



MESS HALL

MECHANICAL HALL

CARPENTER'S SHOP

MAIN BUILDING

WATERBURY SPRING

CATALOGUE

—OF THE—

AGRICULTURAL AND MECHANICAL COLLEGE

—OF TEXAS.—

— FOR —

1883 - 4.

Railroad Depot & Post-Office:
COLLEGE STATION, TEXAS.

CALENDAR.

1884.

Session begins Monday, Sept. 1;
Second Quarter begins Nov. 8.
National Holiday, Nov. 26.
Christmas Holiday—one week—Dec. 24.

1885.

Intermediate Examinations begin Jan. 12.
Third Quarter begins Jan. 15.
National Holiday, Feb. 22.
Fourth Quarter begins Mar. 24.
State Holiday, April 21.
Final Examinations begin May 25.
Commencement Sunday, May 31.
Commencement Day, June 2.

AGRICULTURAL and MECHANICAL COLLEGE OF TEXAS.

HISTORICAL.

The Agricultural and Mechanical College of Texas owes its foundation and endowment to the act of U. S. Congress approved July 2, 1862, amended July 23, 1865, and to a joint resolution of the Legislature of Texas, approved Nov. 1, 1866, an act of the same body approved April 17, 1871, and finally to a provision of the state constitution of 1876, all of which are appended to this catalogue.

Under these acts and the special laws of the legislature growing out of them the first board of directors met at Austin July 15, 1876, and proceeded to organize the College.

At this time the reaction against the exclusive study of the classics to the neglect of natural science had scarcely been felt in the South. There were but two or three institutions in all the southern states that gave unqualified prominence to those studies which bear directly upon the manual occupations of men. The most learned and cultured citizens as a rule admitted but one course of training as proper for education, namely, that which leads through a thorough course of classical reading to the professions of law, medicine and divinity, or to a life of literary ease. With such a sentiment widely prevailing it is not surprising that this college was organized, like nearly all those created by the same act of congress, as a classical and mathematical school. In the first faculty, consisting of a president and five professors, two of the professors alone were to teach those branches of science for the development of which the college was founded. The vast subject of agriculture, with its great

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and important adjuncts, botany, zoology, geology etc. was placed as a subordinate subject under the care of the professor of chemistry.

Great as was this perversion of the college from its true objects it is probable that its able directors at that time could not have done otherwise than they did. Not only did the public notion of education demand such a school, but the college as the only existing branch of the state university was expected to do the work of that entire institution, and not to devote itself to any speciality.

Under such circumstances academic work commenced on the 4 of Oct., 1876. Students entered in large numbers; a career of unexampled prosperity seemed open to the well endowed and firmly established college. The military department, under its very efficient and earnest professor, soon became a prominent feature. The finely drilled, equipped and disciplined body of young men attracted the admiration of all who saw them. The number of students increased till temporary buildings were erected to accommodate them.

At one time six professors, with an assistant or two, were attempting to teach over 300 young men. This too without apparatus, agricultural or mechanical, chemical or physical. The students were crowded together. Discontent arose, and complaints were heard. The attempt to accomplish impossibilities resulted in failure. Then it was that those who for various reasons sought grounds of complaint readily found them. Unfavorable criticism soon discovered the great perversion of the course of instruction. A hostile spirit was developed in the legislature and in the newspapers. The college was named a nursery of military aristocracy. The farmers looked coldly upon it or pronounced it a "humbug." Students began to return to their homes.

Beset by complaints growing louder every day, the faculty, with no means at hand of remedying the evils complained of, fell into dissensions among themselves. These at last necessitated a meeting of the directors on the 18 of Nov., 1879, at which meeting the college was reorganized by the election of a new faculty. But no change was made at this time in the course

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of study. The old chairs were merely filled with new professors. Fortunately, however, the new president saw clearly that nothing would permanently restore the popularity of the college but a strict compliance with the objects of its foundation, and to this he at once addressed his energies. During the remainder of the session a plan of reorganization in the course of study was matured whose main features consisted in the abandonment of the elective system for close curricula from which the ancient and modern languages were excluded, being made optional. There were two courses established; the Agricultural and the Mechanical, and a professor was elected for the leading departments in each of these. Provision was made for supplying the mechanical department with a building, machinery and tools.

An appropriation was made also for equipping the agricultural department. The course of study at this time embraced four years. These changes involving numerous important details at last determined the adoption by the college of its legitimate work as a school of practical science. But much remained to be done in the same direction. At the meeting of the new board of directors—which under a changed law had been appointed by the governor—the chairs of ancient and modern languages were consolidated, the courses of instruction were reduced to a period of three years each, and provision was made for assigning to the two courses ninety-three state students (three from each senatorial district) for whose maintenance at the college the XVII Legislature had passed an appropriation. During the session ending in June 1882 the agricultural and mechanical departments were both put in practical operation. The mechanical was especially successful. The agricultural, however, did not attract students. The causes of this were several, but chiefly the requirement in that department of un-instructive manual labor without compensation. It was found that students did not object to labor, however rough, provided it taught them anything adequate to its demands upon their time. The mechanical labor was all instructive and made attractive. The agricultural department consumed their time in such work as picking cotton and mending roads. That this was a very serious mistake in the policy of that department was soon

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seen, and at a special meeting of the directors in February, 1883, it was ordered that labor thereafter in the agricultural department should be instructive only, excepting of course such VOLUNTARY labor as students might perform for compensation.

At the meeting of the directors in June, 1883, much important business was presented. The president of the college had resigned in March; the professor of agriculture had signified his intention of resigning at the end of the session; the professor of languages had died in February. The legislature had appropriated \$40,000 for the maintenance of the college, and this was to be apportioned to the various objects for which it was greatly needed. During the meeting of the directors the professor of mechanics also tendered his resignation. These important matters, demanding unusual consideration, were not disposed of without a special meeting. This was held on the 19 of July. It having appeared that, in view of the labor and responsibility involved in superintending the improvements about to be made, there must be a division of the president's duties, it was finally determined that the office of president should be abolished, that a business agent of the board of directors should be appointed to superintend the improvements and manage the finances of the college, while the faculty should elect one of their own number to discharge the academic duties pertaining to the presidency. The chair of Physics was created and a professor elected to occupy it. The filling of the chairs of agriculture and mechanics was deferred to a meeting to be called subsequently. On the 15 of Sept., 1883, this meeting was held and, by the election of the professors now occupying these chairs, the organization of the college as it is at this time was completed.

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OBJECTS AND PRESENT POLICY OF THE COLLEGE.

The act of congress which established the state agricultural and mechanical colleges defines their objects. But under that act there have been founded as many different schools as there are states. These institutions have presented a variety of educational schemes which have embraced nearly all gradations from the classical and mathematical college to the manual labor industrial school. In view of this fact it is proper to state as definitely as possible the interpretation given to the act of congress by the authorities of this college, and the manner in which they are endeavoring to carry out its provisions.

Misapprehension of the present status of the college, founded upon its former reputation as a classical and military school, keeps alive a prejudice in the minds of many who are not fully aware of the radical changes that have taken place within the last four years. The following brief statements are therefore presented for the consideration of those who desire to be informed concerning these changes.

The general object of this college is to excite and foster in the minds of our people an enthusiastic appreciation of the attractiveness and value of those pursuits by which the MATERIAL development of the country is advanced.

It is the business of this college to turn the attention of our young men from the overcrowded "learned professions" to those occupations which have brought abundant wealth and power to other states, and which are beginning now to attract and well repay the services of trained young men in Texas.

These objects are sought to be attained—

By a thorough course of instruction in mathematics and natural science, with continual application of principles to work in the

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shops, fields, gardens, vineyard, orchard, pastures, dairies and other laboratories.

By relying upon text books as little as possible and leading the student to seek information directly from observation and experiment.

By inculcating the dignity of intelligent labor—banishing the idea that the farmer or mechanic who is worthy of the name need be any less learned than the professional man.

By inducing in the mind of the student an enthusiastic love of nature and the study of natural laws, whereby agricultural and mechanical processes become invested with absorbing interest, and are pursued in a spirit which leads to progress and success.

EXPERIMENTAL WORK.

This furnishes the chief means of training students in accordance with these aims and hence a most important subsidiary object of this institution is the discovery and dissemination of all sorts of information with regard to industrial pursuits.

