

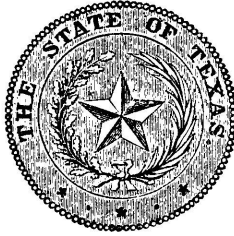
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AGRICULTURAL AND MECHANICAL COLLEGE
OF TEXAS

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No. 1



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1913

1914

| January. | | | | | | | July. | | | | | | | January. | | | | | | | July. | | | | | | | |
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| May. | | | | | | | November. | | | | | | | May. | | | | | | | November. | | | | | | | |
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| June. | | | | | | | December. | | | | | | | June. | | | | | | | December. | | | | | | | |
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COLLEGE CALENDAR.

1913.

Deficiency Examinations, Monday, Tuesday, September 22, 23.
First term begins Tuesday, September 23.
Registration of new students, September 23.
Entrance Examinations, September 24, 25.
Registration of old students, September 25.
Recitations begin September 26.
National Holiday, Thanksgiving Day.
Christmas Holidays begin Sunday, December 21.

1914.

Last Day of the Christmas Holidays, Sunday, January 4.
Recitations resumed, Monday, January 5, 8 a. m.
Short Winter Course in Highway and Rural Engineering, begins
Monday, January 12.
Second Term begins, Thursday, February 5.
National Holiday, February 22.
State Holiday, March 2.
State Holiday, April 21.
Commencement Sermon, Sunday, June 7.
Exhibition of Departments and of Work of Students, June 8.
Commencement Day, June 9.

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(Appointed January 1, 1913.)

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*Resigned Oct. 1, 1912. **Resigned Jan. 1, 1913. ***Resigned Feb. 1, 1913.

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E. LANGFORD,
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*Co-operating 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 herewith. 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 forage 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 eight directors, appointed by the Governor for a term of two years. One of the directors is the Commissioner of Agriculture, who serves on the Board by virtue of his office.

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

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 correspondence courses. See page 64.

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 sub-stations, 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 gatherings 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 con-

stituency than this is reached through the press, through correspondence and through 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 main 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.

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.

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*. (Not required for admission to the School of Agriculture.)

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 24. | |
| Algebra, 8 a. m. | | English, 2 p. m. |
| | Thursday, September 25. | |
| Geometry, 8 a. m. | | History, 2 p. m. |

FOR ADMISSION TO THE TWO-YEAR COURSE.

| | | |
|------------------|--------------------------|------------------|
| | Wednesday, September 24. | |
| 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 ...

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.

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 assignment to company and quarters, and for full information in regard to registration.

Tuesday, September 23, will be devoted to the registration of new students; Thursday, September 25, to the registration of old students. Recitations will begin Friday, September 26.

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 5..... | 80 00 | |
| | | <hr/> |
| | | \$178 00 |

Other necessary expenses are:

| | | |
|--|---------|----------|
| Uniform, payable on entrance, about..... | \$30 00 | |
| Books, from \$15 to..... | 20 00 | |
| Laboratory fees, from \$1.00 to..... | 5 00 | |
| | | <hr/> |
| | | \$ 55 00 |
| | | <hr/> |
| Total | | \$233 00 |

| | |
|--|----------|
| 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 ice water, 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, and 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, 1 pair 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.

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 145.

The School of Agriculture

FACULTY OF THE SCHOOL OF AGRICULTURE.

R. T. MILNER,
President.

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.

J. C. BLAKE, Ph. D.,
Professor of Chemistry and Chemical Engineering.

O. F. CHASTAIN,
Professor of History.

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.

J. W. KIDD, E. E.,
Professor of Physics.

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

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. C. HEDGES, A. B., Ph. D.,
Associate Professor of Agricultural Chemistry.

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

PEYTON IRVING, JR.,
Visitor of Schools.

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 and horticulture. 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 four 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.

The choice of the four groups must be made at the beginning of the Junior year. In the Senior year options are offered as shown in the curricula following. Option 4 is announced subject to the appointment of a Professor of Agricultural Education. 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 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..... | 1 | Military Science 1..... | 1 |
| Physics 2..... | 2 | Animal Husbandry 4..... | 1 |
| General. | | Poultry. | |
| Veterinary Science 1..... | 2 | Animal Husbandry 3..... | 2 |
| Anatomy and Physiology. | | Judging Breeding Types. | |
| | 17 | | 16 |
| <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.

| 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. | |
| Biology 3..... | 3 | Civil Engineering 2..... | 3 |
| Rural Hygiene. | | Surveying, Leveling. | |
| or Agronomy 4 | | or Biology 3 | |
| Irrigation. | | Rural Hygiene. | |
| or Chemistry 4..... | 2 | or Chemistry 4..... | 2 |
| Organic. | | Organic. | |
| | <hr/> 16 or 15 | | <hr/> 17 |
| Agronomy 3..... | 2 | Agronomy 3..... | 2 |
| Entomology 1..... | 2 | Entomology 2..... | 2 |
| Chemistry 3..... | 4 | Chemistry 3..... | 2 |
| Veterinary Science 2..... | 2 | Veterinary Science 3..... | 2 |
| Agronomy 4 or | | Civil Engineering 2 or..... | 4 |
| Biology 3 or | | Chemistry 4 or | |
| or Chemistry 4..... | 2 | Biology 3..... | 2 |
| | <hr/> 14 or 12 | | <hr/> 12 |

SENIOR YEAR.

Required.

| | | | |
|-------------------------|---------|----------------------------|---------|
| Agronomy 6..... | 3 | Agronomy 6..... | 2 |
| Farm Management. | | Farm Management. | |
| Economics 3..... | 3 | Economics 3..... | 3 |
| Economic Organization. | | Economic Organization. | |
| English 6..... | 1 | English 6..... | 1 |
| Public Speaking. | | Public Speaking. | |
| Military Science 2..... | 1 | Textile Engineering 5..... | 1 |
| | | Cotton Classing. | |
| | <hr/> 8 | | <hr/> 8 |
| Agronomy 6..... | 2 | Agronomy 6..... | 2 |

Option 1.—Agronomy.

| | | | |
|-----------------|---------|------------------|---------|
| 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. | |
| | <hr/> 9 | | <hr/> 9 |

OPTION 1.—Agronomy.—Continued.

| First Term. | Hours per week. | Second Term. | Hours per week. |
|-------------------------|-----------------------|--------------------------|-----------------------|
| <i>Agronomy 5</i> | 2 | <i>Agronomy 8</i> | 2 |
| <i>Agronomy 7</i> | 2 | <i>Agronomy 9</i> | 2 |
| <i>Agronomy 8</i> | 2 | <i>Agronomy 10</i> | 2 |
| <i>Biology 4</i> | 2 | <i>Biology 4</i> | 2 |
| | <hr/> 8 | | <hr/> 8 |

Option 2.—Agricultural Chemistry.

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

Option 3.—Agricultural Botany.

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

Option 4.—Agricultural Education.

| | | | |
|-------------------------|----------|-------------------------|----------|
| <i>Education</i> | 6 | <i>Education</i> | 6 |
| <i>Agronomy 6</i> | 3 | <i>Agronomy 6</i> | 3 |
| Farm Management. | | Farm Management. | |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 11 | | <hr/> 11 |
| <i>Agronomy 6</i> | 2 | <i>Agronomy 6</i> | 2 |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 4 | | <hr/> 4 |

GROUP B.—HORTICULTURE.

JUNIOR YEAR.

| 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. | |
| Biology 3..... | 3 | Civil Engineering 2..... | 3 |
| Rural Hygiene. | | Surveying, Leveling. | |
| or Agronomy 4..... | | or Biology 3..... | |
| Irrigation. | | Rural Hygiene. | |
| or Chemistry 4..... | 2 | or Chemistry 4..... | 2 |
| Organic. | | Organic. | |
| | <hr/> 17, 16 or 15 | | <hr/> 18 or 17 |
| Chemistry 3..... | 4 | Chemistry 3..... | 2 |
| Entomology 1..... | 2 | Entomology 2..... | 2 |
| Horticulture 3..... | 2 | Horticulture 4..... | 2 |
| Veterinary Science 2 or | | Civil Engineering 2 or | 4 |
| Agronomy 3..... | 2 | Chemistry 4 or | |
| Biology 3 or | | Biology 3..... | 2 |
| Agronomy 4 or | | Horticulture 5..... | 2 |
| or Chemistry 4..... | 2 | | |
| | <hr/> 14 or 12 | | <hr/> 12 |

SENIOR YEAR.

Required.

| | | | |
|-------------------------|---------|----------------------------|---------|
| 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. | |
| Military Science 2..... | 1 | Textile Engineering 5..... | 1 |
| | | Cotton Classing. | |
| | <hr/> 8 | | <hr/> 7 |
| Horticulture 7..... | 2 | Horticulture 9..... | 2 |

Option 1.—Horticulture.

| | | | |
|---------------------|----------|------------------------------------|----------|
| 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. | |
| | <hr/> 10 | | <hr/> 10 |

Option 1.—Horticulture.—Continued.

| First Term. | Hours per week. | Second Term | Hours per week |
|----------------------------|-----------------------|-----------------------------|----------------------|
| <i>Agronomy</i> 6..... | 2 | <i>Agronomy</i> 6..... | 2 |
| <i>Biology</i> 4..... | 2 | <i>Biology</i> 4..... | 2 |
| <i>Entomology</i> 3..... | 2 | <i>Horticulture</i> 10..... | 2 |
| <i>Horticulture</i> 8..... | 2 | <i>Horticulture</i> 11..... | 2 |
| | <hr/> 8 | | <hr/> 8 |

Option 2.—Agricultural Chemistry.

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

Option 3.—Agricultural Botany.

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

Option 4.—Agricultural Education.

| | | | |
|----------------------------|----------|----------------------------|----------|
| <i>Education</i> | 6 | <i>Education</i> | 6 |
| <i>Horticulture</i> 7..... | 3 | <i>Horticulture</i> 9..... | 3 |
| Pomology..... | | Experimental..... | |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 11 | | <hr/> 11 |
| <i>Horticulture</i> 7..... | 2 | <i>Horticulture</i> 9..... | 2 |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 4 | | <hr/> 4 |

GROUP C.—ANIMAL HUSBANDRY.

JUNIOR YEAR.

| 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 |
| Entomology 1 | | Obstetrics. | |
| Systematic. | | Entomology 2 | |
| or Chemistry 4 | | Economic. | |
| Organic. | | or Chemistry 4 | |
| or Biology 3..... | 2 | Organic. | |
| Rural Hygiene. | | or Biology 3..... | 2 |
| | | Rural Hygiene. | |
| | <hr/> 15 | | <hr/> 17 |
| Agronomy 3..... | 2 | Agronomy 3..... | 2 |
| Animal Husbandry 5..... | 2 | Animal Husbandry 5..... | 2 |
| Chemistry 3..... | 4 | Chemistry 3..... | 2 |
| Veterinary Science 2..... | 2 | Veterinary Science 3..... | 2 |
| | | Veterinary Science 4..... | 2 |
| Chemistry 4 or | | Chemistry 4 or | |
| Entomology 1 or | | Entomology 2 or | |
| Biology 3..... | 2 | Biology 3..... | 2 |
| | <hr/> 12 | | <hr/> 12 |

SENIOR YEAR.

Required.*

| | | | |
|-------------------------|---------|---------------------------|---------|
| Animal Husbandry 7..... | 3 | Animal Husbandry 7..... | 3 |
| Feeding. | | Feeding. | |
| Economics 3..... | 3 | Economics 3..... | 3 |
| Economic Organization. | | Economic Organization. | |
| English 6..... | 1 | English 6..... | 1 |
| Public Speaking. | | Public Speaking. | |
| Military Science 2..... | 1 | Veterinary Science 5..... | 2 |
| | | Infectious Diseases. | |
| | <hr/> 8 | | <hr/> 9 |
| Animal Husbandry 7..... | 2 | Animal Husbandry 7..... | 2 |

Option 1.—Animal Husbandry.

| | | | |
|-------------------------|---------|-------------------------|---------|
| 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 | Elective..... | 2 |
| | <hr/> 8 | | <hr/> 9 |

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

Option 1.—Animal Husbandry—Continued.

| First Term. | Hours per week. | | Hour per week. |
|---------------------------------|-----------------------|---------------------------------|----------------------|
| <i>Agronomy 6</i> | 2 | <i>Agronomy 6</i> | 2 |
| <i>Agronomy 7</i> | 2 | <i>Agronomy 9</i> | 2 |
| <i>Animal Husbandry 8</i> | 4 | <i>Animal Husbandry 9</i> | 2 |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 8 | | <hr/> 8 |

Option 2.—Agricultural Chemistry.

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

Option 3.—Veterinary Science.

| | | | |
|-----------------------------------|----------|-----------------------------------|----------|
| <i>Veterinary Science 6</i> | 3 | <i>Veterinary Science 6</i> | 3 |
| Anatomy. | | Anatomy. | |
| <i>Veterinary Science 7</i> | 3 | <i>Veterinary Science</i> | 3 |
| Adv. Lab. Methods. | | Adv. Lab. Methods. | |
| <i>Elective</i> | 3 | <i>Elective</i> | 3 |
| | <hr/> 9 | | <hr/> 9 |
| <i>Veterinary Science 6</i> | 6 | <i>Veterinary Science 6</i> | 6 |
| <i>Elective</i> | 4 | <i>Elective</i> | 4 |
| | <hr/> 10 | | <hr/> 10 |

Option 4.—Agricultural Education.

| | | | |
|---------------------------------|----------|---------------------------------|----------|
| <i>Education</i> | 6 | <i>Education</i> | 6 |
| <i>Animal Husbandry 7</i> | 3 | <i>Animal Husbandry 7</i> | 3 |
| Feeding. | | Feeding. | |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 11 | | <hr/> 11 |
| <i>Animal Husbandry 7</i> | 2 | <i>Animal Husbandry 7</i> | 2 |
| <i>Elective</i> | 2 | <i>Elective</i> | 2 |
| | <hr/> 4 | | <hr/> 4 |

GROUP D.—DAIRY HUSBANDRY.

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..... | |
| Chemistry 4..... | 2 | Chemistry 4..... | 2 |
| Organic..... | | Organic..... | |
| English 4..... | 3 | English 4..... | 3 |
| Advanced Composition..... | | Advanced Composition..... | |
| Dairy Husbandry 2..... | 3 | Dairy Husbandry 3..... | 2 |
| Dairy Machinery..... | | Butter Making..... | |
| Veterinary Science 2..... | 2 | Veterinary Science 3..... | 2 |
| Pharmacology..... | | Non-infectious Diseases..... | |
| | | Veterinary Science 4..... | 2 |
| | | Obstetrics..... | |
| | <hr/> 16 | | <hr/> 17 |
| Agronomy 3..... | 2 | Agronomy 3..... | 2 |
| Chemistry 3..... | 4 | Chemistry 3..... | 2 |
| Chemistry 4..... | 2 | Chemistry 4..... | 2 |
| Dairy Husbandry 2..... | 4 | Dairy Husbandry 3..... | 2 |
| Veterinary Science 2..... | 2 | Veterinary Science 3..... | 2 |
| | | Veterinary Science 4..... | 2 |
| | <hr/> 14 | | <hr/> 12 |

SENIOR YEAR.

| | | | |
|----------------------------|----------|----------------------------|----------|
| Agronomy 6..... | 3 | Agronomy 6..... | 3 |
| Farm Management..... | | Farm Management..... | |
| Animal Husbandry 6..... | 3 | Chemistry 9..... | 2 |
| Breeding and Feeding..... | | Dairy..... | |
| Biology 7..... | 2 | Biology 7..... | 2 |
| Dairy Bacteriology..... | | Dairy Bacteriology..... | |
| Dairy Husbandry 4..... | 3 | Dairy Husbandry 5..... | 3 |
| Creamery Management..... | | Ice Cream Making..... | |
| Economics 3..... | 3 | Economics 3..... | 3 |
| Economic Organization..... | | Economic Organization..... | |
| English 6..... | 1 | English 6..... | 1 |
| Public Speaking..... | | Public Speaking..... | |
| Military Science 2..... | 1 | Veterinary Science 5..... | 2 |
| | | Infectious Diseases..... | |
| | <hr/> 16 | | <hr/> 16 |
| 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 |
| | <hr/> 10 | | <hr/> 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. |
|-------------------------------------|-----------------------|----------------------------------|-----------------------|
| <i>Agronomy 15</i> | 3 | <i>Agronomy 16</i> | 3 |
| Soils. | | Crop Production. | |
| <i>Biology 15</i> | 3 | <i>Biology 16</i> | 3 |
| Zoology. | | Botany. | |
| <i>English 9</i> | 3 | <i>English 9</i> | 3 |
| Grammar, Composition. | | Grammar, Composition. | |
| <i>Horticulture 15</i> | 3 | <i>Horticulture 2</i> | 3 |
| Plant Culture and Propagation. | | Vegetable Gardening. | |
| | | <i>Animal Husbandry 16</i> | 2 |
| | | Judging Breed Types. | |
| | 12 | | 14 |
| <i>Agronomy 15</i> | 2 | <i>Agronomy 16</i> | 4 |
| <i>Agronomy 16</i> | 2 | <i>Animal Husbandry 16</i> | 2 |
| <i>Animal Husbandry 15</i> | 6 | <i>Biology 16</i> | 2 |
| <i>Biology 15</i> | 2 | <i>Horticulture 2</i> | 2 |
| <i>Horticulture 15</i> | 2 | <i>Dairy Husbandry 1a</i> | 4 |
| <i>Textile Engineering 17</i> | 2 | | |
| | 16 | | 14 |

SECOND YEAR.

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

DEPARTMENT OF AGRONOMY.

PROFESSOR MORGAN, ASSISTANT PROFESSOR'S. A. McMILLAN, MR. WOOD,
MR. COEN.

Agromony 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.
- (e) The Soil Air; composition and functions of.

(f) Heat of the Soil: comprising a study of the sources, functions and means of modifying soil temperature.

(g) 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.)

4. Irrigation and Drainage. Junior. Second 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.

(Option 1, Groups A, B.)

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, Group 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, B, 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.

Text: 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.

Lectures and reference reading.

Practice, 2 hours a week.

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.)

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, ASSISTANT PROFESSOR TEMPLETON, MR. KENNEDY,
MR. BELL.

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 stockman, 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 types 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*.

(Option 1, 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 work 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.*

(Option 1, Group C.)

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 stockman, 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.*

Second Year.

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

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.*

Practice, 2 hours a week.

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. CASSIDAY,
MR. WINTON.

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 textbook. 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 to be assigned.

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 interpretation 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 silage, 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, *Moore*.

(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, Bacteria in Milk, *Conn*.

(Group D.)

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: College Zoology, *Hegner*.

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 any 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.

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

DEPARTMENT OF DAIRY HUSBANDRY.

ACTING PROFESSOR RIDGWAY, MR. CARPENTER, MR. PATTERSON.

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.

The courses are as follows:

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.

Text: Creamery Butter-making, *Michels*.

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 term, 3 hours a week; with practice.

Farm butter-making, clean milk production, and ice-cream making. An elective course designated 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. PADDOCK.

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. 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.

(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. 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 of 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 select thesis 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 and 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 elementary 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.

The recent laws passed by the Legislature requiring elementary agriculture to be taught in the public and normal schools has created a considerable demand for graduates of agricultural colleges as teachers in the public schools. On account of the fact that most of the work of elementary agriculture is of a horticultural nature this department is making a strong effort to prepare young men for this important line of work. A number of graduates of the College are already engaged in this work in the State, and at the present time the department is unable to supply the demand made on it for young men well prepared in the different branches of horticulture, and it can be safely stated that this great industry has only just begun in the State.

The courses are as follows:

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. Special work is given in top working of trees by grafting and budding.

(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 demonstrations 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, embraces 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 preparations to orchard and vegetable crops.
(Required in Group B.)

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

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.

Lectures.

(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.

Prerequisite, *Horticulture 3.*

(Required in Group B.)

8. Elementary 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 climate, etc.

Text: *American Forestry, Green.*

Practice, 2 hours a week.

Practice in estimating the quantity of lumber per acre in square and cubic feet; also in estimating the height of standing trees.

(Option 1, 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 tree; 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, Group B.)

TWO YEAR COURSE IN AGRICULTURE.

First Year.

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.)

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, R; 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 the constant aid of an instructor. It may embrace such work as the finer grades of blood-work for 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, 9 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, O. H. SELLERS, CORRESPONDENCE COURSES, C. B. NICHOLS, SECRETARY, R. R. ROSA, ASSISTANT.

The department of agricultural extension was established 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 work of the department has been planned to include the subdivisions mentioned below.

For more detailed information concerning any of them, those interested should address the Superintendent.

1. Correspondence Courses in Agriculture.

The following correspondence courses are offered:

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.
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.

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 will extend through one week and will be 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 fee of \$2.50 will be charged to cover expenses of the course.

The course will be given during the latter part of July so as to meet the convenience of the greatest number of the 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.

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 livestock, 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 department 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. The actual expenses of these courses are borne by the communities in which they are held.

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.

6. Organization of Farmers' and Boys' and Girls' Clubs.

Much good has already been accomplished in this State by the organizations of such clubs. This department is prepared to aid in the furtherance of this work.

7. Co-operation With Agricultural Fair Associations.

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

8. Promotion of State Industrial Contests.

At present the department 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 in like matters.

9. Farmers' Co-operative Demonstration Work.

The Farmers' Co-operative Demonstration Work is carried on jointly by this Department 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 this Department 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 Extension Department at 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 Cooperative Demonstration work is conducted by the following joint agents of the United States Department of Agriculture and the Department of Agricultural Extension of the Agricultural and Mechanical College:

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 Betty Rogers, assistant in charge of the Girls Club Work; eighteen lady agents.

THE TEXAS AGRICULTURAL EXPERIMENT STATIONS.

DIRECTOR YOUNGBLOOD.

The Main Station, located at College Station, was organized January 25, 1888, and is supported entirely 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 for by Act of Congress in 1887, and may be used for tests, experiments and investigations which may be either original or unoriginal in their nature. The Adams Fund, also of \$15,000 per annum, can be used only for original investigation and research, and for incidental expenses bearing directly upon this work. Salaries may be drawn from either fund in accordance with the character and amount of work done under each.

Besides the Main Station, there are eleven State Sub-Stations located in different parts of the State. The Beeville Station, in Bee county, was established in 1895; the Troup Station, in Smith county, was established in 1903. In 1910 nine others were established as follows: A fruit and farm crops station at Angleton, Brazoria county; a rice station, operated in co-operation with the United States Department of Agriculture, at Beaumont, Jefferson county; a small grains station at Denton, Denton county; a plains station in the Panhandle of Texas, at Lubbock, in Lubbock county; an East Texas farm crops station, including tobacco work, at Nacogdoches, in Nacogdoches county, in co-operation with the United States Department of Agriculture; an irrigation station at Pecos, Reeves county; a farm crops station at Spur, in Dickens county, on the Permian Red Beds soil area; a black land farm crops station between Temple and Belton, in Bell county; and a feeding and breeding experiment station near College Station, Brazos county, operated in co-operation with the Division of Animal Husbandry of the Main Station. At Chillicothe, in Hardeman county, the Division of Agronomy of the Main Station is working in co-operation with the Office of Forage Crops, United States Department of Agriculture. This station is also located in the Permian Red Beds region.

The experiments carried out at the Main Station and the State Sub-Stations are reported from time to time in bulletin form sent free to the farmers of the State, and others interested in agricultural development, upon application to the Director. In addition to these, bulletins involving more or less investigation into agricultural problems, press bulletins giving popular information in regard to agricultural topics, are sent out from time to time.

The Stations are all under the direction of the Director of Experiment Stations, and the Sub-Stations under the immediate supervision of a local superintendent at each Station. The Main Station includes a working staff composed of a veterinarian, a chemist, a horticulturist, an animal husbandman, an entomologist, an agronomist, a plant pathologist and physiologist, a farm management expert, with their assistants, and the necessary force of stenographers and clerks to carry on the office work.

The Chemical Division of the Station has for sometime been making an extensive study of Texas soils and crops, and fertilizers best suited to

the different types of soil in the various parts of the State. This Division also has under way an extensive study and investigation into the relative value of various feeding stuffs as indicated by their respective composition and digestibility.

The Division of Agronomy has charge of the work not only of the Main Station but of all the Sub-Stations as well,—which includes field experiments involving the crops best adapted to various soils, how the fertility of the soil may be maintained by an intelligent system of fertilizing and rotation of crops; cultural methods for different crops, especially corn and cotton; the introduction of new plants, with study of their adaptability to local conditions, and the improvement of agricultural plants by selection and cross breeding.

The Division of Entomology is engaged in studying the methods by which the ravages of the boll weevil may be lessened on the cotton crop, special problems in connection with other injurious insects, and work in connection with the bee industry.

The Division of Horticulture is engaged extensively in the improvement of berries, particularly blackberries and dewberries, by cross breeding and selection, and also has under way extensive studies relative to the control of Crown Gall disease by means of disinfectants and other chemicals.

The Division of Animal Husbandry conducts feeding experiments with cattle, hogs and sheep, testing various combinations of standard feeds, with a view of determining their relative value and economy. The work of this Division is conducted in co-operation with the Feeding and Breeding Station, where it has under way at the present time one of the most elaborate steer feeding experiments ever attempted by the Texas Experiment Station. A sheep breeding experiment wherein pure-bred sheep of the various breeds are being crossed with the Karakule, with a view to producing a more satisfactory combination wool and mutton sheep.

The Division of Plant Pathology and Physiology is giving particular attention to the bacteria which grow in tubercles on the roots of the various legumes and appropriate nitrogen from the atmosphere; with a view of determining whether these bacteria are interchangeable from one legume to another, and whether the principal types of soil in Texas are already inoculated by nature with these bacteria, or whether it will be necessary for the success and growth of the legumes to inoculate each soil and crop specifically.

The Division of Veterinary Science is engaged upon a further study of Texas fever and the means of controlling it, and with infectious anæmia of the Horse. This Division is also engaged in producing hog cholera serum which is very successful as a preventive of cholera in hogs.

The Division of Farm Management is engaged at the present time in an investigation concerning truck raising with a view of determining the proper relation of the trucking enterprise to the general farm. This leads to the proposition of farm reorganization with a view of getting the proper distribution of labor of men and teams, and the proper relation of the various crops to stock raising. As soon as possible this work will be taken up over the entire State. This means the organization of the farm into a profitable business proposition. While this investigational work is being carried on the men engaged in the work visit

many farms throughout the State, giving information that leads to better and more profitable farming.

All the Divisions and the office of the Director carry on a heavy correspondence with the farmers and stockmen of the State, disseminating in this way much useful information in regard to local conditions and agricultural problems in various sections of the State.

The Sub-Stations give all their time to field experiments in order that the local problems may be solved. The Director will be glad to answer questions concerning agricultural problems in the vicinity of the respective Sub-Stations. The superintendents of the various Sub-Stations will co-operate with farmers as much as their time will allow, with the view of securing better farm practices and systems of farm management throughout the State.

Requests for bulletins of the Experiment Station should be made, invariably, to the Director of Experiment Stations, College Station, Brazos county, Texas. Delays in getting publications to those asking for them are frequently incurred by the requests being sent to members of the Station Staff and officers of the College not connected with the Station, who must refer them to the Director.

It is the earnest desire of the administration to make the Texas Agricultural Experiment Stations of the greatest possible service to the greatest number of Texas farmers, and to that end the Director urges their co-operation and suggestions.

THE FEED CONTROL DIVISION OF THE EXPERIMENT STATION.**STATE FEED INSPECTOR BOYETT.**

This division has charge of the enforcement of the law that regulates the sale of concentrated feed stuffs in Texas. All concentrated feed stuffs, including wheat, bran, corn, chops, cottonseed meal, etc., are subject to the requirements of the law. Before selling or offering for sale any concentrated feed stuff the manufacturer or party who causes it to be sold or offered for sale must deposit with the Feed Control Department a sealed glass jar or bottle containing not less than one pound of each kind or brand of feed stuff. The sample must be accompanied by an affidavit that it is a fair average sample of the feed stuff to be sold.

