CATALOGUE

OF THE

AGRICULTURAL COLLEGE

OF UTAH,

FOR

1901-1902.

With List of Students for 1900-1901.

LOGAN, UTAH.

Published by the College.
July, 1901.
Agricultural College of Utah—Main Building.
## Calendar, 1901-1902

### 1901

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COLLEGE CALENDAR, 1901-1902.

FIRST TERM.

1901.

September 17, 18, Tuesday and Wednesday: Entrance examinations. Registration of former students, and new students who are admitted on certificate.

September 19, Thursday: Instruction begins.
November 28, Thursday: Thanksgiving recess.
December 20, Friday: Holiday recess begins.

1902.

January 7, Tuesday: Instruction resumed.
February 8, Saturday: First term ends.

SECOND TERM.

February 11, Tuesday: Second term begins.
February 22, Saturday: Washington's Birthday.
April 15, Tuesday: Arbor Day.
May 30, Friday: Decoration Day.
June 15, Sunday: Baccalaureate sermon.
June 16, Monday: Class Day.
June 17, Tuesday: Commencement. Alumni Reunion.
June 18, Wednesday: Summer vacation begins.
BOARD OF TRUSTEES.

WILLIAM S. McCORNICK .................. Salt Lake City
EMILY S. RICHARDS .................. Salt Lake City
D. C. ADAMS .................. Salt Lake City
LORENZO HANSEN .................. Logan
ROSINA N. BAGLEY .................. Ogden
JOHN A. McALLISTER .................. Logan
SETH A. LANGTON .................. Logan

OFFICERS OF THE BOARD.

WILLIAM S. McCORNICK .................. President
PETER W. MAUGHAN .................. Secretary
ALLAN M. FLEMING .................. Treasurer

EXECUTIVE COMMITTEE.

WILLIAM S. McCORNICK, Chairman.
D. C. ADAMS
LORENZO HANSEN.

EXPERIMENT STATION STAFF.

W. J. KERR .................. President of the College
JOHN A. WIDTSOE .................. Director and Chemist
FREDERICK B. LINFIELD .................. Animal Industry
JAMES DRYDEN ... Meteorologist and Poultry Manager
GEORGE L. SWENDSEN, .................. Hydraulic Engineer
CHARLES P. CLOSE .................. Horticulturist
LEWIS A. MERRILL .................. Agronomist
EPHRAIM G. GOWANS .................. Biologist
JOHN A. CROCKETT .................. Assistant Dairymen
PETER A. YODER .................. Assistant Chemist
W. W. McLAUGHLIN .................. Assistant Chemist
ALLAN M. FLEMING .................. Treasurer
PETER W. MAUGHAN .................. Secretary
FACULTY AND INSTRUCTORS.
Arranged in Groups in the Order of Seniority of Appointment.

WILLIAM JASPER KERR, B. S., D. Sc.,
PRESIDENT.
Professor of Mathematics and Astronomy.

ELIAS J. MACEWAN, M. A.,
SECRETARY OF THE FACULTY.
Professor of English Language and Literature.

FREDERICK B. LINFIELD, B. S. A.,
Professor of Animal Industry.

JOHN A. WIDTSOE, M. A., Ph. D.,
DIRECTOR OF THE EXPERIMENT STATION.
Professor of Chemistry.

DALINDA COTHEY, B. S.,
Professor of Domestic Science.

* JOSEPH JENSON,
DIRECTOR OF WORK SHOPS.
Professor of Mechanical Engineering.

JOHN W. FARIS,
Professor of Commerce.

*On leave of absence.
GEORGE L. SWENDESEN, B. S.,
Professor of Civil Engineering.

CLARENCE SNOW, B. S.,
Professor of Physics.

CHARLES P. CLOSE, M. S.,
Professor of Botany, Horticulture, and Entomology.

EPHRAIM GOWANS GOWANS, B. S., M. D.,
Curator of the Museum.
Professor of Animal Biology.

JOHN FRANKLIN ENGLE, A. M., Ph. D.,
Professor of History and Civics.

KARL R. MOENCH, Ph. D.,
Professor of Modern Languages.

JAMES DRYDEN,
Assistant Professor of Meteorology and Animal Industry.

WILLARD S. LANGTON, B. S.,
Assistant Professor of Mathematics and Astronomy.

LEWIS A. MERRILL, B. S.,
Assistant Professor of Agronomy and Veterinary Science.

EDWARD W. ROBINSON,
Assistant Professor of Commercial Law and Geography.
Agricultural College of Utah.

Peter A. Yoder, M. A., Ph. D.,
Assistant Professor of Chemistry.

John T. Caine, Jr., B. S.,
Principal of Preparatory Department.
Instructor in English.

Sara Godwin Goodwin,
Librarian.

Ruth Evelyn Moench,
Instructor in English and Physical Culture.

August J. Hansen,
Foreman in Carpentry.

Julien P. Griffin,
Foreman in Forging.

John A. Crockett,
Instructor in Dairy Husbandry.

William Peterson, B. S.,
Instructor in Geology and Mathematics.

Peter W. Maughan,
Instructor in Penmanship.
SAMUEL B. MITTON,
Instructor in Music.

HERBERT W. HILL, B.L.,
Instructor in English.

RENA BAKER,
Instructor in English.

ELVIN JENSEN NORTON,
President's Private Secretary.
Instructor in Stenography and Typewriting.

LYDIA HOLMGREN,
Assistant in Domestic Science.

