1891

General Catalogue 1891

Utah State University

Annual Catalogue

—OF THE—

AGRICULTURAL COLLECE

OF UTAH.

1891-2.

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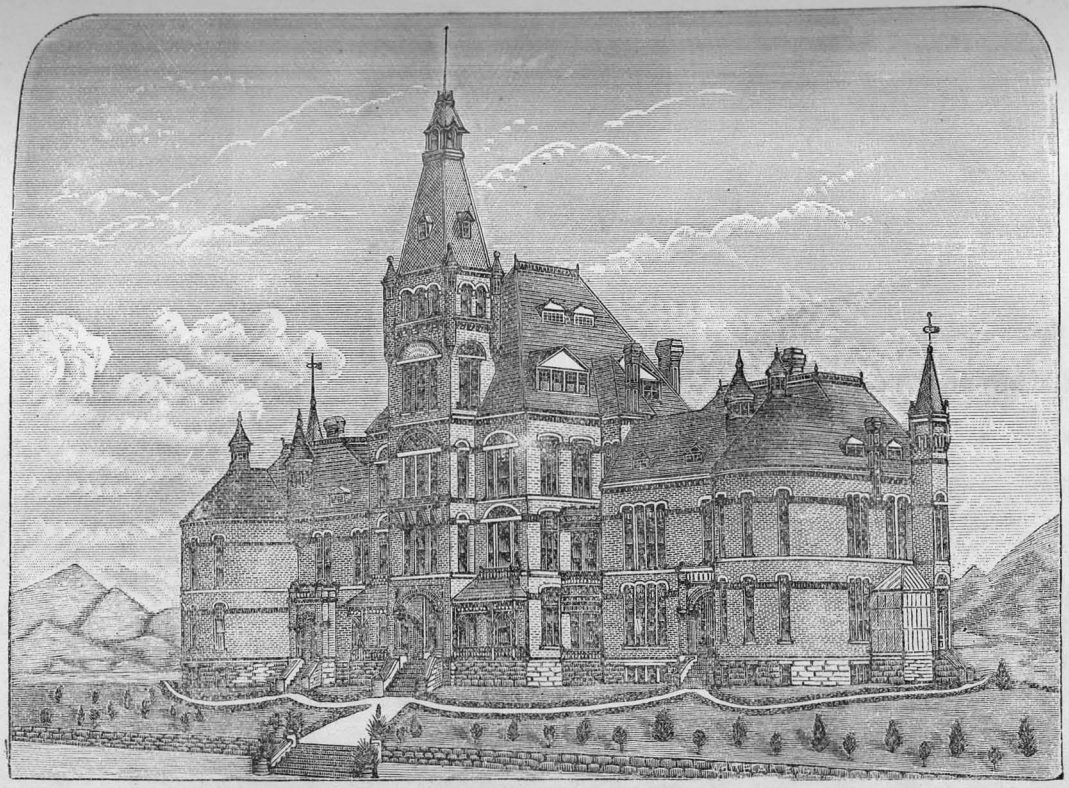

THE AGRICULTURAL COLLEGE OF UTAH.

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OF UTAH.

LOGAN, UTAH,

1891-2.

CALENDAR FOR 1891-2.

First Term Opens ..... Tuesday, September 1, 1891.
First Term Closes ..... Saturday, December 19, 1891.
Second Term Opens ..... Tuesday, January 5, 1892.
Second Term Closes ..... Saturday, March 19, 1892.
Third Term Opens ..... Tuesday, March 24, 1892.
Third Term Closes ..... Friday, June 3, 1892

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Professor of Civil Engineering.

Instructor in Preparatory Department.

Professor of Military Science.

Foreman of Shop Work in Wood.

Veterinary Surgeon.

Librarian.

HISTORICAL STATEMENT.

The Agricultural College of Utah was organized by an act of the Territorial Legislature, approved March 8th, 1888, accepting the provisions of an act of Congress introduced by Hon. Justin S. Morrill of Vermont, and made a law July 2, 1862.

The purposes of Congress are seen in the following quotations from the National law: "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 the mechanic arts * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

THE PURPOSES OF THESE COLLEGES.

The organic law founding these Colleges names agriculture first. This fact, coupled with the further fact that agriculture is the basic industry, quite properly determined most of the States, in giving name to these new institutions of learning, to fix upon that of Agricultural College.

The evident intention of Congress to give prominence to agricultural instruction at these institutions, and the transcendent importance of farming, have led the masses to assume that teaching agriculture as an art is the supreme, if not the only function of these institutions.

This false view has unfortunately led to much misunder-

standing that has been detrimental to both the colleges and those in whose interest they were established. At the threshold of this new college existence it is desirable that its legitimate functions be clearly understood by those for whom it was most wisely and generously founded.

The law states that the mission of these Colleges in their leading purpose is to teach "such branches of learning as relate to agriculture and the mechanic arts." Something more than manual practice was intended by the law makers. The foundation for broad and comprehensive reasoning was to be laid by these industrial schools. All that science and learning can do to increase manual skill or to widen the field of vision of industrialists, either in giving deftness or direction to the hand, or in substitution for the hand, of physicial or more productive forces through the application of increased intelligence, comes within the scope of the law. Indeed, a wider purpose came within the purview of the statutes, as witnessed in the following quotation from them: "In order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The benefits of the law were to be extended beyond farmers and mechanics to those of the several "pursuits and professions of life;" and for all of the industrial classes the intent was to go beyond making the mere expert industrialist to his liberal education as a man and a citizen. There is to-day a keen struggle on the part of the nations for supremacy in the marts of the world. This competition has been developed within the past thirty years by the marvelous growth of the arts, especially by the perfection of steam transportation by land and by sea, whereby the nations of the world have become one commercial neighborhood. Congress recognized, in the provisions of the law, the fact that the intelligence of the industrial classes is the measure of the productive powers of nations, and thus sought to prepare this nation for industrial success. Congress further recognized the fact that more and more the honor, wealth and stability of the nation rest in the keeping of the industrial classes, known as the "great middle classes." From their ranks have risen those to whom the country has committed its interests, and to whom it will, in an increased degree, commit them in the future. Agitation and combination have brought about within a decade a marvelous increase of the direct power of these industrial classes. No fact has been more significant in the growth of this power than the increased conservatism with which it has been used. More intelligence has distinguished the movement than heretofore. A liberal education for the

industrial classes will develop for their leadership, not only stronger and wiser, but more conservative men.

AN EDUCATIONAL DEPARTURE.

On emerging from the dark ages the world had no literature from which to draw knowledge and inspiration, save that of the ancient civilizations of Greece and of Rome. This only source of information and culture became the main instruction of the schools three centuries ago, and of course the fashionable instruction. Despite the superior civilization of to-day, with its broad culture, and despite the new world of thought and action—the outgrowth of sciences unknown to the narrower vision of the ancients—the study of ancient literature remains, through the force of custom, the central work of classical colleges. Herbert Spencer, alluding to classical education says: "Men dress their children's minds as they do their bodies, in the prevailing fashion." Congress gave to the industrial classes, who could not, would not, or did not care to afford a classical education, opportunity to inform themselves regarding the civilization, the varied and deeply interesting natural world and the controlling and productive forces surrounding them and daily reacting upon their destinies.

The control of natural agencies has vastly multiplied the productive powers of man. This widening power has broadened and is still broadening him. These colleges, which seek to extend knowledge of the applied sciences, may, therefore, be looked upon, in their benign influence on humanity, as the most important higher educational movement of all time.

COLLEGE POLICY.

To the full extent of its resources, the College will carry out the broad policy of its founders. First and prominently, it "will teach such branches of learning as relate to agriculture and the mechanic arts." The former being in the thought of Socrates, the mother and nurse of all other industries, will receive special attention. This Department will be made all that the people of Utah will support, not by money alone, but by the attendance of their sons and daughters. The prominence given to the Department of Agriculture will not give

rise to any jealousies, as the character of the agriculture of a country is a measure of the prosperity of other industries, and of a nation's wealth and culture.

The wealth and variety of Utah's mineral resources adapted to the support of the arts, are such that the College will fall far short of its duty if it does not give a zealous and earnest attention to mechanic arts and to civil engineering. This work will be extended until its embrace includes irrigation engineering.

