in the laboratory and in the field.

(Required in Course 1.)

2. Vegetable Gardening. Sophomore. Second term, 3 hours a week; with practice.

Detailed instruction in planting, equipping and operating vegetable gardens for home and commercial purposes, and practical demonstra-

tions and experience in the field; a thorough discussion of the methods used in Texas in growing the most important vegetable crops.

Lectures.

Practice, 2 hours a week.

The practice is devoted to the building of hot-beds, cold-frames, the mixing and application of fertilizers, planting, cultivating, spraying and harvesting of vegetable crops.

Prerequisite, *Horticulture* 1a.

(Required in Course I; and in the first year of the two-year course.)

3. Tree and Vine Fruits. Junior. First term, 3 hours a week; with practice.

A comprehensive study of the various kinds of fruit-orchards and vineyards, embracing the problems of location and soils, protection from insects and diseases, pruning, cultivating, harvesting and marketing.

Lectures.

Text: Popular Fruit Growing, *Green*.

Practice, 2 hours a week.

Practical exercises in laying out orchards, spraying, etc.

Prerequisite, *Horticulture* 1a.

(Required in Group B; and in the second year of the two-year course.)

4. Plant Breeding. Junior. Second term, 2 hours a week; with practice.

This course is planned to give the student a better understanding of the benefits to be derived from the intelligent breeding of plants. The relation of horticultural varieties and hybrids to each other and to their parent species is discussed, together with the principles of pollination, crossing and hybridization.

Text: Plant Breeding, *Bailey*.

Practice, 2 hours a week.

Most of the practice work is devoted to the cross pollination of our most common plants, and to the study of natural variations arising among garden plants.

(Required in Groups A, B.)

5. Spraying. Junior. Second term, 1 hour a week; with practice.

The history and development of spraying in the United States and foreign countries is studied, special attention being given to the evolution of spraying machinery and to formulas.

Text: Spraying of Plants, *Lodeman*; lectures.

Practice, 2 hours a week.

Practical work in making various spraying mixtures for insects and diseases and applying the preparation to orchard and vegetable crops.

(Required in Group B.)

6. Nut Culture. Junior. Second term, 2 hours a week, with practice.

This course includes a study of those nuts which are of the most economic importance. Special attention will be given to the native nuts. Top-working the native pecan and hickory to improved varieties of pecans will be fully discussed.

Practice, 2 hours a week.

Practice will be given in budding and grafting pecans in the Nursery Row; also in top-working our native pecans to improve varieties by means of the Ring, Patch and Chip Buds.

(Required in Group B.)

7. Pomology. Senior. First term, 3 hours a week; with practice.

A comprehensive study is made of the evolution of our native fruits. Special attention is given to the grape, plum, mulberry, apple, cherry, blackberry, dewberry, strawberry, persimmon, etc.

Text: Evolution of Our Native Fruits, *Bailey*.

Practice, 2 hours a week.

Practice in systematic pomology is given with such fruits as can be obtained during the Fall.

8. General Forestry. Senior. First term, 2 hours a week; with practice.

A brief study of the history of forestry, means of propagation and development and the effects of forests on soil, climate, etc.

Text: American Forestry, *Green*.

Practice, 2 hours a week.

Nursery work and observation of local forests.

(Required in Options 1, 4, 6, Group B.)

9. Experimental Horticulture. Senior. Second term, 2 hours a week; with practice.

Practical methods of planning and carrying out experiments, such as are in vogue by the most up-to-date experiment stations.

Practice, 2 hours a week.

The student will be required to plan his experiment, prepare the land, mix and apply the fertilizer, sow the seed, cultivate, spray and harvest the crop, and make a report on the results obtained.

(Required in Group B.)

10. Citrus Fruits and Fig Culture. Senior. Second term, 2 hours a week; with practice.

A study of all the species of citrus fruits grown in this country. Special attention is given to the growing of the hardier varieties that are adapted to the Texas coast region.

Lectures.

Text: Citrus Fruits and Their Culture, *Hume*.

Practice, 2 hours a week.

Practice in the study of propagation of the different species of citrus trees; special demonstration work in protecting citrus trees from frost.

(Option 1, Group B.)

11. Floriculture and Landscape Gardening. Senior. Second term, 2 hours a week; with practice.

The first part of this course is devoted to a full discussion of the methods of growing bedded plants, cut flowers, orchids, palms, etc. The second part is devoted to a study of the history and development of landscape gardening, the engineering and planting of parks, cemeteries and home grounds.

Text: Greenhouse Management, *Taft*. Lectures.

Practice, 2 hours a week.

Practice in the propagation of ornamental plants, the laying out of beds and the proper arrangement of plants on the home ground; special work in designing and laying out parks and cemeteries.

(Option 1, 4, Group B.)

11a. Floriculture. Senior. Second term, 2 hours a week; with practice.

A full discussion is given of the methods of growing bedded plants, cut flowers, orchids, palms, etc.

Text: Greenhouse Management, *Taft*.

Practice, 2 hours a week.

Practice is given in the propagation of ornamental plants, roses, carnations, chrysanthemums, etc.

(Required in Option 6, Group B.)

12. Introduction to Landscape Art. Junior. Second term, 2 hours a week; with practice.

This is a cultural course given for the purpose of developing in the student a true appreciation of Landscape Art.

Illustrated lectures and recitations.

Practice, 2 hours a week.

Practice in inspection and observation of views giving natural landscape effect.

(Required in Option 6, Group B.)

13. Landscape Design. Senior. First and second terms, 3 hours a week; with practice.

This course gives the principles underlying Landscape Art. Also deals with the solving and drafting of problems dealing with Landscape Work.

Illustrated lectures and recitations.

Practice, 2 hours a week.

Practice is given in plotting, mapping and solving original landscape problems.

(Required in Option 6, Group B.)

14. History of Landscape Design. Senior. First term, 2 hours a week.

A comprehensive study of the development of Landscape Design.

Illustrated lectures and recitations.

(Required in Option 6, Group B.)

15. Plant Culture and Propagation. First term, 3 hours a week; with practice.

A modification of course 1. The first part is devoted to plant culture, and followed by a thorough discussion of the propagation of plants, including all the fruits, ornamentals, and vegetables.

Practice, 2 hours a week.

Practice work in the propagation of seedlings and the different forms of budding and grafting, layering, etc.

(Required in the first year of the two-year course in Agriculture.)

16. Ornamentals. Senior. Second term, 2 hours a week.

This course embraces a thorough study of the ornamentals adapted to Southern conditions.

Lectures and recitations.

(Required in Option 6, Group B.)

17. Silviculture. Senior. First and second terms, 2 hours a week; with practice.

A study of the life history of trees. The effect of soil, climate, and site on trees in the local forests. The effect of fire, insects and disease upon forests.

Lectures and recitations.

Practice, 2 hours a week.

Working out the life history of trees. Descriptions of forest trees. Plotting the reproduction of forests by natural and artificial means.

(Required in Option 6, Group B.)

18. Farm Forestry. Senior. First term, 2 hours a week.

A study of the relation of the general subject of forestry to Agriculture. It embraces a study of the formation and development and utilization of the wood lot on the farm. It takes up in detail the planting of wind-breaks and their effect on agricultural crops.

Practice, 2 hours a week.

Planning the wood lot in its relation to other agricultural crops. Preservation of timber.

(Required in Option 6, Group B.)

19. Forest Mensuration. Senior. Second term, 2 hours a week; with practice.

Determining the contents and rate of growth of individual trees and whole forests. Determining the height of standing trees. Measurement of logs and lumber by different units of measurements.

Lectures and recitations.

Practice, 2 hours a week.

Practical problems are given in measuring timber in forests, determining rate of growth, etc.

(Required in Option 6, Group B.)

20. Wood Preservation. Second term, 2 hours a week; with practice.

Discussion of different methods of treating timber with preservatives.

Lectures and recitations.

Practice, 2 hours a week.

Practical exercises in wood preservation.

(Required in Option 6, Group B.)

DEPARTMENT OF VETERINARY SCIENCE.

PROFESSOR FRANCIS, DR. MARSTELLER, DR. DUNN.

Instruction in Veterinary Science is given only to those taking the agricultural course. The class rooms and laboratory are fairly well equipped with books, instruments; skeletons, diseased bones, tumors, parasites, charts, etc. A small hospital erected in 1908 affords opportunity to witness surgical operations and the management and treatment of sick animals.

The courses are as follows:

1. Anatomy and Physiology of Domestic Animals. Sophomore. First term 2 hours a week; with practice.

This course is intended as an introduction to the study of Veterinary Science. It treats the fundamental processes of animal nutrition in detail so that each man may be prepared to meet the problems that arise in the economic production of beef, pork, and dairy products.

Reference books: Physiology of Domestic Animals, *Smith*; Veterinary Anatomy, *Sisson*.

Practice, 2 hours a week.

During the practice period there will be demonstrations on the composition and circulation of the blood, dissections of the heart, bowels, nervous system, eyes, muscles, and studies of the bones, joints and ligaments. The class will be divided into sections of four men each, so that each man can be graded on his work.

(Required in Course I.)

2. Pharmacology. Junior. First term, 2 hours a week; with practice.

A study of the substances used as medicines for animals, embracing a discussion of their origin, properties, preparation, administration, action, use, and dose.

Text: Veterinary Materia Medica and Therapeutics, *Winslow*.

Practice, 2 hours a week.

Each student is required to prepare powders, decoctions, waters, emulsions, spirits, tinctures, liniments, ointments, etc.

(Required in Groups A, C, D; optional in Group B.)

3. Non-infectious Diseases. Junior. Second term, 2 hours a week; with practice.

A discussion of diseases of locomotion, digestion, respiration, etc., of a non-contagious nature.

Text: Veterinary Medicine, Vols. 1, 2, 3, 4, 5, *Law*.

Practice, 2 hours a week.

Those who have not had a sufficient amount of dissection to understand the class work, may be required to spend the first few weeks in reviewing the anatomy of the parts under discussion. The hospital provides quite a number of subjects for observation and surgical operation.

(Required in Groups A, C, D; optional in Group B.)

4. Obstetrics. Junior. Second term, 2 hours a week; with practice.

A study of the processes of reproduction of animals. During the consideration of the subject, many points on embryology, barrenness, artificial breeding, castration of males and females, are brought out.

Text: Veterinary Obstetrics, *Williams*.

Practice, 2 hours a week.

Practice will embrace a dissection of the reproductive organs, and following this are frequent opportunities for observing diseases and irregularities incident to reproduction.

(Required in Groups C, D.)

5. Infectious Diseases. Senior. Second term, 2 hours a week.

This lecture course will embrace a discussion of such diseases as anthrax, black leg, rabies, glanders, hog cholera, tuberculosis, Texas fever, infectious anæmia, and their remedies. Especial mention will be made of those which may be injurious to public health through the consumption of meats or milk. Students have abundant opportunity to see hogs treated for cholera, and cattle for Texas fever.

Text: Pathology of Infectious Diseases of Animals, *Moore*.

(Required in Groups C, D.)

6. Anatomy. Senior. First and second terms, 3 hours a week; with practice.

A histological study of normal and diseased tissues, the dissection of special regions in regard to certain operations, the systematic examination of such groups as the cranial nerves, brachial plexus, or perhaps the blood, or lymph supply of some region. This work will vary with the qualifications and needs of those who elect it.

Texts: Stoke's Text-Book of Histology, *Lewis*.

Pathological Technique, *Mallory and Wright*.

Practice, 6 hours a week.

(Option 3, Group C.)

7. Advanced Laboratory Methods. Senior. Elective. First and second terms, 3 hours a week.

Those who wish to pursue this course must arrange with the instructors in advance, as it is not always possible to supply the material, teaching force, or laboratory space on short notice. It will be open only to those who have learned to work without constant aid of an instructor. It may embrace such work as the finer grades of blood—work of protozoa or bacteria, the ultra-microscopical examination of suspected material, the preparation of serial sections, or of fine injections, or of corrosive anatomy, etc., or the student may prefer the preparation of biological products for diagnosis or cure, such as mallein, tuberculin or the vaccines for hog cholera, black leg, anthrax, Texas fever, or the preparation of bacterins for pus-organism infections.

TWO-YEAR COURSE IN AGRICULTURE.

*Second Year.***16. Animal Diseases. Second term, 3 hours a week; with practice.**

A popular course on the common diseases of animals on the farm, and how to prevent and cure them.

Text: Veterinary Studies for Agricultural Students, *Reynolds*.

Practice, 2 hours a week.

A hasty review of the essential features of animal nutrition precedes the practice proper. Dissection of the organs of nutrition is provided, and following this an examination of the feet, eyes, etc., and the simpler surgical operations. Animals are examined for soundness, and each student must do the required work at its proper time.

DEPARTMENT OF AGRICULTURAL EXTENSION.

C. M. EVANS, SUPERINTENDENT; H. CORBETT MILLENDER, SECRETARY;
D. T. STEVENS, ASSISTANT.

The Extension Work of the College is in charge of the Extension Committee, consisting of the Dean of the College, the Dean of Agriculture, the Dean of Engineering, the Director of the Experiment Station, the Superintendent of Agricultural Extension, and the State Chemist, Chairman.

The extension work has been organized for the purpose of extending the benefits of the College to men actively engaged in farming and to others interested in agricultural pursuits but not in a position to enter upon a regular college course. In order to accomplish this purpose, the extension work has been planned to include the subdivisions mentioned below.

1. Correspondence Courses in Agriculture.

The following correspondence courses are offered. The instruction is given by regular College instructors.

1. Elementary Agriculture for Teachers.
2. Soils.
3. Fertilizers and Soil Fertility.
4. Grain Crops.
6. Hay and Forage Crops.
7. The Silo and Ensilage Crops.
8. Farm Dairying.
9. Farm Management.
11. Plant Propagation.
12. Vegetable Growing.
13. Small Fruits.
15. Citrus Fruits.
16. Beef Cattle.
17. Dairy Cattle.
18. Dual Purpose Cattle.
19. Sheep.
20. Hogs.
21. Horses and Mules.
22. Breeding Farm Animals.
23. Feeds and Feeding.
24. Creamery Management.
25. Elementary Entomology.
26. Economic Entomology.
27. Nut Culture.
28. Cotton Classing.

For further information, address Secretary Correspondence Courses, College Station, Texas.

2. Short Summer Course for Farmers. (At the College.)

This course is planned especially for the practical farmer who has not had the opportunity of taking a regular agricultural course. The work

is essentially practical. It includes lectures, demonstrations, and practice in stock and grain judging; cotton classing; horticulture, including vegetable gardening and orcharding, pruning, spraying, budding, grafting, and tree surgery; feeds and feeding; veterinary science, including abortion and artificial impregnation, hog cholera, tuberculosis and Texas fever; soils, farm crops, and farm machinery; dairying, including butter-making, silos and ensilage; insects and plant diseases; fertilizers; terracing and good roads.

The work extends through one week and is divided into four main groups, namely: Agronomy, Animal Husbandry, Dairy Husbandry and Horticulture.

No entrance examination will be required. There will be no charge for tuition, but a small fee will be charged to cover expenses of the course.

The course is given during the latter part of July so as to meet the convenience of the greatest number of farmers of the State.

Board and lodging will be furnished for \$1.25 per day. Those not boarding at the Mess Hall will be charged 25 cents per day for lodging.

Low rates will be offered on all railroads.

All students must register at the office of the Dean.

For detailed announcement, address the Dean of Agriculture, College Station, Texas.

3. Educational Demonstration Trains.

From time to time the College has operated special agricultural trains, on which lectures were delivered by experts in various branches of agriculture. The trains carried interesting exhibits of live stock, dairy machinery, agricultural and horticultural products, etc. This work will be continued in co-operation with the various railroads of the State.

4. Local Short Courses Over the State.

The College is prepared, in co-operation with the College of Industrial Arts at Denton, to conduct short courses in Agriculture and Domestic Science in a limited number of places over the State. These courses last one week. They are practically a movable College of Agriculture and Domestic Science.

5. Co-operation With Secondary Schools.

The law requires that Agriculture be taught in the public schools; and this department will co-operate with the authorities of any school desiring aid as to the methods of carrying out this requirement.

Address, for further information, Professor of Agricultural Education, College Station, Texas.

6. Boys' and Girls' Clubs.

Boys' and girls' clubs are organized under the Demonstration work in co-operation with the United States Department of Agriculture.

Those interested in the organization of boys' corn clubs, pig clubs, beef clubs, and other clubs, should address, Mr. H. H. Williamson, assistant in charge of club work, College Station, Texas.

Those interested in the organization of girls' canning clubs, poultry clubs, and other girls' clubs, should address Miss Bernice Carter, assistant in charge of Girls' Club Work, College Station, Texas.

7. Co-operation With Agricultural Fair Associations.

The College will co-operate with fair associations in securing judges for exhibits, educational demonstrations, and lectures of a popular nature on agricultural subjects.

8. Co-operation With Agricultural Organizations.

At present the College is co-operating with the Texas Industrial Congress by furnishing bulletins of information on crop production to contestants for the large premiums offered by that organization for the production of large yields of corn and cotton. It will co-operate with other organizations desiring its services, so far as possible.

9. Answers to Inquiries.

Experts at the College answer large numbers of inquiries, giving the information requested as far as possible.

10. Farmers' Co-operative Demonstration Work.

The Farmers' Co-operative Demonstration Work is carried on jointly by the Agricultural and Mechanical College and the Bureau of Plant Industry of the United States Department of Agriculture at Washington, D. C. The plan of co-operation consists in the placing of an agricultural expert in a county under the joint supervision of the College and the United States Department of Agriculture, for the carrying on of agricultural demonstrations in co-operation with the farmers of the county.

Any county wishing to secure the services of such a demonstration agent should address Mr. W. F. Proctor, State Agent, College Station, for further particulars.

Under an agreement entered into October 1, 1912, between the Bureau of Plant Industry, United States Department of Agriculture, and the Agricultural and Mechanical College of Texas, the Farmers' Co-operative Demonstration work is conducted by the following joint agents of the United States Department of Agriculture and the Agricultural and Mechanical College of Texas.

W. F. Proctor, State Agent in charge of Demonstration Work; J. L. Quicksall, Assistant State Agent; Four District Agents; about one hundred county agents; H. H. Williamson, assistant in charge of Club Work; Miss Bernice Carter, assistant in charge of the Girls' Club Work; thirty lady agents.

THE TEXAS AGRICULTURAL EXPERIMENT STATION.

DIRECTOR YOUNGBLOOD.

The Texas Agricultural Experiment Station system comprises the main station located at College Station and eleven correlated substations situated in various agricultural regions of the State. The Texas law relative to experiment stations prescribes that—

“The experiment station located at the Agricultural and Mechanical College in Brazos county, which is in part supported by the Federal Government, shall remain at said point as a permanent institution. It shall be known as the Main or Principal State Experiment Station and shall continue, as heretofore, under the supervision of the Board of Directors of the Agricultural and Mechanical College of Texas, which board shall have the authority to accept from the Federal government such aid in its support as is now or which may hereafter be provided by Congress. All other experiment stations of whatever character which may have heretofore been, or which may hereafter be, established, as provided in this act, shall be considered substations.”

As the above quotation from the law indicates, the Main Texas Agricultural Experiment Station is located at College Station, Brazos county, Texas, as a department of the Agricultural and Mechanical College of Texas. It was organized January 25, 1888, and is supported by funds appropriated by the United States Government. This support comes in two distinct appropriations. The “Hatch Fund” of \$15,000 annually was the original appropriation provided by an act of Congress passed in 1887, and may be used for experiments which may or may not be original in their nature. The “Adams Fund,” also of \$15,000 annually, can be used only for original investigations and experiments. This total of \$30,000 annually appropriated by the Federal Government supports the several divisions of investigation. The substations, which are supported by State appropriation, afford opportunity for the various divisions of the Main Station to pursue investigations under varied agricultural conditions; hence the work of both the Main Station and the substations is accessible at all times to students in agriculture, and being fundamental, renders a valuable service. Aside from experimental results available, much practical and useful experience is gained by observations of plat work on the Experiment Farm, and of feeding and breeding experiments, erection of silos, silage production, and live stock judging, on the Feeding and Breeding Farm located here.

The several substations represent as many distinct agricultural regions. They are designated by number, and are located as follows:

- No. 1—Beeville, Bee county.
- No. 2—Troup, Smith county.
- No. 3—Angleton, Brazoria county.
- No. 4—Beaumont, Jefferson county.
- No. 5—Temple, Bell county.
- No. 6—Krum, Denton county.

- No. 7—Spur, Dickens county.
No. 8—Lubbock, Lubbock county.
No. 9—Pecos, Reeves county.
No. 10—College Station, Brazos county (Feeding and Breeding Substation).
No. 11—Nacogdoches, Nacogdoches county.

The Main Station comprises nine divisions, each conducting investigations and experiments pertaining to that particular branch of agriculture. These divisions with their principal lines of work are as follows:

DIVISION OF VETERINARY SCIENCE.

DR. FRANCIS, DR. SCHMIDT.

The Division of Veterinary Science has done much valuable work on Texas fever, and is engaged in a further study of this problem and means of controlling it. This work has resulted in reducing the death rate from about 98 to 2 per cent. Other important investigations are being made, including work with Infectious Anæmia, an obscure disease of horses and mules which causes a heavy annual loss to the farmers of Texas, and other studies of diseases affecting farm animals.

DIVISION OF CHEMISTRY.

DR. FRAPS, MR. RATHER, MR. LEVIN, MR. CHEWNING.

The Division of Chemistry conducts investigations on the composition of Texas soils, the composition and digestibility of feedstuffs, and important work with fertilizers. Other lines of investigation are being pursued, including studies of irrigation waters, composition of paints, and so forth. This division also has supervision of the Texas Fertilizer Control work, and has rendered much valuable information and assistance to Texas farmers.

DIVISION OF HORTICULTURE.

MR. NESS, MR. HOTCHKISS.

The Division of Horticulture is conducting plant breeding work with dewberries and blackberries. Some very promising hybrids have been secured. Other work is being done with Crown Gall and its control. Orchard and garden work is also being conducted on the various substations, and much valuable information is anticipated.

DIVISION OF ANIMAL HUSBANDRY.

MR. BURNS.

The Division of Animal Husbandry is conducting cattle feeding experiments, testing the relative values of silage and other roughages, when fed with concentrates. Work is also under way in sheep breeding, crossing the Karakule with the more common breeds, with a view to making a study of inheritance problems, and with a view to producing a desirable breed of mutton sheep adapted to Texas conditions, which will also have desirable fur-bearing qualities. This division has established a founda-

tion herd of swine with which to undertake some investigations at an early date.

DIVISION OF ENTOMOLOGY.

MR. NEWELL, MR. PADDOCK.

The Division of Entomology is making a study of inheritance in the honey bee. Crosses have been made of the Italian and Carniolan races. It is anticipated that this work will yield results bearing on the laws of breeding. The life history of the bee moth has been determined for this latitude and control measures perfected. Some work is being done on the life history and control of the peach tree borer, the life history and control of the wax moth, the control of the cotton boll worm, and other studies.

Work is also being done on the turnip louse, and in the swarm control of honey bees. This division has supervision of the Foul Brood Law of Texas, and is charged with enforcing this law.

DIVISION OF AGRONOMY.

MR. CONNER, MR. LEIDIGH, MR. JOBSON, MR. DICKSON.

The Division of Agronomy is conducting investigations with farm crops and soil improvement. Under farm crops studies particular attention has been given to variety tests of corn and the improvement of this crop by securing pedigreed strains. Some additional work with corn is being conducted with seeding rates and the effect of distribution of hills on yield. A study of oats is being made, dealing particularly with the purification of certain types in Red Rust Proof and the improvement of these types by individual plant selection. The cotton work consists of a study of the fundamental principles of inheritance in cotton, particularly with relation to the correlation of unit characters, such as earliness and prolificacy, drouth resistance and earliness, and so forth. Additional cotton work embraces variety tests, seeding rate tests, and so on. The legume work consists largely of variety tests of cowpeas, soy beans and peanuts for hay and seed production. Permanent pasture improvement work is also being carried. Under soil improvement studies are being made of crop rotations versus continuous cropping, and of cultural methods and fertilizer work.

DIVISION OF PLANT PATHOLOGY AND PHYSIOLOGY.

DR. BLODGETT.

The Division of Plant Pathology and Physiology is conducting investigations on the relation of soil types to tubercle production on leguminous plants, especially alfalfa. A careful study of the blossom-end blight disease of melons and means of control, is also being made. A third line of work being conducted is a study of the corn smut, the results of which will be of great economic value to the farmers of the State. This division is working in co-operation with the Bureau of Plant Industry, United States Department of Agriculture, in making a plant disease survey of this State.

DIVISION OF FARM MANAGEMENT.

MR. WILLARD.

The Division of Farm Management, which is conducted in co-operation with the Office of Farm Management, United States Department of Agriculture, is making a study of cropping systems and farm practices, including the cost of production of various crops and the economical distribution of farm labor; in other words, a study of the business conduct of the farm.

DIVISION OF FEED CONTROL.

MR. BOYETT, MR. ROGERS, MR. WOOD, MR. WOLTERS, MR. EHLINGER.

The Division of Feed Control has charge of the enforcement of the law regulating the sale of concentrated commercial feedstuffs in the State of Texas, by virtue of an act of the Legislature empowering the Director of the Experiment Station with the enforcement of this law. This law requires the registration of all concentrated commercial feedstuffs, showing the minimum content of protein and fat, and the maximum amount of crude fiber contained, as well as true labeling and correct standard weights.

Samples are drawn from time to time from various feeding stuffs offered for sale and sent to this division by duly authorized inspectors, for analyses. The results secured by these analyses are compared with the manufacturers' guarantees on file with this division, by which it is determined whether or not the provisions of this law are being fulfilled.

The rulings specifying the names and guaranteed analyses of the various feedstuffs offered for sale are based on the chemical analyses of a large number of samples and a study of the methods of milling these products. It is the intention of this division to continue to make investigations of the various feedstuffs and the milling problems involved, in order that the provisions of this law may be properly enforced. This division is working in co-operation with the Federal Pure Feed Control relative to interstate shipments, and in harmony with the National Association of Feed Control Officials, with which it is affiliated.

The results secured by the work of the divisions of the Station are reported from time to time in bulletin form, sent free to farmers of the State, and others interested in agricultural development, upon application to the director. In addition to these bulletins involving more or less investigations into agricultural problems, press bulletins giving popular information in regard to agricultural topics, are sent out from time to time.

The director and the various members of the staff carry a heavy correspondence with farmers and stockmen of the State, disseminating in this way much useful and valuable information in regard to local conditions and agricultural problems in the varied sections of the State.

The Experiment Station maintains an exhibit showing the results of experiment work conducted, and places this exhibit at the National Corn Exposition, the Texas Farmers' Congress, and the State Fair of Texas, all of which are annual events. This exhibit has resulted in putting the

farmers of the State in touch with much useful and valuable knowledge resulting from the work of the station.

The Texas Agricultural Experiment Station is available at all times for service to the citizens of Texas, in any possible manner. All communications intended for the station should be addressed to "The Director, Texas Agricultural Experiment Station, College Station, Texas."

The School of Engineering

FACULTY OF THE SCHOOL OF ENGINEERING.

CHARLES PURYEAR, M. A., C. E.,
President pro tempore.

D. W. SPENCE, C. E.,
Dean.

CHARLES PURYEAR, M. A., C. E.,
Dean of the College and Professor of Mathematics.

D. W. SPENCE, C. E.,
Professor of Civil Engineering.

C. P. FOUNTAIN, A. M.,
Professor of English.

E. J. FERMIER, M. E.,
Professor of Mechanical Engineering.

O. F. CHASTAIN,
Professor of History.

J. B. BAGLEY, B. A.,
Professor of Textile Engineering.

F. C. BOLTON, B. S.,
Professor of Electrical Engineering.

R. J. POTTS, A. B., C. E.,
Professor of Highway Engineering.

A. MITCHELL, B. C. E.,
Professor of Drawing.

LEVI G. BROWN, First Lieutenant, Cavalry, U. S. A.,
Professor of Military Science and Tactics and Commandant of Cadets

S. J. FOUNTAIN, B. S.,
Professor of Architecture.

C. C. HEDGES, A. B., Ph. D.,
Professor of Chemistry and Chemical Engineering.

H. E. SMITH, M. E.,
Professor of Steam Engineering.

W. T. WRIGHT, B. S., A. B.,
Acting Professor of Physics.

COURSES IN THE SCHOOL OF ENGINEERING.

In the School of Engineering, four-year courses are offered in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering. Each of these courses leads to the degree of Bachelor of Science (B. S.), the particular course pursued being specified in the diploma. In Textile Engineering a two-year course is also offered. In the Civil Engineering department a short winter course, intended to be of assistance particularly to county surveyors and highway superintendents, is likewise offered. Graduate courses leading to the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, and Textile Engineer, respectively, are offered to young men who desire to pursue their studies beyond the field covered by the four-year courses. Descriptions of the various courses will be found in the pages allotted to the several departments.

In all the engineering courses a considerable portion of the student's time is devoted to the study of general subjects, such as English, history, mathematics, physics, chemistry, drawing, and the use of shop tools. The work in Language is optional, but the student who elects a language in his Sophomore year must continue the same language in his Junior year. The military training is of especial value as better fitting young engineers to be organizers and directors of men. In the several courses the more technical studies are intended to equip the students for the particular fields of engineering development they desire to enter. The graduate courses are altogether technical, but in each of them a portion of the time of the student is devoted to work in departments other than the one in which he takes his major studies.

At intervals throughout the session non-resident lecturers, usually men who have attained prominence in some branch of engineering or industrial pursuit, are invited to address the students in order that they may more closely connect their college instruction with the work they will be called upon to do after they enter upon their professional careers. For the same reason, inspection trips to works or plants of interest to engineers are made, usually during the senior year, under the direction of some member or members of the teaching staff. These trips afford the student the opportunity of seeing many things of interest and value.

COURSE IN ARCHITECTURE.

The aim of this course is to prepare young men for the general practice of architecture. While considerable stress is put upon the aesthetic side of this work, students are thoroughly grounded in the underlying principles of construction, sanitation, heating, and ventilating.

Students who have successfully completed this course are prepared to hold responsible positions with practicing architects, and after a few years experience, they should be well equipped to enter the profession of architecture. •

IX.—COURSE IN ARCHITECTURE.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2.....	3	Architecture 24.....	1
Descriptive Geometry.		Elements of Design.	
English 1.....	3	Drawing 2.....	3
Rhetoric and Composition.		Descriptive Geometry.	
Mathematics 1.....	3	English 1.....	3
Solid Geometry.		Rhetoric and Composition.	
Mathematics 2.....	3	Mathematics 2.....	3
Algebra.		Algebra.	
Mechanical Engineering 1.....	2	Mathematics 3.....	3
Elementary Mechanics.		Trigonometry.	
Physics 3.....	2	Mechanical Engineering 1.....	2
Elementary.		Elementary Mechanics.	
		Physics 3.....	2
		Elementary.	
	—		—
	16		17
<i>Architecture 20.....</i>	8	<i>Architecture 20.....</i>	8
<i>Architecture 22.....</i>	4	<i>Architecture 22.....</i>	4
<i>Drawing 1.....</i>	2	<i>Drawing 1.....</i>	2
<i>Physics 3.....</i>	2	<i>Physics 3.....</i>	2
	—		—
	16		16

SOPHOMORE YEAR.

Architecture 25.....	1	Architecture 26.....	2
Principles of Composition.		History of Architecture.	
Architecture 26.....	2	Architecture 27.....	2
History of Architecture.		Carpentry Construction.	
Architecture 27.....	2	English 2.....	2
Carpentry Construction.		Literature.	
English 2.....	2	English 3.....	1
Literature.		Composition.	
English 3.....	1	Mathematics 5.....	6
Composition.		Calculus.	
Mathematics 4.....	6	Physics 6.....	2
Analytics.		Electricity and Magnetism.	
Military Science 1.....	2	Language.....	3
Drill Regulations.		or History 2.....	2
Language.....	3	English.	
or History 2.....	2		
English.			
	—		—
	18 or 19		17 or 18
<i>Architecture 27.....</i>	2	<i>Architecture 27.....</i>	2
<i>Architecture 28.....</i>	8	<i>Architecture 28.....</i>	8
<i>Architecture 29.....</i>	4	<i>Architecture 29.....</i>	2
		<i>Physics 6.....</i>	2
	—		—
	14		14

JUNIOR YEAR.			
First Term.	Hours per week.	Second Term.	Hours per week.
Architecture 30.	2	Architecture 35.	1
History of Architecture.		Heating and Ventilating.	
Architecture 31.	2	Architecture 36.	2
Masonry Construction.		Steel Construction.	
Architecture 34.	1	Electrical Engineering 6.	1
Building Sanitation.		Lighting and Wiring.	
Chemistry 1a.	3	Chemistry 1a.	3
Inorganic.		Inorganic.	
Civil Engineering 6.	4	Civil Engineering 12.	2
Mechanics of Materials.		Stresses.	
Language.	3	Language.	3
or English 5.	1	or English 5.	1
Argumentation.		Argumentation.	
	<hr/> 13 or 15		<hr/> 10 or 12
Architecture 32.	2	Architecture 36.	2
*Architecture 37.	4	*Architecture 37.	4
Architecture 39a.	10	Architecture 39a.	14
Chemistry 1a.	2	Chemistry 1a.	2
Civil Engineering 6.	2	Civil Engineering 12.	2
	<hr/> 20 or 16		<hr/> 24 or 20

SENIOR YEAR.			
(For Class of 1915 only.)			
Architecture 25.	1	Architecture 27.	2
Principles of Composition.		Carpentry Construction.	
Architecture 40.	2	Architecture 41.	1
History of Ornament.		Business Practice.	
Civil Engineering 14.	2	Architecture 42.	2
Stresses.		History of Sculpture and Painting.	
Economics 4.	3	Economics 4.	3
Economic Organization.		Economic Organization.	
English 6.	1	English 6.	1
Public Speaking.		Public Speaking.	
	<hr/> 9	Military Science 2.	1
Architecture 43.	16		<hr/> 10
Architecture 45.	4	Architecture 43.	14
Architecture 47.	4	Architecture 45.	4
Civil Engineering 14.	2	Architecture 47.	4
	<hr/> 26	Architecture 27.	2
			<hr/> 24

SENIOR YEAR.			
(For Class of 1916.)			
Architecture 40.	2	Architecture 41.	1
History of Ornament.		Business Practice.	
Civil Engineering 14.	2	Architecture 42.	2
Stresses.		History of Sculpture and Painting.	
Economics 4.	3	Economics 4.	3
Economic Organization.		Economic Organization.	
English 6.	1	English 6.	1
Public Speaking.		Public Speaking.	
	<hr/> 8	Military Science 2.	1
Architecture 43.	16		<hr/> 8
Architecture 45.	4	Architecture 43.	18
Architecture 47.	4	Architecture 45.	4
Civil Engineering 14.	2	Architecture 47.	4
	<hr/> 26		<hr/> 26

*Not required of students electing language.

COURSE IN ARCHITECTURAL ENGINEERING.

This course is intended to prepare the graduate to enter the profession of architectural engineer, or of builder; it is also intended for young men who desire a technical education in order to fit themselves for engaging in commercial enterprises related to building construction, such as the manufacture or sale of building materials, and the erection, operation, or insurance of buildings.

VII.—COURSE IN ARCHITECTURAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of that department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2	3	Architecture 24	1
Descriptive Geometry.		Elements of Design.	
English 1	3	Drawing 2	3
Rhetoric and Composition.		Descriptive Geometry.	
Mathematics 1	3	English 1	3
Solid Geometry.		Rhetoric and Composition.	
Mathematics 2	3	Mathematics 2	3
Algebra.		Algebra.	
Mechanical Engineering 1	2	Mathematics 3	3
Elementary Mechanics.		Trigonometry.	
Physics 3	2	Mechanical Engineering 1	2
Elementary.		Elementary Mechanics.	
		Physics 3	2
		Elementary.	
	16		17
<i>Architecture 21</i>	<i>6</i>	<i>Architecture 21</i>	<i>6</i>
<i>Architecture 23</i>	<i>2</i>	<i>Architecture 23</i>	<i>2</i>
<i>Drawing 1</i>	<i>2</i>	<i>Drawing 1</i>	<i>2</i>
<i>Mechanical Engineering 13a</i>	<i>4</i>	<i>Mechanical Engineering 14a</i>	<i>4</i>
<i>Physics 3</i>	<i>2</i>	<i>Physics 3</i>	<i>2</i>
	16		16

SOPHOMORE YEAR.

Architecture 25	1	Architecture 26	2
Principles of Composition.		History of Architecture.	
Architecture 26	2	Architecture 27	2
History of Architecture.		Carpentry Construction.	
Architecture 27	2	English 2	2
Carpentry Construction.		Literature.	
English 2	2	English 3	1
Literature.		Composition.	
English 3	1	Mathematics 5	6
Composition.		Calculus.	
Mathematics 4	6	Physics 6	2
Analytics.		Electricity and Magnetism.	
Military Science 1	2	Language	3
Drill Regulations.		<i>or History 2</i>	<i>2</i>
Language	3	English.	
<i>or History 2</i>	<i>2</i>		
English.			
	18 or 19		17 or 18

First Term.	Hours per week.	Second Term.	Hours per week.
<i>Architecture 27</i>	2	<i>Architecture 27</i>	2
<i>Architecture 28</i>	8	<i>Architecture 28</i>	8
<i>Architecture 29</i>	4	<i>Architecture 29</i>	2
		<i>Physics 6</i>	2
	<hr/> 14		<hr/> 14

JUNIOR YEAR.

<i>Architecture 30</i>	2	<i>Architecture 36</i>	2
History of Architecture.		Steel Construction.	
<i>Architecture 31</i>	2	<i>Chemistry 1a</i>	3
Masonry Construction.		Inorganic.	
<i>Architecture 34</i>	1	<i>Civil Engineering 10</i>	3
Building Sanitation.		Masonry Construction.	
<i>Chemistry 1a</i>	3	<i>Civil Engineering 12</i>	2
Inorganic.		Stresses.	
<i>Civil Engineering 6</i>	4	<i>Physics 7</i>	2
Mechanics of Materials.		General.	
<i>Language</i>	3	<i>Language</i>	3
or <i>English 5</i>	1	or <i>English 5</i>	1
Argumentation.		Argumentation.	
		and Mechanical	
		Engineering 3.....	3
		Elem. Steam Eng.	
	<hr/> 13 or 15		<hr/> 16 or 15

<i>Architecture 33</i>	4	<i>Architecture 36</i>	2
<i>Architecture 38</i>	4	<i>Architecture 39</i>	8
<i>Architecture 39</i>	8	<i>Chemistry 1a</i>	2
<i>Chemistry 1a</i>	2	<i>Civil Engineering 12</i>	2
<i>Civil Engineering 6</i>	2	<i>Physics 9</i>	2
	<hr/> 20		<hr/> 16

SENIOR YEAR.

<i>Civil Engineering 14</i>	2	<i>Architecture 35</i>	1
Stresses.		Heating and Ventilating.	
<i>Civil Engineering 18</i>	3	<i>Architecture 41</i>	1
Reinforced Concrete.		Business Practice.	
<i>Economics 4</i>	3	<i>Civil Engineering 23</i>	2
Economic Organization.		Higher Structures.	
<i>English 6</i>	1	<i>Chemistry 10</i>	4
Public Speaking.		Geology.	
* <i>Mechanical Engineering 3</i>	3	<i>Economics 4</i>	3
Elem. Steam Eng.		Economic Organization.	
*or Mechanical		<i>Electrical Engineering 6</i>	1
Engineering 5a.....	2	Lighting and Wiring.	
Steam Engines and Boilers.		<i>English 6</i>	1
		Public Speaking.	
		<i>Military Science 2</i>	1
	<hr/> 11 or 12		<hr/> 14

<i>Architecture 44</i>	8	<i>Architecture 46</i>	16
<i>Architecture 46</i>	11	<i>Chemistry 10</i>	2
<i>Civil Engineering 14</i>	2	<i>Civil Engineering 23</i>	2
	<hr/> 21		<hr/> 20

*Students who elected Language, take Mechanical Engineering 3.

DEPARTMENT OF ARCHITECTURE.

PROFESSOR S. J. FOUNTAIN.

Instruction in this department is based upon the use of text-books and lectures in the class room and by practice in the drafting rooms. Problems are assigned the students in design and construction similar to those they will meet in actual practice.

The Professor of Architecture is a Patron of an Atelier of the Society of Beaux-Arts Architects of New York City which gives the students an opportunity of taking problems given out by this society. These problems are given out simultaneously to all the colleges of Architecture in the United States and are then sent to New York to be judged by a jury of prominent architects and this enables students to compete directly with the students of architecture of the largest colleges and universities.

The courses are as follows:

20. Architectural Drawing. Freshman. First and second terms, 8 hours a week. Practice.

Relations of plans, elevations, and sections to each other. Architectural elements; doors, windows, mouldings; the Orders; conventional rendering.

(Required in Course IX.)

21. Architectural Drawing. Freshman. First and second terms, 6 hours a week. Practice.

The same as Course 20.

(Required in Course VII.)

22. Freehand Drawing. Freshman. First and second terms, 4 hours a week. Practice.

Charcoal and pencil drawing from geometrical objects and from the cast.

(Required in Course IX.)

23. Freehand Drawing. Freshman. First and second terms, 2 hours a week. Practice.

Charcoal and pencil drawing from geometrical objects and from the cast.

(Required in Course VII.)

24. Elements of Design. Freshman. Second term, 1 hour a week.

Lectures on the elements of Architecture; mouldings, windows, doors, columns, walls, cornices, roofs; proper grouping and arrangements of these elements; principles of planning.

(Required in Courses VII and IX.)

25. Principles of Composition. Sophomore. First term, 1 hour a week.

Principles underlying pleasing arrangements, unity, individuality, similarity, subordination. Analysis of buildings. Primary masses, sec-

ondary masses; details, horizontal division, proportion, contrast, practical applications. Comparison and criticism.

Text: Architectural Composition, *Robinson*.

Prerequisite, *Architecture 24*.

(Required in Courses VII and IX.)

26. History of Architecture. Sophomore. First and second terms, 2 hours a week.

From the Egyptian period to the period of the Renaissance. Effects of political, economic, and geographical conditions. Influence of materials, climate and structural systems. This is supplemented by having the students make tracings from various works on the different styles of architecture.

Recitations: Illustrated lectures.

Text: A History of Architecture, *Fletcher-Fletcher*.

(Required in Courses VII and IX.)

27. Carpentry Construction. Sophomore. First and second terms, 2 hours a week; with practice.

The growth, cutting, seasoning, and working of woods. Framing, details, specifications.

Practice, 2 hours a week.

Text: Building Construction and Superintendence, Part 2, *Kidder*.

(Required in Courses VII and IX.)

28. Architectural Design. Sophomore. First and second terms, 8 hours a week. Practice.

Rendered Order problems, involving simple composition.

Prerequisite, *Architecture 20* and *21*.

(Required in Courses VII and IX.)

29. Freehand Drawing. Sophomore. First term, 4 hours, second term, 2 hours a week. Practice.

Charcoal from the cast.

Prerequisite, *Architecture 22* or *23*.

(Required in Courses VII and IX.)

30. History of Architecture. Junior. First term, 2 hours a week.

From the period of the Renaissance to modern times.

Recitations: Illustrated lectures.

Text: A History of Architecture, *Fletcher-Fletcher*.

Prerequisite, *Architecture 26*.

(Required in Courses VII and IX.)

31. Masonry Construction. Junior. First term, 2 hours a week.

Materials, foundations, walls, details. Terra-cotta, fire proofing.

Recitations.

Text: Building Construction and Superintendence, Part 1, *Kidder*.

(Required in Courses VII and IX.)

32. Masonry Construction. Junior. First term, 2 hours a week. Practice.

Drawing and designing details of building construction and masonry.
Text: Building Construction and Superintendence, Part 1, *Kidder*.
Must be preceded or accompanied by *Architecture 31*.
(Required in Course IX.)

33. Masonry Construction. Junior. First term, 6 hours a week. Practice.

Drawing and designing details of building construction and masonry.
Text: Building Construction and Superintendence, Part 1, *Kidder*.
Must be preceded or accompanied by *Architecture 31*.
(Required in Course VII.)

34. Building Sanitation. Junior. First term, 1 hour a week.

Lectures on water supply, drainage, sewage disposal, and plumbing for buildings.
(Required in Courses VII and IX.)

35. Heating and Ventilating. Junior. Second term, 1 hour a week.

The general principles of heating and ventilating and calculation of the sizes of heating surfaces, heaters, boilers, and steam and water pipes and air ducts.

Text: Heating and Ventilation, *Hubbard*.
(Required in Courses VII and IX.)

36. Steel Construction. Junior. Second term, 2 hours a week; with practice.

Lectures on the design and construction of columns, beams, girders, and trusses. Details of steel framing. Standard connections, steel and cast iron stairs, spacing of columns.

Practice, 2 hours a week.
Prerequisite, *Civil Engineering 6*.
(Required in Courses VII and IX.)

37. Freehand Drawing. Junior. First and second terms, 4 hours a week. Practice.

Charcoal from the cast.
Prerequisite, *Architecture 29*.
(Required in Course IX.)

38. Freehand Drawing. Junior. First term, 4 hours a week. Practice.

Charcoal from the cast.
Prerequisite, *Architecture 29*.
(Required in Course VII.)

39. Architectural Design. Junior. First and second terms, 8 hours a week. Practice.

Rendered plan problems and sketch problems.
Prerequisite, *Architecture 28*.
(Required in Course VII.)

39a. Architectural Design. Junior. First term, 10 hours, second term, 14 hours a week. Practice.

Rendered plan problems and sketch problems.

Prerequisite, *Architecture 28.*

(Required in Course IX.)

40. History of Ornament. Senior. First term, 2 hours a week.

Lectures on the history of ornament of the different periods.

Prerequisite, *Architecture 30.*

(Required in Course IX.)

41. Business Practice. Senior. Second term, 1 hour a week.

Lectures on the organization and management of an architect's office, and on the responsibilities of an architect to the owner, contractor, and the community at large.

(Required in Courses VII and IX.)

42. History of Sculpture and Painting. Senior. Second term, 2 hours a week.

Lectures on sculpture and painting.

Prerequisite, *Architecture 30.*

(Required in Course IX.)

43. Architectural Design. Senior. First term, 16 hours, second term, 20 hours a week. Practice.

Advanced problems in original design.

Prerequisite, *Architecture 39.*

(Required in Course IX.)

44. Architectural Design. Senior. First term, 8 hours a week. [Practice..

Advanced problems in original design.

Prerequisite, *Architecture 39.*

(Required in Course VII.)

45. Building Construction. Senior. First and second terms, 4 hours a week. Practice.

Graded problems in structural design of buildings, to be executed in wood, iron, masonry, steel, or reinforced concrete.

Prerequisite, *Architecture 27, 31, 36.*

(Required in Course IX.)

46. Building Construction. Senior. First term, 11½ hours, second term 16 hours a week. Practice.

Graded problems in structural design of buildings, to be executed in wood, iron, masonry, steel, or reinforced concrete.

Prerequisite, *Architecture 27, 31, 36.*

(Required in Course VII.)

47. Freehand Drawing. Senior. First and second terms, 4 hours a week. Practice.

Advanced charcoal drawing from the cast and from life.

Prerequisite, *Architecture 37.*

(Required in Course IX.)

COURSE IN CHEMICAL ENGINEERING.

This course is designed to prepare young men for technical work in those industries in which raw materials undergo a chemical change in the process of manufacture. Many such industries important to the present and future development of this State are those dealing with cottonseed products, sugar, leather, petroleum, cement, ceramics and iron and steel. The analytical chemistry given in the course is sufficient to enable the graduate to engage in the work of a commercial analyst or to enter an industrial plant as a control chemist. The control chemist repeatedly analyzes and evaluates the raw material used in the manufacture as well as the intermediate and finished products. It is through such control that manufactures of this kind have been made scientific. Pure food laws and other legal enactments calculated to protect the people against fraud have, of late years, greatly accentuated the importance of this work. At the same time enough work is given in general engineering practice to enable the graduate who enters the work as a control chemist to come in time to a full understanding and mastery of the industry in which he is engaged.

The fifth year's work, leading to the degree of chemical engineer, is designed to facilitate the transformation of the control chemist into the manager of an industrial plant, capable of adapting chemical processes to varying conditions and improving upon them as occasion demands.

VIII.—COURSE IN CHEMICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week	Second Term.	Hours per week:
Drawing 2.....	3	Drawing 2.....	3
Descriptive Geometry.		Descriptive Geometry.	
English 1.....	3	English 1.....	3
Rhetoric and Composition.		Rhetoric and Composition.	
Mathematics 1.....	3	Mathematics 2.....	3
Solid Geometry.		Algebra.	
Mathematics 2.....	3	Mathematics 3.....	3
Algebra.		Trigonometry.	
Mechanical Engineering 1.....	2	Mechanical Engineering 1.....	2
Elementary Mechanics.		Elementary Mechanics.	
Mechanical Engineering 2.....	1	Mechanical Engineering 2.....	1
Shop Lectures.		Shop Lectures.	
Physics 3.....	2	Physics 3.....	2
Elementary.		Elementary.	
	—		—
	17		17
<i>Drawing 1.....</i>	2	<i>Drawing 1.....</i>	2
<i>Drawing 3.....</i>	2	<i>Drawing 32.....</i>	2
<i>Mechanical Eng. 13 or 14.....</i>	6	<i>Mechanical Eng. 14 or 13.....</i>	6
<i>Physics 3.....</i>	2	<i>Physics 3.....</i>	2
	—		—
	12		12

SOPHOMORE YEAR.

Chemistry 1.....	3	Chemistry 1.....	3
Inorganic.		Inorganic.	
English 2.....	2	English 2.....	2
Literature.		Literature.	
English 3.....	1	English 3.....	1
Composition.		Composition.	
Mathematics 4.....	6	Mathematics 5.....	6
Analytics.		Calculus.	
Military Science 1.....	2	Physics 4.....	3
Drill Regulations.		General.	
Physics 4.....	3	Language.....	3
General.		or History 2.....	2
Language.....	3	English.	
or History 2.....	2		
English.			
	—		—
	19 or 20		17 or 18
<i>Chemistry 1.....</i>	4	<i>Chemistry 1.....</i>	4
<i>Drawing 6.....</i>	2	<i>Drawing 6.....</i>	4
<i>Drawing 33.....</i>	2	<i>Physics 4.....</i>	2
<i>Physics 4.....</i>	2		
	—		—
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemical Engineering 1.....	3	Chemical Engineering 3.....	3
Industrial Chemistry.		Metallurgy.	
Chemistry 4.....	2	Chemistry 4.....	2
Organic.		Organic.	
Chemistry 5.....	2	Civil Engineering 6a.....	2
Economic Geology.		Mechanics of Materials.	
Civil Engineering 7.....	2	Civil Engineering 7.....	2
Hydraulics.		Hydraulics.	
Mathematics 6.....	3	Electrical Engineering 5.....	4
Practical.		Electrical Machinery.	
Mechanical Engineering 3.....	3	Language.....	3
Elementary Steam Engineering.		or English 5.....	1
Language.....	3	Argumentation.	
or English 5.....	1	and Mechanical Eng. 4....	3
Argumentation.		Kinematics.	
and Civil Engineering 16....	2		
Contracts.			
	17		17 or 16
<i>Chemistry 4.....</i>	<i>2</i>	<i>Chemistry 4.....</i>	<i>2</i>
<i>Chemical Engineering 2.....</i>	<i>4</i>	<i>Chemical Engineering 4.....</i>	<i>4</i>
<i>Chemistry 5.....</i>	<i>2</i>	<i>Civil Engineering 6a.....</i>	<i>2</i>
<i>Mechanical Engineering 15.....</i>	<i>4</i>	<i>Electrical Engineering 5.....</i>	<i>3</i>
	12		11

SENIOR YEAR.

Chemical Engineering 5.....	3	Chemical Engineering 5.....	3
Physical Chemistry.		Physical Chemistry.	
Chemical Engineering 6.....	2	Chemical Engineering 6.....	2
Technical Analysis.		Technical Analysis.	
Civil Engineering 15.....	2	Chemistry 11.....	1
Water Supply Engineering.		History of Chemistry.	
Economics 4.....	3	Economics 4.....	3
Economic Organization.		Economic Organization.	
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
Mechanical Engineering 5.....	3	Mechanical Engineering 5.....	3
Steam Engines and Boilers.		Steam Engines and Boilers.	
Mechanical Engineering 6.....	2	Mechanical Engineering 6.....	2
Eng. Mechanics.		Eng. Mechanics.	
	16	Military Science 2.....	1
			16
<i>Chemical Engineering 5.....</i>	<i>2</i>	<i>Chemical Engineering 5.....</i>	<i>2</i>
<i>Chemical Engineering 6.....</i>	<i>6</i>	<i>Chemical Engineering 6.....</i>	<i>6</i>
<i>Mechanical Engineering 22a.....</i>	<i>2</i>	<i>Mechanical Engineering 22a.....</i>	<i>2</i>
	10		10

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

PROFESSOR HEDGES, ASSISTANT PROFESSOR GORDON, ASSISTANT PROFESSOR NELSON, MR. THORNTON, MR. NEWTON, MR. BRYANT.

The beginning work of the Course in Chemical Engineering is described under the Department of Chemistry, page 150. Chemistry and Chemical Engineering today cover such a broad field that in the Senior year students are advised to specialize in some branch of technical analysis such as the chemical control of a cement plant or of a cottonseed plant. All the work is supplemented by laboratory work. The chemical industries most highly developed in this State are inspected from time to time.

The courses in Chemical Engineering are as follows:

1. Industrial Chemistry. Junior. First term, 3 hours a week.

This is an introductory course, covering the principal applications of chemical processes to commercial products, mostly organic in nature, such as gas manufacture, petroleum products, soaps, the starch and sugar industries, and the manufacture of paper, leather and explosives. The manufacture of fertilizers, cement and ceramics is also considered.

Text: Industrial Chemistry, *Rogers and Aubert.*

Prerequisite, *Chemistry 1.*

(Required in Course VIII; in Senior year in Course III.)

2. Quantitative Analysis. Junior. First term, 4 hours a week. Practice.

This course serves as an introduction to the methods of exact analysis, typical inorganic substances being used, such as iron, sulphuric acid, silver and chlorine. The work is at first gravimetric, then volumetric.