The law imposes a tax of 10 cents a ton on all ground or chopped concentrated feed stuff. This tax is collected by the sale of tax tags. The manufacturer or importer must print on the tax tags the following information: Name of the feed stuff, name of ingredients if mixed, percentage of ingredients if adulterated, number of net pounds in package, name and address of the manufacturer or importer, place of manufacture and the guaranteed analysis. A tax tag must be attached to each package or bag of feed stuff before it can be offered for sale. The law requires this division to make annually one or more analyses of each feed stuff sold or offered for sale under this act, and empowers this division to take samples which shall be drawn from not less than 5 per cent of the whole lot inspected. The results of the analyses and additional information are published in reports or bulletins which are sent out to the farmers of the State. About fifty thousand of these reports are distributed annually.

This division has in its employ four men who spend their entire time inspecting to ascertain if the weights and quality of all concentrated feeding stuffs are as claimed for them by the manufacturer, and in collecting samples for analysis.

The School of Engineering

FACULTY OF THE SCHOOL OF ENGINEERING.

R. T. MILNER,
President.

J. C. NAGLE, M. A., C. E., M. C. E.,
Dean.

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

J. C. NAGLE, M. A., C. E., M. C. E.,
Professor of Civil Engineering.

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

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

J. C. BLAKE, Ph. D.,
Professor of Chemistry and Chemical Engineering.

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

O. F. CHASTAIN,
Professor of History.

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

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

J. W. KIDD, E. E.,
Professor of Physics.

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

A. MITCHELL, B. S.,
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.

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 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 architects.

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..... | 1 |
| 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> | <i>8</i> | <i>Architecture 20.....</i> | <i>8</i> |
| <i>Architecture 22.....</i> | <i>4</i> | <i>Architecture 22.....</i> | <i>4</i> |
| <i>Drawing 1.....</i> | <i>2</i> | <i>Drawing 1.....</i> | <i>2</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 | History 2..... | 2 |
| Composition. | | English. | |
| History 2..... | 2 | Mathematics 5..... | 6 |
| English. | | Calculus. | |
| Mathematics 4..... | 6 | Military Science 1..... | 1 |
| Analytics. | | Drill Regulations. | |
| Military Science 1..... | 1 | Physics 6..... | 2 |
| Drill Regulations. | | Electricity and Magnetism. | |
| | 17 | | 18 |
| <i>Architecture 27.....</i> | <i>2</i> | <i>Architecture 27.....</i> | <i>2</i> |
| <i>Architecture 28.....</i> | <i>8</i> | <i>Architecture 28.....</i> | <i>8</i> |
| <i>Architecture 29.....</i> | <i>4</i> | <i>Architecture 29.....</i> | <i>2</i> |
| | | <i>Physics 6.....</i> | <i>2</i> |
| | 14 | | 14 |

JUNIOR YEAR.

| | | | |
|--------------------------|-------|-------------------------------|-------|
| 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. | |
| English 5..... | 1 | English 5..... | 1 |
| Argumentation. | | Argumentation. | |
| | <hr/> | | <hr/> |
| | 13 | | 10 |
| 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/> | | <hr/> |
| | 20 | | 24 |

SENIOR YEAR.

| | | | |
|---------------------------|-------|------------------------------------|-------|
| 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. | |
| Military Science 2..... | 1 | | |
| | <hr/> | | <hr/> |
| | 9 | | 7 |
| Architecture 43..... | 16 | Architecture 43..... | 20 |
| Architecture 45..... | 4 | Architecture 45..... | 4 |
| Architecture 47..... | 4 | Architecture 47..... | 4 |
| Civil Engineering 14..... | 2 | | |
| | <hr/> | | <hr/> |
| | 26 | | 28 |

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. | |
| | <hr/> 16 | | <hr/> 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> |
| | <hr/> 16 | | <hr/> 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 | History 2..... | 2 |
| Composition. | | English. | |
| History 2..... | 2 | Mathematics 5..... | 6 |
| English. | | Calculus. | |
| Mathematics 4..... | 6 | Physics 6..... | 2 |
| Analytics. | | Electricity and Magnetism. | |
| Military Science 1..... | 1 | Military Science 1..... | 1 |
| Drill Regulations. | | Drill Regulations. | |
| | <hr/> 17 | | <hr/> 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>English 5</i> | 1 |
| Mechanics of Materials. | | Argumentation. | |
| <i>English 5</i> | 1 | <i>Mechanical Engineering 3</i> | 3 |
| Argumentation. | | Elementary Steam Eng. | |
| | <hr/> 13 | <i>Physics 7</i> | 2 |
| | | General. | |
| | | | <hr/> 16 |
| <i>Architecture 33</i> | 6 | <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/> 22 | | <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 14</i> | 2 |
| Economic Organization. | | Stresses. | |
| <i>English 6</i> | 1 | <i>Chemistry 10</i> | 4 |
| Public Speaking. | | Geology. | |
| <i>Military Science 2</i> | 1 | <i>Economics 4</i> | 3 |
| <i>Mechanical Engineering 5a</i> | 2 | Economic Organization. | |
| Steam Engines and Boilers. | | <i>Electrical Engineering 6</i> | 1 |
| | <hr/> 12 | Lighting and Wiring. | |
| | | <i>English 6</i> | 1 |
| | | Public Speaking. | |
| | | | <hr/> 13 |
| <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 14</i> | 2 |
| | <hr/> 21 | | <hr/> 20 |

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 or 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, second term, 2 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, 8 hours, second term 20 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 materials 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 works 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. | |
| | <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.

| | | | |
|-------------------------|----------|-------------------------|----------|
| Chemistry 1..... | 3 | Chemistry 1..... | 3 |
| Inorganic. | | Inorganic. | |
| English 2..... | 2 | English 2..... | 2 |
| Literature. | | Literature. | |
| English 3..... | 1 | English 3..... | 1 |
| Composition. | | Composition. | |
| History 2..... | 2 | History 2..... | 2 |
| English. | | English. | |
| Mathematics 4..... | 6 | Mathematics 5..... | 6 |
| Analytics. | | Calculus. | |
| Military Science 1..... | 1 | Military Science 1..... | 1 |
| Drill Regulations. | | Drill Regulations. | |
| Physics 4..... | 3 | Physics 4..... | 3 |
| General. | | General. | |
| | <hr/> 18 | | <hr/> 18 |
| <i>Chemistry 1.....</i> | <i>4</i> | <i>Chemistry 1.....</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. |
|---------------------------------------|-----------------------|--------------------------------------|-----------------------|
| 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. | |
| English 5..... | 1 | English 5..... | 1 |
| Argumentation. | | Argumentation. | |
| Mathematics 6..... | 2 | Electrical Engineering 5..... | 4 |
| Practical. | | Electrical Machinery. | |
| Mechanical Engineering 3..... | 3 | Mechanical Engineering 4..... | 3 |
| Elementary Steam Engineering. | | Kinematics. | |
| | <hr/> 15 | | <hr/> 17 |
| <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>2</i> |
| | <hr/> 12 | | <hr/> 10 |

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. | |
| Military Science 2..... | 1 | | |
| | <hr/> 17 | | <hr/> 15 |
| <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> |
| | <hr/> 10 | | <hr/> 10 |

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMICAL ENGINEERING.

PROFESSOR BLAKE, MR. NELSON, MR. THORNTON.

The beginning work of the Course in Chemical Engineering is described under the Department of Chemistry, page 132. 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 cotton-seed 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.)

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 Courses III and VIII.)

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 co-operative work with Farmers' Institutes 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 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.

| | | | |
|-------------------------------------|----------|---------------------------------|----------|
| Civil Engineering 1..... | 3 | Civil Engineering 4..... | 3 |
| Surveying, Leveling and Topography. | | Railroads. | |
| English 2..... | 2 | English 2..... | 2 |
| Literature. | | Literature. | |
| English 3..... | 1 | English 3..... | 1 |
| Composition. | | Composition. | |
| History 2..... | 2 | History 2..... | 2 |
| English. | | English. | |
| Mathematics 4..... | 6 | Mathematics 5..... | 6 |
| Analytics. | | Calculus. | |
| Military Science 1..... | 1 | Military Science 1..... | 1 |
| Drill Regulations. | | Drill Regulations. | |
| Physics 4..... | 3 | Physics 4..... | 3 |
| General. | | General. | |
| | <hr/> 18 | | <hr/> 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>2</i> | <i>Drawing 6.....</i> | <i>4</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. | Hour. per weeks |
|--|-----------------------|--------------------------------------|-----------------------|
| Chemistry 1a..... | 3 | Chemistry 1a..... | 3 |
| Inorganic. | | Inorganic. | |
| Civil Engineering 5..... | 2 | Civil Engineering 7..... | 2 |
| Railroads. | | Hydraulics. | |
| Civil Engineering 6..... | 4 | Civil Engineering 9..... | 2 |
| Mechanics of Materials. | | Roads. | |
| Civil Engineering 7..... | 2 | Civil Engineering 10..... | 3 |
| Hydraulics. | | Masonry Construction. | |
| English 5..... | 1 | Civil Engineering 11..... | 2 |
| Argumentation. | | Roofs and Bridges. | |
| Mathematics 6..... | 2 | English 5..... | 1 |
| Practical. | | Argumentation. | |
| Mechanical Engineering 3..... | 3 | Electrical Engineering 5..... | 4 |
| Elementary Steam Engineering. | | Electrical Machinery. | |
| | <hr/> 17 | | <hr/> 17 |
| <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>2</i> |
| <i>Mechanical Engineering 22a.....</i> | <i>2</i> | | |
| | <hr/> 11 | | <hr/> 10 |

Summer Practice, Civil Engineering 24.....3 weeks.

SENIOR YEAR.

| | | | |
|----------------------------------|----------|----------------------------------|----------|
| Civil Engineering 13..... | 4 | Civil Engineering 20..... | 2 |
| Roofs and Bridges. | | Sewerage. | |
| Civil Engineering 15..... | 2 | Civil Engineering 21..... | 3 |
| Water Supply Engineering. | | Least Squares and Geodesy. | |
| Civil Engineering 16..... | 2 | Civil Engineering 22..... | 3 |
| Contracts and Specifications. | | Higher Structures. | |
| 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 | | |
| Public Speaking. | | | |
| Military Science 2..... | 1 | | |
| | <hr/> 17 | | <hr/> 16 |
| <i>Civil Engineering 13.....</i> | <i>8</i> | <i>Civil Engineering 13.....</i> | <i>4</i> |
| <i>Civil Engineering 19.....</i> | <i>2</i> | <i>Civil Engineering 19.....</i> | <i>2</i> |
| | | <i>Civil Engineering 22.....</i> | <i>2</i> |
| | | <i>Chemistry 10.....</i> | <i>2</i> |
| | <hr/> 10 | | <hr/> 10 |

DEPARTMENT OF CIVIL ENGINEERING.

PROFESSOR NAGLE, PROFESSOR SPENCE, PROFESSOR POTTS, ASSOCIATE
PROFESSOR RICHEY, ASSISTANT PROFESSOR CROCKETT,
MR. WINDROW, 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, farm terracing, 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. First 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. Sophomore. 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 Courses V, VII, IX.)

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 and compound curves. Transition curves and construction work are treated in the latter part of the course.

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

Practice, 4 hours a week.

In the second term of the Sophomore year problems in simple, compound, and transition curves are assigned, and the curves run in the field. In the first term of the Junior year preliminary and location surveys are made, grade lines laid and slope stakes set. Quantities are afterwards computed from the notes.

Prerequisite, *Civil Engineering 1.*

(Required in Course IV.)

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

A continuation of course 4.

Practice, 3 hours a week.

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 beams, columns, shafts, etc.

Text: *Mechanics of Materials, Merriman.*

Practice, 2 hours a week.

Determination of the strength of materials in the testing laboratory.

Various tests of timbers, steel, cement, etc., must be made by the student and reports submitted showing results.

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, are discussed in this course.

Text: *Treatise on Hydraulics, Merriman.*

Practice, second term, 2 hours a week.

Calibration of nozzles, water meters, weirs, pressure gauges; efficiency tests on pumps, impulse motors, hydraulic rams, etc.

Prerequisite, *Mathematics* 5.

(Required in Course IV; 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.

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 general elementary study of the subject of country roads and city pavements; character of materials and types of construction of different parts of the State and of the United States; the location and drainage of roads; road maintenance; road laws of Texas and 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: *Art of Road Making, Frost.*

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 and the design of simple trusses. Each student must determine the stresses due to given loads in various structures by algebraic and by graphic methods, and afterwards make necessary designs and drawings.

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

Prerequisite, *Mathematics 5; Civil Engineering 6*, first term.

(Required in Course IV.)

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

Stresses in simple structures.

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

Practice, 2 hours a week.

(Required in Courses III, VII, IX.)

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

A continuation of course 11.

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

Practice, first term, 8 hours; second term, 4 hours a week.

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: Roofs and Bridges, Parts I and II, *Merriman and Jacoby*.

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.

In this course questions concerning the collection, storage, pumping, purification and distribution of water for domestic purposes are discussed.

Text: Water Supply Engineering, *Folwell*.

Prerequisite, *Civil Engineering 6*.

(Required in Courses IV, VIII.)

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

This course covers discussions of the principles involved in contract making from the engineer's standpoint, with examples of general and special clauses used in engineering specifications.

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 Course IV.)

19. Field and Laboratory Work. Senior. First and second terms, 2 hours a week. Practice.

Practice in the field, drafting room and laboratory.

Prerequisite, *Civil Engineering* 4, 6.

(Required in Course IV.)

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

Questions relating to the best methods of draining and sewerage cities, and to the disposal of the sewage, receive attention in this course.

Text: Sewerage, *Folwell*.

Prerequisite, *Civil Engineering* 6.

(Required in Course IV.)

21. Least Squares and Geodesy. Senior. Second term, 3 hours a week.

Recitations, supplemented by field work on base line measurements, triangulation, etc., as available time will permit.

Practice will be covered in *Civil Engineering* 19.

Texts: Least Squares, *Merriman*.

Geodesy, *Merriman*.

Prerequisite, *Mathematics* 5.

(Required in Course IV.)

22. Higher Structures. Senior. Second term, 3 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 of at least three weeks duration will be required of all students who have completed the work of their junior year. At the close of the session of 1913-1914 this course will begin on Thursday, June 11th, and close on Friday, July 3, 1914, both dates included. Students in this course will occupy rooms in the dormitories and will take their meals at the Mess Hall. Board, room, lights and janitor service will be charged for at the rate \$4.90 per week. For the present there will be no laboratory fee.

The class will be divided into squads and each squad will be required to put in the full working day and to complete exercises assigned in railroad and topographic surveying, triangulation, river gaugings, and such other exercises as time will permit.

(Required in Course IV.)

FIFTH YEAR.**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 1913-14, 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 12, 1914, and end Saturday, February 7, 1914. 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, triangles, 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 rumbler for testing paving brick. With the exception of the 20,000 pound machine these are all power driven from the

same jack shaft. The hydraulic and road testing 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. Also various machines for testing the hardness, wearing 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.

COURSE IN ELECTRICAL ENGINEERING.

The course in electrical engineering is designed to give the student a working knowledge of general electric engineering, and to fit him for professional work in the various branches of applied electricity.

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.

The foundation for the course in Electrical Engineering is laid in the departments of physics, mathematics and mechanical engineering.

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. | |
| History 2..... | 2 | History 2..... | 2 |
| English. | | English. | |
| Mathematics 4..... | 6 | Mathematics 5..... | 6 |
| Analytics. | | Calculus. | |
| Military Science 1..... | 1 | Military Science 1..... | 1 |
| Drill Regulations. | | Drill Regulations. | |
| | | Physics 7..... | 2 |
| | | Heat. | |
| | | Physics 8..... | 2 |
| | | Mechanics. | |
| | <hr/> 18 | | <hr/> 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>Mechanical Engineering 15a.....</i> | <i>2</i> | <i>Physics 9.....</i> | <i>2</i> |
| <i>Electrical Engineering 1.....</i> | <i>4</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 6..... | 4 | Civil Engineering 3..... | 2 |
| Mechanics of Materials. | | Surveying and Leveling. | |
| Electrical Engineering 3..... | 3 | Electrical Engineering 3..... | 2 |
| Direct Currents. | | Direct Currents. | |
| | | Electrical Engineering 4..... | 1 |
| | | Electric Lighting. | |
| English 5..... | 1 | English 5..... | 1 |
| Argumentation. | | Argumentation. | |
| Mathematics 6..... | 2 | Electrical Engineering 12..... | 2 |
| Practical. | | Telephone Engineering. | |
| Mechanical Engineering 3..... | 3 | Electrical Engineering 13..... | 2 |
| Elementary Steam Engineering. | | El. Al. Currents. | |
| | | Mechanical Engineering 4..... | 3 |
| | | Kinematics. | |
| | <hr/> 16 | | <hr/> 16 |
| Chemistry 1a..... | 2 | Chemistry 1a..... | 2 |
| Civil Engineering 6..... | 2 | Electrical Engineering 3..... | 4 |
| Electrical Engineering 3..... | 4 | Electrical Engineering 12..... | 2 |
| Mechanical Engineering 19a..... | 2 | Civil Engineering 3..... | 2 |
| | <hr/> 10 | | <hr/> 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. | |
| Military Science 2..... | 1 | | |
| | <hr/> 17 | | <hr/> 16 |
| Electrical Engineering 8..... | 4 | Electrical Engineering 8..... | 4 |
| Electrical Engineering 9..... | 4 | Electrical Engineering 9..... | 4 |
| Mechanical Engineering 22a..... | 2 | Mechanical Engineering 22a..... | 2 |
| | <hr/> 10 | | <hr/> 10 |

DEPARTMENT OF ELECTRICAL ENGINEERING.

PROFESSOR BOLTON, ASSOCIATE PROFESSOR LEAR, ASSISTANT PROFESSOR
WOOTEN, MR. GUMAER.

Instruction in Electrical Engineering is given by recitation, lecture experiment, lantern illustration, 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 various uses; calibration and repair of instruments, such ammeters, voltmeters, 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.

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, 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, 2 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 Courses VII, IX.)

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 graphically as far as possible, the text being supplemented by lectures and problems.

Text: Elements of Electrical Engineering, volume II, *Franklin and Esty*.

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 direct current 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 recitations on the transmission and distribution of power by electrical methods. Many subjects not treated in the textbooks 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.

Prerequisite, *Electrical Engineering 2*.

(Required in Course V.)

FIFTH YEAR.

The following courses are offered in the fifth year for students receiving their Bachelor's degree prior to 1914:

(5.) Electrical Machine Design. First term, 3 hours a week; with practice.

Lectures, recitations and calculations on the design of electrical instruments and machines.

Practice, 4 hours a week.

Most of this work is done on the drawing board. It includes the making of detail drawings of the machines designed by the student, and the design of a city power plant.

(6.) Advanced Electrical Machinery. First and second terms, 3 hours a week; with practice.

Lectures and recitations on advanced alternating current work. This course deals with the more complicated instruments and machines such as are used for alternating currents.

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

This is a continuation of the Senior work in testing alternating current machinery.

(12.) Electric Power Distribution. First term, 3 hours a week.

Lectures and recitations on the distribution of electrical power. The calculation and design of a long distance transmission line is required of each student.

(13.) Power Plant Design. Second term, 3 hours a week; with practice.

Lectures on the design and operating characteristics of modern power plants and distributing systems.

Practice, 2 hours a week.

Making of diagrams, laying out of circuits, etc., for the plant designed.

(14.) Electric Railways. Second term, 3 hours a week; with practice.

Optional with fifth year students.

A continuation of the study of electric railway systems and apparatus as begun in the Senior year.

Practice, 4 hours a week.

(15.) Illuminating Engineering. Second term, 3 hours a week; with practice.

Optional with fifth year students.

Lectures and recitations on illumination and illuminants, with special reference to the use of electric lights.

Practice, 4 hours a week.

Practice in the testing of illuminants and the design of systems of illumination.

(16.) Telephone Engineering. Second term, 3 hours a week; with practice.

Optional with fifth year students.

Lectures and recitations on the telephone system, as a whole, methods of construction, systems in use, etc.

Practice, 4 hours a week.

The practice consists in laying out a system for a city with an estimate of cost of construction, etc.

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.

COURSE IN MECHANICAL ENGINEERING.

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 operate the same with the greatest economy of labor and materials.

It is not possible to give the student that experience which comes only with long service, but the aim is to give him the power to understand and apply established principles to engineering problems met with in practical work.

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..... | 2 |
| 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> | 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 |
| | <hr/> 12 | | <hr/> 12 |

SOPHOMORE YEAR.

| | | | |
|---------------------------------------|----------|---------------------------------------|----------|
| English 2..... | 2 | English 2..... | 2 |
| Literature. | | Literature. | |
| English 3..... | 1 | English 3..... | 1 |
| Composition. | | Composition. | |
| History 2..... | 2 | History 2..... | 2 |
| English. | | English. | |
| Mathematics 4..... | 6 | Mathematics 5..... | 6 |
| Analytics. | | Calculus. | |
| Mechanical Engineering 3..... | 3 | Mechanical Engineering 4..... | 3 |
| Elementary Steam Engineering. | | Kinematics. | |
| Military Science 1..... | 1 | Military Science 1..... | 1 |
| Drill Regulations. | | Drill Regulations. | |
| Physics 4..... | 3 | Physics 4..... | 3 |
| General. | | General. | |
| | <hr/> 18 | | <hr/> 18 |
| <i>Drawing 6.....</i> | 2 | <i>Drawing 6.....</i> | 4 |
| <i>Drawing 33.....</i> | 2 | <i>Mechanical Engineering 16.....</i> | 2 |
| <i>Mechanical Engineering 15.....</i> | 4 | <i>Mechanical Engineering 17.....</i> | 4 |
| <i>Physics 4.....</i> | 2 | <i>Physics 4.....</i> | 2 |
| | <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. | |
| English 5..... | 1 | English 5..... | 1 |
| Argumentation. | | Argumentation. | |
| 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 |
| Eng. Mechanics. | | Eng. Mechanics. | |
| | <hr/> 15 | | <hr/> 15 |
| <i>Chemistry 1a.....</i> | <i>2</i> | <i>Chemistry 1a.....</i> | <i>2</i> |
| <i>Civil Engineering 6.....</i> | <i>2</i> | <i>Mechanical Engineering 18.....</i> | <i>3</i> |
| <i>Mechanical Engineering 18.....</i> | <i>3</i> | <i>Mechanical Engineering 19.....</i> | <i>4</i> |
| <i>Mechanical Engineering 19.....</i> | <i>4</i> | <i>Electrical Engineering 5.....</i> | <i>2</i> |
| | <hr/> 11 | <i>Civil Engineering 12.....</i> | <i>2</i> |
| | | | <hr/> 13 |

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..... | 6 | Mechanical Engineering 8..... | 3 |
| Thermodynamics. | | Eng. Design. | |
| Mechanical Engineering 8..... | 3 | Mechanical Engineering 9..... | 3 |
| Eng. Design. | | Gas Engines. | |
| Military Science 2..... | 1 | | |
| | <hr/> 17 | | <hr/> 13 |
| <i>Mechanical Engineering 20.....</i> | <i>2</i> | <i>Mechanical Engineering 21.....</i> | <i>4</i> |
| <i>Mechanical Engineering 21.....</i> | <i>4</i> | <i>Mechanical Engineering 22.....</i> | <i>6</i> |
| <i>Mechanical Engineering 22.....</i> | <i>4</i> | | |
| | <hr/> 10 | | <hr/> 10 |

DEPARTMENT OF MECHANICAL ENGINEERING.

PROFESSOR FERMIER, ASSOCIATE PROFESSOR H. E. SMITH, MR. HERRINGTON, MR. CHAPPELLE, MR. BECHERT, MR. L. B. MCMILLAN, MR. MORLEY, MR. STANDISH.

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-book, 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 notebook 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 all engineering courses.)

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, VI; also in the Junior year of Courses IV, V, VIII, and in the second term of the Junior 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 in the Junior year of Courses V, 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.)

6. Engineering Mechanics. Junior. First and second terms, 2 hours a week.

The mechanics of engineering problems arising in mechanical engineering work, with particular reference to the foundation principles involved in the analytical solution of problems involving the statics and dynamics of a material point and of a rigid body.

Text: Applied Mechanics, *Hancock*.

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, 6 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: Thermodynamics, *Peabody*.

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, 3 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.)

PRACTICE COURSES.

Note.—To secure credit for the courses in shop practice, the student must do more than finish a certain number of exercises. He will be expected to put in full catalogue time 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 engineering courses.)

13a. Carpentry. Freshman. First term, 4 hours a week.

A modification of course 13.

(Required in Course I, 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 engineering courses.)

Note.—Courses 13 and 14 together constitute a year's work, 6 hours a week. The Freshman engineering students 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 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.)

Note.—Patterns will be made the same as in commercial shops, but molding and casting can not be in other than brass, owing to limited foundry equipment.

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 Supplee's handbook.

(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 Supplee*.

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, VIII, and in the first term only of the Junior year of Course IV.)

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 hand, 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 ice plant and cold storage are also available for student study and testing.

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.

COURSE IN TEXTILE ENGINEERING.

The object of this course 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. | |
| | <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.

| | | | |
|--|----------|-----------------------------------|----------|
| Chemistry 1a..... | 3 | Chemistry 1a..... | 3 |
| Inorganic. | | Inorganic. | |
| English 2..... | 2 | English 2..... | 2 |
| Literature. | | Literature. | |
| English 3..... | 1 | English 3..... | 1 |
| Composition. | | Composition. | |
| History 2..... | 2 | History 2..... | 2 |
| English. | | English. | |
| Mechanical Engineering 3..... | 3 | Mechanical Engineering 4..... | 3 |
| Elementary Steam Engineering. | | Kinematics. | |
| Military Science 1..... | 1 | Military Science 1..... | 1 |
| Drill Regulations. | | Drill Regulations. | |
| Physics 4..... | 3 | Physics 4..... | 3 |
| General. | | General. | |
| Textile Engineering 1..... | 3 | Textile Engineering 1..... | 3 |
| Designing. | | Designing. | |
| | <hr/> 18 | | <hr/> 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> | | |
| | <hr/> 10 | | <hr/> 10 |

JUNIOR YEAR.

| First Term. | Hours per week. | Second Term. | Hours per week. |
|---------------------------------|-----------------------|-------------------------------|-----------------------|
| Chemistry 4..... | 2 | Electrical Engineering 5..... | 4 |
| Organic. | | Electrical Machinery. | |
| English 5..... | 1 | Textile Engineering 5..... | 1 |
| Argumentation. | | Cotton Classing. | |
| Textile Engineering 2a..... | 6 | Chemistry 4..... | 2 |
| Yarn Manufacture | | Organic. | |
| Textile Engineering 3..... | 3 | English 5..... | 1 |
| Designing. | | Argumentation. | |
| Textile Engineering 4..... | 1 | Textile Engineering 2a..... | 3 |
| Cotton Classing. | | Yarn Manufacture. | |
| Textile Engineering 6..... | 2 | Textile Engineering 3..... | 3 |
| Power Weaving. | | Designing. | |
| | | Textile Engineering 6..... | 2 |
| | | Power Weaving. | |
| | <hr/> | | <hr/> |
| | 15 | | 16 |
| Chemistry 4..... | 2 | Chemistry 4..... | 2 |
| Mechanical Engineering 19b..... | 4 | Electrical Engineering 5..... | 2 |
| Textile Engineering 2a..... | 2 | Textile Engineering 2a..... | 4 |
| Textile Engineering 6..... | 4 | Textile Engineering 6..... | 4 |
| | <hr/> | | <hr/> |
| | 12 | | 12 |

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. | |
| Military Science 2..... | 1 | Textile Engineering 11..... | 2 |
| | | Mill Management. | |
| | <hr/> | | <hr/> |
| | 16 | | 17 |
| Chemistry 12..... | 2 | Textile Engineering 7..... | 4 |
| Textile Engineering 7..... | 4 | Textile Engineering 9..... | 6 |
| Textile Engineering 9..... | 4 | | |
| | <hr/> | | <hr/> |
| | 10 | | 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 operation of feeder and picking machinery, carding, drawing, slubbing, rov-

ing, 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 and in the two-year course.)