The young women of the Territory attending the College will be put on an equal footing with the young men for obtaining a special education for their sphere of life.

A review of the College courses, which will be found on following pages, shows that the College authorities have not forgotten that the man is before the industrialist. The technical work will be accompanied by those studies best calculated to impart that information which the average citizen now finds most useful and pleasurable.

For more detailed information regarding the proposed work of the College, the reader is referred to information given under "Courses of Study."

RESOURCES OF THE COLLEGE.

Congress provided "that there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land to be appropriated to each State, a quantity equal to 30,000 acres for each Senator and Representative in Congress, to which the States are respectively entitled." The law provides for the sale of these lands by the States without cost to the fund and says: "So that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned." After defining the purposes of the grant, which have already been discussed, and after providing for the safe investment of the funds derived from the sale, the law says in Section 5:

The grant of land and landscrip 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 any 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 interest shall be regularly applied without diminution to the purpose 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.

On the admission of Utah to statehood, the College will come into possession of some 30,000 acres of land for each Congressional Senator and Representative that it may be entitled to, the funds derived from the sale of which, as it has been seen, Utah will be under obligation to perpetuate as a permanent fund for the maintenance of the College.

By an Act of Congress passed in 1890, $15,000 was given to each Agricultural College of the country. This sum is an annual appropriation and increases $1,000 yearly until it reaches $25,000. The revenue from this source for the year 1891-2 will be $17,000.

THE EXPERIMENT STATION.

By an Act of Congress passed March 2d, 1887, $15,000, which it is expected will continue as an annual appropriation, was appropriated for experimental work, to be conducted in connection with agricultural colleges. The first appropriation, or that of 1862, was for the exclusive purpose of teaching or imparting information already acquired, and to all classes of industrialists. The second appropriation, by law, is to be wholly devoted to the acquisition of information, or is wholly for research. This original research is to be in the field of agriculture, and is primarily for the farmer and second only for students. The Congressional law defines quite fully the proposed line of research. Briefly stated the intended investigation may legitimately cover any question relating to economic agriculture.

Under the "Course in Agriculture" the brief presentation of the work now going forward at this station, will illustrate the purpose of the law.

RELATIONS OF UTAH TO THE COLLEGE.

In accepting the grant of Congress for founding both the College and the Station, Utah pledged herself to carry out the

purposes of Congress in good faith and accepted the obligation to equip and maintain the College, and to guard its funds.

The College is, then, a Territorial institution, fully under territorial control within the Territory's stipulations with Congress, and has the Territory's pledge to support it.

It is unnecessary to quote the Territorial law in full. The following points of interest will be noted:

First. The law located the College in Cache County.

Second. The sum of $25,000 was given to erect a college building and to purchase land.

Third. The Governor and the Secretary of the Territory were made, with the Assessors of Cache, Davis, Utah, Salt Lake and Sanpete Counties, ex-officio Trustees of the College. By a decision of a general character, of the Supreme Court, it was held that the power of appointment is vested in the Governor and the Council, and not in the Legislature. The present Board of Trustees was appointed under this decision.

Fourth. The objects of the College were defined by the Territorial law in the language of Congress already quoted. In the same manner the objects of the Experiment Station were defined. The Territory is in full accord with the terms of the Congressional grant.

Fifth. Section 10 is quite important and will be given in full. With this section the management is in most hearty accord. Positive assurance is hereby given to the public that there will be a faithful discharge of the duties devolving upon those in authority, touching this portion of the law.

SEC. 10 In the appointment of professors, instructors and other officers and assistants of said College, and in prescribing the studies and exercises thereof, and in every part of the management and government thereof, no partiality or preference shall be shown by the trustees to one sect or religious denomination over another, nor shall anything sectarian be taught therein; and persons engaged in conducting, governing, managing or controlling said College and its students and exercises in all its parts, shall faithfully and impartially carry out the provisions of this act for the common good, irrespective of sects or parties, political or religious.

Sixth. The course of instruction "shall embrace the English language and literature, mathematics, civil engineering, agricultural chemistry, animal and vegetable anatomy and physiology; the veterinary art, entomology, geology and such other natural science as may be perscribed, technology, political, moral and household economy, horticulture, moral philosophy, history, bookkeeping, and especially the application of science and of the mechanical arts to practical agriculture in the field."

Seventh. The length of the course was made not less than

nine months. Students must be, by law, fifteen years of age to enter the institution. This, doubtless, as in other states and at other colleges, applies to admittance to the collegiate course, and is not intended to bar younger students from any preliminary studies necessary to admit them to the full collegiate course.

LOCATION OF THE COLLEGE.

Cache County and Logan gave a farm of 100 acres and thereby secured its location at Logan. Logan is the capital city of Cache County, and in a commercial sense, of Cache Valley. It is surpassed in wealth and population only by three cities of Utah, and in the beauty of its location by none. Cache Valley is some sixty miles in length, twelve miles in width, and is completely surrounded by the Wasatch range of mountains. From the upper bench of the old lake formation, upon which the College and farm are located, can be seen, in the clear air of this inter-mountain region, the full expanse of the rich valley in which it is placed throughout its entire length, while the uniquely corrugated mountain sides encircling the valley are seen in all their wealth of varied beauty. The College is located at the visual key of this unique and picturesque valley. The beauty of its location is probably unsurpassed by that of the location of any other college in the country.

COLLEGE EQUIPMENT.

Eighty feet square of the College building, constituting one of the wings, is completed and in use. The frontispiece will show that it is a modern building of pleasing exterior. This wing includes eight lecture rooms, a chapel or audience room, rooms for domestic arts, and a light and roomy basement that is used for the time being, for mechanic arts. Its rooms are pleasant to a rare degree, while its halls are wide, light and cheerful.

A new and modern club or boarding house is connected with the College. It contains thirty-three rooms for students. These rooms are 12x14 feet, exclusive of a good closet to each room. Each room has two registers for ventilation, a looking glass, a full set of chamber ware, a wash stand, table, chairs, and either a bedstead or two cots. In addition to the above rooms are

rooms for the matron and for cooks, a fine, large reception room for students, 19x27 feet; a model kitchen, a dining room, and pantry supplied with modern conveniences, a laundry room and bath rooms.

A model barn is connected with the Department of Agriculture. It contains a silo, a root cellar, an engine room, quarters for swine, for sheep, for cattle, for horses, for hay and for other coarse fodder; for grain, tools and for horticultural use.

A farm house with dairy rooms associated with it, illustrates the modern conveniences that are found in connection with modern farm houses.

Two laborers' cottages are located on the grounds of the College.

All of the above buildings are new, well adapted to their purposes, and of credit to the Territory.

Connected with the above buildings is the Experiment Station building, where experiment work is constantly in progress.

The central College building is equipped with the very best of modern college furniture.

LIBRARY.—The Library contains over 2000 volumes that have recently been very carefully selected. They cover the fields of thought to which it will be most useful for students to turn their attention — travel, biography, political economy, sociology, metaphysics, history and fiction of the higher order. The works are from the pens of the world's great thinkers.

The library room contains periodicals that represent the leading lines of modern thought. It is a well equipped section of the college work and free to college students.

A knowledge of current literature is a prime essential to every American, and for it there is no substitute, whether it be used for pleasure or for power, hence the students are encouraged to make use of the library.

MUSEUMS.—A collection for a general museum upon which the several departments of the College may draw for means of illustrating class room teachings, has been begun, and is already of importance. A fund has been devoted to this feature of the college work.

APPARATUS.—Each of the five courses of instruction has a collection of apparatus and materials for object teaching. Under each course of instruction will be found a statement of the means provided for illustrating the instruction given in each college course.

FARM.—Eighty-five acres of land are used for instruction in the art and science of Agriculture and of Horticulture.

Three and one-half acres of ground located close to the College building are set aside for the sole use of students for athletic sports.

COLLEGE INSTRUCTION.