MANUAL LABOR.

It is taken for granted that every farmer boy can learn at home such things as involve mere manual drudgery. It must therefore be understood that the student will not be required to waste valuable time in labor which is not instructive.

The education here given to young men is not intended to make mere laborers of them in the ordinary sense of the word. A student who graduates here may begin life as a field hand; but it is expected that, by virtue of his superior training, he shall be able speedily to find promotion and easily fill the highest position of honor to which his ability may lead him.

MILITARY INSTRUCTION.

This is embraced by law in the objects of the College, and will be given such attention as is necessary for an HONEST compliance with the act of Congress.

ORGANIZATION AND GOVERNMENT.

The government of the College is vested in a board of direc-

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tors consisting of five members appointed by the governor of the state. They are "selected from different sections of the state, and hold office for six years or during good behavior, and until their successors are qualified."

FACULTY.

The faculty, consisting of eight professors each in charge of a department of instruction, is responsible for the academic work of the college.

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COURSES OF STUDY.

There are two courses of study, the Agricultural, and the Mechanical, each extending through three years.

The Agricultural Course embraces the departments of—

AGRICULTURE—including botany, zoology, veterinary science, horticulture &c.

CHEMISTRY—with special attention to agricultural chemistry.

PHYSICS—with special reference to meteorology.

MATHEMATICS—with special reference to surveying and farm engineering.

ENGLISH—including literature and history.

MILITARY SCIENCE.

The Mechanical Course embraces the departments of—

MECHANICS—including civil and mechanical engineering in their various branches.

MATHEMATICS—pure and applied.

PHYSICS.

CHEMISTRY.

ENGLISH—including literature and history.

MILITARY SCIENCE.

In both courses instruction consists largely of practice in the fields, shops and laboratories.

OPTION OF STUDIES.

The ancient and modern languages, except English, are optional and may be studied under the professor of their department without charge.

In view of the great practical importance of the GERMAN and SPANISH languages for business purposes in our state, special attention is given to these. A large number of the students are of German descent and speak the language fluently.

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By association with these, young men may have continual practice in conversation out of the class room as well as in it.

All students must pursue either the agricultural or mechanical course.

They are permitted to choose between these upon entering the college, but will not be allowed to change from one to the other without reasons satisfactory to the faculty.

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CURRICULA.

AGRICULTURAL COURSE.

FIRST YEAR—THIRD CLASS.

1ST TERM.	Mathematics.	Arithmetic, (Venable) Reviewed—Algebra: Davies' Bourdon.
	English.	Clark's Normal Grammar, James' Southern Selections, bi-weekly composition and declamation.
	Agriculture.	History and Description of breeds of domesticated animals, cattle, horses sheep, swine, by lectures.
	Physics.	Lectures on Elementary Physics.
	Drawing.	Free Hand.
2ND TERM.	Practice.	Farm Carpentry.
	Mathematics.	Algebra finished—Davies' Bourdon.
	English.	Alex. H. Stephens' History of United States; James' Southern Selections; bi-weekly compositions and declamations,
	Agriculture.	Gray's Structural and Systematic Botany; Soils, their formation, constituents, classification, &c.
	Physics.	Lectures on Elementary Physics.
	Drawing.	
	Practice.	Farm Carpentry, and Farm, Garden and Orchard culture.

SECOND YEAR—SECOND CLASS

1ST TERM	Mathematics.	Plane, Solid and Spherical Geometry—Venable.
	Physics.	Gage's Physics, Lectures, Experimental Illustrations.
	Agriculture.	Mile's Stock-Breeding: History of Agriculture, Lectures.
	English.	Hill's Science of Rhetoric. Essays and Orations.
	Practice.	Instructive Agricultural Practice.
	Book-keeping.	
	Monthly essay.	

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2ND TERM.	Mathematics.	Plane and Spherical Trigonometry, Mensuration and Surv'ing, (Schuyler). Field Practice in Surveying.
	Chemistry.	Roscoe's Chemistry; Chemical Physics: Laboratory work.
	English.	Ancient History, Essays and orations.
	Agriculture	Fertilizers, Field crops, Tillage, Lectures; White's Gardening in the South.
	Practice.	Instructive Agricultural Practice.
	Monthly essay.	

THIRD YEAR—FIRST CLASS.

1ST TERM.	Mathematics.	Theory of Equations, Leveling, with Field Practice, Mechanics (Wood) and Lectures. Analytical Geometry (optional).
	Agriculture.	Zoology, Entomology, Anatomy and Veterinary Science.
	Chemistry.	Laboratory work in Qualitative Analysis.
	Astronomy.	Lockyer's Outlines.
	English.	Mediaeval and Modern History. Orations.
	Professional Thesis.	
	Practice	Experimental Agriculture.
2ND TERM.	Mathematics.	Mechanics, (Wood), and Lectures. Analytical Geometry (optional).
	Chemistry.	Laboratory work in Agricultural Chemistry
	Geology.	Dana's Elements.
	Agriculture.	Veterinary Science. Forestry, Meteorology.
	Farm Engineering.	Irrigation, Drainage, Water Supply of Farms, Farm Buildings, Roads, Fences, Implements, Machinery, &c.
	English.	Shaw's English and American Literature, Essays and Oratton.
	Graduating Thesis.	

MECHANICAL COURSE.

FIRST YEAR—THIRD CLASS.

1ST TERM.	Mathematics.	Arithmetic. (Venable). Algebra, (Davies' Bourdou).
	English	Clark's Normal Grammar, Compositions and Declamations, James' Southern Selections.
	Physics	Lectures on Elementary Physics.
	Drawing	Mechanical Drawing.
	Shop Work	Elementary constructions in wood with hand tools.

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2ND TERM	Mathematics	Algebra, Davies' Bourdon.
	English	Alex. H. Stephens' History of United States; Compositions and Declamations; James' Southern Selections.
	Physics	Lectures on Elementary Physics.
	Drawing	Geometrical Constructions with Instruments; McCord's Mechanical Drawing.
	Shop Work	Practice with wood-working machinery.

SECOND YEAR—SECOND CLASS.

1ST TERM	Mathematics	Plane, Solid and Spherical Geometry, Venable.
	Engineering	Fairbairn's Elements of Mechanism.
	Physics	Gage's Physics. Lectures, Experimental Illustrations.
	English	Hill's Science of Rhetoric. Essays and Orations.
	Mech'n'l Drawing.	McCord's Mechanical Drawing.
	Shop Work	Elementary Metal-working, Filing, Chipping, Screw-cutting, Steam-fitting.
	Monthly Essay.	
2ND TERM	Mathematics.	Plane, Solid and Spherical Trigonometry, Mensuration, Surveying, (Schuyler). Field Practice in Surveying.
	Chemistry	Roscoe's Chemistry; Chemical Physics; Laboratory work.
	English	Ancient History, Essays and Orations.
	Engineering	Fairbairn's Elements of Mechanism.
	Mech'n'l Drawing	Projections of Elem'tary Machines.
	Shop Work	Machine tool work—as Boring, Turning, Screw-cutting, Drilling &c.; Practical Steam Engineering; Mill-work.
	Monthly Essay.	

THIRD YEAR—FIRST CLASS.

1ST TERM	Mathematics	Theory of Equation—Leveling, with
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		Field Practice. Mechanics (Wood) and Lectures Analytical Geometry (Church).
English		Mediæval and Modern History, Essays and Orations.
Engineering		Mahan's Civil Engineering. Bourne's Steam Engineering; Iron and Steel.
Astronomy		Lockyer's Outlines.
Mech'n'l Draw- ing		Designs for Machines and Structures.
Professional The- sis.		
Shop Work		
ND TERM Mathematics		Mechanics (Wood) and Lectures. Analytical Geometry (Church) and Lectures. Lectures on the History, Utility and Philosophy of Mathematics.
Geology		Dana's Elementary.
Mech'n'l Draw- ing	}	Graduation Construction.
Shop Work		
English		Shaw's English and American Literature.
Graduating The- sis		

In addition to the above the chairman of the faculty delivers a lecture before the whole body of students once a week.

These lectures are devoted to outline expositions of physiology and the laws of health, and aim to enlighten young men with regard to their own bodies and the preservation of all their functions unimpaired.