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. First 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.

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 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.

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 2..... | 3 | Textile Engineering 2..... | 3 |
| Yarn Manufacture. | | Yarn Manufacture. | |
| Textile Engineering 6a..... | 3 | Textile Engineering 6a..... | 3 |
| Weaving. | | Weaving. | |
| | <hr/> 12 | | <hr/> 12 |
| <i>Drawing 23</i> | 1 | <i>Drawing 23</i> | 1 |
| <i>Drawing 24</i> | 2 | <i>Drawing 24</i> | 2 |
| <i>Mechanical Engineering 13a</i> | 4 | <i>Mechanical Engineering 14a</i> | 4 |
| <i>Textile Engineering 2</i> | 2 | <i>Textile Engineering 2</i> | 4 |
| <i>Textile Engineering 6a</i> | 4 | <i>Textile Engineering 6a</i> | 2 |
| | <hr/> 13 | | <hr/> 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. | |
| | <hr/> 13 | | <hr/> 12 |
| <i>Drawing 25</i> | 4 | <i>Drawing 25</i> | 4 |
| <i>Mechanical Engineering 15</i> | 4 | <i>Mechanical Engineering 19b</i> | 4 |
| <i>Textile Engineering 7</i> | 4 | <i>Textile Engineering 7</i> | 4 |
| <i>Textile Engineering 9a</i> | 4 | <i>Textile Engineering 9a</i> | 4 |
| | <hr/> 16 | | <hr/> 16 |

SUMMER SCHOOL OF COTTON CLASSING.

The fifth session of the Summer School of Cotton Classing of the Agricultural and Mechanical College of Texas will open June 16, 1913 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.

Note.—The number in parenthesis following the name of a department refers to the number of the course as shown in the description of that department in the thirty-third annual catalogue.

| 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. | Hours 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.)

FIFTH YEAR.

| First Term. | Hours per week. | Second Term. | Hours per week. |
|---|-----------------------|---|-----------------------|
| Electrical Engineering (5)..... | 3 | Electrical Engineering (13)..... | 3 |
| Elec. Design. | | Power Plant Design. | |
| Electrical Engineering (6)..... | 3 | Electrical Engineering (6)..... | 3 |
| Adv. Elec. Mach. | | Adv. Elec. Mach. | |
| Electrical Engineering (12)..... | 3 | Electrical Engineering (14) | |
| Elec. Power Distribution. | | Electric Railways. | |
| Elective..... | 6 | or Electrical Engineering (16) | |
| | | Telephone Eng. | |
| | | or Electrical Engineering (15).... | 3 |
| | | Illuminating Eng. | |
| | | Elective..... | 6 |
| <i>Electrical Engineering (5), (6).....</i> | <i>8</i> | <i>Electrical Engineering (5), (6),</i> | |
| | | <i>(14), or (15), or (16).....</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 |
| Mechanical Engineering..... | 8 | Mechanical Engineering..... | 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 |
| Textile Engineering (4), (10)..... | 8 | Textile Engineering (4), (10)..... | 8 |
| Elective..... | 2 | Elective..... | 2 |

General Studies

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING.

CHEMISTRY.

PROFESSOR BLAKE, DR. HEDGES, MR. NELSON, MR. THORNTON,
MR. NEWTON.

The work in Chemistry begins in the Sophomore year of the courses in Agriculture and Chemical and Textile Engineering, and in the Junior year and 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. In order to facilitate the work of the student, standardized reagents are supplied by the instructor.

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, Remsen.*

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.)

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 methods 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: Introduction to Geology, *Scott*; Economic Geology of the United States, *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 fibers, dyes, dyestuffs and mordants, together with the principles and appliances involved in the commercial coloring of textiles, especially cotton and woollen 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.)

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, MR. 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 the first term, in all Engineering Courses; in the second term; in all 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. COPER, MR. WOODS, MR. ROSS, MR. FRIZZELL, MR. GUNTER,
MR. CLICK, MR. POWELL.

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. CANFIELD.

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; *Trout*; Source Book, *Lee*; Atlas of English History, *Gardiner*.

ECONOMICS.

ASSOCIATE PROFESSOR LEAVELL.

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.

(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 MATHEMATICS.

PROFESSOR PURYEAR, ASSOCIATE PROFESSOR R. F. SMITH, ASSISTANT
 PROFESSOR J. W. MITCHELL, ASSISTANT PROFESSOR MICHE,

 ASSISTANT PROFESSOR GARNER, MR. JONES, MR.
 NICHOLS, MR. BOND.

Instruction in this department is given by the use of approved text-books, 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.

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.

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,

curvature, maxima and minima; integration, lengths, areas, volumes, moments of inertia; centers 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 all four-year engineering Courses except VI.)

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.)

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 organizations 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 and second terms, 1 hour 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. First term, 1 hour a week.

This course includes the study of Napoleon's Italian 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.

Texts: Napoleon Bonaparte's First Campaign, *Sargent*; The Campaign of Marengo, *Sargent*; Military Map Reading, *Beach*.

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. LEHMANN, MR. SKEELER, MR. MCADAMS, STUDENT ASSISTANTS
MR. BROWN AND MR. LANGFORD.

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.

Since a thorough grounding in the fundamental principles of physics is essential as a prerequisite for the more technical work of the several courses from which students are graduated, effort is made to give general rather than specific instruction in this department.

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 physical 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.

Light: 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 lathe, 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 1913-14.

| First Term. | Thursday January 29. | Friday January 30. | Saturday, January 31. | Monday, February 2. | Tuesday, February 3. | Wednesday, February 4. |
|--------------|-------------------------|-----------------------|--------------------------|------------------------|-------------------------|---------------------------|
| Fresh. Ag. | Phys. 1 | Math. 11 | Biol. 1 | M. E. 1 | Hist. 1 | |
| Fresh. Eng. | Draw. 2 | Math. 1 | Phys. 3 | M. E. 1 | Math. 2 | M. E. 2 |
| Fresh. Arch. | Draw. 2 | Math. 1 | Phys. 3 | M. E. 1 | Math. 2 | |
| Fresh. A. E. | Draw. 2 | Math. 1 | Phys. 3 | M. E. 1 | Math. 2 | |
| Soph. Ag. | Phys. 2 | Engl. 2 Mil. Sc. 1 | Vet. Sc. 1 Agr. 2a | Chem. 1a | Hort. 1a | Biol. 2 |
| Soph. A. E. | | Engl. 2 Mil. Sc. 1 | Arch. 27 | Math. 4 | Hist. 2 | Arch. 26 |
| Soph. Arch. | | Engl. 2 Mil. Sc. 1 | Arch. 27 | Math. 4 | Hist. 2 | Arch. 26 |
| Soph. Ch. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | | Math. 4 | Hist. 2 | Chem. 1 |
| Soph. C. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | | Math. 4 | Hist. 2 | C. E. 1 |
| Soph. E. E. | | Engl. 2 Mil. Sc. 1 | | Math. 4 | Hist. 2 | E. E. 1 |
| Soph. M. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | | Math. 4 | Hist. 2 | M. E. 3 |
| Soph. T. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | T. E. 1 | Chem. 1a | Hist. 2 | M. E. 3 |
| Jun. Ag. (A) | Chem. 2 | Agr. 3 | Chem. 4 Biol. 3 | Engl. 4 | Vet. Sc. 2 | Ent. 1 Agr. 4 |
| Jun. Ag. (B) | Chem. 2 | Agr. 3 Hort. 3 | Chem. 4 Biol. 3 | Engl. 4 | Vet. Sc. 2 | Ent. 1 Agr. 4 |
| Jun. Ag. (C) | Chem. 2 | Agr. 3 | Chem. 4 Biol. 3 | Engl. 4 | Vet. Sc. 2 | Ent. 1 A. H. 5 |
| Jun. Ag. (D) | Chem. 2 | Agr. 3 | Chem. 4 | Engl. 4 | Vet. Sc. 2 | D. H. 2 |
| Jun. Arch. | Arch. 30 | Arch. 31 Engl. 5 | Arch. 34 | Chem. 1a | C. E. 6 | |
| Jun. A. E. | Arch. 30 | Arch. 31 Engl. 5 | Arch. 34 | Chem. 1a | C. E. 6 | M. E. 3 |
| Jun. Ch. E. | Math. 6 | C. E. 7 Engl. 5 | Chem. 4 | Chem. 5 | Ch. E. 1 | M. E. 3 |

| Jun. C. E. | Math. 6 | C. E. 7 Engl. 5 | C. E. 5 | Chem. 1a | C. E. 6 | M. E. 3 |
|---------------------|----------|----------------------------------|------------------------------|------------------------|-------------------|----------------------|
| Jun. E. E. | Math. 6 | Engl. 5 | E. E. 3 | Chem. 1a | C. E. 6 | M. E. 3 |
| Jun. M. E. | Math. 6 | M. E. 5 Engl. 5 | M. E. 6 | Chem. 1a | C. E. 6 | |
| Jun. T. E. | | T. E. 3 Engl. 5 | Chem. 4 | T. E. 2 | T. E. 6 | T. E. 4 |
| Senior Ag. (A) | Econ. 1 | Biol. 4 Chem. 6 Biol. 6 | Agr. 5 Chem. 7 Biol. 5 | Agr. 8 Mil. Sc. 2 | Agr. 6 | Agr. 7 |
| Senior Ag. (B) | Econ. 1 | Biol. 4 Chem. 6 Biol. 6 | Agr. 5 Chem. 7 Biol. 5 | Hort. 8 Mil. Sc. 2 | Hort. 7 Agr. 6 | Agr. 7 |
| Senior Ag. (C) | Econ. 1 | A. H. 8 Chem. 6 Vet. Sc. 6 | Chem. 7 | A. H. 7 Mil. Sc. 2 | Agr. 6 | Agr. 7 Vet. Sc. 7 |
| Senior Ag. (D) | Econ. 1 | | D. H. 4 | Biol. 7 Mil. Sc. 2 | Agr. 6 | A. H. 6 |
| Senior Arch. | Econ. 1 | | Arch. 40 | Mil. Sc. 2 | | C. E. 14 |
| Senior A. E. | Econ. 1 | C. E. 18 | Arch. 40 | Mil. Sc. 2 | M. E. 5a | C. E. 14 |
| Senior Ch. E. | Econ. 1 | M. E. 5 | M. E. 6 | Ch. E. 5 Mil. Sc. 2 | C. E. 15 | Ch. E. 6 |
| Senior C. E. | Econ. 1 | C. E. 18 | C. E. 16 | C. E. 13 Mil. Sc. 2 | C. E. 15 | C. E. 17 |
| Senior E. E. | Econ. 1 | E. E. 8 | C. E. 16 | E. E. 10 Mil. Sc. 2 | M. E. 5a | E. E. 9 |
| Senior M. E. | Econ. 1 | M. E. 8 | | Mil. Sc. 2 | Ch. E. 1 | M. E. 7 |
| Senior T. E. | Econ. 1 | | Chem. 12 | T. E. 9 Mil. Sc. 2 | T. E. 8 | T. E. 7 |
| 1st Yr. 2-yr. Ag. | Engl. 9 | Biol. 15 | | | Hort. 15 | Agr. 15 |
| 1st Yr. 2-yr. T. E. | Engl. 9 | | T. E. 1 | T. E. 2 | T. E. 6a | |
| 2nd Yr. 2-yr. Ag. | Engl. 10 | Hort. 3 | Chem. 20 | | D. H. 16 | Agr. 17 |
| 2nd Yr. 2-yr. T. E. | Engl. 10 | T. E. 3 | T. E. 16 | T. E. 9a | | T. E. 7 |

Heavy type indicates that the examination begins at 1:00 P. M.
Other examinations begin at 8:30 A. M.

EXAMINATION SCHEDULE, SECOND TERM, SESSION 1913-14.

| Second Term. | Monday, May 25. | Tuesday, May 26. | Wednesday, May 27. | Thursday, May 28. | Friday, May 29. | Saturday, May 30. |
|------------------------|--------------------|-----------------------|-----------------------|----------------------|--------------------------------|---------------------------------|
| Senior Ag. (A) | Biol. 4 Biol. 5 | Agr. 10 T. E. 5 | Econ. 2 | Agr. 6 | Biol. 6 Agr. 8 Chem. 6 | Agr. 9 Chem. 8 |
| Senior Ag. (B) | Biol. 4 Biol. 5 | Hort. 9 T. E. 5 | Econ. 2 | Agr. 6 | Hort. 10 Chem. 6 Biol. 6 | Hort. 11 Chem. 8 |
| Senior Ag. (C) | Vet. Sc. 4 | A. H. 7 T. E. 5 | Econ. 2 | Agr. 6 Vet. Sc. 6 | A. H. 9 Chem. 6 | Vet. Sc. 7 Agr. 9 Chem. 8 |
| Senior Ag. (D) | Vet. Sc. 4 | D. H. 5 | Econ. 2 | Agr. 6 | Biol. 7 | Chem. 9 |
| Senior Arch. | Arch. 41 | | Econ. 2 | | | Arch. 42 |
| Senior A. E. | Arch. 41 | | Econ. 2 | | | Chem. 10 |
| Senior Ch. E. | Chem. 11 | M. E. 5 | Econ. 2 | Ch. E. 6 | M. E. 6 | Ch. E. 5 |
| Senior C. E. | C. E. 20 | | Econ. 2 | C. E. 21 | C. E. 22 | Chem. 10 |
| Senior E. E. | E. E. 11 | E. E. 10 | Econ. 2 | E. E. 9 | E. E. 8 | M. E. 5a |
| Senior M. E. | | Ch. E. 3 | Econ. 2 | | M. E. 9 | M. E. 8 |
| Senior T. E. | T. E. 11 | T. E. 10 | Econ. 2 | T. E. 9 | T. E. 8 | T. E. 7 |
| 2nd Yr. 2-yr. Ag. | Agr. 18 | Vet. Sc. 16 | Ent. 10 | A. H. 18 A. H. 17 | Engl. 10 | Chem. 20 |
| 2nd Yr. 2-yr. T. E. | T. E. 11 | | T. E. 16 | T. E. 3 | Engl. 10 | T. E. 7 |
| Fresh. Ag. | Monday, June 1. | Tuesday, June 2. | Wednesday, June 3. | Thursday, June 4. | Friday, June 5. | Saturday, June 6. |
| Fresh. Eng. | Math. 11 | Biol. 1 | Phys. 1 | D. H. 1 | Hist. 1 | |
| Fresh. Arch. | Phys. 3 | M. E. 2 | Math. 2 | Draw. 2 | Math. 3 | M. E. 1 |
| Fresh. Arch. and A. E. | Phys. 3 | Arch. 24 | Math. 2 | Draw. 2 | Math. 3 | M. E. 1 |
| Soph. Ag. | Hort. 2 | Engl. 2 Mil. Sc. 1 | A. H. 4 A. H. 3 | Chem. 1a | Agr. 2 | Biol. 2 |
| Soph. Arch. and A. E. | Arch. 26 | Engl. 2 Mil. Sc. 1 | Math. 5 | Phys. 6 | Hist. 2 | Arch. 27 |

| | | | | | | |
|---------------------|----------------------|-----------------------|--------------------|----------|------------------------------|----------|
| Soph. Ch. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | Math. 5 | Chem. 1 | Hist. 2 | |
| Soph. C. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | Math. 5 | | Hist. 2 | C. E. 4 |
| Soph. E. E. | Phys. 7 | Engl. 2 Mil. Sc. 1 | Math. 5 | Phys. 8 | Hist. 2 | E. E. 2 |
| Soph. M. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | Math. 5 | | Hist. 2 | M. E. 4 |
| Soph. T. E. | Phys. 4 | Engl. 2 Mil. Sc. 1 | T. E. 1 | Chem. 1a | Hist. 2 | M. E. 4 |
| Jun. Ag. (A) | Ent. 2 | Engl. 4 Vet. Sc. 3 | Hort. 4 | Chem. 2 | Chem. 4 Agr. 4 Biol. 3 | Agr. 3 |
| Jun. Ag. (B) | Ent. 2 Hort. 6 | Engl. 4 Vet. Sc. 3 | Hort. 4 Hort. 5 | Chem. 2 | Chem. 4 Agr. 4 Biol. 3 | Agr. 3 |
| Jun. Ag. (C) | Ent. 2 Vet. Sc. 5 | Engl. 4 Vet. Sc. 3 | A. H. 5 | Chem. 2 | Chem. 4 Biol. 3 | Agr. 3 |
| Jun. Ag. (D) | Vet. Sc. 5 | Engl. 4 Vet. Sc. 3 | D. H. 3 | Chem. 2 | Chem. 4 | Agr. 3 |
| Jun. Arch. | | E. E. 6 Arch. 35 | C. E. 12 | Chem. 1a | | Arch. 36 |
| Jun. A. E. | Phys. 7 | E. E. 6 Arch. 35 | C. E. 12 | Chem. 1a | C. E. 10 | Arch. 36 |
| Jun. Ch. E. | E. E. 5 | Ch. E. 3 | C. E. 7 | C. E. 6a | Chem. 4 | M. E. 4 |
| Jun. C. E. | E. E. 5 | C. E. 11 | C. E. 7 | Chem. 1a | C. E. 10 | C. E. 9 |
| * Jun. E. E. | E. E. 13 | C. E. 3 | E. E. 12 | Chem. 1a | E. E. 3 E. E. 4 | M. E. 4 |
| Jun. M. E. | E. E. 5 | M. E. 5 | C. E. 12 | Chem. 1a | M. E. 6 | |
| Jun. T. E. | E. E. 5 | T. E. 5 | T. E. 3 | T. E. 6 | Chem. 4 | T. E. 2 |
| 1st Yr. 2-yr. Ag. | Hort. 2 | Agr. 16 | Biol. 16 | A. H. 16 | Engl. 9 | |
| 1st Yr. 2-yr. T. E. | | | T. E. 1 | T. E. 6a | Engl. 9 | T. E. 2 |

Heavy type indicates that the examination begins at 1:00 P. M.
Other examinations begin at 8:30 A. M.

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 1912-1913 will be held according to the following

Schedule.

| September 22. | | September 23. | |
|---------------|-------------|---------------|----------------|
| 8:30 a. m. | 1:00 p. m. | 8:30 a. m. | 1:00 p. m. |
| Agron. 2 | Agron. 16 | Agron. 3 | Agron. 4 |
| Arch. 3 | A. H. 3 | A. H. 4, 5 | A. H. 16 |
| Biol. 3 | Arch. 6 | Arch. 8 | Chem. 1, 1a, 4 |
| C. E. 10 | Biol. 1 | Biol. 2, 16 | C. E. 4, 6a, 9 |
| E. E. 4, 5, 6 | Ch. E. 3 | Chem. 2 | D. H. 1 |
| Engl. 9 | C. E. 3, 11 | C. E. 7, 12 | Draw. 2 |
| Ent. 2 | E. E. 7 | D. H. 3 | E. E. 2 |
| Hort. 2, 6 | Engl. 2 | E. E. 3 | Hist. 1 |
| Math. 11 | Hist. 2 | Engl. 4 | Math. 3 |
| M. E. 4 | Hort. 5 | Hort. 4 | M. E. 6 |
| Phys. 3, 4, 7 | M. E. 2, 5 | Math. 2, 5 | Phys. 8 |
| Vet. Sc. 5 | Mil. Sc. 1 | M. E. 1 | T. E. 6, 6a |
| | T. E. 2, 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 1912-1913, 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 Mathematics, English, History, Economics, Foreign Languages, and Drawing, and quarters for the administrative offices, the library, and the armory. 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, Architecture, Drawing 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 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 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 comprises 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 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 possible 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 encyclopædias, 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 77 standard magazines, reviews and technical journals. 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, amounting to more than 1000 bound volumes and pamphlets a year. The greater part of the publications of the U. S. Department of Agriculture are on file and a complete card index for all of these is maintained.

The Library is open six days in the week from 8:30 a. m. to 4:30 p. m.

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 weekly classes on Sunday nights, and Bible study classes, in which about 475 students are enrolled, in the several dormitories 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 erected on the College campus.

ATHLETICS.

The usual forms of athletic sports are permitted, subject to the following regulations:

1. 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.

2. Withdrawal from College in the course of any term for any cause except sickness shall debar from participation in intercollegiate athletics until the work of that term shall have been successfully completed by students so withdrawing.

3. Officers and members of the football team shall not be allowed to be absent on trips more than eight working days; of the baseball team, more than eight; of the track team, more than six; of the basketball team, more than six. If a student is a member of more than one organization, his absences on such trips shall not be more than twelve working days in a session.

Members of teams shall be responsible to the Physical Director or his representatives for regular attendance at athletic practice, and for their conduct while at athletic practice and while on trips.

Thirty-six members of the football squad, twenty-four of the baseball squad, fifteen of the track squad and twelve of the basket ball squad are excused from drill during the respective seasons; the duration of the exemption to be determined by Dean and the Commandant.

The Faculty Committee on Athletics is intrusted with the general oversight of athletics, and the Physical Director will submit to this committee all schedules and contracts for intercollegiate contests.

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.

ENTRANCE EXAMINATIONS AT AFFILIATED SCHOOLS.

Examination for admission to the Freshman class will be held at affiliated schools upon request of the Superintendent or Principal. Such examinations will be governed by the following regulations:

1. Not later than May 20 the Dean will send under seal, entrance examination questions to affiliated schools which have applied for them.
2. The examinations will be held at such places as the examiners may appoint.
3. The dates for the examinations in 1914 will be as follows:
Monday, May 25, 9 a. m., Algebra; 3 p. m., History. Tuesday, May 26, 9 a. m., Geometry; 3 p. m., English.
4. The examiner may charge each applicant a fee of \$1.00, to be retained by the examiner.
5. The examiner shall open the sealed envelopes containing the examination questions in the presence of the applicants.
6. The answers shall be written in ink or on legal cap paper, on one side only, and the paper shall close with a pledge that no aid has been given or received.
7. The examination on any one subject shall not continue more than three hours.
8. As soon as the series of examinations is completed, the examiner shall forward the papers to the Dean with a certificate that the examinations have been conducted fairly and in accordance with these regulations.

LIST OF AFFILIATED SCHOOLS.

| Name. | Superintendent. | Location. |
|-------------------------------------|----------------------------|---------------|
| J. M. Abbott's High School..... | J. M. Abbott..... | San Angelo. |
| 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. |

| Name. | Superintendent. | Location. |
|-----------------------------------|------------------------|-----------------|
| 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. |
| 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. Notley..... | 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. Burney..... | 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. |
| Coryell City School..... | Boone Huddleston..... | Coryell. |
| 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. |

| Name. | Superintendent. | Location. |
|------------------------------|------------------|------------------|
| 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. |
| Edna High School | J. W. Bagby | Edna. |
| El Campo Public School | A. W. Griggs | El Campo. |
| 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. |
| Flatonina High School | M. A. McDonald | Flatonina. |
| 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. J. Smith | Godley. |
| Goldthwaite High School | A. J. Street | Goldthwaite. |
| Goliad Public School | T. C. 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. |
| Grandbury High School | R. P. Jarrett | Grandbury. |
| Grand Prairie High School | J. W. Whitener | Grand Prairie. |
| Grand Saline School | J. W. Takington | 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. |
| 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 | Houston Heights. |
| 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. Cogger | Hutto. |
| Iowa Park Public School | J. A. Ramsey | Iowa Park. |
| Italy High School | E. W. Rehy | Italy. |
| Itasca High School | G. L. Marshall | Itasca. |

| Name. | Superintendent. | Location. |
|--------------------------------------|----------------------|----------------|
| Jacksboro High School. | L. Z. Timmons. | Jacksboro. |
| Jacksonville Public School. | B. J. Albritton. | Jacksonville. |
| Jefferson High School. | J. T. Alexander. | Jefferson. |
| Jewett High School. | M. V. Peterson. | Jewett. |
| John C. French High School. | O. R. Hewett. | Cuero. |
| Johnson City High School. | D. F. McCollum. | Johnson City. |
| Junction High School. | | Junction. |
| 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. | Hatchiff. |
| Killeen High School. | M. P. Dalton. | Killeen. |
| Kirbyville High School. | R. W. Persous. | 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. | C. A. Jay. | Laneville. |
| La Porte Public School. | James A. Kelley. | La Porte. |
| Laredo High School. | L. J. Christen. | Laredo. |
| Laredo Seminary. | Miss N. E. Holding. | Laredo. |
| 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 Almema 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. | W. F. Doughty. | 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. |
| Milford High School. | S. E. Green. | Milford. |
| 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. |

| Name. | Superintendent. | Location. |
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| 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. |
| 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..... | N. 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..... | N. C. Chaney..... | 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 Elen 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. |
| Royce City High School..... | Walter Platt..... | Royce 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 High School..... | S. P. Collins..... | Scranton. |
| Sealy High School..... | S. S. Boutwell..... | Sealy. |
| Seguin High School..... | R. E. L. Adams..... | Seguin. |

| Name. | Superintendent. | Location. |
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| 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. |
| 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 | W. L. Bringhurst | 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. Sumrell | 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. |
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| 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. |

CATALOGUE OF STUDENTS.

SCHOOL OF AGRICULTURE.

Graduate Students.

| | |
|---------------------------|---|
| Moore, James Munroe..... | Fayette, Ala. <i>B. S., Alabama Polytechnic Institute, 1912.</i> |
| Patterson, John Carr..... | Clarendon. <i>B. S., A. & M. College of Texas, 1912.</i> |

Total, 2.