The existence of the Agricultural College of Utah rests upon the development of the sciences as unfolded in the immediate past. Its distinctive work will be, in addition to giving a liberal education, teaching these sciences and pointing out, as far as possible in school life, by actual manual exercise, and by the use of apparatus and of materials and agencies used in the arts, their application to industrial life. This work evidently requires men of special experience and instruction. The instructors will all be specialists of a high order of attainment in their several fields of instruction. It is intended that the work undertaken at this College shall be well done and comparable with the better colleges of the country.

COLLEGE COURSES.

The College work includes five distinctive lines of instruction, three special courses and a Preparatory Department.

1. Course in Agriculture.
2. Course in Domestic Arts.
3. Course in Mechanic Arts.
4. Course in Civil Engineering.
5. Business Course.

The special courses are as follows:

1. Three years' course in Agriculture.
2. Course in Mining Engineering.
3. Irrigation Engineering.

In addition to these special courses there has been organized two courses of winter lectures covering ten weeks each, namely: A course of Agricultural lectures and a course of lectures for the Domestic Arts Department.

The courses in Mechanical and in Mining and Irrigation Engineering will be Post Graduate Courses of one year each.

PREPARATORY DEPARTMENT.

The state of development of our public schools requires, for a few years to come, a preparatory department of one year for fitting those students who are unable to pass an examination for entrance to the college courses. This, it is hoped, will be a temporary necessity.

The college is desirous of avoiding the necessity of preparatory studies, yet it believes that at present, those who are denied the privilege of a not overcrowded common school of a high grade, and who propose to pursue their studies at this College, will find it advantageous to fit themselves to enter the College in its Preparatory Department.

The class room exercises of this department are daily one hour each, and are conducted as much for the mental discipline given as for the facts imparted. Students in this department are at a period of mental development when it is more important that right methods of instruction be pursued than it is at any later period of life.

Acquiring facts is of far less importance than learning how to think. Cobbett said that one ounce of reason was worth whole tons of memory. A student who merely learns facts will never become a scholar nor an original thinker. He will remain a follower and not a leader.

It is found that students who come to this College from our common schools require further discipline in the elementary studies.

PREPARATORY COURSE.

Hour.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1.	Penmanship.	Grammar.	Course in Reading or Business Penmanship.
2.	Grammar.	U. S. History.	Arithmetic.
3.	Spelling eight weeks. Reading eight weeks.	Arithmetic.	Physical Geography.
4.	Geography.	Reading and Elocution.	Grammar.

This course fits students for the several courses of study of this College.

COURSE IN AGRICULTURE AND SCIENCE.

It has been said by a great poet that "All nature is but art unknown to thee." This being so, agriculture is the art of arts, for it unceasingly deals with nature and is thereby brought into daily contact with life and the science related to life. In the management of soils and in the use of tools it comes in contact with physical and mechanical laws, and in the markets, with commercial and political laws. Very happily agriculture deals with more of the sciences than any other industry, thereby causing agricultural education to become more nearly a liberal education than the education that is necessary to any other industry or profession. Very nearly the round of natural sciences are involved in farming, so that a well educated farmer is virtually liberally educated as a citizen.

In the following course of instruction very few studies are involved that are not an essential part of the education of a man best equipped to become the most successful farmer. It may well be termed a course in the applied sciences.

Heretofore agriculture has been without guiding laws. It has been a "rule of thumb" business. It is now rapidly becoming the most learned of the industries or professions. Of its profundity there can be no longer any doubt. The inherent fascination of its living forms and of its complex and intricately balanced laws will yet attract the best talent to it as the finest field for industrial gratification and for the development of the highest order of intellectual and physical manhood.

Statistical inquiry has shown that in the several countries of Europe the produce per acre is increased over the most illiterate countries by the increased ratio of the population that can read and write. The same fact is found to exist between the states of the Union. A single illustration of the general law will be given. In 1860, fifty-three per cent of the population of France and nearly all of the population of Germany, could read and write. In the former country the crops were 18.50 bushels per acre while the latter yielded 22.05 bushels. Germany has a poorer country for agriculture than France yet her yield is nearly twenty per cent more than that of France. She has far more Agricultural Colleges and Stations than France and erected them earlier than did France.

COURSE IN AGRICULTURE.

FEESHMAN YEAR.

Hour.	FIRST TERM.	SECOND TERM.	TIHRD TERM.
1	Grammar.	Rhetoric.	English Literature.
2	Higher Arithmetic.	Algebra.	Algebra.
3	German or either Music, Elocution, Course of Reading or Business Ethics.	German or either Music, Elocution, Course of Reading, Mechanical Drawing or Business forms.	German or either Music, Physical Geography, Elocution, Commercial Law, Mechanical Drawing or Business Correspondence.
4	Free Hand drawing.		
5 & 6	Shop work in Wood, 3	Shop work in Wood, 3	Shop work in Wood.

SOPHOMORE YEAR.

1	Geometry.	Bookkeeping	Botany.
2	Chemistry,	Physics.	Physics.
3	Botany eight weeks Trigonometry eight weeks.	Chemistry.	Agricultural Chemistry.
4	Horticulture. 3	Horticultural lectures and Root Grafting.	Surveying, fieldwork in Surveying in afternoon.
5 & 6	Work or practice on Horticultural Grounds.	Laboratory practice in Chemistry.	Horticultural work. 2

JUNIOR YEAR.

1	Agriculture.	Mineralogy and Lithology.	Agriculture, Agricultural practice.
2	Botany.	Agriculture.	Entomology.
3	Zoology.	Physiology.	Geology.
4	Zoological Laboratory. 2	Entomology. 2 Laboratory practice in Mineralogy. 3	Civil Government.
5 & 6	Farm work. 2 Botanical Laboratory. 3	Dairy practice.	Laboratory practice in Entomology.

SENIOR YEAR.

Hour.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1	Veterinary Science.	Veterinary Science.	Veterinary Science.
2	German or Mental Science.	Moral Science.	English Literature.
3	Agriculture,	Agriculture.	Agricultural lectures and Farm practice.
4	Political Economy.	Astronomy, Music, Mechanical Drawing, Elocution and German. (Optional.)	Course of Reading or German.
5 & 6	Farm practice.	Practical lessons in Veterinary Science.	

REMARKS ON INSTRUCTIONAL WORK.

AGRICULTURE.—An exercise a day for two years is given to technical instruction in Agriculture. The greater part of the instruction for this class is given by lectures and by field exercises, as very few agricultural works are adapted to school room study.

These lectures consider the history of the development of the art and science of agriculture; farm buildings and fences; farm implements, their development, care and use; the development and characteristics of the various breeds of cattle, horses, sheep and swine; the art and science of breeding; soils, their origin, classification and their physical laws; tillage of soils in its relation to moisture, crops, and to the physical and chemical condition of soils; manures, their composition, value, preservation, preparation and use; farm crops, their character, improvement, seeding, cultivation, harvesting and preservation; feeding—animal digestion, food value of crops and their combination for feeding to the several classes of animals, and the art of feeding; dairying in all of its complex relations, and the application of the knowledge acquired to the art of organizing a successful type of farming of a high order.

The lecture room and the farm will be wedded. Exercises on the farm and excursions to farms successfully conducted will afford means of converting abstract into concrete knowledge, or general into practical knowledge. Successful farmers will be invited to deliver lectures to the students, thus bringing them into contact with those who may speak wholly from the practical side of farm problems.

A statement of the means in the possession of the College

for illustrating the teachings of the lecture room will be found on following pages.

HORTICULTURE.–Instruction will be given both by lectures and by field exercises. A daily recitation or a daily exercise for the entire year is required to complete the studies of this subject. Instruction will be given on the preparation of ground for garden vegetables, and in their improvement, planting, cultivation and general care; in the propagation, cultivation and general care of small fruits; harvesting, preservation and general care of large fruits and management of fruit trees. This instruction will include seeding, grafting by the various methods, budding, pruning, picking, packing and marketing of fruit.

Forestry will receive considerable attention. Students will have opportunity to work upon the forestry grounds of the College, and to note the methods of planting and care of the several kinds and to observe their habits and rapidity of growth.

The grounds of the Horticultural Department contain a large ratio of the most promising kinds of economic trees. The extremely high price paid for hard wood lumber in Utah, makes it probable that rare kinds of trees may be grown here at a profit.

The management of green house plants, including flowers, will be taught to young women of the college.