Text: Quantitative Chemical Analysis, *Foulk.*

Prerequisite, *Chemistry 2.*

(Required in Course VIII.)

3. Metallurgy of Iron and Steel. Junior. Second term, 3 hours a week.

In this course the metallurgy of iron and the manufacture of steel are considered in detail, especial attention being given to the nature and location of valuable iron ore deposits, together with suitable fluxes; to the nature and availability of proper fuels, together with the furnaces used; to the constitution of the resulting pig iron and the manufacture of steel therefrom; and finally to the chemistry of the different kinds of steel and their adaptability in engineering practice. Lectures and recitations.

Text: The Metallurgy of Iron and Steel, *Stoughton.*

Prerequisite, *Chemistry 1.*

(Required in Course VIII; in Senior Year Course III.)

4. Silicate Analysis. Junior. Second term, 4 hours a week. Practice.

A silicate is to be analyzed for all its constituents until checking duplicate determinations are obtained.

Text: The Analysis of Silicate and Carbonate Rocks, *Hillebrand*.
 Prerequisite, *Chemical Engineering 2*.
 (Required in Course VIII.)

5. Physical Chemistry. Senior. First and second terms, 3 hours a week; with practice.

This course presents, wherever known, physical explanations of chemical and allied phenomena, together with a mathematical exposition of the laws involved. Some of the subjects thus developed are the atomic theory, the periodic law, solubility, fusion, vaporization, the phase rule, dissociation in solution, chemical equilibrium, and relative chemical activity. It leads up to a consideration of the best research work of today. Most of the theoretical conclusions deduced in the class room are confirmed in the laboratory. Lectures and recitations.

Practice, 2 hours a week.

Prerequisite, *Chemical Engineering 3*; *Mathematics 4*.
 (Required in Course VIII.)

6. Technical Analysis. Senior. First and second terms, 2 hours a week; with practice.

This course consists of lectures and conferences with regard to technical methods of analysis, especially in exercising chemical control over industrial plants, such as cement manufacturing, the cottonseed oil industry, and the sugar industry. After studying various methods in general, the student will take up some one system of chemical control and master it, so that he might creditably enter the works as a control chemist in his chosen line.

The nature of this work is inadequately represented by the time allotted to it. The methods of exact analysis require an intelligent, painstaking supervision not limited by time allotments. The degree to which this fact is appreciated by the student determines his value as an analyst. The technical journals and official methods will frequently be consulted by the student.

Practice, 6 hours a week.

Prerequisite, *Chemical Engineering 4*.
 (Required in Course VIII.)

11. Advanced Industrial Chemistry. Fifth Year. First and second terms- 2 hours a week; with practice.

This course consists of lectures and conferences with regard to methods and problems in industrial chemistry. The efficiency of processes and plants, the advisability of replacing old processes by new, the evaluation of rocks, clays, coals and petroleum, the economic and commercial aspects of particular cases, with particular reference to the future development of the chemical industries in this State, all receive attention.

Practice, 12 hours a week.

The practice in this course consists in conducting experiments related to the chemical industries, on a scale affording, as nearly as equipment will allow, the conditions obtaining in the works, with a view of ascertaining the active factors in the different processes and the effect

of varying them; also a detailed study of the status of the different industries in this State.

Prerequisite, *Chemical Engineering 4*.
(Required in Course VIII.)

12. Chemistry of the Rarer Elements. Fifth Year. First term, 2 hours a week; with practice.

In this course most of the rarer elements are prepared from their ores and identified. Those of industrial importance, such as tungsten, cerium and thorium, as well as gold and platinum, receive most attention.

Practice, 4 hours a week.
(Required in Course VIII.)

13. Chemical Preparations. Fifth Year. Second term, 2 hours a week; with practice.

In this course purely chemical industries which are not carried out on the largest scale receive attention. These consist, for the most part, of the manufacture of chemicals and drugs.

Practice, 4 hours a week.
(Required in Course VIII.)

EQUIPMENT.

Besides the equipment described under the Department of Chemistry, this department is provided with a separate room for technical analysis and one for advanced industrial chemistry. The latter is not yet fully equipped. The former is provided with vacuum and compressed air systems, colorimeters, calorimeters, refractometers, Lovibond tintometer, combustion furnaces, gas burettes and other special apparatus used in technical analysis. The laboratory has the usual equipment for work in physical chemistry.

COURSE IN CIVIL ENGINEERING.

This course has for its object the preparation of young men for entrance upon professional practice in the fields of surveying; highway construction and maintenance; municipal engineering as related to street location, paving, water supply, sewerage, sewage disposal works, street railways, etc.; railway location, construction and maintenance; the construction of levees and other protection works to guard against damage by overflows; irrigation and drainage engineering; the construction of canals, reservoirs, the installation of pumping plants, filtration works, etc.; the design and construction of bridges, steel buildings, and masonry structures. Attention is given to drafting so that the student may be prepared to represent his designs on paper; to the preparation of contracts, specifications and estimates of cost, and to the supervision of work, etc. A thorough grounding in the underlying principles of engineering is given, together with the application of these principles to as many special lines as time will permit.

In the Division of Highway and Rural Engineering the Department of Civil Engineering is meeting a constantly increasing demand along lines of great importance to the State. In addition to conducting classes in road building, and in street paving and improvement, the Professor of Highway Engineering delivers lectures and gives advice on highway matters all over the State to as full extent as his time and other duties permit. The Instructor in Terracing gives instruction in farm terracing and the conservation of soil moisture to classes at the College for one-half the scholastic year, the remainder of his time being devoted to cooperative work with Farmers' Institute and individual farmers. Free lectures and demonstrations of terracing work are made on request at any point in the State. Exhibits for instruction in highway engineering and in terracing, are shown at the leading fairs and on demonstration trains for the purpose of giving as many people as possible an opportunity to become familiar with approved methods in these lines. The Professor of Highway Engineering or the Instructor in Terracing, and sometimes both, will be present wherever these exhibits are shown to explain the models and to explain present practice.

The fifth year course, leading to the degree of Civil Engineer (C. E.), offers opportunity for more advanced study in some of the branches of Civil Engineering than can be had within the limit of the four-year course, and includes some elective work in subjects offered in departments other than that of Civil Engineering. Every student who can afford the time and money is urged to follow his four-year course, when possible, with the more technical course covered by the fifth year's work.

IV.—COURSE IN CIVIL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2.....	3	Drawing 2.....	3
Descriptive Geometry.		Descriptive Geometry.	
English 1.....	3	English 1.....	3
Rhetoric Composition.		Rhetoric Composition.	
Mathematics 1.....	3	Mathematics 2.....	3
Solid Geometry.		Algebra.	
Mathematics 2.....	3	Mathematics 3.....	3
Algebra.		Trigonometry.	
Mechanical Engineering 1.....	2	Mechanical Engineering 1.....	2
Elementary Mechanics.		Elementary Mechanics.	
Mechanical Engineering 2.....	1	Mechanical Engineering 2.....	1
Shop Lectures.		Shop Lectures.	
Physics 3.....	2	Physics 3.....	2
Elementary.		Elementary.	
	<hr/> 17		<hr/> 17
<i>Drawing 1.....</i>	<i>2</i>	<i>Drawing 1.....</i>	<i>2</i>
<i>Drawing 3.....</i>	<i>2</i>	<i>Drawing 32.....</i>	<i>2</i>
<i>Mechanical Eng. 13 or 14.....</i>	<i>6</i>	<i>Mechanical Eng. 14 or 13.....</i>	<i>6</i>
<i>Physics 3.....</i>	<i>2</i>	<i>Physics 3.....</i>	<i>2</i>
	<hr/> 12		<hr/> 12

SOPHOMORE YEAR.

Civil Engineering 1.....	3	Civil Engineering 4.....	3
Surveying, Leveling and Topography.		Railroad Engineering.	
English 2.....	2	English 2.....	2
Literature.		Literature.	
English 3.....	1	English 3.....	1
Composition.		Composition.	
Mathematics 4.....	6	Mathematics 5.....	6
Analytics.		Calculus.	
Military Science 1.....	2	Physics 4.....	3
Drill Regulations.		General.	
Physics 4.....	3	Language.....	3
General.		or History 2.....	2
Language.....	3	English.	
or History 2.....	2		
English.			
	<hr/> 19 or 20		<hr/> 17 or 18
<i>Civil Engineering 1.....</i>	<i>4</i>	<i>Civil Engineering 4.....</i>	<i>4</i>
<i>Drawing 33.....</i>	<i>2</i>	<i>Drawing 6.....</i>	<i>4</i>
<i>Drawing 6.....</i>	<i>2</i>	<i>Physics 4.....</i>	<i>2</i>
<i>Physics 4.....</i>	<i>2</i>		
	<hr/> 10		<hr/> 10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week
Chemistry 1a.....	3	Chemistry 1a.....	3
Inorganic.		Inorganic.	
Civil Engineering 5.....	2	Civil Engineering 7.....	2
Railroad Engineering.		Hydraulics.	
Civil Engineering 6.....	4	Civil Engineering 9.....	2
Mechanics of Materials.		Roads.	
Civil Engineering 7.....	2	Civil Engineering 10.....	3
Hydraulics.		Masonry Construction.	
Electrical Engineering 5.....	4	Civil Engineering 11.....	2
Electrical Engineering.		Roofs and Bridges.	
Mathematics 6.....	2	Mechanical Engineering 3.....	3
Practical.		Elementary Steam Engineering.	
Language.....	3	Language.....	3
or English 5.....	1	or English 5.....	1
Argumentation.		Argumentation.	
		and Biology 8.....	1
		Sanitary Water Analysis.	
	<hr/> 18 or 20		<hr/> 17 or 18
<i>Chemistry 1a.....</i>	<i>2</i>	<i>Chemistry 1a.....</i>	<i>2</i>
<i>Civil Engineering 5.....</i>	<i>3</i>	<i>Civil Engineering 7.....</i>	<i>2</i>
<i>Civil Engineering 6.....</i>	<i>2</i>	<i>Civil Engineering 8.....</i>	<i>4</i>
<i>*Drawing 9.....</i>	<i>2</i>	<i>Electrical Engineering 5.....</i>	<i>3</i>
	<hr/> 9 or 7	<i>**Biology 8.....</i>	<i>4</i>
			<hr/> 15 or 11

Summer Practice, Civil Engineering 24..... 4 weeks.

SENIOR YEAR.

Civil Engineering 13.....	4	Civil Engineering 20.....	2
Roofs and Bridges.		Sewerage.	
Civil Engineering 15.....	2	Civil Engineering 25.....	3
Water Supply Engineering.		Modern Pavements.	
Civil Engineering 16.....	2	Civil Engineering 22.....	3
Contracts and Specifications.		Higher Structure.	
Civil Engineering 17.....	2	Economics 4.....	3
Irrigation and Drainage.		Economic Organization.	
Civil Engineering 18.....	2	English 6.....	1
Reinforced Concrete.		Public Speaking.	
Economics 4.....	3	Chemistry 10.....	4
Economic Organization.		Geology.	
English 6.....	1	Military Science 2.....	1
Public Speaking.			
	<hr/> 16		<hr/> 17
<i>Civil Engineering 13.....</i>	<i>8</i>	<i>Civil Engineering 13.....</i>	<i>4</i>
<i>Civil Engineering 19.....</i>	<i>4</i>	<i>Civil Engineering 19.....</i>	<i>4</i>
<i>Mechanical Engineering 22a.....</i>	<i>2</i>	<i>Civil Engineering 22.....</i>	<i>2</i>
	<hr/> 14	<i>Chemistry 10.....</i>	<i>2</i>
			<hr/> 12,

*Students electing Language do not take Drawing 9.

**For students not electing Language.

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR SPENCE, PROFESSOR POTTS, ASSOCIATE PROFESSOR RICHEY,
ASSOCIATE PROFESSOR LOVE, ASSISTANT PROFESSOR CROCKETT,
MR. PEARCE.

Instruction in this department is based upon the use of good textbooks, supplemented by lectures or explanations in the class room and by practice in the field and testing laboratories, and in the drafting room. Many problems are assigned to the student in order that the underlying principles involved in their solution may be more thoroughly impressed upon him. Effort is made to develop appreciation of the degree of precision required in different kinds of work, and of the conditions under which approximate methods are desirable or admissible. Throughout the instruction work in this department a thorough understanding of the basic principles involved in a few fundamental engineering subjects is preferred to a more superficial introduction to many different subjects.

The courses are as follows:

1. Surveying, Leveling, and Topography. Sophomore. First term, 3 hours a week; with practice.

Description of the use and adjustment of the compass, transit, level and minor surveying instruments is followed by instruction in methods of field work, balancing surveys, computation of areas; profile leveling as applied to street grades, sewers, and ditches; topographic leveling with especial reference to problems in grading, drainage and irrigation; plotting and map drawing.

Text: Theory and Practice of Surveying, *Johnson*.

Practice, 4 hours a week.

Students are required to become thoroughly familiar with the construction, adjustment and use of the ordinary instruments; to perform field work, fully illustrating all points covered in the theory, and to make all calculations, and to prepare maps of the work done in the field.

Prerequisite, *Mathematics* 3.

(Required in Course IV.)

2. Surveying, Leveling, and Terracing. Junior. Second term, 3 hours a week; with practice.

In addition to the general principles of surveying, this course will give special attention to the application of these principles to agricultural problems. It is especially planned for those who wish to take up the questions of farm surveys, terracing, drainage, and irrigation. All the time possible will be devoted to such questions as the preservation of soil fertility and moisture on hill sides; drainage of low and swampy lands; principles and methods of irrigation. The text will be liberally supplemented by lectures and by the use of bulletins.

Text: Plane Surveying, *Barton*.

Practice, 4 hours a week.

The practice will follow the lines indicated by the theory. After the use of the instruments and the general methods of field work have been taught, special attention will be given to topographic leveling of a given area, preparation of contour map from original notes, designing a system of terraces for the area surveyed; similar problems for areas to be drained or irrigated, laying out of ditches and determining proper grade lines for them.

(Optional in Course I, Groups A, B.)

3. Surveying and Leveling. Junior. Second term, 2 hours a week; with practice.

This course is the same as course 1 with regard to the instruments and their uses. After the fundamental principles of surveying have been covered, special attention is paid to building and lot surveys, laying out plats, foundations, etc.

Text: *Plane Surveying, Barton.*

Practice, 2 hours a week.

The use of the instruments; field and drafting room work along the lines indicated in the theory.

Prerequisite, *Mathematics 3.*

(Required in Course V.)

4. Railroad Engineering. Sophomore. Second term, 3 hours a week; with practice.

Reconnaissance, preliminary and location surveys are discussed in the class room, with problems involving simple, compound and transition curves.

Text: *Field Manual for Railroad Engineers, Nagle.*

Practice, 4 hours a week.

Problems in simple, compound and transition curves are assigned and the curves run in the field.

Prerequisite, *Civil Engineering 1.*

(Required in Course IV.)

5. Railroad Engineering. Junior. First term. 2 hours a week; with practice.

Frogs and Switches; Railroad Construction and Maintenance.

Text: *Field Manual for Railroad Engineers, Nagle.*

Practice, 3 hours a week.

In practice a short railroad line is surveyed, grade lines laid, and slope stakes set. This is preliminary to the more elaborate field work of course 24.

Prerequisite, *Civil Engineering 4.*

(Required in Course IV.)

6. Mechanics of Materials. Junior. First term, 4 hours a week; with practice.

This course covers a treatment of the resistance of materials and the mechanics of pipes, riveted joints, beams, columns, shafts, etc. After the study of the elementary mechanics of these structures, attention is given to more advanced topics, such as combined stresses, compound beams and columns, resilience, impact, and fatigue of materials.

Text: Mechanics of Materials, *Merriman*.

Practice, 2 hours a week.

Determination of the strength, ductility, modulus of elasticity, and other properties of engineering materials. Various tests of timber, steel, cast iron, cement, etc., are made by the student and reports submitted showing results. In these reports considerable attention is given to the presentation of results in clear and condensed form by means of curves and tables.

Prerequisite, *Mathematics* 5.

(Required in Courses III, IV, V, VII, IX:)

6a. Mechanics of Materials. Junior. Second term, 2 hours a week; with practice.

An abbreviation of course 6.

Text: Mechanics of Materials, *Merriman*.

Practice, 2 hours a week.

Prerequisite, *Mathematics* 5.

(Required in Course VIII.)

7. Hydraulics. Junior. First and second terms, 2 hours a week; with practice.

The laws governing water at rest and in motion, as related to engineering problems. The flow of water in short tubes, pipes, mains, ditches, canals, sewers, streams and rivers; measurement of the flow of water, by nozzles, orifices, weirs, and meters; estimates for water supply, and water power; theory and efficiency of motors, wheels, turbines, rams, and pumps.

Text: Treatise on Hydraulics, *Merriman*.

Practice, second term, 2 hours a week.

Calibration of nozzles, orifices, water meters, weirs, and pressure gauges; efficiency tests on impulse motors, hydraulic rams, and centrifugal pumps of one, two, and three stages.

Prerequisite, *Mathematics* 5.

(Required in Course IV, Senior year in Course III, and without practice in Course VIII.)

8. Graphics. Junior. Second term, 4 hours a week. Practice.

Elements of Graphic Statics. Use of the force and equilibrium polygons. Determination of centers of gravity and moments of inertia of areas. Stress diagrams. The stresses in simple trusses are determined graphically.

Text: Roofs and Bridges, Part II, *Merriman and Jacoby*.

(Required in Course IV.)

9. Roads and Pavements. Junior. Second term, 2 hours a week.

This course covers a thorough study of country roads and a brief general study of city pavements; the character of materials and types of construction in different parts of the State and of the United States; the location and drainage of roads; road maintenance; road laws of Texas and of other States; road finances, organization, and supervision. The

text is supplemented by lectures, the use of bulletins, road machinery, models, and samples of materials.

Text: Text-Book on Highway Engineering, *Blanchard and Browne*.

Prerequisite, *Civil Engineering 1*.

(Required in Course IV.)

10. Masonry Construction. Junior. Second term, 3 hours a week.

The principles of masonry construction in general, except as applied to reinforced concrete, are covered in this course.

Text: Treatise on Masonry Construction, *Baker*.

Prerequisite, *Civil Engineering 6*.

(Required in Course IV.)

11. Roofs and Bridges. Junior. Second term, 2 hours a week.

The stresses in ordinary roofs and bridges. Each student must determine analytically the stresses due to given loads in various structures, and the proper loading to produce the maximum stresses.

Text: Roofs and Bridges, Part I, *Merriman and Jacoby*.

Prerequisite, *Mathematics 5, Civil Engineering 6*.

(Required in Course IV.)

12. Stresses. Junior. Second term, 2 hours a week; with practice.

Stresses in simple structures.

Text: Graphic Statics, *Malcolm*.

Practice, 2 hours a week.

(Required in Courses III, VII, IX.)

13. Roofs and Bridges. Senior. First term, 4 hours a week; with practice.

The determination of stresses in the more complicated structures and the design of simple trusses.

Text: Roofs and Bridges, Parts I and III, *Merriman and Jacoby*.

Practice, First Term, 8 hours; Second Term, 4 hours a week.

The determination of stresses by various graphic methods followed by the design of a Parker truss; after the design, the student is required to make detailed drawings.

Prerequisite, *Civil Engineering 11*.

(Required in Course IV.)

14. Stresses. Senior. First term, 2 hours a week; with practice.

A continuation of course 12.

Text: Graphic Statics, *Malcolm*.

Practice, 2 hours a week.

Prerequisite, *Civil Engineering 12*.

(Required in Courses VII, IX.)

15. Water Supply Engineering. Senior. First term, 2 hours a week.

A general study of the sources of water supply for domestic use; the quantity and quality of a supply; the necessity for, and methods of, purification; collection, storage, and distribution of water; the construction and equipment of a complete system.

Text: Water Supply Engineering, *Folwell*.
Prerequisite, *Civil Engineering 7*.
(Required in Courses IV, VIII.)

16. Contracts and Specifications. Senior. First term, 2 hours a week.

A brief study of the law of contracts as applied to engineering operations; the relation of the engineer to the owner and to the contractor; the necessity for, and preparation of, engineering specifications and the accompanying documents; general and specific clauses in specifications; illustrative examples.

Text: Engineering Contracts and Specifications, *Johnson*.
(Required in Courses IV, V.)

17. Irrigation and Drainage. Senior. First term, 2 hours a week.

Hydraulic principles are applied in the course, and the methods of collecting and distributing water to lands under irrigation are discussed. Existing irrigation systems and methods are reviewed.

Text: Manual of Irrigation Engineering, *Wilson*.
Prerequisite, *Civil Engineering 6*.
(Required in Course IV.)

18. Reinforced Concrete. Senior. First term, 2 hours a week.

The theories of stress distribution, and various systems of reinforcement employed in the construction of beams, columns, arches, etc., are discussed, and illustrative examples studied.

Text: Principles of Reinforced Concrete Construction, *Turneaure and Maurer*.

Prerequisite, *Civil Engineering 10*.
(Required in Courses IV, VII.)

19. Field and Laboratory Work. Senior. First and second terms, 4 hours a week. Practice.

Practice in the field, drafting room and laboratory.

In the field and drafting room, the student is given practice in railroad maintenance of way and problems in street, road and railroad culvert design. In the laboratory the student continues the hydraulic practice of course 7, and makes various tests of road materials.

Prerequisite, *Civil Engineering 5, 6, 7*.
(Required in Course IV.)

20. Sewerage. Senior. Second term, 2 hours a week.

Questions relating to the amount of sewage, kind of system, design, construction, maintenance, and methods of sewage treatment and disposal, receive special attention in this course.

Text: Sewerage, *Folwell*.
Prerequisite, *Civil Engineering 7*.
(Required in Course IV.)

22. Higher Structures. Senior. Second term, 2 hours a week; with practice

The determination of stress in swing, cantilever, and suspension bridges, and in arches.

Text: Roofs and Bridges, Part IV, *Merriman and Jacoby*.

Practice, 2 hours a week.

Prerequisite, *Civil Engineering* 13.

(Required in Course IV.)

23. Higher Structures. Senior. Second term, 2 hours a week; with practice.

The determination of stresses in arches and domes.

Text to be assigned.

Practice, 2 hours a week.

The complete design of an arch rib.

Prerequisite, *Civil Engineering* 14.

(Required in Course VII.)

24. Field Practice. Summer Following the Junior Year.

A summer practice course. Effort is made to approximate the actual working conditions of preliminary and location railroad surveys. The class will be required to put in the full working day, and to complete exercises assigned in railroad and topographic surveying.

Text: Manual for Resident Engineers, *Molitor and Beard*.

Practice is also given in triangulation, river gauging, field work in road and street location and mapping.

At the close of the session 1914-15 this course will begin on Thursday, June 10 and close on Friday, July 9, 1915, both dates included. Students in this course will occupy rooms in the dormitories and will take their meals at the Mess Hall. Board and room, lights and janitor service will be charged for at the rate of \$4.90 per week. For the present, there will be no laboratory fee.

(Required in Course IV.)

25. Modern Pavements. Senior. Second term, 3 hours a week.

A study of the general subject of streets and pavements; planning and locating streets with reference to contiguous property, proper drainage, ease of communication, amount and character of traffic; underground structures, subgrade, and foundations; principal types of wearing surfaces, including the cheaper bituminous mixtures; considerations governing the choice of a pavement; methods of distributing the cost of pavements; cleaning, maintenance, and repair.

Text: To be announced.

Prerequisite, *Civil Engineering* 9.

(Required in Course IV.)

FIFTH YEAR.

21. Least Squares and Geodesy. Second term, 3 hours a week.

Recitations, supplemented by field work on base line measurements, triangulation, etc., as available time will permit.

Texts: Least Squares, *Merriman*.

Geodesy, *Merriman*.

Prerequisite, *Mathematics* 5.

(Required in Course IV.)

31. Astronomy. First term, 2 hours a week.

This course is given in the fifth year for students receiving their Bachelor's degree prior to June, 1914. It embraces recitations and such field observations as the equipment and time available will permit.

Text: General Astronomy, *Young*.
(Required in Course IV.)

32. General Civil Engineering. First and second terms, 2 hours a week.

For fifth-year students receiving their Bachelor's degree prior to June, 1914. The subject offered will conform to the character of instruction best fitted for particular cases.

(Required in Course IV.)

SHORT WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY SURVEYORS.

The Department of Civil Engineering will, during the session 1914-15, offer a short course for public road supervisors, road overseers, county surveyors, and others interested in such work. This course will be open only to men over twenty-one years of age. No entrance examinations will be required, but it will be necessary for applicants to have a thorough working knowledge of arithmetic in order to carry the work to be given.

The course will cover the description and use of the transit, level, compass, and other simple surveying instruments; the elementary principles of land surveying; profile and topographic leveling and establishing grade lines for roads and ditches; the elementary principles of road location, grading, drainage, surfacing, and culverts; and the economic and social benefits of road improvement. The students will be divided into two classes, those having only a knowledge of arithmetic forming the first class, and those having a knowledge of algebra and trigonometry forming the advanced class. Regular lessons will be assigned in the text-books for daily recitations. Lectures will also be given by the Faculty and by prominent engineers in the State. Much practice work will be required in the field and in the drafting room. Road models will be studied and samples of road materials will be classified.

This course is designed exclusively for practical road men and surveyors who have never had college training. No college credit will be given for the course and no certificates of proficiency will be issued.

The course will begin Monday, January 4, 1915, and end Saturday, January 30, 1915. Rooms will be charged for at the rate of \$1.00 per week to cover cost of light, heat, and janitor service. Meals will be furnished at the Mess Hall at twenty-five cents each, or \$4.00 per week.

All students must register at the office of the Dean.

EQUIPMENT.

The department occupies a portion of the Civil Engineering Building and has three recitation rooms, two drafting rooms, library room, and three offices on the second floor. In the basement, the department has an instrument room, a general testing room, a hydraulic and road materials laboratory, a cement laboratory, a model room and store room.

For the field work, the equipment consists of a well assorted lot of transits and engineer's levels for general work, also for more precise work in city surveying and leveling and for simple triangulation. Also surveyor's compasses, terracing levels, plane tables, aneroid barometers, range poles, rods, chains, chain tapes, metallic tapes, surveyor's pins, axes, etc. For the drafting room and other office work there are drawing tables, reckoning machines, a universal drafting machine, planimeters, slide rules, calculating instruments, protractors for general and special uses, and a sufficient supply of T squares, etc.

In the general testing laboratory there is one machine of 100,000, one of 50,000 and one of 20,000 pounds capacity, a 50,000 inch-pounds torsion machine and a rattler for testing paving brick. With the exception of the 20,000 pound machine these are all power driven.

The Hydraulic Laboratory contains weirs, pressure gauges, hook gauges, water meters, measuring tanks, impulse wheels, hydraulic ram, centrifugal pumps, pitot tubes, current meter, nozzles, and other apparatus for hydraulic measurements. The centrifugal pumps are connected to a pressure tank in order that they may be forced to pump against various heads. The road materials testing laboratory contains sieves for examining gravel and machines for testing the hardness, working qualities, cementing values, etc., of materials suitable for road building.

In the cement laboratory are moulds for shaping briquettes for tension tests, moulds for compression tests, cement testing-machines, sieves for testing the fineness of cement and sand, Vicat and Gillmore's needles for testing time of setting, damp closet, balances, pans and other appliances used in testing the qualities of cements.

A road exhibit room is also maintained for the benefit of students and visitors. In this room are shown models of road sections and surfaces made of various materials available in Texas. Samples of gravel, rock, asphalt, and road soils, together with photographs, charts and maps of road work in the State complete the exhibit.

The department library and reading room contains engineering books, periodicals, blue prints, photographs, etc., and is kept constantly open for the use of students during the session.

COURSES IN ELECTRICAL ENGINEERING.**FOUR-YEAR COURSE.**

The four-year course in electrical engineering is designed to give the student a thorough training in the underlying principles of direct and alternating current phenomena and of electric measurements. It provides training in subjects fundamental to the general practice of the engineering profession, in the theory of electricity and in the applications of the theory to practical problems in many branches of applied engineering.

The rapidly increasing number of electrical plants and circuits for power transmission, lighting, transportation, telephoning, and telegraphing demands men who are prepared to design, construct and operate them. The studies in the course outlined have been carefully selected with this demand in view.

At some time during the course students are given an opportunity to make a tour of inspection of some of the larger plants of the State.

A branch of the American Institute of Electrical Engineering has been organized among the students and affords the means of keeping students in touch with the latest development in the electrical field.

TWO-YEAR COURSE FOR ELECTRICIANS.

The course for electricians is as complete in both theoretical and practical training as is possible in two years. It is intended to be a thoroughly practical course, giving a familiarity with modern electric machines and their underlying principles.

The course gives ample preparation for many positions in the electrical industry, and has for its object the training of young men for positions in power, lighting and railway plants and telephone service and in other industries using electricity and electrical machines.

V.—COURSE IN ELECTRICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2	3	Drawing 2	3
Descriptive Geometry.		Descriptive Geometry.	
English 1	3	English 1	3
Rhetoric and Composition.		Rhetoric and Composition.	
Mathematics 1	3	Mathematics 2	3
Solid Geometry.		Algebra.	
Mathematics 2	3	Mathematics 3	3
Algebra.		Trigonometry.	
Mechanical Engineering 1	2	Mechanical Engineering 1	2
Elementary Mechanics.		Elementary Mechanics.	
Mechanical Engineering 2	1	Mechanical Engineering 2	1
Shop Lectures.		Shop Lectures.	
Physics 3	2	Physics 3	2
Elementary.		Elementary.	
	<hr/> 17		<hr/> 17
<i>Drawing 1</i>	<i>2</i>	<i>Drawing 1</i>	<i>2</i>
<i>Drawing 3</i>	<i>2</i>	<i>Drawing 32</i>	<i>2</i>
<i>Mechanical Eng. 13 or 14</i>	<i>6</i>	<i>Mechanical Eng. 14 or 13</i>	<i>6</i>
<i>Physics 3</i>	<i>2</i>	<i>Physics 3</i>	<i>2</i>
	<hr/> 12		<hr/> 12

SOPHOMORE YEAR.

Electrical Engineering 1	6	Electrical Engineering 2	2
Electricity and Magnetism.		Electrical Measurements.	
English 2	2	English 2	2
Literature.		Literature.	
English 3	1	English 3	1
Composition.		Composition.	
Mathematics 4	6	Mathematics 5	6
Analytics.		Calculus.	
Military Science 1	2	Physics 7	2
Drill Regulations.		Heat.	
Language	3	Physics 8	2
or History 2	2	Mechanics.	
English.		Language	3
		or History 2	2
		English.	
	<hr/> 19 or 20		<hr/> 17 or 18
<i>Drawing 6</i>	<i>2</i>	<i>Electrical Engineering 2</i>	<i>4</i>
<i>Drawing 33</i>	<i>2</i>	<i>Drawing 6</i>	<i>4</i>
<i>Electrical Engineering 1</i>	<i>4</i>	<i>Physics 9</i>	<i>2</i>
		<i>Mechanical Engineering 15a</i>	<i>2</i>
	<hr/> 8		<hr/> 12

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours. per week.
Chemistry 1a.....	3	Chemistry 1a.....	3
Inorganic.		Inorganic.	
Civil Engineering 6.....	4	Civil Engineering 3.....	2
Mechanics of Materials.		Surveying and Leveling.	
Electrical Engineering 3.....	3	Electrical Engineering 3.....	2
Direct Currents.		Direct Currents.	
Mathematics 6.....	2	Electrical Engineering 4.....	1
Practical.		Electric Lighting.	
Mechanical Engineering 3.....	3	Electrical Engineering 12.....	2
Elementary Steam Engineering.		Telephone Engineering.	
Language.....	3	Electrical Engineering 13.....	2
or English 5.....	1	El. Al. Currents.	
Argumentation.		Mechanical Engineering 4.....	3
and Civil Engineering 7.....	2	Kinematics.	
Hydraulics.		Language.....	3
		or English 5.....	1
		Argumentation.	
		and Civil Engineering 7... 2	
		Hydraulics.	
	18		18
<i>Chemistry 1a.....</i>	<i>2</i>	<i>Chemistry 1a.....</i>	<i>2</i>
<i>Civil Engineering 6.....</i>	<i>2</i>	<i>Electrical Engineering 3.....</i>	<i>4</i>
<i>Electrical Engineering 3.....</i>	<i>4</i>	<i>Electrical Engineering 12.....</i>	<i>2</i>
<i>Mechanical Engineering 19a.....</i>	<i>2</i>	<i>Civil Engineering 3.....</i>	<i>2</i>
	10		10

SENIOR YEAR.

Electrical Engineering 8.....	3	Electrical Engineering 8.....	3
Alternating Currents.		Alternating Currents.	
Electrical Engineering 9.....	3	Electrical Engineering 9.....	3
Electrical Machine Design.		Electrical Machine Design.	
Electrical Engineering 10.....	2	Electrical Engineering 10.....	2
Electric Railways.		Electric Railways.	
Civil Engineering 16.....	2	Electrical Engineering 11.....	2
Contracts and Specifications.		Electric Power Distribution.	
Economics 4.....	3	Economics 4.....	3
Economic Organization.		Economic Organization.	
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
Mechanical Engineering 5a.....	2	Mechanical Engineering 5a.....	2
Steam Engines and Boilers.		Steam Engines and Boilers.	
	16	Military Science 2.....	1
			17
<i>Electrical Engineering 8.....</i>	<i>4</i>	<i>Electrical Engineering 8.....</i>	<i>4</i>
<i>Electrical Engineering 9.....</i>	<i>4</i>	<i>Electrical Engineering 9.....</i>	<i>4</i>
<i>Mechanical Engineering 22a.....</i>	<i>2</i>	<i>Mechanical Engineering 22a.....</i>	<i>2</i>
	10		10

TWO-YEAR COURSE FOR ELECTRICIANS.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year Course for Electricians the candidate must be at least sixteen years of age and be able to pass entrance examinations in English Grammar and Composition and in Algebra to simultaneous equations of the first degree, or must present a satisfactory certificate of proficiency in these subjects.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9	3	English 9	3
Grammar and Composition.		Grammar and Composition.	
Electrical Engineering 41	3	Electrical Engineering 42	3
Electricity and Magnetism.		Direct Currents.	
Mathematics 13	4	Chemistry 21	3
Elementary Mathematics.		Practical.	
Mechanical Engineering 1	2	Mathematics 13	3
Elementary Mechanics.		Elementary Mathematics.	
	—	Mechanical Engineering 1	2
	12	Elementary Mechanics.	—
			14
<i>Drawing 1</i>	<i>2</i>	<i>Chemistry 21</i>	<i>2</i>
<i>Drawing 3</i>	<i>2</i>	<i>Drawing 1</i>	<i>4</i>
<i>Electrical Engineering 41</i>	<i>4</i>	<i>Electrical Engineering 42</i>	<i>4</i>
<i>Mechanical Engineering 13a</i>	<i>4</i>	<i>Mechanical Engineering 219</i>	<i>6</i>
<i>Mechanical Engineering 14a</i>	<i>4</i>		—
<i>Mechanical Engineering 217</i>	<i>4</i>		16
	—		
	20		

SECOND YEAR.

English 10	3	Electrical Engineering 45	2
Rhetoric.		Meters.	
Electrical Engineering 43	3	Electrical Engineering 46	5
Alternating Currents.		Electrical Machinery.	
Electrical Engineering 44	4	Electrical Engineering 47	1
Wiring and Illumination.		Spec. and Report Writing.	
Mechanical Engineering 205	4	Mechanical Engineering 205	4
Engines, Valves and Indicators.		Boilers and Power Plants.	
or Electrical Engineering 48	4	or Electrical Engineering 48	4
Telephone Engineering.		Telephone Engineering.	
	—		—
	14		12
<i>Drawing 25</i>	<i>4</i>	<i>Drawing 25</i>	<i>4</i>
<i>Electrical Engineering 49</i>	<i>8</i>	<i>Electrical Engineering 49</i>	<i>8</i>
<i>Mechanical Engineering 222a</i>	<i>3</i>	<i>Electrical Engineering 50</i>	<i>3</i>
	—	<i>Mechanical Engineering 222a</i>	<i>3</i>
	15	<i>Mechanical Engineering 223a</i>	<i>2</i>
			—
			20

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSOR LEAR,* ASSISTANT PROFESSOR WOOTEN, MR. NASH.

Instruction in Electrical Engineering is given by recitation, lecture, experiment, lantern illustrations, laboratory exercises, and individual conference. In most courses, some modern text-book is taken as a basis for study and the work broadened and explained by lectures and problems.

The laboratory practice is designed more firmly to impress the principles taught in class room, to familiarize the student with the practical operation of electrical apparatus, and to teach him to investigate for himself the characteristics of various types of machines. Reports are required on all experiments performed and the student learns to express thoughts concisely.

The courses are as follows:

- 1. Electricity and Magnetism. Sophomore. First term, 6 hours a week; with practice.**

Lectures, recitations and problems in electricity and magnetism.

Prerequisite, *Physics 3*.

Practice, 4 hours a week.

This includes a laboratory investigation of the phenomena studied in the text-book.

(Required in Course V.)

- 2. Electrical Measurements. Sophomore. Second term, 2 hours a week; with practice.**

Lectures and recitations on the theory, standardization and use of electrical measuring instruments, including galvanometers, bridges, voltmeters, ammeters, condensers, wattmeters, and recording instruments.

Prerequisite, *Electrical Engineering 1, Mathematics 2, 3*. Must be accompanied by *Mathematics 5*.

Practice, 4 hours a week.

This practice is intended to clarify the ideas received by the student in the class room. It includes the accurate measurements of various electrical quantities, such as resistance, inductance, capacity, and the effect of temperature, position, etc., on these quantities; a study of the various types of batteries to determine their adaptability to different uses; calibration and repair of instruments, such as ammeters, voltmeters, and wattmeters.

(Required in Course V.)

- 3. Direct Currents. Junior. First term, 3 hours, second term, 2 hours a week; with practice.**

This course is devoted to the study of the theory and applications of direct currents and direct current machinery. Attention is given to modern machinery and its application. A short time is devoted to the study of the National Electric Code and modern methods of wiring.

*Absent on leave.

Text: Elements of Electrical Engineering, volume I, *Franklin and Esty*.

Practice, 4 hours a week.

The practice is intended to give practical demonstration of the theory. It includes the operation of dynamos and motors, the determination of characteristics and the measurements and calculation of losses, efficiencies, and regulation. A practical study is also made of the various types of modern illuminants to determine reliability, efficiency, adaptability to various uses, etc.

Prerequisite, *Electrical Engineering 2*, *Mathematics 5*.
(Required in Course V.)

4. Electric Lighting. Junior. Second term, 1 hour a week.

Lectures and recitations on electric lighting units and illumination.

Prerequisite, *Electrical Engineering 1*.
(Required in Course V.)

5. Electrical Machinery. Junior. Second term, 4 hours a week; with practice.

Lectures and recitations on the operation and characteristics of dynamos, motors, transformers and other electrical appliances of the types most commonly met with in general engineering practice. This course is intended to give only a general idea of the subject. The course is intensely practical, only the more fundamental principles being studied in detail.

Practice, 3 hours a week.

The practice is designed to give the general engineering student some degree of familiarity with the operation and the more important characteristics of both direct current and alternating current machines.

Prerequisite, *Physics 4*, *Mathematics 4*.
(Required in Courses III, IV, VI, VIII.)

6. Lighting and Wiring. Junior. Second term, 1 hour a week.

Lectures and recitations on wiring for electric lighting. This includes a study of the National Electric Code of wiring with illustrations of how its requirements are carried out in practice. It is given to enable the architectural students to design and supervise wiring installations.

Prerequisite, *Physics 4*.

(Required in Course IX, and Senior year Course VII.)

8. Alternating Currents. Senior. First and second terms, 3 hours a week; with practice.

This course embraces a study of alternating currents and alternating current machinery, including methods of generation, transformation and use; a study of wave shapes and quantities affecting wave shapes; and the effect of balanced and unbalanced loads.

The subject is treated from both the graphical and the mathematical viewpoint, the text being supplemented by lectures and problems.

Text: Alternating Currents and Alternating Current Machinery, Jackson.

Practice, 4 hours a week.

The practical operation and determination of the characteristics of various types of alternating current machines.

Prerequisite, *Electrical Engineering 3, 13.*

(Required in Course V.)

9. Electrical Machine Design. Senior. First and second terms, 3 hours a week; with practice.

Lectures and recitations on the design of electrical instruments and machines.

Practice, 4 hours a week.

Practice in the design of lifting magnets, clutches, relays, dynamos and motors. Working drawings of some of the machines are required. Some time is devoted to the design of an electric power plant and distribution system. This includes bills of material, estimate of costs, etc.

Prerequisite, *Electrical Engineering 3*; to be accompanied or preceded by *Electrical Engineering 8.*

(Required in Course V.)

10. Electrical Railways. Senior. First and second terms, 2 hours a week.

This course embraces a study of railway apparatus, costs of construction and operation of electric railway systems, and operation methods. Students are required to make an engineering report on a small railway system, estimating cost of construction and operation and probable returns on investment.

Prerequisite, *Electrical Engineering 3.*

(Required in Course V.)

11. Electric Power Distribution. Senior. Second term, 2 hours a week.

Lectures and recitation on the transmission and distribution of power by electrical methods. Many subjects not treated in the text-books are studied and the student is encouraged to investigate all available sources for information.

This course must be accompanied or preceded by *Electrical Engineering 3* and *8.*

(Required in Course V.)

12. Telephone Engineering. Junior. Second term, 2 hours a week; with practice.

Lectures and recitations on telephone systems; their design, installation and management. This course includes a discussion of the relative advantages of the different types of telephones, and the faults and peculiarities met in each system.

Practice, 2 hours a week.

Practice in tracing of circuits, connection of instruments, measurement of constants, and location and remedy of faults and trouble in magneto, central energy and automatic telephone sets and systems.

Prerequisite, *Electrical Engineering 2*; to be preceded or accompanied by *Electrical Engineering 3, 13*.
(Required in Course V.)

13. Elementary Alternating Currents. Junior. Second term, 2 hours a week.

Lectures and recitations on the fundamental principles of alternating currents.

Prerequisites, *Electrical Engineering 2, Mathematics 5*.
(Required in Course V.)

FIFTH YEAR.

31. Advanced Alternating Currents. Fifth Year. First and second terms, 3 hours a week.

A study of alternating currents, including non-harmonic currents, transient currents, and allied phenomena.

(Required in Course V.)

32. Electric Machine Design. Fifth Year. First term, 3 hours a week.

This course consists of the design of some of the more complicated electric machines.

(Required in Course V.)

33. General Electrical Engineering. Fifth Year. First and second terms, 3 hours a week.

The instruction in this course will conform to the needs of the students taking the course.

(Required in Course V.)

34. Power Plant Design. Fifth Year. Second term, 3 hours a week.

A course of lectures dealing with the design and operating characteristics of modern electric power plants and their distributing systems.

35. Electrical Laboratory. Fifth Year. First and second terms, 8 hours a week. Practice.

The division of time in this course is intended to be somewhat flexible so that it may be made to fit the needs of the student taking the work. It will include laboratory investigations of various electric phenomena, such as those resulting from non-harmonic voltages, transient currents, etc. Much of this work will be done with the oscillograph.

This course will also include practice in the design of electric machines and of power plants.

TWO-YEAR COURSE FOR ELECTRICIANS.

First Year.

41. Electricity and Magnetism. First term, 3 hours a week; with practice.

A modification of course 1.

Practice, 4 hours a week.

Laboratory verification of the laws studied in the theory. The course

also includes the use of instruments for the measurement of voltage, current, resistance, etc.

42. Direct Currents. Second term, 3 hours a week; with practice.

A modification of course 3.

Practice, 4 hours a week.

Second Year.

43. Alternating Currents. First term, 3 hours a week.

A study of alternating currents with particular emphasis laid on the practical application of the subject matter. As far as possible, the subject will be treated from the graphical viewpoint.

44. Wiring and Illumination. First term, 4 hours a week.

A study of rules and methods for exterior and interior wiring, including calculations for material to be used and estimates of costs.

The course also includes lectures and recitations on lighting and illumination with special emphasis on electric lighting. The practice for this course is included in course 49.

45. Meters. Second term, 2 hours a week.

A course covering the principles of operation, material of construction and methods of repair, test and calibration of electrical meters. This includes switchboard meters and watt-hour meters of various types.

Practice in the repair, calibration and test of meters is included in course 49.

46. Electrical Machinery. Second term, 5 hours a week.

A course covering the principles involved in the design and operation of electrical machinery. The course deals with transformers and both direct and alternating current motors and generators and the applications of each type of machine.

47. Specifications and Report Writing. Second term, 1 hour a week.

Lectures and recitations on forms of specifications and reports which are ordinarily used in electrical work. The student is required to present specifications covering various appliances and to make written reports so that he may learn to write a clear, concise technical report.

48. Telephone Engineering. First and second terms, 4 hours a week.

A course of lectures and recitations dealing with telephones and telephone systems. The course includes a study of the parts of telephones and switchboards, and of their combinations into complete systems; a study of combined telephone and telegraph systems; and a study of the methods of testing telephone lines and cables. The course also includes the design of a telephone system. *Optional.*

49. Electrical Laboratory. First and second terms, 8 hours a week. Practice.

Instruction and practice in testing electrical machines including generators, motors, transformers, meters, lamps, etc. The course will also

include practice in laying out circuits and installing electric wires. This practice is intended to strengthen the theoretical courses and at the same time give the student a thoroughly practical knowledge of electrical appliances and methods.

This course will include practical experience in operating the electric machinery found in power plants.

50. Electrical Construction. Second term, 3 hours a week. Practice.

Instruction and practice in the construction and repair of electrical machines. This course is intended to familiarize the student with the interior construction of electric machines and to give him sufficient knowledge of materials and methods to enable him to make repairs in these machines.

51. Applied Electricity. First and second terms, 4 hours a week; with practice.

A course of instruction covering magnetism and electricity, magnetic circuits, direct and alternating currents, and direct and alternating current machines and their applications. The subject is treated from a practical standpoint.

Practice, 4 hours a week.

Electrical measurements and the experimental study of the construction and operating characteristics of electrical machinery.

(Required in Course for Power Plant Operators, Second Year.)

EQUIPMENT.

This department is well equipped with apparatus for lecture table experiments. There is a fine projection lantern for general projections of slides and a good supply of slides.

In the laboratory there is sufficient apparatus to enable the students in Electrical Engineering to become familiar with all the operations that will be required of them in the practice of their profession.

The electrical laboratory is equipped with direct and alternating current dynamos and motors, transformers, a station photometer, an illumination photometer, an oscillograph, transmission dynamometers, storage batteries, samples of the various modern electric illuminants, dark rooms, and a full line of measuring instruments, rheostats, resistances, etc.

Through the generosity of the Otis Elevator Company a complete motor driven elevator winding-engine equipment of the most modern type, complete with all automatic switches, regulators, controllers, etc., has recently been donated and has been installed in the laboratory for test and demonstration purposes.

The laboratory is also equipped with a number of frames of dynamos and motors and cores of transformers that are used by the students in learning to wind and repair these machines.

The telephone laboratory is equipped with numerous telephones and telephone parts, a manual switchboard for both central energy and magneto operation, a Strowger automatic switchboard with complete equipment for operation, and storage batteries, condensers, etc., for use with the various systems. The Bryan Telephone Company operates a

complete telephone switchboard, which is used to give local and long distance telephone service from various stations on the campus. This exchange is available to the students in Electrical Engineering for test.

The equipment for the students in Electrical Engineering is augmented by the facts that the direct connected generators in the powerhouse, their exciters and measuring instruments, and the motors used to operate the Textile School laboratories are available for tests as practical operating plants after the students have performed the required experiments on the machines located in the laboratory.

Students are encouraged to read books relating to their work, and for this purpose the department library is available. The technical books in the general library are also available. A reading table is maintained on which are kept copies of a number of technical magazines.

By means of liberal donations from manufacturers of electrical supplies and apparatus an exhibit room is maintained wherein are shown samples of a great variety of electrical supplies.

The department possesses a complete wireless telegraph station of sufficient capacity to reach a number of commercial plants in the State. This equipment is available for study both from an engineering and an operating standpoint.

COURSES IN MECHANICAL ENGINEERING.**FOUR-YEAR COURSE.**

The course in Mechanical Engineering is designed with a view of giving the student such training as will fit him to design, construct, and erect machinery, power plant equipment, etc., and to manage or to operate the same with the greatest economy of labor and materials.

It is not possible to give the student that skill in the shops and that experience in the laboratories which come with long service in practical work, but the aim is to give him the power to understand and apply the underlying principles which are involved in all problems met with in practical engineering.

When it is remembered that there is a steam power plant or other mechanical equipment connected with practically every industrial enterprise it is apparent that the graduates from the course in Mechanical Engineering should find a large field for their activities in the industrial development of the State. The training at College followed by a few years contact with the practical work should fit one to take charge of the operation or of the management of almost any industrial enterprise whether strictly mechanical engineering or involving other activities as well.

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

In the Two-Year Course for Power Plant Operators, the Mechanical Engineering Department offers a short course for those men who are unable to take a full four-year course. Wherever it is possible for him to do so the student is urged to take the regular four-year course. This two-year course is particularly intended for the man who has been at work in a power house and who finds that he is handicapped by a lack of theoretical preparation or education, and who finds himself thus prevented from making reasonable advancement. It is assumed that he will enter upon this course with a very well defined idea of what he needs and with a determination to make the most of his opportunities. While the entrance requirements are made so low as to enable any deserving applicant to enter, any additional preparation or training he may possess will make it possible for him to better take advantage of the opportunities here given him.

The student completing this course should find ready employment in subordinate positions at the numerous power plants of the State and should rapidly develop to the more responsible operating positions.

III.—COURSE IN MECHANICAL ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2.	3	Drawing 2.	3
Descriptive Geometry.		Descriptive Geometry.	
English 1.	3	English 1.	3
Rhetoric and Composition.		Rhetoric and Composition.	
Mathematics 1.	3	Mathematics 2.	3
Solid Geometry.		Algebra.	
Mathematics 2.	3	Mathematics 3.	3
Algebra.		Trigonometry.	
Mechanical Engineering 1.	2	Mechanical Engineering 1.	2
Elementary Mechanics.		Elementary Mechanics.	
Mechanical Engineering 2.	1	Mechanical Engineering 2.	1
Shop Lectures.		Shop Lectures.	
Physics 3.	2	Physics 3.	2
Elementary.		Elementary.	
	<hr/> 17		<hr/> 17
<i>Drawing 1.</i>	<i>2</i>	<i>Drawing 1.</i>	<i>2</i>
<i>Drawing 3.</i>	<i>2</i>	<i>Drawing 32.</i>	<i>2</i>
<i>Mechanical Eng. 13 or 14.</i>	<i>6</i>	<i>Mechanical Eng. 14 or 13.</i>	<i>6</i>
<i>Physics 3.</i>	<i>2</i>	<i>Physics 3.</i>	<i>2</i>
	<hr/> 12		<hr/> 12

SOPHOMORE YEAR.

English 2.	2	English 2.	2
Literature.		Literature.	
English 3.	1	English 3.	1
Composition.		Composition.	
Mathematics 4.	6	Mathematics 5.	6
Analytics.		Calculus.	
Mechanical Engineering 3.	3	Mechanical Engineering 4.	3
Elementary Steam Engineering.		Kinematics.	
Military Science 1.	2	Physics 4.	3
Drill Regulations.		General.	
Physics 4.	3	Language.	3
General.		or History 2.	2
Language.	3	English.	
or History 2.	2		
English.			
	<hr/> 19 or 20		<hr/> 17 or 18
<i>Drawing 6.</i>	<i>2</i>	<i>Drawing 6.</i>	<i>4</i>
<i>Drawing 33.</i>	<i>2</i>	<i>Mechanical Engineering 16.</i>	<i>2</i>
<i>Mechanical Engineering 15.</i>	<i>4</i>	<i>Mechanical Engineering 17.</i>	<i>4</i>
<i>Physics 4.</i>	<i>2</i>	<i>Physics 4.</i>	<i>2</i>
	<hr/> 10		<hr/> 12

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 1a.....	3	Chemistry 1a.....	3
Inorganic.		Inorganic.	
Civil Engineering 6.....	4	Civil Engineering 12.....	2
Mechanics of Materials.		Stresses.	
Mathematics 6.....	2	Electrical Engineering 5.....	4
Practical.		Electrical Machinery.	
Mechanical Engineering 5.....	3	Mechanical Engineering 5.....	3
Steam Engines and Boilers.		Steam Engines and Boilers.	
Mechanical Engineering 6.....	2	Mechanical Engineering 6.....	2
Engineering Mechanics.		Engineering Mechanics.	
Language.....	3	Language.....	3
or English 5.....	1	or English 5.....	1
Argumentation.		Argumentation.	
and Mechanical Engineering 10.	2	and Mechanical Engineering 11	2
Graphic Statics of Machinery.		Pumping Machinery.	
	—		—
	17		17
<i>Chemistry 1a.....</i>	2	<i>Chemistry 1a.....</i>	2
<i>Civil Engineering 6.....</i>	2	<i>Mechanical Engineering 18.....</i>	3
<i>Mechanical Engineering 18.....</i>	3	<i>Mechanical Engineering 19.....</i>	4
<i>Mechanical Engineering 19.....</i>	4	<i>Electrical Engineering 5.....</i>	3
	—	<i>Civil Engineering 12.....</i>	2
	11		—
	11		14

SENIOR YEAR.