Seniors.

| | |
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| Bower, Luther Jasper..... | Stephenville. |
| Boswell, Douglas Byron..... | San Antonio. |
| Caldwell, Robert Ezekiel..... | Bryan. |
| Cardwell, Walter Wilcox..... | Lockhart. |
| <i>Graduate Lockhart High School.</i> | |
| Chewning, James Walter..... | Goodlett. |
| Connellee, Earn Tindall..... | Eastland. |
| Cowart, Ira Ellis..... | San Antonio. |
| Cox, Romie Willis..... | Childress. |
| Culbertson, Joe L..... | Waxahachie. |
| Dowell, Horace Bartlett..... | McKinney. |
| Eagleston, Edward Granville..... | Smithville. |
| <i>Graduate Carlisle Military Academy.</i> | |
| Egan, John Thomas..... | Denton. |
| Ehlinger, Rancier Burt..... | College Station. |
| Eversberg, Eugene August..... | Brenham. |
| Hall, George Graham..... | Houston. |
| Harrison, Ervin William, Jr..... | Greenville. |
| Jackson, Jesse Wilburn..... | Kosse. |
| James, Meredith Haddon, Jr..... | Bryan. |
| <i>Graduate Allen Academy.</i> | |
| Joplin, John Finley..... | Sipe Springs. |
| <i>Graduate Kerens High School.</i> | |
| Kelly, Charles Patrick..... | New York, N. Y. |
| Kennedy, Bruce Rankin..... | Greenville. |
| <i>Graduate Greenville High School.</i> | |
| Laake, Ernest William..... | New Ulm. |
| Lane, Grady J..... | Valley Mills. |
| Langdon, Young Mitchell..... | Hutchins. |
| Lockett, William Richard..... | Cleburne. |
| <i>Graduate Cleburne High School.</i> | |
| Lochridge, Charles Frank..... | Iowa Park. |
| Lodal, Martin Gorman..... | Gordon. |
| Lown, Franklin David..... | Thornton. |
| Miller, Richard Sandford..... | San Saba. |
| Miller, William Zachary..... | College Station. |
| O'Connor, Daniel..... | Laredo. |
| Ohlendorf, Walter..... | Lockhart. |
| Oliver, Clarence..... | Lampasas. |
| <i>Graduate Lampasas High School.</i> | |
| Roberts, Clay Adlai..... | Beaumont. |
| <i>Graduate Beaumont High School.</i> | |
| Scofield, James Arthur..... | Hillsboro. |
| Steel, Wallace W..... | Weatherford. |
| Stevens, Dillon Tarrant..... | St. Louis, Mo. |
| Stone, James Milton..... | Houston. |
| Taylor, Albion Burne..... | Burnet. |
| Thomson, Jasper McDonald..... | Florence. |
| <i>Graduate Florence High School.</i> | |
| Tolbert, Weimer Sidney..... | Miami. |

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| Wallis, Turner Thomas | Cuero. |
| Weinert, Herbert George Henry | Geronimo. |
| Whitfield, Charles Austin | San Angelo. |
| Young, Marvin Hooper | Montgomery. |
| Total, 45. | |

Juniors.

| | |
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| Altgelt, George Adolph | San Antonio. |
| Ayers, Edd Lee | DeLeon. |
| Ball, Bertus Clyde | Mansfield. |
| Beasley, Wyatt Gustie | Cleburne. |
| Boyett, Douglass Chilton | Bryan. |
| Bradley, Earl Iven | Memphis. |
| <i>Graduate Memphis High School.</i> | |
| Brundrett, Harold M. | Mesquite. |
| Buchanan, Harry Hines | Houston. |
| Clegg, Jake Barnes | Trinity. |
| <i>Graduate Trinity High School.</i> | |
| Courtney, Olden Key | Pettus. |
| Crockett, William Edwin | Prosper. |
| Dodson, Alfred Ewing | Petersburg. |
| Everett, George Dudley | Dallas. |
| <i>Graduate Dallas High School.</i> | |
| Fisher, John Kerwin Godfrey | Fort Worth. |
| Gardner, William Bradford | Falfurrias. |
| <i>Graduate Falfurrias High School.</i> | |
| Gibbens, Ernest | Kerrville. |
| Girardeau, Edward Reed, Jr. | Galveston. |
| <i>Graduate Ball High School.</i> | |
| Goodwin, James Calvin | Beaumont. |
| Green, Roy | Floydada. |
| Hanna, Russell Samuel | Denison. |
| Hoepfner, Fred | Houston. |
| Irby, Arthur H. | Beaumont. |
| <i>Graduate Beaumont High School.</i> | |
| James, Oregon Jewell | Monclova, Coah., Mex. |
| Jenson, John Christen | Coolidge. |
| Jordan, Gilbert Frederick | Fredericksburg. |
| Killough, David Thornton | Galveston. |
| Lane, George Irvine | Valley Mills. |
| Lenert, August Albert | LaGrange. |
| <i>Graduate LaGrange High School.</i> | |
| McDowell, John Clifton | Trinity. |
| <i>Graduate Groveton High School.</i> | |
| McGinnis, Perry Templeton | Terrell. |
| Melton, William Briscoe | Arden, N. C. |
| Miller, Arthur Charles | New Ulm. |
| Parr, Virgil Verser | Waelder. |
| Pendleton, George Clark | Farmersville. |
| Phillips, Frank Roy | Hebron. |
| Pumphrey, John Boyce, Jr. | Taylor. |
| Reed, William Neal | Sterling City. |
| <i>Graduate Sterling City Public School.</i> | |
| Rich, Lucian Guy | Forest. |
| Sanford, Roger Allen | Eagle Pass. |
| *Schiller, William Burton | Burlington. |
| Simpson, John N. | Aledo. |
| Snider, James Bailey | Walnut Springs. |
| Sparkman, Frank Alvin | Sterling City. |
| <i>Graduate Sterling City Public School.</i> | |
| Stelzig, Elo Henry | Payetteville. |
| Stroud, Milton Lee | Kaufman. |
| Tanner, Edward Livingston | San Antonio. |
| Templeton, Clive | San Antonio. |
| Thomson, Alexander Spotswood | Lockhart. |

*Deceased.

| | |
|---------------------------------|--------------|
| Warren, Cleon Barnes | Hewitt. |
| Washington, Walter Harris | Austin. |
| Waterhouse, Walter Howard | San Antonio. |
| Total, 51. | |

Sophomores.

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|---|------------------|
| Adriance, Guy Webb | Bryan. |
| Allen, Roderick Random | Palestine. |
| Bailey, Prince Arthur Frederick | Lott. |
| Barraco, Victor Anthony | Houston. |
| Beckmann, Albert Erhard | San Antonio. |
| Bosque, Robert Edward | Corsicana. |
| <i>Graduate State Orphan's High School.</i> | |
| Broun, Thomas Rogers | Greenwood. |
| Brown, Frank Marvin | Orange. |
| Brown, Leslie Walter | Mathis. |
| Bruton, David Derden | Comanche. |
| Bugbee, John Sherman | Clarendon. |
| Burges, Austin Earl | Dallas. |
| Campbell, Archibald Raymond | Plano. |
| <i>Graduate Plano High School.</i> | |
| Cherry, Thomas Graves | Giddings. |
| <i>Graduate Giddings Public School.</i> | |
| Clark, Samuel Finis | Hico. |
| <i>Graduate Hico Graded School.</i> | |
| Cochran, Clyde Vernon | Harwood. |
| Coleman, William Cowles | Athens. |
| Collins, Jack Clarence | Channing. |
| <i>Graduate Channing Public School.</i> | |
| Cowgill, Samuel Paul | San Benito. |
| Craig, William C., Jr. | Brownsville. |
| Crow, Floyd Arnold | Waco. |
| Davis, Charles J. | Corsicana. |
| <i>Graduate Corsicana High School.</i> | |
| Dodd, Grover Cleveland | Rosalie. |
| <i>Graduate Dodd City High School.</i> | |
| Donoho, Devada Lewis | George. |
| Eagleston, Charles Moulton Clark | Smithville. |
| Eckhardt, Robert William | Yorktown. |
| Eiland, Ernest Ralph | Rockdale. |
| Ellis, Howard Ferguson | Abbott. |
| Eschenburg, Arthur Carl | Floresville. |
| Francis, William Bebb | College Station. |
| <i>Graduate Allen Academy.</i> | |
| Gammill, Harold Harper | Bryan. |
| Graham, Cyrus Earl | Bryan. |
| Griffin, Henry Lawton | Henderson. |
| Gunn, Clifton Henry | Waelder. |
| Haller, Clarence Francis | Victoria. |
| Hanson, Wrathall King | San Antonio. |
| Hausser, Charles | Eagle Pass. |
| Hector, Wallace Bryan | Alpine. |
| Henderson, John Marion | Waelder. |
| Hill, Martin Elmo | Eastland. |
| Hill, Robert Allen | Brownwood. |
| Hinds, James Herbert | Bullard. |
| Holloway, Louis Edward | Dallas. |
| Hudson, Charles Britton | Bryan. |
| Hudson, Gay | Celeste. |
| Japhet, Alfred Kapp | Houston. |
| Jennings, Edgar Petty | Martindale. |
| <i>Graduate Martindale High School.</i> | |
| Jones, E. C. | San Antonio. |
| Jones, Lafayette Poindexter | Temple. |
| Keith, Henry Haywood | Beaumont. |

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| Kendrick, James Marcellus..... | Waco. |
| <i>Graduate Douglas Select School.</i> | |
| Kincheloe, James Matson..... | Hubbard. |
| Kinnard, Albert William, Jr..... | Bryan. |
| Klug, Harry Veatch..... | Dearborn. |
| Knolle, Miles..... | Industry. |
| Lambert, Homer G..... | San Antonio. |
| Loring, Martin David..... | Mason. |
| McCollum, Hollie Travis..... | Valley View. |
| McDonnell, George Burleson..... | Austin. |
| McFarland, Hugh..... | Brownwood. |
| Martin, William Patrick..... | Rotan. |
| Maury, Lewis..... | San Antonio. |
| Mayo, Harry Mash, Jr..... | Houston. |
| Meredith, Carlton..... | Houston. |
| Milner, R. T., Jr..... | College Station. |
| Mirus, Carl Fredrick..... | Corsicana. |
| <i>Graduate Corsicana High School.</i> | |
| Montague, Frank Orum..... | Rockdale. |
| <i>Graduate Rockdale High School.</i> | |
| Moore, John Hartwell..... | DeKalb. |
| Mowery, I. H..... | Almeda. |
| Nelms, Milton Richard..... | Dallas. |
| Oatman, Victor..... | Creedmoor. |
| Orand, David Howard, Jr..... | Waco. |
| O'Connor, Robert..... | Laredo. |
| Palmer, George Clark..... | Dunn. |
| Parker, Lester Raymond..... | Davis, Okla. |
| Person, Leo King..... | Lewisville, Ark. |
| Persons, David Henry..... | Hico. |
| <i>Graduate Hico High School.</i> | |
| Peters, Edgar Milton..... | Hondo. |
| <i>Graduate Marshall Training School.</i> | |
| Pumphrey, Reason Beal, Jr..... | San Antonio. |
| Reynolds, Edward Elsworth..... | Albany. |
| Rhodes, Henry Gholson, Jr..... | Bryan. |
| Rollins, John Wesley..... | Merit. |
| Sanders, Grover Cleveland..... | Greenville. |
| Sanders, James Leander..... | Lavernia. |
| Savage, Carl Hamilton..... | Bailey. |
| Schley, William Solomon..... | Gatesville. |
| Scott, Daniel Walton..... | McKinney. |
| Scott, Verne..... | El Paso. |
| Searight, Gilbert Alexander..... | Austin. |
| Sengelmann, Gustav Hans Ferdinand..... | Schulenburg. |
| Seymour, James Dunn..... | Columbus. |
| Sherley, Andrew Abram..... | Anna. |
| <i>Graduate Anna High School.</i> | |
| Skeeler, William John..... | Orange. |
| <i>Graduate Orange High School.</i> | |
| Skeen, Spence David..... | Handley. |
| Smilie, Joe Hanson..... | Baileyville. |
| Smilie, William Harry..... | Baileyville. |
| Smith, Edwin Terrell..... | Fostoria. |
| Stacks, Emory Jefferson..... | Palmer. |
| Stacks, Roberts C..... | Palmer. |
| Stallings, James Henry..... | Bryan. |
| Stangel, Wenzel Louis..... | Fort Worth. |
| <i>Graduate North Fort Worth High School.</i> | |
| Sterling, Edward Arthur, Jr..... | Tulsa, Okla. |
| Stiteler, Ernest Earl..... | Smithville. |
| Tanner, Carl..... | Wolfe City. |
| Terrell, Joseph Percy..... | Navasota. |
| Thomas, Carl Everett..... | Corpus Christi. |

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|---|------------------|
| Thomas, William Clinton | LaGrange. |
| <i>Graduate LaGrange High School.</i> | |
| Thomason, James Hendon | Huntsville. |
| Thornton, John McKinney | Gonzales. |
| Tigner, John Hughes | House. |
| Trew, Robert Lafayette | Myra. |
| Turner, Joseph Marston, Jr | Angleton. |
| Warren, Charles Frederick | Hewitt. |
| <i>Graduate Hewitt Public School.</i> | |
| Washam, Oscar Floyd | Hico. |
| <i>Graduate Hico High School.</i> | |
| Wellage, George Francis | Eagle Pass. |
| Wheless, William Meade | Beaumont. |
| <i>Graduate Beaumont High School.</i> | |
| White, John Parker | Lott. |
| White, Rufus David | Bynum. |
| Wisrodt, Clarence Emil Philip | Galveston. |
| Wood, Beall | San Marcos. |
| Wooten, Ralph Hudson | Senatobia, Miss. |
| Yeary, Horace Edwin | Farmersville. |
| <i>Graduate Farmersville High School.</i> | |
| Yeary, James Carroll | Farmersville. |
| <i>Graduate Farmersville High School.</i> | |
| Zuber, Neill Daniel | Bryan. |
| Total, 124. | |

Freshmen.

| | |
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| Abbott, John | Galveston. |
| Abbott, Thomas Jefferson | Mart. |
| Ainsworth, Bruce Shepard | Riesel. |
| <i>Graduate Riesel High School.</i> | |
| Allen, Joe Graham | Washington, Ind. |
| Amick, Oscar Floyd | Dalhart. |
| Andrews, Dallas Robert | Bryan. |
| Atchison, William Earl | Haskell. |
| <i>Graduate Haskell High School.</i> | |
| Atwell, Ulysses Sam | Hutchins. |
| Baker, Henry Cady | Navasota. |
| Bernal, Luis Ramirez | Eagle Pass. |
| Blakely, William Bassett | Richmond. |
| Bledsoe, William Scott | Lubbock. |
| Bollmann, Eric Joseph | Clarksville. |
| Boyett, Thomas Pinckney | Bryan. |
| Brailsford, Thomas Reed | Latexo. |
| <i>Graduate Crockett High School.</i> | |
| Brann, Lowesco | Shive. |
| Brown, Joe F. | Rock Springs. |
| Bruce, Andrew Davis | San Antonio. |
| Buck, Beaumont B. | Palestine. |
| Buckner, Louis McIntosh | Austin. |
| Bull, Alfred Castleman | Austin. |
| Burns, Douglass | Cuero. |
| Carleton, Howard Cantrell | Dallas. |
| Carter, James Quinton | Carrizo Springs. |
| Casey, Alfred Cecil | Burlington. |
| Clark, George Thomas | Waco. |
| Cole, Ransom James | Bryan. |
| Coleman, Everett Freeman | Prosper. |
| Collins, Willie Atmar | Groveton. |
| Connor, James Augustus | Lexington. |
| <i>Graduate Lexington Public School.</i> | |
| Copeland, Alvin B. | Huckabay. |
| Crawford, Vernon William | Fort Stockton. |
| Crocker, Norman G. | Center. |
| Crothers, William French | Brady. |
| Daugherty, Martin Marion | Alpine. |

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| Davenport, Ernest V..... | Eastland. |
| Dennis, Leon Chapman..... | Prince Bay, N. Y. |
| DeVlaming, Neville William..... | Kaufman. |
| Dibrell, James Crockett, Jr..... | Echo. |
| Donoho, Edward..... | San Antonio. |
| Dumas, Lawrence Washington..... | Bullard. |
| Edrington, Henry Clay..... | Fort Worth. |
| Ehlert, John Charles Fredrick..... | Brenham. |
| Ehlinger, Frank Charles..... | College Station. |
| Elder, Sam Enos..... | Clarksville. |
| Floyd, Nat Brelford..... | Pledger. |
| Foster, Charles Darwin..... | Riesel. |
| Foster, Thomas Hume..... | McKinney. |
| <i>Graduate McKinney High School.</i> | |
| Frazier, Jacob Moore, Jr..... | Belton. |
| Fuess, Carl Andrew..... | Cuero. |
| Gallman, Doyle Murphy..... | Quiangan, P. I. |
| Garrett, Melrose Truett..... | Merrimac. |
| <i>Graduate Crawford High School.</i> | |
| Gillespie, Jack Cole..... | Dallas. |
| Greene, Ossie Wendelken..... | Comanche. |
| Gregory, Haskell Thomas..... | Edgewood. |
| <i>Graduate Edgewood High School.</i> | |
| Grimes, Ezekiel William..... | Milford. |
| Hall, Robert Alison..... | Tarkington Prairie. |
| Harris, Carroll Joseph..... | Bryan. |
| Heath, Richard Hardy..... | Pittsburg. |
| Heldenfels, Grover Cleveland..... | Beeville. |
| Helm, Dury Lane..... | Clifton. |
| <i>Graduate Clifton High School.</i> | |
| Henry, Julian Lemonde..... | Lancaster. |
| Herring, William Douglass..... | Waco. |
| Hill, Samuel Edward..... | Bellville. |
| Hogue, Aubrey Lynn..... | Paris. |
| <i>Graduate Paris High School.</i> | |
| Jackson, John Henson..... | Richardson. |
| <i>Graduate Richardson High School.</i> | |
| Jennings, Weyman Clarence..... | Martindale. |
| Johnson, Albert Denarvous..... | Kaufman. |
| Johnson, Henry Isaac..... | Palestine. |
| Johnson, James Clyde..... | Richmond. |
| Jones, Richard..... | Bessmay. |
| <i>Graduate Buna High School.</i> | |
| Jones, Roy Colster..... | Myra. |
| Keasler, Thomas Frank..... | Mineral Wells. |
| Killough, Hugh Baxter..... | Center Point. |
| Lacy, William Horace..... | Tyler. |
| Lander, John William..... | Victoria. |
| Lauderdale, Jefferson Davis..... | Somerville. |
| Lawrence, Albert Sidney..... | Ravenna. |
| <i>Graduate Ravenna Public School.</i> | |
| Lawless, Frank Lucians..... | Lott. |
| Lockridge, Robert Napoleon..... | Iowa Park. |
| Loden, Homer Allen..... | Nacogdoches. |
| <i>Graduate Nacogdoches High School.</i> | |
| McBirney, William Carter..... | Chicago, Ill. |
| McDougald, Neill Robinson..... | Groveton. |
| McGilberry, Alton Earl..... | Shiro. |
| McGregor, Joel Ira..... | Millican. |
| McIver, James Dalrymple..... | Lexington. |
| McMillan, Roy Dillard..... | College Station. |
| Malloy, Henry Platter..... | Palestine. |
| Mangum, Eugene Edison..... | Groveton. |
| Martin, Charlie Brady..... | Bryan. |
| Massey, Raymond Rufus..... | Fort Worth. |

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| Mercer, Ernest Franklin | Atwell. |
| Meyers, Horace Daniel | Haskell. |
| Mikeska, Edwin Frank | Brenham. |
| Miller, Avery Ruben | Huckabay. |
| Miller, Herman Edward | Bellville. |
| Miller, Steve Paul | Athens. |
| <i>Graduate Athens High School.</i> | |
| Mizell, Dee Bart | Kaufman. |
| Moffett, George Clarence | Chillicothe. |
| <i>Graduate Chillicothe High School.</i> | |
| Mogford, Joseph Sayers | London. |
| Morgan, Ira Carroll | Cleburne. |
| Morris, Thomas Kyle | Valley Mills. |
| <i>Graduate Valley Mills High School.</i> | |
| Moses, Andrew | Lampasas. |
| <i>Graduate Lampasas High School.</i> | |
| Motley, Robert Lee | Grand Prairie. |
| <i>Graduate Grand Prairie High School.</i> | |
| Murphy, Alfred Winston | Fort Worth. |
| Nisbet, Walker Robert | San Angelo. |
| Oltorf, John Gibson | Marlin. |
| Otto, John August | Ottine. |
| Pedigo, Maxie Smith | Valley Mills. |
| <i>Graduate Valley Mills High School.</i> | |
| Pepper, John Wilson | Rock Springs. |
| Perkins, Cyrus Wilber | McKinney. |
| Perkins, Paul Richard | Nacogdoches. |
| <i>Graduate Nacogdoches High School.</i> | |
| Porter, Thomas Sharp | Boyd. |
| Powell, Ire Hicks | Center. |
| <i>Graduate Center High School.</i> | |
| Punchard, Herbert Gillespie | Riesel. |
| Radetzki, Gus Reese | Houston. |
| Ray, Paul Franklin | Belton. |
| <i>Graduate Belton High School.</i> | |
| Reuss, John Alfred | Cuero. |
| Rhodes, Albert Marshall | Bryan. |
| Richardson, Henry Haller | Buna. |
| <i>Graduate Buna High School.</i> | |
| Richardson, James Samuel | Henderson. |
| Richardson, Will Jack | Athens. |
| Robert, Jack Baker | Albany. |
| Roberts, Roy Webb | Bryan. |
| Robertson, Harper Walter | Waelder. |
| Rogers, Victor Lee | Aldridge. |
| <i>Graduate Buna High School.</i> | |
| Rust, Charles Edward | Galveston. |
| Sawyer, Joseph Zetuc | Clarendon. |
| Schultz, Walter Gustave | Fort Worth. |
| Seale, Homer Teague | Corsicana. |
| Skeen, Arthur John | Handley. |
| Slay, Clyde | Fort Worth. |
| Smith, Langston Montgomery | Tyler. |
| Steel, Charles McClure | Weatherford. |
| Suber, Tom Goodwin | College Station. |
| Taylor, J. Preston | Runge. |
| Thacker, Grady Monroe | Crowell. |
| Thaxton, Robert | Mason. |
| <i>Graduate Mason Public School.</i> | |
| Thomas, Charles Leonard | Marfa. |
| <i>Graduate Marfa High School.</i> | |
| Thornhill, Roy | Dallas. |
| Tom, Preston White | Runge. |
| Torti, Maurice Leo | Tyler. |
| <i>Graduate Tyler High School.</i> | |

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|---|-----------------|
| Trueheart, John Crawford | San Antonio. |
| Vance, John William | Gouldbusk. |
| Watson, John Leroy | Stephenville. |
| Whisenant, Herbert Wesley | Dallas. |
| Wilkinson, Clark Newton | Blooming Grove. |
| Williams, Stump Marvin | Wills Point. |
| Williford, Johnson | Houston. |
| Witcher, Loftin Verdery | Fort Worth. |
| <i>Graduate Fort Worth High School.</i> | |
| Withers, Warren Tilley | Bryan. |
| Wood, Charles Sterling | Bessmay. |
| <i>Graduate Buna High School.</i> | |
| Wood, Henry Fort | Swan. |
| Wood, William Henry | Mission. |
| Zincke, August George | Fredericksburg. |
| Total, 155. | |

TWO-YEAR COURSE IN AGRICULTURE.

Second Year.

| | |
|---|------------------|
| Barker, Fred Elijah | Palestine. |
| Barnhart, Charles Millett | Austin. |
| Bateman, Alex Rankin | Dublin. |
| Biggers, Oliver Nelson | Bonham. |
| Chappell, Robert Forrest | Brenham. |
| Eubank, James Hogg | Foard City. |
| Evans, Thomas | Hutto. |
| Findlater, Jean Martin | San Angelo. |
| Fowler, Gus Pearson | Spicewood. |
| Hinckley, Leon Carl | New Boston. |
| <i>Graduate New Boston High School.</i> | |
| Hinton, William Benton | Gainesville. |
| Hoffman, Carl Anton Leopold | Berlin, Germany. |
| Holekamp, Kurt August | Comfort. |
| King, James Bryant | Whitewright. |
| Krenek, Joseph | Dime Box. |
| McWilliams, George Leslie | Marshall. |
| Maddox, John Clyde | Nocona. |
| Martyn, William Pitt | Dallas. |
| Mays, Vernon Byrd | New Salem. |
| Mitchell, Claudie Lee | Winnboro. |
| Randolph, William Millican | Austin. |
| Robb, Chester J. | Gainesville. |
| Setzer, Walter Karl | Teague. |
| Weatherford, John Pierce | Driftwood. |
| Weir, Henry Howard | San Antonio. |
| Whaley, Beecher | Gainesville. |
| Total, 26. | |

First Year.

| | |
|---------------------------------------|----------------------|
| Aramburu, Henry | Mexico City, Mexico. |
| Arney, John Marion | Thornton. |
| Balboa, Rodrigo | Arriaga, Mexico. |
| Ballard, Curtis | Haskell. |
| Barse, William Horace | Fort Worth. |
| Bass, Matthew Lloyd | Houston. |
| Black, William Tom | McGregor. |
| <i>Graduate McGregor High School.</i> | |
| Bolton, Harrell Thomas | Waco. |
| Bouldin, David Wooldridge | Austin. |
| Boutwell, William Jones | Celeste. |
| Broome, George Stranahan | San Angelo. |
| Brown, John Ed., Jr. | Waco. |
| Bryant, George Fitzgerald | Whitewright. |
| Burrus, Swan Thompson | College Station. |

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|--------------------------|-----------------------|
| Caballero, Pedro Antonio | Nuevo Laredo, Mexico. |
| Carlisle, Edwin Fuller | Chapel Hill. |
| Clifton, George Whitney | Haskell. |
| Coleman, John Everett | Cotulla. |

Graduate Cotulla High School.

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|-------------------------------|--------------------|
| Collins, Carlos C. | North Roby. |
| Cover, John Steele | Elmendorf. |
| Crow, Louie Conley | Meridian. |
| Cunningham, Tom Martin | Jacksonville. |
| Davis, Granville Ewing | Grandview. |
| Duck, Ira B. | Dadeville. |
| Eckert, Willie John | Marlin. |
| Evans, George Noyes | San Antonio. |
| Federolf, Gus John | Brownsville. |
| FitzGerald, Paul Florea | Austin. |
| Franklin, Thomas Wiley | McKinney. |
| Frost, William | Mineral Wells. |
| Garland, Roy L. | Annona. |
| de la Garza, Manuel Francisco | N. Laredo, Mexico. |
| Gillespie, Hubert Walter | Dallas. |

Graduate Hardin School for Boys.

| | |
|-----------------------------|-----------------|
| Gillespie, William Edmonson | Alleyton. |
| Groeneveld, Eddie | Corpus Christi. |
| Hale, Carl Ray | Huckabay. |
| Harwood, Amasa Turner | Gonzales. |
| Hill, Mac Moran | McKinney. |

Graduate McKinney High School.

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|-----------------------|---------|
| Holick, Edward Weldon | Bryan. |
| Holman, Jesse Rogers | Weimar. |

Graduate Weimar Institute.