Horticulture is approximately a polite art and knowledge of it is becoming more and more prized by all classes of citizens. This department will, therefore, be made as strong as circumstances will justify. Effort will be made to blend theory and practice as perfectly as possible.

ENTOMOLOGY.—This subject will be taught with special reference to its relations to insects injurious to vegetation. The world is now in a measure conquering the insect foes to vegetation, and has accumulated valuable information that will be imparted to the students.

ZOOLOGY.—Students of zoology will be required to collect specimens and mount them and to make dissections of representative animals.

VETERINARY SCIENCE.—The class in veterinary science will be in charge of a skilled veterinarian. Lectures are given on anatomy, physiology, principles of hygiene and the special pathology and treatment of the common and most distinctive diseases of domestic animals.

Diseases of stock will be treated in the presence of the students, one day in each week during the spring time.

Sufficient information will be acquired by this study to enable the student to treat intelligently the common ailments of farm stock and to guard against the quack practices so frequently seen on the farm.

SHOP WORK.—Three exercises of two hours each for three days of the week for each term of the year will be devoted to work at the bench with wood and at the forge with iron. Skill in handling ordinary carpenters' tools and in common blacksmith work at the forge will be acquired that will excel that of ordinary workmen. Habits of accuracy and of perfection in details of work will be acquired that will remain as a force or a mental habit that will color all of after life. The design is to acquaint young farmers with the manipulation of tools and with some of the principles involved, for their own use on the farm. This work has been found to be one of the most popular and useful labors of courses in agriculture.

BOTANY.—Elementary Botany will commence in the first term of the Sophomore year. In this term the student will become familiar with the roots, stems, leaves and flowers of plants. Each student will be required to do field work.

The third term of the Sophomore year will be given to the study of Physiological Botany and to plant analysis. Each student will be required to collect, name and properly mount specimen plants.

The first term of the Junior year, the study of Cryptogams and Economic Botany will be taken up. Two afternoons each week will be given to the microscopic study of the structure and diseases of plants.

Especial attention will be given to such fungi as are injurious to cultivated crops.

CHEMISTRY.—The elementary principles of Chemistry will be taught the first term of the Sophomore year. Instructions for this subject will be given, so far as possible, with an agricultural bias, that is, illustrations will be made from farm subjects, and laboratory practice will deal with farm products. This fact will hold true of all of the instruction given in the other sciences taught in the course in agriculture.

ENGLISH.—It will be observed that two and one-third years are given to Grammar, Rhetoric and English literature during the time that students who enter the preparatory course are at the College.

A command of English is an acquisition of commercial, political and social power. It is believed that it is second in importance to no other study in its influence on the culture and general happiness of society. Thorough drill is therefore given in Grammar and English.

A term's work in higher English Grammar makes sure the foundations of our language.

The study of Rhetoric is pursued with a special view to imparting skill in the use of clear, vigorous English. All the elements of style are examined with the aid of a text book; but, throughout the entire year, specimens of composition in various kinds of literature are presented to the attention of the students and they are then called upon to write not only the ordinary descriptive essay for which occasion arises in the professions and in nearly all the walks of life but also specimens of the argumentative style which would be needed in any political meeting or office. They also generally manifest considerable aptitude in humor, romance and verse though they had not imagined that they possessed any such latent capacity. English literature is taught by a text book and by specimens of the best authors. The early history and development of the English language is first examined, then the great periods of English literature and incidentally of English history are discussed, particularly the Elizabethan and Victorian periods. The poets and prose writers of America during this century are discussed and the aim in this study is to impart a taste for the better class of literature both by showing its superior interest and by bringing the students into personal contact, so to speak, with the writers themselves.

HISTORY.—The History of the United States receives due attention in the preparatory course and is taught with a view to illustrating the life of the people at various periods; their manners and customs and their gradual advancement in comfort through inventions and in culture through literature.

The same objects are kept in view in an elective course in general history which is offered to the more advanced students.

CIVIL GOVERNMENT.—This covers the field of United States History more philosophically in the Junior year and traces the progress of constitutional liberty through the long line of English History and in our national and state constitutions and treats of the organization of territorial and local governments. Great interest is imparted to this study by free discussion and occasional debates on questions of the day.

POLITICAL ECONOMY is studied by text books and by lectures. The text book gives the established scientific principles of economics. The lectures examine the subject by the historical and statistical methods and seek to find in all history and even among prehistoric nations, examples in accordance with which nations, states, cities and private business may be

managed to advantage; and then accumulate all possible data from statistics of wages, taxation, population, emigration, profits in all occupations, etc. for the purpose of rigidly testing the comparitive merits of various systems and establishing a system which approaches perfection.

GERMAN.—The study of German is offered to the young men on account of the admirable untranslated literature of this language on the subject of scientific agriculture. German agricultural periodicals are placed at the disposal of the students.

After acquiring the rudiments of German, the students begin to read and converse and thus very soon become masters of an extensive vocabulary, which enables them to take up works in their special field. The ability to speak German will prove of great value in business, and skill in reading German will reveal new avenues of thought and knowledge in a literature second only to English.

OPTIONAL STUDIES.—Young men are urged to study German but are not compelled to do so in order to receive their diploma. It is made optional for the first and last years of the course for the reason that it is better to study it in the opening period of college life, but as maturer judgment leads those that have once declined it, to reconsider their purpose, an opportunity is again offered.

ELOCUTION.—There is opportunity to study both German and Elocution, Elocution will be taught for one year and as a science. Voice culture will be the initial work followed by a thorough study of the principles of Elocution and their application. Good address lends power to good English and to logic and often rises superior to them in its effect on the public mind. All three must be one to him who aspires to the highest success on the rostrum.

OTHER OPTIONAL STUDIES.—Choice of music and of several industrial studies is given, the latter in the interest of those who may for special reasons desire them and yet who do not desire to take the studies of the course to which they belong.

GENERAL NOTES ON THE ABOVE COURSE.

Those who enter college from the Preparatory Department will receive one year's drill in English Grammar, and one and one-third years more in English during the regular course. This time and the time devoted to Political Economy, Civil Government, Moral Science, Mental Science and History coupled

with Mathematics, the sciences and the time devoted to the library, will so far develop the taste for that class of reading which informs and disciplines the mind for the proper discharge of effective citizenship, that a graduate of this course will become well equipped to enjoy the book of nature surrounding him, the society of man, and to represent the interest of the class that the course seeks to promote. It is said that the chances of a college graduate for high honors in the country are multiplied two-hundred fold by a collegiate training. The college does not seek to train statesmen but to fit young men taking this course for effective farming and as representative citizens. It is well known that farmers have few representatives of their class in National affairs and that their interests have never been effectively protected.

WORK SHOP.—A bench with a full set of carpenters tools is assigned to each student. Students are taught to handle tools with skill, to work wood into various forms and to make the several joints, splices, etc. that are ordinarily made by carpenters.

The work shop is also furnished with wood turning lathes.

Modern forges with power blasts occupy a separate room. In this room the principles and practice of upsetting, tempering, welding and forming various tools in short blacksmithing is taught.

The engine supplying power is by turns run by students.

FARM AND HORTICULTURE WORK.—It will be observed that throughout the four years' course laboratory practice in physics, botany, chemistry and veterinary science, shop work and in labor on the farm and on the horticultural grounds keeps students in daily exercise. This is found to be a potent way to retain a love for an active physical existence, which it is often claimed is lost during college life by the old system of education, while at the same time it secures health and vigor to the students.

The work on the Farm and in the Horticultural Department, while largely for the purpose of illustration, and to gain familiarity with the methods pursued, is in part for physical culture. Young men desirous of working beyond the required time, will, when they are needed, be compensated for their services.

MEANS OF ILLUSTRATION.

LABORATORIES.—The Chemical, Physical, Botanical, Veteri-

nary, Agricultural and Horticultural Laboratories, Museums and Libraries contain some $10,000 worth of newly purchased means of illustrating class room teachings. Already the College has secured from Prof. M. E. Jones, 4,500 species of the flora of Utah and the intermountain region for the Botonical Laboratory. In addition to the Chemical Laboratory of the College, the Experiment Station has a Chemical Laboratory that is equipped at a cost of $2,500.