Chemical Engineering 1.....	3	Chemical Engineering 3.....	3
Industrial Chemistry.		Metallurgy.	
Economics 4.....	3	Economics 4.....	3
Economic Organization.		Economic Organization.	
English 6.....	1	English 6.....	1
Public Speaking.		Public Speaking.	
Mechanical Engineering 7.....	4	Mechanical Engineering 8.....	3
Thermodynamics.		Eng. Design.	
Mechanical Engineering 8.....	3	Mechanical Engineering 9.....	2
Eng. Design.		Gas Engines.	
Civil Engineering 7.....	2	Mechanical Engineering 7.....	2
Hydraulics.		Thermodynamics.	
	—	Civil Engineering 7.....	2
	16	Hydraulics.	
	16	Military Science 2.....	1
<i>Mechanical Engineering 20.....</i>	2		—
<i>Mechanical Engineering 21.....</i>	4		17
<i>Mechanical Engineering 22.....</i>	4	<i>Mechanical Engineering 21.....</i>	4
	—	<i>Mechanical Engineering 22.....</i>	6
	10	<i>Civil Engineering 7.....</i>	2
	10		—
	10		12

TWO-YEAR COURSE FOR POWER PLANT OPERATORS.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year course for Power Plant Operators, the candidate must be at least sixteen years of age, and must be able to pass entrance examinations in English grammar and composition and in algebra to simultaneous equations of the first degree, or must present satisfactory certificate of proficiency in these subjects.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9	3	Chemistry 21	3
Grammar and Composition.		Practical.	
Mathematics 13	4	English 9	3
Elementary Mathematics.		Grammar and Composition.	
Mechanical Engineering 1	2	Mathematics 13	3
Elementary Mechanics.		Elementary Mathematics.	
Mechanical Engineering 205	4	Mechanical Engineering 1	2
Engines, Valves and Indicators.		Elementary Mechanics.	
		Mechanical Engineering 205	4
		Boilers and Power Plants.	
	—		—
	13		15
<i>Drawing 1</i>	<i>2</i>	<i>Chemistry 21</i>	<i>2</i>
<i>Drawing 3</i>	<i>2</i>	<i>Drawing 1</i>	<i>4</i>
<i>Mechanical Engineering 13a</i>	<i>4</i>	<i>Mechanical Engineering 219</i>	<i>6</i>
<i>Mechanical Engineering 14a</i>	<i>4</i>	<i>Mechanical Engineering 222</i>	<i>3</i>
<i>Mechanical Engineering 217</i>	<i>4</i>		
	—		—
	16		15

SECOND YEAR.

Electrical Engineering 51	4	Electrical Engineering 51	4
Applied Electricity.		Applied Electricity.	
Mechanical Engineering 200	2	Mechanical Engineering 200	2
Technical Literature.		Technical Literature.	
Mechanical Engineering 208	3	Mechanical Engineering 211	3
General Mech. Engineering.		Pumping Machinery.	
Mechanical Engineering 209	3	Mechanical Engineering 212	2
Internal Combustion Engines.		Refrigeration.	
Mechanical Engineering 218	3	Mechanical Engineering 218	3
Machine Design.		Machine Design.	
	—		—
	15		14
<i>Electrical Engineering 51</i>	<i>4</i>	<i>Electrical Engineering 51</i>	<i>4</i>
<i>Mechanical Engineering 218</i>	<i>3</i>	<i>Mechanical Engineering 218</i>	<i>3</i>
<i>Mechanical Engineering 219</i>	<i>4</i>	<i>Mechanical Engineering 220</i>	<i>3</i>
<i>Mechanical Engineering 222</i>	<i>3</i>	<i>Mechanical Engineering 223</i>	<i>4</i>
		<i>Mechanical Engineering 224</i>	<i>3</i>
	—		—
	14		17

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, PROFESSOR H. E. SMITH, MR. HERRINGTON, MR. CHAPPELLE, MR. BECHERT, *MR. L. B. McMILLAN, MR. C. E. HANSON, MR. G. W. HANSON.

The work of this department is carried on in both class room and shop or laboratory, the two lines of work being designed to emphasize and reinforce each other.

In the shop practice the student works with woods and various kinds of metals; getting experience in the handling of tools and materials and acquiring a knowledge of the properties of materials by personal contact. Although he acquires a certain skill in the handling of tools, etc., yet the main result sought is not the training as a mechanic. Instead, it is expected that he will chiefly get the clear and definite ideas of the behavior of materials under the various technological processes which can be acquired only by personal contact and experience.

The class room work is taught by text-books, lecture and many numerical examples. The student is expected to understand the underlying principles and show their application in the solution and discussion of engineering problems of various sorts.

In the design rooms the instruction is given by lecture and reference books, together with practice, using the methods of drafting rooms of manufacturing concerns.

In the latter part of his course the student is expected to examine, operate, test and report on the various pieces of apparatus and equipment in the laboratory, shops and powerhouse.

The courses are as follows:

1. Elementary Mechanics. Freshman. First and second terms, 2 hours a week.

The work of this course consists of lectures, quizzes, and problems involving those principles of mechanics which are more commonly used in all branches of engineering.

No text-book is required, but each student is required to keep a note-book to contain the lectures and problems.

The second term's work must be preceded or accompanied by Mathematics 3.

(Required in all Engineering Courses.)

2. Shop Lectures. Freshman. First and second terms, 1 hour a week.

This course consists of lectures and quizzes (1) on hand and power tools and machines for working wood and metals, their construction, care and operation; (2) on the technological properties of materials of shop manufacture; and (3) on processes of manufacture.

No text-book is required, but a note-book is required for the lectures.

(Required in Courses III, IV, V, VI and VIII.)

*Absent on leave.

3. Elementary Steam Engineering. Sophomore. First term, 3 hours a week.

This course aims to give the student such a knowledge of steam power plant equipment as will enable him to understand the operation of the same, and serve as a foundation for subsequent study and calculation along these lines. Valve gears, valve diagrams, and indicator practice are also included.

Text: *Elementary Steam Engineering, Spangler.*

Prerequisite, *Mathematics 3, Physics 3, Mechanical Engineering 1.*
(Required in Courses III and VI, also in the Junior year of Courses IV, V and VIII; also in the Junior and Senior year of Course VII.)

4. Kinematics. Sophomore. Second term, 3 hours a week:

Without taking account of the strength of the structure, this course takes up the study of velocity ratios, comparative forces, etc., in machines and their elemental parts.

Text: *Machine Design, Part I, Jones.*

Prerequisite, *Mathematics 2.*

(Required in Courses III, VI and the Junior year of Course V. Also optional in the Junior year of Course VIII.)

5. Steam Engines and Boilers. Junior. First and second terms, 3 hours a week.

A study of the generation of steam; the construction, operation, care, design and testing of boilers of various types, together with the design of chimneys and other means of producing draft; followed by a study of the elementary thermodynamics of the heat engine; also the mechanics, construction, design and operation of the steam engine. Valve gears, indicators, governors, etc., are also studied.

Texts: *Steam Boilers, Parsons; Steam Engines, Creighton.*

Prerequisite, *Mathematics 5, Mechanical Engineering 3, Physics 4;* must be preceded or accompanied by *Chemistry 1.*

(Required in Course III, and in the Senior year of Course VIII.)

5a. Steam Engines and Boilers. Senior. First and second terms, 2 hours a week.

A briefer course than course 5, of which it is a modification.

(Required in Course V, optional in the Junior year of Course VI; also optional in the first term only of the Senior year of Course VII.)

6. Engineering Mechanics. Junior. First and second terms, 2 hours a week.

A study of pure mechanics as the foundation principles involved in the analytical solution of problems concerning the statics and dynamics of a material point and of a rigid body; with numerous numerical examples from practical engineering questions.

Prerequisite, *Mathematics 5;* must be preceded or accompanied by *Civil Engineering 6.*

(Required in Course III, and in the Senior year of Course VIII.)

7. Thermodynamics. Senior. First term, 4 hours a week, second term 2 hours a week.

This embraces a study of the effects of heat upon gases and the application of thermodynamic laws, and principles to the steam engine, gas engine, hot air engine, injectors, calorimeters, etc., together with a study of heat efficiencies of these machines and instruments.

Text: Applied Thermodynamics for Engineers, *Ennis*.

Prerequisite, *Mechanical Engineering 5*.

(Required in Course III.)

8. Engineering Design. Senior. First and second terms, 3 hours a week.

A study of the design of engines, pumping machinery, etc., from the standpoint of their strength, speed regulation, construction, and economical performance; also a study of the design of power plants, as to capacities and arrangements.

Prerequisite, *Mechanical Engineering 6, 7*; must be accompanied by *Mechanical Engineering 21*.

(Required in Course III.)

9. Gas Engines. Senior. Second term, 2 hours a week.

The application of the principles of thermodynamics to the design of gas engines. Also the study of the different cycles, methods of governing, and some details of construction of various types of gas engines and other internal combustion motors.

Text: The Gas Engine, *Jones*.

Prerequisite, *Mechanical Engineering 7*.

(Required in Course III.)

10. Graphic Statics of Machinery. Junior. First term, 2 hours a week.

A study of graphical methods of solving problems of the forces in machines in operation, including applied forces, friction forces, and transmitted forces as well as reactions.

(Optional in Course III.)

11. Pumping Machinery. Junior. Second term, 2 hours a week.

A study of different methods and machines used in pumping water.

(Optional in Course III.)

PRACTICE COURSES.

Note.—The mere completing of a certain set of exercises will not suffice in the shop practice courses. The student to receive credit for any course in shop practice will be expected also to be regular in attendance and to do creditable work.

13. Carpentry. Freshman. One term, 6 hours a week.

Shop practice in the use of common bench tools and power machinery for working in wood.

(Required in all four-year engineering courses except VII, IX.)

13a. Carpentry. Freshman. First term, 4 hours a week.

A modification of course 13.

(Required in Courses I, VII and in the first year of the two-year course in Textile Engineering.)

14. Forging. Freshman. One term, 6 hours a week.

Shop practice in the use of blacksmith and general forge tools in the working of iron and steel. Also tempering, annealing, welding, case-hardening, etc.

(Required in all four-year engineering courses except VII, IX.)

Note.—Courses 13 and 14 together constitute a year's work, 6 hours a week. The Freshman students in Courses III, IV, V, VI and VIII, will be divided into two groups at the beginning of the first term; one group will begin with course 13, and the other with course 14. At the beginning of the second term the groups will each change to the other work.

14a. Forging. Second term, 4 hours a week.

A modification of course 14.

(Required in Course VII and in the first year of the two-year course in Textile Engineering.)

15. Wood Turning. Sophomore. First term, 4 hours a week.

Instruction and shop practice in the use of wood turning tools for center, chuck and face-plate work.

(Required in Course III, in the Junior year of Course VIII, and in the second year of the two-year course in Textile Engineering.)

15a. Wood Turning. Sophomore. First term, 2 hours a week.

A modification of course 15.

(Required in Courses V, VI.)

16. Kinematic Drawing. Sophomore. Second term, 2 hours a week.

Practice in the construction of kinematic diagrams.

Must be accompanied by *Mechanical Engineering 4*.

(Required in Course III.)

17. Pattern Making and Foundry Work. Sophomore. Second term, 4 hours a week.

Shop practice in pattern making, molding, and casting in iron, brass, etc.

(Required in Course III.)

18. Machine Design. Junior. First and second terms, 3 hours a week.

This course consists of practice in the design of machine elements, and their proper representation by finished shop drawings.

Text: No text will be required, but each student is urged to secure a Kent's or a Suplee's hand-book.

(Required in Course III.)

19. Machine Shop Practice. Junior. First and second terms, 4 hours a week.

Practice in bench and machine-tool work in metals. This includes chipping, scraping, filing, babbiting, drilling, turning, boring, grinding, milling machine work, etc.

(Required in Course III.)

19a. Machine Shop Practice. Junior. First term, 2 hours a week.

A modification of course 19.

(Required in Course V.)

19b. Machine Shop Practice. Junior. One term, 4 hours a week.

A modification of course 19.

(Required in the first term of Course VI, and in the second term of the second year of the two-year course in Textile Engineering.)

20. Machine Shop Practice. Senior. First term, 2 hours a week.

A continuation of course 19.

(Required in Course III.)

21. Engineering Design. Senior. First and second terms, 4 hours a week.

Drawing room practice in the design of machines, and power plants.

Text: Hand-book, *Kent or Suplee*.

Must be accompanied by *Mechanical Engineering* 8.

(Required in Course III.)

22. Engineering Laboratory. Senior. First term, 4 hours; second term, 6 hours a week.

Instruction and practice in testing gauges, indicators, boilers, engines, etc., also a study of the actual mechanical operation of various machines.

In addition to the work with the apparatus, the student will be expected to make calculations and written reports on the investigations and the results obtained.

Text: Power Plant Testing, *Moyer*.

(Required in Course III.)

22a. Engineering Laboratory. Senior. First and second terms, 2 hours a week.

A modification of course 22.

(Required in Courses V and VIII, and in the first term only of Course IV.)

TWO-YEAR COURSES.

200. Technical Literature. First and second terms, 2 hours a week.

A study of magazines and papers covering the field of technical work, with special reference to current literature of Mechanical Engineering.

(Required in the second year of the Two-Year Course for Power Plant Operators.)

205. Steam Engines and Boilers. First and second terms, 4 hours a week.

A modification of course 5 specially planned for those taking the Two-Year Course for Power Plant Operators.

208. General Mechanical Engineering. First term, 3 hours a week.

A study of steam power plant equipment, including steam turbines, compound engines, auxiliaries, etc., and the general planning and arrangement of power plant equipment.

(Required in the Two-Year Course for Power Plant Operators.)

209. Internal Combustion Engines. First term, 3 hours a week.

In this course the student will study gas producers, and the various internal combustion motors, with special reference to their efficient performance and their troubles.

(Required in the Two-Year Course for Power Plant Operators.)

211. Pumping Machinery. Second term, 3 hours a week.

A modification of course 11, specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.

212. Refrigeration. Second term, 2 hours a week.

A practical study of Refrigerating methods and machines.

(Required in the Two-Year Course for Power Plant Operators.)

218. Machine Design. First and second terms, 3 hours a week; with practice.

A study of the materials of machines, elements of strength of materials, elements of mechanism, principles of lubrication, commercial standards of machine supplies and parts. Also a study of the application of these to the design of machine elements and machines.

Practice, 3 hours a week.

Students will be given problems involving the principles taught in the class room, and will be required to make the calculations necessary for the design of machine elements or parts.

The student will also be given practice in the correct representation of the part designed by making commercial drawings of the parts and machines. So far as is practicable opportunity will also be given the student to make tracings and blue prints.

(Required in the Two-Year Course for Power Plant Operators.)

219. Machine Shop Practice. Second term, 6 hours a week, and first term of the next year, 4 hours a week.

A modification of course 19 specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.

220. Machine Shop Practice. Second term, 3 hours a week.

A continuation of course 219, including tool making and tool dressing.

(Required in the Two-Year Course for Power Plant Operators.)

222. Engineering Laboratory Practice. Second term, 3 hours a week and first term of the succeeding year, 3 hours a week.

A modification of course 22 specially planned for the Two-Year Course for Power Plant Operators, in which course it is required.

222a. Engineering Laboratory Practice. First term, 3 hours a week.

A modification of course 222.

(Required in the Two-Year Course for Electricians.)

223. Power Plant Practice. Second term, 4 hours a week.

In this course the student will be required to serve as helper in the College power plant at duties which will give him an experience with practical operation.

(Required in the Two-Year Course for Power Plant Operators.)

223a. Power Plant Practice. Second term, 2 hours a week.

A modification of course 223.

(Required in the Two-Year Course for Electricians.)

224. Engineering Laboratory Practice. Second term, 3 hours a week.

This course is a continuation of course 223.

(Required in the Two-Year Course for Power Plant Operators.)

EQUIPMENT.

In the carpenter shop are excellent double work benches, equipped with quick-acting vises, and the saws, planes, chisels, etc., ordinarily found in a carpenter's kit. Supplementing these are a number of special tools in the tool room.

The wood turning equipment consists of a number of smaller lathes for the ordinary work, and a large pattern maker's lathe which admits of wide application. Besides the lathes there are band, jig and circular saws, planer and jointer, power driven, and grindstones for the students' use.

The forge room equipment consists of twenty-eight forges, all having power blast and exhaust, and eighteen hand forges, the necessary anvils, tongs, and other small tools usually found in the forge equipment.

In the machine shop the equipment is now very satisfactory. It consists of a full line of lathes, grinders, milling machines, etc., so that the student has an opportunity to learn how to operate the ordinary shop tools and machines. The equipment has been recently increased by the addition of four most excellent lathes and one automatic multiple spindle machine. One of the lathes is a most approved type of motor driven, geared-head precision machine; and is typical of the best of its kind. The automatic machine is one of the most highly specialized machines for the rapid production of duplicate small parts, and shows the student how such parts can be most cheaply made when the number needed warrants the employment of such means. The tool room contains a large assortment of drills, reamers, chucks, and other machine accessories, as well as the small tools for laying out work and accurately and properly

measuring the same; calipers, micrometers, steel scales, punches, surface plates, etc.

The engineering laboratory contains steam engines, gasoline engines, steam turbines, steam and power pumps, fans, water motors, a hot-air engine, condensers, air pump, injectors and a full line of indicators, gauges, pyrometers, thermometers, tachometers, speed indicators, prony brakes, platform scales, etc., for conducting tests as outlined in course 22.

In addition, the laboratory has the use of all apparatus of the power plant, consisting of compound engines, Corliss and pumping engines of several different kinds; also the boilers of well-known makes and different types. The testing of these constitutes part of the course in Mechanical Engineering.

The new equipment of the steam plant adds larger engines, condensers, air compressor, air lift pump, etc.

For the class room instruction there are numerous full-size wooden models of different kinds of engines, also sections of actual air-brake equipment and other appliances and fittings for railway and power plant equipment.

Besides the above mentioned equipment might be mentioned the fact that manufacturers have in some instances deposited or donated for the use of the department a number of standard appliances, which prove valuable to the student.

COURSES IN TEXTILE ENGINEERING.

The object of these courses is to prepare young men for entering the field of textile manufacturing. The unprecedented development of the cotton milling industry in the South has brought about an era of prosperity and created a strong demand for educated young men in this industry. The State of Texas offers excellent advantages for the manufacture of cotton goods in its vast supply of raw material, intelligent labor, and excellent climatic conditions, and it is believed that cotton manufacturing will develop as rapidly as skilled and capable managers familiar with local conditions are to be had. The studies outlined have been selected with a view of giving theoretical and practical training in the manufacture of cotton goods as thorough as is possible with the time available.

VI.—COURSE IN TEXTILE ENGINEERING.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FRESHMAN YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Drawing 2	3	Drawing 2	3
Descriptive Geometry.		Descriptive Geometry.	
English 1	3	English 1	3
Rhetoric and Composition.		Rhetoric and Composition.	
Mathematics 1	3	Mathematics 2	3
Solid Geometry.		Algebra.	
Mathematics 2	3	Mathematics 3	3
Algebra.		Trigonometry.	
Mechanical Engineering 1	2	Mechanical Engineering 1	2
Elementary Mechanics.		Elementary Mechanics.	
Mechanical Engineering 2	1	Mechanical Engineering 2	1
Shop Lectures.		Shop Lectures.	
Physics 3	2	Physics 3	2
Elementary.		Elementary.	
	—		—
	17		17
<i>Drawing 1</i>	<i>2</i>	<i>Drawing 1</i>	<i>2</i>
<i>Drawing 3</i>	<i>2</i>	<i>Drawing 32</i>	<i>2</i>
<i>Mechanical Eng. 13 or 14</i>	<i>6</i>	<i>Mechanical Eng. 14 or 13</i>	<i>6</i>
<i>Physics 3</i>	<i>2</i>	<i>Physics 3</i>	<i>2</i>
	—		—
	12		12

SOPHOMORE YEAR.

Chemistry 1a	3	Chemistry 1a	3
Inorganic.		Inorganic.	
English 2	2	English 2	2
Literature.		Literature.	
English 3	1	English 3	1
Composition.		Composition.	
Mechanical Engineering 3	3	Mechanical Engineering 4	3
Elementary Steam Engineering.		Kinematics.	
Military Science 1	2	Physics 4	3
Drill Regulations.		General.	
Physics 4	3	Textile Engineering 1	3
General.		Designing.	
Textile Engineering 1	3	Language	3
Designing.		or History 2	2
Language	3	English.	
or History 2	2		
English.			
	—		—
	19 or 20		17 or 18
<i>Chemistry 1a</i>	<i>2</i>	<i>Chemistry 1a</i>	<i>2</i>
<i>Drawing 6</i>	<i>2</i>	<i>Drawing 6</i>	<i>4</i>
<i>Drawing 33</i>	<i>2</i>	<i>Textile Engineering 1</i>	<i>2</i>
<i>Mechanical Engineering 15a</i>	<i>2</i>	<i>Physics 4</i>	<i>2</i>
<i>Physics 4</i>	<i>2</i>		
	—		—
	10		10

JUNIOR YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemistry 4.....	2	Electrical Engineering 5.....	4
Organic.....		Electrical Machinery.....	
Textile Engineering 2a.....	6	Textile Engineering 5.....	1
Yarn Manufacturing.....		Cotton Classing.....	
Textile Engineering 3.....	3	Chemistry 4.....	2
Designing.....		Organic.....	
Textile Engineering 4.....	1	Textile Engineering 2a.....	3
Cotton Classing.....		Yarn Manufacturing.....	
Textile Engineering 6.....	2	Textile Engineering 3.....	3
Power Weaving.....		Designing.....	
Language.....	3	Textile Engineering 6.....	2
or English 5.....	1	Power Weaving.....	
Argumentation.....		Language.....	3
and Mechanical Eng. 5a....	2	or English 5.....	1
Steam Engines and Boilers.....		Argumentation.....	
	—	and Mechanical Eng. 5a....	2
	17	Steam Engines and Boilers.....	
			—
			18
<i>Chemistry 4.....</i>	<i>2</i>	<i>Chemistry 4.....</i>	<i>2</i>
<i>Mechanical Engineering 19b.....</i>	<i>4</i>	<i>Electrical Engineering 5.....</i>	<i>3</i>
<i>Textile Engineering 2a.....</i>	<i>2</i>	<i>Textile Engineering 2a.....</i>	<i>4</i>
<i>Textile Engineering 6.....</i>	<i>4</i>	<i>Textile Engineering 6.....</i>	<i>4</i>
	—		—
	12		13

SENIOR YEAR.

Economics 4.....	3	Economics 4.....	3
Economic Organization.....		Economic Organization.....	
English 6.....	1	English 6.....	1
Public Speaking.....		Public Speaking.....	
Textile Engineering 7.....	3	Textile Engineering 7.....	3
Yarn Manufacture.....		Yarn Manufacture.....	
Textile Engineering 8.....	4	Textile Engineering 8.....	4
Designing.....		Designing.....	
Textile Engineering 9.....	2	Textile Engineering 9.....	2
Power Weaving.....		Power Weaving.....	
Chemistry 12.....	2	Textile Engineering 10.....	2
Dyeing.....		Yarn Manufacture.....	
	—	Textile Engineering 11.....	2
	15	Mill Management.....	
		Military Science 2.....	1
			—
			18
<i>Chemistry 12.....</i>	<i>2</i>	<i>Textile Engineering 7.....</i>	<i>4</i>
<i>Textile Engineering 7.....</i>	<i>4</i>	<i>Textile Engineering 9.....</i>	<i>6</i>
<i>Textile Engineering 9.....</i>	<i>4</i>		—
	—		10

DEPARTMENT OF TEXTILE ENGINEERING.

PROFESSOR BAGLEY, ASSISTANT PROFESSOR TATUM.

The Legislature having made a liberal provision for the establishment of a Textile School as a department of the College, a suitable building of modern cotton mill construction has been erected, and an excellent equipment has been secured. The building offers excellent opportunities for the study of the details of mill construction.

The equipment has been carefully selected with a view of having a wide variety of the leading makes of cotton mill machinery represented. This will afford the student the opportunity of becoming familiar with such machinery as that with which he is likely to come in contact in the mills of the country.

Instruction will be confined to the manufacture of cotton goods and a thorough training will be given in the manufacture of many classes of cotton yarns and fabrics.

Instruction is given by the use of text-books, lectures, recitation and the practical operation of the machines in the actual production of yarns and fabrics.

The instruction in this department is divided into four sections, viz., Yarn Manufacturing, Weaving, Designing, and Chemistry and Dyeing. These subjects are so treated as to cover the manufacture of all classes of cotton yarns and fabrics.

A considerable amount of equipment has been added which is operated on a commercial basis. This offers an opportunity to the student to observe a cotton mill in operation, turning off a finished product. A part of the student's practice is to take charge of this machinery and put the stock through. This is entirely a new feature for a textile school and should increase the efficiency to a considerable extent.

The dye laboratory is a new addition and contains adequate machinery for instruction in dyeing and bleaching yarn and cloth.

The courses are as follows:

1. Designing. Sophomore. First and second terms, 3 hours a week; with practice.

This course includes the classification of fabrics; the elementary principles of fabric structure; the explanation of various technical terms applied to designs and fabrics; the representation of drawing-in drafts and harness chains; the design of fancy shirting, madrases, and dress goods, etc.

Practice, second term, 2 hours a week.

(Required in Course VI; without practice in the two-year course.)

2a. Yarn Manufacture. Junior. First term, 6 hours; second term, 3 hours a week; with practice.

Recitations on the machinery and processes in the manufacture of coarse cotton yarns. Instruction is given with a view of imparting a general knowledge of the machinery and processes, including the study of the raw material; mixing; mixing machinery; construction and oper-

ation of feeder and picking machinery, carding, drawing, slubbing, roving, ring spinning, spooling, reeling, and twisting; calculations to determine the necessary gearing to produce given numbers, speeds and production.

Practice, first term, 2 hours; second term, 4 hours a week.

(Required in Course VI.)

3. Designing. Junior. First and second terms, 3 hours a week.

A combination of course 1 and the design of lenos, two and three-ply fabrics, and pile fabrics. The course is supplemented by the practice in power weaving.

Prerequisite, *Textile Engineering 1*.

(Required in Course VI and in the two-year course.)

4. Cotton Classing. Junior. Second term, 1 hour a week.

This course offers instruction in judging and classifying cotton,
(Required in Course VI.)

5. Cotton Classing. Junior. Second term, 1 hour a week.

In addition to cotton judging and classing, instruction will include the ways of handling the crop from the field to the mill.

(Required in Course VI; and of Seniors in Course I, Groups A, B; and optional in Group C.)

6. Power Weaving. Junior. First and second terms, 2 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of the plain and fancy looms; a study of the timing and setting of the various parts, and weave room calculations.

(Required in Course VI.)

Practice, 4 hours a week.

7. Yarn Manufacture. Senior. First and second terms, 3 hours a week; with practice.

Recitations and lectures; a continuation and more exhaustive treatment of the subjects of course 2. In addition the study of warp preparation and of the machinery necessary for the manufacture of fine cotton yarns, including the sliver lap machine, ribbon lap machine and comber, and a study of the spinning mule, organizations for the manufacture of all classes of yarns and the preparation of fancy warps.

Practice, 4 hours a week.

(Required in Course VI and in the two-year course.)

8. Designing. Senior. First and second terms, 4 hours a week.

Fabric analysis, including the dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, including the production of original designs, card cutting and lacing. This course is supplemented by the production of dobby and Jacquard designs on power looms.

Prerequisite, *Textile Engineering 3*.

(Required in Course VI.)

9. Power Weaving. Senior. First and second terms, 2 hours a week; with practice.

Recitations and lectures on the construction, operation and adjustment of leno and Jacquard machines. A study of the different "tie-ups" used in Jacquard weaving. Sketching the most important motions on automatic and dobby looms.

Practice, first term, 4 hours; second term, 6 hours a week.

Prerequisite, *Textile Engineering 4*.

(Required in Course VI.)

10. Yarn Manufacture. Senior. Second term, 2 hours a week.

Recitations and lectures: The object here will be to present the work of the management of a plant in looking after the operation of the departments of the mill.

Prerequisite, *Textile Engineering 2*.

(Required in Course VI.)

11. Mill Management. Senior. Second term, 2 hours a week.

Lectures and recitations on the general management of cotton mills, including the study of fire protection, cost of production in the various departments, labor conditions and wages, care of mill and mill village.

(Required in Course VI and in the two-year course.)

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

2b. Yarn Manufacture. First and second terms, 3 hours a week; with practice.

A modification of course 2a.

Practice, first term, 2 hours; second term, 4 hours a week.

6a. Weaving. First and second terms, 3 hours a week; with practice.

A modification of course 6.

Practice, first term, 4 hours; second term, 2 hours a week.

Second Year.

9a. Weaving. First term, 3 hours a week; with practice.

A modification of course 9.

Practice, first and second terms, 4 hours a week.

16. Designing. First and second terms, 1 hour a week.

Fabric analysis; including the dissection of small samples with a view to the reproduction of fabrics; Jacquard designing, cutting cards from original designs.

17. Cotton Classing. First Year. First term, 2 hours a week. Practice.

The course covers the handling of the crop from the field to the mill; the method of establishing classes for cotton and their values, and practice in judging the value of samples.

(Required in the two-year course in Agriculture.)

EQUIPMENT.

The building itself is a modern cotton mill model and is equipped in general with an automatic system of sprinkler heads for fire protection. The building is heated with steam and the atmosphere is kept in ideal condition for the manufacturing of cotton by a system of humidifiers. The power is furnished by electric motors conveniently distributed over the building, while the shafting, pulleys and hangers serve as an example of standard construction of such things.

In the department of yarn manufacture there is every equipment necessary to produce carded or combed yarns and with it, machines for making chain or slashed warps of either single or double yarns.

In the weaving room there are ten hand looms for the weaving of short fancy patterns. There are fourteen Northrop looms, which are entirely automatic and two plain looms for ordinary plain goods. There are two ordinary dobby looms, with box motion to insert four colors for filling; one dobby loom for weaving terry towels; one dress goods loom, with dobby and boxes for making a seven-colored pattern; one loom for weaving narrow Jacquard dress goods, and one wide Jacquard loom for weaving table covers.

The finishing machinery is for ordinary ducks, sheetings or drills, and consists of an inspecting machine, railway sewing and rolling machine, a brushing and calendering machine, and a cloth-folding machine.

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

ENTRANCE REQUIREMENTS.

In order to be admitted to the two-year Course in Textile Engineering the candidates must be at least sixteen years of age and be able to pass entrance examinations in English Grammar and Composition and in Algebra to simultaneous equations of the first degree, or must present a satisfactory certificate of proficiency in these subjects.

PLAN OF THE COURSE.

The two-year course in Textile Engineering is intended for young men who wish to take up the work of cotton manufacturing and can not spend more than two years in preparation.

The aim of the course is to prepare young men for the responsible positions in a cotton mill after a short term of apprenticeship. Certificates will be given students who complete the work as outlined.

Note.—The number following the name of a department refers to the number of the course as shown in the description of the department. Practice is indicated by italics.

FIRST YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
English 9	3	English 9	3
Grammar, Composition.		Grammar, Composition.	
Textile Engineering 1	3	Textile Engineering 1	3
Designing.		Designing.	
Textile Engineering 2b	3	Textile Engineering 2b	3
Yarn Manufacture.		Yarn Manufacture.	
Textile Engineering 6a	3	Textile Engineering 6a	3
Weaving.		Weaving.	
	—		—
	12		12
<i>Drawing 23</i>	<i>1</i>	<i>Drawing 23</i>	<i>1</i>
<i>Drawing 24</i>	<i>2</i>	<i>Drawing 24</i>	<i>2</i>
<i>Mechanical Engineering 13a</i>	<i>4</i>	<i>Mechanical Engineering 14a</i>	<i>4</i>
<i>Textile Engineering 2b</i>	<i>2</i>	<i>Textile Engineering 2b</i>	<i>4</i>
<i>Textile Engineering 6a</i>	<i>4</i>	<i>Textile Engineering 6a</i>	<i>2</i>
	—		—
	13		13

SECOND YEAR.

English 10	3	English 10	3
Composition, Rhetoric.		Composition, Rhetoric.	
Textile Engineering 7	3	Textile Engineering 3	3
Yarn Manufacture.		Designing.	
Textile Engineering 9a	3	Textile Engineering 7	3
Weaving.		Yarn Manufacture.	
Textile Engineering 3	3	Textile Engineering 11	2
Designing.		Mill Management.	
Textile Engineering 16	1	Textile Engineering 16	1
Designing.		Designing.	
	—		—
	13		12
<i>Drawing 25</i>	<i>4</i>	<i>Drawing 25</i>	<i>4</i>
<i>Mechanical Engineering 4</i>	<i>4</i>	<i>Mechanical Engineering 19b</i>	<i>4</i>
<i>Textile Engineering 7</i>	<i>4</i>	<i>Textile Engineering 7</i>	<i>4</i>
<i>Textile Engineering 9a</i>	<i>4</i>	<i>Textile Engineering 9a</i>	<i>4</i>
	—		—
	16		16

SUMMER SCHOOL OF COTTON CLASSING.

The sixth session of the Summer School of Cotton Classing of the Agricultural and Mechanical College of Texas will open June 15, 1914 and will continue six weeks.

The object of the course in Cotton Classing is to prepare young men for cotton buying and the running of cotton warehouses, and to offer to farmers the opportunity to increase their knowledge of the leading farm crop of Texas.

A study is made of the elements which determine the commercial grades of cotton, the influences which affect the price of cotton; the system of financing the crop from the field to the factory, and the relation of exchanges to the business in general. New samples are put each day on the cotton tables for practice, and the work is patterned somewhat after that of a cotton office.

The first hour each morning will be spent in the study of Miller's "American Cotton System," the Government's Report on "Cotton Exchanges" and other literature on the subject.

EXPENSES.

Registration fee.....	\$ 7 50
Board at local hotel, per month.....	20 00
Room at local hotel, per month.....	8 00
The registration fee is in no case refunded.	

EQUIPMENT.

Students in the Summer School will have the use of the library and reading room, and of the shower baths. Those interested will have the opportunity to inspect the College farm, sheds, barns, silos, dairy, creamery and experimental plots.

Instruction in Cotton Classing is given in the Textile Building and there the student can be shown the processes of manufacturing cotton and where the cotton goes.

The Government standards for classing cotton, which have been adopted by nearly all the leading exchanges with the exception of New York, will be used.

The State Experiment Station has in its cotton laboratory a fiber testing machine, showing the breaking strength of the individual fiber, and an instrument for measuring the length accurately. Demonstrations will be made showing the use and value of these machines.

FIFTH YEAR'S WORK IN ENGINEERING.

In the engineering courses a fifth year's work is offered to young men who have obtained the bachelor's degree in this College or other institution approved by the Faculty. The work of this year leads to the professional degree of Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, or Textile Engineer. The instruction is entirely technical and consists of advanced work in various engineering subjects as shown in the tabular statement following. It is believed that the graduate will find it well worth while to take this work, either immediately after graduation, or after a year or more spent in active work; and that the wider acquaintance with engineering subjects, and the power of investigation so acquired will prove to be decidedly promotive of his professional advancement.

A thesis is required and must be typewritten and bound in a manner satisfactory to the head of the leading department in each course. No drill is required.

The curricula shown on the following pages are for students receiving their bachelor's degree prior to June, 1914.

The elective work is subject to the approval of the head of the leading department.

COURSE IN CHEMICAL ENGINEERING.

(Leading to the Degree of Chemical Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Chemical Engineering 11.....	2	Chemical Engineering 11.....	2
Adv. Ind. Chemistry.		Adv. Ind. Chemistry.	
Chemical Engineering 12.....	2	Chemical Engineering 13.....	2
Rarer Elements.		Chem. Preparations.	
Elective.....	6	Elective.....	6
<i>Chemical Engineering 11, 12.....</i>	<i>16</i>	<i>Chemical Engineering 11, 13.....</i>	<i>16</i>

COURSE IN CIVIL ENGINEERING.

(Leading to the Degree of Civil Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hour per week.
Civil Engineering (31).....	2	Civil Engineering (32).....	2
Astronomy.		General Civil Engineering.	
Civil Engineering (11).....	2	Civil Engineering (14).....	2
Least Squares.		Contracts.	
Civil Engineering (12).....	3	Civil Engineering (11).....	2
Bridge Designing.		Geodesy.	
Civil Engineering (32).....	2	Civil Engineering (12).....	3
General Civil Engineering.		Bridge Designing.	
Elective.....	6	Elective.....	6
<i>Civil Engineering.....</i>	<i>8</i>	<i>Civil Engineering.....</i>	<i>8</i>

COURSE IN ELECTRICAL ENGINEERING.

(Leading to the Degree of Electrical Engineer.)

(For students receiving their bachelor's degree after June, 1913.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Electrical Engineering 31.....	3	Electrical Engineering 31.....	3
Advanced Alternating Currents.		Advanced Alternating Currents.	
Electrical Engineering 32.....	3	Electrical Engineering 34.....	3
Electric Machine Design.		Power Plant Designs.	
Electrical Engineering 33.....	3	Electrical Engineering 33.....	3
General Electrical Engineering.		General Electrical Engineering.	
Elective.....	6	Elective.....	6
<i>Electrical Engineering 35.....</i>	<i>8</i>	<i>Electrical Engineering 35.....</i>	<i>8</i>

COURSE IN MECHANICAL ENGINEERING.

(Leading to the Degree of Mechanical Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Mechanical Engineering	3	Mechanical Engineering	3
Analytical Mechanics.		Analytical Mechanics.	
Mechanical Engineering	3	Mechanical Engineering	3
Steam Turbines.		Gas Producers.	
Mechanical Engineering	3	Mechanical Engineering	3
Refrigeration.		Power Plants.	
Elective	6	Elective	6
<i>Mechanical Engineering</i>	8	<i>Mechanical Engineering</i>	8

COURSE IN TEXTILE ENGINEERING.

(Leading to the Degree of Textile Engineer.)

FIFTH YEAR.

First Term.	Hours per week.	Second Term.	Hours per week.
Textile Engineering (4)	3	Textile Engineering (4)	3
Yarn Manufacture.		Yarn Manufacture.	
Textile Engineering (10)	2	Textile Engineering (13)	4
Weaving.		Designing.	
Textile Engineering (13)	4	Textile Engineering (15)	2
Designing.		Mill Management.	
Elective	6	Elective	6
<i>Textile Engineering</i> (4), (10)	8	<i>Textile Engineering</i> (4), (10)	8
<i>Elective</i>	2	<i>Elective</i>	2

General Studies

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMISTRY.

PROFESSOR HEDGES, ASSISTANT PROFESSOR GORDON, ASSISTANT PROFESSOR NELSON, MR. THORNTON, MR. NEWTON, MR. BRYANT.

The work in Chemistry begins in the Sophomore year of the courses in Agriculture and Chemical and Textile Engineering, and in the Junior year of all the other courses. A broad foundation is laid in the beginning course of General Inorganic Chemistry, which extends throughout the year, and is required in all courses. The remaining subjects described below include the work in Agricultural Chemistry and various special courses. The advanced work of the students of Chemical Engineering is described under that course. Most of the work is given by lectures, illustrated by experiments, and supplemented by laboratory work, with frequent oral and written quizzes.

The courses are as follows:

1. General Inorganic Chemistry. First and second terms, 3 hours a week; with practice.

In this course the foundation principles of all chemical activity are fully discussed and demonstrated. The chemical elements and their compounds are then taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described, and organic chemistry is touched upon. This course must precede all other chemical studies. A preliminary course in physics is prerequisite. Lectures, illustrated by experiments.

Text: General Chemistry, Theoretical and Applied, *Blake*.

Practice, 4 hours a week.

General laboratory work, duplication of lecture experiments, qualitative analysis, simple tests of technical importance.

(Required in Course VIII.)

1a. General Inorganic Chemistry. First and second terms, 3 hours a week; with practice.

The same as course 1, except as to amount of practice.

Practice, 2 hours a week.

(Required of Sophomores in Courses I, VI; of Juniors in Courses III, IV, V, VII, IX.)

2. Agricultural Chemistry. Junior. First and second terms, 3 hours a week.

This is a study of the fundamental chemical principles of agriculture, and in addition to giving the student a grasp of the application of chemistry to agriculture, it helps him to understand the chemical terms used in Experiment Station literature. The chemistry of plant growth, soils, irrigation water, fertilizers, feeding stuffs and animal nutrition are studied. Lectures.

Prerequisite, *Chemistry 1a*.

(Required in Course I.)

3. Agricultural Analysis. Junior. First term, 4 hours; second term, 2 hours a week. Practice.

This course serves to familiarize the student with the composition and behavior in the laboratory of many materials important in agriculture. It consists of a determination of the percentage of water and ash in various products, together with sugars, starch, crude fibre, fat, protein, potash and phosphoric acid.

Prerequisite, *Chemistry 1a*.
(Required in Course I.)

4. Organic Chemistry. Junior. First and second terms, 2 hours a week; with practice.

In this course the general principles and theories of organic chemistry, together with the general methods of preparation and synthesis of organic compounds are treated in detail. Special attention is given to compounds of technical importance, thus laying a foundation for work in dyeing, in agricultural chemistry, and in many processes of industrial chemistry. Lectures.

Text: *Organic Chemistry, Moore*.
Practice, 2 hours a week.

Preparation and properties of simple organic compounds; synthesis of complex organic substances.

Prerequisite, *Chemistry 1, or 1a*.
(Required in Courses VI, VIII, I Group D; optional in I Groups A, B, C.)

4a. Organic Chemistry. First and second terms, 2 hours a week; with practice.

A modification of Course IV, especially designed for Agricultural students.

Practice, 2 hours a week.

(Required in Course I, Group D; optional in Groups A, B, C.)

5. Geology. Junior. First term, 2 hours a week; with practice.

This course deals primarily with dynamic and structural geology, but historical geology is briefly considered. Special attention is given to the weathering of rocks and to the chemical explanations of many geological phenomena.

Text: *An Introduction to Geology, Scott*.

Practice, 2 hours a week.

The laboratory work in this course consists largely of determinative mineralogy and lithology, with special tests on coals, petroleums, and mineral waters.

Text: *Tables for the Determination of Common Minerals, Crosby*.

Prerequisite, *Chemistry 1*.
(Required in Course VIII.)

6. Advanced Agricultural Analysis. Senior. First and second terms, 2 hours a week; with practice.

In this work the methods of exact analysis are discussed in the lectures and, so far as time allows, applied in the laboratory. The official meth-

ods of analysis are used throughout the work; but other methods are frequently used for comparison. It supplies a working basis for course 8, or any further study of agricultural chemistry.

Practice, 6 hours a week.

Prerequisite, *Chemistry 2*.

(Required in Course I, option 2, Groups A, B, C.)

7. Physical Chemistry. Senior. First term, 2 hours a week; with practice.

This is an elementary course, emphasizing the phenomena which show the state of substances in solution. Lectures.

Practice, 4 hours a week.

Molecular weight determinations by vapor-density and freezing-point methods; electrical conductivity; migration of ions and of colloids; osmosis.

Prerequisite, *Chemistry 4*.

(Required in Course I, option 2, Groups A, B, C.)

8. Advanced Agricultural Chemistry. Senior. Second term, 2 hours a week; with practice.

Studies of selected topics concerning the chemistry of soils, plants, or animal nutrition, in such a way as to give the student a knowledge of the methods used in agricultural investigation, and to aid him to develop habits of independent thought.

Bulletins, scientific journals, lectures.

Practice, 4 hours a week.

The student is expected in this work to take up some special problem in agricultural chemistry, or to work on the chemical phase of some problem simultaneously pursued in some other department.

Prerequisite, *Chemistry 7*.

(Required in Course I, option 2, Groups A, B, C.)

9. Dairy Chemistry. Senior. Second term, 2 hours a week; with practice.

The object of this course is to study the composition of milk and the principal chemical changes that take place in the handling of it, and in its manufacture into butter and cheese. It includes the analysis of cream, butter and cheese; the testing for adulterants; sanitary conditions necessary for creamery work, and influences of different feeds on the quality of dairy products.

Practice, 6 hours a week.

(Required in Course I, Group D.)

10. Geology. Senior. Second term, 4 hours a week; with practice.

This course consists of a study of dynamic, structural, and economic geology, with emphasis on the non-metallic minerals—coal, petroleum, building stones, clay, lime and cement, gypsum, abrasives and road materials.

Texts: *College Geology, Chamberlin and Salisbury*; *Economic Geology, Ries*.

Practice, 2 hours a week.

Largely determinative mineralogy and lithology, with special tests on some of the non-metallic minerals.

Text: Tables for the Determination of the Common Minerals, *Crosby*.

Prerequisite, *Chemistry 1a*.

(Required in Courses IV, VII, IX.)

11. History of Chemistry. Senior. Second term, 1 hour a week.

This course puts the development of chemical theories in their historical setting and gives an intimate acquaintance with the lives of great chemists.

Prerequisite, *Chemistry 7*, or *Chemical Engineering 4*, first term.

(Required in Course VIII.)

12. Dyeing. Senior. First term, 2 hours a week; with practice.

This course consists of a study of the physical and chemical properties of textile fibres, dyes, dyestuffs and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woolen goods. Lectures.

Practice, 2 hours a week.

All the principles discussed in the lectures are tested in the laboratory, with especial attention to the production of dyeing to meet particular commercial requirements.

Prerequisite, *Chemistry 4*.

(Required in Course VI.)

20. Practical Chemistry. First and second terms, 3 hours a week; with practice.

This course is intended to familiarize the student with the facts underlying the more important chemical processes involved in agricultural operations, such as fertility of soils, plant growth and the digestibility of feeds. The elementary principles of inorganic chemistry are first considered. This is followed by a detailed description of the composition of most of the common foods and feeds, and a study of the conditions affecting their composition during growth. A study of the rational feeding of men and animals completes this course. Lectures, recitations and quizzes.

Text: *Chemistry of Plant and Animal Life, Snyder*; *Soils and Fertilizers, Snyder*.

Practice, 2 hours a week.

Most of the principles discussed in the lectures are confirmed by the student in the laboratory.

(Required in the two-year course in Agriculture.)

21. Practical Chemistry. Second term, 3 hours a week; with practice.

The course is intended to familiarize the engineering student with Chemistry and its relation to daily life. The elementary principles of inorganic chemistry are first considered. This is followed by the study of the composition and relation of chemistry to the following materials: Carbon and its compounds, glass, cement, alloys, paints, oils, varnishes, leather, silk, wool, cotton, rubber, soils, fertilizers, and insecticides. Lectures, recitations and quizzes.

Text: Chemistry and Its Relation to Daily Life, *Kahlenberg and Hart*.

Practice, 2 hours a week.

(Required in the two-year courses for Electricians and for Power Plan Operators.)

EQUIPMENT.

The department has the usual laboratory facilities, including a vacuum system for rapid filtration, a compressed-air system for use with blast lamps and a ventilating system. The laboratories are supplied with hydrant, cistern and distilled water. Each student is assigned to a lock-desk containing the necessary equipment. The large lecture room, with raised seats, has a seating capacity of one hundred. The museum occupies a large, well-lighted room. The department has a good reference library.

DEPARTMENT OF DRAWING.

PROFESSOR A. MITCHELL, ASSISTANT PROFESSOR GEIST, MR. REDLICH,
MR. MANSFIELD.

Instruction in Drawing and Descriptive Geometry is given with three objects in view: First, to train the student by developing his powers of observation and imagination; second, to provide a basis for further instruction in other departments; and, third, to prepare the student for professional work as a draftsman.

The department is equipped with the necessary tables, models and reference books.

The courses are as follows:

1. Mechanical Drawing. Freshman. First and second terms, 2 hours a week. Practice.

Use and care of drawing instruments, instrumental drawing, free-hand and mechanical lettering, geometrical constructions, projections, intersections, developments, axonometry, shades and shadows and perspective.

Text: Mechanical Drawing, Parts I and II, *Giesecke*.

(Required in all Engineering courses.)

2. Descriptive Geometry. Freshman. First and second terms, 3 hours a week.

Problems relating to the point, line, plane and solids; problems in tangency and intersections, in shades and shadows and in perspective.

Text: Descriptive Geometry, *Giesecke*.

(Required in all Engineering courses.)

3. Freehand Drawing. Freshman. First term, 2 hours a week. Practice.

Drawing from geometrical solids, common objects, plaster casts, and still life, to study form, proportion, light and shade.

(Required in all four-year courses.)

31. Freehand Drawing. Freshman. Second term, 2 hours a week. Practice.

Drawing of farm tools, implements and structures, and objects from plant and animal life. Elementary water color.

(Required in Course I.)

32. Freehand Drawing. Freshman. Second term, 2 hours a week. Practice.

Drawing of machines, machine parts, engineering structures, details.

(Required in all Engineering courses except VII, IX.)

33. Freehand Drawing. Sophomore. First term, 2 hours a week. Practice.

A continuation of course 32 with special attention to measuring objects and dimensioning drawings.

Prerequisite, *Drawing 32*.

(Required in all Engineering courses except VII, IX.)

6. Mechanical Drawing. Sophomore. First term, 2 hours; second term, 4 hours a week. Practice.

Working drawings of elementary parts of machines and engineering structures, tracing and photo printing.

Text: Mechanical Drawing, Part III, *Giesecke*.

Prerequisite, *Drawing 1*.

(Required in all Engineering courses except VII, IX.)

9. Topographical Drawing. Junior. First term, 2 hours a week. Practice.

Topographic signs, topographic maps and out-door sketching.

Prerequisite, *Drawing 6*.

(Required in Course IV.)

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

First Year.

23. Freehand Drawing. First and second terms, 1 hour a week. Practice.

Drawing from geometrical solids and common objects to study form and proportion.

24. Mechanical Drawing. First and second terms, 2 hours a week. Practice.

Use and care of drawing instruments, instrumental drawing, free-hand and mechanical lettering, and geometrical constructions.

Text: Mechanical Drawing, Part I, *Giesecke*.

Second Year.

25. Mechanical Drawing. First and second terms, 4 hours a week. Practice.

Working drawings of elementary parts of machines and engineering structures, tracing and photo printing.

Text: Mechanical Drawing, Part III, *Giesecke*.

Prerequisite, *Drawing 24*.

DEPARTMENT OF ENGLISH.

PROFESSOR FOUNTAIN, ASSISTANT PROFESSOR THOMAS, MR. BRESSLER,
MR. COFER, MR. GUNTER, MR. CLICK, MR. POWELL,
MR. CHANDLER, MR. WILSON.

The aim of this department is to give students such training as will enable them to use their mother tongue readily and accurately. The instruction, therefore, is practical rather than theoretical. Frequent written exercises are required, and these exercises are not only carefully read by the instructor, but are also discussed in personal conferences with the individual student. In this way each student has his attention called to his most frequent errors; and suggestions, especially adapted to his needs, are made. Experience has proved that a student often gets more benefit from a fifteen minutes' personal conference with an instructor than he does from an hour's lecture in the class room.

The courses are as follows:

1. Rhetoric and Composition. Freshman. First and second terms, 3 hours a week.

This course involves recitations, readings from masterpieces of literature, composition writing, and personal conferences at hours to be arranged with the instructors.

(Required in all four-year courses.)

2. English Literature. Sophomore. First and second terms, 2 hours a week.

This course affords an opportunity for the student to obtain a general knowledge of the outline of English Literature, the different stages of development being illustrated by the critical reading of a classic of each period. Students are also required to do a large amount of reading outside of the class room and to submit written reports on what they read.

Prerequisite, *English 1*.

(Required in all four-year courses.)

3. English Composition. Sophomore. First and second terms, 1 hour a week.

This course is intended to give practice in organizing and writing longer themes than are required in course 1. In addition to weekly compositions, the work involves recitations and personal conferences.

Prerequisite, *English 1*.

(Required in all four-year Engineering courses.)

4. Advanced Composition. Junior. First and second terms, 3 hours a week.

This course will involve continual practice in writing, and a study of modern English literature illustrating the principal kinds of prose composition. Personal conferences with the instructor will be required.

Prerequisite, *English 1*.

(Required in Course I.)

5. Argumentation. Junior. First and second terms, 1 hour a week.

This course will involve a study of the essentials of argumentation, and practice in drawing briefs.

(Required in all four-year Engineering courses.)

6. Public Speaking. Senior. First and second terms, 1 hour a week.

The aim of this course is to help the student to a simple, direct manner of speaking. The work consists of the oral interpretation of some of the best orations, writing and delivering original pieces, and debating. Personal conferences with the instructor are required.

(Required in all four-year courses.)

TWO-YEAR COURSES.

First Year.

9. Grammar and Composition. First and second terms, 3 hours a week.

This course includes a rapid but thorough review of the essentials of English Grammar, composition writing, and personal conferences with instructors.

Second Year.

10. Composition and Rhetoric. First and second terms, 3 hours a week.

In this course the written exercises are longer and on more difficult subjects than those of course 9. Especial attention is given to expository and argumentative composition, and to business correspondence. Parallel reading is required in both courses.

DEPARTMENT OF HISTORY AND ECONOMICS.

HISTORY.

PROFESSOR CHASTAIN, MR. ABSHIRE.

It is the aim of this department to have the student learn that history deals with the life of a nation in the process of growth; that the content of history is not a dead thing, but that it lives and moves; that it is dynamical and not statical; that it obeys the law of continuity; that there are no breaks or leaps; that development may hasten or may slacken, but that it is always continuous, and that the operation of the law of continuity makes history a unit. The study of the life of any people reveals certain characteristics common to the history of all civilized nations; there will be found five well marked phases—a political, a religious, an educational, an industrial, and a social phase. The student should understand that history is one continuous current moving on toward one purpose—not one destiny for government, another for church, and so on, but that all these make one life with one destiny. The student is encouraged to trace all these lines of growth, taking each great event and each series of events, discovering to what extent all institutions are affected.

Students are urged to make constant use of the College library, which contains a great many histories and biographies from which they may be able to pursue a systematic investigation for themselves.

The courses in history are as follows:

1. English History. Freshman. First and second terms, 3 hours a week.

This course traces the outline of English History from the earliest times to the present. In addition to the political history of England, the development of governmental institutions and the condition of the Church will receive some attention.

Texts: A History of Great Britain, *Tout*; Atlas of English History, *Gardiner*.

(Required in Course I.)

2. English History. Sophomore. First and second terms, 2 hours a week.

Similar to course 1, but more comprehensive.

Texts: A History of Great Britain, *Tout*; Source Book, *Lee*; Atlas of English History, *Gardiner*.

ECONOMICS.

*ASSOCIATE PROFESSOR LEAVELL, ACTING ASSOCIATE PROFESSOR
KIBLER.

The courses in economics have three objects. The student is expected to gain:

(1) An intelligent appreciation of the significant facts in the economic life of his own day.

*Absent on leave.

(2) A method for getting an accurate knowledge of economic problems, or others, as they may arise in his later experience.

(3) An understanding of some of the ways by which the informed and public-spirited citizen may help his community in the solution of such problems.

The emphasis of the courses is upon modern organization and current problems, but history and theory will receive enough attention to make clear how the present order has grown out of past conditions, and to reveal the essential principles underlying the modern organization, so far as those principles are understood. The standpoint of the courses is economic efficiency.