POST GRADUATE COURSES.

With the present standard of admission students cannot in three years become worthy of a degree which would confer honor upon them or the college. For those who desire degrees the following post-graduate courses have been established. They extend through one year, and embrace the most advanced

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studies in the departments named under each degree.

First.—BACHELOR OF SCIENCE.

Agriculture, Mathematics, Chemistry, one Modern Language, Lectures in English.

Second.—CIVIL ENGINEER.

Mathematics, Engineering, Mineralogy, and Geology, one Modern Language, Lectures in English.

Third.—MECHANICAL ENGINEER.

Mechanical Engineering, Mathematics, Physics, one Modern Language, Lectures in English.

It is required for admission to study for these degrees that the candidate be a graduate in one of the courses, or pass satisfactory examinations upon subjects embraced in them.

Students for these degrees are under the general regulations of the college, but are not subjected to military discipline; they may however be required to assist in keeping order in the barracks.

MISCELLANEOUS INFORMATION.

MILITARY ORGANIZATION AND DISCIPLINE.

For the purpose of maintaining good order and discipline, as well as for the proper execution of the law of congress requiring military instruction of the students, they are organized into a battalion of two or more companies. The battalion is under the immediate command of the commandant. The officers, commissioned and non-commissioned, are students taken for the most part from the first and second classes. They are appointed by the chairman of the faculty upon the recommendation of the Commandant, and their appointment and rank is made to depend upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

These officers, not merely at drill, but at all times when on duty, assist in keeping good order in and around the buildings. In their various positions of graduated responsibility they not only aid most efficiently in maintaining discipline, but continually practice and are trained in the exercises of the highest qualities involved in obedience and command.

REQUISITES OF ADMISSION.

To enter the college an applicant must be in his sixteenth year or at least must have attained a degree of physical and mental advancement corresponding to that age. He must be free from contagious or infectious disease or any deformity or defect that would unfit him for the performance of his duties as a student of this college. He may be required to furnish evidences that he has not been dismissed from another institution of learning and that his moral character is good.

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The mental attainments necessary for entering upon the courses of study comprise a fair knowledge of arithmetic as far as proportions, of descriptive geography and of elementary English grammar and composition.

The reputation of this college for good discipline has caused parents in some instances to apply for admission for boys that had proved unmanageable and thoroughly vicious at other institutions. It is desired that such applications be not in the future presented.

MATRICULATION.

Upon arrival at the college young men intending to enter will report as soon as possible to the chairman of the faculty. From him they will go to the treasurer, to whom they will pay their prescribed entrance fees, and then to the several professors for enrollment in classes and to the commandant for assignment to company and quarters.

Upon entering the college every student may be required to state upon honor that he has no fire arms or other deadly weapons in his possession, or if he has such to deposit them with the chairman of the faculty.

As there is no hotel at the station and the college is nearly half a mile distant new students or other strangers would be saved much embarrassment by arriving on a day train.

MARKS AND EXAMINATIONS.

Records of the standing of each student are kept by the professors of the several departments. This standing is indicated by a system of marks based upon 100 as a maximum with decimal gradations.

Two general examinations are held during the session, the intermediate, at the end of the first term in February, and the final, at the end of the session in June.

The results of these examinations combined with the session marks determine the final standing of the student.

A monthly report is mailed to the parent or guardian of each student showing his class standing, conduct and health.

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GRADUATION.

The diploma of the college will be conferred upon all students who complete either of the prescribed three years' courses of study, and pass satisfactory examinations on all the branches embraced therein. Each candidate for graduation is required to submit to the professor in charge of the leading department of his course a graduation thesis; and he may be required to read this or some other essay, approved by the faculty, on commencement day as a part of the public exercises.

To every student who completes satisfactorily any one of the optional studies—German, French, Spanish, Latin, Greek—a special diploma on that subject will be granted.

Each student receiving a diploma will be required to pay \$5.00 therefor.

HONORS.

The three students most distinguished for scholarship and deportment in each of the classes as determined by marks and examinations are known as honor men, and their names appear at the head of their several classes in the catalogue, though this rule may be modified if the number of the students in any class or their scholarship shall not warrant such distinction.

The valedictorian is elected by the members of the graduating class from their own number.

A member of the second class is chosen by his classmates to reply to the valedictorian.

Military promotion is an honor attainable by general good conduct and manly behavior as well as excellence in studies.

Professors from time to time offer gold medals or other prizes for excellence in special studies or work.

AGRICULTURAL PRIZES.

The following resolution has been adopted by the board of directors:

RESOLVED, That for the encouragement of students in the

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Agricultural Department, the professor in that department shall be required to keep an accurate grade of the proficiency and deportment of each student in that department, and at the end of each session the student having the highest grade shall be entitled to a scholarship for the succeeding year free of any charge: and the student having the next highest grade shall be entitled to one half a scholarship for the succeeding year; and the student having the next highest grade shall be entitled to one fourth of a scholarship for the same time, but none of the scholarships shall be transferable.

No academic honor will be conferred upon any student who may be deficient in conduct for the session.

HYGIENE.

The buildings of the college stand upon the crest of a "divide" from which there is sufficient slope to carry off all drainage.

The soil is sandy, and mud and water disappear within a few hours after a rain. An extensive open prairie surrounds the college on all sides. There is a constant breeze—usually very strong. The water used by students is obtained from cisterns supplied from high clean roofs.

The rooms of students are inspected at least twice a day, and are required to be kept neat and well ventilated.

Students have the use of bath rooms supplied with cistern water.

There is in the vicinity of the college apparently nothing to produce malarial sickness, and as a matter of fact there is very little of it here. All serious sickness has been in the form of pneumonia and measles which do not depend on local causes.

There has been no case of severe illness during the last session. Instruction in Hygiene is regarded as of the utmost importance, and is given to the whole body of students by the chairman of the faculty in weekly lectures continued through the session.

The drill, farm and shop practice, and athletic sports furnish abundant and wholesome exercise for the students.

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HOSPITAL.

Ample and comfortable quarters are provided for the sick, and the surgeon living on the grounds will give his attention to all students without charge other than the regular medical fee of five dollars paid by each student upon entrance.

RELIGIOUS AND MORAL CULTURE.

Every Sunday afternoon there is preaching in the chapel by one of the ministers from Bryan, and all students are expected to be present. And the faculty will try with all the means in their power to protect and develop the moral character of those committed to their charge.

The situation of the college is peculiarly favorable for the preservation of the morals of students. The nearest town is distant five miles, and it is almost impossible for any student to go to Bryan, even for a short time, without his absence becoming known to the authorities. All the temptations that beset young men in cities are entirely absent here. No student is ever permitted to visit Bryan at night except by request of his parent or guardian.

LITERARY SOCIETIES.

There are two literary societies in the college, the Austin and the Calliopean. They meet weekly in their respective halls for practice in debate, literary composition and declamation. Public debates are held frequently during the session, and speakers are invited to deliver addresses.

LIBRARY AND READING ROOM.

Through the liberality of the Legislature a valuable library and Reading Room have been provided for the use of students, and additions will be annually made.

The Library now comprises standard works of History, Biography, Agriculture, Mechanics, Engineering, Mathematics, Natural

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Sciences, Law and Political Economy, Mental and Moral Philosophy, Poetry, General Literature and Reference.

The thanks of the college are due for the following periodicals, the gifts of the proprietors, which have been kept on file during the past session in the reading room: Houston Daily Post, Brazos Pilot, Massachusetts Ploughman, The Industrialist, Bulletin of National Association of Wool Manufacturers, The South.

Gifts of books and magazines will be thankfully received. Back numbers of literary and scientific periodicals will be especially useful in completing the files already begun.

GENERAL REGULATIONS.

It is understood that every student upon entering the college pledges himself to an honest effort to observe the regulations and sustain the authorities in the maintenance of discipline.

The strictest attention to study and the most exact punctuality in attendance on recitations, and other duties, will be made the **CONDITION** of every student's continuance at the college; and any student who without authority absents himself from recitation or any other duty, deserts his class, or refuses to attend when warned, shall be dismissed, or less severely punished, at the discretion of the faculty.

Students are forbidden to enter into combinations under any pretext whatever. One who shall begin, excite, cause or join in any boisterous or riotous conduct, or become a party to any agreement to avoid or violate any regulation, to hold no intercourse with a comrade, or to do any act to the prejudice of good order and military discipline, shall be dismissed.