LIBRARY.—The Library contains a large and choice selection of agricultural books, and the reading room is supplied with agricultural papers.

MUSEUM.—The Museum contains material for class room illustrations for this department. Some 400 slides for use in the magic lantern illustrate processes that cannot be shown in practice, while collections of wools, grain, some forty milling products of wheat, etc., etc., afford means of teaching by the eye rather than by the ear.

The Experiment Station affords a most valuable means of illustrating modern farm processes and has the added advantage of stimulating the thinking and observing powers as no other means of object teaching can do, for the Station is engaged in testing methods and in searching for unknown laws.

FARM HOUSE AND FARM BARN.—It has already been stated that the Farm House and Farm Barn are modern and very convenient. The barn it is believed is unexcelled in its conveniences by any college barn in the country.

THE FARM.—On the farm proper there are over three hundred plats laid out for investigation. These cover time of irrigation, amount of water to use, sub-irrigation, night versus day irrigation, method of fitting ground for irrigation and other irrigation trials. They include trials of varieties of wheat, corn, oats, barley and of forage crops; of mulching, drilling against broadcasting, method of tillage, time of tillage, depth of tillage, several methods of plowing, no tillage, depth of planting, distance of planting, time of sowing, amount to sow, selected seed, time of harvesting, chemical fertilizers, method of manuring, varieties of grass for hay, varieties of grass for pasture—to be tested by actual grazing trials, mixed grasses for pasture, several crop rotations and soil and other studies.

Some twenty-six feeding trials with cattle, sheep, horses and hogs are in progress.

HORTICULTURAL DEPARTMENT.—In this department there is a series of the most important economic trees under test. Many have been introduced by the Station. Seventy varieties

of apples, many varieties of pears, peaches, plums, grapes, strawberries, raspberries, blackberries, potatoes, and vegetables of the various sorts are on trial, while lines of other horticultural investigations are in progress,

CHEMICAL DEPARTMENT.—The Chemist of the Station will carry forward a large amount of chemical work in plant and in animal life and on soils, etc.

It is believed that the Agricultural College and Agricultural Experiment Station of Utah are equipped for first class work and will compare favorably with similar Colleges and Stations in other states.

The Bulletins of the Experiment Station will be sent free to any one asking for them.

LITERARY OPPORTUNITIES.

READING ROOM.—The reading room is well supplied with papers suited to the wants of the several departments.

LECTURES.—Members of the Faculty and speakers from abroad will deliver lectures in the Chapel.

LITERARY SOCIETIES.—The students of the College have organized a literary society, thereby affording an opportunity of acquiring before an audience, self possession and ease and skill in debate. The other means, essays, orations, papers, etc., of advancing the literary tastes and acquirements of its members that are common to such societies, are included in exercises of the society.

MILITARY DRILL.

By a defect in the Congressional Law, Territories are not furnished as are the States, an army officer to teach military drill. Probably the next Congress will remedy this defect of the law; if not, the College will doubtless provide an officer to take charge of this feature of the College purpose.

This department of instruction has become very popular in college life. It takes the place in many colleges, of Calisthenics, and is found to be a most valuable method of securing physical culture. It gives an erect carriage, ease and grace of bodily movement, and habits of discipline and order. The

influence of military drill is soon visible in its effects on those taking it.

The marked advantage of this practice to young men has led several colleges to extend the privilege of military drill to young women with the most happy results. The spear, light rifle, or some other light weapon is usually carried. The young women of this college will have the advantages of this feature of college instruction.

SHORT COURSE IN AGRICULTURE.

FRESHMAN YEAR.

Hour.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1.	Penmanship.	Bookkeeping.	Grammar.
2.	Grammar.	U. S. History.	Arithmetic.
3.	Spelling eight weeks. Reading eight weeks.	Arithmetic.	Physical Geography.
4.	Drawing.	Grammar.	Horticulture. 2
5 & 6.	Shop work. 3		Shop work

JUNIOR YEAR.

1	Agriculture.	Rhetoric.	Agriculture.
2	Chemistry,	Agriculture.	Agricultural Chemistry.
3	Botany eight weeks Trigonometry eight weeks.	Physiology.	Botany.
4	Horticulture. 3	Physics.	Surveying, field work in Surveying in afternoon.
5 & 6	Horticultural work.	Root Grafting, Laboratory practice in Chemistry.	Agricultural and Horticultural practice.

SENIOR YEAR.

1	Veterinary Science	Veterinary Science.	Veterinary Science.
2	Botany.	Mineralogy, Lithology and Geology—special lectures.	Entomology.
3	Agriculture.	Agriculture.	Agriculture.
4	Political Economy.	Entomology. Laboratory practice.	Special Reading Course.
5 & 6	Botanical Laboratory. Farm practice.	Lessons in Veterinary practice.	

This course is intended for those who cannot or will not afford the expense of the full course of studies. It is a busines course in agriculture. It is framed on the same plan that courses in law and medicine are, as a purely technical course, and is intended, as they are, to furnish economic or practical, or as it is known, technical information. English Grammar is made an exception, in the first year of the course. The first year furnishes a small degree of preparatory fitting, without which no student would be prepared to study or learn in the field of agriculture, as its abstruse sciences require some preliminary training.

WINTER LECTURES ON AGRICULTURE.

As a preliminary trial or test of the public demand for such a course of lectures for farmers, a course of practical lectures one term in duration will be inaugurated at the opening of the winter term in 1892, provided there are ten applications for admittance to the course. These lectures will be open to every one free of charge, and without examination touching educational qualifications.

Application should be made two or more weeks in advance of the opening lectures.

No degree will be attached to either course, although a certificate stating the fact of honorable completion of the three years' course will be given.

SPECIAL LECTURES IN AGRICULTURE.

Agriculture	50	lectures
Horticulture	30	"
Entomology	10	"
Botany	10	"
Chemistry	20	"
Veterinary Science	20	"
Political Economy	10	"
Special Reading Course	50	exercises.

The lectures in agriculture will be confined to the most important practical questions in farming, such as tillage, drainage, dairying, breeding, stock feeding, manuring and to

answering such questions as may occur to those taking the lectures.

HORTICULTURE.—Horticulture, Chemistry and other studies will be treated wholly from the directly practical side. Those principles of Horticulture, Chemistry, etc. that bear directly upon practical operations on the farm will be explained and their application pointed out.

POLITICAL ECONOMY is included for the reason that farmers are now taking an active part in National affairs, and often in ignorance or in defiance of plain first principles and well settled laws of political economy.

The time given to these lectures will enable a teacher to point out some of the fundamental laws that control in commercial and civil affairs and thus enable him to widen the field of industrial view of those employed in farming who have given little attention to the subject, who may attend the lectures. An increased ability to understand the current and scientific literature of agriculture and a taste for such literature will be acquired.

COURSE IN DOMESTIC ARTS.

The course for young women will be the same as for young men in the four years' course in agriculture, except in the hours devoted to shop, farm or horticultural work. There will be some seventeen studies of one lesson daily, wherein the course for young women will not run parallel with that of the young men. This time will be devoted to special work adapted to woman's sphere of life. Co-education is now very widely recognized in the higher as it has been in the lower schools. No adequate reason can be assigned for denying women a share of the benefits of this public bequest. Once admitted into the institution, their right to special consideration in making up the courses of instruction is as clear as that of young men. For this reason, if for no other, special attention will be given to those branches of information in which young women require technical proficiency, and to those studies that tend to adorn life in the sphere in which they move most.

IMPORTANCE OF THIS COURSE.

Modern Household Economy and Home Keeping is rapidly broadening out into a wider field. Its plane of existence has been greatly elevated, and is still being lifted to a higher and wider sphere, and well worthy of the highest powers of women. This department is based upon the belief that the home is a vital force in the development of a broad culture and of a sound and noble social, moral, political and economic existence for mankind. It is believed that the science and art of Domestic Economy is a broad one in its social and economic phases, and requires talent of a high order. In no field is the power of refinement more potent and pleasurable, and there is no other of equal importance.

This course will have the friendly care of those to whom it is committed.

COURSE IN DOMESTIC ARTS.

FRESHMAN YEAR.