The courses in economics are as follows:

3. Economic Organization and Theory. Senior. First and second terms, 3 hours a week.

This course considers the following topics: Natural resources as agents in production, conservation of natural resources, labor problems, money, banking and rural credits, co-operation in agriculture with especial reference to marketing, rural economics, problems of rural life, and a brief resume of industrial evolution and economic theory.

Texts to be assigned.

(Required in Course I.)

4. Economic Organization and Theory. Senior. First and second terms, 3 hours a week.

This course considers the following topics: Natural resources as agents in production; conservation of natural resources; scientific management of labor; labor problems; money and banking; business organization, especially as illustrated by corporations and transportation; and a brief resume of industrial evolution and economic theory.

Texts to be assigned.

(Required in all four-year Engineering courses.)

DEPARTMENT OF MODERN LANGUAGES.

It is the object of the department to impart a practical knowledge of French, German, or Spanish, such as will benefit the student in the prosecution of a scientific career.

To this end, the text-books used and the method of imparting instruction are practical. French and German are taught because neither the specialist nor the general student can afford to be ignorant of those literatures; Spanish is taught in view of the rapidly growing intercourse between us and the Latin republics south of us.

Students coming to us, therefore, from the high schools of the State find here the opportunity to continue their linguistic studies by the side of agriculture and mechanical branches to which those studies lend effective aid.

The courses are as follows:

1. French. First and second terms, 3 hours a week.

A thorough drill in the elements of language, its pronunciation, its grammatical forms, is given through oral and written exercises. The reading of simple text is undertaken as early as possible.

2. French. First and second terms, 3 hours a week.

Course 1 is continued and the reading gradually adapted to the scientific work of other departments. The speaking of the language is encouraged.

3. German. First and second terms, 3 hours a week.

The student is drilled on grammatical forms, the grammar of the word and sentence, and introduced to the simpler written and spoken language.

4. German. First and second terms, 3 hours a week.

Course 3 is continued with a view to reading the scientific literature bearing on the work in other departments.

5. Spanish. First and second terms, 3 hours a week.

The grammar of Spanish, with simple reading as early as possible.

6. Spanish. First and second terms, 3 hours a week.

Advanced grammar, written and oral exercises. Scientific texts for reading.

DEPARTMENT OF MATHEMATICS.

PROFESSOR PURYEAR, ASSOCIATE PROFESSOR R. F. SMITH, ASSISTANT PROFESSOR J. W. MITCHELL, ASSISTANT PROFESSOR MICHIE, ASSISTANT PROFESSOR GARNER, MR. JONES, MR. NICHOLS, MR. BOND.*

Instruction in this department is given by the use of approved textbooks, supplemented by oral explanations and informal lectures. The student's knowledge of the subject is tested daily at the blackboard, and in each course written solutions of selected problems and review exercises involving the work of preceding courses are frequently assigned. Prominence is given to practical applications.

The courses are as follows:

1. Solid Geometry. Freshman. First term, 3 hours a week.

The course will include definitions, lines and planes in space, dihedral angles, polyhedral angles, polyhedrons, the cylinder, cone and sphere.

Text: Solid Geometry, *Wentworth-Smith*.

(Required in all four-year Engineering courses.)

2. Algebra. Freshman. First and second terms, 3 hours a week.

This course will include graphs, quadratic equations, ratio, proportion, variation, arithmetical progressions, geometrical and harmonical progressions, permutations, combinations; limits, undetermined coefficients, partial fractions, binomial theorem, logarithms, logarithmic and exponential series, and such other topics as the time may allow.

Text: Complete Secondary Algebra, *Fisher and Schwatt*.

(Required in all four-year Engineering courses.)

3. Plane Trigonometry. Freshman. Second term, 3 hours a week.

This course will include goniometry, review of logarithms, solution of right triangles, problems of heights and distances, properties of triangles, solution of oblique triangles, geometrical applications.

Text: Plane and Spherical Trigonometry, *Taylor and Puryear*.

(Required in all four-year Engineering courses.)

4. Analytics. Sophomore. First term, 6 hours a week.

The course will include the straight line, transformation of coordinates, circle, ellipse, hyperbola, the general equation of the second degree, solid analytic geometry.

Text: Analytic Geometry, *Nichols*.

(Required in all four-year Engineering courses except VI.)

Prerequisite, *Mathematics* 1, 2, 3.

5. Differential and Integral Calculus. Sophomore. Second term, 6 hours a week.

The course will include differentiation, expansion of functions, indeterminate forms, functions of several variables, tangent and normal,

*Absent on leave.

curvature, maxima and minima; integration, lengths, areas, volumes, moments of inertia; centres of gravity.

Text: Differential and Integral Calculus, *Osborne*.

(Required in all four-year Engineering courses except VI.)

Prerequisite, *Mathematics* 4.

5a. Differential and Integral Calculus. Second term, 3 hours a week.

This course will include the same topics as course 5. With the consent of the head of the department, students who have had that course through the term may take course 5a. Such students may remove a deficiency in course 5 by passing course 5a.

6. Practical Mathematics. Junior. First term, 2 hours a week.

Applications of the Calculus to engineering problems.

Text: Practical Mathematics, *Saxelby*.

(Required in Courses III, IV, V, VIII.)

Prerequisite, *Mathematics* 5.

11. Plane Geometry. Freshman. First and second terms, 3 hours a week.

The course will include definitions, rectilinear figures, the circle, similar polygons, areas of polygons, regular polygons, measurement of the circle.

Text: Plane Geometry, *Wentworth-Smith*.

(Required in Course I.)

13. Elementary Mathematics. First term, 4 hours a week; second term, 3 hours a week.

Elementary Algebra, Plane Geometry, Plane Trigonometry. Problems are taken from practical work, and correlated with instruction given in other subjects.

(Required in the two-year courses for Electricians and for Power Plant Operators.)

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

LIEUTENANT BROWN.

The object of the military instruction given at this College is to develop the student physically by the systematic drill and exercise; to inculcate in students that unhesitating and subconscious obedience to constituted authority so essential to good citizenship; to qualify students to be company officers of volunteers or Militia.

Graduates of this College may be given the opportunity by the War Department of taking the competitive examination for commissions as second lieutenant in the regular army; and their services are in demand as officers in the organization of native troops in the Philippine Islands.

The Cadet Corps, which includes all students in attendance at the College, is organized as a regiment of infantry, consisting of band and three battalions of four companies each. All military instruction is under the immediate charge of the Commandant.

The officers and non-commissioned officers are selected from the Senior, Junior and Sophomore classes. They are appointed by the Commandant upon the approval of the President. Their appointments are dependent upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The Military system regards a man for his inherent qualities of manhood and encourages ambition and self-reliance; it is an aid in the enforcement of discipline and encourages regularity in attendance upon academic duties; it tends to develop that sense of duty and honor that mark a man as a gentleman.

The courses are as follows:

1. Drill Regulations. Sophomore. First term, 2 hours a week.

The course includes infantry drill regulations through the schools of the soldier, company, battalion and regiment, both in close and extended order; reviews, inspections, parades, guard mounting, guard duty, small arms firing regulations, field service regulations and instruction in making out military records. It includes talks and lectures upon tactics, marching, camping, sanitation and modern firearms.

2. Military Science. Senior. Second term, 1 hour a week.

This course includes the study of Military Campaigns, in which the class is given lessons and required to stand a written examination. In connection with the lessons given to the class, the instruction also includes lectures upon organization, marches, discipline, rations, map reading, shelter trenches, duties of a company commander, and a resume of the military history, the military system, and of the military policy of the United States.

3. All Classes. First and second terms, 3 hours a week.

Infantry drill through the schools of the soldier, company, battalion and regiment in close and extended order, advance and rear guard, outposts and marches, regimental review, inspection, parade, escort of the colors, guard mounting, target practice for the Senior class, instruction in company reports, muster rolls, rosters, etc.

DEPARTMENT OF PHYSICS.

ACTING PROFESSOR WRIGHT, MR. MCPHEETERS, MR. SKEELER, MR.
MCADAMS, MR. BATES.

The courses in this department are designed to impart to students some acquaintance with the various fields of physics, to accustom them to exact reasoning from experiment to theory, and to prepare them for further instruction in the more technical studies of the various departments. Instruction is given by recitation from standard texts, supplemented by numerous illustrated lectures, quizzes and practical problems. Especial emphasis is given to laboratory work. Full written reports are required of all experiments performed. Practical applications of the principles involved are emphasized throughout the courses.

The courses are as follows:

1. Elementary Physics. Freshman. First and Second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and illustrations in elementary mechanics, heat, sound, and light.

Practice, 2 hours a week.

The practice includes: Measurements of precision with vernier and micrometer calipers and balances; curve plotting; accurate determinations of lengths, volumes, densities, forces, moments, stress, expansion, specific heat, heat exchange, refraction and reflection of light by various forms of lenses and mirrors, velocity of sound in different media, and the laws of vibrating strings. The Metric or the English system of units is used as the instructor may designate.

(Required in Course I.)

2. General Physics. Sophomore. First term, 2 hours a week; with practice.

This course is a continuation of course 1, the work of the term being largely devoted to electricity and magnetism.

Practice, 2 hours a week.

Prerequisite, *Physics* 1, *Mathematics* 11.

(Required in Course I.)

3. Elementary Physics. Freshman. First and second terms, 2 hours a week; with practice.

Lectures, recitations, problems and illustrations in elementary mechanics, heat, sound, and light. Particular stress is laid on problems presented in text-book and class.

Practice, 2 hours a week. For description, see course 1.

(Required in all four-year Engineering courses.)

4. General Physics. Sophomore. First and second terms, 3 hours a week; with practice.

Lectures, recitations, problems, and demonstrations in the theory of mechanics, heat, electricity and magnetism. In this course particular stress is laid on the derivation of the various formulas necessary for a thorough understanding of the mathematical relations existing in phy-

sical determinations. Much emphasis is placed on practical problems furnished by the instructors.

Practice, 2 hours a week.

The practice includes magnetic and electrical measurements and a series of exercises in mechanics and calorimetry more advanced than those of course 3.

Prerequisite, *Physics 3, Mathematics 2, 3.*
(Required in Courses III, IV, VI, VIII.)

6. General Physics. Sophomore. Second term, 2 hours a week; with practice.

This course is identical with the Electricity and Magnetism given in course 4.

Practice, 2 hours a week, equivalent to course 4. Second term.

Prerequisite, *Physics 3, Mathematics 2, 3.*
(Required in Courses VII, IX.)

7. General Physics. Sophomore. Second term, 2 hours a week.

This course is identical with Heat given in course 4.

Prerequisite, *Physics 3, Mathematics 2, 3.*
(Required in Course V.)

8. General Physics. Sophomore. Second term, 2 hours a week.

This course is identical with the Mechanics given in course 4.

Prerequisite, *Physics 3, Mathematics 2, 3.*
(Required in Course V.)

9. General Physics. Sophomore. Second term, 2 hours a week. Practice.

This course consists of a series of laboratory exercises in calorimetry and mechanics.

(Required in Course V.)

EQUIPMENT.

The Department of Physics occupies the first floor and part of the basement of the Civil Engineering Building. Alternating and direct current, storage battery, water, gas, and electric lights are conveniently arranged and connected throughout the department. The equipment is sufficient for a great variety of demonstration and laboratory work.

Mechanics of Solids, Liquids, and Gases: Apparatus for determining moment of inertia, centrifugal force, acceleration, mechanical and electrical equivalent of heat, Young's Modulus, Hooke's Law; micrometer and vernier calipers, rotators, U. S. Standard Measures, air pumps, hydraulic press, cathetometer, balances, and many simple and compound machines.

Heat: Conductometers, thermopiles, expansion apparatus, various types of thermometers, and numerous calorimetric outfits.

Lights: Polariscope, spectrometer, vernier microscope, nicols, camera, projection lantern, optical bench, Hartl discs, and a great variety of lenses and mirrors.

Sound: Sonometers, tuning forks, organ pipes, and wave motion apparatus.

Electrostatics: A very large static machine and accessories

Current Electricity: Various types of batteries, rheostats, bridges, galvanometers, induction coils, telephone and telegraph fixtures, mercury arc and electrolytic rectifiers; ammeters, voltmeters, and motors for both alternating and direct current; and complete X-Ray outfit.

The department has a well chosen assortment of general and special accessories for use with the above apparatus.

The work-shop is supplied with drill-press, soldering outfit, stock materials, and the usual metal and wood working tools. In the shop all repairs and improvements are made and the specially devised apparatus, requiring continual test, is constructed. Many of the most useful pieces of apparatus have been constructed in the shop. Economy in time and money is thus effected.

The department library contains several hundred volumes treating of pure physics and kindred subjects.

GENERAL INFORMATION.**GRADES, REPORTS, EXAMINATIONS AND ADVANCEMENT.**

Records of the standing of each student are kept by the instructors in the several departments. This standing is indicated by a system of marks based upon 100 as a maximum.

At the end of each term, examinations are held and a report is mailed to the parent or guardian of each student, showing his class standing and conduct. A preliminary report is made December 1.

When a student is absent from recitation a considerable number of times, his absences are taken into account in making up his term grade, unless the work missed is satisfactorily made up before the time set for the examination.

The passing mark is 70 for the Junior and Senior classes, and 66 for all other classes.

Reports are made in terms of letters with the following meanings: 90 to 100 inclusive, A; 80 to 89, inclusive, B; passing mark to 79, inclusive, C; from 50 to the passing mark, D; below 50, E. In "practice" only two grades are given; P passed; F failed. Students who receive a grade E in any subject must take the subject over in class in order to receive credit.

No student will be advanced from a lower to a higher class while he has recorded against him more than eight term-subjects; and no student will be classed as a Senior while he has recorded against him more than four term-subjects.

EXAMINATION SCHEDULE, FIRST TERM, SESSION 1914-15.

(Note:—This schedule is subject to change. The official schedule will be posted on the bulletin board before the time for the examinations.)

Tuesday, January 26.	Wednesday, January 27.	Thursday, January 28.	Friday, January 29.	Saturday, January 30.	Monday, February 1.	Tuesday, February 2.	Wednesday, February 3.
Biol. 2	A. H. 5 Ch. E. 5 C. E. 13 Econ. 3 E. E. 8 Engl. 5 Hort. 3 M. E. 7 Mil. Sc. 1	Arch. 26, 31 Biol. 15 Chem. 2 Hist. 1 Math. 6 M. E. 2 Phys. 2, 4 T. E. 3	Ag. Ed. 1 Agron. 3 Biol. 4, 6, 7 Chem. 6, 1a, 5 Econ. 4 Engl. 2, 10 Math. 1 T. E. 2, 2a Vet. Sc. 6	Ag. Ed. 2 Agron. 4, 8 A. H. 8 Arch. 34 Biol. 1, 3, 5 Chem. 7, 12, 4, 20 C. E. 5, 18 E. E. 10 Engl. 9 Entom. 3 Hist. 2 Language M. E. 3, 8 Phys. 16 T. E. 16 Vet. Sc. 1, 7	Agron. 5, 17 A. H. 7 Arch. 40, 30 Chem. 1a C. E. 7, 16 D. H. 4 E. E. 3 Engl. 8 Hort. 8 M. E. 1, 6 T. E. 9, 6, 6a, 9a	Agron. 6 Arch. 25 Ch. E. 1 C. E. 1, 6, 15 Draw. 2 E. E. 1 Hort. 1a, 15 M. E. 3a Phys. 1 T. E. 1, 4, 8 Vet. Sc. 2	Agron. 2a, 7, 15 A. H. 6 Arch. 26 Ch. E. 6 Chem. 1 C. E. 14, 17 D. H. 2, 16 E. E. 9 Entom. 1 Hort. 1 Math. 2, 11 M. E. 5 T. E. 7

EXAMINATION SCHEDULE, SECOND TERM, SESSION 1914-15.

(Note:—This schedule is subject to change. The official schedule will be posted on the bulletin board before the time for the examinations.)

	Saturday, May 22.	Monday, May 24.	Tuesday, May 25.	Wednesday, May 27.	Thursday, May 27.	Friday, May 28.	Saturday, May 29.
	Mil. Sc. 2	Agron. 18 Arch. 41 Chem. 11 C. E. 20 E. E. 9 M. E. 7 T. E. 11	Econ. 4 Vet. Sc. 16	Arch. 35 Ch. E. 3 C. E. 21 E. E. 9 Entom. 10 M. E. 5 T. E. 10, 16	A. H. 17, 18 Ch. E. 6 C. E. 7, 23 E. E. 10 T. E. 3, 9	C. E. 22 E. E. 6, 11 Engl. 10 M. E. 6, 9 T. E. 8	Arch. 42 Ch. E. 5 Chem. 10, 20 M. E. 5a, 8 T. E. 7
Friday, May 28.	Saturday, May 29.	Monday, May 31.	Tuesday, June 1.	Wednesday, June 2.	Thursday, June 3.	Friday, June 4.	Saturday, June 5.
Vet. Sc. 4	C. E. 10 E. E. 3 Hort. 4 M. E. 1 T. E. 2a, 2 Vet. Sc. 3	Arch. 26 D. H. 3 E. E. 5, 6, 13 Entom. 2 Hist. 1 Hort. 2 Phys. 3, 4, 7	Arch. 24, 35 Biol. 3 Ch. E. 3 C. E. 3, 11 Engl. 2, 4, 9 M. E. 2, 3, 5 T. E. 5	A. H. 3, 4 Biol. 16 Chem. 2 C. E. 7, 12 E. E. 12 Hist. 2 Langage Math. 2 Phys. 1 T. E. 3	Agron. 3, 16 Chem. 1a C. E. 9a D. H. 4 Hort. 4 Math. 3 Phys. 6, 8 T. E. 6, 6a	Agron. 2a A. H. 6 Biol. 36 Chem. 1 Chem. 4 C. E. 2 E. E. 2 Hort. 5 M. E. 4	A. H. 5 Arch. 27 Biol. 2 Chem. 1 Chem. 4 E. E. 2 Hort. 5 M. E. 4

DEFICIENCY EXAMINATIONS.

In each term there is held a series of examinations for the removal of deficiencies incurred in the preceding term. These examinations are open only to those who have a term grade D, and to those absent from the regular examination with excuse. Special examinations will in no case be given without Faculty action.

The deficiency examinations for the courses given during the second term of the session of 1913-14 will be held according to the following

Schedule.

September 21.		September 22.	
8:30 a. m.	1:00 p. m.	8:30 a. m.	1:00 p. m.
Agron. 2a	Agron. 16	Agron. 3	A. H. 16
Arch. 26, 36	A. H. 3	A. H. 4, 5	Chem. 1, 1a, 4
Biol. 3	Arch. 24, 27	Arch. 35	C. E. 4, 6a, 9
C. E. 10	Biol. 1	Biol. 2, 16	D. H. 1
E. E. 4, 5, 6	Ch. E. 3	Chem. 2	Draw. 2
Engl. 9	C. E. 3, 11	C. E. 2, 7, 12	E. E. 2
Ent. 2	E. E. 13	D. H. 3	Hist. 1
Hort. 2, 6	Engl. 2	E. E. 3, 12	Math. 3
Math. 11	Hist. 2	Engl. 4	M. E. 6
M. E. 4	Hort. 5	Hort. 4	Phys. 6, 8.
Phys. 3, 4, 7	M. E. 2, 5	Math. 2, 5	T. E. 6, 6a
Vet. Sc. 4	Mil. Sc. 1	M. E. 1, 3	
	T. E. 2, 2a, 5	Phys. 1	
	Vet. Sc. 3	T. E. 1, 3	

GRADUATION.

A diploma of the College, with the degree corresponding to the course of study pursued, will be granted students who complete one of the regular courses and pass satisfactory examinations on all of the branches therein.

No degree will be conferred without a residence of at least one year at the College. The diploma fee is \$5.00.

HONORS.

At the end of each session students who have during the year received no term grade below B and have no deficiency in "Practice" are announced as "Distinguished."

ACADEMIC BUILDING.

The Academic Building erected in 1912, is located on the highest part of the campus and occupies the site of the original Main Building which was erected in 1876 and destroyed by fire May 27, 1912. It is 89 feet wide and 260 feet long and four stories high. It provides class and lecture rooms for the department of Architecture, Drawing, Economics, English, History, and Mathematics, and quarters for the administrative offices, the library, and the armory; certain other departments have been assigned temporary quarters in this building. The building is constructed of brick and reinforced concrete, and is fireproof.

BERNARD SBISA HALL.

This is a one-story, fireproof building erected in 1912, to replace the Mess Hall destroyed by fire in October, 1911. The dining room has a seating capacity of over 1200, and the appointments of the building are modern in every respect.

MECHANICAL ENGINEERING BUILDING.

This building is situated north of the Academic Building and partly houses the Department of Mechanical Engineering. It consists of two distinct parts: First, the one containing the carpenter shop, and section rooms; second, that containing the blacksmith shop, machine shops, wood-turning room, and experimental laboratory. The first mentioned part is a two-story part, having the carpenter shop on the first floor and the other rooms on the second floor. The second part of the building is a one-story structure, containing the departmental equipment belonging to the work therein cared for; also an additional steam engine which furnishes the power for the shops.

AGRICULTURAL AND HORTICULTURAL BUILDING.

This building, erected in 1899, accommodates the agricultural and horticultural departments of the College by furnishing rooms for class instruction, laboratory investigations, museum purposes, butter and cheese making, pasteurizing milk, seed store room, photographic room, and the necessary offices for the accommodation of these departments. The building is 160 feet long and 77 feet wide, two stories high, and covered with slate. It contains twenty-seven rooms, fitted with apparatus and machinery for the instruction of students in the several branches of agriculture and horticulture.

CHEMICAL AND VETERINARY BUILDING.

This building, erected in 1902, is 138 feet long and 130 feet deep. It is built of brick and contains two stories and a basement. On the first floor the Veterinary Department has its office, veterinary laboratory, students' laboratory, dissecting room, operating room, museum, lecture room and apparatus room. The Chemical Department has on the same floor two store rooms, an assay room and a laboratory for State chemical work.

The second floor comprises the chemical and mineralogical museum, office and private laboratory of the professor of chemistry, two lecture rooms, balance room, two supply rooms and three laboratories for students.

VETERINARY HOSPITAL.

The Veterinary Hospital, erected in 1908, contains a clinic room, 36x36 feet, eight box stalls, four tie stalls, two rooms for dogs, a large colic stall, feed room, medicine room, janitor's room, etc. The building is floored with concrete, with traps from each stall to the sewer, thus

permitting the proper isolation of contagious diseases and the thorough disinfection of each stall. An automatic flush tank serves to keep the building in a sanitary condition.

TEXTILE BUILDING.

This building, erected in 1904, is constructed of smooth red brick, according to the plans of an expert mill engineer, and is an excellent example of modern cotton mill construction. The construction is of the slow-burning type generally accepted by American engineers as the most satisfactory for cotton manufacturing.

The building is two stories high, 50 feet wide and 180 feet long. The first floor is occupied by the carding and spinning and warp-preparation machinery, and the Professor's office. The second floor is occupied by the weaving and cloth-finishing machinery and by the designing and classrooms, and the offices of the instructors in weaving.

The building is heated throughout by a Webster vacuum system of steam heat, and a complete sprinkling system for fire protection has been installed. The plumbing in the building is perfectly sanitary and typical of the best cotton mill practice.

CIVIL ENGINEERING BUILDING.

This building, erected in 1909, and used to house the departments of Civil Engineering and Physics, contains eight lecture rooms, five laboratories, five drawing rooms, and several offices and store rooms.

The building is 125 feet wide and 73 feet deep; it has a basement and three stories, is heated by steam and is fireproof.

ELECTRICAL ENGINEERING BUILDING.

This building, erected in 1912, and used to house the departments of Electrical Engineering and Mechanical Engineering, contains thirteen lecture rooms, four laboratories, two drawing rooms, and several offices and store rooms.

It has a basement and three stories; is 125 feet wide by 103 feet deep; is heated by hot water, and is fireproof.

EXPERIMENT STATION BUILDING.

This building, erected in 1909, contains offices, laboratories and store rooms for the officers of the Experiment Station.

The building is 115 feet wide and 61 feet deep; it has a basement and two stories, is heated by steam, and is fireproof.

GATHRIGHT HALL.

This building was erected in 1876, and is named in honor of Thomas L. Gathright, the first President of the College. It is being used temporarily for administrative offices and for section rooms.

PFEUFFER HALL.

This is a dormitory, erected in 1887, and contains twenty-five rooms. It is named in honor of George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and contains twenty-five rooms. It is named in honor of Stephen F. Austin.

ROSS HALL.

This is a dormitory, erected in 1892, three stories high, with forty-one rooms. It is named in honor of former President L. S. Ross.

FOSTER HALL.

This building was erected in 1899, and is named in honor of former President L. L. Foster. It is a dormitory and consists of three separate parts; the central part is four stories high and contains nineteen rooms; the two ends are three stories high and contain eighteen rooms each.

GOODWIN HALL.

This dormitory was erected in 1908 and named in honor of Hon. G. I. Goodwin. It contains eighty-two rooms and is equipped with a steam heating system and modern toilet facilities.

MILNER HALL.

This building was erected in 1911 and named in honor of former President R. T. Milner. It is a dormitory containing one hundred and two rooms. The building is four stories high; there are no connecting stairways between the several floors, but each story has separate entrances so as to divide the buildings into four distinct parts, without interfering with the ventilation in any part of the building. Each story has four shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick and is practically fireproof.

LEGETT HALL.

This building was erected in 1911 and is named in honor of K. K. Legett, a former President of the Board of Directors. It is a dormitory and in every respect a duplicate of Milner Hall.

HARVEY MITCHELL HALL.

This building was erected in 1912, and is named in honor of a former citizen of Bryan, who was largely instrumental in having the College located in Brazos county.

It is a dormitory, having a basement and three stories, and contains

eighty-six rooms, each one having an outside exposure. Each story has shower baths and ample toilet facilities. Every room is provided with water, electric light, and hot water heat.

The building is constructed of reinforced concrete and brick, and is practically fireproof.

ASSEMBLY HALL.

This is a two-story brick building, erected in 1889, having a main floor and gallery.

NATATORIUM.

This building was erected in 1908 and is thoroughly equipped for shower baths. It contains forty-six dressing rooms, thirty-two stalls supplied with hot and cold water for shower baths, toilet facilities, and rooms for the attendants.

SEWERAGE SYSTEM.

The College is provided with an efficient system of sewers, to which are connected the various barracks, the main building, the agricultural and horticultural hall, the steam plant, the infirmary, the mess hall, and the residences. The outfall of the system is three-fourths of a mile from the nearest College building and nine-tenths of a mile from the nearest recitation hall or barracks building.

FARM BUILDINGS.

The farm buildings of the College and Experiment Station are situated to the rear of the main building, and consist of a farm implement building, a mule barn, a general farm barn, a large dairy barn with two silos, each of 200 tons capacity.

OTHER IMPROVEMENTS.

Other improvements comprise a laundry, an ice plant with a daily capacity of five tons, a system of waterworks, an electric light and cold storage plant.

GROUNDS AND GARDEN.

The garden, orchard, barnyards and campus are included in the enclosure to the east of the railroad station. The campus consists of some twenty-five acres of lawn, shrubbery and flowers.

The orchard, vineyard, nursery and garden are located north and east of the Academic building.

FARM.

The farm proper comprises about three hundred and fifty acres. The pastures contain in the neighborhood of two thousand acres, and furnish grazing for the College herds.

LIBRARY.

The College Library was completely destroyed by fire in the burning of the Main Building, May 27, 1912. Through the generosity of friends of the College in Houston it has been possible to make a beginning in its re-establishment. The Library contains 2400 volumes, exclusive of 1200 bound public documents, and about 15,000 pamphlets. It is chiefly a library of reference, containing standard and technical works bearing particularly upon lines of study pursued in the College. The greatest care has been exercised in the selection of books, so as to include only the latest and most essential books in each line. With the exception of encyclopedias, etc., periodicals and books temporarily reserved for required reading in the several courses, all books are loaned for home use for a period of two weeks with the privilege of renewal.

A large number of complimentary periodicals and exchanges are regularly received and the library subscribes to 73 standard magazines, reviews and technical journals. All these are indexed in the Reader's Guide to Periodical Literature which is likewise to be found in the Library. The leading newspapers of Texas are received and filed.

The Library is a designated depository and receives copies of all the publications of the Federal Government which the Superintendent of Public Documents is authorized to distribute. The greater part of the publications of the U. S. Department of Agriculture and of the several Experiment Stations are on file and a complete card index for all these is maintained.

The Library is open from 8:30 a. m. to 5:45 p. m. on week days, and from 2 to 5 p. m. on Sundays.

RELIGIOUS AND MORAL CULTURE.

There is religious service in the chapel every Sunday for the corps of students and the residents of the campus. A Sunday school for Bible study, attendance at which is voluntary, affords additional help in the way of ethical training. Every effort is made through lecture and personal example to develop and protect good morals in the young men attending the institution.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association of the College has an enrollment of about 500 members. It conducts religious meetings and lectures on Sunday nights, and Bible study classes, in which about 475 students are enrolled, in the several dormitories and in Sunday School on Sunday mornings. It employs a General Secretary, who devotes his entire time to the work.

An Association building to cost about \$70,000 is now being finished on the College campus.

ATHLETICS.

The usual forms of athletic sports are permitted. The College is a member of the Texas Intercollegiate Athletic Association and of the

Southern Intercollegiate Athletic Association. The general rules of eligibility of both these organizations have been adopted by the Faculty and published in the Blue Book. The Faculty Committee on Athletics is intrusted with the general oversight of athletics.

The following rules are of especial interest to parents and guardians:

Officers and members of athletic squads or teams which propose to take part in intercollegiate athletics must satisfy the following requirements:

(a) Unless they are of age they must have the written consent of parent or guardian, sent directly by mail to the Dean.

(b) They must be carrying at least eighteen hours per week of work, and must be making passing grades in at least fourteen hours of work. In order that this requirement may be enforced, reports shall be made to the Dean at the end of the first month of the session, and thereafter at bi-weekly intervals during the seasons devoted to the several sports; each report to cover the work from the beginning of the current term to the date of the report.

(c) In their last term of attendance they must have passed in at least fourteen hours of work. Absence for one or more terms shall not vitiate this rule.

(d) They must not have been absent without excuse from class or other required college duties more than six times during the current term.

BAND.

An attractive feature is a regularly organized cadet band. Under the direction of a leader employed by the College, it furnishes music for occasions of social and military importance, gives open-air concerts in season, leads the regiment in marching to dinner, and plays at guard mounting and dress parade.

AFFILIATED SCHOOLS.

The Faculty, with the desire to bring the College into closer relation with the schools of the State, has provided that graduates of approved schools shall be admitted to the College on diploma or certificates *at the beginning of the session* without examination. Superintendents who desire to have their schools enrolled among the affiliated schools are invited to examine the requirements for admission, and the specimen examination questions in the appendix.

The offer of affiliation is made upon the following terms: The superintendent of a school desiring affiliation should obtain from the Registrar of the College a form of application to be filled out and returned. If the application should be approved by the Faculty, the superintendent will be notified and the name of the school and that of the superintendent enrolled in the catalogue. The privilege of affiliation will be withdrawn from any school whose graduates show a lack of thoroughness in their preparation for the work of the College.

Catalogues of the College will be sent regularly to superintendents of affiliated schools, and they in turn will be expected to send the Dean copies of their reports or catalogues.

LIST OF AFFILIATED SCHOOLS.

Name.	Superintendent.	Location.
Abilene High School.....	J. H. Burnett.....	Abilene.
Albany High School.....	M. I. Miles.....	Albany.
Alexander Collegiate Institute.....	F. E. Butler.....	Jacksonville.
Alice Public School.....	W. C. Ogier.....	Alice.
Allen Academy.....	J. H. and R. O. Allen.....	Bryan.
Alpine.....	G. W. Page.....	Alpine.
Alvarado High School.....	S. E. Watson.....	Alvarado.
Alvin Public School.....	R. R. Sebring.....	Alvin.
Alvord Public School.....	J. Arthur Tibbetts.....	Alvord.
Alto Public School.....	J. M. Cook.....	Alto.
Amarillo Public School.....	S. M. Byrd.....	Amarillo.
Angleton High School.....	J. B. Oliver.....	Angleton.
Anna High School.....	W. L. Roper.....	Anna.
Anson High School.....	J. W. Grissom.....	Anson.
Arlington Public School.....	H. Tarpley.....	Arlington.
Aspermont Public School.....	T. L. Hiner.....	Aspermont.
Athens High School.....	I. P. Skinner.....	Athens.
Atlanta High School.....	J. B. McClung.....	Atlanta.
Aubrey High School.....	J. T. Teel.....	Aubrey.
Austin High School.....	A. N. McCallum.....	Austin.
Axtell High School.....	C. C. Cross.....	Axtell.
Baird Public School.....	R. D. Green.....	Baird.
Ball High School.....	J. W. Hopkins.....	Galveston.
Ballinger High School.....	W. S. Fleming.....	Ballinger.
Barnett School, The.....	W. W. Barnett.....	Houston.
Bastrop Public School.....	W. P. Arnold.....	Bastrop.
Bay City High School.....	R. E. Scott.....	Bay City.
Beaumont High School.....	H. F. Triplett.....	Beaumont.
Beeville High School.....	W. E. Madderra.....	Beeville.
Bellevue High School.....	Nolan T. Gaines.....	Bellevue.
Bellville High School.....	C. N. Shaver.....	Bellville.
Belton Academy.....	C. H. Wedemeyer.....	Belton.
Belton High School.....	L. H. Hubbard.....	Belton.
Big Foot Public School.....	D. M. Henry.....	Big Foot.
Big Sandy Public School.....	A. M. W. Smith.....	Big Sandy.
Big Springs High School.....	J. W. Dees.....	Big Springs.
Blanco High School.....	T. B. Bailey.....	Blanco.
Blanket High School.....	D. F. Eaton.....	Blanket.
Blinn Memorial College.....	J. L. Neu.....	Brenham.
Blossom High School.....	Dexter Diffie.....	Blossom.
Blum High School.....	C. F. Christensen.....	Blum.
Boerne High School.....	R. J. Kepke.....	Boerne.
Bonham High School.....	I. W. Evans.....	Bonham.
Bowie High School.....	E. G. Alexander.....	Bowie.
Brackett High School.....	D. E. McArthur.....	Brackettville.
Brady High School.....	R. H. Long.....	Brady.

Name.	Superintendent.	Location.
Brandon High School	J. D. Mayo	Brandon.
Breckenridge Public School	J. R. Smith	Breckenridge.
Bremond High School	H. E. Blythe	Bremond.
Brenham High School	W. D. Motley	Brenham.
Britton's Training School	O. L. Britton	Cisco.
Brookston High School	J. H. English	Brookston.
Brownsville Public School	C. H. Hallmark	Brownsville.
Brownwood High School	G. H. Carpenter	Brownwood.
Bryan Baptist Academy	R. McDonald	Bryan.
Bryan High School	W. C. Lawson	Bryan.
Buda High School	J. E. Watkins	Buda.
Buffalo High School	R. O. Bennett	Buffalo.
Buna High School	A. D. Rawlinson	Buna.
Burleson High School	Clyde Howard	Burleson.
Burnet High School	M. B. Brown	Burnet.
Caldwell High School	J. M. Smith	Caldwell.
Calvert High School	I. N. Stevens	Calvert.
Cameron High School	J. E. Watts	Cameron.
Canyon School	Thos. J. Yoe	Canyon.
Carbon High School	L. L. Barney	Carbon.
Carlisle Military Academy	J. M. Carlisle	Arlington.
Carlton Public School	W. A. O'Quinn	Carlton.
Carney Graded School	E. A. Caldwell	O'Brien.
Carthage High School	A. J. Holmes	Carthage.
Cedar Hill Public School	G. R. Adkins	Cedar Hill.
Celeste Public School	Robt. L. Dudley	Celeste.
Celina Public School	C. T. Cobb	Celina.
Center High School	M. M. Dupre	Center.
Channing Public School	J. F. Smith	Channing.
Chapel Hill High School	W. R. Kennedy	Chapel Hill.
Childress High School	W. H. Wooddey	Childress.
Chillicothe Public School	Robt. L. Dudley	Chillicothe.
Cisco High School	J. N. Johnston	Cisco.
Clarksville High School	R. C. Campbell	Clarksville.
Claude High School	W. L. Bates	Claude.
Clayton Rural High School	J. O. Lowe	Clayton.
Cleburne High School	R. G. Hall	Cleburne.
Clifton High School	J. M. Bettis	Clifton.
Clyde Public School	J. B. Shannon	Clyde.
Coleman Public School	J. E. Hickman	Coleman.
Collinsville High School	E. R. Benedict	Collinsville.
Colorado High School	W. W. Hart	Colorado.
Columbus High School	B. T. Gillespie	Columbus.
Comanche High School	R. F. Holloway	Comanche.
Conroe High School	W. C. Hanna	Conroe.
Cookville Public High School	H. H. J. Fling	Cookville.
Cooper High School	J. H. Newton	Cooper.
Copperas Cove High School	J. M. Witcher	Copperas Cove.
Coronal Institute	Sterling Fisher	San Marcos.
Corpus Christi High School	C. W. Crossley	Corpus Christi.
Corsicana High School	J. E. Blair	Corsicana.
Corvell City School	Boone Huddleston	Corvell.
Cotulla High School	R. A. Taylor	Cotulla.
Crawford High School	B. C. Dyess	Crawford.
Cresson Public School	C. E. Bloss	Cresson.
Crockett High School	Donald McDonald	Crockett.
Crowell Public School	E. W. Muse	Crowell.
Cumby Public School	C. E. McGuire	Cumby.
Dalhart High School	G. R. Kelly	Dalhart.
Dallas High School	James A. Brooks	Dallas.
Dawson Public School	E. W. Tarrant	Dawson.
Decatur High School	H. P. Barton	Decatur.
D'Hanis High School	J. L. Williams	D'Hanis.
De Leon High School	J. S. Carroll	De Leon.
Del Rio Public School	W. F. Jourdan	Del Rio.
Denison High School	F. B. Hughes	Denison.
Denton High School	J. S. Carlisle	Denton.
Deport Public School	Geo. W. Webb	Deport.
Detroit Public School	W. I. Woodson	Detroit.
Devine High School	W. H. Adamson	Devine.
Dodge School	E. A. Bennick	Dodge.
Donna High School	J. F. M. Stephens	Donna.
Douglas Select School	S. A. Douglas	Waco.
Dublin High School	J. W. Dunlap	Dublin.
Duffau High School	John Purvis	Duffau.
Dunn Public School	O. L. Howell	Dunn.
Durango Public School	Mrs. N. F. Alsup	Durango.
Eagle Lake High School	J. H. Morgan	Eagle Lake.
Eagle Pass High School	W. S. Bliss	Eagle Pass.
Eastland Public School	N. A. Cox	Eastland.
Eden High School	D. C. Broyles	Eden.
Edgewood High School	T. R. Howard	Edgewood.

Name.	Superintendent.	Location.
Edna High School	J. W. Bagby	Edna.
El Campo Public School	A. W. Griggs	El Campo.
Eldorado High School	B. F. Bennett	Eldorado.
Elgin High School	Buckner Harris	Elgin.
El Paso High School	N. R. Crozier	El Paso.
Ennis High School	J. D. Coghlan	Ennis.
Evant High School	D. B. Burrows	Evant.
Farmersville High School	W. E. Foster	Farmersville.
Flatonia High School	M. A. McDonald	Flatonia.
Florence High School	I. A. Hicks	Florence.
Floresville High School	W. B. Toone	Floresville.
Floydada Public School	F. E. Savage	Floydada.
Fort Davis High School	A. B. Tyson	Fort Davis.
Fort Worth High School	J. W. Cantwell	Fort Worth.
Franklin Public School	W. C. Crane	Franklin.
Frankfort Independent School	Miss Mary Brown	Frankston.
Franklin Institute		Mount Vernon.
Fredericksburg High School	Wm. Dietel	Fredericksburg.
Frisco Public School	I. I. Isbell	Frisco.
Frost High School	L. C. Stockard	Frost.
Gainesville High School	J. P. Glasgow	Gainesville.
Garland High School	S. M. Loyd	Garland.
Gatesville High School	G. W. Harris	Gatesville.
Georgetown High School	J. W. Clark	Georgetown.
Giddings Public School	T. P. Walker	Giddings.
Gillespie School	J. B. Jones	Knox City.
Gilmer High School	I. A. Costan	Gilmer.
Gladewater High School	S. D. Pearce	Gladewater.
Glen Rose High School	R. E. McDonald	Glen Rose.
Godley High School	L. I. Smith	Godley.
Goldthwaite High School	A. J. Street	Goldthwaite.
Goliad Public School	T. S. Cox	Goliad.
Gonzales Public School	W. E. Taylor	Gonzales.
Gordon High School	C. E. Maxwell	Gordon.
Goree Graded School	A. L. Hardgrave	Goree.
Gorman Public School	J. E. Smith	Gorman.
Graham High School	Edgar McLendon	Graham.
Granbury High School	R. P. Jarrett	Granbury.
Grand Prairie High School	J. A. Whitener	Grand Prairie.
Grand Saline School	J. W. Talkington	Grand Saline.
Grandview Public School	N. O. Robbins	Grandview.
Granger High School	T. P. Mallard	Granger.
Grapeland Public School	W. L. Price	Grapeland.
Grapevine High School	P. D. Kennamer	Grapevine.
Greenville High School	L. C. Gee	Greenville.
Groesbeck High School	J. F. Henson	Groesbeck.
Groveton High School	L. J. Frizzell	Groveton.
Hallettsville Public School	K. A. Jones	Hallettsville.
Hamilton High School	G. J. Mason	Hamilton.
Hamlin Public School	K. C. Spratlen	Hamlin.
Hankin's Normal College	J. H. Hankin	Gorman.
Hardin School for Boys	J. A. Hardin	Dallas.
Harrisburg High School	Joe W. Lyle	Harrisburg.
Haskell High School	R. J. Turrentine	Haskell.
Hearne High School	W. A. Holland	Hearne.
Hempstead Public School	J. H. Naff	Hempstead.
Henderson High School	P. B. Bittle	Henderson.
Henrietta High School	S. R. Terry	Henrietta.
Hewitt Public School	J. L. Smith	Hewitt.
Hico Graded School	P. B. Peterson	Hico.
Hillsboro High School	T. D. Brooks	Hillsboro.
Holland High School	J. W. G. Meadows	Holland.
Hondo High School	T. C. Hickman	Hondo.
Honey Grove High School	W. L. Willis	Honey Grove.
Houston Heights High School	L. W. Greathouse	HoustonHeights.
Houston High School	P. W. Horn	Houston.
Howe Public School	S. B. Sivells	Howe.
Huckaby Public School	O. E. Covey	Huckaby.
Hutto High School	T. G. Coger	Hutto.
Iowa Park Public School	J. A. Ramsey	Iowa Park.
Italy High School	E. W. Reby	Italy.
Itasca High School	G. L. Marshall	Itasca.
Jacksboro High School	L. Z. Timmons	Jacksboro.
Jacksonville Public School	B. J. Albritton	Jacksonville.
Jefferson High School		Jefferson.
Jewett High School	J. T. Alexander	Jewett.
John C. French High School	M. V. Peterson	Cuero.
Johnson City High School	O. R. Hewett	Johnson City.
Junction High School	D. F. McCollum	Junction.
Justin Agricultural High School	J. N. Mallory	Justin.

Name.	Superintendent.	Location.
Karnes City High School	A. V. McClothing	Karnes City.
Kaufman Public School	O. P. Norman	Kaufman.
Kemp Public School	H. F. Moore	Kemp.
Kenedy High School	R. W. Bennett	Kenedy.
Kennard High School	W. M. Anderson	Kennard.
Kennard Mills High School	J. T. Cook	Ratcliff.
Killeen High School	M. P. Dalton	Killeen.
Kirbyville High School	R. W. Persons	Kirbyville.
Kosse High School	J. R. Atkins	Kosse.
Kyle High School	Henry R. Moore	Kyle.
Ladonia Public School	C. G. Yarborough	Ladonia.
LaGrange High School	W. J. Kirk	LaGrange.
Lamesa Public School	D. C. Ashmore	Lamesa.
Lampasas High School	G. D. Scott	Lampasas.
Laneville High School	W. E. Youngblood	Laneville.
La Porte Public School	James A. Kelley	La Porte.
Laredo High School	L. J. Christen	Laredo.
Laredo Seminary	Miss N. E. Holding	Laredo.
Lavernia High School	O. F. Burney	Lavernia.
Lawrence Public School	A. N. Brown	Lawrence.
Leander Public School	J. A. Hudson	Leander.
Ledbetter Public School	A. H. Wilcox	Ledbetter.
Leesville Public School	W. R. Muir	Leesville.
Leonard High School	C. T. Speed	Leonard.
Lewisville Academy	Herbert C. Lyon	Lewisville.
Lexington Public School	E. Mackintosh	Lexington.
Liberty Normal and Business College	H. W. Stevenson	Liberty.
Lindale High School	James O'Keefe	Lindale.
Lipan Public School	Amos Bennett	Lipan.
Livingston High School	J. C. Wright	Livingston.
Llano High School	J. G. Toland	Llano.
Lockhart High School	Cuthbert Spencer	Lockhart.
Lockney Public School	E. C. Nix	Lockney.
Lometa Public School	J. Weir	Lometa.
Lone Oak High School	C. J. Denton	Lone Oak.
Longview High School	S. J. Blocker	Longview.
Lott Public School	W. F. Turner	Lott.
Louise Public School	Miss Almena Sublett	Louise.
Lovelady High School	W. H. Tomme	Lovelady.
Lubbock High School	J. K. Wester	Lubbock.
Lufkin High School	S. W. Derrickson	Lufkin.
Luling High School	J. W. Peeler	Luling.
Lutheran College	F. W. C. Jesse	Clifton.
McGregor High School	H. P. Walker	McGregor.
McKinney High School	J. H. Hill	McKinney.
Madison Academy	M. L. Bennett	Madisonville.
Manor Public School	W. T. Pollard	Manor.
Mansfield High School	A. V. Byrd	Mansfield.
Marble Falls Academy	A. S. J. Steel	Marble Falls.
Marfa High School	H. B. Griffin	Marfa.
Marlin High School		Marlin.
Marshall High School	B. B. Cobb	Marshall.
Marshall Training School	N. J. Marshall	San Antonio.
Mart Public School	W. E. Patty	Mart.
Martindale High School	T. A. Fisher	Martindale.
Mason Public School	F. A. Koenig	Mason.
Masonic Industrial School	S. B. Bedinger	Fort Worth.
Medina High School	L. C. Ingram	Medina.
Memphis High School	T. A. Taggart	Memphis.
Menardville High School	H. B. Cowles	Menardville.
Meridian College	G. F. Winfield	Meridian.
Meridian High School	R. N. Smith	Meridian.
Merkel High School	W. R. Craigbaum	Merkel.
Mesquite High School	W. J. Berry	Mesquite.
Mexia High School	E. B. Stover	Mexia.
Midland High School	W. W. Lackey	Midland.
Midlothian High School	M. H. Morris	Midlothian.
Miles Public School	J. H. Head	Miles.
Millford High School	S. E. Green	Millford.
Mineola High School		Mineola.
Mineral Springs Institute	W. B. Hargis	Garrison.
Mineral Wells Public School	E. O. McNew	Mineral Wells.
Moody Public School	M. R. Nelson	Moody.
Montague School	R. L. Shults	Montague.
Montgomery Public School	T. J. Payne	Montgomery.
Morgan Public School	T. S. Benton	Morgan.
Morgan's Mill Public School	A. C. Johnson	Morgan's Mill.
Moscow Public School	W. M. Anderson	Moscow.
Mount Calm High School	C. A. Middleton	Mount Calm.
Mount Enterprise School	N. C. Chaney	Mount Enterprise.
Mount Pleasant High School	G. P. Blackburn	Mount Pleasant.
Mount Vernon Public School	W. G. Shipp	Mount Vernon.
Munday Public School	A. J. Bunts	Munday.
Muskogee High School	E. S. Monroe	Muskogee, Okla.

Name.	Superintendent.	Location.
Nacogdoches High School	R. F. Davis	Nacogdoches.
Naples High School	C. B. Christian	Naples.
Navasota High School	J. T. Davis	Navasota.
Nevada High School	F. Z. T. Jackson	Nevada.
New Boston High School	H. C. Somerville	New Boston.
New Braunfels High School	B. Holecamp	New Braunfels.
Nocona Public School	F. F. Mace	Nocona.
Normangee High School	T. W. Brown	Normangee.
North Fort Worth Public School	M. H. Moore	North Fort Worth.
Oakwood Public School	R. H. Bing	Oakwood.
Odessa Public School	W. V. Harrison	Odessa.
Oenaville Public School	H. H. Goodman	Oenaville.
Olney High School	W. A. Cain	Olney.
Orange High School	J. E. Binkley	Orange.
Overton Public School	G. G. Hassell	Overton.
Paducah High School	C. L. Stone	Paducah.
Palacios High School	W. C. Gray	Palacios.
Palestine High School	Walker King	Palestine.
Palo Pinto Academy	H. T. Beckworth	Palo Pinto.
Paris High School	J. G. Wooten	Paris.
Park Public School	J. I. Wheeler	Nash.
Pasadena Public School	Miss Ella Wood Hill	Pasadena.
Peacock Military College	Wesley Peacock	San Antonio.
Pearsall Public School	S. G. Turner	Pearsall.
Pecos City High School	D. S. Robbins	Pecos City.
Pennington College	T. R. Allen	Justin.
Pilot Point Public School	A. B. Weisner	Pilot Point.
Pittsburg High School	C. L. Turner	Pittsburg.
Plainview High School	Miss Ellen Robinson	Plainview.
Plano High School	C. F. Walker	Plano.
Pleasanton Public School	Josiah Bixler	Pleasanton.
Port Arthur High School	J. H. Bright	Port Arthur.
Port Lavaca High School	J. E. Briggs	Port Lavaca.
Proctor Public School	M. P. Chambers	Proctor.
Purves High School	O. B. Rollins	Purves.
Quanah High School	J. W. O'Banion	Quanah.
Queen City Public School	Drew Porter	Queen City.
Quinlan High School	E. H. Watson	Quinlan.
Ranger Public School	J. E. Settle	Ranger.
Ravenna Public School	F. A. Spencer	Ravenna.
Richardson High School	J. W. Arnold	Richardson.
Richland Grammar School	Mrs. E. L. Moncrief	Richland.
Richmond High School	J. M. Patton	Richmond.
Riesel High School	T. S. Whitlock	Riesel.
Rising Star Public School	J. E. Wickham	Rising Star.
Robert Lee Public School	L. E. Crutcher	Robert Lee.
Rockdale Public School	C. G. Green	Rockdale.
Rock Island High School	J. H. Dufner	Rock Island.
Rockport Public School	H. O. Norwood	Rockport.
Rock Springs High School	J. H. Kile	Rock Springs.
Rockwall High School	J. E. Shelton	Rockwall.
Roscoe Public School	C. C. Shaver	Roscoe.
Rosebud Public School	B. F. Sisk	Rosebud.
Rosenberg High School	V. L. Peterson	Rosenberg.
Rotan Public School	L. L. Price	Rotan.
Royse City High School	Walter Platt	Royse City.
Runge High School	M. F. Hall	Runge.
Rusk Public School	Ed. Singletary	Rusk.
Saint Jo School	J. E. Park	Saint Jo.
Sam and Will Moore Institute	Geo. Baur	Moulton.
San Angelo High School	Felix E. Smith	San Angelo.
San Antonio Academy	W. W. Bondurant	San Antonio.
San Antonio High School	C. J. Lukin	San Antonio.
San Augustine High School	W. H. Rushing	San Augustine.
Sanderson High School	J. J. Allen	Sanderson.
San Diego High School	D. B. Burrows	San Diego.
Sanger High School	R. Compton	Sanger.
San Marcos High School	G. M. Sims	San Marcos.
San Saba High School	E. S. Repp	San Saba.
Santa Anna High School	Z. D. Jones	Santa Anna.
Scranton Academy	J. E. Temple Peters	Scranton.
Scranton High School	S. P. Collins	Scranton.
Sealy High School	S. S. Boutwell	Sealy.
Seguin High School	R. E. L. Adams	Seguin.
Seymour Public School	W. E. Edelen	Seymour.
Sherman High School	J. C. Pyle	Sherman.
Shiner Public School	T. J. Ponton	Shiner.
Sidney Public School	J. F. Redwine	Sidney.
Sims School for Boys	J. G. Sims	Fort Worth.
Skidmore Public School	J. J. Jenkins	Skidmore.
Slidell High School	W. E. Hutchins	Slidell.