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|---------------------------|------------------|
| Holmgreen, Herbert Howard | San Antonio. |
| Houghton, Roy Edward | Lyford. |
| Hurt, Wilbur Torney | Dallas. |
| Johnston, Lewis Trundle | Paris. |
| Jones, Loyd Clifton | Bono. |
| Kirkpatrick, Ira Landreth | Whitewright. |
| Klein, Ferdinand Peter | Marion. |
| Landers, Grover William | Cleburne. |
| Law, Jarrette D. | Belton. |
| Liddell, James Woodlan | Fort Worth. |
| Little, Lewis Norman | Goldthwaite. |
| London, Clyde Earnest | Bailey. |
| Luedtke, Edward Henry | McGregor. |
| McGown, Grover | Fort Worth. |
| McIntyre, Willie Stokes | Roans Prarie. |
| McMurray, Samuel Flemine | Cuero. |
| Martin, Paul Henry | Mason. |
| Meerscheidt, Hilmar | San Antonio. |
| Meincher, William August | Leroy. |
| Metcalf, Penrose Blakely | San Angelo. |
| Moore, Gordon Bennett | Midlothian. |
| Page, Oliver Barnett | Sherwood. |
| Peterson, John Lee | Bonham. |
| Peutet, John Paul | College Station. |
| Pierson, John Cleveland | Haskell. |

Graduate Haskell High School.

| | |
|---------------------------|---------------|
| Prell, Randolph Fred | Brazoria. |
| Puckett, Cyrus Wells | Silverton. |
| Raiden, James Robert | Honey Grove. |
| Raiden, William Martin | Honey Grove. |
| Reding, John Brown | Grand Saline. |
| Reese, William Clifford | Colorado. |
| Roberts, Raymond | Gainesville. |
| Robison, John Elbert, Jr. | Prosper. |
| Routh, Oscar Ralph | Ballinger. |

| | |
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| Routt, Joseph Lewin..... | Navasota. |
| Russell, George Hill..... | Cotulla. |
| <i>Graduate Cotulla High School.</i> | |
| Scasta, Jerry J..... | Wheelock. |
| Schattel, Joe Isidor..... | Hungerford. |
| Scofield, John S..... | Gainesville. |
| Sears, Homer Head..... | Bells. |
| Shaw, Blocker..... | Fort Worth. |
| Shelton, John Malcolm..... | Shamrock. |
| Smith, Herman..... | Mineral Wells. |
| <i>Graduate Mineral Wells Public School.</i> | |
| Smith, Horace Chilton..... | Huckabay. |
| Smith, Joseph Louis..... | McKinney. |
| Smith, McBroom Vandiver..... | Columbus. |
| <i>Graduate Columbus High School.</i> | |
| Smith, William Veasy..... | Belton. |
| Stiles, William Lyford..... | San Antonio. |
| Taylor, Earl Eugene..... | San Antonio. |
| <i>Graduate San Antonio High School.</i> | |
| Tomlinson, Mack Berry..... | Detroit. |
| <i>Graduate Detroit Public School.</i> | |
| Turnbow, Daniel Jackson..... | Coushatta, La. |
| Vance, John Bernard..... | Devine. |
| Vance, James Leslie..... | Devine. |
| White, Morris Brush..... | Waco. |
| Wolff, Otto Henry..... | Marlin. |
| Wynn, Charles Clinton..... | Bryan. |
| Total, 96. | |

UNCLASSIFIED.

| | |
|-----------------------------|-------------|
| Haller, Raymond Burton..... | Victoria. |
| Knolle, Roger Edmund..... | Industry. |
| *Koons, Archer William..... | Nada. |
| Menke, Edgar Paul..... | Hempstead. |
| Mizell, John Love..... | Waxahachie. |
| Runge, James Forest..... | Galveston. |
| Wallis, Jack..... | Cuero. |
| Total, 7. | |

SPECIAL STUDENTS.

| | |
|----------------------------------|-----------------|
| Barnes, Alpheus Milton..... | Corpus Christi. |
| Brann, Erich Julius..... | Fort Worth. |
| Clark, Earle..... | Omaha, Neb. |
| Harding, Lewis..... | Bryan. |
| Harle, Paul C..... | Memphis. |
| Oberrender, Willie Gotthold..... | Comfort. |
| Sanders, Marion Dewitt..... | Mexia. |
| Taylor, William Darden..... | Homer, La. |
| Total, 8. | |

SHORT WINTER COURSE IN AGRICULTURE.

| | |
|-----------------------|-----------------|
| Acker, H. W..... | Whitehouse. |
| Allen, W. E..... | Singleton. |
| Bagwell, J. F..... | Wharton. |
| Banzhof, George..... | Rockdale. |
| Barrington, S. H..... | Kountze. |
| Banks, R. L..... | Weatherford. |
| Barrier, A. B..... | Mount Pleasant. |
| Beaird, H. E..... | Tyler. |
| Beeson, H. W..... | Lovelady. |
| Benson, J. W..... | Sinton. |
| Berry, H. G..... | Mesquite. |
| Berryman, O. G..... | Meridian. |
| Bond, R. L..... | Buna. |

*Deceased.

| | |
|--------------------|------------------|
| Brazelton, W. L. | Anson. |
| Brown, L. A. | Nacogdoches. |
| Buchanan, A. W. | Bryan. |
| Burkhalter, H. P. | Vernon. |
| Butcher, J. W. | San Angelo. |
| Caldwell, J. E. | Brownwood. |
| Calvert, W. C. | Sweetwater. |
| Campbell, J. W. | Holliday. |
| Clossen, John. | Bracken. |
| Connor, J. M. | Daingerfield. |
| Cotton, A. J. | Bertram. |
| Covington, J. A. | Waller. |
| Cox, R. B. | Waco. |
| Cunyus, J. P. | Longview. |
| Davis, W. E. | Austin. |
| Dean, M. G. | Paris. |
| Dennis, H. C. | Athens. |
| Drake, J. G. | Lockhart. |
| Drummond, A. H. | Caps. |
| Eastipp, H. D. | Pennington. |
| Edmonds, J. R. | Quitman. |
| Edwards, Glen. | Bullard. |
| Erickson, J. H. | Greenville. |
| Eudaly, G. W. | Fort Worth. |
| Fisher, G. W. | Fort Worth. |
| Freeman, M. J. | Dallas. |
| Ganzer, William. | Denton. |
| Garland, W. R. | Annona. |
| Gardner, R. J. | Granbury. |
| Gavenda, Otto. | Caldwell. |
| Gibson, P. A. | Teague. |
| Giles, E. V. | Austin. |
| Giles, T. J. | Mason. |
| Gilliland, D. B. | Decatur. |
| Gilson, W. H. | San Saba. |
| Goodson, E. M. | Rusk. |
| Greer, J. D. | Nacogdoches. |
| Griffin, J. W. | Brady. |
| Gruss, E. W. | Galveston. |
| Handy, J. S. | Abilene. |
| Hardwicke, D. H. | Abilene. |
| Hart, S. C. | Jefferson. |
| Hays, M. L. | Clyde. |
| Hilton, F. E. | Waxahachie. |
| Hood, J. C. | Anson. |
| Hughes, D. A. | Dallas. |
| Hunter, L. T. | Henrietta. |
| Johnson, G. W. | Newton. |
| Justice, M. A. | Donie. |
| Kloppenburg, J. | Sublime. |
| Kolberg, O. G. | Eagle Lake. |
| Lawson, L. O. | McGregor. |
| Liles, E. M. | Chilton. |
| McMaster, William. | Clarksville. |
| Mackey, A. J. | Lampasas. |
| Mann, R. E. | Halsell. |
| Marks, Tom M. | Jacksboro. |
| Martin, B. B. | Liberty. |
| Mathis, W. R. | New Boston. |
| Matthews, D. | Athens. |
| Mitchell, R. S. | Victoria. |
| Morris, T. G. | Angleton. |
| Myers, D. C. | Cookville. |
| Orms, G. W. | Mineola. |
| Orms, L. E. | Sulphur Springs. |

| | |
|--------------------|---------------|
| Orr, W. C. | Red Oak. |
| Palmer, J. R. | Comanche. |
| Payne, M. T. | Temple. |
| Peel, F. A. | Abilene. |
| Persons, R. W. | Beaumont. |
| Pipkin, J. A., Jr. | Waco. |
| Quicksall, J. F. | Brady. |
| Quicksall, J. L. | Waco. |
| Rebmann, J. | Houston. |
| Roberson, D. D. | Valley View. |
| Runnels, Lewis. | Willis. |
| Scott, V. L. | Marshall. |
| Shanks, J. T. | Cuero. |
| Shelton, W. R. | LaGrange. |
| Smith, D. A. | Bryan. |
| Smith, George A. | Beaumont. |
| Smith, P. D. | Beeville. |
| Stieler, W. | Comfort. |
| Stitt, O. J. | San Marcos. |
| Strange, D. M. | Pittsburg. |
| Tackett, R. O. | Dublin. |
| Tidwell, J. R. | Franklin. |
| Tisdal, N. R. | Huntsville. |
| Trueheart, W. E. | Holland. |
| VanKirks, A. S. | Bonham. |
| Walton, T. O. | Livingston. |
| Weisinger, W. S. | Ryals. |
| Wilkins, P. P. | Collinsville. |
| Wilkinson, L. C. | Katy. |
| Withers, R. C. | Buna. |
| Wood, T. B. | Groveton. |
| Total, 109. | |

SUMMER SCHOOL OF COTTON CLASSING, 1912.

| | |
|-------------------|-------------------|
| Birkelbach, Henry | Thrall. |
| Hammon, W. H. | Brookesmith. |
| Higgins, W. W. | San Benito. |
| Luke, Bernard | Muenster. |
| Norwood, Sam | Dripping Springs. |
| Steinle, A. N. | San Antonio. |
| Total, 6. | |

SCHOOL OF ENGINEERING.

Abbreviations: A. E., Architectural Engineering; Arch., Architecture; Ch. E., Chemical Engineering; C. E., Civil Engineering; E. E., Electrical Engineering; M. E., Mechanical Engineering; T. E., Textile Engineering.

Graduate Students.

| | | |
|--|--------|------------------|
| Bechert, Fred John | Ch. E. | Corpus Christi. |
| <i>B. S., A. and M. College of Texas, 1911; M. E., 1912.</i> | | |
| Bryant, William Thoreau | Ch. E. | Hillsboro. |
| <i>B. S., A. and M. College of Texas, 1911.</i> | | |
| Forsyth, James Milen | M. E. | McKinney. |
| <i>B. S., A. and M. College of Texas, 1912.</i> | | |
| Lehmann, Emil Wilhelm | E. E. | College Station. |
| <i>B. S., Mississippi A. and M. College, 1910.</i> | | |
| McAdams, Edward E. | C. E. | Bedias. |
| <i>B. S., A. and M. College of Texas, 1911.</i> | | |
| McMillan, Luther Burchard | Ch. E. | Anchor. |
| <i>B. S., A. and M. College of Texas, 1911; M. E., 1912.</i> | | |
| Mansfield, Bruce Jefferson | C. E. | Columbus. |
| <i>B. S., A. and M. College of Texas, 1912.</i> | | |
| Morley, Marcus DeLafayette | M. E. | Fort Worth. |
| <i>B. S., A. and M. College of Texas, 1912.</i> | | |

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| Neff, A. Judson..... | M. E..... | College Station. |
| | <i>B. S., A. and M. College of Texas, 1903.</i> | |
| Newton, John Wharton..... | Ch. E..... | Bryan. |
| | <i>B. S., A. and M. College of Texas, 1912.</i> | |
| Proctor, Joseph Harold..... | E. E..... | Houston. |
| | <i>B. S., A. and M. College of Texas, 1910.</i> | |
| Windrow, Rollen Joseph..... | C. E..... | College Station. |
| | <i>B. S., A. and M. College of Texas, 1906.</i> | |

Total, 12.

Seniors.

| | | |
|-------------------------------------|---|-----------------------|
| Alexander, Melville Richard..... | C. E..... | Navasota. |
| Anderson, John Victor..... | C. E..... | Abilene. |
| | <i>Graduate Abilene High School.</i> | |
| Anderson, Meriwether Lewis..... | E. E..... | Eagle Lake. |
| Anderson, Rexford Olan..... | M. E..... | Denton. |
| | <i>Graduate Denton High School.</i> | |
| Apperson, Roy Stephenson..... | E. E..... | Commerce. |
| Baylor, Robert Emmett..... | C. E..... | Montell. |
| Beazley, Charles Nugent..... | C. E..... | Grapeland. |
| Bell, Tyree L., Jr..... | C. E..... | Dallas. |
| Birk, Ralph Adolphus..... | C. E..... | Iowa Park. |
| | <i>Graduate Iowa Park High School.</i> | |
| Borchert, William Charles..... | C. E..... | Kyle. |
| Bourland, William Fowler..... | C. E..... | Valley Springs. |
| Bowler, Samuel Edwin..... | E. E..... | Fort Worth. |
| Brown, James Franklin..... | E. E..... | Fort Worth. |
| Buchanan, John Dixon..... | E. E..... | Bryan. |
| Burleson, Wade Hampton..... | E. E..... | San Saba. |
| Burton, Allan..... | A. E..... | Clarendon. |
| Cade, King Charles..... | C. E..... | Birkville. |
| Cain, Robert Wofford..... | C. E..... | Athens. |
| Campbell, Price..... | E. E..... | Weatherford. |
| Chambers, Taylor Lee..... | E. E..... | Sherman. |
| Chinski, Charles Clarence..... | C. E..... | Beaumont. |
| | <i>Graduate Beaumont High School.</i> | |
| Christian, James Russell..... | Ch. E..... | Houston. |
| | <i>B. S., A. and M. College of Texas, 1911.</i> | |
| Collins, James William Herring..... | T. E..... | Mexia. |
| | <i>Graduate Mexia High School.</i> | |
| Davis, John Newton, Jr..... | C. E..... | Hico. |
| | <i>Graduate Hico High School.</i> | |
| Donoho, William Thompson..... | C. E..... | Utopia. |
| Dreiss, Edward, Jr..... | T. E..... | San Antonio. |
| | <i>Graduate San Antonio High School.</i> | |
| Fischer, Harrison Howard..... | M. E..... | Kansas City, Kan. |
| | <i>Graduate Port Arthur High School.</i> | |
| Fitzpatrick, Brandon..... | C. E..... | Columbus. |
| | <i>Graduate Columbus High School.</i> | |
| Fountain, Edmund Jones, Jr..... | A. E..... | Bryan. |
| French, William Allen, Jr..... | C. E..... | Kaufman. |
| | <i>Graduate Carlisle Military Academy.</i> | |
| Fries, Louis, Jr..... | A. E..... | San Antonio. |
| Gillette, Paul Clifford..... | C. E..... | Bellaire. |
| Gist, William Belew..... | C. E..... | Nocona. |
| Gonzales, Jose de la Merced..... | C. E..... | Tampico, Tamps., Mex. |
| Grissom, Roy John..... | C. E..... | Fort Worth. |
| Hale, John Davis..... | E. E..... | Anson. |
| Hays, Forest Park..... | E. E..... | Smithville. |
| | <i>Graduate Smithville High School.</i> | |
| Hefner, William Jesse..... | E. E..... | Cuero. |
| Hill, John Rutledge..... | C. E..... | Willis Point. |
| Holland, Charlie Jenkins..... | Ch. E..... | Brownwood. |
| Hudgins, Lewis Allison..... | Ch. E..... | Houston. |
| Jackson, William Halbert..... | C. E..... | Graham. |

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| Johnston, Lemuel Munroe | M. E. | Bryan. |
| Jones, Hamlet Park | C. E. | Kaufman. |
| <i>Graduate Kaufman High School.</i> | | |
| Josserand, Lewis Peter | A. E. | Groveton. |
| <i>Graduate Groveton High School.</i> | | |
| Keller, Jules | E. E. | Houston. |
| <i>Graduate Houston High School.</i> | | |
| King, Thomas S. | E. E. | Victoria. |
| Koinm, Charles Herman | E. E. | Aldine. |
| Kraege, Alfred C. A. | E. E. | Yorktown. |
| Lammers, Edwin S., Jr. | E. E. | Dallas. |
| Langford, Ernest | A. E. | Bertram. |
| Lidiak, Joseph Paul | M. E. | Muldoon. |
| <i>Graduate LaGrange High School.</i> | | |
| Lienhard, Leon Victor | C. E. | Cuero. |
| Lorenz, John Henry | M. E. | Stockdale. |
| <i>Graduate Stockdale High School.</i> | | |
| Lott, James Guy | C. E. | Beeville. |
| <i>Graduate Beeville High School.</i> | | |
| Lyles, John Vinston | C. E. | Blue Grove. |
| <i>Graduate Bellevue High School.</i> | | |
| McDonald, James Milton | E. E. | Ozona. |
| Miller, Robert H. | E. E. | Ben Franklin. |
| Mills, Eben Hulbert | C. E. | San Antonio. |
| Montgomery, Fred Lawrence | C. E. | Corsicana. |
| Nolte, Robert Walker | E. E. | New Orleans, La. |
| Nussbaum, Julius Harold | M. E. | Mexia. |
| Oliphant, Luther Nugent | C. E. | Rice. |
| Olson, John N. | C. E. | Galveston. |
| Orth, William Alva | A. E. | Yoakum. |
| Park, Oscar Brantley | E. E. | Bryan. |
| <i>Graduate Mexia High School.</i> | | |
| Ragsdale, Thomas Milton | A. E. | Flatonia. |
| Roberts, Frank Allen | C. E. | Austin. |
| Rollins, Joseph Guy | C. E. | Merit. |
| von Rosenberg, Hilmer Carl | E. E. | Hallettsville. |
| <i>Graduate Hallettsville High School.</i> | | |
| Sayers, Albert Fawcett | C. E. | Houston. |
| Schaefer, Seley Eugene | M. E. | Waco. |
| Schroeter, Richard Ralph | C. E. | Double Horn. |
| Simon, Raphael Bernard | E. E. | Houston. |
| <i>Graduate Houston High School.</i> | | |
| Spence, Thomas Reese | C. E. | College Station. |
| Spencer, Thomas Carroll | C. E. | Athens. |
| Stevens, Alexander Campbell | A. E. | Burnet. |
| Thomas, Hugh Wesley | C. E. | Dallas. |
| Tigner, Joseph Bingham | T. E. | Duke. |
| Torrence, William Clifton | M. E. | Waco. |
| Tucker, David Halsey | E. E. | Missouri City. |
| Vesmirovsky, Ed. | T. E. | Bryan. |
| <i>Graduate Bryan High School.</i> | | |
| Walker, Phelps White | E. E. | Gonzales. |
| Walzem, Louis Frederick | M. E. | New Braunfels. |
| <i>Graduate New Braunfels High School.</i> | | |
| Waters, Jerome Jackson, Jr. | C. E. | San Antonio. |
| Whiteside, Blount | C. E. | Lott. |
| •Total, 86. | | |

Juniors.

| | | |
|--------------------------------------|-------|----------------|
| Baker, Harlan Kay | E. E. | Haskell. |
| <i>Graduate Houston High School.</i> | | |
| Biggers, Chester Arthur | E. E. | Bonham. |
| Booth, George Edward | M. E. | Chico. |
| Braunig, Hubert Edwin | E. E. | Hallettsville. |
| Broome, William Scott | C. E. | Memphis. |
| <i>Graduate Memphis High School.</i> | | |

| | | |
|-------------------------------|---|------------------|
| Butts, Edgar Branch | C. E. | Cisco. |
| | <i>Graduate Cisco High School.</i> | |
| Camp, George Dashiell | C. E. | San Antonio. |
| | <i>Graduate Walnut Springs High School.</i> | |
| Clement, Charles Burbank | Arch. | Port Lavaca. |
| Cole, Noah Davis | E. E. | Bryan. |
| Cushman, Cecil Alonzo | E. E. | Sherman. |
| | <i>Graduate Sherman High School.</i> | |
| Darby, James Henry | C. E. | Cedar Hill. |
| Davis, Thomas Charlton | C. E. | Poteet. |
| | <i>Graduate Bronson High School.</i> | |
| Denton, Velpain Curlee | C. E. | Lone Oak. |
| Dorroh, George Ross | M. E. | Leander. |
| Emmett, Carl Perry | M. E. | Hamilton. |
| Farthing, William Eugene | C. E. | Valley View. |
| Felt, Wright Lafayette | E. E. | Hamilton. |
| Ford, Earl Raymond | M. E. | Peniel. |
| Forsyth, William Russell | M. E. | McKinney. |
| | <i>Graduate McKinney High School.</i> | |
| Fouraker, Leroy Levi | E. E. | Dallas. |
| | <i>Graduate Dallas High School.</i> | |
| Fouraker, Raymond Spivey | E. E. | Dallas. |
| | <i>Graduate Dallas High School.</i> | |
| Fowler, William Brown | Arch. | Dallas. |
| Giesecke, Walter Guenther | M. E. | San Antonio. |
| Groginski, Philip | E. E. | Bryan. |
| Harrison, Julius Caesar | M. E. | Stockdale. |
| | <i>Graduate Stockdale High School.</i> | |
| Herrington, James Joseph, Jr. | M. E. | Neshoba, Miss. |
| Homann, Frederick Adolph | M. E. | New Braunfels. |
| | <i>Graduate New Braunfels High School.</i> | |
| Jarvis, Joseph Robert | Ch. E. | Brandon. |
| | <i>Graduate Brandon High School.</i> | |
| Jennings, Albert Lawrence | M. E. | Kosse. |
| | <i>Graduate Kosse High School.</i> | |
| Jones, Tignall William | E. E. | Sinton. |
| Knox, George Pierce | Arch. | San Antonio. |
| Kotzebue, Meinhard Henry | M. E. | Flatonia. |
| | <i>Graduate Flatonia High School.</i> | |
| Levy, David H. | E. E. | Waco. |
| | <i>Graduate Waco High School.</i> | |
| McAlpin, Claude Thomas | M. E. | Eagle Pass. |
| | <i>Graduate Eagle Pass High School.</i> | |
| McCraw, William S. | E. E. | Dallas. |
| Mayers, Hayden Potter | C. E. | Wagner, Okla. |
| Meriwether, Gay Clifford | E. E. | Tampico, Mexico. |
| Miller, Vance Woody | E. E. | Springtown. |
| Nicholson, Robert Marcelino | E. E. | Houston. |
| Parker, Earl | E. E. | Carthage. |
| Perrin, Harvey | Arch. | College Station. |
| Peterson, Joseph Arvid | M. E. | Louise. |
| | <i>Graduate Louise Public School.</i> | |
| Pickens, Dennis Brandt | E. E. | Wallis Station. |
| | <i>Graduate Wallis Public School.</i> | |
| Poetter, Norman Mitchell | M. E. | Franklin. |
| Powell, Louis Hamilton | C. E. | Baird. |
| Rack, Edgar Charles | M. E. | Waco. |
| | <i>Graduate Douglas Select School.</i> | |
| Rollins, Millard Elisha | M. E. | Merit. |
| Schmidt, Frederick Harry | C. E. | Kingsbury. |
| Schuwirth, William Charles | M. E. | San Antonio. |
| Scott, Floyd Logan | M. E. | Waco. |
| Senter, Erasmus Gilbert, Jr. | C. E. | Dallas. |
| | <i>Graduate Dallas High School.</i> | |
| Shannon, James William | M. E. | Madisonville. |

| | | |
|--------------------------------------|--------|-----------------|
| Shiller, Harry Hinek | M. E. | Victoria. |
| Simmons, Jared Claude | E. E. | Waco. |
| Slay, Samuel Houston | M. E. | Frost. |
| <i>Graduate Frost High School.</i> | | |
| Smith, John Randolph | C. E. | Columbia. |
| Smith, William Aubrey | C. E. | Denison. |
| Smitham, Verner | M. E. | Walnut Springs. |
| Taliaferro, Eugene Sinclair | Ch. E. | Houston. |
| Taylor, Henry Stanley | C. E. | Cookville. |
| Tinker, Ernest Briggs | C. E. | Brandon. |
| <i>Graduate Brandon High School.</i> | | |
| Vossler, James Mears | E. E. | Palestine. |
| Wallace, James Asberry | E. E. | Blooming Grove. |
| Wear, Hugh Andrew | Arch. | Rogers. |
| Total, 64. | | |

Sophomores.

| | | |
|---|-------|---------------|
| Andrews, Albert | T. E. | Sherman. |
| <i>Graduate Sherman High School.</i> | | |
| Askew, Henry Forest | M. E. | Baileyville. |
| Avinger, John Hamilton | M. E. | Avinger. |
| Baccus, Embury Depee | E. E. | Seymour. |
| <i>Graduate Seymour Public School.</i> | | |
| Baker, Claud | Arch. | Houston. |
| Bates, Wade Hamilton | E. E. | Roby. |
| Bell, Jeff E. | C. E. | Luling. |
| <i>Graduate Luling High School.</i> | | |
| Bennett, Frank Crine | C. E. | Henderson. |
| <i>Graduate Henderson High School.</i> | | |
| Black, Robert Clyde | C. E. | Skidmore. |
| <i>Graduate Skidmore Public School.</i> | | |
| Blanchard, J. Guion | E. E. | Amarillo. |
| <i>Graduate Amarillo High School.</i> | | |
| Booth, Charles James | Arch. | Austin. |
| Bouknight, Raymond Andre | E. E. | Greenville. |
| <i>Graduate Greenville High School.</i> | | |
| Bradley, Lewis Lawson | M. E. | Baileyville. |
| Branson, Alfred Lovell, Jr. | M. E. | Marlin. |
| Braumiller, Walter Edwin | C. E. | Texarkana. |
| <i>Graduate Texarkana High School.</i> | | |
| Brewster, Herbert Thomas | C. E. | Terrell. |
| Browder, John Hosea, Jr. | T. E. | Groesbeck. |
| Brown, Earl Travis | E. E. | Del Rio. |
| <i>Graduate Del Rio Public School.</i> | | |
| Brown, James David | Arch. | Rockport. |
| <i>Graduate Rockport Public School.</i> | | |
| Brumfield, Elmer Berry | E. E. | Alvin. |
| Bussey, Flem Bledsoe | E. E. | Hutchins. |
| Caruthers, Lawrence Haley | E. E. | Alpine. |
| <i>Graduate Alpine High School.</i> | | |
| Cawthon, Frank Walter | C. E. | Denison. |
| <i>Graduate Denison High School.</i> | | |
| Clark, Frank Haddon, Jr. | E. E. | Clarksville. |
| <i>Graduate Clarksville High School.</i> | | |
| Clarkson, Percy William | E. E. | San Antonio. |
| Crisp, Marshall Claiborne | Arch. | Cuero. |
| <i>Graduate John C. French High School.</i> | | |
| Crosby, George Thomas | E. E. | Lockhart. |
| Crown, Phil Theodore | Arch. | Waco. |
| Davis, Dean | E. E. | Dawson. |
| DeLong, Raleigh | M. E. | Mexia. |
| Densmore, Ralph Albert | C. E. | Dallas. |
| Densmore, Robert Earl | C. E. | Dallas. |
| Dickie, Byron Homer | E. E. | Breckenridge. |
| <i>Graduate Breckenridge Public School.</i> | | |

| | | |
|---|--------|-----------------|
| Dunning, George Rutledge | Ch. E. | Gonzales. |
| Elmendorf, Harold Benjamin | C. E. | Port Arthur. |
| <i>Graduate Port Arthur High School.</i> | | |
| Faber, Bennie Herman | C. E. | Eagle Lake. |
| <i>Graduate Eagle Lake High School.</i> | | |
| Fendley, James Monroe | Arch. | Galveston. |
| <i>Graduate Ball High School.</i> | | |
| Francisco, Edgar Oliver | C. E. | Coalgate, Okla. |
| Gillespie, William Spence | C. E. | Houston. |
| Glaze, Wesley Ogden | E. E. | Goliad. |
| Graves, Thaddeus Cullen | C. E. | Hutchins. |
| <i>B. A., Texas Christian University, 1912.</i> | | |
| Haden, Julian Frank | Arch. | Timpson. |
| <i>Graduate Timpson High School.</i> | | |
| Hargett, Frederick | C. E. | Texarkana. |
| Hawes, Roscoe | C. E. | San Antonio. |
| <i>Graduate Uvalde High School.</i> | | |
| Hobbs, Leonard Sinclair | M. E. | Brownsville. |
| <i>Graduate Brownsville Public School.</i> | | |
| Hogue, Ernest Newton | E. E. | Paris. |
| <i>Graduate Paris High School.</i> | | |
| Hook, Donnie Leon | M. E. | Sherman. |
| <i>Graduate West High School.</i> | | |
| Hudspeth, Clarence Chancey | E. E. | Hondo. |
| Jarrett, Ed Lee | E. E. | Valley Mills. |
| <i>Graduate Valley Mills High School.</i> | | |
| Jernigan, Dudley Cotter | Arch. | Commerce. |
| Kern, Robert Augustus | C. E. | Columbus, Ohio. |
| Kiesling, Justin Alucius | E. E. | Houston. |
| <i>Graduate Houston High School.</i> | | |
| Levy, Edmond Harrison | C. E. | Texarkana. |
| <i>Graduate Texarkana High School.</i> | | |
| Love, Joseph William | E. E. | Salado. |
| <i>Graduate Thomas Arnold High School.</i> | | |
| Lynch, Henry | C. E. | Amarillo. |
| <i>Graduate Amarillo High School.</i> | | |
| McCarty, Stuart Clare | C. E. | Taylor. |
| Martin, William Leslie | M. E. | Bryan. |
| Mason, Stephen Kearney | C. E. | San Antonio. |
| Mathews, Reuben Kennett | T. E. | Hearne. |
| <i>Graduate Hearne High School.</i> | | |
| Mayers, Frank Gilbert | Arch. | Wagoner, Okla. |
| Mitchell, George William | M. E. | San Antonio. |
| Montgomery, Samuel | C. E. | Corsicana. |
| Morgan, Henry Julius | C. E. | Temple. |
| <i>Graduate Temple High School.</i> | | |
| Morrison, Douglass Eaton | E. E. | Trenton, Ga. |
| Moss, Mac Augustin | C. E. | Izora. |
| Moursund, L. E. | E. E. | Fredericksburg. |
| Nash, John Forbes | E. E. | Belton. |
| Overstreet, Andrew Madison | Ch. E. | Fort Worth. |
| <i>Graduate Fort Worth High School.</i> | | |
| Pirie, Felix Paul | C. E. | Parita. |
| Randall, Richard Owen | E. E. | San Antonio. |
| <i>Graduate Beeville High School.</i> | | |
| *Rawlins, Fisher Younger | E. E. | Ardmore, Okla. |
| Regenbrecht, Albert, Jr. | Ch. E. | Peters. |
| Reynolds, William LaFayette | M. E. | Buck. |
| <i>Graduate Livingston High School.</i> | | |
| Rhodes, James Efford | T. E. | Iola. |
| Roberts, Paul Vane | C. E. | Taft. |
| Robertson, John Marshall | M. E. | Ganado. |
| Rothe, Hans Hugo | Arch. | Hondo. |
| <i>Graduate Hondo High School.</i> | | |

*Deceased.

| | | |
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| Sansom, George Wallace | T. E. | Groesbeck. |
| | <i>Graduate Mart Public School.</i> | |
| Saper, Gustave Alexander | Ch. E. | Houston. |
| Scott, Homer Amon | Arch. | Frost. |
| | <i>Graduate Frost High School.</i> | |
| Senter, Seldon William | C. E. | Dallas. |
| Sinclair, William Carl | E. E. | Wolfe City. |
| Siros, Alphonse, Jr. | E. E. | Laredo. |
| | <i>Graduate Laredo High School.</i> | |
| Skeeler, Leon James | Ch. E. | Orange. |
| | <i>Graduate Orange High School.</i> | |
| Smith, Marvin Wadsworth | E. E. | Overton. |
| | <i>Graduate Overton High School.</i> | |
| Spurlock, Daniel W. | C. E. | Corsicana. |
| | <i>Graduate Corsicana High School.</i> | |
| Stiles, Robert Walker | A. E. | San Antonio. |
| Streuer, Julius William | E. E. | New Braunfels. |
| Stribling, Simpson Ridley | E. E. | Waco. |
| Taylor, H. W. | E. E. | Houston. |
| Thalmann, Friedrich Berthold | M. E. | Bandera. |
| Thomas, Mitchell Boyd | E. E. | Texarkana. |
| Turnage, Rodger Elmo | E. E. | LaGrange. |
| | <i>Graduate LaGrange High School.</i> | |
| Walker, Frank Erastus | C. E. | Eagle Lake. |
| | <i>Graduate Eagle Lake High School.</i> | |
| Weatherly, Richard Keene | T. E. | Grapevine. |
| | <i>Graduate Grapevine High School.</i> | |
| Wellman, J. Walter | M. E. | Beaumont. |
| West, James Hogg | E. E. | Merkel. |
| | <i>Graduate Merkel High School.</i> | |
| West, Oscar Gregory | E. E. | Columbus. |
| | <i>Graduate Columbus High School.</i> | |
| White, John Calvin | M. E. | Grand Saine. |
| Whittet, Chester Stiggins | Ch. E. | Anchorage. |
| Williams, Clayton Wheat | E. E. | Fort Stockton. |
| Williams, Richard Stokely | T. E. | Thorpe. |
| Willman, George Conan | T. E. | Bryan. |
| Wilson, Charles Sebastian | M. E. | Bryan. |
| Wood, Jackson Broadus | C. E. | Enid, Okla. |
| Wotipka, Frank Louis | M. E. | Flatonia. |
| | <i>Graduate Flatonia High School.</i> | |
| Wright, Lucian | E. E. | Fredericksburg. |
| Young, Roy Lester | E. E. | Hallettsville. |
| | <i>Graduate Hallettsville High School.</i> | |

Total, 108.