HOUR.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1	Grammar.	Rhetoric.	English Literature.
2	Higher Arithmetic.	Algebra	Algebra.
3	Higher Arithmetic.	Sewing.	Sewing.
4	French or either Music, Elocution, Drawing, Type writing or Course of Reading.	French or either Music, Mechanical Drawing, Elocution, Phonography or Course in Reading.	French, or either Music, Elocution, Physical Geography, Phonography, Mechanical Drawing or Course in Reading.

SOPHOMORE YEAR.

1	Geometry.	Bookkeeping.	Botany.
2	Chemistry.	Physics.	Physics.
3	Botany eight weeks. Trigonometry eight weeks	Organic Chemistry.	Horticulture.
4	Free Hand drawing.	Cooking Lectures.	Cooking in its relations to Dietetics.
5 & 6	Out-door lessons in Horticulture and in the Green House.	Laboratory practice in Chemistry. Cooking practice.	

JUNIOR YEAR.

1	Literature.	Mineralogy and Lithology.	Hygiene and Laboratory practice.
2	Botany.	Drawing and Painting.	Entomology.
3	Zoology.	Physiology.	Geology.
4		Entomology. 2	Civil Government.
5 & 6	Botanical Laboratory, Cooking and Canning Fruits. 2	Dairy practice.	Laboratory practice in Entomology.

SENIOR YEAR.

1	Painting.	Advanced Cooking.	Painting.
2	Mineralogy.	Moral Science.	English Literature.
3	Sewing with reference to Designing and Study of Color.	Fancy Work.	Course of Reading and Thesis Work.
	Music, Elocution, Drawing and Painting. French, Chemistry, Course in Reading. (Optional.)	French, Astronomy, Drawing and Painting. Elocution, Music, General History. (Optional.)	French, Fancy Work, Cooking, Music, Elocution, Commercial Law. (Optional.)

REMARKS ON THE SPECIAL STUDIES OF THE ABOVE COURSE.

The art as well as the science or the chemistry of cooking is taught. Exercises in cooking in application of lecture room teaching is a regular feature of the work. Lectures in chemistry are succeeded by cooking exercises. The cooking exercises are accompanied by table setting, waiting and presiding over the table as hostess. The latter exercises develop the knowledge and grace that characterize the well bred hostess.

For the development of this feature of the course the College is provided with a kitchen, dining room, pantry, a model cooking range and kitchen and table ware.

CUTTING AND SEWING is taught in the Freshman year, with special terms in the Senior year for fancy work and for the designing of artistic gowns.

The work begins with all varieties of hand sewing, hemming, overcasting, blind stitching, button holes; up through cutting out, measuring, basting, fitting, draping, trimming and entirely finishing a gown. The students may furnish material and make their own garments. It will be the aim to teach hygienic modes of dress.

DAIRYING.—Butter and cheese making is a fine art. Milk is one of the most complex and unstable compounds known in the whole range of farm life. In no other field of farm economy is the product so irregular and with results so unfortunate. The problems involved are very complex and interesting. Very decided attention will be given to this most important field of work, over which woman has general charge. Fortunately, the more exacting work of the dairy now falls to other hands. While this is true, the necessity remains of mastery by woman of the philosophy of dairying.

HYGIENE.—A special course of lectures on Hygiene will be given to the young women of this course.

MUSIC AND PAINTING.—Music and painting are tuition free studies. They are not made compulsory studies; but those who have a taste for and can acquire those graces are encouraged to devote time to them.

French is made an optional study, this is done in deference to the wishes of many of our citizens. Young women are, however, encouraged to acquire French. It is still the diplomatic language of Europe and that of fashionable circles, while its terms are more used in the special studies of the young women of the College and is also more used in the domestic affairs of women than those of any other foreign language.

German is offered to young men for the reason that Germany is the early home of agricultural science and is still the richest language, save our own, of agricultural literature.

HORTICULTURE.—Horticulture has a fascination for all classes of our population. Man has an inherent love of nature. Her living forms everywhere claim the admiration and almost the affection of every cultivated or refined man or woman. Horticultural and household plants are varied; are very plastic in our hands, and are either beautiful or useful. In either case they minister to our pleasure. Household plants and the farm or the village garden are always objects of interest and of importance to women, and often the source of physical health, inducing, as they do, frequency in the open air. This does not necessitate the added drudgery of physical work in the garden any further than pleasure may dictate.

The growing taste for this refined field of agriculture warrants the devotion of some time on the part of the young women to the principles and practices of at least a restricted field in horticulture. A special class is taught that is adapted to the wants of students of this course.

SPECIAL COURSE IN COOKING.

A special course in cooking will be given in the winter term of each year to any woman desiring to perfect herself in this work. No examination will be required, as it is designed for those who from lack of opportunity or time have been unable to become proficient in this important art.

COURSE IN MECHANICAL ENGINEEING.

The growth of modern industrial arts springs from recent development of the sciences. Their pursuit rests, then, upon a knowledge of all the laws involved. This implies a systematic study of related sciences. The value of general intelligence and of mechanical skill finds striking illustration in the marketing of American mechanical productions in India and other countries where labor is but one-twentieth of the rates paid here.

It is believed that the effect of a strong department of Mechanical Engineering will be, through its graduates, to stimulate the development of the mechanical industries in this Territory. The presence of masters of the science of mechanics and of men trained to a high order of skill in the art of mechanical construction, can but result in increasing the number and in elevating the character of our mechanical industries.

The increasing call for mechanics skilled not only in the use of tools but also in the methods of applying the underlying principles of mechanical construction is best testified to by the great demand made upon the mechanical courses of the various industrial colleges.

The time has arrived when the successful mechanic, constructor, inventor or designer must not only think for himself but must have his thoughts and calculations guided by laws established by recent calculations and investigations.

COURSE IN MECHANICAL ENGINEERING.

FRESHMAN YEAR.

Hour.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1	Grammar.	Rhetoric.	English Literature.
2	Higher Arithmetic.	Algebra.	Algebra.
3	German or either Music, Elocution, Business Ethics or Course in Reading.	German or Music, Elocution, Business forms, Course in Reading, and Drawing.	German or Music, Elocution, Physical Geography, Commercial Law, Business forms or Course in Reading.
4	Free Hand Drawing.	Mechanical Drawing	Mechanical Drawing.
5 & 6	Shop work 3	Shop work.	Shop work.

SOPHOMORE YEAR.

Hour.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1	Geometry.	Spherical Geometry. 6 Higher Algebra. 5	Higher Algebra.
2	Chemistry.	Physics.	Physics.
3	Botany eight weeks. Trigonometry eight weeks	Chemistry.	Mechanical Drawing.
4	Mechanical Drawing,	Mechanical Drawing.	Metallurgical Chemistry.

JUNIOR YEAR.

1	Physics.	Principles of Mechanism.	Principles of Mechanism.
2	Analytical Geometry.	Calculus.	Calculus.
3	Hydraulics six weeks. Descriptive Geometry ten weeks.	Descriptive Geometry.	Mechanical Drawing.
4	Theory of Pattern making. 2 Mechanical Drawing. 3	Theory of Machine work. 2 Mechanical Drawing. 3	Civil Government.
5 & 6	Pattern making. 4 Foundry work. 1	Machine work and Vise work.	Machine work and Vise work.

SENIOR YEAR.

1	Analytical Mechanics.	Analytical Mechanics 3 w. Strength of materials 8 w.	Machine Designs.
2	Mental Science.	Steam Engine, three weeks. Steam Boilers eight weeks.	English Literature.
3	Heat six weeks. Steam Engine ten weeks.	Metallurgy.	Geology.
4	Political Economy.	Electricity and Magnetism.	Applied Electricity.
5 & 6	Mechanical Drawing, Experimental work in Engineering.	Mechanical Drawing and Experiment work in Engineering.	Thesis work.

It will be seen by the course of study that students are given a thorough training in higher Mathematics, Physics and Chemistry, which involve the underlying principles of all modern investigations. They are also given two years of training in the use of tools and of principles of construction in both wood and metal, including bench-work in wood, forg-

ing of iron and steel, pattern making, foundry practice, machine work and vise work in iron. In these departments, the purpose is to include as many principles for instruction as it is possible to do in the time at command, while at the same time, insisting upon accuracy of work and the proper care of tools. The exercises in the shops are two hours daily.