Name.	Superintendent.	Location.
Smith School	Landon F. Smith	Pittsburg.
Smithville High School	J. N. Bigbee	Smithville.
Snyder High School	H. E. Gable	Snyder.
Sonora High School	J. A. Woodford	Sonora.
Sour Lake High School	W. H. Bodenheimer	Sour Lake.
Springtown High School	A. S. Johnston	Springtown.
Spur Public School	S. W. Adams	Spur.
Stamford High School	J. P. Comer	Stamford.
State Institute for Blind	E. E. Bramlette	Austin.
State Orphan High School		Corsicana.
Stephenville Public School	Henry Sims	Stephenville.
Sterling City Public School	B. F. Bennett	Sterling City.
Stratford High School	B. H. Taylor	Stratford.
Strawn High School	L. T. Cook	Strawn.
Sulphur Springs High School	F. V. Garrison	Sulphur Springs.
Summer Hill Select School	L. G. Sumerell	Omen.
Sweetwater High School	M. B. Johnson	Sweetwater.
Talpa Public School	W. W. Wooten	Talpa.
Taylor High School	J. F. O'Shea	Taylor.
Temple High School	J. F. Kimball	Temple.
Teneha Academy	D. A. Leak	Teneha.
Terrell High School	S. M. N. Marrs	Terrell.
Texarkana High School	O. L. Dunaway	Texarkana.
Thomas Arnold High School	S. J. Jones	Salado.
Timpson High School	J. B. Ramsey	Timpson.
Tioga High School	J. A. Giles	Tioga.
Tivy High School	Alvin Dille	Kerrville.
Tolar High School	C. A. Ward	Tolar.
Trinity High School	J. W. Bright	Trinity.
Troup High School	C. A. Lanier	Troup.
Tyler County High School	E. W. Tubb	Woodville.
Tyler High School	W. T. Adams	Tyler.
Uvalde High School	A. W. Evans	Uvalde.
Valentine Public School	Herman Wofford	Valentine.
Valley Mills High School	A. R. Roach	Valley Mills.
Van Alstyne High School	W. F. Barnett	Van Alstyne.
Velasco High School	J. H. DeFee	Velasco.
Venus High School	W. F. Griswold	Venus.
Vernon Public School	B. F. Holcomb	Vernon.
Victoria High School	Miss Alice C. Dean	Victoria.
Waco High School	J. C. Lattimore	Waco.
Waelder Public School	A. V. Peterson	Waelder.
Wallis Public School	Mrs. L. Barnhill	Wallis Station.
Walnut Springs Public School	W. W. Battle	Walnut Springs.
Waxahachie High School	G. B. Winn	Waxahachie.
Weatherford College Training School	F. D. Cavaness	Weatherford.
Weatherford High School	T. W. Stanley	Weatherford.
Weimar Institute	H. R. Bolton	Weimar.
West High School	A. L. Deveney	West.
West Texas Military Academy	Angus McD. Crawford	San Antonio.
White, William L., Public School	W. C. Carrell	Lancaster.
Whitesboro High School	G. W. Acton	Whitesboro.
Whitney Public School	A. D. Clark	Whitney ?
Wichita Falls High School	T. L. Toland	Wichita Falls.
Willie Denton College	H. P. Warren	Joshua.
Wills Point High School	E. Core	Wills Point.
Winnboro High School	J. H. Sheppard	Winnboro.
Winters Public School	J. W. Lewis	Winters.
Wolfe City High School	E. F. King	Wolfe City.
Wortham High School	D. E. Dean	Wortham.
Wylie High School	J. W. Teasley	Wylie.
Yoakum High School	C. A. Peterson	Yoakum.
Yorktown High School	N. Wilson	Yorktown.
Zephyr High School	J. D. Shaw	Zephyr.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

- Gee, Elmer Charles. College Station.
B. S., University of Nebraska, 1913.
 Candidate for the Degree of Master of Science.
- Herrington, John Anderson. Bryan.
B. S., A. and M. College of Mississippi, 1906.
 Candidate for the Degree of Mechanical Engineer.
- Hohn, Caesar. Yorktown.
B. S., A. and M. College of Texas, 1912.
 Candidate for the Degree of Master of Science.
- Johnston, Lemuel Munroe. Bryan.
B. S., A. and M. College of Texas, 1913.
 Candidate for the Degree of Mechanical Engineer.
- McAdams, Edward E. College Station.
B. S., A. and M. College of Texas, 1911.
 Candidate for the Degree of Civil Engineer.
- Mansfield, Bruce Jefferson. Columbus.
B. S., A. and M. College of Texas, 1912.
 Candidate for the Degree of Civil Engineer.
- Moh, Hsiang-yueh. Shanghai, China.
B. S., University of Illinois, 1913.
 Candidate for the Degree of Master of Science.
- Potts, Arthur Tillman. College Station.
B. S., A. and M. College of Texas, 1907.
 Candidate for the Degree of Master of Science.
- Wood, Casper Alfred. College Station.
B. S., Kansas State Agricultural College, 1911.
 Candidate for the Degree of Master of Science.

UNDERGRADUATE STUDENTS.

Abbreviations.

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|--|--------------------------|
| Ag—Agriculture | C—Civil Engineering |
| Ar—Architecture | E—Electrical Engineering |
| AE—Architectural Engineering | M—Mechanical Engineering |
| Ch—Chemical Engineering | T—Textile Engineering |
| a—Two-Year Course in Agriculture | |
| t—Two-Year Course in Textile Engineering | |

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|---------------|---------------------------------------|
| '14—Senior | Sp—Special Student |
| '15—Junior | 1—First Year of the Two-Year Courses |
| '16—Sophomore | 2—Second Year of the Two-Year Courses |
| '17—Freshman | |

- Abbott, John. '16 Ag. Galveston.
- Abernathy, Milton Aubrey. '16 C. Paducah.
- Adriance, Guy Webb. '15 Ag. Bryan.
- Aldridge, Edwin Ernest. '16 M. Eagle Pass.
Graduate Eagle Pass High School.
- Alexander, John Richmond. '15 M. Navasota.
Graduate Navasota High School.
- Allen, Edward Rudge. '17 Ag. Galveston.
- Allen, John Spillman. '17 Ar. Palestine.
- Allen, Oscar Lamar. 1 a. Yoakum.
- Allen, Robert Luke. '16 M. Graham.
Graduate Graham High School.

Allen, Roderick Random.....	'15 Ag.....	Palestine.
Allert, Carlos Carter.....	'17 E.....	Cuero.
<i>Graduate John C. French High School.</i>		
Amsler, Lamar Bennard.....	'17 M.....	Hempstead.
<i>Graduate Hempstead High School.</i>		
Andrews, Dallas Robert.....	'16 Ag.....	Bryan.
Appling, Walter William.....	'17 C.....	Louise.
<i>Graduate Louise High School.</i>		
Aramburu, Enrique.....	1 a.....	Mexico City, Mex.
Armstrong, Sam Jones.....	1 a.....	Purdon.
Armstrong, Ural Stokes.....	'17 E.....	Plainview.
<i>Graduate Plainview High School.</i>		
Arnold, Albert Wendell.....	'17 AE.....	Angleton.
<i>Graduate Angleton High School.</i>		
Artusy, Gerald Max.....	Sp Ag.....	Galveston.
Askew, Henry Forest.....	'16 M.....	Baileyville.
Aston, Andy Chisalem.....	'17 E.....	Tulia.
Ater, Guy.....	'17 E.....	Bertram.
<i>Graduate Bertram High School.</i>		
Atkinson, Donald Eustace.....	1 a.....	Winona.
Atwell, Ulysses Sam.....	'16 Ag.....	Hutchins.
August, Lester Holmes.....	'16 Ch.....	Luling.
<i>Graduate Luling High School.</i>		
Austin, Buryl Anderson.....	'17 Ag.....	Sterling City.
<i>Graduate Sterling City High School.</i>		
Avent, Benjamin Rhetete.....	'17 C.....	Lott.
<i>Graduate Rosebud High School.</i>		
Ayers, Ed Lee.....	'14 Ag.....	DeLeon.
Baccus, Embury Depee.....	'16 E.....	Seymour.
<i>Graduate Seymour High School.</i>		
Baker, Harlan Kay.....	'14 E.....	Haskell.
<i>Graduate Houston High School.</i>		
Baker, Roy Lee.....	'17 M.....	Anson.
Ball, Bertus Clyde.....	'14 Ag.....	Mansfield.
Ballard, John Curtis.....	2 a.....	Haskell.
Ballowe, Thomas Randolph.....	'17 E.....	Brazoria.
Barbee, William Terry.....	'17 Ag.....	Hico.
Barnes, James Renfro.....	'17 Ag.....	Chillicothe.
<i>Graduate Chillicothe High School.</i>		
Barnett, Curtis Hugh Washington.....	'16 E.....	Caldwell.
Barraco, Victor Anthony.....	'15 Ag.....	Houston.
Barse, William Horace.....	2 a.....	Fort Worth.
Barton, John Alexander.....	'17 Ag.....	Port Lavaca.
<i>Graduate Port Lavaca High School.</i>		
Bartosh, Lida.....	1 a.....	Wichita Falls.
Bass, Matthew Lloyd.....	'17 C.....	Houston.
Bates, Clyde Noble.....	'17 C.....	El Campo.
<i>Graduate El Campo High School.</i>		
Bates, Wade Hampton.....	'15 E.....	Bryan.
Beals, Orville Oliver.....	'17 E.....	Houston.
Beasley, Jeff Gibson, Jr.....	'17 Ag.....	Cleburne.
Beasley, Wyatt Gristie.....	'14 Ag.....	Cleburne.
Beaty, Charles Leoffler.....	'17 E.....	Beaumont.
<i>Graduate San Antonio High School.</i>		
Beckmann, Albert Erhard.....	'15 Ag.....	San Antonio.
Bell, Benjamin Franklin.....	1 a.....	Tyler.
Bell, Jeff Edgar.....	'15 C.....	Luling.
<i>Graduate Luling High School.</i>		
Bell, Willis Fenton.....	1 a.....	Luling.
Bennett, Adam Jackson.....	'17 E.....	Nottawa.
Bennett, Frank Crine.....	'16 C.....	Henderson.
Bennett, Joel Blackwell.....	'17 Ag.....	Hochheim.
Benson, William Thomas.....	'17 T.....	Eldorado.
<i>Graduate Eldorado High School.</i>		

Beringer, Milton Streuer.....	'16 Ch.....	Gonzales.
<i>Graduate Gonzales High School.</i>		
Berry, Jack.....	'17 Ag.....	Pearsall.
<i>Graduate Coronal Institute.</i>		
Biffle, John Theodrick.....	'17 Ag.....	Myra.
Biggers, Chester Arthur.....	'14 E.....	Bonham.
Biggers, Vernon Wilson.....	'17 C.....	Bonham.
Billups, Val T.....	'17 Ar.....	Winters.
Bivins, June.....	'17 Ag.....	Longview.
Black, Robert Clyde.....	'16 C.....	Skidmore.
<i>Graduate Skidmore High School.</i>		
Black, William Thomas.....	2 a.....	McGregor.
<i>Graduate McGregor High School.</i>		
Blakely, William Bassett.....	'17 Ag.....	Richmond.
Blalock, Lewis Brown.....	'16 E.....	Kosse.
<i>Graduate Kosse High School.</i>		
Blanchard, Kenneth.....	1 a.....	Highland Falls, N. Y.
Blanchard, William Wesley.....	1 a.....	Highland Falls, N. Y.
Blanton, John Franklin.....	'17 E.....	Hewitt.
<i>Graduate Hewitt High School.</i>		
Blasingame, Albert Jerome.....	1 a.....	Kemp.
Bledsoe, Albert McQueen.....	'17 Ag.....	Cleburne.
<i>Graduate Cleburne High School.</i>		
Bledsoe, William Scott.....	'17 E.....	Lubbock.
Boesch, George Darwin.....	'17 AE.....	Whitney.
<i>Graduate Whitney High School.</i>		
Bollman, Eric Joseph.....	'16 Ag.....	Clarksville.
Bolton, Harrell Thomas.....	2 a.....	Waco.
Bonner, Harry Lloyd.....	'17 Ag.....	Waco.
Booker, Sam F.....	1 a.....	Glen Rose.
Booth, George Edward.....	'14 M.....	Chico.
Bosque, Robert Edward.....	'15 Ag.....	Corsicana.
<i>Graduate State Orphan High School.</i>		
Boswell, Fredrick Thomas.....	'17 Ag.....	Midlothian.
Bouknight, Raymond Andre.....	'15 E.....	Greenville.
<i>Graduate Greenville High School.</i>		
Boutwell, William Jones.....	2 a.....	Celeste.
Bowles, John Cleveland.....	'17 C.....	Rockwall.
Boyett, Douglas Chilton.....	'14 Ag.....	Bryan.
Boyett, Guy Frank.....	'17 C.....	College Station.
Boyett, Norman Kittrell.....	1 a.....	College Station.
Bradley, Earl Iven.....	'14 Ag.....	Memphis.
<i>Graduate Memphis High School.</i>		
Bradley, Lewis Lawson.....	'16 M.....	Baileyville.
Brailsford, Thomas Reed.....	'16 Ag.....	Latexo.
<i>Graduate Crockett High School.</i>		
Bramlette, Frederick Levenworth.....	'16 C.....	Longview.
Branson, Alfred Lovell, Jr.....	'15 M.....	Marlin.
Braumiller, Nickolaus Mathias.....	'16 M.....	Texarkana.
<i>Graduate Texarkana High School.</i>		
Braumiller, Walter Edwin.....	'16 Ag.....	Texarkana.
<i>Graduate Texarkana High School.</i>		
Braunig, Carl Francis.....	'17 Ag.....	Hallettsville.
Braunig, Hubert Edwin.....	'14 E.....	Hallettsville.
Brecher, Edwin Robert.....	'17 Ag.....	San Antonio.
<i>Graduate Breckenridge High School.</i>		
Brewster, James Edward, Jr.....	1 a.....	Temple.
<i>Graduate Temple High School.</i>		
Bridgwater, Malcolm Macfarlan.....	'17 E.....	Schulenburg.
Brigance, George.....	'16 C.....	Sherman.
Briggs, Robert Webb.....	'17 C.....	Bay St, Louis, Miss.
Briggs, William Hardaway.....	'17 C.....	Bremond.
<i>Graduate Bremond High School.</i>		
Briggs, Will Talbot.....	1 a.....	Calvert.
Brock, James Russell, Jr.....	Sp. Ag.....	Trenton, Ga.

Brooks, Edward Cottrell	'17 Ag	Bay City.
Broome, William Scott	'14 C	Memphis.
<i>Graduate Memphis High School.</i>		
Broun, Thomas Rogers	'15 Ag	Greenwood.
Browder, Charles Marion	'17 C	Groesbeck.
<i>Graduate Groesbeck High School.</i>		
Browder, John Hosea, Jr.	'15 T	Groesbeck.
Brown, Edward Lee	'17 E	Dallas.
<i>Graduate Dallas High School.</i>		
Brown, James David	'16 AE	Rockport.
<i>Graduate Rockport High School.</i>		
Brown, Joe F.	'17 Ag	Rock Springs.
Brown, Leslie Walter	'15 Ag	Mathis.
Brown, Mitchell Harvey	'16 E	Rockwall.
Brown, Rodgers Porter	'17 M	Dallas.
Bruce, Andrew Davis	'16 Ag	San Antonio.
Brundrett, Herald McElvaney	'14 Ag	Mesquite.
Bryan, Lester Leon	'17 T	Glen Rose.
<i>Graduate Glen Rose High School.</i>		
Buchanan, Alfred Frederick	'16 C	Brenham.
<i>Graduate Brenham High School.</i>		
Buchanan, Andrew Frederick, Jr.	'17 Ag	Sunny Side.
Buchanan, Durant Samuel	'17 Ag	Bryan.
Buchner, Louis McIntosh	'16 Ag	Austin.
Bugbee, John Sherman	'15 Ag	Clarendon.
Bull, Alfred Castleman	'16 Ag	Austin.
Burges, Austin Earl	'15 Ag	Weatherford.
Burkett, Fred	'16 C	Morgan.
Burkett, Harry J.	'17 Ar	Galveston.
Burkett, James Marion	'17 Ar	Graham.
<i>Graduate Graham High School.</i>		
Burns, Douglas	'13 Ag	Cuero.
Burrus, Swan Thompson	2 a	Deport.
Camp, George Dashiell	'14 C	San Antonio.
<i>Graduate Walnut Springs High School.</i>		
Camp, Thomas Ringgold	'16 Ar	San Antonio.
Campbell, Archibald Raymond	'15 Ag	Plano.
<i>Graduate Plano High School.</i>		
Campbell, Ray	'16 C	Holliday.
Canion, Claude	1 a	Port Lavaca.
<i>Graduate Port Lavaca High School.</i>		
Cardwell, Jonnie Stell	'16 Ag	Albertville, Ala.
Carleton, Howard Cantrell	'16 Ag	Dallas.
Carpenter, Dudley Rimes	'17 Ag	Texarkana.
<i>Graduate Texarkana High School.</i>		
Carson, Alfred Doughton	'17 Ag	Bryan.
Carson, William Willis	'15 E	Sherwood.
<i>Graduate Sherwood High School.</i>		
Cartwright, Emmit Bea	'17 Ag	Sherman.
Caruthers, Lawrence Haley	'15 E	Alpine.
<i>Graduate Alpine High School.</i>		
Casey, Alfred Cecil	'16 Ag	Rogers.
Cather, Harold Malcolm	'17 M	Waco.
<i>Graduate San Antonio High School.</i>		
Cawthon, Frank Walter	'15 C	Denison.
<i>Graduate Denison High School.</i>		
Cerf, Uriah Moise	1 a	Corsicana.
<i>Graduate Corsicana High School.</i>		
Chambers, David Cheatham	'17 M	New Boston.
<i>Graduate New Boston High School.</i>		
Chappelle, Roy L.	'17 Ag	College Station.
Cherry, Thomas Graves	'15 Ag	Giddings.
<i>Graduate Giddings High School.</i>		
Christopherson, George	'17 Ag	Cooledge.
Clark, Samuel Finis	'15 Ag	Hico.
<i>Graduate Hico High School.</i>		

Clarke, Hugh St. Clair.....	'16 M.....	Comanche.
<i>Graduate Comanche High School.</i>		
Clarkson, Percy William.....	'15 E.....	San Antonio.
Claytor, Edward McRae.....	'15 E.....	Campbell.
Clement, Charles Burbank.....	'14 AE.....	Port Lavaca.
Cochran, Thomas Beauford.....	'17 Ag.....	Austin.
Cockrell, James Bass.....	'17 Ag.....	Terrell.
<i>Graduate Terrell High School.</i>		
Cole, Leon Roy.....	'17 C.....	Quanah.
<i>Graduate Quanah High School.</i>		
Cole, Noah Davis.....	'15 E.....	Bryan.
Cole, Ransom James.....	'16 Ag.....	Bryan.
Coleman, Everette Freeman.....	'16 Ag.....	Prosper.
Coleman, Frank Ralph.....	'16 E.....	Hallettsville.
<i>Graduate Hallettsville High School.</i>		
Coleman, John Everette.....	2 a.....	Cotulla.
<i>Graduate Cotulla High School.</i>		
Coleman, William Cowles.....	'15 Ag.....	Athens.
Coleman, Wiley Lee.....	'17 M.....	Fort Worth.
Collins, Jack Clarence.....	'15 Ag.....	Channing.
<i>Graduate Channing Public School.</i>		
Collins, Willie Atmar.....	'16 Ag.....	Groveton.
Cone, Joe Milton.....	1 a.....	Llano.
Conner, Arch Rice.....	1 a.....	Archer City.
Conner, James Augustus.....	'16 Ag.....	Lexington.
<i>Graduate Lexington High School.</i>		
Conway, Myron Joseph.....	Sp Ag.....	Mission.
Coogle, Jesse.....	'16 C.....	Corsicana.
<i>Graduate State Orphan High School.</i>		
Cook, William Berry.....	'17 Ag.....	Bryan.
Copeland, Alvin Barnabas.....	'15 Ag.....	Huckabay.
Corley, James Robert.....	2 t.....	Flatonia.
Cornett, Guy Joris.....	'16 C.....	Grandview.
Corry, Hal Francis.....	'17 E.....	Rockwall.
Countess, William Stephen.....	1 a.....	Maypearl.
Courtney, Olden Key.....	'14 Ag.....	Pettus.
Cover, Clarence Carlos.....	'17 Ag.....	Elmendorf.
Cover, John Steele.....	2 a.....	Elmendorf.
Covey, Cyclone Davis.....	'17 E.....	Morgan.
Cox, Carl Clarence.....	'16 E.....	Mt. Vernon.
<i>Graduate Mt. Vernon High School.</i>		
Cox, Floyd Alonzo.....	'17 C.....	Whitney.
<i>Graduate Whitney High School.</i>		
Cox, Noland Charles.....	'17 Ag.....	Groveton.
Cozby, George Lewis.....	1 a.....	Azle.
Craig, Charles Elbert.....	'17 C.....	El Campo.
<i>Graduate El Campo High School.</i>		
Craig, Samuel Reid.....	'17 C.....	El Campo.
<i>Graduate El Campo High School.</i>		
Craig, William Carmichael.....	Sp Ag.....	Brownsville.
Crawford, Vernon William.....	'16 Ag.....	Fort Stockton.
Crisp, Marshall Claiborne.....	'15 Ar.....	Cuero.
<i>Graduate John C. French High School.</i>		
Crocker, William Jennings.....	'16 E.....	Dallas.
Crockett, Floyd Marion.....	'16 C.....	Prosper.
Croom, Guy.....	'16 M.....	Elmina.
Crow, Glenn Columbus.....	'17 C.....	Willis.
Crow, Louie Conley.....	2 a.....	Meridian.
Crown, Phil Theodore.....	'15 AE.....	Waco.
Curnutte, James Vincill.....	'16 C.....	Snyder.
<i>Graduate Snyder High School.</i>		
Curtis, Wyman Broun.....	'17 Ag.....	Sunny Side, Ark.
Darby, James Andrew.....	'17 E.....	San Antonio.
Daugherty, Martin Marion.....	'16 Ag.....	Alpine.
Davidson, Grover Randal.....	'17 Ag.....	Bertram.
<i>Graduate Bertram High School.</i>		

Davis, Charles Jester	'15 Ag	Corsicana.
<i>Graduate Corsicana High School.</i>		
Davis, Dean	'15 E	Dawson.
Davis, Grandville Ewing	2 a	Grandview.
Davis, Stanley Forrest	'15 Ag	San Antonio.
<i>Graduate San Antonio High School.</i>		
Davis, Thomas Charlton	'14 C	Poteet.
<i>Graduate Bronson High School.</i>		
Davis, William Kinnard	'15 E	Hico.
<i>Graduate Hico High School.</i>		
DeLong, Raleigh	'15 M	Mexia.
Denning, Charles Oscar	'17 M	Mexia.
<i>Graduate Mexia High School.</i>		
Dennis, Leon Chapman	'16 Ag	Prince Bay, N. Y.
Densmore, Ralph Albert	'15 C	Dallas.
Densmore, Robert Earl	'15 C	Dallas.
Denton, Velpean Curlee	'15 C	Whitewright.
Dickie, Alexander	'16 E	Breckenridge.
<i>Graduate Breckenridge High School.</i>		
Dickie, Byron Homer	'15 E	Breckenridge.
<i>Graduate Breckenridge High School.</i>		
Dieterich, Herman Frank	'17 Ag	Dallas.
Dillashaw, Rowland Harry	'17 AE	Gatesville.
Dillon, Roy Eustuce	1 a	Judkins.
Dodd, Grover Cleveland	'15 Ag	Clarksville.
<i>Graduate Dodd City High School.</i>		
Dodson, Alfred Ewing	Sp Ag	Petersburg.
Donoho, Devada Lewis	'16 Ag	George.
Doucette, Fred Louis	'17 E	Grayburg.
<i>Graduate Sour Lake High School.</i>		
Douglas, Guy McDavid	'17 C	Sterling City.
<i>Graduate Sterling City High School.</i>		
Duck, Ira B.	2 a	Proctor.
Dudley, Howard Waller	1 a	Hillsboro.
<i>Graduate Hillsboro High School.</i>		
Duncan, Mofford Slawson	'17 Ag	Killeen.
<i>Graduate Killeen High School.</i>		
Dunkle, Paul Burtch	'17 Ag	Lelia Lake.
Dunning, George Rutledge	'15 Ch	Gonzales.
Dutton, Carl Arden	'17 M	Waco.
<i>Graduate Waco High School.</i>		
Dycus, Standish Gage	'17 Ag	Dallas.
Dyer, Fletcher Floyd	'16 M	Barstow.
Dyer, Scott Bruce	'17 E	Tulia.
Eagleston, Charles Moulton Clark	'15 Ag	Smithville.
Earnest, Lawrence Howell	'17 C	Dolores.
<i>Graduate San Antonio High School.</i>		
Easley, Claudius Miller	'16 AE	Waco.
<i>Graduate Waco High School.</i>		
Edrington, Henry Clay	'17 Ag	Fort Worth.
Ehlers, Alfred	'17 AE	LaGrange.
<i>Graduate LaGrange High School.</i>		
Ehlert, John Charles Frederick	'16 Ag	Brenham.
Eiland, Ernest Ralph	'15 Ag	Rockdale.
Elam, William Nile	'17 Ag	Ohio.
Eldridge, Herbert	'17 C	Pineland.
<i>Graduate Buna High School.</i>		
Elliott, George Monroe	1 a	Paris.
Elliott, Robert Drane	'17 E	Corsicana.
<i>Graduate Corsicana High School.</i>		
Elliott, Walton Henderson	Sp Ar	Greenville.
<i>Graduate Greenville High School.</i>		
Ellis, Howard Ferguson	'15 Ag	Abbott.
Enloe, Guy	'17 E	Saratoga.
<i>Graduate Santa Anna High School.</i>		

Erskine, Wood Steele	'16 E	San Antonio.
Eschenburg, Arthur Carl	'16 Ag	Floresville.
Everett, George Dudley	'15 Ag	Dallas.
<i>Graduate Dallas High School.</i>		
Faber, Bennie Herman	'15 C	Eagle Lake.
<i>Graduate Eagle Lake High School.</i>		
Fairchild, William Seley	'17 Ag	Taylor.
Farthing, William Eugene	'14 C	Valley View.
Farthing, Welbourne Owen	'17 Ag	Valley View.
Findlater, John Corscaden	'17 E	San Angelo.
Fisher, John Kerwin Godfrey	'14 Ag	Fort Worth.
Flach, Ernest Kapp	'17 Ag	Comfort.
Fleming, Charles Herman	1 a	Merit.
<i>Graduate Fort Worth High School.</i>		
Floyd, Nathaniel Breford	'16 Ag	Pledger.
Forsyth, George Alexander	'17 M	McKinney.
<i>Graduate McKinney High School.</i>		
Forsyth, William Russell	'15 M	McKinney.
<i>Graduate McKinney High School.</i>		
Foster, Charles Darwin	'17 Ag	Riesel.
Foster, Clayton Jones	'16 Ag	Denton.
<i>Graduate North Texas State Normal.</i>		
Foster, Julian Lewis	'15 E	Fort Worth.
Foster, Wilbur Carradine	'17 Ag	Opelousas, La.
Fouraker, Harold Edgar	'17 E	Dallas.
<i>Graduate Dallas High School.</i>		
Fouraker, Leroy Levi	'14 E	Dallas.
<i>Graduate Dallas High School.</i>		
Fouraker, Raymond Spivey	'14 E	Dallas.
<i>Graduate Dallas High School.</i>		
Francis, William Bebb	'15 Ag	College Station.
<i>Graduate Allen Academy.</i>		
Francisco, Edgar Oliver	'15 C	Coalgate, Okla.
Frazier, Harris Lamar	'17 E	Tyler.
<i>Graduate Tyler High School.</i>		
Fry, Curtis Lozelle	'17 Ag	Denton.
Fry, Homer Lee	'17 E	Denton.
<i>Graduate Denton High School.</i>		
Fuchs, John William	'17 E	Round Rock.
Fuess, Carl Andrew	'16 AE	Cuero.
Galliford, Walter Thomas	'17 M	Galveston.
<i>Graduate Palacios High School.</i>		
Gallman, Doyle Murphy	'16 Ag	Bartlett.
Gammill, Harold Harper	'15 Ag	Bryan.
Gardner, Jesse Cornelius	'17 Ag	Terrell.
Gardner, Neil Ethridge, Jr.	'17 Ar	Troy.
<i>Graduate Granger High School.</i>		
Garitty, John Patterson	2 t	Corsicana.
Garrett, Melrose Truett	'16 Ag	Merrimac.
<i>Graduate Crawford High School.</i>		
Garrison, Richard Eugene	'17 M	Pilot Point.
<i>Graduate Pilot Point High School.</i>		
George, Cicero Jackson	1 a	Waco.
<i>Graduate Douglas Select School.</i>		
Gibbens, Ernest	'14 Ag	Kerrville.
Gibbs, John Lawson	'17 M	Burnet.
<i>Graduate Burnet High School.</i>		
Gibson, Manly Broadus	'17 Ag	Angleton.
<i>Graduate Angleton High School.</i>		
Giesecke, Edward	'17 Ag	Ballinger.
Gilfillan, Max Dole	'17 Ag	St. Johnsbury, Vt.
Gill, Hugh	1 a	Houston.
Gillespie, Jack Cole	'17 Ag	Dallas.
Gillespie, William Edmonson	1 a	Alleyton.
Gillespie, William Spence	'15 C	Houston.

Gilley, Burns Ingram	'17 Ag	Caldwell.
Girardeau, Edward Reed, Jr.	'15 Ag	Galveston.
<i>Graduate Ball High School.</i>		
Givens, George Thomas	'17 Ar	Dallas.
Glasgow, Herschel	'17 C	Alvarado.
<i>Graduate Alvarado High School.</i>		
Glaze, Wesley Ogden	'15 E	San Antonio.
Glover, Rufus Elliott	1 a	San Antonio.
Godwin, Zooling Andrew	'17 E	Temple.
<i>Graduate Temple High School.</i>		
Goen, Preston Soles	1 a	Bryan.
Gooch, Roy Branch	'16 M	Temple.
<i>Graduate Temple High School.</i>		
Goodwin, James Calvin	'14 Ag	Beaumont.
Graham, Cyrus Earle	'16 Ag	Bryan.
Gray, James William	'17 E	Caldwell.
<i>Graduate Caldwell High School.</i>		
Gray, Oscar Somers	'16 Ag	Terrell.
<i>Graduate Terrell High School.</i>		
Greathouse, Thaddeus Allen	'17 Ag	Austin.
Green, Perry Roberts	'17 C	Waco.
<i>Graduate Waco High School.</i>		
Green, Roy	'14 Ag	Floydada.
Green, John Wikoff	Sp Ag	Liberty, Mo.
Green, Ossie Wendelken	'15 Ag	Comanche.
Grimes, William Ezekiel	1 a	Milford.
Groginski, Philip S.	'14 E	Bryan.
Gunn, Clifton Henry	'16 Ag	Waelder.
Haden, Julian Frank	'15 Ar	Timpson.
<i>Graduate Timpson High School.</i>		
Hafner, Vernon Etter	'17 AE	Greenville.
<i>Graduate Greenville High School.</i>		
Hagaman, Leslie Hilsman	'16 C	Ranger.
Hagan, Thomas Edison	'16 Ag	Troup.
Hail, Irma	1 t	Bonham.
Haines, Paul Graves	'17 Ag	Gatesville.
Hajek, William Stephan	'16 T	Bryan.
<i>Graduate Allen Academy.</i>		
Halbedl, Clifton Charles	'17 Ag	San Antonio.
<i>Graduate San Antonio High School.</i>		
Hall, George Graham	Sp Ag	Houston.
<i>B. S., A. & M. College of Texas, 1913.</i>		
Hall, Robert Alison	'16 Ag	Tarkington Prairie.
Haller, Clarence Francis	'15 Ag	Victoria.
Haller, Raymond Burton	'15 Ag	Victoria.
Halsey, Frank Wilbur	'17 Ag	St. Johnsbury, Vt.
Hamerly, Jewel Silas	'16 M	Oakhurst.
Hamilton, George Buchanan	1 a	Houston.
Hamlet, Claron Bailey	'17 Ag	Nome.
Hamner, Edward Joe, Jr.	'17 Ag	Sweetwater.
Hanson, Gordon Bell	'17 E	Tyler.
<i>Graduate Tyler High School.</i>		
Hanson, John Lynd	1 a	Brownsville.
Hanson, Wrathall King	'16 Ag	San Antonio.
Hanway, John Thomas, Jr.	'17 T	Bryan.
<i>Graduate Allen Academy.</i>		
Hargett, Frederick	'15 C	Texarkana.
Harrell, James Wilson	'17 AE	Mt. Vernon.
<i>Graduate Mt. Vernon High School.</i>		
Harris, Henry Clay	'17 Ag	Dallas.
<i>Graduate Greenville High School.</i>		
Harris, Munroe	'17 E	Houston.
Harrison, Julius Caesar	'14 M	Stockdale.
<i>Graduate Stockdale High School.</i>		

Harrison, Julian P.	'17 E	Marshall.
<i>Graduate Marshall High School.</i>		
Harriss, David Lonnie	'17 Ar	Rockdale.
<i>Graduate Miles High School.</i>		
Hausser, Charles	'16 Ag	Eagle Pass.
Hawes, Roscoe	'16 C	San Antonio.
<i>Graduate Uvalde High School.</i>		
Hawkins, Alden Riley	'16 AE	Dallas.
Hawley, George Cressey	'16 C	Kingsville, Ohio.
Haynes, Sylvan Blum	'15 Ar	Port Arthur.
<i>Graduate Port Arthur High School.</i>		
Heath, Richard Hardy	'17 Ag	Pittsburg.
*Hector, Wallace Bryan	'15 Ag	Alpine.
Hedges, Colonel Nugent	1 a	Mossville.
<i>Graduate Gainesville High School.</i>		
Hefner, Charles Balsar	'16 E	Cuero.
<i>Graduate John C. French High School.</i>		
Heilig, Gustav Alexander	'17 AE	LaGrange.
<i>Graduate LaGrange High School.</i>		
Heldenfels, Grover Cleveland	'16 Ag	Beeville.
Helm, Dury Lane	'16 Ag	Clifton.
<i>Graduate Clifton High School.</i>		
Hemphill, James Andrew	'17 M	Richmond, Ark.
Henderson, John Marion	Sp Ag	Waelder.
Henley, Ernest Nelson	'16 C	Brackettville.
Henry, Julian Lemonde	'16 Ag	Lancaster.
Herrington, James Joseph, Jr	'14 M	Neshoba, Miss.
Hervey, Stewart Darden	'17 Ag	Galveston.
Hester, Jesse Walton	'17 AE	Colorado.
Hicks, Jesse William	'17 Ag	Canyon.
<i>Graduate Canyon High School.</i>		
Hill, Martin Elmo	'15 Ag	Eastland.
Hill, Robert Aaron	1 a	Austin.
Hill, Ralph Edwin	'17 E	El Campo.
<i>Graduate El Campo High School.</i>		
Hill, Scott Shelby	'14 E	Sandy.
<i>Graduate Al en Academy.</i>		
Hinds, Gordon Ferguson	'17 E	Bullard.
<i>Graduate Bullard High School.</i>		
Hobbs, Leonard Sinclair	'15 M	Brownsville.
<i>Graduate Brownsville High School.</i>		
Hockaday, Frederick James	1 t	Bowie.
Hockaday, Irving Thomas	'16 E	Bowie.
Hodgson, Albert Lee	1 a	Mazomanie, Wis.
Hoepfner, Fred William	'14 Ag	Houston.
Hogue, Aubrey Lynn	'16 Ag	Paris.
<i>Graduate Paris High School.</i>		
Hogue, Ernest Newton	'15 E	Paris.
<i>Graduate Paris High School.</i>		
Hohn, Alexander	'17 E	Yorktown.
<i>Graduate Yorktown High School.</i>		
Holick, Edward Weldon	2 a	Bryan.
Holland, Horace Furman	'17 E	Jefferson.
<i>Graduate Jefferson High School</i>		
Holland, Jesse Mercer, Jr	'17 M	Lakeland, Fla.
Hollingshead, Frank Adolphus	'16 Ch	Ganado.
Holloway, Louis Edward	'15 Ag	Dallas.
Holman, Jesse Rogers	2 a	Weimar.
<i>Graduate Weimar Institute.</i>		
Holmes, Neill Shaw	'17 Ag	Fayetteville, N. C.
Homann, Frederick Adolph	'15 M	New Braunfels.
<i>Graduate New Braunfels High School.</i>		

*Deceased.

Hook, Donnie Leon	'16 C	Denison.
<i>Graduate West High School.</i>		
Hooker, Guy Burch	'17 M	Silsbee.
Hoppe, Roland Charles	'17 M	Cypress Mills.
Horn, Jeffie Neal	'17 Ag	Athens.
<i>Graduate Athens High School.</i>		
Hubbard, Edmund Paul	'17 E	Lampasas.
<i>Graduate Lampasas High School.</i>		
Hudson, Gay	'15 Ag	Celeste.
Hudson, Murray Edward	'17 E	Abilene.
Hudspeth, Clarence Chancey	'15 E	Hondo.
Huebner, Louis Henry Alfred	'17 Ar	Shiner.
<i>Graduate Shiner High School.</i>		
Hurdle, Eugene Franklin	'15 C	Slayden, Miss.
Hurt, Wilbur Torney	Sp Ag	Dallas.
Irby, Arthur Henri	'14 Ag	Beaumont.
<i>Graduate Beaumont High School.</i>		
Irby, Benjamin Earle	'17 Ar	Beaumont.
<i>Graduate Beaumont High School.</i>		
Iriarte, Fernando	'17 M	Mexico City, Mexico.
Isbell, Lester Livingston	'17 Ag	Uvalde.
Jackson, John Henry	'17 Ag	Kosse.
Jackson, William Halbert	'15 C	Graham.
Jackson, Willie Wood	'17 Ag	Liberty Hill.
James, James Ray	'17 E	Hamlin.
<i>Graduate Hamlin High School.</i>		
James, Origen Jewett	'14 Ag	Monclova, Coah., Mex.
Jantzen, Henry William	Sp Ag	Paige.
Jarrett, Ed. Lee	'15 E	Valley Mills.
<i>Graduate Valley Mills High School.</i>		
Jarrett, J. C., Jr.	'17 C	Valley Mills.
<i>Graduate Valley Mills High School.</i>		
Jarvis, Fred Bond	1 a	Leakey.
Jarvis, Joseph Robert	'15 Ch	Brandon.
<i>Graduate Brandon High School.</i>		
Jenkins, Joe Alphaeus	'17 Ag	Caldwell.
<i>Graduate Caldwell High School.</i>		
Jennings, Albert Lawrence	'14 M	Kosse.
<i>Graduate Kosse High School.</i>		
Jennings, Edgar Petty	'15 Ag	Martindale.
<i>Graduate Martindale High School.</i>		
Jennings, Robert Quincy	'17 Ag	Martindale.
<i>Graduate Martindale High School.</i>		
Jobson, Charlie Culberson	'17 E	Mesquite.
Johnson, Albert Denarvous	'16 Ag	Kaufman.
Johnson, Harry Hubbard	'17 Ag	Eagle Lake.
Johnson, James Henry	'17 E	Bertram.
<i>Graduate Temple High School.</i>		
Johnson, Olaf Konstantine	'17 Ar	Waco.
<i>Graduate Douglas Select School.</i>		
Jones, Arthur Orlander	'17 E	Chillicothe.
<i>Graduate Chillicothe High School.</i>		
Jones, Lloyd Clifton	2 a	Bono.
Jones, Lafayette Poindexter	'15 Ag	Temple.
Jones, Roy Colster	'17 Ag	Myra.
Jones, William Echols	2 t	Utopia.
Jones, William Tignal	'14 E	Sinton.
Jopling, Homer Augustus	'16 AE	Wharton.
<i>Graduate Trinity High School.</i>		
Jordan, Alvin Wayne	'17 C	Meridian.
<i>Graduate Meridian High School.</i>		
Jordan, George Frank	1 a	Nacogdoches.
<i>Graduate Nacogdoches High School.</i>		
Jordan, Gilbert Frederick	'14 Ag	Fredericksburg.
Jourdan, Harry	'17 Ag	Del Rio.

Joy, Whitney Orvan	'16 E	Ingram.
Joyce, John Berry	'17 E	Brady.
Keahey, Ray Dewitte	'17 Ag	Rockwall.
Keasler, Thomas Frank	'16 Ag	Mineral Wells.
Kelly, David Cleveland	'16 Ch	Greenville.
<i>Graduate Greenville High School.</i>		
Kelly, Thomas James	'17 Ar	Beaumont.
<i>Graduate Beaumont High School.</i>		
Kerbow, Herbert Ralph	'16 Ar	Clarendon.
Kiber, Daniel Henry	'16 M	Corsicana.
<i>Graduate Corsicana High School.</i>		
Kiesling, Justin Alucius	'15 E	Houston.
<i>Graduate Houston High School.</i>		
Killough, David Thornton	'14 Ag	Galveston.
Killough, Hugh Baxter	'16 Ag	Center Point.
Kincheloe, James Matson	'15 Ag	Hubbard.
Kinnard, Albert William, Jr	'15 Ag	Bryan.
Klug, Harry Veatch	'16 Ag	Dearborn.
Knolle, Miles	'15 Ag	Industry.
Knox, George Pierce	'14 Ar	San Antonio.
Kothmann, Damon Harry	1 a	Castell.
Kotzebue, Leon Lightner	'17 Ag	Flatonia.
<i>Graduate Flatonia High School.</i>		
Kotzebue, Meinhard Henry	'14 M	Flatonia.
<i>Graduate Flatonia High School.</i>		
Kristek, George Henry	'16 E	Flatonia.
Kroschel, John Anthony Forest	'17 E	Hallettsville.
<i>Graduate Hallettsville High School.</i>		
Kurtz, Lawrence A.	'17 E	Seadrift.
Landers, Jesse C.	'17 Ag	Cleburne.
Lane, George Irvin	'14 Ag	Valley Mills.
Langford, Ivan	'17 E	Georgetown.
Langley, Samuel Gallatin	'17 Ag	Bullard.
Lawson, Roy	'17 E	Burleson.
Leary, John Benjamin Rex	'17 Ag	San Antonio.
<i>Graduate Corpus Christi High School.</i>		
Lee, Homer Goodson	1 a	Comanche.
Lee, Thomas Nugent	1 a	Eckert.
Lenert, August Albert	'14 Ag	LaGrange.
<i>Graduate LaGrange High School.</i>		
Letot, Alfred Eugene	1 a	San Antonio.
Levy, David Henry	'14 E	Waco.
<i>Graduate Waco High School.</i>		
Lewis, Henry Stanley	Sp Ag	La Porte.
Lill, John Frank	1 a	Panhandle.
Little, Thomas Ewing	'16 Ag	Harleton.
Lloyd, Emil Edward	'17 E	Italy.
<i>Graduate Italy High School.</i>		
Lochridge, Robert Napoleon	'16 Ag	Iowa Park.
Lockett, William Cureton	'16 E	Cleburne.
Long, Aretas William	1 a	Childress.
Long, Brevard Stephenson	'17 E	Haskell.
<i>Graduate Haskell High School.</i>		
Long, George Alvin	'17 Ag	Greenville.
Lowry, Richard Cohron	'17 M	San Antonio.
Lucky, Maurice Cecil	'17 E	Saragosa.
Luedtke, Edward Henry	2 a	McGregor.
Lyle, Francis Marion	'17 Ag	Quinlan.
<i>Graduate Quinlan High School.</i>		
Lyne, Eugene Scott	'17 M	Houston.
McBirney, William Carter	'16 Ag	Pecos.
McCampbell, Robert Floyd	1 a	San Antonio.
McCarty, Stuart Clare	'15 C	Taylor.
McCollum, Hollie Travis	'15 Ag	Valley View.
McConnell, Mosey Walker	'17 Ag	Gordonville.

McCorkle, George McCutchen.....	1 a.....	Godley.
McDaniel, George Edward, Jr.....	'17 C.....	Mertens.
MacDonnell, George Burleson.....	'16 Ag.....	Austin.
McDowell, John Clifton.....	'14 Ag.....	Trinity.
<i>Graduate Groveton High School.</i>		
MacFadden, Samuel Poole.....	'16 E.....	San Antonio.
<i>Graduate San Antonio High School.</i>		
McFerran, Luther.....	1 a.....	Graham.
<i>Graduate Graham High School.</i>		
McGilberry, Alton Earl.....	'16 Ag.....	Shiro.
McGinnis, Perry Temple.....	'14 Ag.....	Terrell.
McGown, Grover Clifford.....	2 a.....	Fort Worth.
McGregor, Gilbert.....	'17 Ag.....	Caldwell.
<i>Graduate Caldwell High School.</i>		
McGregor, Joel Ira.....	'16 Ag.....	Millican.
McIver, James Dalrymple.....	'16 Ag.....	Lexington.
McKnight, John Banning.....	'17 Ag.....	Brady.
McMillan, Roy Dillard.....	'17 Ag.....	College Station.
McMurtry, Joseph Homer.....	1 a.....	Windthorst.
McMurtry, John Lester.....	1 a.....	Jermyn.
Malloy, Henry Platter.....	'16 Ag.....	Palestine.
Mann, John Adam.....	'17 Ag.....	Dallas.
Mansker, William Pierce.....	'17 M.....	Moody.
Marquess, Harry Clyde.....	'17 Ag.....	Calvert.
<i>Graduate Calvert High School.</i>		
Marquez, Miguel.....	'17 M.....	Mexico City, Mexico.
Marrs, Cecil Douglas.....	'16 C.....	Terrell.
<i>Graduate Terrell High School.</i>		
Martin, Charlie Brady.....	'16 Ag.....	Bryan.
Martin, Daugherty Exline.....	'17 C.....	Waxahachie.
Martin, Paul Henry.....	2 a.....	Mason.
Martin, Sam Winford.....	'17 Ag.....	Morgan.
Martin, William Patrick.....	'15 Ag.....	Rotan.
Mason, Stephen Kearny.....	'15 C.....	San Antonio.
Mather, Frank Collins.....	'17 E.....	Houston.
Mathewson, LuVerne Merton.....	'16 Ag.....	Aurora, Illinois.
Mathis, William Fowler.....	1 a.....	Kemp.
Matthews, Jim Gahagan.....	'17 E.....	Greenville.
Mattox, Jesse Kuykendall.....	'17 E.....	Greenville.
<i>Graduate Pearsall High School.</i>		
Mauldin, Edward.....	'16 E.....	Lancaster.
May, Robert Livingston.....	1 a.....	Tolbert.
Mayers, Hadyn Potter.....	'14 C.....	San Antonio.
Mayo, Harry Mash, Jr.....	'15 Ag.....	Houston.
Meinscher, William Ernest August.....	2 a.....	Leroy.
Melton, William Brisco.....	'14 Ag.....	Hutchins.
Menke, Edgar Paul.....	'16 Ag.....	Hempstead.
Menn, Hubert Leopoldt.....	'17 Ag.....	Yorktown.
<i>Graduate Yorktown High School.</i>		
Menzies, William.....	'17 Ag.....	Menard.
Mercer, Vandal Day.....	'17 E.....	Chilton.
<i>Graduate Douglas Select School.</i>		
Meriwether, Gay Clifford.....	'15 E.....	Tampico, Mexico.
Metcalfe, Penrose Blakely.....	'16 Ag.....	San Angelo.
Metcalfe, Samuel Little.....	'17 Ag.....	Pearsall.
<i>Graduate Pearsall High School.</i>		
Meyer, James Victor.....	'16 Ag.....	Flatonia.
<i>Graduate Flatonia High School.</i>		
Millikien, Marion Alvin.....	1 a.....	New Waverly.
Miller, Arthur Charles.....	'14 Ag.....	New Ulm.
Miller, Alden Deloss.....	'17 E.....	Denton.
<i>Graduate Denton High School.</i>		
Miller, Avery Rubean.....	'16 Ag.....	Huckabay.
Miller, Clarence Leneal.....	'17 E.....	Alvin.
<i>Graduate Alvin High School.</i>		

Miller, Herman Edward	'16 Ag	Bellville.
Miller, James Edgerly	'17 Ag	Sandusky, Ohio.
Miller, Vance Woody	'14 E	Springtown.
Mills, Clyde Atteberry	1 a	Lancaster.
Milner, Drinkard Blacknall	'17 Ar	Henderson.
Mitchell, George William	'15 M	San Marcos.
Mitchell, Merlin	'17 Ag	Gainesville.
<i>Graduate Gainesville High School.</i>		
Mittanck, Erwin Albert	2 t	Kerrville.
Moffett, George Clarence	'16 Ag	Chillicothe.
<i>Graduate Chillicothe High School.</i>		
Mogford, Joseph Sayers	'16 Ag	London.
Montague, Frank Orum	'15 Ag	Rockdale.
<i>Graduate Rockdale High School.</i>		
Montgomery, Roark	'17 Ag	Corsicana.
Montgomery, Samuel	'15 C	Corsicana.
Moore, Buhl	'17 C	Smithville.
<i>Graduate Smithville High School.</i>		
Moore, Isaac George	'17 T	Hubbard.
Moore, John Hartwell	'15 Ag	DeKalb.
Moran, James Edward	'17 Ag	Gordonville.
Moreland, Banks George	'17 Ch	Fort Worth.
<i>Graduate Fort Worth High School.</i>		
Morgan, Henry Julius	'16 C	Temple.
<i>Graduate Temple High School.</i>		
Morgan, John	'16 C	Bronson.
Morris, Sam Wilson	'17 AE	San Augustine.
Morris, Thomas Kyle	'16 Ag	Valley Mills.
<i>Graduate Valley Mills High School.</i>		
Morrison, Otho Key	'17 C	Hamilton.
<i>Graduate Hamilton High School.</i>		
Morrow, Joseph Spencer	1 a	Arlington.
Moses, Andrew	'16 Ag	Lampasas.
<i>Graduate Lampasas High School.</i>		
Moss, Mac Augustin	'15 C	Izora.
Moursund, Lief Erik	'15 E	Fredericksburg.
Mower, Robert Lefferts	2 t	Corsicana.
Mowery, Irl Halden	'15 Ag	Almeda.
Muckleroy, James Hamilton	'17 Ag	Tilden.
Mullin, William Harris	'16 Ag	Winters.
Murphy, William Michael	'16 Ch	Quanah.
<i>Graduate Quanah High School.</i>		
Mynatt, Jesse Herman	'16 E	Gunter.
Nash, John Forbes	'15 E	Belton.
Nash, Jesse Ghent	'17 M	Belton.
<i>Graduate Belton High School.</i>		
Nesmith, Oscar	'16 Ag	Ryan, Oklahoma.
<i>Graduate Eden High School.</i>		
Ness, Cornelius Lee	'17 C	College Station.
Newman, Lewis	'17 Ag	Matador.
Nisbet, Walker Robert	'16 Ag	San Angelo.
Noack, Roland Rufus	'17 M	Navasota.
Nowlin, Henry Burford	1 a	Valley Mills.
<i>Graduate Valley Mills High School.</i>		
O'Brien, Floy	'16 E	San Antonio.
<i>Graduate State Orphan High School.</i>		
O'Connor, Robert	'16 Ag	Laredo.
Oberthier, Fred Holmsley	'17 Ag	Hereford.
Oglesby, Enslie Orsen	'16 E	Mertzon.
Olson, Oscar Rudolph	'16 M	Galveston.
Olson, Palmer Henry	'16 C	Clifton.
<i>Graduate Clifton High School.</i>		
Otto, John August	'16 Ag	Ottine.
Overstreet, Andrew Madison	'15 Ch	Fort Worth.
<i>Graduate Fort Worth High School.</i>		

Palmer, George Clark	'15 Ag	Dunn.
Palmer, Virgil Harris	'17 M	Mission.
Parker, Benjamin Joseph	'17 Ag	Vernon.
<i>Graduate Vernon High School.</i>		
Parker, Earl	'14 E	Carthage.
Parks, John Duncan	'17 Ag	Rusk.
Parr, Virgil Verser	'14 Ag	Waelder.
Pate, John Elmer	'17 Ag	Bryan.
Patterson, Edwin Bridgers	'16 E	Goodnight.
Pattie, Don Hufford	'16 Ag	Van Alstyne.
<i>Graduate Van Alstyne High School.</i>		
Peabody, Albert Lawson	'17 Ag	Corpus Christi.
<i>Graduate Fort Worth High School.</i>		
Peavy, Sterling Alexander	'17 C	Brownwood.
Pedigo, Maxie Smith	'16 Ag	Valley Mills.
<i>Graduate Valley Mills High School.</i>		
Pendergrass, Albert Grider	'17 E	Leonard.
<i>Graduate Leonard High School.</i>		
Pepper, John Wilson	'17 Ag	Rock Springs.
Perkins, Paul Richards	'16 Ag	Nacogdoches.
<i>Graduate Nacogdoches High School.</i>		
Perrin, Arthur Charles	'17 M	Boerne.
Perrin, Stanley Ezra	'17 Ag	Boerne.
Perrine, Nat Smith	'17 Ar	Fort Worth.
<i>Graduate Fort Worth High School.</i>		
Person, Leo King	Sp Ag	Lewisville, Ark.
Persons, David Henry	'15 Ag	Hico.
<i>Graduate Hico High School.</i>		
Peters, Edgar Milton	'15 Ag	Hondo.
<i>Graduate Marshall Training School.</i>		
Peters, Noah Linton	'17 AE	Hondo.
<i>Graduate Hondo High School.</i>		
Peterson, Joseph Arvid	'14 M	Louise.
<i>Graduate Louise High School.</i>		
Peutet, Jean Paul	2 a	Dallas.
Phillips, Frank Robert	'15 T	Perry.
Phillips, Frank Roy	'14 Ag	Denton.
<i>Graduate North Texas State Normal.</i>		
Phillips, James Kolb	'17 Ag	Rockdale.
Pickens, Dennis Brandt	'14 E	Wallis.
<i>Graduate Wallis High School.</i>		
Pierson, John Cleveland	'16 Ag	Haskell.
<i>Graduate Haskell High School.</i>		
Pinkston, Lucian Albert	'16 M	Corsicana.
Pitts, Claude Noel	'16 E	Onalaska.
Platt, George Alfred	1 t	Houston Heights.
Poch, John	'17 Ag	Yorktown.
Poetter, Norman Mitchell	'15 M	Franklin.
Ponder, Leander Elvin	'17 Ag	Bryan.
Porter, Thomas Sharp	'16 Ag	Boyd.
Powell, Louis Hamilton	'14 C	Baird.
Powers, Garland Arch	'17 Ag	Lockhart.
Prell, Randolph Fred	'17 Ag	Brazoria.
Prestridge, Kenneth Kade	'17 C	Alvarado.
<i>Graduate Alvarado High School.</i>		
Prewett, Roma Charles	'17 Ag	Fort Worth.
Price, Byron James	1 a	Nacogdoches.
Priester, Lewis Arnold	'17 E	Richmond.
<i>Graduate Richmond High School.</i>		
Puckett, Cyrus Wells	2 a	Silverton.
Punchard, Herbert Gillespie	'17 Ag	Riesel.
Raborn, Garland Walter	'17 C	Weatherford.
Rack, Edgar Charles	'15 E	Waco.
<i>Graduate Douglas Select School.</i>		
Randal, Horace Gibson	1 a	Brownfield.