Freshmen.

| | | |
|---------------------------------|---|--------------|
| Aldridge, Edwin Ernest | M. E. | Eagle Pass. |
| | <i>Graduate Eagle Pass High School.</i> | |
| Alexander, Earl Gladstone | T. E. | Paducah. |
| | <i>Graduate Paducah High School.</i> | |
| Alexander, John Richmond | M. E. | Navasota. |
| | <i>Graduate Navasota High School.</i> | |
| Alford, Jesse Burk | E. E. | Henderson. |
| Allen, Robert Lee, Jr. | E. E. | San Antonio. |
| Anderson, Benjamin Watson | C. E. | Waxahachie. |
| Ard, Robb Luther | E. E. | Seagoville. |
| Atchley, Ernest Earl | E. E. | Abbott. |
| Atwell, Snyder | C. E. | Dallas. |
| August, Lester Holmes | C. E. | Luling. |
| | <i>Graduate Luling High School.</i> | |
| Baker, Roy | M. E. | Anson. |
| Barnett, Curtis Hugh Washington | E. E. | Caldwell. |
| Bartley, Wannie Lee | C. E. | El Paso. |

| | | |
|---|--------|-----------------------|
| Baur, George Frank August | M. E. | Moulton. |
| <i>Graduate Sam and Will Moore Institute.</i> | | |
| Beringer, Milton Streuer | Ch. E. | Gonzales. |
| <i>Graduate Gonzales High School.</i> | | |
| Blalock, Lewis Brown | E. E. | Kosse. |
| <i>Graduate Kosse High School.</i> | | |
| Blanchard, William Wesley | C. E. | Highland Falls, N. Y. |
| Bland, Mack Theodore | C. E. | Port Arthur. |
| <i>Graduate Port Arthur High School.</i> | | |
| Bowles, John Cleveland | C. E. | Rockwall. |
| Boyett, Guy Frank | C. E. | College Station. |
| Bramlette, Frederick Levenworth | C. E. | Longview. |
| Braumiller, Nicholas Mathias | M. E. | Texarkana. |
| <i>Graduate Texarkana High School.</i> | | |
| Brigance, George | E. E. | Sherman. |
| Brown, James Roger | Arch. | Hallettsville. |
| <i>Graduate Hallettsville Public School.</i> | | |
| Brown, Mitchell Harvey | E. E. | Rockwall. |
| Brown, Prather Hayes | C. E. | Dallas. |
| Bryan, Banard Dashill | C. E. | Abilene. |
| Burkett, Fred | C. E. | Morgan. |
| Burkett, James Marion | E. E. | Graham. |
| <i>Graduate Graham High School.</i> | | |
| Burt, Francis Stanislaus | M. E. | Brownwood. |
| Camp, Thomas Ringgold | Arch. | San Antonio. |
| Campbell, Ray | C. E. | Holliday. |
| Chambers, David Cheatham | M. E. | New Boston. |
| <i>Graduate New Boston High School.</i> | | |
| Clark, Harold McConnell | E. E. | San Angelo. |
| Clarke, Hugh St. Clair | M. E. | Comanche. |
| <i>Graduate Comanche High School.</i> | | |
| Claytor, Edward McRae | E. E. | Campbell. |
| Cogdell, Charles White | E. E. | Hereford. |
| Coleman, Frank Ralph | C. E. | Hallettsville. |
| <i>Graduate Hallettsville High School.</i> | | |
| Coleman, William Herbert | M. E. | Cotulla. |
| <i>Graduate Cotulla High School.</i> | | |
| Collins, William Louis | Arch. | Denton. |
| <i>Graduate Denton High School.</i> | | |
| Combs, Albert Read | E. E. | Velasco. |
| <i>Graduate Velasco High School.</i> | | |
| Coney, Mason Cleveland | E. E. | Cleburne. |
| <i>Graduate Cleburne High School.</i> | | |
| Coogle, Jesse | M. E. | Corsicana. |
| <i>Graduate State Orphan High School.</i> | | |
| Cook, Joe Tollie | E. E. | Rosebud. |
| Cooper, B. Zachariah | Arch. | Clifton. |
| <i>Graduate Clifton High School.</i> | | |
| Cornett, Guy Joris | C. E. | Grandview. |
| Cox, Carl Clarence | E. E. | Mt. Vernon. |
| <i>Graduate Mt. Vernon Public School.</i> | | |
| Crocker, William Jennings | E. E. | Dallas. |
| Croom, Guy | E. E. | Elmina. |
| Crow, William Thomas | E. E. | Electra. |
| <i>Graduate Waxahachie High School.</i> | | |
| Curnutte, James Vincell | C. E. | Snyder. |
| <i>Graduate Snyder High School.</i> | | |
| Davidson, Lewis | Arch. | Sanger. |
| Davidson, Ross Wilson | E. E. | San Felipe. |
| Davis, William Kinnard | E. E. | Hico. |
| <i>Graduate Hico Graded School.</i> | | |
| Dickie, Alexander | E. E. | Breckenridge. |
| <i>Graduate Breckenridge Public School.</i> | | |
| Doucette, Fred L. | E. E. | Grayburg. |
| <i>Graduate Sour Lake High School.</i> | | |

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|---|--------|-------------------|
| Downs, Otis Lee Roy | E. E. | Fort Worth. |
| <i>Graduate Mineral Wells High School.</i> | | |
| Driggers, James Robert | C. E. | Chickasha, Okla. |
| Dyer, Fletcher Floyd | M. E. | Barstow. |
| Easley, Claudius Miller | Arch. | Waco. |
| <i>Graduate Waco High School.</i> | | |
| Eisemann, John Ed. | Arch. | Houston. |
| Ellsworth, Frank Leslie | T. E. | San Antonio. |
| Erskine, Wood Steele | E. E. | San Antonio. |
| Fleming, Charles Herman | Arch. | Merit. |
| <i>Graduate Fort Worth High School.</i> | | |
| Foster, Julian Lewis | E. E. | Fort Worth. |
| Furman, Edward Edwards | E. E. | Corpus Christi. |
| Gaines, Paul | E. E. | Hasse. |
| Gannon, Russell Clyde | C. E. | Denison. |
| <i>Graduate Denison High School.</i> | | |
| Garrison, Richard Eugene | M. E. | Pilot Point. |
| <i>Graduate Pilot Point Public School.</i> | | |
| Gooch, Roy Branch | M. E. | Temple. |
| <i>Graduate Temple High School.</i> | | |
| Graves, Albert Horne | Arch. | Fort Worth. |
| Gray, Oscar Somers | E. E. | Terrell. |
| <i>Graduate Terrell High School.</i> | | |
| Green, Eugene | E. E. | San Marcos. |
| Greer, James Frank | Ch. E. | Waco. |
| <i>Graduate Waco High School.</i> | | |
| Grubbs, Ronald Earle | E. E. | Temple. |
| <i>Graduate Temple High School.</i> | | |
| Hagaman, Leslie Hilsman | C. E. | Ranger. |
| Hajek, William Stephan | T. E. | Bryan. |
| <i>Graduate Allen Academy.</i> | | |
| Harrison, James S. | C. E. | Waco. |
| <i>Graduate Allen Academy.</i> | | |
| Hawkins, Alden Riley | C. E. | Dallas. |
| Haynes, Sylvan Blum | Arch. | Port Arthur. |
| <i>Graduate Port Arthur High School.</i> | | |
| Hefner, Charles Balser | M. E. | Cuero. |
| <i>Graduate John C. French High School.</i> | | |
| Henley, Ernest Nelson | C. E. | Brackettville. |
| Hockaday, Irving Thomas | E. E. | Hollis, Okla. |
| Hollingshead, Frank Adolphus | Ch. E. | Ganado. |
| Holmgreen, Warren Erixson | M. E. | Lavernia. |
| Holt, Lester Berry | E. E. | Arcadia. |
| Hoppe, Roland Charles | M. E. | Cypress Mill. |
| Horn, Scott Elthan | E. E. | Alvin. |
| Hutchings, John Henry | M. E. | Galveston. |
| Irby, Benjamin Earle | Arch. | Beaumont. |
| <i>Graduate Beaumont High School.</i> | | |
| Isbell, Lester Livingston | Arch. | Uvalde. |
| Jopling, Homer Augustus | Arch. | Trinity. |
| <i>Graduate Trinity High School.</i> | | |
| Joy, Whitney Orvan | T. E. | Ingram. |
| Kaler, Earl Schnurr | C. E. | Corpus Christi. |
| Keeling, Roy Elden | C. E. | Dallas. |
| Kelly, David Cleveland | C. E. | Greenville. |
| <i>Graduate Greenville High School.</i> | | |
| Kerbow, Herbert Ralph | E. E. | Clarendon. |
| Kiber, Daniel Henry | M. E. | Corsicana. |
| <i>Graduate Corsicana High School.</i> | | |
| King, Paul Duckett | C. E. | Grand Prairie. |
| <i>Graduate Grand Prairie High School.</i> | | |
| Kirven, John Dunnagan | C. E. | Wynne Wood, Okla. |
| Kristek, George Henry | E. E. | Flatonja. |
| Kurtz, Lawrence A. | E. E. | Seadrift. |
| Lamm, William Alden | M. E. | Haskell. |

| | | |
|---|--------|-------------------|
| Leatherwood, James Herman | Arch. | Merit. |
| Lockett, William Cureton | E. E. | Cleburne. |
| Love, Robert Phocian | C. E. | Bryan. |
| <i>Graduate San Angelo High School.</i> | | |
| Lyons, Leslie Thayer | E. E. | Buena Vista. |
| McAuliff, Lester T. | E. E. | Houston. |
| MacFadden, Samuel Poole | E. E. | San Antonio. |
| <i>Graduate San Antonio High School.</i> | | |
| Marquess, Harry Clyde | M. E. | Calvert. |
| <i>Graduate Calvert High School.</i> | | |
| Marrs, Cecil Douglass | C. E. | Terrell. |
| <i>Graduate Terrell High School.</i> | | |
| Mattingly, Claude | E. E. | LaGrange. |
| Mauldin, Ed | E. E. | Lancaster. |
| Mercer, Vandal Day | E. E. | Chilton. |
| <i>Graduate Douglas Select School.</i> | | |
| Montgomery, Homer Roy | C. E. | Muskogee, Okla. |
| Morgan, John | C. E. | Bronson. |
| Mueller, Charles Paul | M. E. | San Antonio. |
| Murphy, William Michael | Ch. E. | Quanah. |
| <i>Graduate Quanah High School.</i> | | |
| Myers, Coren Douglass | M. E. | Temple. |
| <i>Graduate Temple High School.</i> | | |
| Mynatt, Jessie Herman | E. E. | Gunter. |
| Northcott, Harold Morgan | E. E. | Galveston. |
| Nuckols, Albert Edwards | C. E. | Brownwood. |
| O'Brien, Floy | E. E. | Corsicana. |
| <i>Graduate State Orphan High School.</i> | | |
| Oglesby, Enslie Orsen | E. E. | Mertzon. |
| Olds, Frederick Hortman | E. E. | Denver, Col. |
| Olson, Oscar Rudolph | M. E. | Galveston. |
| Olson, Palmer Henry | C. E. | Clifton. |
| <i>Graduate Clifton High School.</i> | | |
| Olson, Thomas Albert | M. E. | Genoa. |
| Parker, Herbert Edward | C. E. | Bay City. |
| Parks, Ollie Jordan | E. E. | Bryan. |
| Patterson, Edwin Bridgers | E. E. | Clarendon. |
| Pearce, Jack McMahon | E. E. | Lake Charles, La. |
| Peyton, Harry Lamar | M. E. | Waco. |
| <i>Graduate Waco High School.</i> | | |
| Pinkston, Lucian Albert | C. E. | Corsicana. |
| Pitts, Claude Noel | E. E. | Onalaska. |
| Powell, John Burr | C. E. | Baird. |
| Preston, Herbert Rodney | E. E. | Bryan. |
| Randlett, Samuel Lathrop | E. E. | Lancaster. |
| Rees, Martin Loren | E. E. | Center Point. |
| Regenbrecht, Ferdinand | E. E. | Sealy. |
| <i>Graduate Sealy High School.</i> | | |
| Riesner, Edmund Laritz | C. E. | Houston. |
| Robertson, James Evander | Arch. | Austin. |
| Robertson, James Linton | M. E. | Bryan. |
| Rosenfield, Joseph Levy | E. E. | Galveston. |
| Rosprim, Alphonse Joseph | Arch. | Bryan. |
| Royse, Frank Alexander | E. E. | Royse City. |
| Rudasill, Aubrey | C. E. | Bartlett. |
| Runge, Hans Eyl | T. E. | Galveston. |
| Rutan, Wilton Lynn | Arch. | Port Arthur. |
| <i>Graduate Port Arthur High School.</i> | | |
| Sanders, Irl Nowlin | M. E. | Bryan. |
| <i>Graduate Bryan High School.</i> | | |
| Sawyer, Horace Adali | C. E. | Fate. |
| Schadt, Ewald Keller | E. E. | Galveston. |
| <i>Graduate Ball High School.</i> | | |
| Scheultz, George Wright | E. E. | Houston. |
| Schornstein, Raphael M. | Arch. | Galveston. |

| | | |
|--|--------|-------------------|
| Scott, Bennett Willie | M. E. | Colorado. |
| Scott, Harper Anderson | C. E. | San Antonio. |
| <i>Graduate San Antonio Academy.</i> | | |
| Seele, Hermann Hugo | E. E. | New Braunfels. |
| <i>Graduate New Braunfels High School.</i> | | |
| Short, James Clay | C. E. | Bandera. |
| Singletary, Harry Hunter | E. E. | Atlanta. |
| Slauter, Lee B. | Ch. E. | Fort Worth. |
| <i>Graduate Fort Worth High School.</i> | | |
| Smith, Jule Redwine | C. E. | Henderson. |
| Sobel, David | C. E. | Beaumont. |
| <i>Graduate Beaumont High School.</i> | | |
| Spurlock, Robert Floyd | E. E. | Beaumont. |
| <i>Graduate Beaumont High School.</i> | | |
| Sramek, John N. | M. E. | Bryan. |
| Staples, Thomas Malcolm | M. E. | Wylie. |
| Stephens, Uel | C. E. | Lometa. |
| <i>Graduate Lometa Public School.</i> | | |
| Stieber, Charles Hostrasser | M. E. | Rock Springs. |
| Stoner, Charles Dewitt | E. E. | Lakeland, Fla. |
| Taliaferro, Champ Lee, Jr. | T. E. | Henderson. |
| Taylor, Leslie | E. E. | Blum. |
| <i>Graduate Blum High School.</i> | | |
| Taylor, Otis | E. E. | Corsicana. |
| <i>Graduate State Orphan High School.</i> | | |
| Taylor, Richard Lee | M. E. | Clarksville. |
| <i>Graduate Clarksville High School.</i> | | |
| Tippett, Cleveland | E. E. | Greenville. |
| Tips, Eugene Conrad | Arch. | Seguin. |
| Tomlinson, James Alexander | M. E. | Lott. |
| Van Hutton, Edgar | E. E. | LaGrange. |
| Wagnon, Dan Peter | Arch. | Mathis. |
| Ward, Henry Gohlke | M. E. | San Antonio. |
| Watling, Foster Edgerton | M. E. | Los Angeles, Cal. |
| Werner, Arthur M. | E. E. | Mt. Pleasant. |
| White, Jesse Edgbert | E. E. | Gainesville. |
| <i>Graduate Gainesville High School.</i> | | |
| Whitener, Harry William | M. E. | Burton. |
| Wight, Schuyler Byron | M. E. | Odessa. |
| Williamson, Philip Gathings | C. E. | Covington. |
| Winston, Milton Montgomery | E. E. | San Marcos. |
| Wipprecht, Read | Arch. | Bryan. |
| Yakel, Henry Edwin | M. E. | Marshall. |
| Yeates, Clarence Carpenter | E. E. | Katy. |
| Zedler, Otto Frederick Christian | E. E. | Ottine. |
| Total, 189. | | |

TWO-YEAR COURSE IN TEXTILE ENGINEERING.

Second Year.

| | |
|------------------------|--------------|
| Crockett, Claude | Prosper. |
| Cover, William Joseph | San Antonio. |
| Mittanck, Erwin Albert | Kerrville. |
| Total, 3. | |

First Year.

| | |
|-----------------------------|-----------------|
| Ballew, Henry Logan | Honey Grove. |
| Caldwell, Eugene H. | Brownwood. |
| Corley, James Robert | Flatonia. |
| Donohue, Edward Charles | El Paso. |
| Duncan, Donald Lee | Dallas. |
| Dycus, Gage | Dallas. |
| Garitty, John Patterson | Corsicana. |
| Higginbotham, Graily Hewell | Lakewood, N. M. |
| Jones, William Echols | Utopia. |

| | |
|---------------------------------------|--------------------|
| Jourdan, Harry..... | Del Rio. |
| Love, William Oscar..... | Gorman. |
| Lyne, Eugene Scott..... | Houston. |
| McArthur, Olia Alexander..... | Jacksonville, Ala. |
| Mower, Robert Lefferts..... | Corsicana. |
| Muse, Willard Burt..... | Dallas. |
| O'Brien, Jack..... | Galveston. |
| Reynolds, James Boone..... | Buck. |
| Roberts, McClellan..... | Corsicana. |
| Spake, William Edwin..... | Dallas. |
| Turner, Albert William, Jr..... | Cuero. |
| Wolters, Gus..... | Shiner. |
| <i>Graduate Shiner Public School.</i> | |
| Wood, Robert Burns..... | Enid, Okla. |
| Total, 22. | |

Unclassified.

| | | |
|---------------------------------------|-----------|------------------|
| Bower, Walter Olin..... | A. E..... | Stephenville. |
| Carson, William Willis..... | E. E..... | Sherwood. |
| <i>Graduate Sherwood High School.</i> | | |
| Eason, Claud Frank..... | E. E..... | Nacogdoches. |
| Gentsch, Horace Stokes..... | E. E..... | College Station. |
| Phillips, Frank Robert..... | T. E..... | Perry. |
| Rice, John D..... | C. E..... | Hillsboro. |
| Royer, Lloyd David..... | M. E..... | Denver, Colo. |
| Smith, William Wiley..... | C. E..... | McKinney. |
| <i>Graduate McKinney High School.</i> | | |
| Total, 8. | | |

Special Students.

| | | |
|--|-----------|----------------|
| Arnold, Guy Renfro..... | Arch..... | Rockdale. |
| Elliott, Walton Henderson..... | Arch..... | Greenville. |
| <i>Graduate Greenville High School.</i> | | |
| Ervin, Manvel..... | Arch..... | Fort Worth. |
| Garwood, George Calvin..... | Arch..... | San Antonio. |
| <i>Graduate Peacock Military College.</i> | | |
| Hamerly, Jewell Silas..... | M. E..... | Oakhurst. |
| Lacy, George Harry..... | Arch..... | Marble Falls. |
| <i>Graduate Valley Mills High School.</i> | | |
| von Rosenberg, Leslie August..... | Arch..... | Hallettsville. |
| <i>Graduate Hallettsville High School.</i> | | |
| Total, 7. | | |

SUMMARY OF ATTENDANCE.**School of Agriculture.**

| | |
|------------------------|-----|
| Graduate students..... | 2 |
| Seniors..... | 45 |
| Juniors..... | 51 |
| Sophomores..... | 124 |
| Freshmen..... | 155 |

Two-Year Courses.

| | |
|-------------------|----|
| Second year..... | 26 |
| First year..... | 96 |
| Unclassified..... | 7 |
| Special..... | 8 |

Total in the School of Agriculture.....

514

SCHOOL OF ENGINEERING.**Graduate Students.**

| | |
|-----------------------------|---|
| Chemical Engineering..... | 4 |
| Civil Engineering..... | 3 |
| Electrical Engineering..... | 2 |
| Mechanical Engineering..... | 3 |

12

SUMMARY.

191

Seniors.

| | |
|--------------------------------|----|
| Architectural Engineering..... | 8 |
| Chemical Engineering..... | 3 |
| Civil Engineering..... | 38 |
| Electrical Engineering..... | 24 |
| Mechanical Engineering..... | 9 |
| Textile Engineering..... | 4 |

86

Juniors.

| | |
|-----------------------------|----|
| Architecture..... | 5 |
| Chemical Engineering..... | 2 |
| Civil Engineering..... | 15 |
| Electrical Engineering..... | 22 |
| Mechanical Engineering..... | 20 |

64

Sophomores.

| | |
|-----------------------------|----|
| Architecture..... | 14 |
| Chemical Engineering..... | 6 |
| Civil Engineering..... | 28 |
| Electrical Engineering..... | 36 |
| Mechanical Engineering..... | 16 |
| Textile Engineering..... | 8 |

108

Freshmen.

| | |
|-----------------------------|----|
| Architecture..... | 21 |
| Chemical Engineering..... | 5 |
| Civil Engineering..... | 45 |
| Electrical Engineering..... | 73 |
| Mechanical Engineering..... | 39 |
| Textile Engineering..... | 6 |

189

Two-Year Course in Textile Engineering.

| | |
|-------------------|----|
| Second year..... | 3 |
| First year..... | 22 |
| Unclassified..... | 8 |
| Special..... | 7 |

40

Total in the School of Engineering.....

499

Total Attendance, Regular Session.....

1013

Short Winter Course in Agriculture.....

109

Summer School of Cotton Classing.....

6

Total Enrollment, Session 1912-13.....

1128

REGIMENTAL ORGANIZATION 1912-13.

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.

B. P. Day, Chief Musician.

LINEAL RANK OF OFFICERS AND NON-COMMISSIONED OFFICERS OF THE CADET REGIMENT.

| | | |
|-----------------------|--------------------------|---------------------------|
| Colonel. | 9. Young, M. H. | First Sergeants. |
| 1. Baylor, R. E. | 10. Roberts, C. A. | 1. Hoepfner, F. W. |
| Lieutenant Colonel. | 11. Rollins, J. G. | 2. Scott, F. L. |
| | 12. Schaefer, S. E. | 3. Parr, V. V. |
| | 13. Ragsdale, T. M. | 4. Lenert, A. A. |
| 1. Orth, W. A. | 14. Lott, J. G. | 5. Jordan, G. F. |
| Majors. | 15. Hudgins, L. A. | 6. Emmett, C. P. |
| | 16. Harrison, E. W. | 7. James, O. J. |
| 1. Borchert, W. C. | 17. Kraege, A. C. A. | 8. Knox, G. P. |
| 2. Hays, F. P. | 18. Sayers, A. F. | 9. Tinker, E. B. |
| 3. Bell, T. L., Jr. | 19. Nolte, R. W. | 10. Snider, J. B. |
| Captains. | 20. Taylor, A. B. | 11. Vossler, J. M. |
| | 21. Tucker, D. H. | 12. Powell, L. H. |
| | 22. Hill, J. R. | |
| | 23. Lown, F. D. | Sergeants. |
| 1. Waters, J. J., Jr. | 24. Caldwell, R. E. | 1. Wear, H. A. |
| 2. Scofield, J. A. | 25. Gillette, P. C. | 2. Smith, J. R. |
| 3. Lammers, E. S. | 26. Fountain, E. J. | (Trophy Sergeant.) |
| 4. Miller, W. Z. | 27. French, W. A. | 3. Bower, W. O. |
| 5. Jackson, J. W. | 28. Lockett, W. R. | 4. Herrington, J. J. |
| 6. Fries, L. | 29. Connellee, E. T. | 5. Schmidt, F. H. |
| 7. Whitfield, C. A. | 30. Cox, R. W. | 6. Davis, T. C. |
| 8. Oliver, C. | 31. Langford, E. | 7. Stroud, M. L. |
| 9. Bowler, S. E. | 32. Walzem, L. F. | 8. Miller, V. W. |
| 10. Lienhard, L. V. | 33. Anderson, J. V. | 9. Farthing, W. E. |
| 11. Miller, R. S. | Regimental Sergeant | 10. Pickens, D. B. |
| 12. Stevens, A. C. | Major. | 11. Reed, W. N. |
| 13. Hale, J. D. | 1. Kotzebue, M. H. | 12. Broome, W. S. |
| 14. Holland, C. J. | Regimental Quartermaster | 13. Tanner, E. L. |
| 15. Burlison, W. H. | Sergeant. | 14. Slay, S. H. |
| 16. Schroeter, R. R. | | 15. McDowell, J. C. |
| 17. Fischer, H. H. | | 16. Braunig, H. E. |
| First Lieutenants. | 1. Miller, A. C. | 17. Rhodes, J. E. |
| | Regimental Ordnance | 18. Green, R. |
| 1. Weinert, H. G. H. | Sergeant. | 19. Biggers, C. A. |
| 2. Chinski, C. C. | | 20. Warren, C. B. |
| 3. Jones, H. P. | 1. Gibbens, E. | 21. Booth, G. E. |
| 4. Tolbert, W. S. | Regimental Commissary | 22. Bradley, E. I. |
| 5. Cain, R. W. | Sergeant. | 23. Ayers, E. L. |
| 6. Brown, J. F. | | 24. Sparkman, F. A. |
| 7. Collins, J. W. H. | 1. Simpson, J. N. | 25. Peterson, J. A. |
| 8. Eversberg, E. A. | Regimental Color | 26. Schuwirth, W. C. |
| 9. Laake, E. W. | Sergeant. | 27. McGinnis, P. T. |
| 10. Joplin, J. F. | | 28. Goodwin, J. C. |
| 11. Donoho, W. T. | 1. Crockett, W. E. | 29. Dodson, A. E. |
| 12. Davis, J. N. | Chief Trumpeter. | 30. Ball, B. C. |
| 13. Cardwell, W. W. | | 31. Irby, A. H. |
| 14. Anderson, R. O. | 1. Stone, J. M. | 32. Beasley, W. G. |
| 15. Lyles, J. V. | Battalion Sergeants | 33. Harrison, J. C. |
| 16. Dowell, H. B. | Major. | 34. Jennings, A. L. |
| 17. Torrence, W. C. | | 35. Shiller, H. H. |
| Second Lieutenants. | | 36. Jones, T. W. |
| | | 37. Fisher, J. K. G. |
| 1. Ehlinger, R. B. | | 38. Lane, G. I. |
| 2. Montgomery, F. L. | | 39. Killough, D. T. |
| 3. Spence, T. R. | | 40. Groginski, P. |
| 4. Olson, J. N. | | 41. Rollins, M. E. |
| 5. Langdon, Y. M. | | 42. Jensen, J. C. |
| 6. Ohlendorf, W. | | 43. Baker, H. K. |
| 7. Lane, G. J. | Drum Major. | 44. Girardeau, E. R., Jr. |
| 8. Eagleston, E. G. | 1. Brundrett, H. M. | 45. Cole, N. D. |
| | | 46. Parker, E. |

Corporals.