The last two years will be devoted largely to the study of the underlying principles of machine construction and to actual work in designing. Steam and the steam valves and valve movements, the economy effected by the use of high pressure steam in the compound engine, will be thoroughly investigated and calculated. A careful study will be made of the different forms of steam boilers, their construction and the materials used in them. The study of the steam engine and steam boiler is of vast importance, as by ignorance they may be converted from the most economic to the most wasteful of prime movers.

The properties of iron and steel, their strength and adaptability will be carefully investigated. Ten weeks will be given to the study of the properties and location of the various ores of iron, the fuel and refractory materials used in the conversion of the ore into iron or steel. It will be observed also that much attention is given to mechanical drawing, one of the prime requisites of a well educated mechanic.

Equipment for the first two years' work has been provided. That for the last two years will be furnished when required. No charge is made for use of appliances, if properly cared for.

The degree of B. M. E. (Bachelor of Mechanical Engineering) will be given to those who complete the course.

COURSE IN CIVIL ENGINEERING.

The purposes of this course need no explanation in a territory pre-eminently requiring the services of the Civil Engineer. The mining interests of Utah, the immense work to be done in irrigation engineering before the vast resources of water in the Territory are utilized, and the great work of a territory just ready to develop its varied resources, fully demand this course in an industrial college for its people.

FIRST YEAR.—The first and second years are the same as the course in Mechanical Engineering.

JUNIOR YEAR.

1	Physics.	Principles of Mechanism.	Principles of Mechanism.
2	Analytical Geometry.	Calculus.	Calculus.
3	Hydraulics six weeks. Descriptive Geometry ten weeks.	Descriptive Geometry. 3	Stereotomy.
4	Field Engineering.	Mechanical Drawing.	Civil Government.
5 & 6	Field practice.		Field Practice.

SENIOR YEAR.

1	Analytical Mechanics.	Analytical Mechanics, three weeks. Strength of Materials.	Engineering Designs.
2	Mental Science.	Metallurgy, Steam Engine and Steam Boiler.	Irrigating Engineering
3	Roads and Pavements.	Mineralogy and Lithology.	Geology.
4	Stability of Structures.	Astronomy.	Political Economy.
5 & 6	Experimental Work.	Experimental Work.	Thesis Work.

MINING AND IRRIGATION ENGINEERING.

A year each will be given to Mining and Irrigation Engineering in addition to the regular course in Engineering. The present wealth and the future prospects of Utah rest largely

upon mining and irrigation. It is believed that this department of instruction can be made to serve the material interests of Utah to an eminent degree.

When we consider the vast debt due to engineering in countries where irrigation is far more nearly perfected than it is here, when we reflect upon the great opportunities for water storage, the great waste of water under the present system of irrigation and the probable near approach of the time when the forces of nature will be used in raising and controlling irrigating waters, it is plainly the evident duty of the College to foster this science as far as it possibly can. The possible productive power of the water falling upon our water sheds it is believed, and probably justly so, is far greater than it is ordinarily understood to be. The extensive mineral resources of the Territory will, in their dvelopment in the near future, sustain a large and prosperous population. This population will call for the full resources of all the land that our valleys can sustain. This in turn will stimulate the husbanding of our water resources.

This College seeks to educate men within its own borders who will be capable of developing this vital interest.

DEGREE FOR COURSE IN CIVIL ENGINEERING.

On the satisfactory completion of the course in Civil Engineering the degree of B. C. E. (Bachelor of Civil Engineering) will be conferred.

BUSINESS COURSE.

The Congressional law seeks to aid the "Industrial Classes." Business men and their agents represent a class of large importance, and any aid that the schools can render them is due them; nor will any advantage that the schools may confer be confined to this class, for all citizens are interested in perfecting our system of exchanges. Commercial knowledge increases the accuracy of methods and widens the judgment and field of view of business men and is therefore a power to its possessor.

A distinguished judge has stated that nine-tenths of the failures in business that have come before the court of which he was judge, were accompanied by poorly kept books. Business requires a wide mass of information beyond mere bookkeeping. It is believed that acquaintance with the forms and the principles involved in trade to one about to enter it, whether as an agent or as principal, will prove of value both to the merchant and to the public.

BUSINESS COURSE.

FIRST YEAR.

Hour.	FIRST TERM.	SECOND TERM.	THIRD TERM.
1.	Penmanship.	Reading and Elocution.	Business Penmanship.
2.	Grammar.	U. S. History.	Grammar.
3.	Spelling eight weeks. Reading eight weeks.	Arithmetic.	Arithmetic.
4	Geography.	Grammar.	Physical Geography.

SECOND YEAR.

1	Grammar.	Rhetoric.	English Literature.
2	Bookkeeping.	Business forms, Bookkeeping, Exchange, etc.	Commercial Law.
3	Business Ethics eight weeks. Civil Government eight weeks.	Political Economy.	Business forms and Business Correspondence
4	Commercial Arithmetic or Type-writing.	History of Commerce or Phonography.	Practical Exercises or Phonography.

REMARKS.

The above course is an experiment with the College. It will be given a thorough trial. In order to secure its success and to insure the other courses against injury from those who are inclined to get a mere smattering knowledge of book-keeping and a little grammar and then to pass out into the world as students of the College, it has been determined that those desiring the advantages of any of its studies must take the full course or pass a critical examination in each study. It certainly is for the interest of students to make a thorough preparation if their aim is high.

The obvious utility and bearing of most of the studies is so clear that remarks touching them are uncalled for.

GRAMMAR AND ENGLISH LITERATURE.—To secure a first-class clerkship in this age requires a thorough knowledge or command of good English. Business and professional men find that a knowledge of capitalization, punctuation, of grammatical construction and even of good diction is a commercial power and whether they possess it or not they find it necessary to rely upon clerks, when their business is a large one, for the construction of creditable letters. Grammar is therefore given a prominent place in the course.

United States History, Geography, Civil Government, Business Ethics and Political Economy are deemed important acquisitions to either a business man or to his aids. They give knowledge of the genius of our people, the spirit of their laws, of the moral code that governs in honorable business transactions and of the great laws that underlie the commercial growth of a nation and upon which its laws should be based.

Business men are active factors in the national existence and find that their purposes and commercial powers are widened by knowledge in the fields covered by the studies named.

TECHNICAL STUDIES.—These studies are in charge of a man of business experience. They will be made of as practical a character as possible. Banking and business counters will afford the students opportunity for practice in banking, exchange and for the use of the various instruments that enter into business accounts and transactions. Type-writing and phonography will be taught by one who is in daily business practice. This course is more complete than it is usually made by commercial colleges. The aim of the college is to do thorough work in all of its departments. The necessity of

making this department thoroughly practical is strongly impressed upon those in charge of the College.

No extra charge will be assessed upon those pursuing this course other than the cost of the materials used up by them.

GENERAL RULES.

Rules for the government and class grading of students can be had on application to the President of the College or to the Secretary of the Faculty.

EXAMINATIONS.

Examinations for admission to full College Course will cover Arithmetic, Elements of Grammar, Geography, and the elementary branches taught in our common schools.

Students passing in the Preparatory Department will be admitted to the College courses without further examination.

CATALOGUE.

The College Catalogue will be sent to any one requesting a copy.

All Bulletins of experiment work performed at the Experiment Station will be forwarded free to any individual desiring them.

DIRECTIONS TO STUDENTS.

1. Logan may be reached over the Utah Northern R. R., which runs two trains each way daily.

2. New students will first present themselves for examination to the Professors of English and Mathematics. Examinations will occur on the first and second days of the opening of the Fall term.

3. After passing examination, pay the entrance fee to the Secretary of the Board of Trustees and obtain his receipt for the same.

4. The Secretary will furnish the students a matriculation card. This card will be presented to the Professors of the

several classes in which students desire to be enrolled. They will place the name on their class rolls and give all further advice needed to enable the students to be properly prepared to start with their classes.

For further particulars address the President of the Faculty.

TERMS OF ADMISSION.