Ransom, Robert Jerrod	'17 C	Richmond.
<i>Graduate Richmond High School.</i>		
Ray, Paul Franklin	'16 Ag	Belton.
<i>Graduate Belton High School.</i>		
Read, William Kyle	1 a	Deport.
Redlich, Frederick William	Sp AE	College Station.
<i>B. S., Polytechnic Institute, Stuttgart, Germany, 1905.</i>		
Reed, William Neal	'14 Ag	Sterling City.
<i>Graduate Sterling City High School.</i>		
Regenbrecht, Edward Michael	'17 Ag	Sealy.
<i>Graduate Sealy High School.</i>		
Regenbrecht, Ferdinand	'16 E	Sealy.
<i>Graduate Sealy High School.</i>		
Reily, Paul Patrick	'17 E	D'Hanis.
Reynolds, James Boone	2 t	Buck.
Reynolds, William LaFayette	'15 M	Buck.
<i>Graduate Livingston High School.</i>		
Rhodes, Henry Gholson	'15 Ag	Bryan.
Rhodes, James Efford	'15 T	Iola.
Rice, Roy Emmett	'17 Ag	West Plains, Mo.
Rich, Lucian Guy	'14 Ag	Forest.
Richardson, John	Sp Ag	Mexia.
<i>Graduate State Orphan High School.</i>		
Richardson, James Samuel	'16 Ag	Henderson.
Ridder, Louis Fred	'17 Ag	San Antonio.
Riesner, Edmund Laritz	'16 C	Houston.
Ripple, Joe Edward	'17 Ag	Caldwell.
Robert, Jack Baker	'16 Ag	Albany.
Roberts, Paul Vane	'15 C	Taft.
Robertson, John Marshall	'15 M	Ganado.
Robison, John Elbert, Jr	1 a	Prosper.
Roe, Peter Henry	'17 E	San Antonio.
Rogers, Ray J.	'17 M	Buda.
Rogers, Victor Lee	'16 Ag	Kountze.
<i>Graduate Buna High School.</i>		
Rollins, John Wesley	'16 Ag	China.
Rollins, Millard Elisha	'14 M	Merit.
Romberg, Felix Berthold	'17 Ag	Holland.
<i>Graduate Holland High School.</i>		
Von Rosenberg, Leslie August	'16 Ar	Hallettsville.
<i>Graduate Hallettsville High School.</i>		
Rosenfield, Joseph Levy	'16 C	Galveston.
Rosson, John Keighton, Jr	1 a	Fort Worth.
Rothe, Hans Hugo	'16 Ar	Hondo.
<i>Graduate Hondo High School.</i>		
Rountree, John Blackwell	'17 Ag	Rockdale.
Royse, Frank Alexander	'16 E	Royse City.
Runge, Hans Eyl	'16 T	Galveston.
Runge, James Forest	'14 Ag	Galveston.
Russell, George Hill	2 a	Cotulla.
<i>Graduate Cotulla High School.</i>		
Rust, Charles Edward	'16 Ag	Galveston.
Rutan, Wilton Lynn	'15 Ar	Port Arthur.
<i>Graduate Port Arthur High School.</i>		
Rutherford, James Rector	'17 E	Hereford.
Rutter, William Warren	'16 C	Topeka, Kansas.
Sanders, Andrew Newell	'17 T	Lavernia.
<i>Graduate Lavernia High School.</i>		
Sanders, Irl Nowlin	'16 M	Bryan.
<i>Graduate Bryan High School.</i>		
Sanders, James Leander	'15 Ag	Lavernia.
Sanders, Marion Dewitt	'15 Ag	Hubbard.
Sandidge, Julian Wright	'17 M	Fort Worth.
Sansom, George Wallace	'15 T	Groesbeck.
<i>Graduate Mart High School.</i>		

Saper, Gustave Alexander	'15 Ch	Houston.
Savage, Carl Hamilton	'15 Ag	Bailey.
Savage, Marshall Edward	'17 C	Florence.
<i>Graduate Florence High School.</i>		
Sawyer, Horace Adali	'16 C	Fate.
Scasta, Jerry Joe	'17 Ag	Wheelock.
Schadt, Ewald Keller	'16 E	Galveston.
<i>Graduate Ball High School.</i>		
Schaefer, Robert	1 a	Converse.
Schaefer, Seley Eugene	'14 M	Waco.
Schattel, Frank Bruno Emil	1 a	Hungerford.
Schattel, Joe Isidor	Sp Ag	Hungerford.
Schepps, Julius	1 a	Dallas.
Schimmelpfennig, William Harrington	'17 Ar	Waco.
Schmidt, Archibald Gottfried	'17 M	Eagle Pass.
<i>Graduate Eagle Pass High School.</i>		
Schmidt, Frederick Harry	'14 C	Kingsbury.
Schmitz, Edward Joseph	'17 M	Dallas.
Schoremoyer, Conrad	1 a	Fort Worth.
SchorNSTein, Raphael Mondra	'16 Ar	Galveston.
Schramm, Albert Charles	'17 Ag	Taylor.
Schulze, Hugo Oscar	1 a	Hilda.
Schuwirth, William Charles	'14 E	San Antonio.
Seofield, John S.	2 a	Gainesville.
Scott, Daniel Walton	'15 Ag	McKinney.
Scott, Floyd Logan	'14 M	Waco.
Scott, Henry Bruce	'17 E	Clareville.
Scott, John Pinckney, Jr.	1 a	San Antonio.
Scott, Verne	'16 Ag	El Paso.
Scott, Walter Marion	'17 E	Marshall.
Seale, Herd Read	1 a	Walnut Springs.
<i>Graduate Walnut Springs High School.</i>		
Seale, Thomas Edwin	'17 Ag	Walnut Springs.
<i>Graduate Walnut Springs High School.</i>		
Seele, Hermann Hugo	'16 E	New Braunfels.
<i>Graduate New Braunfels High School.</i>		
Sengelmann, Gustav Hans Ferdinand	'15 Ag	Schulenburg.
Sevier, Gilbert Joseph	'17 Ag	Itasca.
Shannon, Louis Timothy	'17 E	Tilden.
Shelton, Jack	'17 Ag	Brownwood.
Sherley, Andrew Abram	'15 Ag	Anna.
<i>Graduate Anna High School.</i>		
Sherwood, Aris Brass, Jr.	'17 E	San Angelo.
Short, James Clay	'16 C	Bandera.
Shutt, Ray Edward	1 a	Duncanville.
Simpson, John N.	'14 Ag	Aledo.
Sims, Benjamin Victor	'17 Ag	Paint Rock.
<i>Graduate Paint Rock High School.</i>		
Sinclair, William Carl	'16 E	Wolfe City.
Singletary, Harry Hunter	'16 E	Atlanta.
Skeeler, Leon James	'15 Ch	Orange.
<i>Graduate Orange High School.</i>		
Skeeler, William John	'15 Ag	Orange.
<i>Graduate Orange High School.</i>		
Skeen, Arthur John	'16 Ag	Handley.
Skeen, Spence David	'15 Ag	Handley.
Slay, Clyde	'16 Ag	Italy.
Slay, Samuel Houston	'14 M	Frost.
<i>Graduate Frost High School.</i>		
Smilie, Joe Hanson	'15 Ag	Rosebud.
Smilie, William Henry	'16 Ag	Rosebud.
Smith, Anderson Cage	'17 M	Vernon.
Smith, Joseph Louis	2 a	McKinney.
Smith, Langston Montgomery	'16 Ag	Tyler.

Smith, Michael Gibson	'17 E	San Augustine.
<i>Graduate San Augustine High School.</i>		
Smith, Marvin Wadsworth	'15 E	Overton.
<i>Graduate Overton High School.</i>		
Smith, Philip Basil	'17 Ag	San Augustine.
<i>Graduate San Augustine High School.</i>		
Smith, Ross	'17 E	Waxahachie.
Smitham, Verner	'15 M	Walnut Springs.
Smythe, Peter	'17 E	Etzatlan, Mexico.
Snider, James Bailey	'14 Ag	Walnut Springs.
Snyder, Lloyd Hurst	'17 Ag	Hereford.
South, Ira Walter	Sp Ar	Bryan.
Sparkman, Frank Alvin	'14 Ag	Sterling City.
<i>Graduate Sterling City High School.</i>		
Spencer, Oliver Forbes	'17 Ag	Crosbyton.
Spencer, Thomas Carroll	'14 C	Athens.
Spiller, Kyle	'17 Ch	Jacksboro.
Spruill, Alfred	1 a	Hillsboro.
Sramek, John Neil	'16 M	Bryan.
Stacks, Emory Jefferson	'16 Ag	Palmer.
Stacks, Robert C	'15 Ag	Palmer.
Stallings, James Henry	'14 Ag	Bryan.
Standifer, Lilburn Echols	'17 Ag	Spur.
<i>Graduate Spur High School.</i>		
Stangel, Wenzel Louis	'15 Ag	Fort Worth.
<i>Graduate North Fort Worth High School.</i>		
Steedman, John Roy	'17 Ag	Gordonville.
Stelzig, Elo Henry	'14 Ag	Fayetteville.
Stephens, Uel	'16 C	Lometa.
<i>Graduate Lometa High School.</i>		
Stetler, Marvin Mayfield	'17 Ar	Dallas.
<i>Graduate Dallas High School.</i>		
Stewart, Gordon Frank	1 a	Brady.
Stieber, Charles Hostrasser	'16 T	Rock Springs.
Stiles, Robert Walker	'15 Ar	San Antonio.
Stiles, William Lyford	1 a	San Antonio.
Stockton, Haywood Paul, Jr	'17 C	Louise.
<i>Graduate Louise High School.</i>		
Stoner, Charles Dewitt	'16 E	Lakeland, Florida.
Stribling, Simpson Ridley	'15 E	Waco.
Strieber, Jesse Edwin	'17 E	Yorktown.
<i>Graduate Yorktown High School.</i>		
Stroman, Govan Napoleon	'17 Ag	Uvalde.
<i>Graduate Uvalde High School.</i>		
Stroud, Milton Lee	'14 Ag	Kaufman.
Swafford, Chester Arthur	'17 E	Kaufman.
<i>Graduate Kaufman High School.</i>		
Swink, Wilmer Turner	'17 Ag	Dawson.
Swope, John Gordon	'17 E	Houston.
Tabor, George Reed, Jr	'17 Ag	Puerto, V. C., Mexico.
<i>Graduate Crystal City High School.</i>		
Taliaferro, Champ Lee, Jr	'17 T	Henderson.
Tankersley, Clay Patten	Sp Ag	Corpus Christi.
Tanner, Carl	'16 Ag	Wolfe City.
Tanner, Edward Livingston	'14 Ag	San Antonio.
Taylor, Delos Eugene	'17 Ag	Blum.
<i>Graduate Blum High School.</i>		
Taylor, Oly Otis	'16 E	Corsicana.
<i>Graduate State Orphan High School.</i>		
Taylor, Philip Bates	Sp C	Santa Anita, Cal.
Taylor, William Darden	Sp Ag	Homer, La.
Temple, Theodore Watkins	'17 C	Weatherford.
Templeton, Bruce Guthrie	1 a	Dallas.
Terrell, Tully Vernon	'17 Ag	Decatur.
<i>Graduate Decatur High School.</i>		

Thaxton, Robert Calvin	'16 Ag	Mason.
<i>Graduate Mason High School.</i>		
Thomas, Charles Leonard	'16 Ag	Marfa.
<i>Graduate Marfa High School.</i>		
Thomas, Edwin Wayne	'17 Ag	Marfa.
<i>Graduate Marfa High School.</i>		
Thomas, Hugh Wesley	'14 C	Dallas.
Thomas, Mark Price	'17 E	Abilene.
Thomas, William Clinton	'16 Ag	LaGrange.
<i>Graduate LaGrange High School.</i>		
Thomason, James Hendon	'16 Ag	Huntsville.
Thorne, Lawrence Edward	'17 E	Fort Worth.
Thorne, Lansing Stephen	'17 E	Fort Worth.
Thut, Charlie	'17 Ag	Lefors.
Tigner, John Hughes	'15 Ag	House.
Tilson, Howard Ferguson	'17 C	Texarkana.
<i>Graduate Texarkana High School.</i>		
Timm, Henry Otto	'17 E	Hallettsville.
<i>Graduate Hallettsville High School.</i>		
Tinker, Ernest Biggs	'14 C	Brandon.
<i>Graduate Brandon High School.</i>		
Tippett, Cleveland	'17 Ag	Greenville.
Tomlinson, Mack Berry	2 a	Detroit.
<i>Graduate Detroit High School.</i>		
Torti, Maurice Leo	'16 Ag	Tyler.
<i>Graduate Tyler High School.</i>		
Tracy, William Cloyde	'17 Ag	Victoria.
<i>Graduate Victoria High School.</i>		
Trew, Robert Lafayette	Sp Ag	Myra.
Trickey, Charlie Thomas	'17 C	Sanger.
<i>Graduate Sanger High School.</i>		
Trueheart, John Crawford	'16 Ag	San Antonio.
Tucker, Coleman Calvert	'17 Ag	Missouri City.
Tuerpe, Elmer Christopher	1 t	Lytle.
Tuerpe, Ellis Richard	1 t	Lytle.
Tumlinson, Otto Gurvas	1 a	Verdi.
Turnage, Rodger Elmo	'16 E	LaGrange.
<i>Graduate LaGrange High School.</i>		
Turner, Joseph Marston, Jr	'15 Ag	Angleton.
Uhr, Irwin Adolph	'17 E	San Antonio.
Underwood, John Carson, Jr	'17 Ag	Houston.
<i>Graduate Houston High School.</i>		
Vance, John Bernard	2 a	Devine.
Vance, John William	'16 Ag	Gouldbusk.
Van Deren, Earl Roff	'16 Ag	Van Alstyne.
<i>Graduate Van Alstyne High School.</i>		
Van Hutton, Edgar	'17 AE	LaGrange.
Vickers, Major R. L.	'17 Ag	Tehuacana.
Vossler, James Mears	'14 E	Houston.
Waak, Walter	1 a	Bellville.
<i>Graduate Bellville High School.</i>		
Wadley, Burr Plevin	'17 Ag	Ferris.
Wagnon, Daniel Peter	'16 Ar	Mathis.
Walker, Albert Alvia	'17 E	Rockwall.
Walker, John Thaddeus	'17 C	Azle.
Walker, Randolph	'17 Ar	Timpson.
<i>Graduate Timpson High School.</i>		
Wallace, James Asberry	'15 E	Blooming Grove.
Wallis, Samuel Jackson	Sp Ag	Cuero.
Walton, Robert Frank	'17 M	Hubbard.
Ware, Henry Grady	Sp Ag	Kemp.
Warren, Cleon Barnes	'14 Ag	Hewitt.
Warren, Charles Frederick	'15 Ag	Hewitt.
<i>Graduate Hewitt High School.</i>		

Washam, Oscar Floyd	'15 Ag.	Crawford.
<i>Graduate Hico High School.</i>		
Watson, John Leroy	'15 Ag.	Stephenville.
Wear, Hugh Andrew	'14 Ar.	Rogers.
Weatherford, Archie Fountain	'17 Ag.	Driftwood.
Weaver, Alfred Bradley	'17 E.	Rule.
Weiler, Lewis Forest	'17 M.	Corsicana.
Wellage, George Francis	'16 Ag.	Eagle Pass.
Wendlandt, Charles Fred Julius	1 a.	Austin.
Werner, Arthur Henry	1 a.	Mt. Pleasant.
Werner, Arthur Max	1 t.	Dallas.
Whatley, Alva White	1 a.	Calvert.
White, Jesse Egbert	'16 E.	Gainesville.
<i>Graduate Gainesville High School.</i>		
White, Kenneth Reignald	'17 Ag.	Somerville.
Whitehead, Raymond William	'17 Ar.	Fort Worth.
Whitener, Harry William	'16 M.	Burton.
Whittet, Chester Stiggins	'15 Ch.	Anchorage.
Whitton, Robert Benjamin	'17 Ag.	Timpson.
<i>Graduate Timpson High School.</i>		
Wight, Schuyler Byron	'16 M.	Odessa.
Wilhite, Ray Maynard	'17 M.	Lometa.
<i>Graduate Lometa High School.</i>		
Wilkinson, Edgar	'17 C.	Menard.
<i>Graduate Menard High School.</i>		
Wilkinson, Henry Hayden	'17 Ag.	Bullard.
<i>Graduate Bullard High School.</i>		
Wilkinson, Rufus Lester	'17 E.	Hereford.
Williams, Clayton Wheat	'15 E.	Fort Stockton.
Williams, James Wishart	'17 C.	Hamilton.
<i>Graduate Hamilton High School.</i>		
Williams, Richard Stokely	'16 T.	Thorpe.
Williams, Stump Marvin	'16 Ag.	Corsicana.
Williamson, Alma Boston	'17 Ag.	Alief.
Williamson, Philip Gathings	'16 E.	Covington.
Willman, George Conan	'16 T.	Bryan.
Wilson, Charles Sebastian	'15 M.	Bryan.
Wilson, Frank William	'17 Ag.	Port Lavaca.
<i>Graduate Port Lavaca High School.</i>		
Wilton, Edgar Fremaux	'17 Ag.	Houston.
Winston, Milton Montgomery	'17 Ag.	San Marcos.
Winston, Walter Clinton	'17 E.	Bay City.
<i>Graduate Bay City High School.</i>		
Wipprecht, Read	'17 Ag.	Bryan.
Wisrodt, Clarence Emil Philip	'15 Ag.	Galveston.
Witcher, Loftin Verdery	'16 Ag.	Fort Worth.
<i>Graduate Fort Worth High School.</i>		
Woody, George Abe	'17 E.	Tilden.
Wooten, Ralph Hudson	'16 Ag.	Senatobia, Miss.
Wotipka, Walter Martin	'17 Ag.	Flatonia.
<i>Graduate Flatonia High School.</i>		
Wynn, Charles Clinton	2 a.	Bryan.
Yater, Alexander Norwood	'17 Ag.	Cleburne.
<i>Graduate Cleburne High School.</i>		
Yeary, David Edward	1 a.	Farmersville.
Yeary, Horace Edwin	'15 Ag.	Farmersville.
<i>Graduate Farmersville High School.</i>		
Yeary, James Carroll	'15 Ag.	Farmersville.
<i>Graduate Farmersville High School.</i>		
Yeates, Clarence Carpenter	'17 E.	Katy.
Young, Roy Lester	'15 E.	Hallettsville.
<i>Graduate Hallettsville High School.</i>		
Young, Spencer	1 a.	Killeen.
Youngblood, Elzy Otis	'17 E.	Vernon.
<i>Graduate Vernon High School.</i>		

Zedler, Otto Frederick Christian	'16 E	Ottine.
Zengle, O. B.	'17 E	San Antonio.
Zuber, Neill Daniel	'15 Ag	Bryan.
Zuehl, Albert	'17 M	Lavernia.

Graduate Yoakum High School.

SUMMER SCHOOL OF COTTON CLASSING, 1913.

Allyn, H. W.	Philadelphia,-Pa.
Baber, J. L.	Winnsboro.
Bailey, A. C.	College Station.
Braly, T.	Celeste.
Brown, J. J.	Lockhart.
Brown, W. L.	Gordon.
Burch, J. B.	Gainesville.
Chaney, C. N.	Mesa.
Cochran, W. A.	Linden.
Dennis, V. A.	Caldwell.
Dudley, J. W.	Ferris.
Ferguson, W. L.	Vernon.
Furrh, J. D.	Elysian Fields.
Gardner, J. E.	Big Foot.
Gillam, O. R.	Mart.
Grinnan, L. P.	Terrell.
Hall, A. N.	Hillsboro.
Heck, J.	Groesbeck.
Hill, F.	Whitt.
Hinton, J. W.	Gainesville.
Hinton, W. B.	Gainesville.
Jones, A. G.	Brady.
Kellogg, A. T.	Francitas.
Lam, G. S.	Mound.
Lang, H. B.	Somerville.
Leigh, J. W.	Navasota.
Lemon, J. J.	Nocona.
McDuff, S. E.	Grandview.
McFarland, J. A.	Ladonia.
McIver, J. D.	Lexington.
Mair, R.	San Antonio.
Mathews, J. L.	San Augustine.
Mays, V. B.	New Salem.
Milner, R. T., Jr.	College Station.
Mulkey, F. G.	Buffalo.
Newton, P.	Bryan.
Parker, O. M.	Jewitt.
Potts, E. A.	Caldwell.
Rhodes, H. F.	Beaver Falls, Pa.
Rife, T. D.	Del Rio.
Rogers, T. L.	Palestine.
Rutledge, W. J.	Dallas, Texas.
Sagareff, W.	Tchernigoff, Russia.
Sansom, G. W.	Groesbeck.
Sharp, E. F.	San Augustine.
Stevens, D. T.	College Station.
Thompson, W. E.	Milford.
Traugott, C.	San Antonio.
Watson, J. Y.	Groveton.
Wright, E. F.	Mexia.
Young, A. L.	Muskogee, Okla.

SHORT SUMMER COURSE FOR FARMERS, 1913.

Ables, L. R.	Rosebud.
Acker, H. W.	Whitehouse.

Allyn, H. W.	Philadelphia, Pa.
Arnold, P.	Rockdale.
Bagwell, J. F.	
Baker, N. C.	Lexington.
Barton, J. A.	Port Lavaca.
Banzhaf, G.	Rockdale.
Baur, V. H.	Floresville.
Beavers, J. J.	Gause.
Berryman, J. O.	Corpus Christi.
Bertelson, P.	Kingsville.
Burns, C. R.	Venus.
Butler, G. W.	Mexia.
Chisholm, W. H.	Sherman.
Collier, C. M.	Goliad.
Colvin, J. F.	Tama.
Cooper, H. H.	Nacogdoches.
Daugherty, T. P.	Van Army.
Dickson, W. E.	Oplin.
Dowling, W.	Bryan.
Eisentraut, J. C.	Beaumont.
Elwell, L. S.	Oakville.
Gaines, M. C.	Volney.
Gatewood, G.	Cleburne.
Gillam, O. R.	Mart.
Gilliam, B. L.	Temple.
Gilliam, R. A.	Dallas.
Gilley, T. V.	Whitehouse.
Gorham, R. A.	Waco.
Gray, J. D.	Boerne.
Green, J. M.	Lincoln.
Greer, J. D.	Nacogdoches.
Gruss, E. W.	Galveston.
Honenkamp, M., Jr.	Fort Worth.
Hilton, F. E.	Waxahachie.
Hunt, E.	Mexia.
Johns, A.	
Knudson, T.	Meridian.
Latch, J. S.	Donna.
Lown, F. D.	Thornton.
McCarthy, S. M.	Weatherford.
McKellar, D. P.	Palestine.
McMillan, E. L.	Lometa.
May, D. R.	Berclair.
Meadows, A. B.	Oenaville.
Meadows, B. F.	Oenaville.
Meadows, W. L.	Oenaville.
Messer, W. F.	Whitehouse.
Minus, W. S.	Asherton.
Murphy, H. M.	Hermleigh.
Nollkamper, E. G.	Shiner.
Orr, C. K.	Red Oak.
Orms, G. W.	Leola.
Osborne, S. S.	Raymondville.
Payne, M. T.	Temple.
Payton, B. R.	Austin.
Peck, T. H.	Star.
Persons, R. W.	Bay City.
Peters, L.	San Antonio.
Pietzschke, E. C.	Robstown.
Poenisch, E.	Corpus Christi.
Pomeroy, E.	Donna.
Quicksall, J. F.	Cleburne.
Ray, J. J.	Bryan.
Renfro, O. C.	Corpus Christi.
Rhodes, H. F.	Beaver Falls, Pa.

Rhodes, M. B.	Vernon.
Robinson, H. S.	Houston.
Russell, C. E.	Yoakum.
Savage, E.	Axtell.
Sagareff, W.	Tchernigoff, Russia.
Schallert, A.	Alice.
Schallert, R.	Alice.
Schattenberg, Mrs. A. C.	_____
Schroeder, A. H.	Rockdale.
Schroeder, E. H.	Rockdale.
Sharp, E. F.	San Augustine.
Shelton, J.	Brownwood.
Shepperd, B. E.	Donna.
Shuddemagen, E. G.	Sabinal.
Simpson, B. F.	Northfield.
Smith, J.	Nacogdoches.
Smith, S. J.	_____
Speer, S. A.	_____
Tallman, C. E.	Bandera.
Taylor, C. F.	Danbury.
Tidwell, J. R.	Franklin.
Vandiver, M. H.	Mineola.
Walton, T. O.	Livingston.
Weber, F., Jr.	Corpus Chrsiti.
Westbrook, W. S.	_____
White, H.	Keller.
White, R.	Keller.
Whitten, R. L.	Oenaville.
Wilkinson, L.	Katy.
Wilkinson, L. C.	Brenham.
Wilson, J. R.	Hermleigh.
Wilson, L. M.	Houston.
Winston, A. D.	Whitehouse.
Winston, T. G.	Whitehouse.
Wiseman, A. G.	Flatonia.
Wood, E. E.	Bay City.
Woodward, R. C.	San Antonio.
Wright, E. T.	Ricardo.
Wright, J. B.	Oplin.
York, O. C.	Lincoln.

**SHORT WINTER COURSE FOR ROAD SUPERVISORS AND COUNTY
SURVEYORS, 1914.**

Morgan, Frank P.	Belton.
Tschirhart, S.	Castroville.

REGIMENTAL ORGANIZATION 1913-1914.

The Corps of Cadets is organized as a Regiment of Infantry of three Battalions with a Regimental Band and a Bugle Corps.

First Lieutenant Levi G. Brown, Cavalry, United States Army,
Commandant of Cadets.

Quartermaster Sergeant J. M. Kenny, United States Army, Retired,
Assistant Commandant.

First Sergeant George Smart, United States Army, Retired,
First Sergeant Philip Henderson, United States Army, Retired,
Assistant Commandants.

B. P. Day, Chief Musician.

LINEAL RANK OF OFFICERS AND NON-COMMISSIONED OFFICERS OF THE
CADET REGIMENT.

Colonel.	6. Lane, G. I.	Sergeants.
1. Parr, V. V.	7. Rollins, M. E.	1. Palmer, G. C.
Lieutenant Colonel.	8. Harrison, J. C.	2. Cawthon, F. W.
1. Reed, W. N.	9. Stroud, M. L.	3. Mason, S. K.
Majors.	10. Baker, H. K.	4. Moss, M. A.
1. Lenert, A. A.	11. Rich, L. G.	5. Moore, J. H.
2. Miller, A. C.	12. Melton, W. B.	6. Williams, C. W.
3. Tanner, E. L.	13. Levy, D. H.	7. Campbell, A. R.
Captains.	14. Phillips, F. Roy.	8. Smith, M. W.
1. Kötzebue, M. H.	15. Fisher, J. K. G.	9. Mitchell, G. W.
2. Knox, G. P.	Regimental Sergeant	10. Skeeler, L. J.
3. Scott, F. L.	Major.	11. Gammill, H. H.
4. Tinker, E. B.	1. Kinnard, A. W.	12. Hudspeth, C. C.
5. James, O. J.	Regimental Quartermaster.	13. Coleman, W. C.
6. Beasley, W. G.	Sergeant.	14. Browder, J. H.
7. Jordan, G. F.	1. Peters, E. M.	15. Montague, F. O.
8. Powell, L. H.	Regimental Commissary	16. Clarkson, P. W.
9. Schmidt, F. H.	Sergeant.	17. Young, R. L.
10. Mayers, H. P.	1. Adriaance, G. W.	18. Reynolds, W. L.
11. Gibbens, E.	Regimental Color	19. Mayo, H. M.
12. Vossler, J. M.	Sergeant.	20. Hill, M. E.
13. Stelzig, E. H.	1. Wisrodt, C. E. P.	21. McCollum, H. T.
14. Snider, J. B.	Chief Trumpeter.	22. Bell, J. E.
15. Broome, W. S.	1. Sherley, A. A.	23. Gillespie, W. S.
16. Ball, B. C.	Battalion Sergeants	24. Francis, W. B.
17. Slay, S. H.	Major.	25. Eiland, E. R.
First Lieutenants.	1. Ellis, H. F.	26. Yearly, H. E.
1. Hoepfner, F. W.	2. Francisco, E. O.	27. Scott, D. W.
2. McGinnis, P. T.	3. Crisp, M. C.	28. Sansom, G. W.
3. Ayers, E. L.	Drum Major.	29. Collins, J. C.
4. Biggers, C. A.	1. Brundrett, H. M.	30. Saper, G. A.
5. McDowell, J. C.	First Sergeants.	31. Haden, J. F.
6. Groginski, P.	1. Hogue, E. N.	32. Yearly, J. C.
7. Jones, W. T.	2. Allen, R. R.	33. Overstreet, A. M.
8. Braunig, H. E.	3. Bugbee, J. S.	34. Girardeau, E. R.
9. Warren, C. B.	4. Brown, L. W.	35. Crown, P. T.
10. Sparkman, F. A.	5. Dickie, B. H.	36. Sanders, J. L.
11. Bradley, E. I.	6. Wilson, C. S.	37. Smilie, J. H.
12. Camp, G. D.	7. Clark, S. F.	38. Jennings, E. P.
13. Davis, T. C.	8. Dunning, G. R.	39. Faber, B. H.
14. Wear, H. A.	9. Mowery, I. H.	40. Knolle, M.
15. Pickens, D. B.	10. Sengelmann, G. H.	(Trophy Sergeant.)
16. Clement, C. B.	11. Warren, C. F.	41. Smitham, V.
Second Lieutenants.	12. Green, O. W.	42. Denton, V. C.
1. Irby, A. H.	13. Davis, C. J.	43. Burges, A. E.
2. Peterson, J. A.		44. Rutan, W. L.
3. Jennings, A. L.		45. Menke, E. P.
4. Farthing, W. E.		46. Sanders, M. D.
5. Herrington, J. J.		47. Martin, W. P.
		48. Washam, O. F.
		49. Davis, D.
		50. Rack, E. C.
		51. Homann, F. A.
		52. McCarty, S. C.
		53. Everett, G. D.
		54. Barraco, V. A.
		55. Jarvis, J. R.
		56. Nash, J. F.
		57. Cherry, T. G.

58. Wallace, J. A.	23. Coleman, F. R.	52. Braumiller, W. E.
59. Moursund, L. E.	24. Moses, A.	53. Burkett, F.
60. Carson, W. W.	25. Stephens, U.	54. Crocker, W. J.
61. Stribling, S. R.	26. Gallman, D. M.	55. Henley, E. N.
	27. Crawford, V. W.	56. Hefner, C. B.
	28. Seale, H. H.	57. McGregor, J. I.
	29. Peudet, J. P.	58. Runge, H. E.
	30. Ballard, J. C.	59. Blalock, L. B.
	31. Wooten, R. H.	60. Hanson, W. K.
	32. Haynes, S. B.	61. Stoner, C. D.
	33. Jopling, H. A.	62. Casey, A. C.
	34. Vance, J. W.	63. Baccus, E. D.
	35. Davis, G. E.	64. McGown, G. C.
	36. Killough, H. B.	65. Kelly, D. C.
	37. Hall, R. A.	66. Cole, R. J.
	38. White, J. E.	67. Murphy, W. M.
	39. Miller, H. E.	68. Sawyer, H. A.
	40. Metcalfe, P. B.	69. Hausser, C.
	41. Cover, J. S.	70. Hawkins, A. R.
	42. Buchner, L. M.	71. Ahernathy, M. A.
	43. Hagaman, L. H.	72. Hollingshead, F. A.
	44. Rust, C. E.	73. Kristek, G. H.
	45. Barnett, C. H.	74. Oglesby, E. O.
	46. Connor, J. A.	75. Riesner, E. L.
	47. Skeen, A. J.	76. Bramlette, F. L.
	48. Porter, T. S.	77. Hockaday, I. T.
	49. Williams, S. M.	78. Zedler, O. F.
	50. Morris, T. K.	79. Helm, D. L.
	51. Pedigo, M. S.	

ASSIGNMENTS TO ORGANIZATIONS.

Colonel—Parr, V. V.
 Lieutenant Colonel—Reed, W. N.
 Captain and Adjutant—Kotzebue, M. H.
 Captain and Quartermaster—Schmidt, F. H.
 Captain and Ordnance Officer—Gibbens, E.
 Captain and Commissary—Powell, L. H.
 Regimental Sergeant Major—Kinnard, A. W.
 Regimental Quartermaster Sergeant—Peters, E. M.
 Regimental Commissary Sergeant—Adriance, G. W.
 Regimental Color Sergeant—Wisrodt, C. E. P.

The Band.

Captain.
 Slay, S. H.
 First Lieutenant.
 Clement, C. B.
 Drum Major.
 Brundrétt, H. M.
 First Sergeant.
 Greene, O. W.

Bugle Corps.

Chief Trumpeter.
 Sherley, A. A.

Sergeants.
 Faber, B. H.
 Carson, W. W.
 Stribling, S. R.

Corporals.

Williams, S. M.
 Morris, T. K.
 Pedigo, M. S.

First Battalion.

Major—Miller, A. C.
 First Lieutenant and Adjutant—Hoepfner, F. W.
 Second Lieutenant and Quartermaster—Peterson, J. A.
 Sergeant Major—Crisp, M. C.

Company A.	Company B.	Company C.	Company D.
Captain. Beasley, W. G.	Captain. Broome, W. S.	Captain. Ball, B. C.	Captain. Jordan, G. F.
First Lieutenant. Ayers, E. L.	First Lieutenant. Sparkman, F. A.	First Lieutenant. Davis, T. C.	First Lieutenant. Pickens, D. B.
Second Lieutenant. Herrington, J. J.	Second Lieutenant. Fisher, J. K. G.	Second Lieutenant. Lane, G. I.	Second Lieutenant. Melton, W. B.
First Sergeant. Clark, S. F.	First Sergeant. Warren, C. F.	First Sergeant. Dunning, G. R.	First Sergeant. Dickie, B. H.

Sergeants.
Skeeler, L. J.
Sansom, G. W.
Jennings, E. P.
McCarty, S. C.

Sergeants.
Palmer, G. C.
Gammill, H. H.
Smilie, J. H.
Nash, J. F.

Sergeants.
Hudspeth, C. C.
McCollum, H. T.
Collins, J. C.
Knolle, M.
(Trophy Sergeant.)
Rutan, W. L.
Barraco, V. A.

Sergeants.
Cawthon, F. W.
Coleman, W. C.
Bell, J. E.
Sanders, J. L.
Homann, F. A.

Corporals.
Bruce, A. D.
Keasler, T. F.
Bull, A. C.
Wooten, R. H.
Cover, J. S.
Braumiller, W. E.
Bramlette, F. L.

Corporals.
Johnson, A. D.
Haynes, S. B.
Buchner, L. M.
McGown, G. C.
Riesner, E. L.
Hockaday, I. T.
Zedler, O. F.

Corporals.
Moffett, G. C.
Dennis, L. C.
Coleman, F. R.
Metcalfe, P. B.
McGregor, J. I.

Corporals.
Dickie, A.
Curnutte, J. V.
Moses, A.
Seele, H. H.
Baccus, E. D.
Sawyer, H. A.

Second Battalion.

Major—Lenert, A. A.
First Lieutenant and Adjutant—McGinnis, P. T.
Second Lieutenant and Quartermaster—Irby, A. H.
Sergeant Major—Ellis, H. F.

Company E.
Captain.
Snider, J. B.
First Lieutenant.
Bradley, E. I.
Second Lieutenant.
Jennings, A. L.
First Sergeant.
Bugbee, J. S.
Sergeants.
Mason, S. K.
Browder, J. H.
Eiland, E. R.
Smitham, V.
Moursund, L. E.
Corporals.
Gray, O. S.
Short, J. C.
Hagaman, L. H.
Blalock, L. B.
Henley, E. N.
Hefner, C. B.

Company F.
Captain.
Mayers, H. P.
First Lieutenant.
Braunig, H. E.
Second Lieutenant.
Phillips, F. Roy
First Sergeant.
Mowery, I. H.
Sergeants.
Moss, M. A.
Montague, F. O.
Gillespie, W. S.
Saper, G. A.
Davis, D.
Corporals.
Mogford, J. S.
Foster, J. L.
Stephens, U.
Vance, J. W.
Hausser, C.
Helm, D. L.

Company G.
Captain.
James, O. J.
First Lieutenant.
Camp, G. D.
Second Lieutenant.
Stroud, M. L.
First Sergeant.
Brown, L. W.
Sergeants.
Clarkson, P. W.
Francis, W. B.
Haden, J. F.
Crown, P. T.
Corporals.
Erskine, W. S.
Cornett, G. J.
Gallman, D. M.
Davis, G. E.
Rust, C. E.
Runge, H. E.

Company H.
Captain.
Stelzig, E. H.
First Lieutenant.
Biggers, C. A.
Second Lieutenant.
Farthing, W. E.
First Sergeant.
Sengelmann, G. H.
Sergeants.
Campbell, A. R.
Reynolds, W. L.
Overstreet, A. M.
Rack, E. C.
Burgas, A. E.
Corporals.
Coleman, J. E.
Peutet, J. P.
White, J. E.
Casey, A. C.
Hollingshead, F. A.
Kristek, G. H.

Third Battalion.

Major—Tanner, E. L.
First Lieutenant and Adjutant—Wear, H. A.
Second Lieutenant and Quartermaster—Harrison, J. C.
Sergeant Major—Francisco, E. O.

Company I.
Captain.
Scott, F. L.
First Lieutenant.
Warren, C. B.
Second Lieutenant.
Rich, L. G.
First Sergeant.
Hogue, E. N.
Sergeants.
Moore, J. H.
Young, R. L.
Sanders, M. D.
Martin, W. P.
Everett, G. D.

Company K.
Captain.
Tinker, E. B.
First Lieutenant.
Groginski, P.
Second Lieutenant.
Baker, H. K.
First Sergeant.
Allen, R. R.
Sergeants.
Williams, C. W.
Smith, M. W.
Mayo, H. M.
Scott, D. W.
Denton, V. C.

Company L.
Captain.
Vossler, J. M.
First Lieutenant.
Jones, W. T.
Second Lieutenant.
Levy, D. H.
First Sergeant.
Wilson, C. S.
Sergeants.
Yeary, H. E.
Yeary, J. C.
Girardeau, E. R.
Washam, O. F.
Wallace, J. A.

Company M.
Captain.
Knox, G. P.
First Lieutenant.
McDowell, J. C.
Second Lieutenant.
Rollins, M. E.
First Sergeant.
Davis, C. J.
Sergeants.
Mitchell, G. W.
Hill, M. E.
Menke, E. P.
Jarvis, J. R.
Cherry, T. G.

Corporals.
 Fuess, C. A.
 Crawford, V. W.
 Killough, H. B.
 Kelly, D. C.
 Murphy, W. M.
 Oglesby, E. O.

Corporals.
 Easley, C. M.
 Ballard, J. C.
 Miller, H. E.
 Connor, J. A.
 Burkett, F.
 Stoner, C. D.

Corporals.
 Olson, P. H.
 Beringer, M. S.
 Hall, R. A.
 Barnett, C. H.
 Cole, R. J.
 Hawkins, A. R.

Corporals.
 Collins, W. A.
 Nesbit, W. R.
 Jopling, H. A.
 Porter, T. S.
 Crocker, W. J.
 Abernathy, M. A.

THE HOWELL TROPHY.

The Howell Trophy is a handsome Texas Flag, presented to the College in 1903 by Mr. W. S. Howell, of Bryan, Texas. A competitive drill is held each session during Commencement to determine the best drilled company. The successful company is designated as the "Trophy Company" and carries the Trophy during the following session. It is authorized to elect a "Trophy Sergeant" who is the Color Bearer.

The Trophy Company for the session of 1913-14 is Company "C."

DEGREES AND HONORS CONFERRED AT THE THIRTY-SEVENTH ANNUAL COMMENCEMENT

(June 10, 1913.)

MASTER OF SCIENCE IN AGRICULTURE.

Moore J. M.
B. S., Alabama Polytechnic Institute, 1912.

CHEMICAL ENGINEER.

Bechert F. J.
B. S., A. & M. College of Texas, 1911; M. E., 1912.

Bryant W. T.
B. S., A. & M. College of Texas, 1911.

McMillan L. B.
B. S., A. & M. College of Texas 1911; M. E., 1912.

CIVIL ENGINEER.

Windrow R. J.
B. S., A. & M. College of Texas, 1906.

ELECTRICAL ENGINEER.

Lehmann E. W.
B. S., A. & M. College of Mississippi, 1910.

Proctor J. H.
B. S., A. & M. College of Texas, 1910.

von Rosenberg H. C.
B. S., A. & M. College of Texas, 1913.

MECHANICAL ENGINEER.

Forsyth J. M.
B. S., A. & M. College of Texas, 1912.

Neff A. J.
B. S., A. & M. College of Texas, 1903.

BACHELOR OF SCIENCE.

Dr. Marion McMillan, New York City.

In Agriculture.

Bower, L. J.
Caldwell, R. E.
Cardwell, W. W.
Chewning, J. W.
Connellee, E. T.
Coward, I. E.
Cox, R. W.
Culbertson, J. L.
Dowell, H. B.
Eagleston, E. G.
Egan, J. T.
Ehlinger, R. B.
Eversberg, E. A.
Hall, G. G.
Harrison, E. W., Jr.
Heller, J. H.
(As of 1912.)

Jackson, J. W.
James, M. H., Jr.
Joplin, J. F.
Kelly, C. P.
Kennedy, B. R.
(As of 1912.)
Laake, E. W.
Lane, G. J.
Langdon, Y. M.
Lochridge, C. F.
Lodal, M. G.
Lown, F. D.
Miller, R. S.
Miller, W. Z.
O'Connor, D.
Ohlendorf, W.
Oliver, C.

Roberts, C. A.
Scofield, J. A.
Stevens, D. T.
Stone, J. M.
Taylor, A. B.
Thomson, J. M.
Tolbert, W. S.
Wallis, T. T.
Weinert, H. G. H.
White, T. F.
(As of 1912.)
Whitfield, C. A.
Young, M. H.

In Architectural Engineering.

Burton, A.
Fountain, E. J., Jr.

Josserand, L. P.
Langford, E.

Orth, W. A.

In Chemical Engineering.

Christian, J. R.

Holland, C. J.

Hudgins, L. A.

In Civil Engineering.

Alexander, M. R.	Donoho, W. T.	Montgomery, F. L.
Anderson, J. V.	Fitzpatrick, B.	Oliphant, L. N.
Baylor, R. E.	French, W. A., Jr.	Olson, J. N.
Beazley, C. N.	Gillette, P. E.	Roberts, F. A.
Birk, R. A.	Gist, W. B.	Rollins, J. G.
Borchert, W. C.	Gonzales, J. M.	Sayers, A. F.
Bourland, W. F.	Grissom, R. J.	Schroeter, R. R.
Cade, K. C.	Hill, J. R.	Spence, T. R.
Cain, R. W.	Jones, H. P.	Waters, J. J., Jr.
Chinski, C. C.	Lienhard, L. V.	Whiteside, B.
Davis, J. N.	Lyles, J. V.	

In Electrical Engineering.

Apperson, R. S.	Keller, J.	von Rosenberg, H. C.
Bowler, S. E.	Koim, C. H.	(As of 1912.)
Brown, J. F.	Kraege, A. C. A.	Simon, R. B.
Burleson, W. H.	Lammers, E. S., Jr.	Tucker, D. H.
Campbell, P.	McDonald, J. M.	Walker, P. W.
Chambers, T. L.	Miller, R. H.	
Hefner, W. J.	Nolte, R. W.	

In Mechanical Engineering.

Anderson, R. O.	Lorenz, J. H.	Torrence, W. C.
Johnston, L. M.	Nussbaum, J. H.	Walzem, L. F.
Lidiak, J. P.		

In Textile Engineering.

Collins, J. W. H.	Nugent, C. W.	Tigner, J. B.
Dreiss, E., Jr.	(As of 1912.)	

SUMMARY OF DEGREES CONFERRED.

Advanced Degrees:

M. S.	1
Ch. E.	3
C. E.	1
E. E.	3
M. E.	2
	<hr/>

10

Baccalaureate Degrees:

B. S. (In Agriculture)	44
B. S. (In Architectural Engineering)	5
B. S. (In Chemical Engineering)	3
B. S. (In Civil Engineering)	32
B. S. (In Electrical Engineering)	18
B. S. (In Mechanical Engineering)	7
B. S. (In Textile Engineering)	4
B. S. (No Course Specified)	1
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114

Total..... 124

CERTIFICATES IN TWO-YEAR COURSES.

In Agriculture.

Hinckley, L. C.	Mays, V. B.	Weatherford, J. P.
Hinton, W. B.	Setzer, W. K.	Weir, H. H.
McWilliams, G. L.		

In Textile Engineering.

Crockett, C.

DISTINGUISHED STUDENTS.

At the end of each session students who have during the year received no term grade below "B" and who have no deficiency in "Practice," are announced as "Distinguished."

SENIOR CLASS.

Anderson, J. V.	Joplin, J. F.	Rollins, J. G.
Brown, J. F.	Laake, E. W.	Spence, T. R.
Collins, J. W. H.	Lammers, E. S.	Waters, J. J.
Cowart, I. E.	Langdon, Y. M.	Young, M. H.
Harrison, E. W.	Ohlendorf, W.	

JUNIOR CLASS.

Bradley, E. I.	Lenert, A. A.	Scott, F. L.
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SOPHOMORE CLASS.

Adriance, G. W.	Bugbee, J. S.	Densmore, R. A.
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FRESHMAN CLASS.

Dennis, L. C.	Jopling, H. A.	Olson, P. H.
Dickie, A.	Moffett, G. C.	Short, J. C.
Gray, O. S.		

TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.	SECOND YEAR.
Pierson, J. C.	Hinckley, L. C.

TITLES OF THESES OF GRADUATING CLASS, JUNE, 1913.

Candidate for the Degree of Master of Science.

Moore, James Mumroe, B. S. Fayette, Ala.
 A Study of Systems of Farm Management on Some Typical Live Stock Farms in Texas.

Candidates for the Degree of Chemical Engineer.

Bechert, Fred John, B. S., M. E. Corpus Christi.
 The Analysis of Mixed and Impure Sugar Products.

Bryant, William Thoreau, B. S. Hillsboro.
 The Determination of the Suitability of Crude Petroleum and Petroleum Products for Use in Smudge Pots.

McMillan, Luther Burchard, B. S., M. E. Anchor.
 A Study of Boiler Waters.

Candidate for the Degree of Civil Engineer.

Windrow, Rollen Joseph, B. S. Waco.
 Highway Culverts and Bridges.

Candidates for the Degree of Electrical Engineer.

Lehmann, Emil Wilhelm, B. S. College Station.
 A Treatise on the Use of Electricity on the Farm.

Proctor, Joseph Harold, B. S. Houston.
 Theoretical Design of Commercial Transformers.

von Rosenberg, Hilmer Carl, B. S. Hallettsville.
 An Oscillographic Study of Transformer Grouping.

Candidates for the Degree of Mechanical Engineer.

Forsyth, James Milen, B. S. McKinney.
 With Neff, Asa Judson. Dallas.
 Efficiency Test of a Battery of Water-Tube Boilers.

CANDIDATES FOR THE DEGREE OF BACHELOR OF SCIENCE.

In Agriculture.

- Bower, Luther Jasper..... Stephenville.
The Life History, Habits, and Control of the House Fly on the A. & M. Co. ege Campus.
- Caldwell, Robert Ezekiel..... Bryan.
A Test of the Relative Values of Sorghum Hay and Cotton Seed Hulls for Fattening Steers. (With C. P. Kelly.)
- Cardwell, Walter Wilcox..... Lockhart.
The Influence of Heredity on Prolificacy in Poland-China Hogs. (With A. S. Thomson.)
- Chewing, James Walter..... Goodlett.
Comparative Fertilizer Tests with Cabbage. (With I. E. Cowart.)
- Connellee, Earn Tindall..... Eastland.
Draft Tests Under Field Conditions of Some Common Farm Implements.
- Cowart, Ira Ellis..... San Antonio.
Comparative Fertilizer Tests with Cabbage. (With J. W. Chewing.)
- Cox, Romeo Willis..... Childress.
Serum-Simultaneous Treatment for Immunizing Hogs to Cholera.
- Culbertson, Joe L..... Waxahachie.
Economical Production of Butter Fat Based on Tests at State Fair, Dallas, Texas, 1912. (With R. S. Miller.)
- Dowell, Horace Bartlett..... McKinney.
The Use of Abortion Vaccine for the Prevention and Treatment of Contagious Abortion of Cows. (With R. B. Ehlinger.)
- Eagleston, Edward Granville..... Smithville.
Treatment for Echinorhynchus Gigas. (With W. S. Tolbert.)
- Egan, John Thomas..... Denton.
Economical Production of Butter Fat Based on Test at State Fair, 1911.
- Ehlinger, Rancier Burt..... College Station.
The Use of Abortion Vaccine for the Prevention and Treatment of Contagious Abortion of Cows. (With H. B. Dowell.)
- Eversberg, Eugene August..... Brenham.
Some Secondary Effects of Fertilizers on Soils. (With H. G. Weinert.)
- Hall, George Graham..... Houston.
Treatise on Tree Surgery. (With D. T. Stevens.)
- Harrison, Erwin William..... Greenville.
The Influence of Heredity on Prolificacy in Duroc-Jersey Hogs. (With C. A. Roberts.)
- Heller, Joe Henry..... Buda.
Value of Balanced Rations for Farm Animals.
- Jackson, Jesse Wilburn..... Kosse.
A Chemical, Physical, and Pot Culture Study of Two Typical Soils of Limestone County, Texas. (With C. F. Lochridge and F. D. Lown.)
- James, Meredith Haddon..... Bryan.
A Preliminary Study of Scale Insects Occurring in Texas.
- Joplin, John Finley..... Sipe Springs.
The Cost of Producing Corn and Cotton in Texas. (With Y. M. Langdon.)
- Kelly, Charles Patrick..... New York, N. Y.
A Test of the Relative Values of Sorghum Hay and Cotton Seed Hulls for Fattening Steers. (With R. E. Caldwell.)
- Kennedy, Bruce Rankin..... Greenville.
Economical Production of Butter Fat Based on Tests at State Fair, 1911.
- Laake, Ernest William..... New Ulm.
The Effect of Different Quantities and Different Sources of Potash on Irish Potatoes.
- Lane, Grady J..... Valley Mills.
Chemical, Physical, and Pot Culture Studies of Certain Soils in Montgomery County, Texas. (With M. H. Young.)
- Langdon, Young Mitchell..... Hutchins.
The Cost of Producing Corn and Cotton in Texas. (With J. F. Joplin.)
- Lochridge, Charles Frank..... Iowa Park.
A Chemical, Physical, and Pot Culture Study of Two Typical Soils of Limestone County, Texas. (With J. W. Jackson and F. D. Lown.)

- Lockett, William Richard..... Cleburne.
Prickly Pear (*Opuntia*) Cultivation and Feeding Value.
- Lodal, Martin Gorman..... Gorman.
Equipment and Management of a Modern Dairy Farm. (With J. M. Thomson.)
- Lown, Franklin David..... Thornton.
A Chemical, Physical, and Pot Culture Study of Two Typical Soils of Limestone County, Texas. (With J. W. Jackson and C. F. Lochridge.)
- Miller, Richard Sandford..... San Saba.
Economical Production of Butter Fat Based on Tests at State Fair, Dallas, Texas, 1912. (With J. L. Culbertson.)
- Miller, William Zachary..... College Station.
The Organization, Equipment, and Management of a 500-Acre Mixed Farm in Central Texas. (With W. Ohlendorf.)
- O'Connor, Daniel..... Laredo.
The Effect of Moisture and Temperature Upon the Development of the House Fly.
- Ohlendorf, Walter..... Lockhart.
The Organization, Equipment, and Management of a 500-Acre Mixed Farm in Central Texas. (With W. Z. Miller.)
- Oliver, Clarence..... Lampasas.
The Relation of Hog Cholera Infection in the Blood of Hogs to Their Temperature. (With A. B. Taylor.)
- Roberts, Clay Adlai..... Beaumont.
The Influence of Heredity on Prolificacy in Duroc-Jersey Hogs. (With E. W. Harrison.)
- Scofield, James Arthur..... Hillsboro.
A Test of the Relative Values of (a) Cotton Seed Hulls and Silage and (b) Cotton Seed and Cotton Seed Meal for Fattening Cattle. (With C. A. Whitfield.)
- Stevens, Dillon Tarrant..... College Station.
Treatise on Tree Surgery. (With G. G. Hall.)
- Stone, James Milton..... Houston.
Equipment and Management of a Modern Dairy Farm for Pure-Bred Jersey Cattle.
- Taylor, Albion Burne..... Burnet.
The Relation of Hog Cholera Infection in the Blood of Hogs to Their Temperature. (With C. Oliver.)
- Thomson, Jasper McDonald..... Florence.
Equipment and Management of a Modern Dairy Farm. (With M. G. Lodal.)
- Tolbert, Weimer Sid..... Miami.
Treatment for *Echinorhynchus Gigas*. (With E. G. Eagleston.)
- Wallis, Turner Thomas..... Cuero.
History and Development of Agriculture and Manual Training in the Public Schools of Texas.
- Weinert, Herbert George Henry..... Geronimo.
Some Secondary Effects of Fertilizers on Soils. (With E. A. Eversberg.)
- White, Theodore Frierson..... Lott.
A Study of the Sub-Soil of the Lufkin Fine Sandy Loam.
- Whitfield, Charles Austin..... San Angelo.
A Test of the Relative Values of (a) Cotton Seed Hulls and Silage and (b) Cotton Seed and Cotton Seed Meal for Fattening Cattle. (With J. A. Scofield.)
- Young, Marvin Hooper..... Montgomery.
Chemical, Physical, and Pot Culture Studies of Certain Soils in Montgomery County, Texas. (With G. J. Lane.)

[In Architectural Engineering.]

- Burton, Allan..... Clarendon.
A Twelve-Story Apartment House.
- Fountain, Edmund Jones, Jr..... Bryan.
An Art Museum.
- Josserand, Lewis Peter..... Groveton.
A Sixteen-Story Hotel.

Langford, Ernest	Bertram.
A Theater.	
Orth, William Alva	Yoakum.
A Church.	

In Chemical Engineering.

Christian, James Russell	Houston.
The Action of Coagulants Used in the Mechanical Filtration of Water.	
Holland, Charlie Jenkins	Brownwood.
A Study of the Physical Properties of Texas Portland Cement.	
Hudgins, Lewis Allison	Houston.
The Identification of Edible Oils.	

In Civil Engineering.