- | | | |
|-----------------------|-----------------------|-----------------------|
| 1. Crockett, C. E. | 18. Warren, C. F. | 37. Sansom, G. W. |
| 2. Thornton, J. M. | 19. Davis, C. J. | 38. Jarrett, E. L. |
| 3. Scott, D. W. | 20. Mayo, H. M. | 39. Montague, F. O. |
| 4. Eagleton, C. M. C. | 21. Wilson, C. S. | 40. Ellis, H. F. |
| 5. Kinnard, A. W. | 22. Dunning, G. R. | 41. Campbell, A. R. |
| 6. Hinton, W. B. | 23. Braumiller, W. E. | 42. Crisp, M. C. |
| 7. Adriance, G. W. | 24. Moore, J. H. | 43. Searight, G. A. |
| 8. Francis, W. B. | 25. Glaze, W. O. | 44. Bouknight, R. A. |
| 9. Bugbee, J. S. | 26. Hill, M. E. | 45. Williams, C. W. |
| 10. Hogue, E. N. | 27. Faber, B. H. | 46. Stittler, E. E. |
| 11. Brumfield, E. B. | 28. Mowery, I. H. | 47. Skeeler, W. J. |
| 12. Gammill, H. H. | 29. Turnage, R. E. | 48. Overstreet, A. M. |
| 13. Bell, J. E. | 30. McCollum, H. T. | 49. Coleman, W. C. |
| 14. Allen, R. R. | 31. Palmer, G. C. | 50. Clarkson, P. W. |
| 15. Bates, W. H. | 32. Moss, M. A. | 51. Young, R. L. |
| 16. Bruton, D. D. | 33. Greene, O. W. | 52. Lynch, H. |
| 17. Trew, R. L. | 34. Brown, L. W. | 53. Garitty, J. P. |
| | 35. Clark, S. F. | 54. Skeen, S. D. |
| | 36. Wisrodt, C. E. P. | |

ASSIGNMENTS TO ORGANIZATIONS.

Colonel—Baylor, R. E.
 Lieutenant Colonel—Orth, W. A.
 Captain and Adjutant—Waters, J. J., Jr.
 Captain and Quartermaster—Stevens, A. C.
 Captain and Ordnance Officer—Bowler, S. E.
 Captain and Commissary—Miller, W. Z.
 Regimental Sergeant Major—Kotzebue, M. H.
 Regimental Quartermaster Sergeant—Miller, A. C.
 Regimental Ordnance Sergeant—Gibbens, E.
 Regimental Commissary Sergeant—Simpson, J. N.
 Regimental Color Sergeant—Crockett, W. E.

The Band.

| | |
|---------------------|--------------------|
| Captain. | Drum Major. |
| Lienhard, L. V. | Brundrett, H. M. |
| First Lieutenant. | Sergeant. |
| Laake, E. W. | Slay, S. H. |
| Second Lieutenants. | Corporals. |
| Schaefer, S. E. | Eagleton, C. M. C. |
| Hill, J. R. | Faber, B. H. |
| | Green, O. W. |
| | Jarrett, E. L. |

Bugle Corps.

| | |
|------------------|----------------|
| Chief Trumpeter. | Corporals. |
| Stone, J. M. | Garitty, J. P. |
| | Skeen, S. D. |

First Battalion.

Major—Borchert, W. C.
 First Lieutenant and Adjutant—Lyles, J. V.
 Second Lieutenant and Quartermaster—Ehlinger, R. B.
 Sergeant Major—Mayers, H. P.

Company A.
(Trophy Company)

Captain.
 Fischer, H. H.

First Lieutenant.
 Torrence, W. C.

Second Lieutenants.
 Connelley, E. T.
 Langford, E.
 Anderson, J. V.

First Sergeant.
 Scott, F. L.

Sergeants.
 Smith, J. R.
 (Trophy Sergeant)
 Herrington, J. J.
 Rhodes, J. E.
 Ayers, E. L.
 Beasley, W. G.

Company B.

Captain.
 Fries, L.

First Lieutenant.
 Jones, H. P.

Second Lieutenants.
 Lott, J. G.
 Fountain, E. J.

First Sergeant.
 Hoepfner, F. W.

Sergeants.
 Schmidt, F. H.
 Sparkman, F. A.
 Girardeau, E. R., Jr.

Company C.

Captain.
 Jackson, J. W.

First Lieutenant.
 Cain, R. W.

Second Lieutenants.
 Spence, T. R.
 Taylor, A. B.
 Gillette, P. C.

First Sergeant.
 Parr, V. V.

Sergeants.
 Biggers, C. A.
 Peterson, J. A.
 Rollins, M. E.
 Baker, H. K.

Company D.

Captain.
 Oliver, C.

First Lieutenant.
 Cardwell, W. W.

Second Lieutenants.
 Ohlendorf, W.
 Young, M. H.
 Tucker, D. H.

First Sergeant.
 Jordan, G. F.

Sergeants.
 Davis, T. G.
 Harrison, J. C.
 Shiller, H. H.
 Jensen, J. C.

Corporals.
 Crockett, C. E.
 Braumiller, W. E.
 Sansom, G. W.
 Skeeler, W. J.

Corporals.
 Gammill, H. H.
 Palmer, G. C.
 Searight, G. A.
 Bouknight, R. A.

Corporals.
 Mowery, I. H.
 Turnage, R. E.
 McCollum, H. T.
 Lynch, H.

Corporals.
 Bell, J. E.
 Wisrodt, C. E. P.
 Overstreet, A. M.
 Coleman, W. C.

Second Battalion.

Major—Hays, F. P.

First Lieutenant and Adjutant—Weinert, H. G. H.

Second Lieutenant and Quartermaster—Eagleston, E. G.

Sergeant Major—Camp, G. D.

| Company E. | Company F. | Company G. | Company H. |
|---|---|--|--|
| Captain. Hale, J. D. | Captain. Miller, R. S. | Captain. Whitfield, C. A. | Captain. Holland, C. J. |
| First Lieutenant. Davis, J. N. | First Lieutenant. Joplin, J. F. | First Lieutenant. Collins, J. W. H. | First Lieutenant. Eversberg, E. A. |
| Second Lieutenants. Montgomery, F. L. Kraege, A. C. A. | Second Lieutenants. Lane, G. J. Nolte, R. W. | Second Lieutenants. French, W. A. Lockett, W. R. Cox, R. W. | Second Lieutenants. Ragsdale, T. M. Caldwell, R. E. |
| First Sergeant. Snider, J. B. | First Sergeant. Powell, L. H. | First Sergeant. James, O. J. | First Sergeant. Lenert, A. A. |
| Sergeants. Bower, W. O. Stroud, M. L. Warren, C. B. Jennings, A. L. | Sergeants. Miller, V. W. Schuwirth, W. C. McGinnis, P. T. Lane, G. I. | Sergeants. Wear, H. A. Braunig, H. E. Jones, T. W. Parker, E. | Sergeants. Farthing, W. E. Booth, G. E. Killough, D. T. |
| Corporals. Kinnard, A. W. Hogue, E. N. Warren, C. F. Clark, S. F. | Corporals. Hinton, W. B. Moss, M. A. Brown, L. W. Montague, F. O. | Corporals. Francis, W. B. Bruton, D. D. Ellis, H. F. Clarkson, P. W. | Corporals. Davis, C. J. Wilson, C. S. Campbell, A. R. Crisp, M. C. |

Third Battalion.

Major—Bell, T. L., Jr.

First Lieutenant and Adjutant—Chinski, C. C.

Second Lieutenant and Quartermaster—Olson, J. N.

Sergeant Major—Altgelt, G. A.

| Company I. | Company K. | Company L. | Company M. |
|--|---|---|---|
| Captain. Burleson, W. H. | Captain. Schroeter, R. R. | Captain. Lammers, E. S. | Captain. Scofield, J. A. |
| First Lieutenant. Donoho, W. T. | First Lieutenant. Brown, J. F. Dowell, H. B. | First Lieutenant. Tolbert, W. S. | First Lieutenant. Anderson, R. O. |
| Second Lieutenants. Roberts, C. A. Harrison, E. W. | Second Lieutenants. Sayers, A. F. Walzem, L. F. | Second Lieutenants. Langdon, Y. M. Hudgins, L. A. | Second Lieutenants. Rollins, J. G. Lown, F. D. |
| First Sergeant. Emmett, C. P. | First Sergeant. Tinker, E. B. | First Sergeant. Vossler, J. M. | First Sergeant. Knox, G. P. |
| Sergeants. Pickens, D. B. Irby, A. H. Fisher, J. K. G. | Sergeants. Reed, W. N. Green, R. Goodwin, J. C. Groginski, P. | Sergeants. Broome, W. S. Ball, B. C. Cole, N. D. | Sergeants. Tanner, E. L. McDowell, J. C. Bradley, E. I. Dodson, A. E. |
| Corporals. Adriance, G. W. Bugbee, J. S. Moore, J. H. Young, R. L. | Corporals. Scott, D. W. Brumfield, E. B. Allen, R. R. Mayo, H. M. | Corporals. Thornton, J. M. Dunning, G. R. Williams, C. W. Stiteler, E. E. | Corporals. Bates, W. H. Trew, R. I. Glaze, W. O. Hill, M. E. |

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 1912-13, is Company "A."

DEGREES AND HONORS.

(Conferred June, 1912.)

DEGREE OF MECHANICAL ENGINEER.

Bechert, F. J.
B. S., A. & M. College of Texas, 1911.

McMillan, L. B.
B. S., A. & M. College of Texas, 1911.

DEGREE OF BACHELOR OF SCIENCE.**In Agriculture.**

Brown, J. J.
Connor, T. P.
Dickson, R. E.
Ehlinger, G. E.
Farmer, J. S.
Francis, A. J.
Figh, J. R.
Hohn, C.

Jenson, W. M.
Johnson, T. L.
Jones, G. M.
Kenedy, E. J.
Langston, J. A.
Lindley, T. L. P.
McDowell, C. H.
McEachern, C. A.

McMillan, F. N.
Moser, E. F.
Patterson, J. C.
Rosa, R. R.
Shearer, T. R.
Souther, S. C.
Thaxton, H.
Wickes, H. G.
Youngblood, Tom.
(As of 1905)

In Architectural Engineering.

Adams, O.
Barnitz, R. B.

Geren, P. M.
Griesenbeck, C. H.

Mansfield, B. J.
von Rosenberg, H. J.

In Chemical Engineering.

Newton, J. W.

In Civil Engineering.

Atwell, C. S.
Block, J. A.
Boyet, H.
Buckner, J. F.
Burleson, Lieut. R. C.
(As of 1901)
Butler, J. V.
Callaway, W. H.
Carrington, H.
Carruthers, R. B.

Dellis, J. L.
Devine, P. S.
Dickson, J. L.
Dwyer, T. J.
Fries, J.
Haile, C. R.
Hoelle, K. F.
Krueger, C. C.
McCullough, R. E.
Miller, J. D.

Mistrot, G. A.
Scarborough, J.
Schaedel, C. T.
Schlom, C. H.
Sory, E. G.
Stewart, J. E.
Taylor, L. T.
Underwood, H.
Watkins, H. B.
Wilson, A. G.

In Electrical Engineering.

Ashford, G. W.
Atwell, B. D.
Ball, W. A.
Bozeman, J. R.
Cabaniss, W. M.
Carter, T. J.
Chaney, L. P.
Christen, J. C.
Church, W. G.

Collins, A. B.
Cox, H. T.
Eppler, H. G.
Fairbairn, G. C.
Goodwin, W. M.
Green, C. E.
Hemphill, G. H.
Hunt, N. H.
Johnson, M. L.

McFarland, J. L.
Mangum, R. L.
Martin, S. P.
Meece, B. L.
Shropshire, L. O.
Templeton, B. O.
Washington, W. C.
Welborn, G. M.

In Mechanical Engineering.

Caldwell, J. R.
Curtin, W. H.
Forsyth, J. M.

Huth, T. G.
Morley, M. D.
Nave, G. F.

Partridge, R. C.
Romberg, C. B.
Wendland, W. A.

CERTIFICATES IN TWO-YEAR COURSES.**In Agriculture.**

Anderson, R. J.
Boney, R. W.
Brothers, J. R.
Burk, S. M.
Cocanougher, C. M.
Conlisk, L. J.
Ellwood, C. A.

Goen, C. F.
Green, L. M.
Haller, R. B.
Lambert, H. G.
Luedtke, E. R.
Marshall, W. I.
Millender, H. C.

Miller, G. E.
Pugh, M. S.
Reese, A. F.
Ross, W. I.
Simons, R. V.
Staben, E. O.
Taylor, C. E.

In Textile Engineering.

Glover, P. J.

Harris, J. D.

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.

Morley, M. D.

JUNIOR CLASS.

Ohlendorf, W., Tilton, L. W.

FRESHMAN CLASS.

Bugbee, J. S.

GRADUATING CLASS.

(With Subjects of Theses.)

Graduate Courses.

(For the Degree of Mechanical Engineer.)

Bechert, Fred John; McMillan, Luther Burchard—(Substituted other work for Thesis.)

Course in Agriculture.

(For the Degree of Bachelor of Science in Agriculture.)

Brown, Joe Joshua, Cherokee, Texas; McMillan, Frank Ney, Calvert, Texas—Ensilage for Beef Production.

Connor, Thomas Patrick, Red Oak, Texas; Patterson, John Carr, Clarendon, Texas—The use of Starters in Butter Making.

Dickson, Roy Esther, Greenville, Texas; Hohn, Caesar, Yorktown, Texas—History and Development of Agriculture and Manual Training in the Public Schools of Texas.

Ehlinger, George Elo, LaGrange, Texas; Wickes, Henry Gillette, Bryan, Texas—Development of an Experimental Breeding and Feeding Farm at College Station.

Farmer, Joseph Sayers, Junction, Texas; McEachern, Carl Angus, Austin Texas—Equipment and Management of a Modern Dairy Farm at College Station.

Figb, John Rufus, Dallas, Texas—Silo Construction and Ensilage.

Francis, Andrew Jones, College Station, Texas—Anatomy of Distoma Hepaticum.

Jenson, William Marion, Coolidge, Texas; Langston, John Adams, Cleburne, Texas—Comparative Tests of Some Milk Bacteria Under Varying Conditions.

Johnson, Thomas Loraine, Lissie, Texas—The Potency of Hog Cholera Serum.

Jones, George Mitchell, Smithville, Texas; McDowell, Cincinnatus Hamilton, Taft, Texas; Shearer, Thomas Rodney, Houston, Texas—Laboratory Studies of the Soils of a Corpus Christi Truck Farm.

Kennedy, Edwin Jay, Houston, Texas; Souther, Sim Cruse, Rosebud, Texas—A Physical and Chemical Study of the Soils of Grayson County.

Lindley, Thomas Lee Pendleton, Wortham, Texas; Moser, Ernest Frederick, Dallas, Texas—The Angora Goat Industry in Texas.

Rosa, Ralph R., Sandy, Texas; Thaxton, Harold, Mason, Texas—A Comparison of Some Texas Grown Feed Stuffs for Mutton Production.

Youngblood, Tom, Davis, Okla. (Class of 1905)—Proposed Reorganization of the Dairy Farm of the A. & M. College of Texas.

Course in Architectural Engineering.

(For the Degree of Bachelor of Science in Architectural Engineering.)

Adams, Quinlan, Bryan, Texas; Barnitz, Richard B., San Antonio, Texas—Design of a Bank Building.

Geren, Preston Murdock, Sherman, Texas—Design of Portions of Foundation and of Steel Frame for Twelve-Story Office Building.

Mansfield, Bruce Jefferson, Columbus, Texas—Design of School Building.

Von Rosenberg, Herbert John, Hallettsville, Texas—Design of a Mercantile Building.

Griesenbeck, Clyde Hugo, San Antonio, Texas—Design of an Apartment House.

Course in Chemical Engineering.

(For the Degree of Bachelor of Science in Chemical Engineering.)

Newton, John Wharton, Bryan, Texas—Comparative Study of the Refining of Hotpressed and Coldpressed Cottonseed Oil with Caustic Soda.

Course in Civil Engineering.

(For the Degree of Bachelor of Science in Civil Engineering.)

Atwell, Charles S., Hutchins, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Block, Jake Albert, Houston, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Boyett, Horace, Bryan, Texas—Survey and Estimate for Improvement of Roads on the College Campus.

Buckner, John Franklin, Glenfawn, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Burleson, Lieut. Richard Coke, San Antonio, Texas—(Class of 1901)—The Action of Nickel Steel Rings Under Stress from Internal Strains.

Butler, Jesse Vernon, Nederland, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Callaway, William Henry, Charco, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Carrington, Henry, Bay City, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Carruthers, Robert Bruce, Coryell, Texas—Plans and Estimates for a Gravel Road Between Bryan and College Station.

Dellis, Joseph Lloyd, Abilene, Texas—The Design of a Railroad Bridge of 196 ft. Span.

Devine, Patrick Sarsfield, Laredo, Texas; Krueger, Carl Clifton, San Antonio, Texas—Tests of Building Brick.

Dickson, John Lafayette, Velasco, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Dwyer, Thomas Joe, El Paso, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Fries, John, San Antonio, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Haile, Charles Radcliffe, San Antonio, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Hoefle, Karl Fred, Velasco, Texas—The Design of a Railroad Bridge of 196 ft. Span.

McCullough, Robert Edgar, Houston, Texas; Underwood, Harris, Houston, Texas—Comparative Tests of the Strengths of Cement Mortars as Affected by the Character of the Sand Used.

Miller, J. D., Comanche, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Mistrot, Gustave Antoine, Jr., Houston, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Scarborough, John, Corsicana, Texas—The Design of a Railroad Bridge of 196 ft. Span.

Schadel, Charles Theodore, Bay City, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Schlom, Charles Hyman, Houston, Texas—The Design of a Railroad Bridge of 168 ft. Span.

Sory, Eugene Gilbert, Mount Enterprise, Texas—The Design of a Railroad Bridge of 154 ft. Span.

Stewart, Joe Edgar, Sandy, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Taylor, Lee Thomas, San Augustine, Texas—The Design of a Railroad Bridge of 161 ft. Span.

Watkins, Homer Bailey, Bowie, Texas—The Design of a Railroad Bridge of 189 ft. Span.

Wilson, Addison George, McKinney, Texas—The Design of a Railroad Bridge of 182 ft. Span.

Course in Electrical Engineering.

(For the Degree of Bachelor of Science in Electrical Engineering.)

Ashford, George William, Diboll, Texas; Atwell, Benjamin D. Jr., Hutchins, Texas—Test of a Direct Connected Gasoline Engine Driven Generator Set.

Ball, William Armour, San Diego, Texas; Cabaniss, Walter Marcus, Garland, Texas; Carter, Thomas Jefferson, Celeste, Texas—Test of the Bryan Power Plant.

Bozeman, Jeff Ray, Dayton, Texas; Hemphill, Grover Hicks, Tyler, Texas—A Study of Electric Elevators.

Chaney, Leonard Press, Beaumont, Texas—Plans and Specifications for the Electrification of the Bryan College Interurban Railway.

Christine, Joseph Charles, Laredo, Texas; Church, Warren George, Farmersville, Texas—Test of the Bryan Power Plant.

Collins, Allan Buren, Mexia, Texas; Shropshire, L. Otis, Plainview, Texas—An Appraisal of the Electric Light Lines of the A. & M. College of Texas, and an Estimate of the Cost of Putting Certain Lines Underground.

Cox, Henry Taylor, Hereford, Texas—Rewinding a Five-horse Power Induction Motor for Two Speeds.

Eppler, Henry Gilford, Cisco, Texas—Johnson, Melville Lockett, Stockdale, Texas—A Study of the Parallel Operation of the Generators of the New Power Plant of the A. & M. College of Texas.

Fairbairn, George Calvin, Mineral Wells, Texas—Rewinding a Three-horse Power Induction Motor.

Goodwin, William Mulvey, Beaumont, Texas; Mangum, Raleigh Lee, Sabine Pass, Texas; Meece, Brown Louis, Livingston, Texas—A Study of Watt-hour Meters Under Service Conditions.

Green, Charles Elmer, Peniel, Texas; Hunt, Noah Houston, Oakwood, Texas—An Investigation of the Advisability of Purchasing Power from Bryan for Use at the College.

McFarland, James Lee, Santa Anna, Texas; Martin, Samuel Paul, Bryan, Texas—The Design of an Electric System for the Bryan College Interurban Railway.

Templeton, Bryce Osborn, Cleburne, Texas—A Study of Alternating Current Rectifiers.

Washington, William Claude, Austin, Texas—The Design and Reconstruction of Two Commercial Transformers.

Welborn, George M., Palestine, Texas—(Substituted other work for Thesis).

Course in Mechanical Engineering.

(For the Degree of Bachelor of Science in Mechanical Engineering.)

Caldwell, James Robert, San Marcos, Texas; Forsyth, James Milen, McKinney, Texas—Construction and Test of a Four-Cycle Gasoline Engine.

Curtin, William Henry, Houston, Texas; Nave, Gordon Fletcher, Kenedy, Texas—Construction and Test of a Four-Cycle Gasoline Engine.

Huth, Theodore George, San Antonio, Texas; Partridge, Roscoe Conklin, Munday, Texas—An Experimental Study of the Airlift Method of Pumping Water.

Morley, Marcus DeLafayette, Fort Worth, Texas; Romberg, Carl Bernard, Holland, Texas; Wendtland, Willie Armen, Shiner, Texas—Test of a Diesel Engine.

ALUMNI.

(Association Organized 1886.).

ORGANIZATION FOR 1912-1913.

| | |
|--------------------------------------|----------------------------|
| HAL MOSELEY, Dallas..... | President |
| S. A. McMILLAN, College Station..... | 1st Vice President |
| G. B. OGLESBY, Gordonville..... | 2nd Vice President |
| A. M. FERGUSON, Sherman..... | 3rd Vice President |
| A. MITCHELL, College Station..... | Secretary-Treasurer |
| F. K. MCGINNIS, Terrell..... | Member Executive Committee |

Executive Committee.

HAL MOSELEY.

F. K. MCGINNIS.

A. MITCHELL.

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 of 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.
- ABRAHAM, J. E., 1900, III, Cashier, with Jos. Landa, New Braunfels.
- *ABRAHAM, 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, Builders' Supply, Dallas.
- ADAMS, F. L., 1892, I, Farmer, Stafford.
- ADAMS, LEM., 1908, IV, Draftsman, Oregon Short Line, Pocatello, Idaho.
- ADAMS, Q., 1912, VII, with Gravens & 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.
- ADKISSON, W. T., 1910, IV, U. S. Eng. Corps, Shreveport.
- *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, Rice Farmer, Richmond.
- ALDWELL, R. E., 1909, V, Asst. Cashier, First National Bank, Sonora.
- ALEXANDER, D. E., 1880, Fort Worth.
- 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., 1892, IV, Farming, 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, W. D., 1890, I, Manager Ice Works, Waxahachie.
- ANDREWS, V., 1884, III, Physician, Floydada.
- ARMSTRONG, M. F., 1882, III, Real Estate and Banking, Mission.
- ARMSTRONG, J. F., 1906, III, Mining, Guanajuato, Mexico, Box 33.
- ARNESON, E. P., 1910, IV, Medina Irrigation 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, Planter, Mumford.
- ATWELL, B. D., Jr., 1912, V, W. E. & M. Co., Wilkinsburg, Pa.
- ATWELL, C. S., 1912, IV, Transitman for Texas Speedway, 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., Dallas.
- 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, Farmer, 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, Dairy Investigation, United States Department of Agriculture, R. F. D. No. 2, Knoxville, Tenn.
- BARNITZ, R. B., 1912, VII, San Antonio.
- BARWIS, I. G., 1910, VII, Architectural Draftsman, Fairfield, Iowa.
- BASS, R. O., 1909, V, Electrician, Los Angeles, Cal.
- BATTE, T. R., 1902, IV, Chief Engineer, Rio Bravo Oil Co., Houston.
- BAUER, F., 1904, III, Ginner, Burton.
- BAUM, J. A., 1903, IV, Civil Engineer, Georgia.
- BEALL, V. Z., 1908, IV, Student M. I. of Tech., 263 Newbury, Boston.
- BEAN, B., 1907, IV, C. E., 1909, Civil Engineer, Los Angeles, Cal.

- BEAUREGARD, R. T., 1910, IV, Medina Irrigation Co., San Antonio.
 BECHERT, F. J., 1911, III, M. E., 1912, 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. Railway, Galveston.
 BING, B. L., 1910, I, Farmer, Waller.
 BITTLE, P. B., 1896, I, Superintendent City Schools, Henderson.
 BITTLE, T. C., JR., 1900, IV, care C. C. Todd, San Antonio.
 BITTLE, A. W., 1894, I, Professor Mathematics, La. Ind. Institute, Lafayette, 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, Agriculturist, San Antonio.
 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, Navasota.
 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, Marfa.
 BORN, THOMAS C., 1905, I, General Contractor, Houston.
 BOWER, W. E., 1908, V, Farmer, R. F. D. No. 5, Hico.
 BOYCE, CHARLES W., 1905, I, Farmer, Charco.
 BOYCE, W. JR., 1907, IV, Roadmaster, C. G. W. R. R., Chicago, Ill.
 BOYETT, H., 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, Van. U., 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, Bell Tel. Co., Pittsburg, Pa.
 BROWN, H. P., 1911, I, Farmer, Mathis.
 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, P. G. Student, College.
 BUCHANAN, T. S., 1909, IV, Resident Engineer, F. F. C. C. N. of Mex., Ajono, Kilo, 110 Michoacan, Mex.
 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, Fort Myer, Va.
 BURLESON, R. W., 1895, III, Cashier, W. M. & Co., Bank, San Saba.
 BURMEISTER, C. A., 1908, I, Teacher of Agriculture, Brownwood.
 BURNEY, J. W., 1896, III, Lumberman, Kerrville.