Students are prohibited, under penalty of dismissal, from having in their possession ammunition, weapons or arms not issued for the performance of military duty; nor shall these be retained loaded in quarters under any pretext.

A student who shall drink, or bring, or cause to be brought within the cadet's limits, or have in his room, or otherwise in his possession, any fermented or intoxicating liquor, or fruits or

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vials preserved in intoxicating liquor, shall be dismissed or otherwise punished at the discretion of the faculty.

No student shall have in his possession, or play at, cards, or games of chance, engage in a raffle, or in any manner wager money or other things, on penalty of dismissal.

Permission to attend private parties, or places of public amusement, will not be granted during the term.

No cadet can be granted a leave of absence during a term of twenty weeks, without an urgent necessity.

No student is allowed to leave the college during the session without permission of the chairman of the faculty on application through the commandant.

A student who shall cut, mark, or otherwise injure or deface the buildings, furniture or appurtenances; the trees, shrubbery, green-sward, grounds, fences; stables, or out-houses; or who shall lose, injure, destroy, or improperly dispose of the arms, accoutrements, or other property of the college, shall make good all damage, and be dismissed or otherwise punished, according to the nature of the offense.

When the responsibility for the destruction of state property cannot be fixed upon any one, the amount of the damage will be assessed against the occupants of a room or division, or the entire body of students as the case may require.

Students receive the admonition and counsel of the chairman of the faculty before being subjected to any penalty, except in case of flagrant offenses. Those who are habitually neglectful of their duties, or who do not regularly attend their classes, will be required to withdraw from the college.

To each recorded delinquency a number of from one to ten proportional to the degree of the offense in a moral and military view, is assigned to express demerit.

If any student receives 150 demerits for the whole or any part of half year, or 250 for a greater period, he shall be declared deficient and dismissed.

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TO PARENTS AND GUARDIANS.

The necessity for uninterrupted attention to their studies on the part of students cannot be too strongly urged. It is impossible for a young man to become interested in his work here if he is permitted to leave the college whenever any special amusement is advertised in our neighboring towns or cities.

It is therefore respectfully asked that those who send their sons or wards here do not, except in the most pressing emergencies, request permission for them to leave their studies for any purpose whatever.

EXPENSES FOR SESSION OF NINE MONTHS.

Matriculation fee.....	\$ 15 00
Physician's fee.....	\$ 5 00
1st. Quarter, board, lights, fuel, washing, rooms....	\$ 32 50
2nd. " " " " " " "	\$ 32 50
3rd. " " " " " " "	\$ 32 50
4th. " " " " " " "	\$ 32 50
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Total.....	\$150 00

In addition to the above a desposit of \$5 will be required to cover possible damage to the college property. If not expended this or as much of it as is left to his credit, will be returned to each student who remains to the end of the session. Matriculation and Physician's fee are payable on entrance and cannot be refunded.

Quarterly payment must be made at the beginning of each quarter.

No deduction can be made for absence except on account of sickness of at least one month's duration.

Any student resigning will be charged to the end of the Quarter, unless the resignation is on account of sickness and takes effect at least one month before the end of the Quarter.

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All communications in reference to accounts of students should be addressed to Prof. L. L. McInnis, Treasurer.

ROOM FURNITURE, CLOTHING, ETC.

The College will furnish the following articles free of charge: Bedsteads, mattresses, pillows, tables, washstands, chairs, wardrobes, lamps, buckets, basins and slop cans.

Students should bring with them,—Pillow cases, blankets or comforters, sheets (for single beds), towels, comb, brush, tooth brush, clothes bag, and other articles of personal apparel and use.

UNIFORM, BOOKS AND STATIONERY.

A neat uniform of cadet grey cloth is furnished here at a cost of from \$15 to \$18 depending upon the size.

Books and stationery may be obtained here. They will probably cost about \$5 to \$8 per session.

BEGINNING OF THE SESSION.

Attention is called to the change in the opening of the session from Oct. 1st. to Sept. 1st.

Students are requested to arrive on the day trains on Monday, Sept. 1st.

The ninth annual session beginning on that day will end on Tuesday, June 2nd, 1885.

ENDOWMENT.

PERMANENT FUNDS.

In November, 1876, the Legislature formally accepted from Congress the gift of 180,000 acres of public land for the endowment of an Agricultural and Mechanical College. This land was sold for \$174,000 which sum was invested in seven per cent state bonds. As under the act of Congress neither principal nor interest of this money could be used for other purposes than the payment of officers' salaries, at the time of the opening of the college there was an addition to the fund, from accumulated interest, of \$35,000. This was invested in six per cent bonds of the state, thus furnishing an annual income of \$14,280.

GROUNDS.

The county of Brazos donated to the College 2416 acres of land lying on each side of the Houston and Texas Central Railroad and five miles from Bryan.

BUILDINGS.

These were provided by legislative appropriations. The main building cost about \$100,000. The mess hall and president's house cost about \$35,000. The professors' houses of which there are five cost about \$3000 each.

Two large wooden buildings, one of which is now the wood working shop, cost about \$4600 each.

Barn, sheds, bath houses, fences and all other improvements

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made during the first two years of the existence of the college cost over \$50,000.

The total of successive appropriations by the legislature to cover these expenditures amounted to \$202,000.

In 1879 the sum of \$15,000 was appropriated for the purchase of a library and apparatus and again in 1883 \$40,000 was appropriated, which sum is now being expended in repairs, purchase of additional apparatus, stock, tools, machinery &c., and in the erection of barns and metal working shops and in the enlarging of pastures.

Thus the entire endowment of the college may be summed up as follows :

Productive funds \$209,000. · Permanents improvements and appliances \$257,000.

Land not less than \$12,000.

LOCATION AND DESCRIPTION OF BUILDINGS.

LOCATION.

The college is situated at College Station in the county of Brazos five miles south of Bryan, and ninety-five miles north-west of Houston. The Houston and Texas Central Railroad runs through the grounds, two daily trains stopping at the station about 800 yards from the main building.

POST OFFICE.

Letters are often delayed by going to Bryan. It is important therefore that all mail matter for the college should be addressed to "College Station" and not to Bryan.

MAIN BUILDING.

The main building stands on the highest point of the grounds. It is four stories high, made of brick, with mansard roof and towers. The rooms are all of high pitch and well ventilated. On the fourth story nearly half the space is occupied by the chapel. Two society halls, the armory, the athletic hall and three small rooms are also on this floor. On the third story are the mathematical section and instrumental rooms and students' quarters.

On the second floor are the library, agricultural section room, chairman's office, chemical laboratory for qualitative work and several students' rooms. On the first floor are the physical and chemical section rooms, chemical balance room and dark room, section rooms of English languages and mechanics, offices of

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the commandant, business manager and treasurer, and janitor's room. There are broad halls running through each story at right angles to each other, and two sets of broad stairways, one in the middle, the other two at the end of the building. The external appearance of the main building is shown on the right of the frontispiece.

SHOPS.

Back of the main building, (seen a little to the left of it in the picture), is the carpenter shop. It is two stories fitted with benches and woodworking tools in separate sets for students. A portion of the lower floor is at present used for metal working machinery. Power is supplied in this shop by a 12-horse power vertical engine. The boiler house and blacksmith shop are in the rear of the building. The metal working shop is seen near the middle of the engraving. It is not yet finished, but will be so by the opening of next session. Its machinery will be driven by a 20-horse power engine which is now being placed in position. The building is of brick.

MESS HALL.

This is seen on the left of the other buildings. It is three stories high and is attached to the house which was formerly the president's residence. The first floor is occupied by the hall, steward's office, store rooms, kitchen &c. The second and third floors are occupied by students' rooms of which there are 20 in the building.

APPLIANCES FOR INSTRUCTION.

GROUND, FARM AND STOCK.

The farm, garden, orchard, barnyards and campus are included in the first inclosure of 160 acres to the east of the station. The farm comprises about 90 acres. This is devoted solely to experimental culture and the production of forage for stock. The orchard of 8 acres contains a large variety of young fruit trees more or less adapted to this climate. The garden affords experimental work to students and furnishes an abundance of vegetables to the mess hall. A young vineyard has been started; many of the vines are already bearing well.