Alexander, Melville Richard	Navasota.
Location and Estimates of Spurs from Houston and Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With W. F. Bourland and W. B. Gist.)	
Anderson, John Victor	Abilene.
Stadia Topographical Survey and Map of "E" Portion of Campus. (With B. Fitzpatrick and E. H. Mills.)	
Baylor, Robert Emmet	Montell.
Stadia Topographic Survey and Map of "S" Portion of Campus. (With J. G. Rollins and J. J. Waters.)	
Beazley, Charles Nugent	Grapeland.
Water Consumption and Sewage Discharge at the A. & M. College. (With W. A. French, Jr., and F. A. Roberts.)	
Birk, Ralph Adolphus	Iowa Park.
Stadia Topographic Survey and Map of "N" Portion of Campus. (With J. V. Lyles and L. N. Oliphant.)	
Borchert, William Charles	Kyle.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With J. N. Davis, Jr., and F. L. Montgomery.)	
Bourland, William Fowler	Valley Springs.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With M. R. Alexander and W. B. Gist.)	
Cade, King Charles	Birkville.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With J. M. Gonzalez and B. Whiteside.)	
Cain, Robert Wofford	Athens.
Location, Design, and Estimates for a System of Storm Sewers for the Upper Campus. (With J. R. Hill and L. V. Lienhard.)	
Chinski, Charles Clarence	Beaumont.
Stadia Topographic Survey and Map of "W" Portion of Campus. (With W. T. Donoho.)	
Davis, John Newton, Jr.	Hico.
Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With W. C. Borchert and F. L. Montgomery.)	
Donoho, William Thompson	Utopia.
Stadia Topographic Survey and Map of "W" Portion of Campus. (With C. C. Chinski.)	
Fitzpatrick, Brandon	Columbus.
Stadia Topographic Survey and Map of "E" Portion of Campus. (With J. V. Anderson and E. H. Mills)	
French, William Allen, Jr.	Kaufman.
Water Consumption and Sewage Discharge at the A. & M. College. (With C. N. Beazley and F. A. Roberts.)	
Gillette, Paul Clifford	Houston.
Design of an Eight Panel, 184 Foot Span Parker Truss.	

- Gist, William Belew..... Nacona.
 Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With M. R. Alexander and W. F. Bourland.)
- Gonzalez, Jose de la Mercer, Jr..... Tampico, Mexico.
 Location and Estimates of Spurs from Houston and Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With K. C. Cade and B. Whiteside.)
- Grissom, Roy John..... Fort Worth.
 Plans and Estimates for Certain Campus Walks and Pavements.
- Hill, John Rutledge..... Wills Point.
 Location, Design, and Estimates for a System of Storm Sewers for the Upper Campus. (With R. W. Cain and L. V. Lienhard.)
- Jones, Hamlet Park..... Kaufman.
 Survey, Plans, Specifications, and Estimates for the Improvement of the Bryan-College Road. (With A. F. Sayers.)
- Lienhard, Leon Victor..... Cuero.
 Location, Design, and Estimates for a System of Storm Sewers for the Upper Campus. (With R. W. Cain and J. R. Hill.)
- Lyles, John Winston..... Blue Grove.
 Stadia Topographic Survey and Map of "N" Portion of Campus. (With R. A. Birk and L. N. Oliphant.)
- Montgomery, Fred Lawrence..... Corsicana.
 Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With W. C. Borchert and J. N. Davis.)
- Oliphant, Luther Nugent..... Rice.
 Stadia Topographic Survey and Map of "N" Portion of Campus. (With R. A. Birk and J. V. Lyles.)
- Olson, John N..... Galveston.
 Survey, Design, and Estimates for Street Paving in Bryan, Texas. (With R. R. Schroeter.)
- Roberts, Frank Allen..... Austin.
 Water Consumption and Sewage Discharge at the A. & M. College. (With C. N. Beazley and W. A. French, Jr.)
- Rollins, Joseph Guy..... Merit.
 Stadia Topographic Survey and Map of "S" Portion of Campus. (With R. E. Baylor and J. J. Waters, Jr.)
- Sayers, Albert Fawcett..... Houston.
 Survey, Plans, Specifications, and Estimates for the Improvement of the Bryan-College Road. (With H. P. Jones.)
- Schroeter, Richard Ralph..... Double Horn.
 Survey, Design, and Estimates for Street Paving in Bryan, Texas. (With J. N. Olson.)
- Spence, Thomas Reese..... College Station.
 Design of an Eight Panel, 175 Foot Span Parker Truss.
- Waters, Jerome Jackson, Jr..... San Antonio.
 Stadia Topographic Survey and Map of "S" Portion of Campus. (With R. E. Baylor and J. G. Rollins.)
- Whiteside, Blount..... Lott.
 Location and Estimates of Spurs from Houston & Texas Central Railroad to the Mess Hall, Steam Plant, and Dairy Barn of the A. & M. College of Texas. (With K. C. Cade and J. M. Gonzalez.)

In Electrical Engineering.

- Apperson, Roy Stephenson..... Commerce.
 The Design and Construction of a Magnetic Clutch.
- Bowler, Samuel Edwin..... Denver, Colo.
 The Design of a Rotary Converter Sub-Station.
- Brown, James Franklin..... Cherokee.
 Translation from German of E. Kosack's "Elektrische Starkstromanlagen, Machinen, Apparate, Schaltungen, Betrieb" (Power Installations, Machines, Apparatus, Connections, Operation.)
- Burleson, Wade Hampton..... San Saba.
 Design, Construction, and Test of a Direct Current Lifting Magnet.

- Campbell, Price..... Weatherford.
 Design of a Special Switchboard. (With J. M. McDonald.)
- Chambers, Taylor Lee..... Sherman.
 Telephone Talking Currents and Their Wave Shapes.
- Hefner, William Jesse..... Cuero.
 A Study of Current Transformers. (With A. C. A. Kraege.)
- Keller, Jules..... Houston.
 The Grouping of Transformers. (With R. B. Simon.)
- Koinm, Charles Herman..... Aldine.
 A Study of Rectifiers. (With E. S. Lammers, Jr.)
- Kraege, Alfred C. A..... Yorktown.
 A Study of Current Transformers. (With W. J. Hefner.)
- Lammers, Edwin E., Jr..... Dallas.
 A Study of Rectifiers. (With C. H. Koinm.)
- McDonald, James Milton..... Ozona.
 Design of a Special Switchboard. (With P. Campbell.)
- Miller, Robert H..... Ben Franklin.
 Tests of a Compound Steam Engine and Generator.
- Nolte, Robert Walker..... New Orleans, La.
 The Design, Construction, and Test of a 1-2 Kw. Transformer.
- von Rosenberg, Herbert John..... Hallettsville.
 A Study of Rectifiers.
- Simon, Raphael Bernard..... Houston.
 The Grouping of Transformers. (With J. Keller.)
- Tucker, David Halsey..... Missouri City.
 The Design, Construction, and Test of a Single Phase Transformer.
- Walker, Phelps White..... Gonzales.
 An Experimental Study of the Telephone.

In Mechanical Engineering.

- Anderson, Rexford Olan..... Denton.
 Tests of the Steam Engine Direct-Connected to a Two-Stage Air Compressor.
- Johnston, Lemuel Munroe..... Bryan.
 Experimental Study of the Air-Lift Method of Pumping Water from Deep Wells. (With J. H. Nussbaum and L. F. Walzem.)
- Lidiak, Joseph Paul..... Muldoon.
 Tests of a Compound Steam Engine and Generator. (With J. H. Lorenz.)
- Lorenz, John Henry..... Stockdale.
 Tests of a Compound Steam Engine and Generator. (With J. P. Lidiak.)
- Nussbaum, Julius Harold..... Mexia.
 Experimental Study of the Air-Lift Method of Pumping Water from Deep Wells. (With L. M. Johnston and L. F. Walzem.)
- Torrence, William Clifton..... Waco.
 Tests of a Two-Stage Air Compressor.
- Walzem, Louis Fred..... New Braunfels.
 Experimental Study of the Air-Lift Method of Pumping Water from Deep Wells. (With L. M. Johnston and J. H. Nussbaum.)

In Textile Engineering.

- Collins, James William Herring..... Mexia.
 Organization, Equipment, Cost, and Operation of a 20,000 Spindle Cotton Mill, Making a Six-Yard Sheeting.
- Dreiss, Edward, Jr..... San Antonio.
 Organization, Equipment, Cost, and Operation of a 5,000 Spindle Cotton Mill, Making an Eight-Ounce Duck.
- Nugent, Clyde Wellington..... Conroe.
 The Organization and Equipment of a 20,000 Spindle Cotton Mill.
- Tigner, Joseph Bingham..... Duke.
 Organization, Equipment, Cost and Operation of a 5,000 Spindle Cotton Mill, Manufacturing a Three-Yard Sheeting.

No Course Specified.

- Dr. Marion McMillan..... New York City.
 Municipal Sanitary Organization.

ALUMNI.

(Association Organized 1886.)

P. L. DOWNS, Temple.....	President
J. WEBB HOWELL, Bryan.....	First Vice President
C. O. MOSER, Dallas.....	Second Vice President
R. G. TABER, Houston.....	Third Vice President
A. MITCHELL, College Station.....	Secretary-Treasurer
R. B. PEARCE, College Station.....	Assistant Secretary-Treasurer

Executive Committee.

P. L. DOWNS.	A. MITCHELL.	A. C. LOVE.
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On the following pages are given the names of all graduates of the College, with the courses of study pursued and the degrees obtained; their occupations and residences are also given as far as known. The alumni are requested to aid the Secretary of the Association in making the roll as accurate as possible. Each alumnus should send the Secretary a postal card at the opening of each session, giving his address and occupation.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective, and led to appropriate degrees. Degrees received in this interval are noted in the list of names.

From 1881 to 1887 there were two prescribed courses, the Agricultural and the Mechanical, but no degrees were given.

From 1888 to 1895 there were four prescribed courses, leading to the degrees of Bachelor of Scientific Agriculture (B. S. A.); Bachelor of Civil Engineering (B. C. E.); Bachelor of Scientific Horticulture (B. S. H.); Bachelor of Mechanical Engineering (B. M. E.).

From 1895 to 1901 the four prescribed courses remained the same, but the degree in each was Bachelor of Science (B. S.), the particular course being specified in the diploma.

In 1901 the Horticultural course was merged with the Agricultural. In 1903 the course in Electrical Engineering was added; in 1904, the course in Textile Engineering; in 1905, the course in Architectural Engineering; in 1908, the course in Chemical Engineering, and in 1909, the course in Architecture, making eight regular courses leading to the degree in Bachelor of Science (B. S.) in Agriculture, in Architecture, in Architectural Engineering, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Textile Engineering.

The courses of study are indicated by the use of Roman numerals, as follows:

- I. Agriculture.
- II. Horticulture.
- III. Mechanical or Mechanical Engineering.
- IV. Civil Engineering.
- V. Electrical Engineering.
- VI. Textile Engineering.
- VII. Architectural Engineering.
- VIII. Chemical Engineering.
- IX. Architecture.

Names of deceased alumni are marked with an asterisk.

- ABBOTT, E. G., 1894, IV, Captain Coast Artillery, United States Army, Fort Wood, Bedloe's Island, N. Y.
- ABBOTT, H. T., 1898, II, Bookkeeper, 4010 Cedar Springs, Dallas.
- ABNEY, CARLTON C., 1905, IV, Bank Clerk, Lampasas.
- ABNEY, G. R., 1906, IV, Civil Engineer, Eagle Lake.
- ABRAHAMS, J. E., 1900, III, Cashier, with Jos. Landa, New Braunfels.
- *ABRAHAMS, M. L., 1903, III.
- ACKER, L., 1902, IV, Roadmaster, H. & T. C., Ennis.
- ADAMS, R. E., 1910, IV, Hardware Merchant, Santa Anna.
- ADAMS, A. S., 1895, IV, Engineer, Bryan.
- ADAMS, F. L., 1892, I, Farmer and Merchant, Snyder.
- ADAMS, LEM, 1908, IV, Draftsman, Oregon Short Line, Pocatello, Idaho.
- ADAMS, O., 1912, VII, with Cravens & Cage, Houston.
- ADAMS, T. A., 1908, VI, Mining Engineer, Inde Gold Mining Co., Inde, Durango, Mex.
- ADICKES, C. F., 1910, IV, Fred A. Jones Co., Dallas.
- ADISSON, W. T., 1910, IV, U. S. Eng. Corps, Shreveport, La.
- *ADRIANCE, D., 1886, I, M. S., 1890, Bryan.
- AGUAYO, N. A., 1904, III, Parass, Mex.
- AHRENBECK, W. T., 1891, III, Minister, Huntsville.
- AKERS, M. E., 1902, IV, Farmer, Stowell.
- ALDWELL, R. E., 1909, V, Cashier, First National Bank, Sonora.
- ALEXANDER, D. E., 1880, Fort Worth.
- ALEXANDER, M. R., 1913, IV, Navasota.
- ALEXANDER, R. L., 1902, IV, 320 Hutton Bldg., Spokane, Wash.
- ALLEN, F., 1906, V, Campbellton.
- ALLEN, L. E., 1881, III, Manager Allen's City Drug Co., Marlin.
- ALLEN, W. H., 1888, I, Physician and Surgeon, Marlin.
- ALTGELT, E. J., 1892, IV, Real Estate, San Antonio.
- ALTGELT, E. S., 1904, IV, Civil Engineer, San Antonio, Box 902.
- AMSLER, L. D., 1889, III, Cashier Farmers' National Bank, Hempstead.
- AMTHOR, A. W., 1895, IV, Civil Engineer for Brownsville Land and Irrigation Co., Brownsville.
- ANDERSON, J. V., 1913, IV, Abilene.
- ANDERSON, R. O., 1913, III, Westinghouse Machine Co., Pittsburgh, Pa.
- ANDERSON, W. D., 1890, I, Manager Ice Works, Waxahachie.
- ANDREWS, V., 1884, III, Physician, Floydada.
- APPERSON, R. S., 1913, V, care Crocker-Wheeler Co., Ampere, N. J.
- ARMSTRONG, J. F., 1906, III, Mining, Guanajuato, Mexico, Box 33.
- ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
- ARNESON, E. P., 1910, IV, Light and Power Co., San Antonio.
- ARNOLD, E. C., 1906, III, Chemist for Inde Gold Mining Co., Inde, Durango, Mexico.
- ASHFORD, G. W., 1912, V, General Elec. Co., Schenectady, N. Y.
- ASHTON, JOHN, 1906, I, Ranchman, Linares, N. L., Mexico.
- ASTIN, E. H., 1899, III, Banker, Bryan.
- ATWELL, B. D., Jr., 1912, V, W. E. & M. Co., Wilkinsburg, Pa.
- ATWELL, C. S., 1912, IV, Surveyor U. S. Eng. Corps, Hutchins.
- BAADE, J. E., 1911, VII, Waco.
- BACKUS, U. J., 1890, III, Farmer, Eagle Pass.
- BAILEY, C. C., 1892, IV, Cashier First National Bank, Bartlett.
- BAINES, H., 1906, V, Traffic Dept., S. W. Tel. & Tel. Co., Waco.
- BAKER, L. A., 1910, V, Westinghouse Electric Co., 500 Kelly St., Wilkinsburg, Pa.
- BAKER, J. J., 1879, Merchant, Homer, La.
- BAKER, SEARCY, 1882, III, Assistant Manager South Texas Lumber Co., Houston.
- BALL, W. A., 1912, V, Engineer, Corpus Christi.
- BALLARD, LUKE L., 1905, I, Stock Farmer, Waco.
- BANKS, A. L., 1879, B. S., 1892, M. S., 1895, Professor of Mathematics, College of Industrial Arts, Denton.
- BARCLAY, R. L., 1898, III, President and Manager Reed Transfer Co., Temple.
- BARHAM, G. S., 1902, III, Physician, Nacogdoches.
- BARHAM, R. E., 1903, IV, Engineer, Nacogdoches.
- BARNES, G. W., 1911, I, Extension Dept. A. & M. College, Stillwater, Okla.
- BARNES, R. M., 1898, III, General Merchant, Abilene.
- BARNES, S. E., 1899, I, DeLaval Separator Co., 165 Broadway, New York.
- BARNITZ, R. B., 1912, VII, 2nd Lieutenant U. S. A., Ft. Clark.
- BARWIS, I. G., 1910, VII, Architectural Draftsman, Fairfield, Iowa.
- BASS, R. O., 1909, V, Electrician, Los Angeles, Cal.
- BATTE, T. F., 1902, IV, Chief Engineer Rio Bravo Oil Co., Houston.
- BAUER, F., 1904, III, Ginner, Burton.

- BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
 BAYLOR, R. E., 1913, IV, Instrument Man, Panama Canal, Balboa.
 BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston, Mass.
 BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Los Angeles, Cal.
 BEAUREGARD, R. T., 1910, IV, M. of W. Dept. T. & B. V. Ry., Teague; Home address, San Antonio.
 BEAZLEY, C. N., 1913, IV, Grapeland.
 BECHERT, F. J., 1911, III, M. E., 1912, 1913, Ch. E., Instructor, M. E. Dept., College Station.
 BECKER, ADOLPH, 1905, I, Merchant, Brenham.
 BEEMAN, T. R., 1903, IV, Locating Engineer, C. M. & St. P. R. R., 617 White Bldg., Seattle, Wash.
 BEESLEY, T. J., 1908, III, Manager Rockdale Oil Co., Rockdale.
 BEESLEY, W. S., 1892, IV, Merchant, Abilene.
 BEILHARZ, W. E., 1903, III.
 BENJAMIN, J. W., 1905, IV, City Engineer, Cuero.
 BENTLEY, C. N., 1910, V, Northern Electric Co., Montreal, Canada.
 BERNAY, C. L., 1904, IV, Paving and Roads Dept., Texas Oil Co., Houston.
 BEYER, F. C., 1892, III, Mgr. Mason Ice and Power Co., Mason.
 *BIBERSTEIN, F. R., 1882, III.
 BIERING, S. R., 1902, IV, Chief Claim Clerk, G. C. & S. F. Ry., Galveston.
 BING, B. L., 1910, I, Farmer, Waller.
 BIRK, R. A., 1913, IV, Iowa Park.
 BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
 BITTLE, T. C., JR., 1900, IV, Farming, Texarkana.
 BITTLE, A. W., 1894, I, Principal High School, Washington, La.
 BIVINS, M., 1907, V, Mattress Manufacturer, Longview.
 BLACK, M., Minister, Sterling City.
 BLACK, R. S., 1907, IV, Nacoyari, Sonora, Mexico.
 BLACKALLER, G. A., 1911, I, Stockman, Frio Town.
 BLACKMON, G. H., 1910, Asst. Professor of Horticulture, A. & M. College, College Station.
 BLAKE, H. H., 1907, IV, Markham.
 BLAKE, T. W., 1904, I, Gen. Sales Mgr. South Texas Lumber Co., Houston.
 *BLAKEMORE, T. E., 1880.
 BLAND, L. F., 1899, I, Medical Student, Memphis, Tenn.
 BLEDSOE, F. F., 1880, Minister, Bedias.
 BLOCK, J. A., 1912, IV, Houston.
 BLOOR, A. W., 1895, I, Attorney, Austin.
 BLOUNT, S. L., 1896, I, U. S. Veterinary Inspector, Bureau of Animal Industry, Department of Agriculture, 913 W. Lenda St., Fort Worth.
 BOCOCK, J. H., 1894, I, Traveling Salesman, Thaxton, Va.
 BOETTCHER, R. B., 1900, III.
 BOGEL, W. W., 1907, V, Maria.
 BORGHERT, W. C., 1913, IV, Kyle.
 BORN, THOMAS C., 1905, I, General Contractor, Houston.
 BOURLAND, W. F., 1913, IV, Rodman S. A. & A. P. Ry. Co., Yoakum.
 BOWER, L. J., 1913, I, Stephenville.
 BOWLER, W. E., 1908, V, Farmer, R. F. D. No. 5, Hico.
 BOYCE, S. E., 1913, V, Fort Worth.
 BOYCE, CHARLES W., 1905, I, Farmer, Charco.
 BOYCE, W. JR., 1907, IV, Roadmaster C. G. W. R. R., Chicago, Ill.
 BOYETT, H. E., 1912, IV, Bryan.
 BOYKIN, R. E., 1892, III, Teacher.
 BOZEMAN, J. R., 1912, V, Unsan, Korea.
 BRANDT, R. L., 1906, III, Draftsman, Box 808, San Antonio.
 BRANNIN, C. P., 1909, VI, Educational and Vocational Sec., Y. M. C. A., Dallas.
 *BRAUN, P., 1888, San Antonio.
 BRAUNIG, V. H., 1910, V, Asst. Supt. Elect. Dept., San Antonio Gas and Elec. Co., San Antonio.
 BRINKMANN, H., 1906, III, 1907, V, 12 Barrett St., Schenectady, N. Y.
 *BRITTINGHAM, W. F., JR., 1890, IV.
 BRETSCHNEIDER, W., 1898, IV, Assistant Superintendent M. of W. Dept., T. & N. O. R. R., Houston.
 BREWER, H. A., 1899, III, Farmer, R. F. D. No. 3, Dale.
 BRICE, H. A., 1910, IV, Fred A. Jones Co., Birmingham, Ala.
 BRISCOE, W. P., 1911, IV, City Engineering Dept., Houston.
 BROGDON, S. T., 1908, III, Minister Vanderbilt University, Nashville, Tenn.
 BROWN, B. Mc., 1911, III, Draftsman S. P. Shops, San Antonio.
 BROWN, C., 1911, V, S. W. Tel. & Tel. Co., Dallas.
 BROWN, C. G., 1906, V, Instructor, Sibley College, Ithaca, N. Y.
 BROWN, H. P., 1911, I, Farmer, Mathis.
 BROWN, J. F., 1913, V, 1008 Polk Ave., Houston.
 BROWN, J. J., 1912, I, Instructor Agriculture, Moore.
 BROWN, R. M., 1901, IV, in charge of track, Guayquil & Quito Ry., Box 37, Guayquil, Ecuador, S. A.
 BROWN, T. H., 1879, Claim Agent T. & N. O. Ry., Houston.
 BROWN, W. H., 1880, IV, Planter, Navasota.
 BRUCE, E. L., 1894, IV, Lawyer, Orange.
 BRUNDRETT, G. T., 1908, V, with Stone & Webster, Dallas.
 BRYAN, B. F., 1897, I.
 BRYAN, W. I., 1900, II, Chief Engineer Flour Mills, Celina.
 BRYANT, W. T., 1911, VIII, Ch. E., 1913, Asst. in Chemistry, College Station.
 BUCHANAN, T. S., 1909, IV, Resident Engineer F. F. C. C. N. of Mex., Ajono, Kilo, 110 Michoacan, Mexico.
 BUCKMAN, C. D., 1889, IV, Denison Grocery Co., Denison.
 BUCKNER, J. F., 1912, IV, Rodman Santa Fe, Cleburne.
 BUFORD, F. L., 1892, IV, Assistant Engineer G. C. & S. F. Ry., Silsbee.

- BUHLER, C. M., 1897, III, Chief Clerk, Disbursements, S. P. Co., 7532 Hampson St., New Orleans, La.
 BUHLER, C. W., 1892, IV, Chief of Car Department S. A. & A. P. Ry., San Antonio.
 BUHLER, W. A., 1900, III, Grocer, Victoria.
 BULLARD, T. O., 1899, III, I. & G. N. Shops, Mart.
 BURCK, L. B., 1889, IV, Broker, 631 S. Spring St., Los Angeles, Cal.
 BURFORD, J. M., 1882, III, Physician and Surgeon, Independence.
 BURCHARD, C. L., 1886, III, Cashier, Bank of Goliad.
 BURGOON, C. E., 1895, III, M. E., 1899, Eng. Federal Bldg., Chicago, Ill.
 BURLESON, R. C., 1912, IV, 1st Lieutenant, U. S. Army, Fort Myer, Va.
 BURLESON, R. W., 1895, III, Cashier W. M. & Co. Bank, San Saba.
 BURLESON, W. H., 1913, V, Brush Electric Co., Galveston.
 BURMEISTER, C. A., 1908, I, U. S. Dept. of Agriculture, Amarillo.
 BURNEY, J. W., 1896, III, Lumberman, Kerrville.
 BURNEY, R. L., 1906, IV, General Contractor, 416 Conroy Bldg., San Antonio.
 BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
 BURNS, H. E., 1906, IV, Draftsman Colorado Southern R. R., Beaumont.
 BURNS, J. C., 1904, I, Professor of Animal Husbandry, College Station.
 BURRITT, W. P., 1906, III, City Engineer, San Antonio.
 BURT, F. O., 1910, IV, Contractor, Waco.
 BURTON, A., 1913, VII, Student Columbia University, 2940 Broadway, New York
 BUTLER, J. V., 1912, IV, County Road Engineer, Huntsville.
 BYARS, G. E., 1910, IV, City Engineer, Waco.
 CABANISS, W. M., 1912, V, Draftsman Texas Portland Cement Co., Dallas.
 CADE, K. C., 1913, IV, Birkville.
 CAIN, R. W., 1913, IV, Cotton factor, Italy.
 *CALDWELL, J. C., 1883, III.
 CALDWELL, J. R., 1912, III, Manual Training Teacher, Blanco.
 CALDWELL, R. E., 1913, I, care Lackawana Farm, Hillsboro.
 CALLAWAY, W. H., 1912, IV, Student Columbia University, New York.
 CAMPBELL, D., 1879, Stockman, El Paso.
 CAMPBELL, P., 1913, V, Weatherford.
 CAMPBELL, R. W., 1899, III, President and Bookkeeper Campbell-Hutcheson Hardware Co., Roff, Okla.
 CARDWELL, W. W., 1913, I, Lockhart.
 CARLIN, W. J., 1910, III, Draftsman City Engineer's Office, Houston.
 CARLISLE, E., 1906, I, 38 W. 35th St., New York.
 CARPENTER, M. M., 1902, I, Mining Engineer, 66 Scott St., Tucson, Arizona.
 CARRINGTON, H., 1912, IV, Civil Engineer, Bay City.
 CARROLL, J. G., 1911, V, Westinghouse E. and M. Co., 413 Pitt St., Wilkinsburg, Pa.
 CARSON, A. B., 1897, IV, Civil Engineer, Bryan.
 CARSON, J. M., JR., 1886, I, Treasurer A. & M. College, College Station.
 CARSON, J. W., 1886, I, Director of the Harris County Demonstration Farms, Houston.
 CARSON, R. C., 1899, III, Machinist, 1305 N. Robinson St., Cleburne.
 CARTER, J. D., 1900, IV, Civil Engineer, 905 Main St., Dallas.
 CARTER, J. W., Civil Engineer, El Paso.
 CARTER, T. H., 1912, V, Celeste.
 CARTER, W. T., JR., 1898, I, Scientist in Bureau of Soils, Washington, D. C.
 CARUTHERS, F., 1885, I, Cashier United States Land Office, Oklahoma City, Okla.
 CARUTHERS, R. B., 1912, IV.
 CASEY, P. D., 1908, VI, S. W. Tel. & Tel. Co., Dallas.
 CAVEN, G. P., 1897, I, Clerk M. K. & T. Ry., 200 San Jacinto St., Dallas.
 CAVITT, J. S., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
 CAVITT, W. H., 1897, III, Oil Well Contractor, Box 101, Batson.
 CELY, H. M., 1910, V, Teacher, Frankston.
 CHAMBERS, M. L., 1879, Real Estate and Loans, 501 1-2 Main St., Fort Worth.
 CHAMBERS, T. L., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
 CHANEY, L. P., 1912, V, Texas City Trans. Co., Texas City.
 CHEWNING, J. W., 1913, I, Chemist, Feed Control, College Station.
 CHINSKI, C. C., 1913, IV, Beaumont.
 CHRISTEN, J. C., 1912, V, 500 Kelly St., Wilkinsburg, Pa.
 CHRISTIAN, B. H., 1910, IV.
 CHRISTIAN, J. R., 1911, IV; VIII, 1913, Houston.
 CHURCH, MARION S., 1905, I, Assistant County Attorney, Dallas County, Dallas.
 CHURCH, W. G., 1912, V, General Electric Co., Schenectady, N. Y.
 CLARK, H., 1895, I, Physician, Crowell.
 CLAYTON, W. D., I, M. S., 1897, Farmer, Wakefield, La.
 CLEMENT, T. H., JR., 1900, IV, Engineer L. H. & G. Ry. Co., Hemphill.
 CLONTS, T. P., 1904, IV, City Engineer, Muskogee, Okla.
 COBBS, S. A., 1896, IV, Civil Engineer, Muskogee, Okla.
 COBBS, T. D., JR., 1904, IV, Attorney at Law, San Antonio.
 COCHRAN, E. G., 1879, Physician and Surgeon, Pearsall.
 COCHRAN, J., 1904, IV, C. E., 1905, Trussed Concrete Steel Co., Detroit, Mich.
 COCK, C. E., 1911, IV, Contractor, Belton.
 COGHILL, E. S., 1911, IV, Inst. Man. U. S. Eng. Corps, Crockett.
 COHN, S. L., 1897, IV, Advertising Manager Sherman Oil and Cotton Co., Sherman.
 COLE, A. T., 1909, V, Engineering Department Pacific Elec. Ry. Co., Y. M. C. A., Bldg., Los Angeles, Cal.
 COLEMAN, M. M., 1910, I, Ranchman, Rodger, N. M.
 COLEMAN, N. P., 1911, III, Lineman Bryan Tel. Co., Bryan.
 COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winnfield, La.
 COLLINS, J. W. H., 1913, VI, Mexia.
 COLLINS, A. B., 1912, V, Inspecting Eng., Elmhurst, N. Y.
 CONNELLEE, E. T., 1913, I, Eastland.
 CONNER, A. B., 1904, I, Agronomist for Texas Experiment Station, College Station.
 CONNER, T. P., 1912, I, Red Oak.
 COOK, E. A., 1892, III, Cleburne.

- CORLETT, R. H., 1911, IV, Civil Engineer for the Texas Co., Wichita Falls.
 CORNELL, A. L., 1908, IV, Auditor M. K. & T. Ry. Co., Denison.
 COTTINGHAM, I. A., 1886, III, Assistant General Manager H. & T. C. Ry., 2811 Fannin St., Houston.
 COTTINGHAM, W. P., 1892, IV, Manager Texas Blue Print and Supply Co., Houston.
 *COTTON, H., 1897, IV.
 COUCH, E., 1897, III, City Engineer's Office, Houston.
 COULTER, H. T., 1895, II, Physician, Rockdale.
 COULTER, W. J., 1895, III, Merchant, Bryan.
 COULTER, R. E., 1901, III, Foreman Fuel Department, T. & P. Ry. Co., Texarkana.
 COUSINS, R. W., 1899, III, Electrical Eng. Ind. Steel Co., Gary, Ind.
 COWART, I. E., 1913, I, Student University of Missouri, Columbia, Mo.
 COX, D. W. S., 1892, IV, Sales Agent, Dallas.
 COX, H. T., 1912, V, Power and Light Co., Hereford.
 COX, R. W., 1913, I, Scientific Asst. Sub-Station No. 2, Troup.
 COZART, R. B., 1911, III, Assistant Superintendent Lufkin Foundry and Iron Works, Lufkin.
 CRAVENS, J. R., 1882, III, General Agent, Fire Insurance, Houston.
 *CROCKETT, C. M., 1910, IV.
 CROCKETT, J. B., 1908, IV, C. E., 1909, Assistant Professor of Civil Engineering, College Station.
 CROUCH, J. H., 1910, V, Salesman, Alvin.
 CROW, W. E., 1898, II, Physician, Dallas.
 CRUM, J. B., 1911, VII, Bookkeeper American Exchange National Bank, Dallas.
 CRUSE, JOHN T., 1905, I, Farmer and Teacher, Eagle Lake.
 CULBERTSON, J. L., 1913, I, Waxahachie.
 CULVER, DAN, 1908, III, Salesman, Lampasas.
 CUNNINGHAM, F. H., 1910, V, Service Agent Otis Elevator Co., Houston.
 CUNNINGHAM, A., 1879, Railway Postal Clerk, Palacios.
 CUNNINGHAM, P. E., 1907, IV, Junior Engineer Mississippi River Commission, Box 404, Vicksburg, Miss.
 CURTIN, W. H., 1912, III, City Eng. Dept., Houston.
 CUSHING, D., 1891, III, Pharmacist, Yorktown.
 CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer Construction Sunset-Central Lines, President Board Directors A. & M. College, Houston.
 DAHME, A. F., 1904, IV, Engineer, Yorktown.
 DALE, I., 1908, IV, Instrumentman, Clarksdale, Miss.
 DALE, J., 1908, III, 330 E. 6th St., Oklahoma City, Okla.
 DALLMEYER, C. D., 1911, VI, with Swift Mfg. Co., Columbus, Ga.
 DARST, T. B., 1911, I, Farming and Stock Raising, Richmond.
 DASHIELL, W. R., 1891, IV, Physician, Surgeon for the Victor Fuel Co., Gray Creek, Col.
 DARNPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
 DAVIS, D. O., 1911, I, Farming, McKinney.
 DAVIS, J. M., 1903, IV, Banker, Forney.
 DAVIS, J. N., 1885, III, Farming and Stock Raising, Hico.
 DAVIS, J. N., JR., 1913, IV, Hico.
 DAWSON, N. A., 1884, III, Lawyer, Austin.
 DAY, T. R., 1902, I, Real Estate, El Paso.
 DAZEY, W. L., 1894, IV, Dentist, Hillsboro.
 DEAN, J. S., 1906, VII, Architect, State Architect's Office, Sacramento, Cal.
 DELLIS, J. L., 1912, IV, Draftsman Pacific Electric Ry. Co., Los Angeles, Cal.
 DEVINE, P. S., 1912, IV, Laredo.
 DIBRELL, Z. H., 1910, V, Salesman, Mecca Hotel, Houston.
 DICKERSON, A. F., 1910, V, Gen. Elec. Co., Schenectady, N. Y., now Asst. Chief of Illumination P.-P. Int. Exposition, San Francisco, Cal.
 DICKERSON, W. E., 1911, IV, County Surveyor, Cuero.
 DICKSON, J. L., 1912, IV, Asst. Eng. Freeport T. Wn. Co., Velasco.
 DICKSON, R. E., 1912, I, Asst. Agronomist Texas Experiment Station, College Station.
 DIETERT, R. H., 1888, III, Car Foreman H. & T. C. Ry., 1214 Prairie St., Houston.
 DINTER, H. A., 1911, V, Hico Electric Light and Power Co., Hico.
 DODSON, C. P., 1911, V, Manager Light Plant, Nocona.
 DONALDSON, C. B., 1893, III, Farmer, Kyle.
 DONOHO, W. T., 1913, IV, Utopia.
 DORSEY, W. L., 1911, V, Asst. Commandant Peacock's Military College, San Antonio.
 DOWELL, H. B., 1913, I, McKinney.
 DOWNS, J. R., 1879, Lawyer, Waco.
 DOWNS, P. L., Vice President First National Bank, Temple.
 DRIESS, E., JR., 1913, VI, San Antonio.
 DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Colo.
 DROSS, P. H., 1902, III, General Manager F. Marty Foundry Co., Meridian, Miss.
 DUDLEY, F. E., 1885, II, Real Estate, Hollywood, Cal.
 *DUGAN, G. H., 1881.
 DUGGAN, A. P., 1895, IV, Manager Littlefield Lands, Littlefield.
 DUNN, R. B., 1904, III, Merchant, Benchley.
 DURST, BRUNO L., 1905, IV, Civil Engineer, Dallas.
 DWYER, T. J., 1912, IV, International Boundary Com., El Paso.
 DWYER, W. F., 1899, I, Car Clerk A., T. & S. F., Ry., Deming, N. M.
 EAGLESTON, E. G., 1913, I, Smithville.
 EGAN, J. T., 1913, I, Farmer, Haslet.
 EDDINS, R. R., 1909, V, Electrician, Marlin.
 EDSALL, A. B., 1907, I, Farmer, Spring Creek.
 EDWARDS, J. F., 1883, III.
 EBERSPACHER, F., 1906, IV, Retail Stationer, 221 N. 20 St., Birmingham, Ala.
 EBERSPACHER, G., 1896, III, Machinist S. P. Ry., Houston.
 EBERSPACHER, R., 1901, III, Automobile Dealer, Corpus Christi.
 EHLERS, P., 1907, V, Automatic Electric Co., Dallas.
 EHLERS, V. M., 1905, Sanitary Engineering, La Grange.

- EHLERS, W. J., 1910, VII, Architect, Bishop.
 EHLINGER, G. E., 1912, I, La Grange.
 EHLINGER, L., 1906, IV, Draftsman, General Land Office, Austin.
 EHLINGER, R. B., 1913, I, Deputy State Feed Inspector, College Station.
 EHRHARDT, E. J., 1910, IV.
 *ELDRIDGE, H. M., 1897, IV.
 ELLIOTT, J. E., 1910, VII, Eng. for Gordon-Jones Const. Co., San Antonio.
 ELLIOTT, F. G., 1906, VI, with Bush & Witherspoon, Cotton Brokers, Waco.
 ELLIS, H. E., 1910, V, Western Electric Co., Oklahoma City, Okla.
 ELLIS, B. V., 1892, I, Physician, 1515 Boulevard St., Houston.
 ELLIS, FORT O., 1894, IV, Sheriff and Tax Collector, Harrisonburg, La.
 ELLIS, O. L., 1908, V, Telephone Co., Clovis, N. M.
 ENGLD, H. E., 1901, III, Consulting Engineer, S. W. Life Bldg., Dallas.
 ENGLISH, M. G., 1909, IV, Civil Engineer, Port Arthur.
 EPPLE, H. G., 1912, V, Cisco.
 EPPRIGHT, F. G., 1902, III, Machinist I. & G. N. Shops, San Antonio.
 EPSTEIN, S. G., 1907, IV, Resident Engineer, Interurban, Dallas.
 ERHARD, E. C., 1903, III, Machinist I. & G. N. R. Co., Palestine.
 EUDALY, E. R., 1910, I, Livestock and Dairy Agent, Chattanooga, Tenn.
 EVANS, C. D., 1899, IV, Civil Engineer, Shreveport, La.
 EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
 EVERSBERG, E. A., 1913, I, Brenham.
 EVERSBERG, O. L., 1910, I, with Armour & Co., Brenham.
 FAIRBAIRN, G. C., 1912, V, Port Arthur Light and Power Co., Port Arthur.
 FARMER, A. G., 1895, III, Stockman, Junction.
 FARMER, J. S., 1912, I, Mission Irrigated Farm Co., San Antonio.
 FAUST, H., 1900, III, First National Bank, New Braunfels.
 FAUST, W., 1897, IV, Cashier of First National Bank, New Braunfels.
 FEARHAKE, J. D., 1889, IV, Attorney, 5 Nassau St., New York City.
 FEHRENKAMP, E. B., 1901, IV, Bookkeeper, Kenedy.
 FERGUSON, A. M., 1894, II, M. S., 1896, Seed Breeding, Sherman.
 FIELD, H. Y., 1891, I, Stock Breeder, Argyle Avenue, Dallas.
 FIGH, J. R., 1912, I, S. W. Tel. & Tel. Co., Box 1809, Houston.
 FINNEY, C. B., 1896, IV, Mining Engineer, Apartado 173, Oax., Mexico.
 FITZGERALD, A. H., 1895, I, Druggist, Gonzales.
 FITZGERALD, L., 1900, III, Superintendent G. H. L. & W. Co., Gary, Ind.
 FITZHUGH, E. E., 1880, Real Estate, Waco.
 FITZPATRICK, B., 1913, IV, Columbus.
 FLEMING, C. H., 1908, VI, Bookkeeper, Cisco.
 FLOYD, J. F., 1892, III, Lumber Dealer, Texarkana.
 FLYNT, H. C., 1890, I, Real Estate, 810 Gunter Bldg., San Antonio.
 FORD, F. D., 1911, IV, Cordell, Okla.
 FORDTRAN, F. L., 1887, I, Physician, Kerrville.
 FORSGARD, C. H., 1911, V, Engineer, Dallas.
 FORSGARD, OSCAR L., 1905, IV, Resident Engineer H. & T. C. Ry., Home Address, 1204 Holman Ave., Houston.
 FORSYTH, J. M., 1912, III, 1913, M. E., with Allis-Chalmers, West Allis, Wis.
 FORT, F. W., 1879, Wholesale Grain, Provident Building, Waco.
 FOUNTAIN, E. J., JR., 1913, VII, Salesman, Bryan.
 FOUNTAIN, S. J., 1901, IV, Professor of Architecture, College Station.
 FOUNTAIN, T. D., 1904, IV, Merchant, Dalhart.
 FOUNTAIN, T. L., 1901, IV, Civil Engineer, Dallas.
 FOUTREL, G. F., 1898, III, Machinist, 225 S. Presa St., San Antonio.
 FOWLER, E. G. R., 1894, IV, Lawyer, Palestine.
 FOY, H. F., JR., 1908, V, Engineer Bell Tel. Co., St. Louis, Mo.
 FOY, V. H., 1902, III, S. W. Tel. & Tel. Co., Pine Bluff, Ark.
 FRANCIS, A. J., 1912, I, College Station.
 FRAZIER, B., 1911, I, Manager Clifton Stock Farm, Waco.
 FREEMAN, J. H., 1887, III, Insurance Agent, Austin.
 FRENCH, W. A., 1913, IV, Kaufman.
 FRIES, JOHN, 1912, IV, Levelman S. A., N. & G. Ry., San Antonio.
 *FULLER, T. A., 1879.
 FURNEAUX, W. H., 1909, I, American Exchange National Bank, Dallas.
 GARBADE, W. T., 1901, Adjunct Professor University of Texas, Medical Department, Galveston.
 GARNETT, R. M., 1902, IV, Section Foreman S. P. Ry., Bay City.
 GARZA, C. M., 1905, IV, Brownsville.
 GEREN, P. M., 1912, VII, Architect, Austin.
 GIESECKE, A. C., 1909, IV, Draftsman Utah L. & P. Co., Salt Lake City, Utah.
 GIESECKE, B. E., 1911, VII, Architect, Austin.
 GIESECKE, F. E., 1886, III, M. E., 1890, Professor of Architecture, University of Texas, Austin.
 GIESECKE, G., 1884, III, Merchant Miller, 228 Washington St., San Antonio.
 GIESECKE, W. E., 1892, III, New York City.
 GILBERT, C. L., 1911, V, U. S. Army, Fort Adams, R. I., Home Address, Smithville.
 GILBERT, J., 1894, I, Physician, Austin.
 GILBERT, W. A., 1907, I, Farmer, Mabank.
 GILBERT, W. R., Farmer, Austin.
 GILLESPIE, S. E., 1903, III, Draftsman, The Murray Co., Dallas.
 GILLETTE, P. C., 1913, IV, Bellaire.
 GILMORE, H. C., 1896, III, Electrician, Barden Electric Co., Houston.
 GIST, BYRON, 1910, I, Stock Farming, Littlefield.
 GIST, W. B., 1913, IV, Nacona.
 GLASS, R. H., 1904, III, Dentist, Hearne.
 GLASS, WILL V., 1905, I, Druggist, Lufkin.
 GLEASON, B., 1906, V, Postmaster, Hico.
 GLEASON, H., 1903, IV, Manager Hico Light and Power Co., Hico.

- GLOVER, W. F. H., 1898, I, Planter, James Island, S. C.
 GOLDBERG, I. L., 1896, II, Merchant, Jefferson.
 GONZALES, J. de la M., 1913, IV, Tampico, Tampico, Mexico.
 GOODWIN, W. M., 1912, V, Western Elec. Co., Cicero, Ill.
 GRADY, M. L., 1909, IV, Civil Engineer for Kirby Lumber Co., Houston
 GRAY, O. H., 1911, V, San Antonio Steam Laundry, San Antonio.
 GRANAU, H. F., 1907, IV, Merchant, Bellville.
 *GRAVES, C. S., 1882, III.
 GRAVES, D. R., 1903, III, Signal Maintainer, T. & P. Ry., 314 S. Jennings Ave., Fort Worth.
 GRAY, J. L., 1884, III, Civil Engineer.
 GREEN, C. E., 1912, V, General Elec. Co., Schenectady, N. Y.
 *GREEN, R. B., 1884, III.
 *GREENWOOD, F. J., 1898, IV
 GRIESENBECK, C. H., 1912, VII, Architect, 1101 S. W. Life Bldg., Dallas
 GRIFFITHS, T. W., JR., 1900, III, with Griffiths & Co., Lumber Dealers, Dallas.
 GRISSOM, R. J., 1913, IV, Professor of Mathematics B. B. A., Bryan.
 GROTE, F. H., 1911, I, Taft.
 GRUENE, E., 1887, III, Piano Dealer, New Braunfels.
 GRUPE, G., 1892, III, Superintendent L. & P. Plant, Cleburne.
 *GUGENHEIM, L. Z., JR., 1906, V, E. E., 1907.
 GURLEY, D. R., JR., 1892, Farmer, Waco.
 HACKNEY, J. G., 1906, III, Merchant, Stamford.
 HAILE, C. R., 1912, IV, San Antonio.
 HADEN, J. H., 1879, Farmer and Stockman, R. F. D. No. 2, Barry.
 HALL, G. G., 1913, I, Houston.
 HALTOM, G. T., 1906, V, Signal Supervisor, Waco.
 HANER, E., 1904, IV, Division Engineer Natl. R. R. of Mexico, Gomez Palacios, Mexico.
 HANNA, HOWARD E., 1905, I, Traveling Salesman Hughes-Perrell Paint Co., Kansas City, Mo.
 HANSCHKE, R., JR., 1890, III, Manager Advertising Department Freie Presse fuer Texas Publishing Co., 225 King William St., San Antonio.
 *HARE, H. C., 1887, III.
 HARE, S. C., 1882, III, Lawyer, 566 S. Travis St., Sherman.
 HARRINGTON, C. B., 1902, I, Physician, Lake Charles, La.
 HARRISON, C. C., 1899, II.
 HARRISON, E. W., JR., 1913, I, Scientific Asst. Sub-Station No. 7, Spur.
 HARRISON, J. G., 1902, III, Architect, Wilson Bldg., Dallas.
 *HARRISON, W. A., 1898, II.
 HARRIS, D. B., 1909, IV, Bank Clerk S. Texas Com. Natl. Bank, Houston.
 HAUCK, CHARLES F., 1905, III, Captain Dredge Boat, Galveston.
 HAWKINS, J. W., 1893, I, General Land Office, Austin.
 HEIDELBERG, H. A., 1903, III, Iola Portland Cement Co., Dallas.
 HEFNER, W. J., 1913, V, with General Elec. Co., Schenectady, N. Y.
 HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
 HELDENFELS, F. W., 1909, VII, Lumber Dealer, Beeville.
 HELLER, J. H., 1913, I, Buda.
 HELLER, W. L., 1908, I, Wholesale Florist, R. F. D. No. 1, Alvin.
 HEMPHILL, G. H., 1912, V, Otis Elec. Co., Houston.
 HENDERSON, C. M., 1911, I, Broker, Linz Bldg., Dallas.
 HENDERSON, H. W., 1891, I, Cotton Buyer, Ladonia.
 HENSEL, F., JR., 1907, I, Student Cornell University.
 HEREFORD, J. B., 1887, III, General Agent, Fire Insurance, Dallas.
 HERNSTADT, S. J., 1890, IV, Member New York Cotton Exchange, 60 Broadway, N. Y.
 HIGGINS, W. S., 1907, IV, Roadmaster G. H. & S. A. Ry., Victoria.
 HILDEBRANDT, A. M., 1896, II, M. S., 1898, Minister, Sewanee, Tenn.
 HILL, JOHN E., JR., 1904, III, 1905, V, E. E., 1907, Bell Tel. Co., Waco.
 HILL, J. R., 1913, IV, care County Engineer, Waco.
 HILL, M. J., 1907, V, District Traffic Manager S. W. Tel. & Tel. Co. Marshall.
 HOEFLE, K. F., 1912, IV, Amalgamator, Unsan, Chosen, Japan.
 HOFFER, T. B., 1904, IV, Resident Engineer Texas Company, Wichita Falls.
 HOFFMAN, F. C., 1888, III, Jeweler, New Braunfels.
 HOFMAN, R. W., 1906, IV, Merchant, Mason.
 HOHN, CAESAR, 1912, I, Post Graduate Student A. & M., College Station.
 HOLCOMB, R. M., 1902, Clerk Auditor's Office, P. E. Ry. Lines, Los Angeles, Cal.
 HOLLAND, C. J., 1913, VIII, Brownwood.
 HOLLOWAY, T. E., 1908, I, U. S. Department of Agriculture, New Orleans, La.
 HOLMAN, J. R., 1895, IV, Chief Engineer Oregon & Washington R. R., Seattle, Wash.
 HOLZMAN, F. R., 1902, I, Real Estate, Dallas.
 HOLZMAN, WALTER R., 1905, I, Veterinary Inspector, B. A. I, Lubbock.
 HOMANN, A. C., 1898, III, Cashier First State Bank, Rowena.
 HOMEYER, C. W., JR., 1908, IV, Engineer Medina Irrigation Co., Lytle.
 HOOKER, R. M., 1910, I, Farming, Tyler.
 HOOPER, J. J., 1901, I, Professor of Animal Husbandry, Kentucky State College, Lexington, Ky.
 HOPKINS, S. H., 1890, I, Attorney, Gonzales.
 HORN, T. L., 1899, III, Machinist I. & G. N. Shops, Palestine.
 HORTON, C. K., 1909, IV, Civil Engineer for Horton & Horton, Houston.
 HOUGH, S. A., 1885, III, County and District Clerk, Rock Springs.
 HOUSTON, F. N., 1894, IV, Track Foreman T. & N. O., R. R., Beaumont.
 HOWELL, J. W., 1894, I, President and Manager Bryan Cotton Oil Co., Bryan.
 HOWELL, R. W., 1896, I, Cashier First National Bank, Bryan.
 HOYO, G. A., 1906, I, Government Superintendent and Agriculturist, Calumet, Okla.
 HUDGINS, F. D., 1897, IV, General Superintendent Jas. C. Travilla Co., Fort Worth.
 HUDGINS, L. A., 1913, VIII, Asst. Chemist, College Station.
 HULL, B. E., 1904, IV, Chief Engineer, Texas Co., Box 1805, Houston.
 HUNT, N. H., 1912, V, Electrical Engineer, Texas City.
 HUTCHINSON, E. W., 1889, IV, Secretary-Treasurer Moore-Cortes Canal Co., Houston.

- HUTCHINSON, O. D., 1893, I, Farmer and Stockman, Chickasha, Okla.
 HUTCHINSON, W. F., 1897, IV, Bank Cashier, Winter Haven, Fla.
 HUTH, T. G., 1912, III, Mechanical Engineer, San Antonio.
 HUTSON, A. C., 1900, IV, Engineer Natl. Bd. Fire Underwriters, New York City.
 HUTSON, H. L., 1896, III, Chief Engineer A. M. Lockett & Co., Ltd., 533 Barron St. New Orleans, La.
 HUTSON, W. F., 1895, IV, Assistant Engineer G. H. & S. A. Ry., El Paso.
 HUTSON, M. B., 1909, V, Salesman Electric Appliance Co., New Orleans, La.
 HYNDS, H. G., 1910, V, Texas City Ter. Co., Texas City.
 INGRAM, H. L., 1910, V, Texas Traction Co., Dallas.
 ISBELL, J. M., 1903, IV, Civil Engineering Department M. K. & T. Ry., Oklahoma City, Okla.
 ITZ, F., 1911, IV, Medina Irrigation Co., San Antonio.
 *JACK, D. M., 1879.
 JACKSON, J. W., 1913, I, Scientific Asst. Sub-Station No. 3, Angleton.
 JACOT, H., 1902, Merchant Mining Machinery, Apartado 414, Mexico City.
 JAHN, R. S., 1910, IV, Draftsman Sunset-Central Lines, Houston.
 JAHN, F. C., 1894, II, Horticulturist, Gonzales.
 JAMES, M. H., JR., 1913, I, Horticulturist, Brazoria.
 JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
 JAPHET, W. E., 1904, IV, Civil Engineer Producers Oil Co., Houston.
 JENNINGS, J. W., 1911, I, Farmer, San Antonio.
 JENSON, W. M., 1912, I, Ice Cream Mfg. Co., Durant, Okla.
 JOHNSON, H. H., 1908, I, U. S. Department of Agriculture, College Station.
 JOHNSON, T. S., 1903, III, Signal Supervisor G. H. & S. A. Ry., Box 553, Del Rio.
 JOHN, J. R., 1910, IV, Draftsman Sunset Lines, Houston.
 JOHNSON, M. L., 1912, V, Eng. of Con. A. L. & W. Co., Amarillo.
 JOHNSON, T. L., 1912, I, Manager Farm, Slidell.
 JOHNSTON, L. M., 1913, III, Heating Engineer, College Station.
 JOHNSTON, T. J., 1911, V, Westinghouse E. and M. Co., 500 Kelly St., Wilkinsburg, Pa.
 JONAS, E. C., 1894, IV, Draftsman Resident Engineer's Office, G. H. & S. A. Ry., 1002 Avenue D, San Antonio.
 JONAS, H. F., 1898, IV, Bridge Engineer Sunset Lines, Houston.
 JONES, H. P., 1913, IV, Kaufman.
 JONES, C. E., 1908, I, Bookkeeper First National Bank, Bryan.
 JONES, G. M., 1912, I, Medical Student Galveston.
 JONES, L. R., 1908, IV, Engineer Gulf Refining Co., Port Arthur.
 *JONES, W. F., 1889, IV.
 JOPLIN, J. F., 1913, I, Sipe Springs.
 JORDAN, H. P., 1895, IV, Attorney at Law, Waco.
 JOSEY, N. L., 1888, I, Merchant, San Antonio.
 JOSSERAND, P. P., 1913, VII, Student Columbia University, 2940 Broadway, New York.
 JOUINE, G. P. E., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
 KAHN, M. S., 1900, II, Physician and Surgeon, Hallettsville.
 KELL, E., 1894, III, Mechanical Engineer, 2221 Columbus St., New Orleans, La.
 KELLER, J., 1913, V, with Western Elec. Co., Hawthorn, Chicago.
 KELLY, C. P., 1913, I, New York City.
 KELLY, H. J., 1911, IV, Orange.
 KENDRICK, R. T., 1906, I, Ranchman, Dimmit.
 KENNEDY, O., 1883, III, Life Insurance, Georgetown.
 KENNEDY, B. R., 1913, I, Dairy Manager, Falfurrias.
 KENNEDY, E. J., 1912, I, Student University of Texas, Austin.
 KERR, E. W., 1896, III, M. E., 1899, Professor of Mechanical Engineering Louisiana State University, Baton Rouge, La.
 KERR, J. G., 1898, I, Veterinarian, 135 Cypress St., Beaumont.
 KIDD, J. W., E. E., 1909, Electrician, Reclamation Service, Elephant Butte, N. M.
 KINCAID, E. B., 1911, I, San Antonio.
 KINSLOE, R. H., 1903, Magnolia Pet. Co., Beaumont.
 KIRKPATRICK, L. R., 1906, III, Farmer, McKinney.
 KIRSCHNER, L., 1901, IV, Resident Engineer W. F. & N. W. Ry., Leedey, Okla.
 KLEINSMITH, M. L., 1901, IV, Resident Engineer, Maricopa, Cal.
 KLEUSER, M. C., 1901, VII, Architect, 421 Scarbrough Bldg., Austin.
 KLOSS, E. L., 1902, III, Machinist I. & G. N. Shops, San Antonio.
 KLOSS, O. H., 1907, IV, Assistant Cashier First National Bank, Bellville.
 KNOLLE, A. P., 1888, IV, Physician, Ellinger.
 KNOLLE, B. E., 1894, III, Physician, Industry.
 KNOLLE, E. R., 1887, III, Physician, Brenham.
 KNOLLE, O. J., 1897, I, Physician, Industry.
 KNOLLE, W. H., 1888, IV, Physician and Surgeon, 3941 Canal St., New Orleans, La.
 KOINM, C. H., 1913, with Denver Gas and Elec. Co., Denver, Colo.
 KOONS, J. V., 1911, III, Civil Engineer, El Campo.
 KOPKE, L. J., 1880, IV, Civil Engineer and Rice Planter, 1068 Liberty Ave., Beaumont.
 KOWALSKI, B., 1906, IV, with Fred A. Jones Bldg. Co., Dallas.
 KRAUSKOPF, E. M., 1911, IV, U. S. Engineer Miss. River Com., Vicksburg, Miss.
 KREUGER, C. C., 1912, IV, Salesman S. A., M. and S. Co., San Antonio.
 KRAEGER, A. C. A., 1913, V, with General Elec. Co., Schenectady, N. Y.
 KROULIK, HUGO J., 1905, Bookkeeper, Taylor.
 KUEHNE, J. F., 1889, II, Manufacturing and Commission Agent, Box 5104, Mexico City.
 KYLE, A. J., 1897, I, Stockman, Pecos.
 KYLE, E. J., 1899, II, Professor of Horticulture and Dean of School of Agriculture, College Station.
 *KYLE, H. C., 1896, I.
 KYLE, J. A., 1890, I, Physician and Surgeon, Member of Board Directors A. & M. College, Binz Bldg., Houston.
 *KYLE, T. M., 1893, III.
 LAAKE, E. W., 1913, I, U. S. Dept. of Agriculture, Dallas.
 LAMMERS, E. S., JR., 1913, V, 415 Kelly St., Wilkinsburg, Pa.
 LANDA, L. M., 1907, V, Automatic Elec. Co., Dallas.