- BURNEY, R. L., 1906, IV, Chief Eng., Mex. Coal and Coke Co., Los Esperanzos, Coahuila, Mexico.
- BURNS, A. C., 1907, I, Veterinary Surgeon, Cleburne.
- BURNS, H. E., 1906, IV, Draftsman, Colorado Southern R. R., Beaumont.
- BURNS, J. C., 1904, I, Acting Professor of Animal Husbandry, College Station.
- BURRITT, W. P., 1906, III, Asst. City Eng., San Antonio.
- BURT, F. O., 1910, IV, City Engineer's Office, Waco.
- BUTLER, J. J., 1912, IV, Medina Valley Irrigation Co., La Costa.
- BYARS, G. E., 1910, IV, with City Engineer, Waco.
- CABANISS, W. M., 1912, V, Garland.
- CALDWELL, J. C., 1883, III.
- CALDWELL, J. R., 1912, III, Architecture, San Marcos.
- CALLAWAY, W. H., 1912, IV, City Engineering Department, Corpus Christi.
- CAMPBELL, D., 1879, Stockman, El Paso.
- CAMPBELL, R. W., 1899, III, President and Bookkeeper, Campbell-Hutcheson Hardware Co., Roff, Okla.
- 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, J., 1912, IV, Civil Engineer, Bay City.
- CARROL, J. G., 1911, 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. and 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, 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, R., 1885, I, Cashier United States Land Office, Oklahoma City, Okla.
- CARUTHERS, R. B., 1912, IV, City Engineer Department, Waco.
- CASEY, P. D., 1908, VI, Secretary Police Department, Dallas.
- CASEY, G. P., 1897, I, Clerk, M., K. & T. Ry., 200 San Jacinto St., Dallas.
- CAVITT, J. S., 1911, 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., 1879, Real Estate and Loans, 501½ Main St., Fort Worth.
- CHANEY, L. P., 1912, V, Houston Electric Co., Houston.
- CHRISTEN, B. C., 1912, V, 500 Kelly St., Wilkinsburg, Pa.
- CHRISTIAN, J. B., 1910, IV, Houston.
- CHRISTIAN, J. B., 1911, IV, 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.
- CLAXTON, W. B., 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, Pearlsall.
- COCHRAN, J., 1904, I, C. E., 1905, Trussed Concrete Steel Co., Detroit, Mich.
- COCK, C. E., 1911, I, Highway Engineer, Gonzales County, Gonzales.
- COGHILL, E. S., 1911, IV, Medina Irrigation Co., Ingram.
- COHN, S. L., 1897, V, Advertising Manager, Sherman Oil and Cotton Co., Sherman.
- COLE, A. T., 1909, V, Engineering Department, T. & N. O. Ry., Y. M. C. A. Bldg., Houston.
- COLEMAN, M. M., 1910, I, Ranchman, Lubbock.
- COLEMAN, N. P., 1911, III, Lineman, Bryan Tel. Co., Bryan.
- COLLINS, J. A., 1907, V, Louisiana Creosoting Co., Winfield, La.
- COLLINS, A. B., 1912, V, Denver Gas and Electric Co., Denver, Col.
- 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, Engineer, City Engineer's Office, Dallas.
- COULTER, H. T., 1895, I, 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.
- COX, D. W. S., 1892, IV, Manager Freight Department, Dallas Transfer Co., Dallas.
- COX, H. T., 1912, V, Hereford.
- 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, C. E., U. S. Eng. Corps, Crockett.
- 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.
- 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, Houston.
- CUSHING, D., 1891, III, Pharmacist, Starkville, Miss.
- CUSHING, E. B., 1880, III, C. E., 1899, Chief Engineer, Construction Sunset-Central Lines, President Board Directors, A. and 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.
- DAVIS, D. O., 1911, I, McKinney.
- DASHIELL, W. R., 1891, IV, Physician, Surgeon for the Victor Fuel Co., Gray Creek, Col.
- DAVENPORT, H. S., II, Agriculturist, 2 Crawford St., Palestine.
- DAVIS, J. M., 1903, IV, Banker, Forney.
- DAVIS, J. N., 1885, III, Farming and Stock Raising, 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, Meca Hotel, Houston.
- DICKERSON, A. F., 1910, V, Gen. Elec. Co., Schenectady, N. Y.
- DICKERSON, W. E., 1911, IV, County Surveyor, Cuero.
- DICKSON, J. L., 1912, IV, Velasco.
- DICKSON, R. E., 1912, I, Principal Cooper High School, Cooper.
- 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.
- DORSEY, W. L., 1911, V, Assistant Commandant, Peacock's Military College, San Antonio.
- DOWNS, J. R., 1879, Lawyer, Waco.
- DOWNS, P. L., Cashier First National Bank, Temple.
- DRISDALE, W. E., 1889, II, Physician and Surgeon for Victor-Amer. Fuel Co., Gray Creek, Col.
- 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, BRÜNO 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.
- 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, LaGrange.
- EHLERS, W. J., 1910, VII, Architect, Bishop.
- EHLINGER, G. E., 1912, I, LaGrange.
- EHLINGER, L., 1906, IV, Draftsman, General Land Office, Austin.
- EHRHARDT, J. E., 1910, IV.
- *ELDRIDGE, H. M., 1897, IV.
- ELLIOTT, J. E., 1910, VII, Architectural Draftsman with W. H. Young, Architect, Houston.
- 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, 1131 Yale St., Houston.
- ELLIS, FORT O., 1894, IV, Merchant, Harrisonburg, La.
- ELLIS, O. L., 1908, V, Telephone Co., Clovis, N. M.
- ELROD, H. E., 1901, III, Consulting Engineer, S. W. Life Bldg., Dallas.
- ENGLISH, M. G., 1909, IV, with Stone & Webster, Houston.
- EPPLER, H. G., 1912, V, Cisco.
- EPRIGHT, 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. R. Co., Palestine.
- EUDALY, E. R., 1910, I, Manager Brookdale Farms, Jewett.
- EVANS, C. D., 1899, IV, Civil Engineer, Shreveport, La.
- EVANS, C. M., 1908, I, Superintendent Agricultural Extension Dept., College Station.
- EVERSBURG, O. L., 1910, I, with Armour & Co., Brenham.
- FAIRBAIRN, G. C., 1912, V, Port Arthur Lt. and Pr. 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. and Tel. Co., Dallas.
- FITNEY, 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.

- 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., 1917, 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, 1201 Holman Ave., Houston.
 FORSYTH, J. M., 1912, III, McKinney.
 FORT, F. W., 1879, Wholesale Grain, Provident Building, Waco.
 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. Pressa 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. and 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.
 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.
 GARBAGE, 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, Draftsman, M. K. & T. Ry., Dallas.
 GIESECKE, A. C., 1909, IV, Draftsman, Utah L. & P. Co., Salt Lake City, Utah.
 GIESECKE, B. E., 1911, VII, Post Graduate Student, College Station.
 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, Civil Engineer and Contractor, Gomez Palacios, P. O. Box 82, Durango, Mexico.
 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.
 GILMORE, H. C., 1896, III, Electrician, Barden Electric Co., Houston.
 GIST, BYRON, 1910, I, Memphis.
 GLASS, R. H., 1904, III, Dentist, Alvin.
 GLASS, WILL, V., 1905, I, Teacher, Franklin.
 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.
 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., FortWorth
 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.
 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.
 HALTOM, G. T., 1906, V, Signal Supervisor, S. P. Ry., Flatonia.
 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, 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.
 HELDENFELS, C. A., 1903, I, Lumber Dealer and Architect, Beeville.
 HELDENFELS, F. W., 1909, VII, Lumber Dealer, Beeville.
 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, Farmer, Wills Point.
 HENDERSON, H. W., 1891, I, Cotton Buyer, Ladonia.
 HENSEL, F., JR., 1907, I, Instructor of Horticulture, College Station.
 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, M. J., 1907, V, District Traffic Manager, S. W. Tel. and Tel. Co., Marshall.
 HOEFLE, K. F., 1912, IV, Amalgamator, Usan, 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, Instructor in Agriculture and Athletic Director, Albertville, Ala.
 HOLCOMB, R. M., 1902, Clerk, Auditor's Office, P. E. Ry, Lines, Los Angeles, Cal.
 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., 1421 Lake Ave., Fort Worth.
 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, Jennings, La.
 HOWELL, J. W., 1894, I, President and Manager, Bryan Cotton Oil Mill 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.
 HULL, B. E., 1904, IV, Chief Engineer, Texas Co., Box 1805, Houston.
 HUNT, N. H., 1912, V, Elec. Cont., Palestine.
 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.
 HYND, H. G., 1910, V, Texas Traction Co., McKinney.
 INGRAM, H. L., 1910, V, Tex. 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.
 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.
 JAPHET, G., 1894, III, Wholesale Fruit and Produce, 917 Commerce St., Houston.
 JAPHET, W. E., 1904, IV, Civil Engineer, J. M. Guffey Co., Wichita Falls.
 JENNINGS, J. W., 1911, I, Teacher of Agriculture, Jasper High School, Jasper.
 JENSON, W. M., 1912, I, Coolidge.
 JOBSON, H. H., 1908, I, U. S. Department of Agriculture, College Station.
 JOBSON, T. S., 1903, III, Signal Supervisor, G., H. & S. A. Ry., El Paso.
 JOHN, J. R., 1910, IV, Draftsman, Sunset Lines, Houston.
 JOHNSON, M. L., 1912, V, Denver Gas and Electric Co., Denver, Col.
 JOHNSON, T. L., 1912, I, Manager, Wadsworth Farm, Wadsworth.
 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., 1888, IV, Bridge Engineer, Sunset Lines, Houston.
 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.
 JORDAN, H. P., 1895, IV, Attorney at Law, Waco.
 JOSEY, N. L., 1888, I, Merchant, San Antonio.
 JOUNE, G. P. F., 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.
 KELLY, H. J., 1911, IV, Orange.
 KENDRICK, R. T., 1906, I, Ranchman, Demmit.
 KENNEDY, O., 1883, III, Attorney at Law, Georgetown.
 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., Corsicana.
 KIRKPATRICK, L. R., 1906, III, McKinney.

- KIRSCHNER, I., 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, Cuero.
 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, E. 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.
 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.
 KREUGER, C. C., 1912, IV, Salesman, S. A., M. and S. Co., San Antonio.
 KRAUSKOPF, E. M., 1911, IV, U. S. Engineer, Miss. River Com., Vicksburg, Miss.
 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. and M. College, Binz Bldg., Houston.
 *KYLE, T. M., 1893, III.
 LANDA, L. M., 1907, V, Automatic Elec. Co., Dallas.
 *LANGDON, W. F., 1911, IV.
 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.
 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, City Engineer, Tahlequah, Okla.
 LEWIS, J., 1900, I, Veterinary Surgeon, Greenwood, Miss.
 LEWIS, L., 1893, I, M. S., 1894, Professor of Zoology and Veterinary Science, Oklahoma A. and M. College, Stillwater, Okla.
 LEWIS, M. G., 1899, III, Locomotive Inspector, Schenectady, N. Y.
 LICHTS, F., 1906, VI, Merchant, Cleburne.
 LILLARD, S. A., 1910, IV, Manager, Flour Mill, Decatur.
 LILLARD, W. W., 1904, IV, U. S. Eng. Corps, Dallas.
 LILLY, R. C., 1907, IV, U. S. Junior Engineer, Box 404, Vicksburg, Miss.
 LINDEMAN, C. E., 1903, III, Machinist, G., C. & S. F. Ry., Cleburne.
 LINDEMAN, JAMES 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, J. L., 1910, IV, Draftsman, Medina Irrigation Co., Lytle.
 LOCKETT, N., 1903, IV, Engineering Department, Care Williamson, Balfour & Co., Taltal, Chile.
 LOMANITZ, S., 1908, Chemist, Houston.
 LOONEY, L. P., 1910, I, Farmer, R. F. D. No. 1, Commerce.
 LOUWIEN, H., 1911, V, Denver Gas and Electric Co., Denver, Col.
 LOVE, A. C., 1899, IV, Real Estate, Franklin.
 LOVING, J. W., 1906, I, Ranchman, Jermyn.
 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.
 McADAMS, E. E., 1911, IV, Instructor in Physics, College Station.
 McANELLY, E. E., 1911, VII, Architect, 1101 S. W. Life Bldg., Dallas.
 McCALL, H. S., 1903, IV, Resident Engineer, T. C. R. R., Waco.
 McCONNELL, J. P., 1911, IV, M. K. & T. Ry., Oklahoma City, Okla.
 McCONNICO, 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, Medical Student, University of Texas, Galveston.
 McDONALD, W. A., 1910, V, Houston.
 McDONALD, H. F., 1895, III, Draftsman, General Land Office, Austin.
 McDONALD, W. H., 1902, I, Farmer, Brownsville.
 McDOWELL, C. H., 1912, I, Farmer, Corpus Christi.
 McEACHERN, C. A., 1912, I, Merchant, Route 1, Austin.
 McELROY, T. E., 1908, I, U. S. Department of Agriculture, Stillwater, Okla.
 McFARLAND, ARTHUR, 1905, III, U. S. Engineering Corps, Galveston.

- McFARLAND, J. L., 1912, V, Santa Anna.
 McGINNIS, F. K., 1900, II, Horticulturist, Dallas.
 McGINNIS, N. M., 1908, I, Instructor, College of Industrial Arts, Denton.
 McCRAW, M., 1911, III, Merchant, Dallas.
 McGREGOR, F., 1903, IV, Contractor, Houston.
 McILHENNY, J. L., 1910, IV, San Antonio St. Ry. Co., San Antonio.
 McKAY, C., 1910, V, 100 Kelly St., Wilkinsburg, Pa.
 McKAY, C., 1910, V, Western Electric, Chicago, Ill.
 McKAY, C., 1903, III, Longview, Iron Works, Longview.
 McKNIGHT, O. J., 1903, IV, Assistant 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, Agriculturist, San Antonio.
 McMILLAN, M., 1895, III, Physician and Surgeon, Health Department, New York City.
 McMILLAN, S. A., 1909, I, San Antonio.
 MacNAIR, H. J., 1887, III, 239 W. 39th St., New York City.
 McNEIL, J. C., 1896, IV, Ranchman, Spur.
 McQUEEN, T. B., 1884, III, Secretary, Marlin Oil Co., 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, R. 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, Cashier, Guaranty State Bank, Pearsonville.
 MARTIN, E. B., 1889, 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. F., 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, Cocuimbo, 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.
 MERRIWETHER, W. T., 1891, IV, Tampico, Mexico.
 METCALFE, J. D., 1906, IV, Resident Engineer, H. & T. C. Ry., Caldwell.
 METCALFE, T. P., 1901, 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, Attorney at Law, 401 N. Beard St., Shawnee, Okla.
 MILLER, C. S., 1880, Banker, Ballinger.
 MILLER, E. A., 1908, I, Assistant State Horticulturist, Austin.
 MILLER, H. A., 1883, Broker, Bellville.
 MILLER, J. D., 1912, IV, Comanche.
 MILLER, M. J., 1911, IV, with C. B. Roulet, Dallas.
 MILLER, R. F., 1909, I, Assistant A. and M. College of Montana, Bozeman, Mont.
 MILLICAN, WAYNE, 1907, I, Stock Farmer, Corsicana.
 MINEAR, SYLVESTER, A., 1905, I, Agricultural Department, A. and M. College, Stillwater, Okla.
 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, Assistant Engineer, American Rio Grande Land and Irrigation Co., Mercedes.
 MONROE, J. S., 1900, IV, Assistant Engineer, Mexican Central Ry., Mexico City.
 MONTEMAYOR, R. R., 1911, I, C. Victoria, Tamaulipas, Mexico.
 MONTGOMERY, F. L., 1889, I, Lawyer, Muskogee, Okla.
 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, R., 1892, I, Druggist, Tilden.
 MOORE, T. E., 1892, I, Secretary and Auditor, Eureka Tel. Co., San Antonio.
 MOORE, W. G., 1907, V, Sales Engineer, Arnold & Wetherby, Oklahoma City, Okla.
 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, Instructor in Mechanical Engineering, A. and M. College.

- 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, II, Draftsman, Dallas.
 MOSELEY, HAL., 1901, IV, Civil Engineer, P. O. Box 1682, Dallas.
 *MOSELEY, W. E., 1883, III.
 MOSER, C. OTTO., 1904, I, President North Texas Creamery Co., Dallas.
 MOSER, E. F., 1912, I, 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, Norton Hall, Kv.
 MUNSON, T. A., 1910, IV, Civil Engineer, Angleton.
 MUNSON, A., 1908, V, Civil Engineer, Angleton.
 MUNSON, H. W., 1909, V, Houston.
 MYERS, A. W., 1907, V, McFell Electrical Co., San Francisco, Cal.
 MYERS, O. W., 1900, III, Machinist, I. & G. N. Shops, 406 Austin St., Palestine.
 MYERS, W. G., 1894, III, Mining, Farral, Mexico.
 NAGLE, J. M., 1911, IV, Draftsman, Stone & Webster, Dallas.
 NAVE, G. F., 1912, III, Clerk, S. A. & A. Ry., Kennedy.
 NEALE, E. B., 1908, I, Stock Farmer, Archer City.
 NEATHERY, D. E., 1892, I, Merchant, Farmersville.
 NEFF, A. J., 1903, III, Post Graduate Student, College Station.
 NEIGHBORS, H. H., 1911, VII, Medical Student, University of Texas, Galveston.
 NESS, H., 1889, II, Horticulturist, Experiment Station, College Station.
 NETHERWOOD, D. V., 1908, III, 2nd Lieutenant Coast Artillery, Fort Stevens, Ore.
 NETHERWOOD, J. S., 1911, III, Houston.
 NEWELL, G., 1910, V, Westinghouse E. and M. Co., Houston.
 NEWTON, G., 1898, I, Merchant, Thorndale.
 NEWTON, J. W., 1912, VIII, Instructor in Chemistry, A. and M. College.
 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.
 NORTH, W. G., 1908, I, Farmer, Yoakum.
 O'BAR, J. H., 1893, I, Cotton Buyer, Coleman.
 O'CONOR, T., 1910, V, 515 Soledad St. San Antonio.
 OGLESBY, G. B., 1894, IV, Farming, Gordonville.
 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.
 ORR, W. R., 1906, IV, Grocer, Llano.
 ORTIZ, J. A., 1892, IV, Stockman, 915 Zaragossi St., Laredo.
 OVERSHINER, E. M., 1897, IV, Attorney at Law, Abilene.
 PAPE, C. 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, II.
 PARTRIDGE, R. C., 1912, III, Farming, Munday.
 PATTERSON, J. C., 1912, I, Clarendon.
 PEARCE, R. B., 1911, IV, Instructor in Terracing, College Station.
 PEARSON, H. A., 1893, IV, Farmer, Troy.
 PEDEN, L. 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., 1884, I, Lawyer, Brenham.
 *PERLITZ, W. E., 1893, IV.
 PESCAPY, C. H., 1885, III, Special Agent, 911 Hennen Bldg., New Orleans, La.
 PETER, L. S., 1911, V, Westinghouse Electric Co., Wilkinsburg, 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. B., 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 Hamilton, New York.
 PITTLUCK, B. C., 1894, I, Division College Extension, A. and M. College, Stillwater, Okla.
 POLANSKY, T., 1909, IV, Post Graduate Student, Columbia University, New York.
 POLK, W. A., JR., 1895, IV, Wholesale Grocer, Corsicana.
 POOF, H. M., 1911, IV, U. S. Engineer, Vicksburg, Miss.
 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, Associate Professor of Highway Engineering, College Station.
 *POULTER, R. J., 1899, II.
 PRICE, W. A., 1905, I, Farmer, Reagan.
 PROCTER, J. H., 1910, V, Westinghouse Elec. Co., Wilkinsburg, 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, Professor of Animal Husbandry, Jonesboro, Ark.
 READING, R. S., 1910, V, Otis Elevator Co., Waco.

- 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, Mining Engineer, S.-W. Miami Copper Co., Miami, 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.
 RIKE, 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, Silversmith, Bryan.
 *ROBERTSON, D. K., 1902, III.
 ROBERTSON, R. L., 1909, I, Ranchman, Valentine.
 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, Manager, Farm, Merit.
 ROLLINS, C. W., 1893, IV, Civil Engineer, Neches Canal Co., China.
 ROLLINS, H. M., 1897, III, Foreman Gulfport Creosoting Works, Gulfport, Miss.
 ROMBERG, C. B., 1912, III, Erecting Engineer, Frick Co., Dallas.
 ROSA, R. R., 1912, I, Extension Department, College Station.
 ROSE, W. F., 1894, III, Sanitary Engineer, Box 490, San Antonio.
 ROSEBOROUGH, W. D., 1909, IV, Civil Engineer, Dallas.
 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, Cole Springs.
 ROSS, J. L., 1902, IV.
 ROSS, R., 1902, IV, Civil Engineer, Guatamala City.
 ROUNTREE, T. D., 1898, IV, Physician, Lake Creek.
 ROWELL, T. D., 1885, I, Attorney at Law, Jefferson.
 RUBENKONIG, 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.
 RUDOLPH, R. F., 1911, IV, U. S. Engineer, Box 404, Vicksburg, Miss.
 RUST, W. M., JR., III, Signal Department, Seguin.
 SAMMONS, THOMAS B., 1905, I, Farmer, 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 Hereford Cattle, Clarendon.
 SCARBOROUGH, JOHN, 1912, IV, Corsicana.
 SCHADT, C. A., 1907, V, Merchant, 27th St., and Ave. H, Galveston.
 SCHAEFFER, R. E., 1908, III, Salesman, Schulenburg.
 SCHAEDEL, C. T., 1912, IV, San Benito Drainage Co., San Benito.
 SCHAW, 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, 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.
 SCHUMACHER, H. C., 1892, IV, Wholesale Grocer, Houston.
 SCHWAB, L. C., 1911, III, Cuero.
 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.
 SHIELDS, 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.
- SHROMPSHIRE, L. O., 1912, V, Plainview.
- *SIGEL, R. C., 1909, III.
- SIMPSON, J. H., 1901, IV, Deck Officer, U. S. Bache Fijardo, Porto Rico.
- SIMPSON, O. M., 1900, IV, Hardware, Calahan & 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.
- SKEELER, 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.
- 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.
- STERNENBERG, PAUL, 1905, III, Superintendent Steel Works, 2228 Chapel St., Berkeley, Cal.
- STERN'S, 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.
- STEWART, W. W., 1888, III, Civil Engineer for Freestone Co., Stewart'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.
- 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.
- SVASTA, S. F., 1910, V, Telephone Engineer, 400 E. 61st St., Chicago, Ill.
- SWAIN, M. S., 1888, II, Houston.
- TABER, R. G., 1910, IV, Dallas Electric Ry. Co., Dallas.
- TABOR, J. R., 1906, VII, Architect, Houston.
- TALBOT, A., 1882, III, Planter, Calvert.
- TARVER, T. C., JR., 1904, IV, Houston.
- TAYLOR, L. T., 1912, IV, San Augustine.
- TAYLOR, M., 1911, V, Sulphur Springs.
- 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, Law Student, 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.
- THROWER, J. D., 1900, I, U. S. Department of Agriculture, Kansas City, Mo.
- TILSON, M. D., 1886, III, Manufacturer and Merchant, Texarkana.
- TILSON, P. S., 1888, I, M. S., 1894, Director Houston Laboratories, 215½ 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, Amarillo.
- TRACY, H. H., IV, Hardware, Tulia.
- TREADAWAY, S. J., 1907, IV, R. R. Cons. Works, El Granada, Cal.
- TRENNCKMANN, R., 1907, III, Fairbanks, Morse & Co., Beloit, Wis.
- TRENNCKMANN, 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.
- *TULLER, W. L., 1883, III.
- UECKERT, H. H., 1897, IV, Draftsman, M. of W. Department, Sunset Route, Houston.

- UNDERWOOD, A., 1907, IV, Civil Engineer, Dowys Land Co., B. E. Africa..
 UNDERWOOD, HARRIS, 1912, IV, Houston.
 VAN AMBURG, T. A., 1909, IV, with Cotton Belt Ry., Pine Bluffs, Ark.
 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.
 VINTEHR, 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, 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.
 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, Vicksburg, Miss.
 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, Assistant City Engineer, Houston.
 WASHINGTON, W. C., 1912, V, 2nd Lieutenant, U. S. Army, Fort Monroe, Va.
 WATKINS, H. B., 1912, IV, Bowie.
 WATKINS, R. C., 1895, IV, Right of Way Agent, S. P. Co., Houston.
 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, M. H., 1909, V, Teacher, Staples.
 WELBOAN, J. S., 1906, I, Bank Clerk, 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, Shriner.
 *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, G. R., 1895, IV, Banker, Brady.
 WHITENER, H. L., 1891, I, Physician, 2009 E. Grand Ave., St. Louis, Mo.
 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.
 WINDROW, R. J., 1906, IV, Instructor in Civil Engineering, College Station.
 WINKLER, A., 1900, I, Farmer, The Grove.
 WIGHT, A. T., 1895, IV, General Merchandise, Roxton.
 WIGNALL, C. L., 1909, VII, Superintendent of Construction, College Station.
 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, U. S. Engineer, Vicksburg, Miss.
 WILSON, W., 1893, IV, Attorney at Law and County Judge, Calhoun County, Port Lavaca.
 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 Grand Fire Insurance Co., San Antonio.

WURZBACH, W. A., 1888, IV, Lawyer, San Antonio.
 WYCHE, T. S., 1910, V, Electrician, Ark. Valley Ry., Victor, Colo.
 WYSE, IRA O., 1901, I, Dallas.
 WYSE, J. T., JR., 1905, I, Traveling Salesman, Texas Oil Co., Greenville.
 YAKELY, 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.
 YOUNGBLOOD, B., 1902, I, M. S., 1907, Director of Texas Agricultural Experiment Stations,
 College Station.
 YOUNGBLOOD, TOM, 1912, I, Agriculturist for the Pittman-Harrison Seed Co., Sherman.

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 | | |
| | | | 991 |
| Counted twice..... | | | 8 |
| | | | 983 |
| Total graduates..... | | | 983 |
| Deceased..... | | | 50 |
| | | | 933 |

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.

1. Factor: x^3+y^3 , x^6-y^6 , $x^2+5x-24$.
2. Simplify: $\left(\frac{a+b}{a-b} + \frac{a^2+b^2}{a^2-b^2}\right) \div \left(\frac{a-b}{a+b} - \frac{a^3-b^3}{a^3+b^3}\right)$;
3. 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 .
4. Find the square root of $10x^2-4x^3+9-12x+x^4$.
5. Simplify: $3a^2 \times a^3$, $6a^2 \div 3a^5$, $(a^2)^7$.
6. Reduce $\frac{3\sqrt{5}+2\sqrt{2}}{3\sqrt{5}-2\sqrt{2}}$ to an equivalent fraction having a rational denominator.
7. Solve: $\sqrt{x+6} + \sqrt{x+3} = 3$.
8. Solve: $7-12x^2=17x$.
9. Determine by inspection the sum of the roots of $8x^2+13x-82=0$.

Geometry.

1. Only one perpendicular can be drawn to a given line from a given external point.
2. 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.
3. Two angles whose sides are perpendicular, each to each, are either equal or supplementary.
4. In the same circle, or in equal circles, equal chords are equally distant from the center.
5. An inscribed angle is measured by half the arc intercepted between its sides.
6. In a triangle ABC, $AB=12$, $AC=14$, $BC=13$. Find the segments of BC made by the bisector of the angle A.

7. Find the area of an equilateral triangle, if one side equals 8 feet.

8. 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 favourite 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 Embarrassing Position I Was Ever In*. 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 $21a^6b + 20b^4 - 22a^2b^3 - 29a^4b^2$ 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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