Back of these are the piggery, calf lots, barns and pastures of about 400 acres. The stock of the college is sufficient to give experimental instruction to students and supply the mess hall with milk. Arrangements have been made by the professor of agriculture to import during the next fall a number of thoroughbred animals. With these it is expected that the instruction in dairying will be much more complete, and beef and butter be produced in sufficient quantities to supply the mess hall.

With a view to this a new pasture of about 800 acres has recently been inclosed.

There is also a hog pasture of about 50 acres south of the campus inclosure.

Water is supplied for farm purposes from two large tanks or reservoirs. A wind mill will raise this to the barns, gardens, &c.

APPARATUS.

All departments of instruction are well supplied with implements and instruments of the latest and best forms. The ag-

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gricultural department is equipped with hand tools, machinery and mules for farm work. The machine shops are well furnished with wood and metal working machinery and tools. The chemical and physical laboratories have recently received important accessions of apparatus.

The department of mathematics has also been supplied with additional sets of surveying and engineering instruments.

BOARD OF DIRECTORS.

HON. GEO. PFEUFFER, President, - New Braunfels.

COL. T. M. SCOTT, - - - Melissa, Collin Co.

C. C. WIGGIN, ESQ., - - - - - Houston.

J. G. GARRISON, ESQ., - - - - - Henderson.

W. R. CAVITT, ESQ., - - - - - Bryan.

PROF. L. L. McINNIS, Sec. Board. - College Station.

FACULTY.

H. H. DINWIDDIE,
Professor of Chemistry and Chairman of Faculty.

L. L. McINNIS, A. M.,
Professor of Mathematics and vice Chairman of the Faculty.

J. R. COLE, A. M.,
Professor of English Literature and History.

RUDOLPH WIPPRECHT,
Professor of Ancient and Modern Languages.

W. L. BRINGHURST, Ph. D.,
Professor of Physics.

GEO. W. CURTIS, B. S. A.,
Professor of Scientific and Practical Agriculture and Horticulture.

R. H. WHITLOCK, M. E.,
Professor of Engineering, Mechanics and Drawing.

Lt. J. S. MALLORY, (U. S. A.),
Professor of Military Science and Commandant of Cadets.

R. F. SMITH,
Assistant in Mathematics.

PROF. BRINGHURST,
Secretary of the Faculty.

PROF. WIPPRECHT,
Librarian.

NON ACADEMIC OFFICERS.

GEN. W. P. HARDEMAN,
Business Manager.

L. L. McINNIS,
Treasurer.

J. D. READ, M. D.,
Physician.

B. SBISA,
Steward.

E. KELLNER,
Foreman of Farm.

A. HARBERS,
Foreman of Shops.

J. S. FOWLKES, Bryan,
Fiscal Agent.

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SECOND CLASS.

General Merit.	Names.	Chemistry.					Department	Number of Demerits.	Remarks.
		Mathematics	English.	Physics.	Agriculture	Mechanics.			
1	*Davis, J. N.	1	1	5	2	1	6	1	Sergeant
2	*Pfeuffer	4	6	1	3	5	3	0	"
3	*Lantz	3	3	6	4	6	9	27	Corporal
4	Rowell	7	13	3	6	1	1	0	1st. Sergeant
5	Caruthers, F.	8	5	2	10	3	5	0	Cond. in Ag.
6	Whitaker	2	2	11	7	3	11	81	Corporal
7	Dudley	6	7	10	1	2	14	177	"
8	McDonald	9	4	7	12	8	10	38	Sergeant
9	Rutherford, R.	11	8	8	9	7	8	20	1st. Sergeant
10	Whitfield	5	16	14	13	2	7	7	Sergeant Con. in Ge
11	Mackensen, L.	10	10	13	15	9	2	0	"
12	Pescay	17	9	9	14	8	4	0	Sergeant
13	Spanu	15	11	17	5	4	17	232	"
14	Hough	13	12	12	17	10	13	171	"
15	Graves	16	15	16	11	4	16	189	Cond. in Math.
16	Asten	12	17	4	8	11	12	100	Sergeant
17	Chatham	14	14	15	16	12	15	181	Sergeant
18	Willman								Resigned
19	Robb								Dropped from rolls.
20	Bettis								Absent with leave.
21	Lancaster						def		Dismissed

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THIRD CLASS CONTINUED.

General Merit.	Names.	Math m'cs.	English.	Physics.	Agriculture	Mechanics.	Department	Number of Demerits.	Remarks.
✓	Schwarz								Dropped from rolls.
✓	Lawler								Resigned
✓	Renean								Abs. with leave.
✓	Newsom								Dropped from rolls
✓	Tyson								Resigned
✓	Murfee								Resigned
✓	Seale								"
✓	Grant								Dropped from rolls
✓	Gravis						def		Dismissed
✓	Jones								Resigned
✓	Moores								Dropped from rolls
✓	Owen								" "
✓	Davis, C.						def		Dismissed
✓	Bree								Dropped from rolls
✓	Baker, R.								" "
✓	Rubenstein						def		Dismissed

HONOR STUDENTS IN DEPARTMENT OF LANGUAGES.

GERMAN.

1. Williams, S. H.
2. Adriance, D.
3. Hollinsworth, B. H.

SPANISH.

1. Wright, H. L.
- 1st. Section—Roach, G. W.
- 2nd. Section—Rowell, T. D.

RECAPITULATION.

First-Class Graduates.	- - - - -	1574
Second Class.	- - - - -	21
Third Class.	- - - - -	7273
Total.	- - - - -	108

ALUMNI,

From the opening of the college in 1876 to its reorganization in 1880 the studies were elective. There were many graduates during that period in one or more departments. Since at that time only those students who obtained degrees could rank with graduates under a curriculum, it has been deemed proper to omit from this list all except titled graduates and those who have completed a curriculum. Names of deceased alumni are in small capitals.

1880

L. J. Kopke, C. E.
W. H. Brown, C. E.

1881

G. H. Dugan.

1882

M. F. Armstrong, ✓	Mechanical Course.		
Searcy Baker, ✓		“	“
J. M. Burford, ✓		“	“
F. R. VON BIBERSTEIN, ✓		“	“
J. R. Cravens, ✓		“	“
C. S. Graves, ✓		“	“
S. A. Hare, ✓		“	“
R. S. Lipscomb, ✓		“	“
David Rice, ✓		“	“
Robert Sawyer, ✓		“	“
Aaron Talbot, ✓		“	“
D. H. Watson,		“	“

1883

J. C. Caldwell,	Mechanical Course.		
J. F. Edwards,		“	“
Osborne Kennedy,		“	“

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H. J. Miller,	Mechanical Course.
W. E. Mosely,	“ “
A. T. Patrick,	“ “
W. L. Tuller,	“ “
J. M. Wesson,	“ “

1884

After this time the names are arranged in the order of general merit, the three most distinguished students being indicated by asterisks.

1. *G. W. Roach, Mechanical Course.
2. *W. Wipprecht, Agricultural “
3. *J. L. Gray, Mechanical “
4. T. B. McQueen, “ “
5. N. A. Dawson, “ “
6. F. C. von Rosenberg “ “
7. B. C. Mackensen, “ “
8. A. L. Sherley, Agricultural “
9. R. B. Pennington, “ “
10. G. Giescke, Mechanical “
11. R. B. Green, “ “
12. W. B. Philpott, “ “
13. B. E. Knolle, “ “
14. V. Andrews, “ “

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DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF CHEMISTRY.

PROFESSOR H H DINWIDDIE,

This subject will be introduced by the study of Inorganic Chemistry, passing into a brief course of Organic Chemistry, The attention of students will be directed to the historical development of the science and to the phases of chemical theory which have successively obtained among scientists.

During this part of the course there will be constant practice in the use of symbols and chemical calculations. As far as possible illustrative experiments will be made by the students themselves. Special study will be given to technical processes and the construction, arrangement and working of apparatus for the manufacture of chemicals for commerce.

After a fair knowledge of general principles has been acquired Practical Chemistry will be taken up and the instruction will consist of actual work in the laboratory. It will commence with the use of the blowpipe, simple glass working and fitting up of apparatus, continuing as far as time will permit through a course of analysis, wet and dry, qualitative and quantitative, gravimetric and volumetric.