Students admitted to the College courses must be fifteen years of age. This requirement will not be enforced for the Preparatory Department for students above thirteen years of age. Students must furnish, when required, for entrance to both the Preparatory Department and the College courses, evidence of good moral character.

COLLEGE CHARGES.

Tuition is free.

Five dollars will be charged as an entrance fee for each year of the College course. For a single term for irregular students the charge will be three dollars. This sum is in lieu of the charges ordinarily made at colleges for library and other fees, so that the Library, Museums, etc., will be free to the students.

In the Chemical Laboratory, workshops and cooking rooms students will be charged for the cost of the materials actually used up by them in their exercises. This charge will only be made for the terms when the materials are used. This cost will not be over $1.50 to $2.00 per term.

COST OF BOARD.

Board at the new Club-house will cost about $2 per week. This cost will include fires and lights but not room rent. The room rent, which will be at a moderate rate, is used in paying the Matron, the breakage of dishes and wear and insurance of the building.

The character of the board is controlled by the students who room at the Club-house and therefore the cost is determined by their wishes.

The system works admirably. It has already been demonstrated that plain but good, substantial board can be furnished at from $2 to $2.25 per week.

Students boarding at private homes can secure board at from $3 to $3.50 per week. Students are neither required nor urged to board at the Club-house.

REQUIREMENTS AND DISCIPLINE.

Daily attendance at Chapel Exercises is required. These exercises will be wholly devotional and completely non-sectarian. They will be conducted in part by members of each of the churches represented in Logan, but wholly as worshipers.

Students will be required to take four full studies, unless excused from one of them by the Faculty.

Prompt attention to all duties assigned to them will be required of each student. Gentlemanly deportment towards all with whom they come in contact, whether of the Faculty, fellow students or citizens, will be expected. Any failure in this direction will become, when this aggregate reaches a given standard, a matter of record and of decided Faculty action.

The disciplinary rules of the College can be had on application to the Secretary of the Faculty.

STUDENTS.

Anderson, Anthon Edward,	Logan
Anderson, Hans,	Logan
Anderson, Robert,	Logan
Baker, Mrs. Sarah Jane,	Logan
Ballif, Adeline Marie,	Logan
Ballif, Joseph Fenelon,	Logan
Barlow, John Yeates,	Bountiful
Barlow, Pamela Eleanor,	Bountiful,
Barrett, Arthur,	Logan
Beatie, Alice,	Salt Lake City
Beatie, Helen Mar,	Salt Lake City
Bell, Alfred James,	Logan
Bell, George,	Logan
Benson, Don Carlos,	Logan
Berntson, Albert,	Logan
Berntson, Vendla,	Logan
Bertoch, Daniel Hampton,	Morgan City
Blanchard, Moses,	Logan
Broberg, Ernest Ferdinand,	Logan
Burgess, Samuel,	Logan
Burton, Hyrum,	Logan
Burton, Rhoda Ellen,	Logan
Burton, Selina Piedmont,	Logan
Caine, Florence Nightingale,	Salt Lake City
Caine, Margaret Nightingale,	Salt Lake City
Calder, Henrietta,	Salt Lake City
Campbell, David Moroni,	Providence
Card, Charles Ora,	Logan
Carlson, Joseph,	Logan
Carlson, Nephi,	Logan
Christensen, Kate Anne,	Newton
Clawson, Charles Cyrus	Providence
Cole, Gilbert William,	Logan
Cook, St. Elmo William,	Logan
Crandall, Franklin Austin,	Springville
Cranney, Wilford Woodruff,	Logan
Crittenden, Oscar,	Hoytsville

Dahll, Joseph, ... Logan
Dougall, William Bernard, ... Springville

Ellis, James Henderson, ... Logan
Erwin, Robert Wesley, ... Fulton, Mo.

Ferguson, Ethel Beatrice, ... Salt Lake City
Fife, Wallace, ... Providence
Fife, William John, ... Providence
Frederick, Hyrum, ... Providence
Fuhriman, Frank William, ... Providence

Gallagher, David, ... Logan
Gamble, Edith Virginia, ... Millville
Gessel, Jacob, ... Logan
Goodwin, Frank Charles, ... Logan
Goodwin, Harry Sherman, ... Trenton
Goodwin, Pearl Isabel, ... Logan
Goodwin, Rose Maud, ... Logan

Hadfield, James Henry, ... Smithfield
Hadfield, Sarah Lizzie, ... Smithfield
Hammond, Daniel Arnold, ... Providence
Hammond, George M., ... Providence
Hanson, Clarence, ... Logan
Hanson, George, ... Logan
Hanson, James, ... Logan
Hanson, William, ... Logan
Hayball, Alfred Hyrum, ... Logan
Henderson, Benjamin William, ... Logan
Holden, Edward Hezekiah, ... Logan
Hurst, Alexander Riego, ... Logan

Irvine, James Alma, ... Logan
Izatt, Alexander Samuel, ... Logan

Jacobs, Frederick, ... Logan
Jensen, Oscar, ... Logan
Jessop, Ephraim, ... Millville
Johnson, Carl E., ... Logan
Jones, Nellie Severn, ... Montpelier, Idaho
Jones, John Henry, ... Montpelier, Idaho.

Kimball, Ernest, ... Meadowville
Kimball, Hiram, ... Salt Lake City
Kimball, John Franklin, ... Logan
Kimball, Joseph Raymond, ... Logan
Kimball, Orson Heber, ... Meadowville
Kimball, Roy, ... Salt Lake City

Larson, Andrew Bernstoff,	Levan
Lundberg, Frederick,	Logan
Lundberg, Victoria,	Providence
Maddison, Walter,	Providence
Malin, Charles Milburn,	Hoytsville
Mendenhall, Guy Wesley,	Springville
Mendenhall, Seymour Lovel,	Springville
Mills, Maud,	Hoytsville
Mills, Richard Isaac, Jr.,	Logan
Moffatt, Millen Atwood,	Logan
Munk, Rosa,	Logan
McAlister, Lorenzo Charles,	Logan
McAlister, Roy Snow,	Logan
McCarthy, Heamen,	Smithfield
McLaughlin, Walter Wesley,	Salt Lake City
Naef, Joseph,	Providence
Nelson, Joseph Bent,	Logan
Nelson, Robert,	Smithfield
Nielson, Joseph,	Logan
Olsen, Alma,	Logan
Palmer, Lettie,	Logan
Parry, Sarah Celestia Harriet,	Logan
Peterson, Sern,	Logan
Porter, Susie,	Franklin, Idaho.
Preston, Lee,	Logan
Price, Alonzo Harmon,	Smithfield
Price, Moroni, Jr.,	Smithfield,
Reese, Homa,	Logan
Richardson, Joseph John,	Smithfield,
Robinson, Robert Lewis,	Logan
Rosengreen, John Hyrum,	Logan
Roylance, George Riley,	Springville
Sanborn, Alice,	Logan
Sanborn, Harry Edgar Wilson,	Logan
Smith, Harriet,	Logan
Smith, Richard McNiel,	Logan
Smith, Zoyara Nightingale,	Hyrum
Stalker, William Hyde,	Half Way, Oregon
Stalker, Willard Smith,	Franklin, Idaho
Tarbet, Nephi, Jr.,	Smithfield
Theurer, David,	Providence
Thomas, Daniel Hadland,	Franklin, Idaho
Thomas, Letitia,	Franklin ,Idaho

Thomas, Rosabel,	Franklin, Idaho
Thomas, Seth H.,	Franklin, Idaho
Thomley, Annie,	Smithfield
Thornley Helen,	Smithfield
Tibbitts, Benjamin,	Providence
Tibbitts, Edgar,	Providence
Toolson, George,	Smithfield
Toolson, Jean,	Smithfield
Toolson, John Peter,	Smithfield
Turner, Frederick Hyde,	Logan
Wahlstrom, Mrs. Lottie,	Logan
Weekes, Sarah Ann,	Smithfield
Wood, George, Hammond,	Springville
Wood, Ralph Eugene,	Springville
Woodward, Jennie,	Franklin, Idaho
Wright, George Frederick,	Logan
Young, George Tyler,	Salt Lake City

Total number enrolled for the year, 139. This enrollment for the first year of the College existence is greater than could have been reasonably expected.

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