- LANE, G. J., 1913, I, Valley Mills.
 LANGDON, Y. M., 1913, IX, Hutchins.
 *LANGDON, W. F., 1911, IV.
 LANGFORD, E., 1913, VII, Bertram.
 LANGSTON, J. A., 1912, I, Cleburne.
 *LAUDERDALE, J. R., 1908, I.
 LAUDERDALE, J. C., 1911, IV, Assistant Engineer Bureau of Public Works, Manila, P. I., Home Address, Somerville.
 LAW, F. M., 1895, I, Cashier First National Bank, Beaumont.
 *LAWLEY, L. P., 1902, I.
 LEAR, J. E., E. E., 1909, Associate Professor of Electrical Engineering, College Station.
 LEARY, EDGAR M., 1905, IV, Civil Engineer, with Mex. & N. W. R. R., Home Address, Alvin.
 LEE, D., 1911, IV, Student Cornell University, Ithaca, N. Y.
 LEE, H. F., 1909, V, Dallas Tel. Co., Dallas.
 LEE, KNOX, 1908, V, Electrical Foreman, Beaumont.
 LEGGETT, C. W., 1910, III, Chemist Fidelity Cotton Oil Co., Houston.
 LEGGETT, W. W., 1889, IV, Co. "C," 1st Bat. U. S. Engineers, Manila, P. I.
 LEHMANN, E. W., 1913, E. E.
 LEMPERT, L. H., 1907, V, General Electric Co., Lynn, Mass.
 LENERT, L. G., 1906, IV, Resident Engineer T. C. R. R., Rising Star.
 LENZ, L., 1907, IV, Draftsman R. of W. Department S. P. R. R., Box 464, Houston.
 LEROY, L. F., 1911, III, San Antonio.
 LEWIS, F., 1894, IV, Farmer, Forney.
 LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
 LEWIS, L. L., 1893, I, M. S., 1894, Professor of Zoology and Veterinary Science Oklahoma A. & M. College, Stillwater, Okla.
 LEWIS, M. G., 1899, III, Locomotive Inspector, Schenectady, N. Y.
 LICHTER, F., 1906, VI, Merchant, Cleburne.
 LIDIAK, J. P., 1913, III, Westinghouse Machine Co., Pittsburg, Pa.
 LIENHARD, L. V., 1913, IV, Cuero.
 LILLARD, S. A., 1910, IV, Manager Flour Mill Decatur.
 LILLARD, W. W., 1904, IV, U. S. Eng. Corps, Sabine.
 LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
 LINDEMAN, JAMES E., 1903, III, Machinist G. C. & S. F. Ry., Cleburne.
 LINDEMAN, C. E., 1905, III, Draftsman Ft. W. & D. C. R. R., Childress.
 LINDLEY, T. L. P., 1912, I, Wortham.
 LINDNER, M., 1908, III, Box Manufacturer, San Antonio.
 LIPSCOMB, R. S., 1882, III, Physician, Grapevine.
 LITTLEJOHN, R. G., 1891, IV, City Assessor and Collector, City Hall, Fort Worth.
 LOCHRIDGE, C. F., 1913, I, Iowa Park.
 LOCHRIDGE, J. L., 1910, IV, Medina Irrigation Co., Box 1140, San Antonio.
 LOCKETT, N., 1903, IV, Engineering Department, care Williamson, Balfour & Co., Taltal, Chile.
 LOCKETT, W. R., 1913, I, Cleburne.
 LODAL, M. G., 1913, I, Gorman.
 LOMANITZ, S., 1908, Chemist, Houston.
 LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
 LORENZ, J. H., 1913, III, Stockdale.
 LOUWIEN, H., 1911, V, Denver Gas and Electric Co., Denver, Col.
 LOVE, A. C., 1899, IV, Associate Professor of Civil Engineering, A. & M. College, College Station.
 LOVING, J. W., 1906, I, Ranchman, Jermyn.
 LOWN, F. D., 1913, I, Thornton.
 LUCKETT, W. H., 1891, I, Physician and Surgeon, 112 W. 119th St., New York, N. Y.
 *LUCKETT, W. M., 1894, III.
 *LUHRSEN, C. W., 1900, IV.
 LYLES, J. V., 1913, IV, Blue Grove.
 McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
 McANELLY, E. E., 1911, VII, Architect, 1201 S. W. Life Bldg., Dallas.
 McCALL, H. S., 1903, IV, McCall-Moore Eng. Co., Waco.
 McCONNELL, J. P., 1911, IV, M. K. & T. Ry., Oklahoma City, Okla.
 McCORMICO, S. F., 1901, I, Fire Insurance Inspector, Praetorian Bldg., Dallas.
 McCORMICK, GEO. JR., 1891, III, Assistant Superintendent G. H. & S. A. Ry., El Paso.
 McCOWN, J. W., 1910, I, Whitney.
 McCULLOUGH, C. C., 1886, C. E., 1890, Surgeon U. S. Army, Manila, P. I.
 McCULLOUGH, R. E., 1912, IV, Houston.
 McDANIEL, A. A., 1909, I, Physician, Gibbs Bldg., San Antonio.
 McDONALD, J. M., 1913, V, Ozona.
 McDONALD, W. A., 1910, V, Houston.
 McDONALD, H. F., 1895, III, Draftsman General Land Office, Austin.
 McDONALD, W. H., 1902, I, Farmer, Athens.
 McDOWELL, C. H., 1912, I, Farmer, Corpus Christi.
 McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
 McELROY, T. E., 1903, I, U. S. Department of Agriculture, Stillwater, Okla.
 McFARLAND, ARTHUR, 1905, III, U. S. Engineering Corps, Port Arthur.
 McFARLAND, J. L., 1912, V, with General Electric Co., Schenectady, N. Y.
 McGINNIS, F. K., 1900, II, Horticulturist, Dallas.
 McGINNIS, N. M., 1908, I, Instructor College of Industrial Arts, Denton.
 McGRAW, M., 1911, III, Merchant, Dallas.
 McGREGOR, F., 1903, IV, Contractor, Houston.
 McHANNENY, J. L., 1910, IV, Natl. Steel Rail Co., 227 Woodlawn Ave., San Antonio.
 McKAY, C., 1910, V, 500 Kelly St., Wilkensburg, Pa.
 McKAY, C., 1910, V, Longview.
 McKAY, G., 1903, III, Longview Iron Works, Longview.
 McKNIGHT, O. J., 1903, IV, Cashier Dalhart Bank, Dalhart.
 McLAVY, R. B., 1903, III, Bastrop.

- McLENNAN, LAMAR, 1905, I, State Feed Inspector, Oklahoma City, Okla.
 McLEOD, J. H., 1908, I, Student University of Wisconsin, Madison, Wis.
 McMAHAN, L., 1911, V, Merchant, Waco.
 McMILLAN, F. N., 1912, I, Calvert.
 McMILLAN, L. B., 1911, III, 1912, M. E., 1913, Ch. E., Student University of Wisconsin, 230 W. Gilman St., Madison, Wis.
 McMILLAN, M. R., 1895, III, 1913, B. S., Physician and Surgeon, Health Dept., New York.
 McMILLAN, S. A., 1909, I, Asst. Professor in Agronomy A. & M. College, College Station.
 MacNAIR, H. J., 1887, III, 239 W. 39th St., New York City.
 McNEIL, J. C., 1896, IV, Ranchman, Spur.
 McQUEEN, T. B., 1884, III, Accountant, Marlin.
 MABRY, R., 1889, IV, 806 Cherry St., Fort Worth.
 MACKENSEN, B. C., 1884, III.
 MACKENSEN, L., 1885, III, Farmer, Houston.
 MAEDGEN, C. E., 1904, I, Banker, Temple.
 MANGUM, R. L., 1912, V, Unsan, Korea.
 MANSFIELD, B. J., 1912, VII, Instructor in Drawing, College Station.
 MANSFIELD, R. H., 1903, IV, Eng. Dept. N. Y. C. & H. R. R., Room 3016, G. C. Station, New York City.
 MARBACH, A., 1907, IV, Instrumentman for S. L. Clark, Cotulla.
 MARBURGER, BERNARD, 1905, IV, Roadmaster H. & T. C., Ennis.
 MAREK, E. L., 1907, IV, Draftsman, Pleasanton.
 MARKHAM, E. L., 1902, IV, Assistant Engineer St. L. S. W. Ry., Pine Bluff, Ark.
 MARKS, S. H., 1911, VI, Stockman, Mason.
 MARTIN, E. L., 1899, IV, Assistant Superintendent M., L. & T. Ry., Lafayette, La.
 MARTIN, H. B., 1895, III, Superintendent for Morey-Faulkhaber Construction Co., Caldwell
 MARTIN, C. H., 1911, I, Stock Farmer, Mason.
 MARTIN, S. H., 1911, I, Rancher, Mason.
 MARTIN, S. P., 1912, V, Bryan.
 *MARTIN, W. C., 1898, II, M. S., 1901.
 MASSENBERG, W. G., 1894, IV, Division Engineer G. C. & S. F. Ry., Beaumont.
 MATTHEWS, H. F., 1903, IV, Contractor, San Antonio.
 MAXWELL, J. W., 1904, III, Manager Copper Mines, Panulcillo, Cocumibo, Chile.
 MAXWELL, N. C., 1907, IV, Bookkeeper, Hamilton.
 MAYER, M. F., 1906, VII, Architect, San Antonio.
 MEAD, J., 1897, IV, Resident Engineer, St. L., B. & M. Ry., Bay City.
 MEECE, B. L., 1912, V, D. C. Mining Co., Unsan, Korea.
 MEEK, R. W., 1904, III, Foreman T. & N. O. Signal Shops, Houston.
 MENKE, C. H., 1910, Stockman, Hempstead.
 *MERRETT, W. B., 1889, I.
 MERIWETHER, W. T., 1891, IV, Tampico, Mexico.
 METCALFE, J. D., 1906, IV, Eng. Brazos River Protection, Pitts Bridge.
 METCALFE, T. P., 1911, I, Post Graduate Student University of Missouri, Columbia, Mo.
 MIDDLEBROOK, E. S., 1889, IV, Manager for Lumber Manufacturing Plant, Nona.
 MIDDLEBROOK, R. M., 1891, III, Sales Manager, Gibbs Bldg., San Antonio.
 MIKESKA, H. J., 1910, IV, with Santa Fe, Davis, Okla.
 MILEY, J. H., 1896, IV, Special Asst. to Attorney General of U. S., Wewoka, Okla.
 MILLER, C. S., 1880, President Ballinger State Bank and Trust Co., Ballinger.
 MILLER, E. A., 1908, I, Assistant State Horticulturist and Plant Pathologist, Austin.
 MILLER, H. J., 1883, Banker, Bellville.
 MILLER, J. D., 1912, IV, Municipal Eng., Winnsboro.
 MILLER, M. J., 1911, IV, Fire Insurance Inspector, Fort Worth.
 MILLER, R. F., 1909, I, Assistant A. & M. College of Montana, Bozeman, Mont.
 MILLER, R. H., 1913, V, with General Elec. Co., Schenectady, N. Y.
 MILLER, R. S., 1913, I, San Saba.
 MILLER, W. Z., 1913, I, Farm Manager D. W. Glasscock, Mission.
 MILLIGAN, WAYNE, 1907, I, Stock Farmer, Richland.
 MINEAR, SYLVESTER A., 1905, I, County Farm Demonstrator, Fort Stockton.
 MINTER, C. J., 1909, I, Bank Clerk, Fort Worth.
 MISTROT, G. A., JR., IV, Houston.
 MITCHELL, A., 1894, IV, Professor of Drawing, College Station.
 MITCHELL, W. H., 1894, IV, Druggist, Holland.
 MITCHELL, A. F., 1909, IV, Civil Engineer, Eagle Lake.
 MITTMAN, E. F., 1902, IV, Draftsman Ft. Worth & Denver City R. R., Fort Worth.
 MONROE, J. S., 1900, IV, Assistant Engineer Mexican Central Ry., Mexico City.
 MONTMAYOR, R. R., 1911, I, C., Jaumune, Tampico, Mexico.
 MONTGOMERY, F. L., 1889, I, Lawyer, Muskogee, Okla.
 MONTGOMERY, F. L., 1913, IV, Corsicana.
 MOORE, C. B., 1911, I, Stock Farmer, Van Alstyne.
 MOORE, F., 1902, I, Teacher, 410 W. Second St., Fort Worth.
 MOORE, G. F., 1908, IV, 1st Lieutenant U. S. Army, Fort Worden, Wash.
 MOORE, G. G., 1903, IV, Farmer, DeKalb.
 MOORE, J. M., 1913, M. S., Fayette, Ala.
 MOORE, R., 1892, I, Druggist, Tilden.
 MOORE, T. E., 1892, I, Secretary and Auditor Eureka Tel. Co., San Antonio.
 MOORE, W. G., 1907, V, Manager Texas Power and Light Co., Paris.
 MOORE, W. M., 1895, IV, President and General Manager, L. G. & R. M. Mining Co., S. W. Life Bldg., Dallas.
 MOORE, W. S., 1911, I, Stock Farmer, Yoakum.
 MORLEY, M. D., 1912, III.
 MORRILL, C. R., 1891, IV, Assistant Superintendent G. H. & S. A. R. R., El Paso.
 MORRIS, C. C., 1911, I, Farmer, R. F. D., No. 4, Henderson.
 MORTON, O. L., 1911, III, Draftsman, Dallas.
 MOSELEY, HAL, 1901, IV, Insurance Inspector, Box 309, Dallas.
 *MOSELEY, W. E., 1883, III.
 MOSER, C. OTTO, 1904, I, President North Texas Creamery Co., Dallas.
 MOSER, E. F., 1912, I, Poultry Raiser, 1519 Ross Ave., Dallas.

- MOURSUND, A. F., 1895, IV, Assistant Superintendent G., V. G. & N. R. R., Globe.
 MOURSUND, E. M., 1897, IV, Resident Engineer H. & T. C. R. R., Ennis.
 MOUSER, E. B., 1895, I, Physician, Electra.
 MULLINS, E. Y., 1879, President Southern Baptist Theological Seminary, Louisville, Ky.
 MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
 MUNSON, A., 1908, V, Civil Engineer, Angleton.
 MUNSON, H. W., 1909, V, Houston.
 MYERS, A. L., 1907, V, Mfg. Agent, 111 New Montgomery St., San Francisco, Cal.
 MYERS, O. W., 1900, III, 406 Austin St., Palestine.
 MYERS, W. G., 1894, III, Mining, Parral, Mexico.
 NAGLE, J. M., 1911, IV, Engineer Ft. Worth-Denton Traction Co., 902 State National Bank Bldg., Fort Worth.
 NAVE, G. F., 1912, III, Clerk, S. A. & A. P. Ry., Kenedy.
 NEALE, R. B., 1908, I, Stock Farmer, Archer City.
 NEATHERY, D. E., 1892, I, Merchant, Farmersville.
 NEFF, A. J., 1903, III, 1913, M. E., Consulting Engineer, 3111 Cole Ave., Dallas.
 NEIGHBORS, A. H., 1911, VII, Medical Student, University of Texas, Galveston.
 NESS, H., 1889, II, Horticulturist Experiment Station, College Station.
 NETHERWOOD, D. B., 1908, III, 2nd Lieutenant Coast Artillery, San Diego, Cal.
 NETHERWOOD, J. S., 1911, III, Draftsman Sunset-Central, Houston.
 NEWELL, G., 1910, V, Westinghouse E. and M. Co., Houston.
 NEWTON, G., 1898, I, Merchant, Thorndale.
 NEWTON, J. W., 1912, VIII, Assistant in Chemistry A. & M. College, College Station.
 NICHOLS, J. F., 1898, II, Attorney at Law, Greenville.
 NICHOLS, J. R., 1889, I, Oculist, State Institutions, Austin.
 NICHOLS, W. L., 1891, IV, Real Estate, Wilson Bldg., Dallas.
 NOLTE, R. W., 1913, V, New Orleans, La.
 NORTH, W. G., 1908, I, Farmer, Yoakum.
 NUGENT, C. W., 1913, VI, Conroe.
 NUSSBAUM, J. H., 1913, III, Allis-Chalmers, West Allis, Wis.
 O'BAR, J. H., 1893, I, Cotton Buyer, Coleman.
 O'CONNOR, D., 1913, I, Laredo.
 O'CONNOR, T., 1910, V, 515 Soledad St., San Antonio.
 OGLESBY, G. B., 1894, IV, Farming, Gordonville.
 OHLENDORF, W., 1913, I, Lockhart.
 OLDS, T. H., 1902, IV, Sao Paulo Light and Power Co., Sao Paulo, Brazil.
 OLIPHANT, J. W., 1903, IV, Civil Engineer, with S. Gibbs, Huntsville.
 OLIPHANT, L. N., 1913, IV, Rice.
 OLIVER, C., 1913, I, Lampasas.
 OLSON, J. N., 1913, IV, Galveston.
 ORTH, W. A., 1913, VII, Merchant, Yoakum.
 ORF, W. R., 1906, IV, Grocer, Llano.
 ORTIZ, J. A., 1892, IV, Stockman, 915 Zaragossi St., Laredo.
 O'ERSHINER, E. M., 1897, IV, County Judge, Abilene.
 PAPE, G. H., 1904, IV, Cotton Agent, Wilson Bldg., Dallas.
 *PARK, C. M., 1896, IV.
 PARKS, L. D., 1911, IV, Civil Engineer Frisco R. R., 589 St. Louis Ave., Springfield, Mo.
 PARSONS, B. C., 1893, II, Deputy Collector of Customs, Terlingua.
 PATRICK, A. T., 1883, III.
 PARTRIDGE, R. C., 1912, III, Farming, Munday.
 PATTERSON, J. C., 1912, I, Farmer, Goodnight.
 PEARCE, R. B., 1911, IV, Instructor in Terracing, College Station.
 PEARSON, H. A., 1893, IV, Farmer, Troy.
 PEDEN, I. T., 1904, IV, Dewson & Fletcher, Houston.
 PENDLETON, DAVID E., 1905, IV, Assistant Engineer M., K. & T. Ry., Trinity.
 PENNER, W. A., 1906, V, Corsicana Light Co., Corsicana.
 PENNINGTON, R. E., 1884, I, Lawyer, Brenham.
 *PERLITZ, W. E., 1893, IV.
 PESCAV, C. H., 1885, III, Special Agent, 911 Hennen Bldg., New Orleans, La.
 PETER, L. S., 1911, V, Westinghouse Electric Co., Wilkingsburg, Pa.
 PETERS, R. F., 1894, III, Chief Draftsman S. A. & A. P. Ry., San Antonio.
 PFEUFFER, F. L., 1885, III, Real Estate Colonizing, Omaja, Cuba.
 *PFEUFFER, W. O. R., 1888, I.
 PFEUFFER, U. S., 1891, IV, Lumber Merchant, New Braunfels.
 PHILPOTT, W. B., 1884, III, M. S., 1890, care D. M. Derden, Amarillo.
 PICKETT, G., 1911, III, Medina Irrigation Co., Home Address, Karnes City.
 PIRIE, J. E., 1904, with Street & Born, Contractors, Houston.
 PIRIE, J. H., 1906, V, 1st Lieutenant Coast Artillery U. S. Army, Fort Warren, Mass.
 PITTSUCK, B. C., 1894, I, Division College Extension, A. & M. College, Stillwater, Okla.
 POLANSKY, T., 1909, IV, Post Graduate Student Columbia University, New York.
 POLK, W. A., JR., 1895, IV, Wholesale Grocer, Dallas.
 POOL, H. M., 1911, IV, U. S. Army, Texas City.
 POTTHAST, A. H., 1911, IV, Medical Student University of Texas, Galveston.
 POTTS, A. T., 1907, I, Assistant Professor of Horticulture, College Station.
 POTTS, R. J., 1906, IV, C. E., 1907, Professor of Highway Engineering, College Station.
 *POULTER, R. J., 1899, II.
 PRICE, W. A., 1905, I, Farmer, Reagan.
 PROCTER, J. H., 1910, V, 1913, E. E., Westinghouse Elec. Co., Pittsburg, Pa.
 PUCKETT, D. M., 1911, IV, Engineer, Los Andes, Chile, S. A.
 PUCKETT, F. S., 1907, I, care N. C. Dept. of Agriculture, Raleigh, N. C.
 PUCKETT, J. W., 1904, IV, Civil Engineer, Los Andes, Chile, S. A.
 RADFORD, J. S., 1890, II, Manager Oriental Textile Mills, Houston.
 RAGSDALE, J. W., 1890, I, Lawyer, Hallettsville.
 RAMSAY, J. W., 1906, V, Instructor in Electrical Engineering, University of Texas, Austin.
 RATCHFORD, W. P., 1892, III, County Surveyor, Del Rio.
 RATHER, J. B., 1907, I, M. S., 1911, Assistant State Chemist, College Station.
 RAWLINS, H. E., 1898, III, Superintendent Quarries Supply Co., Campo Florida, Cuba.

- RAY, S. H., 1911, I, Graduate Student University of Illinois.
 READING, R. S., 1910, V, Otis Elevator Co., Houston.
 REESE, G. W., 1907, IV, Bosque-Wensley Lead Co., Denver, Colo.
 *REICHARDT, F. A., 1879.
 *RENNERT, F., 1888, I, Commission Merchant, Rennert-Millette Co., San Antonio.
 *RHODES, S. E., 1896, III.
 RHOME, R. J., 1901, Attorney at Law, Fort Worth.
 RICE, D., 1882, III, Public Weigher, 1107 Lamar St., Houston.
 RICE, E. R., 1902, III, Gen. Manager of Efficiency Eng. Co., Bisbee, Ariz.
 RIDENHOWER, R., 1903, IV, Hico.
 RIDENOUR, C. A., 1909, IV, U. S. Engineer's Office, Dallas.
 RIFE, A. J., 1909, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
 RILEY, H. M., 1893, IV, Abstractor, Haskell.
 RILEY, A. A., 1909, IV, Assistant Engineer T. & N. O. R. R. Co., Y. M. C. A. Bldg., Houston.
 RISIEN, G. W., 1903, IV, Draftsman N. Y. C. & H. R. Ry., S. W. 129th St., New York City.
 *ROACH, G. W., 1884, III.
 *ROBBINS, A. J., 1911, III.
 ROBERTS, C. A., 1913, I, Beaumont.
 ROBERTS, F. A., 1913, IV, Austin.
 *ROBERTSON, D. K., 1902, III.
 ROBERTSON, R. L., 1909, I, Ranchman, Waelder.
 ROBINSON, E. R., 1908, I, Ranchman, Dalhart.
 ROBINSON, G. W., 1911, V, Brush Elec. Co., Galveston.
 ROBSON, C. G., 1898, II, President Southern Tel. Co., LaGrange.
 RODRIGUEZ, D., 1896, IV, Civil Engineer and Planter, 114 Zazaona St., C. Porfirio Diaz, Mexico.
 ROGAN, CHAS., 1879, Lawyer, Austin.
 ROGERS, B. F., 1889, IV, Banker, Jefferson.
 ROGERS, C. P., 1900, II, Attorney at Law, Austin.
 *ROGERS, G. A., 1887, III.
 ROGERS, R. A., 1878, Cotton Factor and Commission Merchant, Galveston.
 ROLLINS, A. P., 1906, IV, Asst. Eng., Medina Valley Irrig. Co., Natalia.
 ROLLINS, C. W., 1893, IV, Civil Engineer Neches Canal Co., China.
 ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
 ROLLINS, J. G., 1913, IV, care County Engineer, Waco.
 ROMBERG, C. B., 1912, III, Erecting Engineer Frick Co., Dallas.
 ROSA, R. R., 1912, I.
 ROSE, W. F., 1894, III, Wholesale Plumbing and Heating Supplies, San Antonio.
 ROSEBOROUGH, W. D., 1909, IV, Civil Engineer, Dallas.
 VON ROSENBERG, H. C., 1913, V, Hallettsville.
 VON ROSENBERG, H. J., 1912, VII, Student Massachusetts Institute Tech., Boston, Mass.
 ROSENTHAL, H. H., 1896, IV, Secretary and Treasurer J. J. Segal Co., Jefferson.
 ROSS, F. R., 1894, I, Physician and Surgeon, Houston.
 ROSS, J. G., 1894, IV, Attorney at Law, Cold Springs.
 ROSS, J. L., 1902, IV.
 ROSS, R., 1902, IV, care County Engineer, Waco.
 ROUNTREE, T. D., 1898, IV, Physician, Lake Creek.
 ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
 RUBENKOENIG, H., 1904, III, Professor of Mechanical Drawing State Manual Training Normal, Pittsburg, Kan.
 RUDASILL, W. S., 1890, IV, Real Estate Dealer, Box 94, Sherman.
 RUDLOFF, E. W., 1911, V, Otis Elevator Co., Houston.
 RUDOLF, R. F., 1911, IV, U. S. Engineer, Box 404, Vicksburg, Miss.
 RUST, W. M., JR., III, Signal Department, Seguin.
 SAMMONS, THOMAS B., 1905, Hardware and Saddlery, Mission.
 SAMPSON, W. E., 1908, IV, Assistant City Engineer, Beaumont.
 SAMUCH, L., 1902, IV, Merchant, Hallettsville.
 SANDERS, P. L., 1903, IV, Controller Galvez Hotel, Galveston.
 SANDERS, W. O., 1896, II, Manager Parker Lumber Co., Bryan.
 SANFORD, C. E., 1911, IV, with Cory, Harrison & Co., San Antonio.
 SAUVIGNET, E. H., 1892, I, Physician, Laredo.
 SAWYER, R., 1882, III, Breeder of High Grade Herefore Cattle, Clarendon.
 SAYERS, A. F., 1913, IV, Houston.
 SCARBOROUGH, JOHN, 1912, IV, Mining Eng. Unsan, Chosen, Japan.
 SCHAT, C. A., 1907, V, Merchant, 27th St. and Ave. H, Galveston.
 SCHAEFFER, R. E., 1908, III, Hardware Business, Schulenburg.
 SCHAEDEL, C. T., 1912, IV, San Benito Drainage Co., San Benito.
 SCHAWWE, W. A., 1907, I, Hardware Merchant, Bowie.
 SCHERER, C. L., 1896, IV, City Engineer, Beaumont.
 SCHERER, W. A., 1898, II, Stockman, Anahuac.
 SCHILLER, R. E., 1906, IV, C. E., 1908, U. S. Engineer, Dallas.
 SCHLEY, C. C., 1910, V, Salesman W. E. Co., Dallas.
 SCHLOM, C. L., 1912, IV, Gulf Pipe Line Co., Houston.
 SCHMIDT, C. L., 1890, III, Pierce-Fordyce Oil Association, Laredo.
 *SCHMIDT, D. T. C., 1894, IV.
 SCHMIDT, H., 1908, I, Veterinarian Experiment Station, College Station.
 SCHOLL, E., 1907, I, State Entomologist, Department of Agriculture, Austin.
 SCHROEDER, E. A., 1911, VII, Draftsman, College Station.
 SCHROEDER, ERWIN F., 1905, I, House Surgeon Boston Veterinary Hospital, 549 Albany St., Boston, Mass.
 SCHROETER, H., 1907, IV, Inspector A. T. & S. F. Ry., Kerckhoff Bldg., Los Angeles, Cal.
 SCHROETER, A., 1909, IV, Draftsman, 2119 Ave. I, Galveston.
 SCHROETER, R. R., 1913, IV, Engineer, Cypress Mill.
 SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
 SCHWAB, L. C., 1911, III, Cuero.
 SCOFIELD, J. A., 1913, I, Hillsboro.
 SEWARD, O., 1907, IV, Office Engineer Gulf Pipe Line Co., Beaumont.

- SEWELL, M. S., 1894, IV, Merchant, McGregor.
 SHANKLIN, R. W., 1906, IV, Civil Engineer for Mexico & N. W. R. R., Nuevo Casas Grandes, Cia., Mexico.
 SHEARER, D. M., 1909, IV, U. S. Engineer, Greenville, Miss.
 SHEARER, T. R., 1912, I, Secretary New Era Gravel and Drainage Co., Houston.
 SHERRARD, R. G., 1910, V, 2nd Lieutenant U. S. Army, Fort Liscum, Alaska.
 SHERRILL, O. W., 1910, I, Farmer, Kerens.
 SHIELS, R. T., 1910, V, General Electric Co., Chicago, Ill.
 *SHIRES, F. N., 1897, III.
 SHIRES, G. M., 1897, III, City Boiler and Elevator Inspector, City Hall, Houston.
 SHIRLEY, A. L., 1884, I, Farmer and Merchant, Anna.
 *SHIRLEY, M. W., 1889, III.
 SHIRLEY, W. M., 1889, IV, County Treasurer, Collin County, McKinney.
 *SHIRLEY, Z. M., 1888, III.
 SHORT, A. K., 1900, I, Superintendent of Experiment Station, Temple.
 SHORT, J. L., 1893, I, Physician and Surgeon, 300-301 Kiam Bldg., Houston.
 SHROPSHIRE, L. O., 1912, V, Plainview.
 *SIGEL, R. C., 1909, III.
 SIMON, R. B., 1913, IV, with Western Elec. Co., Hawthorn, Chicago.
 SIMPSON, J. H., 1901, IV, Deck Officer U. S. Bache Fijardo, Porto Rico.
 SIMPSON, O. M., 1900, IV, Hardware, Callehan & Simpson, Jacksboro.
 SIMPSON, S. H., 1909, IV, Cashier Simpson Bank, Columbus.
 SINGLETARY, J. N., 1910, I, Instructor in Science, Longview High School, Longview.
 SKAGGS, G. E., 1908, V, Assistant Engineer Bell Tel. Co., St. Louis, Mo.
 SKELLER, F. J., 1910, V, Instructor in Physics, College Station.
 SLEEPER, W. M., 1879, III, Lawyer, 714 N. 12th St., Waco.
 *SLOSS, A. M., 1899, I.
 SMITH, A. J., 1908, I, Farmer, Port Sullivan.
 SMITH, A. U., 1895, III, Texas Blueprint Co., Dallas.
 SMITH, E. J., 1888, I, Attorney at Law, Denison.
 SMITH, E. W., 1910, IV, Denison.
 SMITH, G. A., 1909, V, Bermuda.
 SMITH, T. L., JR., 1898, IV, Civil Engineer and Surveyor, Eagle Lake.
 SMITH, T. M., 1901, I, Bookkeeper, Columbia.
 SMITHER, R., 1894, III, Merchant, Duke.
 *SMYTHE, H. G., 1879.
 SNEARLEY, C. L., 1911, V, Electrician Automatic Elec. Co., Chicago, Ill.
 SNEED, G. L., 1898, I, Minister, Station A, Dallas.
 SOLES, C. B., 1899, III, Machinist I. & G. N. Shops, Palestine.
 SORY, E. G., 1912, IV, Draftsman M. K. & T. Ry., Dallas.
 SOUTHER, S. C., 1912, I, Farmer, Rosebud.
 *SPANN, E. W., 1885, III.
 SPEER, R. H., 1894, IV, Stockman, Quanah.
 SPENCE, E. V., 1911, IV, Medina Irrigation Co., Rio Medina.
 SPENCE, T. R., 1913, IV, Assistant County Engineer, Waco.
 SPENCER, W. W., 1911, III, Clerk Commonwealth National Bank, Dallas.
 SPIVEY, M. C., 1908, IV, Civil Engineer, care City Engineer, Houston.
 STALLCUP, J. F., 1904, IV, with H. & T. C., 1513 Wash. Ave., Houston.
 STANDIFER, R. H., 1908, IV, City Engineering Department, Fort Worth.
 STAPP, W. E., 1904, IV, Conroe.
 STERNBERG, E. H., 1897, IV, County Superintendent of Public Instruction, Bellville.
 STEVENS, D. T., 1913, I, Bryan.
 STERNBERG, PAUL, 1905, III, Superintendent Steel Works, 2228 Chapel St. Berkeley, Cal.
 STERNS, J. B., 1903, Civil Engineer Nona Mills Co., Leesville, La.
 STEVENS, R. R., 1910, IV, Engineer C., M. & S. P. Ry., Minneapolis, Minn., Home Address, Clarendon.
 STEWARD, W. W., 1888, III, Civil Engineer for Freestone Co., Steward's Mill.
 STEWART, J. E., 1912, IV, Civil Engineer, Corpus Christi.
 STIMSON, O. E., 1910, IV, Houston.
 STINSON, V. L., 1904, IV, Civil Engineer and County Surveyor, Durant, Okla.
 STONE, J. M., 1913, I, Houston.
 STREET, GUS C., JR., 1905, I, Contractor, Houston.
 STRIEBER, C. A., 1902, III, Machinist I. & G. N. Shops, 215 Trinity St., Palestine.
 STUBBS, VAN HOOK, 1905, I, Banker, Wortham.
 SWASTA, S. F., 1910, V, Telephone Engineer, 400 E. 61st St., Chicago, Ill.
 SWAIN, M. S., 1888, II, Houston.
 TABER, R. G., 1910, IV, Engineer S. & W. E. Co., Dallas.
 TABOR, J. R., 1906, VII, Architect, Houston.
 TALBOT, A., 1882, III, Planter, Calvert.
 TARVER, T. C., JR., 1904, IV, Civil Engineer, 816 Clement St., Houston.
 TAYLOR, A. B., 1913, I, Burnet.
 TAYLOR, L. T., 1912, IV, Rodman G. C. & S. F. Ry. Co., Crawford.
 TAYLOR, M., 1911, V, Eng. S. W. Tel. & Tel. Co., Fort Worth.
 TELFAIR, W. H., 1909, V, Ennis.
 TEMPLETON, B. O., 1912, V, Western Elec. Co., Cicero, Ill.
 TERRY, L. H., 1911, VIII, Chemist Oklahoma Cotton Oil Co., Oklahoma City, Okla.
 THALMANN, C. H., 1911, III, Ranch Manager, Bandera.
 THANHEISER, C. A., 1901, IV, Engineer M. of W., M., K. & T. Lines, Dallas.
 THANHEISER, L. O., 1911, V, San Antonio Gas and Electric Co., San Antonio.
 THARP, P., 1910, IV, Attorney at Law, Stewart Bldg., Houston.
 THAXTON, HAROLD, 1912, I, Mason.
 THOMAS, J. B., 1911, III, Dallas Elec. Co., Dallas.
 THOMAS, M. F., 1901, III, Instructor and Graduate Student Cornell University, Ithaca, N. Y.
 THOMPSON, C. B., 1907, III, Milling Engineer, 917 S. Alameda St., Los Angeles, Cal.
 THOMPSON, T. E., 1910, IV, Medina Irrigation Co., Lytle.
 THOMSON, J. M., 1913, I, Florence.
 THROWER, J. D., 1900, I, U. S. Department of Agriculture, Kansas City, Mo.

- TIGNER, J. B., 1913, VI, Duke.
 TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
 TILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215 1-2 Main St., Houston.
 TILSON, W. H., 1903, IV, City Engineer, Plainview.
 TODD, A. M., 1894, IV, U. S. Assistant Engineer, P. O. Box 404, Vicksburg, Miss.
 TODD, CHAS. C., 1897, II, Attorney at Law, San Antonio.
 TODD, D. H. B., 1911, V, Commandant C. M. A., Whitewright.
 TOLBERT, W. S., 1913, I, Miami.
 TORRENCE, W. C., 1913, III, Waco.
 TRACY, H. H., IV, Hardware, Tulia.
 TREADAWAY, S. J., 1907, IV, R. R. Cons. Works, El Granada, Cal.
 TRENCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
 TRENCKMANN, W. A., 1878, Newspaper Publisher, Austin.
 TRICKEY, W. W., 1911, IV, with C. B. Roulet, Civil Engineer, Dallas.
 TRIGG, K. M., 1911, I, Stock Farmer, Bastrop.
 TUCKER, D. H., 1913, V, Missouri City.
 *TULLER, W. L., 1883, III.
 UECKERT, H. H., 1897, IV, Draftsman M. of W. Department, Sunset Route, Houston.
 UNDERWOOD, A., 1907, IV, Civil Engineer, Houston.
 UNDERWOOD, HARRIS, 1912, IV, Stock Raising, La Porte.
 VAN AMBURG, T. A., 1909, IV, with Cotton Belt Ry., Dexter, Mo.
 VAN ZANDT, K. M., JR., 1879, Vice-President and Manager Mercantile Banking Co., No. 12 Avenida, San Francisco, Mexico.
 VAN ZANDT, R. L., 1890, IV, National Bank Examiner, Fort Worth.
 VICK, JNO. C., 1904, III, Miller, Bryan.
 VINTEH, F., 1897, III, Machinist and Draftsman, 602 W. 15th Ave., Pine Bluff, Ark.
 VOELCKER, H. R., 1909, VII, Heating and Ventilating Engineer, Kansas City, Mo.
 VON ROSENBERG, F. C., 1884, III, Attorney at Law, Austin.
 WALDEN, W. J., 1900, I, M. S., 1903, Attorney at Law, 710 Crawford St., Houston.
 WALKER, P. W., 1913, V, Gonzales.
 WALKER, R. R., 1911, V, General Electric Co., Pittsfield, Pa.
 WALKER, W. T., 1906, VI, Farming, San Saba.
 WALLACE, L. W., 1903, III, Instructor in Car and Locomotive Design, Purdue University, West Lafayette, Ind.
 WALLIS, J. W., 1909, V, 1st Lieutenant Coast Artillery, Fort Fladger, Wash.
 WALLIS, T. T., 1913, I, Cuero.
 WALZEM, L. F., 1913, III, New Braunfels.
 WANGEMANN, A. E., 1890, I, Wholesale Grocer, Brenham.
 WARD, A. L., 1910, I, Manager Oak Knoll Farm, Hagerman.
 WARDEN, J. A., 1908, IV, 2nd Lieutenant U. S. Army, Fort Sam Houston, San Antonio.
 WARDEN, T. B., 1903, IV, U. S. Engineer's Office, Dallas.
 WASHBURN, H. A., 1906, IV, Draftsman, S. P. R. R., Houston.
 WASHBURN, JOHN E., 1905, III, Assistant Master Mechanic National Carbon Co., Cleveland, Ohio.
 WASHBURN, W. W., 1908, IV, Bridge Engineer, Houston.
 WASHINGTON, W. C., 1912, V, 2nd Lieutenant U. S. Army, Fort Crockett, Galveston.
 WATERS, J. J., JR., 1913, IV, San Antonio.
 WATKINS, H. B., 1912, IV, Bowie.
 WATKINS, R. C., 1895, IV, Superintendent G. H. & S. A., San Antonio.
 WATKINS, W. A., 1892, IV, New Orleans, La.
 *WATSON, D. H., 1882, III.
 WATSON, W. D., 1893, I, Clerk, Markham.
 WEATHERBY, E. P., 1903, III, Signal Engineer T. & P. Ry., Dallas.
 WEBB, THOMAS C., 1905, IV, 927 Franklin St., Waco.
 WEIDEL, J., 1893, IV, Engineer of Construction P. & N. T. Ry., Lubbock.
 WEINERT, H. G. H., 1913, I, Geronimo.
 WEINERT, M. H., 1909, V, Principal State Juvenile School, Gatesville.
 WELBOAN, J. S., 1906, I, Cashier Citizens State Bank, Alvin.
 WELBORN, G. M., 1912, V, Palestine.
 WELHAUSEN, C. B., 1891, III, Merchant, Shiner.
 WELHAUSEN, P. H., 1905, III, Assistant Cashier First National Bank, Shiner.
 WELLS, D. D., 1895, I, Physician, 18 San Diego, Acapulco, Mexico.
 WENDTLAND, W. A., 1912, III, Merchant, Shiner.
 *WESSEN, J. M., 1883, III.
 WESSENDORF, J. A., 1907, VI, Bookkeeper and Assistant Manager for J. A. Wessendorf, Richmond.
 WEST, T. B., 1887, III, Agent G., H. & S. A. Ry., Columbus.
 WHELAN, J. J., 1891, III, Machinist, H. & T. C. Ry., Houston.
 WHEAT, G. N., 1897, IV, Rock Springs.
 WHEELER, A. C., 1905, I, Ranchman, Sue.
 WHISENANT, W. H., 1899, II, Pharmacist, 117 E. Houston St., San Antonio.
 WHITAKER, W., 1885, III, Oil Producer, Texarkana.
 WHITE, C. R., 1895, IV, Stockman, Brady.
 WHITE, T. F., 1913, I, Lott.
 WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
 WHITESIDE, B., 1913, IV, Lott.
 WHITFIELD, C. A., 1913, I, San Angelo.
 WHITLOCK, E. H., 1886, III, Assistant Factory Manager National Carbon Works, Cleveland, Ohio.
 WHITTET, A. B., 1908, III, Ordnance Office, War Department, Washington, D. C.
 WHITTET, H. E., 1909, V, Anchorage.
 WHITTLE, C. T., 1899, III, Mining, Craig and 18th Sts., Pueblo, Colo.
 WICKES, H. G., 1912, I, Stockman, Wheelock.
 WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
 WIGNALL, C. L., 1909, VII, Architect, Port Arthur.
 WILLIAMS, I. L., 1903, III, Foreman of Construction Signal Department Sunset Lines, Houston.

WILLIAMS, L. D., 1897, IV, Bookkeeper Austin National Bank, Austin.
 WILLIAMS, J. S., 1909, I, Farmer, Benton, Miss.
 WILLIAMS, R. S., 1910, V, Eck Dynamo and Motor Co., Newark, N. J.
 WILLIAMS, T. S., 1911, III, Draftsman, Milwaukee, Wis., Home Address, Cuero.
 WILLIAMSON, H. H., 1911, I, Assistant in Extension Department, College Station.
 WILLIFORD, C. L., 1911, III, Draftsman City Engineer's Office, Houston.
 WILSON, ASHLEY F., 1905, IV, Instructor Cornell University, Ithaca, N. Y.
 WILSON, A. G., 1912, IV, Surveyor, McKinney.
 WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
 WINDROW, R. J., 1906, IV, 1913, C. E., County Engineer, Waco.
 WINKLER, A., 1900, I, Farmer, The Grove.
 WIPPRECHT, W., 1884, I, B. S. A., 1899, Manager of the Bryan Press Co. and Tax Collector, Brazos County, Bryan.
 WISDOM, F. L., 1896, IV, Bookkeeper for Frost-Johnson Lumber Co., Shreveport, La.
 WISE, W. F., 1909, IV, M., L. & T. R. R., Lafayette, La.
 WOOD, E. G., 1911, IV, with Texas Bitulithic Co., Waco.
 WOOD, W. M., 1888, IV, Assistant Disbursing Officer, I. C. Commission, Empire, Canal Zone.
 WOODALL, HOWARD, 1905, III, Clerk P. O. Service, San Marcos.
 WOODS, H. A., 1911, IV, Newton.
 WOODS, HENRY S., 1905, V, E. E., 1907, Sales Agent General Electric Co., Kansas City, Mo.
 WOODWARD, W. F., 1886, III, Banker, Denton.
 WORTHING, E. E., 1903, III, Signal Supervisor Sunset-Central Lines, Houston.
 WRAY, JAY, 1908, V, Centre Point.
 WRIGHT, A. A., 1906, I, Stockman, Alfred.
 WRIGHT, B. F., 1911, V, Merchant, Waco.
 WRIGHT, H. L., 1886, III, Secretary Rio Grande Fire Insurance Co., San Antonio.
 WURTZBACH, W. A., 1888, IV, Lawyer, San Antonio.
 WYCHE, T. S., 1910, V, Superintendent Hydro. Elec. Station, Victor, Colo.
 WYSE, IRA O., 1901, I, Dallas.
 WYSE, J. T., JR., 1905, I, Traveling Salesman Texas Oil Co., Greenville.
 YAKEY, H. G., 1906, I, Farmer, Taylor.
 YARBROUGH, R. W., 1901, III, Merchant and Planter, Red River Parish, Greening, La.
 YOUNG, M. H., 1907, VI, Farmer, Primm.
 YOUNG, M. H., 1913, I, Montgomery.
 YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agricultural Experiment Station, College Station.
 YOUNGBLOOD, TOM, 1912, I, Demonstration Agent, Belton.

NUMBER OF GRADUATES BY CLASSES.

Class of 1878.....	2	Class of 1896.....	22
Class of 1879.....	23	Class of 1897.....	27
Class of 1880.....	7	Class of 1898.....	23
Class of 1881.....	1	Class of 1899.....	22
Class of 1882.....	12	Class of 1900.....	26
Class of 1883.....	8	Class of 1901.....	19
Class of 1884.....	14	Class of 1902.....	27
Class of 1885.....	10	Class of 1903.....	36
Class of 1886.....	11	Class of 1904.....	36
Class of 1887.....	10	Class of 1905.....	39
Class of 1888.....	17	Class of 1906.....	46
Class of 1889.....	19	Class of 1907.....	45
Class of 1890.....	14	Class of 1908.....	49
Class of 1891.....	16	Class of 1909.....	47
Class of 1892.....	25	Class of 1910.....	69
Class of 1893.....	15	Class of 1911.....	98
Class of 1894.....	31	Class of 1912.....	98
Class of 1895.....	27	Class of 1913.....	114
			1105
Counted twice.....			8
Total graduates.....			1097
Deceased.....			52
			1045

APPENDIX A

SPECIMEN ENTRANCE EXAMINATIONS.

For Admission to the Freshman Class.

Special attention is called to the following specimen entrance examinations. Young men intending to apply for admission are urged to satisfy themselves by actual trial before coming to College that they can answer such questions.

Algebra.

- Factor: x^3+y^3 , x^6-y^6 , $x^2+5x-24$.
- Simplify: $\left(\frac{a-b}{a-b} + \frac{a^2+b^2}{a^2-b^2}\right) \div \left(\frac{a-b}{a+b} - \frac{a^3-b^3}{a^3+b^3}\right)$
- Given: $\frac{x-y}{4} - \frac{2x-y-1}{3} = \frac{2y-2}{5}$ and $\frac{2y+x-1}{9} = \frac{x+y}{4}$, find the values of x and y .
- Find the square root of $10x^2-4x^3+9-12x+x^4$.
- Simplify: $3a^2 \times a^3$, $6a^2 \div 3a^5$, $(a^2)^7$.
- Reduce $\frac{3\sqrt{2}+2\sqrt{2}}{3\sqrt{5}-2\sqrt{2}}$ to an equivalent fraction having a rational denominator.
- Solve: $\sqrt{x+6} + \sqrt{x+3} = 3$.
- Solve: $7-12x^2=17x$.
- Determine by inspection the sum of the roots of $8x^2+13x-82=0$.

Geometry.

- Only one perpendicular can be drawn to a given line from a given external point.
- Two triangles are equal if two sides and the included angle of the one are equal, respectively, to two sides and the included angle of the other.
- Two angles whose sides are perpendicular, each to each, are either equal or supplementary.
- In the same circle, or in equal circles, equal chords are equally distant from the center.
- An inscribed angle is measured by half the arc intercepted between its sides.
- In a triangle ABC , $AB=12$, $AC=14$, $BC=13$. Find the segments of BC made by the bisector of the angle A .
- Find the area of an equilateral triangle, if one side equals 8 feet.
- The area of a circle is equal to half the product of its radius by its circumference.

Grammar.

“‘A clear fire, a clean hearth, and the rigour of the game.’ This was the celebrated wish of old Sarah Battle (now with God), who, next to her devotions, loved a good game at whist, * * * * *

* * * * * She sat bolt upright; and neither showed you her cards, nor desired to see yours. All people have their blind side—their superstitions; and I have heard her declare, under the rose, that Hearts was her favorite suit.”

1. What parts of speech are the italicized words?
2. What is the grammatical function of each of the underscored words and expressions.
3. Point out the antecedent of each pronoun in the passage.
4. What is the difference between a phrase and a clause?
5. Classify the clauses in this passage from both the standpoint of form and the standpoint of function.
6. What is the difference in grammatical function between “side” and “that Hearts was her favourite suit”? Between “clean” and “who loved a game at whist”?
7. Account for the punctuation of the passage.
8. What do you understand by the grammatical terms: Case, Gender, Number, Person, Mood, Voice and Tense?

Composition.

1. Write a theme containing 300 words on the following subject: *The Most Exciting Incident in My Life*. Pay special attention to *clear* and forceful expression.
2. Write a letter to a friend, telling of your trip to college, and your first impressions of college life.

History.

1. Name the European nations that acquired colonial possessions within the present limits of United States, and locate their several claims.
2. What territory formed the original United States?
3. Give a brief account of the French and Indian war, stating the causes and results.
4. Name the important campaigns of the Revolutionary War, and write a short account of one of them.
5. Name an important event connected with the life of each of the following persons: Hamilton, Jefferson, Jackson, Calhoun and Webster.
6. What is the Monroe Doctrine, and what were the circumstances of its first announcement?
7. What was the Missouri Compromise?
8. Name five American inventors, and give the name of an invention made by each.
9. State the cause, name two of the principal battles, and give the result of the Mexican War.
10. Give a short history of the differences between President Johnson and Congress.

11. Name and discuss briefly the three leading religions of China.
12. Name the services that the Hebrews have rendered civilization.
13. Compare and contrast the characters of David and Solomon.
14. Who was the father of history? The last of the Pharaohs?
15. Give a brief account of the Trojan War.
16. Give an account of the early growth of Athens and Sparta.
17. Name the Punic Wars, and give the causes of each.
18. Who composed the first and second triumvirates?
19. Tell about the persecution of the Christians during the reign of Nero.
20. Tell about the capture and destruction of Jerusalem by Titus during Vespasian's reign.

For Admission to the two Year Courses.

Algebra.

1. Multiply $2a^2 - 3ab + 5b^2$ by $2a^2 + 3ab - 5b^2$.
2. Divide $21a^6b + 20b^4 - 23a^2b^3 - 29a^4b^2$ by $3a^2b - 5b^2$.
3. Factor: $x^3 + y^3$, $x^4 - y^4$ and $x^2 - 23x - 24$.
4. Find the highest common factor of $x^2 - 9$ and $x^2 + 3x$.
5. Find the lowest common multiple of $x^2 + 3x - 10$ and $x^2 - 3x - 40$.
6. Simplify: $\frac{x-1}{2} - \frac{x-2}{3} + \frac{x+7}{6}$
7. Simplify: $\frac{8a^2}{a^2 - b^2} \times \frac{a+6}{2a}$
8. Solve: $\frac{5x}{x+3} - \frac{9}{x-2} = 5$.

Grammar and Composition.

1. (a) What is a sentence?
(b) Explain how sentences are divided according to use and form.
Give examples.
2. (a) Show clearly the difference between a phrase and a clause.
(b) What is the difference between an independent and a dependent clause?
3. Define the following grammatical terms: gender, case, voice, mode, and tense.
4. (a) What is conjugation of verbs?
(b) Give synopsis of the conjugation of the verb "choose" in active voice, indicative mode.
5. In the following selection, (a) analyze the sentences; (b) parse the nouns and verbs:
Consider what you have in the smallest chosen library. A company of the wisest and wittiest men of all civilized countries have set in order the results of their learning and wisdom.
6. Write a 200-word composition on the following subject:
"My Early School Days."

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