Advanced students will be required to investigate specialities, to keep careful notes of their work and to present results more or less original in the form of memoirs to be read before the class

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or handed to the professor. Agricultural students will devote their time mainly to analysis of soil, manure and plants. Mechanical students may take up any subject directly connected with manufacturing chemistry.

It will be the object of this department to equip its graduates with such practical knowledge and skill as will be available at once upon leaving the college.

In order to present definitely the facilities for practical work and experimental instruction in this department the following list of more important pieces of apparatus is given. Two fine analytical balances, three ordinary ones, gas holders and generators, filter pumps, full supply of retorts, receivers, flasks, lamps, evaporating dishes, burettes, hydrometers, volumetric glassware, glass-blower's table, gas closets, tanks and sink, two assay furnaces with muffles, crucibles, &c., combustion furnaces, stock of chemicals and collection of minerals; in short everything necessary for ordinary analysis.

During the past session many improvements have been made in the laboratory. The working space has been doubled, twenty desks have been supplied, a gas machine has been erected, a considerable quantity of glassware has been bought, new tanks and hoods have been put in, and the following important additions to apparatus made: one Soleil Laurent Saccharimeter, one digester, one Elliott's gas apparatus, one Colorimeter, one Sprengel's pump, one large still, water bath, photographic apparatus complete. A fine Fuess' goniometer-spectrometer has been ordered from Europe and is daily expected.

The following text and reference books will be used.

Roscoe's Chemistry, Caldwell's Agricultural Chemistry, Church's Laboratory Practice, Fleischer's Volumetric Analysis, Dana's Mineralogy, Watts Chemical Dictionary, Naquet's Legal Chemistry, Fresenius' Analytical Chemistry, Prescott's Analysis, Blyth's Foods and Poisons &c. and other standard works.

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DEPARTMENT OF MATHEMATICS.

PROFESSOR L. L. McINNIS, A. M.

Instruction in this department will have for its aim, to lead the student into the habit of thoroughly analyzing every subject. He will be taught to accept nothing as true in mathematical science, unless rigidly demonstrated, and he will be required so to demonstrate all rules and principles before applying them to the solution of problems. He will be made to realize the importance of this science in the practical affairs of life, as well as its value in strengthening and disciplining the intellectual powers, by carefully selected and original problems throughout the course, involving the application of its principles to the arts, industries and applied sciences of to-day.

The principles enunciated and established in the texts will be constantly supplemented by oral and written lectures tending to show their application.

In the application of mathematics to mechanics the student will be taught the doctrine of forces—their composition and resolution, laws of gravity, laws of motion, &c. A series of lectures on the History, Utility and Philosophy of Mathematics will be given.

In surveying and leveling much attention will be devoted to making the student familiar with the practical work.

He will have explained to him the construction, principles, and use of all the instruments employed in this useful branch of mathematics. He will be instructed in Rectangular, Compass, Transit and Plane Table surveying and will be required to use these instruments in the field in laying out and dividing land, and will draw accurate plots and maps of his work. He will also

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have practice with the solar compass with which lines are run by the sun independent of the needle.

In leveling he will have practice in determination of difference of level, section leveling, leveling for section, cross section work drainage, leveling and determination of volume of excavation and embankments.

EQUIPMENT.

Special attention is invited to the complete equipment of this Department with surveying and Engineering Instruments, which include the following :

Engineer's Transit.

Surveyor's Transit with Solar Attachment.

Plane Table, complete.

Burts Improved Solar Compass.

Railroad Compass.

Vernier Compass.

Engineer's Level.

Farmer's Level for Drainage.

Chains, Leveling Rods, Poles &c., &c.

For instruction in geometry, plane, solid, spherical, descriptive and analytical, the department is supplied with a complete set of Schröder's mathematical models, imported from Germany for this institution.

MEDAL.

The Professor offers a gold medal to be competed for by the members of the Second Class. The examination will embrace all the subjects taught in the first and second years.

TEXT AND REFERENCE BOOKS.

Venable's Arithmetic, Brook's Philosophy of Arithmetic, Wentworth's Algebra, Davies' Bourdon, Venable's Geometry, Schuyler's Trigonometry, Mensuration, Surveying and Leveling, Gillespie's Surveying, Churh's Analytical Geometry, Church, Peck, Bowser and Howison; Mechanics, Wood, Peck, Smith, Bartlett—Calculus, Church, Bowser, Bryerly, Davis'. Dictionary of Mathematics.

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DEPARTMENT OF ENGLISH LANGUAGE, LITERATURE AND
HISTORY.

PROFESSOR J. R. COLE. A. M.

The following subjects are taught:

I. ENGLISH LANGUAGE AND LITERATURE.—Embracing the grammatical and rhetorical structure of the language, its history and development, synonyms and comparative philology. That the students may thoroughly master the principles of his mother tongue, daily recitations are accompanied with practical exercises on the blackboard in writing, spelling, diagramming, analysing and criticising. Constant practice in declamation and composition is required.

The historical development of English literature is carefully traced, and the student is made as familiar with the works of our great authors in poetry, history, philosophy, fiction, science, etc., as the time allotted will permit. Lectures are delivered to the class, and original reviews, essays and criticisms required.

TEXT BOOKS—Clark's English Grammar. Hill's Science of Rhetoric. Shaw's new History of English and American Literature, James' Southern Selections to Reading and Oratory.

II. HISTORY.—The object of this course is to give the student a thorough knowledge of the history of his own country and of England, and an outline of the world's history, ancient and modern. Special attention is given to the history of the people, and of the gradual development of the civilization, power, laws, constitution and political system of our republic. Lectures are given on the history of political parties; of prominent leaders, military, civil, ecclesiastical and educational; of great measures that have convulsed the nation, and of the acquisition and government of our vast territory. The department is well supplied

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with a valuable series of wall-maps and historical and chronological charts.

TEXT BOOKS.—Stephen's (Alex. H.) History of the United States, Anderson's Universal History.

For reference and private reading the college library supplies an admirable collection of histories, dictionaries, biographies and encyclopædias, such as Macaulay's, Hume's, Green's Knight's Histories of England; Gibbon's, Mirivale's Mommsen's, Rome; Curtius, Grote's, Greece; Bancroft's, Hildreth's, Von Holst's, Stephens' United States. Encyclopædia Britannica, Chambers, Appleton's Cyclopædias, etc. Poetry and general literature are also well represented.

DEPARTMENT OF LANGUAGES.

PROFESSOR RUDOLPH WIPPRECHT.

This Department comprises the Ancient and Modern Languages, which are prosecuted, as optional studies, during three years.

While the instruction in the Ancient Languages consists mainly in thorough systematic drilling of the students in the Grammatical Analysis of the languages, so as to make them subservient to a critical and correct use of the English; in exercises from Latin into English, or from English into Latin, and in as comprehensive a course as possible of reading; the instruction in the Modern Languages is not confined to imparting theoretical knowledge, but is intended for the practical benefit of the student, viz: to enable him to speak them. Thus the study of text books is supplemented by oral and written translations.

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blackboard exercises, and, as soon as practicable, by conversations in and out of the class room.

A knowledge of German and Spanish is becoming more and more a necessity in our state, and the study of them is recommended to all.

DEPARTMENT OF PHYSICS.

PROF. W. L. BRINGHURST, Ph. D.

Work in this department will commence with the study of elementary Physics in the Third Class, passing to a more advanced course of Physics in the Second Class.

The apparatus of the department is excellent and extensive, being sufficient for illustration and experiment throughout the entire course. Besides, the shops of the Mechanical Department will be most useful as a laboratory for practical applications of the study of Physics. With this aid students may construct special pieces of apparatus for illustration of any subject.

The following are some of the pieces of apparatus found in the Physical Laboratory: Powerful air-pump, Atwood's Machine, 3-inch spark induction coil, smaller coil, telegraphic apparatus, galvanometer, plunge battery, Grove's battery, other batteries, dielectric machine, magneto-electro machine, electromagnetic machine, Toepler-Holtz machine, jars, electro-magnetic engine, dynamo machine, Geissler's tubes, Siren, Crouch's best binocular microscope and fittings, polariscope and accessories, spectroscope, radiometer, hydraulic ram, hydrostatic and hydrodynamic apparatus, models of machines and mechanical powers, etc.

Gage's Physics is used as a text-book. The works of Ganot and Deschanel and other standard authors are used for reference. Lectures form a very important part of the course.

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DEPARTMENT OF AGRICULTURE.

PROFESSOR GEO. W. CURTIS, B. S. A.

The design of the course in agriculture is to furnish a broad and liberal education, thoroughly practical in all its details, giving it such direction as will tend to produce fitness for the higher demands of agricultural industry and meet the requirements of educated citizenship.

Manual labor is divided into two classes, viz: 1st. Uninstructive, comprising all those operations on the Farm and in the Dairy, Garden or Orchard, from which benefit shall accrue to the college and not to the student; 2nd Instructive—comprising all those operations which are necessary to a thorough practical knowledge of the various branches taught, and from which the benefits accrue to the student.

The first is paid for by the department at rates varying from 6 to 10 cents per hour. A few DETAILS will be given to MERITORIOUS students, by means of which a part of their expenses may be paid.

Instructive labor is amply compensated for by the instruction given, and comprises the various operations in garden and orchard culture and the conduct of experiments, bearing directly on the agricultural problems of the age.

The studies pursued are as follows:

FIRST YEAR—THIRD CLASS.

FIRST TERM: History and Description, care and Management of Domestic animals—Lectures—3 Days in week. Horticulture—"Barry's Fruit Garden"—2 Days in week with the supplementary studies,—Grammar.

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composition, Arithmetic, Free-hand Drawing and Physics.

Practice in Farm Carpentry 4 hrs. each week.

SECOND TERM: Botany—"Gray's School and Field Book"—3 Days in week. Zoology (MacAlister's) and Entomology (Lectures)—2 Days in week with the supplementary studies,—Algebra, (finished)—History, Composition, and Physics. Practice in Horticulture, and the preparation and Analyses of Botanical Specimens.

SECOND YEAR—SECOND CLASS.

FIRST TERM: Principles of Stock-breeding—Lectures—2 Days in week. Book-keeping—Bryant and Stratton's—3 Days in week, with the supplementary studies,—Geometry, Rhetoric and Physics—Practice Experimental agriculture.

SECOND TERM: "Armsby's Cattle Feeding," part 1st—2 Days in week, with the supplementary studies, Trigonometry and Surveying, Chemistry and Universal History. Practice,—Field work in Surveying.

THIRD YEAR—FIRST CLASS.

FIRST TERM: "Armsby's Cattle Feeding," parts 2nd and 3rd—Daily—with the supplementary studies,—Theory of Equations and Mechanics, Analytical Geometry (optional) Chemistry—(qualitative)—Universal History, and Sketching from nature. Practice—Laboratory work—(qualitative analysis) chemistry.

SECOND TERM: Veterinary Anatomy and Medicine—Lectures—Daily—with the supplementary studies,—Chemistry, Geology, Mechanics, analytical Geometry (optional,) English Literature, (finished,) and sketching from nature. Practice—Laboratory work, quantitative analysis—in chemistry, and Veterinary clinics and Dissections. Graduating Thesis.

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In the study of our Domestic animals, careful attention is given to the merits and demerits of different breeds—to their care and management; and remedies are given for common and simple diseases.

In Horticulture the aim is to give such instruction as will enable our students to take proper and effective care of the home orchard and garden. How to select, bud, graft, plant, train and prune, with practical work in the various instructive branches connected with the subject.

In Botany, the aim is to make the student familiar with the common plants, beneficial, injurious and neutral, and especial attention is given to our native and cultivated grasses. In our experimental plot, we have beds of the grasses and aim to give practical lessons in their economic value; we also touch upon the various Fungus growths prevalent, such as Rust, Ergot, etc.

In Entomology, we aim to give a brief but thorough synopsis of those insects injurious to the fruit and agricultural produce of the country, with discussion of the various means of extermination or prevention.

Armsby's Cattle Feeding is conveniently divided into three parts; taking up first a condensed statement of THE GENERAL LAWS OF ANIMAL NUTRITION; second, THE CHEMICAL COMPOSITION OF FEEDING STUFFS; third, THE FEEDING OF FARM ANIMALS. We pursue each head successively thus giving a thorough knowledge of the principles and reasons upon which PROFITABLE CATTLE FEEDING is based, either upon the range or in the yard.

In Veterinary Anatomy it would be impossible for the students to understand, thoroughly, the subject in so short a time without the aid of the skeleton. The class in this study have prepared and mounted a complete skeleton of the horse, under the direction of the Professor of Agriculture which is used constantly in the lecture room during the study of anatomy.

A short synopsis is given of the various classes of drugs and their action—both Physiological and Therapeutical. The injuries and diseases to which the horse is most commonly subject, and their treatment are taken up and thoroughly studied by means of lectures—the class assisting in dressing and treating cases which occur from time to time.

The object of this branch of instruction is to protect our stu-

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students in after life from the numerous quacks who infest the country, by enabling them to diagnose and properly treat all ordinary cases, without the aid of a skilled veterinarian.

Believing that system is essential to success in any pursuit, and as essential to the farmer and stockman as to the merchant, we have added to this course, during the first term of the second year, a careful and thorough course in **BOOK-KEEPING**. We are confident that this addition will supply a want long felt among the farmers of our state and induce a systematic course in the after business relations of our students which shall greatly enhance their success.

In connection with this study, lectures will be given on the laws governing, and relating to Commercial paper as applied, especially in our own state.

It will be seen, from the synopsis of studies, that students in the agricultural department are given instructive practice in general Farm Carpentry—the object being to give them a certain skill in the use of ordinary tools which will save the expense of a carpenter for all ordinary repairing, etc.

The supplementary studies throughout the course are so arranged as to be of the greatest possible value in after life; among them we would call especial attention to the studies, **CHEMISTRY** and **SURVEYING** as having a peculiar value in connection with agricultural industry. Military drill is conducted during the entire course in conformity to the act of congress, establishing agricultural and mechanical colleges in the various states. All books used in the course may be secured at the **COLLEGE BOOK DEPARTMENT** at a slight advance on publisher's prices. No books should be purchased before arriving at the college as the proper edition may not be secured.

Communications relative to the Department may be addressed to the professor.

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DEPARTMENT OF MECHANICAL ENGINEERING
AND DRAWING.

PROFESSOR R H WHITLOCK, M E

This department is intended so to combine theory and practice that after deriving a theoretical knowledge of a subject from the text books of standard writers the students may go into the shop and apply that knowledge in a thoroughly practical manner. With this theoretical preparation the mind grasps the salient points, and avoids the difficulties of the more practical part of the work. The work is carried on by the aid of practice in the shops and drawing room, and by text books and lectures.

I ENGINEERING.

This subject being one which contains many minor divisions the text book is often superseded by lectures. These are generally so chosen as to enlarge on some topic introduced in the text but which needs a detailed discourse to enable the student to fully master the subject. Some of the important topics treated are:— Strength of Materials ;— Treating of the strength of the different materials used in construction when they are subjected to the different strains which must necessarily be brought upon them when they are in actual use.

Masonry, — Giving full descriptions of materials used, with the chemical and physical properties of the ingredients; the different styles, &c.

Foundations,—Describing the best practice in laying and preserving foundations, and giving particular attention to such soils as necessitate extraordinary precautions being taken for the preservation of structures.

Roadways, — Their location and details, including railroads and the methods of laying them out.

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Shafting,—Its strength and uses, with calculations of sizes required under certain circumstances.

Pulleys. — Speed, transmission of power, with methods of decreasing or increasing speed by their uses.

Before graduating from this department each student must place in the hands of the Professor in charge a thesis which treats of some Mechanical subject and which shall be declared satisfactory by him.

I MECHANICAL DRAWING.

This subject is taken up when the student has little or no knowledge of the instrument used, and but little idea of the benefits to be derived from a thorough skill in their manipulation. At the start the principal object is to train the mind, eye and hand to work in unison. In order to accomplish this the first drawings consist of problems, which, though very simple, contain principles which will be of use all through the course of drawing. Thus the mind is trained as well as the hands, and after proceeding in this manner until all difficulties are surmounted the nature of the problems gradually changes until that point is reached where they may be applied to mechanical work. First the screw, then the teeth of the wheels, and so on, gradually drawing out the skill of the embryo draughtsman until he can make a "working drawing" of the most complicated pieces of machinery. This, like the preceding subject, is intimately connected with actual practice as shown by the fact that we take our measurements from machines which are the results of the best practice of the age. Again, in drawings toothed or gear wheels, we compare theory with practice in such a manner as to point out the desirability of combining them in our work. The fear of being able merely to copy other drawing is avoided from the beginning, as each drawing is made from measurements taken by the student and is finished up as if the machine were to be actually constructed. In time the designing of machinery will be taken up, thus enabling the student to put his own ideas in such a shape as to show others what he thinks, and in such a manner as to admit of the construction of the machine from his drawings. Each student must provide himself with a set of

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drawing instruments and is advised not to make his purchase before entering the college, as arrangements have been made with reliable makers to furnish instruments on advantageous terms.

SHOPS AND SHOP WORK.

Prof. R. H. Whitlock, Supt.

A. Harbers, Foreman.

The present shops are situated in a two story frame building 84 x 34 feet, and have attached a boiler house and forge shop. In addition to this there is now in course of construction a one story brick building 80 x 35 feet, in which will be placed new tools of the latest patterns which represent the best practice of the age. Here the student receives practical and systematic instruction, beginning with the simplest exercises and gradually working up to those of a more difficult character which involve greater skill. Each of these when finished must reach a certain standard of perfection before the learner can pass on to the next, thus insuring a knowledge of the principles by which the work is accomplished. The wood working department is subject to the same requirements, and here, as in iron working, the first exercises are of the simplest character while the later ones demand increased skill on the part of the workman. The only tools necessary for the student to purchase are a pair of calipers, a two foot rule; also a pair of overalls, all of which may be obtained in Bryan.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

LIEUT. JOHN S. MALLORY, 2 U. S. INFANTRY, PROF.

The instruction in this department is in conformity with the Act of Congress, which in endowing this and similar institutions, stipulates that military tactics shall be taught.

An officer of the regular army is detailed by direction of the

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President of the United States to carry out this requirement of the act in question, and the necessary arms, accoutrements and ammunition are furnished by the General Government without cost to the college.

The military instruction given is confined to Infantry and Artillery drills, a limited amount of target practice, and the duties of sentinels. Also lectures on technical subjects will be occasionally delivered.

The military system is also used here as the principal means of enforcing discipline and securing regularity in the performance of academic duties. The Professor of Military science is under the Chairman of the Faculty, charged with the preservation of discipline, with the title and powers of Commandant.

It will be the special aim of the present Commandant in the future, as it has been in the past, to inculcate in the students that manliness of character and habit of truthfulness in all things that characterizes young men as gentlemen the world over.

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This College owes its origin to—

AN ACT

DONATING PUBLIC LANDS TO THE SEVERAL STATES AND TERRITORIES WHICH MAY PROVIDE COLLEGES FOR THE BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

I. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled—

That there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land, to be apportioned to each State, a quantity equal to Thirty Thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: PROVIDED That no mineral land shall be selected or purchased under the provisions of this act.

SEC. 2. AND BE IT FURTHER ENACTED, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or sub-division of sections not less than one quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said States shall be entitled shall be selected from such lands within the limit to each of the States, and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this act, land scrip to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said States and the proceeds applied to the uses and purposes prescribed in this act, and for no other purpose whatsoever; PROVIDED, That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subjected to same at private entry at one dollar and twenty-five cents or less, per acre: AND PROVIDED FURTHER, that not more than one million acres shall be located by such assignees in

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any one of the States: AND PROVIDED FURTHER, That no such location shall be made before one year from the passage of this act.

SEC. 3. AND BE IT FURTHER ENACTED, That all the expenses of management, superintendence and taxes from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the money which may be received therefrom, shall be paid by the State to which they may belong, out of the treasury of said States so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. AND BE IT FURTHER ENACTED, That all moneys derived from the sale of the lands aforesaid, by the States to which the lands are apportioned, and from the sale of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks; yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in section fifth of this act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, in such manner as the Legislature of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. AND BE IT FURTHER ENACTED. That the grant of land and land scrip hereby authorized, shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

First, If any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall by action or contingency, be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual increase shall be regularly applied without diminution to the purposes mentioned in the fourth section of this act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this act, may be expended for the purchase of lands for sites or experimental farms, whenever authorized by the respective Legislatures of said States.

Second, No portion of said fund nor the interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings.

Third, Any State which may take and claim the benefit of the

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provisions of this act, shall provide, within five years, at least not less than one college, as described in the fourth section of this act, or the grant to such State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold and that the title to purchasers under the State shall be valid.

Fourth, An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their cost and results, and such other matters, including State industrial and economical statistics, as may be supposed useful, one copy of which shall be transmitted by mail free, by each to all the other colleges which may be endowed under the provisions of this act and also one copy to the Secretary of the Interior.

Fifth, When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the States at the maximum price and the number of acres proportionately diminished.

Sixth, No State, while in a condition of rebellion or insurrection against the government of the United States, shall be entitled to the benefit of this act.

Seventh, No State shall be entitled to the benefit of this act unless it shall express its acceptance thereof by its Legislature within two years from the date of its approval by the president.

SEC. 6. AND BE IT FURTHER ENACTED, That land scrip issued under the provisions of this act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three

SEC. 7. AND BE FURTHER ENACTED, That the land officers shall receive the same fees for locating scrip issued under the provisions of this act as is now allowed for the location of military bounty land warrants under existing laws: PROVIDED, Their maximum compensation shall not be thereby increased.

SEC. 8. AND BE IT FURTHER ENACTED, that the Governors of the several States to which scrip shall be issued under this act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of the amount received for the same, and what appropriation has been made of the proceeds.

APPROVED JULY 2, 1862.

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And to the following amendment :

AN ACT TO AMEND THE FIFTH SECTION OF AN ACT ENTITLED
“AN ACT DONATING PUBLIC LANDS TO THE SEVERAL STATES
AND TERRITORIES WHICH MAY PROVIDE COLLEGES FOR THE
BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS,” AP-
PROVED JULY TWO, EIGHTEEN HUNDRED AND SIXTY-TWO, SO
AS TO EXTEND THE TIME WITHIN WHICH THE PROVISIONS OF
SAID ACT SHALL BE ACCEPTED AND SUCH COLLEGES ESTABLISH-
ED.

1. Be it enacted by the Senate and House of Representatives
of the United States of America in Congress assembled—

That the time in which the several States may comply with the provisions of the act of July two, eighteen hundred and sixty-two entitled “AN ACT donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts,” is hereby extended so that the acceptance of the benefits of the said act may be expressed within five years from the date of filing of such acceptance with the Commissioner of the Land Office; PROVIDED, That when any Territory shall become a State and be admitted into the Union, such new states shall be entitled to the benefits of said act of July two, eighteen hundred and sixty-two, by expressing acceptance therein required within three years from the date of its admission into the Union, and providing the colleges within five years after such acceptance, as prescribed in this act: PROVIDED FURTHER, That any state that has heretofore expressed its acceptance of the act herein referred to shall have the period of five years within which to provide at least one college as described in the fourth section of this act, after the time for providing said college according to the act of July two, eighteen hundred and sixty-two shall have expired.

APPROVED JULY 28, 1865.

By Joint Resolution, approved November 1, 1866, the Legislature of Texas formally accepted the provisions of the Congressional Acts, and the State received from the General Government scrip for 180,000 acres of public land, the proceeds of which constitute the present permanent endowment fund of this College, and is in Texas seven per cent. gold frontier defense bonds to the amount of \$174,000.

The Legislature fulfilled its obligations by passing “AN ACT to provide for the establishment of an Agricultural and Mechanical College of Texas,” approved April 17, 1871, and by making liberal successive appropriations—aggregating \$202,000—for the

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buildings and equipments necessary for putting the institution in operation. And the County of Brazos secured its location within its limits by donating to the State the present college farm, a tract of 2416 acres, five miles south of the town of Bryan.

Finally, the Constitution of 1876, article VII, provided :
“Section 13. The Agricultural and Mechanical College of Texas, established by the act of the Legislature, passed April 17, 1871, located in the County of Brazos, is hereby made and constituted a branch of the University of Texas, for instruction in agriculture, the mechanic arts, and the natural sciences connected therewith.”

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