EDWARD PARLEY PULLEY,
Assistant in Mechanical Engineering.

RHODA B. COOK,
Instructor in Sewing and Millinery.

LOUISE RICHARDS,
Instructor in Drawing.

WALTER W. McLAUGHLIN, B.S.,
Assistant in Chemistry.

WM. D. BEERS, B.S.,
Assistant in Civil Engineering.
The President of the College is ex-officio a member of all standing committees.

1. **Agriculture.**—Professors Linfield, Close, Widtsoe, Gowans, Swendsen, Merrill, Dryden.

2. **Domestic Science.**—Professors Cotey, Linfield, Moench, Yoder, Mrs. Cook.

3. **Commerce.**—Professors Faris, Engle, Robinson, Mr. Norton.

4. **Engineering.**—Professors Swendsen, Jenson, Snow, Langton.

5. **General Science.**—Professors Widtsoe, MacEwan, Snow, Langton, Moench.


7. **Preparatory.**—Principal Caine, Mr. Peterson, Miss Baker.

8. **Farmers' Institute.**—Professors Widtsoe, Linfield, Swendsen, Close, Merrill.

9. **Military Department and Gymnasium.**—Professors Close, Caine, Merrill, Miss Moench, Lieut. ______.

10. **Scholarship and Graduation.**—Professors Snow, MacEwan, Swendsen, Langton.

11. **College Publications.**—Professors MacEwan, Faris, Dryden, Caine, Mr. Hill.

12. **Students' Affairs.**—Professors Jenson, Faris, Gowans, Engle, Moench, Robinson, Mr. Peterson, Mrs. Cook, Miss Richards.

13. **Athletics.**—Professors Langton, Swendsen, Snow, Faris, Gowans, Miss Baker, Miss Richards.

14. **Amusements and Public Entertainments.**—Professors Gowans, Engle, Robinson, Mr. Hill, Miss Moench.

15. **Literary Societies.**—Professors Robinson, Engle, Moench, Mr. Peterson, Miss Moench.

16. **Class Organization.**—Professors Engle, Moench, Merrill, Mr. Hill, Miss Baker.
The Agricultural College of Utah constitutes part of the public school system of the State. It comprises practically six different schools: the School of Agriculture, the School of Domestic Science, the Commercial School, the School of Engineering, the School of General Science, and the Manual Training School; also the Agricultural Experiment Station, which, while not providing directly for instructional work, is one of the most important departments of the institution. The character and extent of the work offered by the College are shown, as far as the limits of space will allow, in the following descriptive statements and schedules.

FOUNDATION AND ENDOWMENT.

An Act of Congress, approved July 2, 1862, provided that public lands should be granted to the several states, to the amount of "thirty thousand acres for each Senator and Representative in Congress," from the sale of which there should be established a perpetual fund, "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 such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." The Act forbids the use of any portion of the aforesaid fund, or of the interest thereon, for the purchase, erection, or maintenance of any building or buildings. The states accepting the provisions of the Act are required to provide for the construction and maintenance of the necessary buildings and for the expenses of administration in carrying out the purposes of the Act.

On March 8, 1888, the Utah Legislative Assembly accepted the national law, and in accordance with its provisions founded the Agricultural College of Utah. The amount of public lands granted to this institution, under the provisions of the Act of Congress, was 90,000 acres; but by the terms of the Enabling Act, passed by Congress and approved July 16, 1894, providing for the admission of Utah as a state, the amount was increased to 200,000 acres.

Under an Act of Congress, approved March 2, 1887, the College receives $15,000 annually for the maintenance of the Experiment Station, "to aid in acquiring and diffusing among the people useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science."

Under an Act of Congress, approved August 30, 1890, the College receives $25,000 annually, "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their application to the industries of life."

In addition to the income from the national government and from the land grant fund, the College is dependent upon the State Legislature for such appropriations as
are needed to meet the requirements of the several departments in accordance with the provisions of the Acts of Congress, and to provide for the further development of the institution consistent with the educational and industrial demands of the state.

HISTORY.

In 1888, the legislature appropriated $25,000 for buildings, and the county of Cache and the city of Logan gave one hundred acres of land on which to locate the College. Plans were prepared for the main College building, and part of the south wing was completed. In January, 1890, the institution was first opened for the admission of students. Regular courses were offered in agriculture, domestic arts, civil engineering, mechanic arts, and commerce; also a preparatory course, and special courses in agriculture, mining engineering, and irrigation engineering.

The legislature of 1890 appropriated $48,000 for the construction of an Experiment Station building, two laborers' cottages, and a farm house, and for the purchase of apparatus and the employment of administrative officers. The legislature of 1892 provided $108,000 with which the south wing, the north wing, and part of the center of the main College building were completed; rooms in the basement were provided with machinery and other facilities for shopwork; the scientific laboratories were more thoroughly equipped; and other additions were made which added greatly to the facilities of the institution for advanced work. In 1894, additional apparatus was provided, and a forcing house and a veterinary laboratory were constructed. In 1896, part of the Mechanic Arts Building was completed and the forge shops were removed from the Main Building. In 1897, the legislature made an appropri-
ation for the maintenance of a Manual Training School, and for the extension of the Mechanic Arts Building, providing rooms for the chemical laboratories and the carpentry and machine shops; manual training courses were established in mechanic arts and domestic arts. In 1899, a greenhouse was constructed and equipped. In 1900, a department of art was established, additional class rooms were furnished, the several departments throughout the institution were more thoroughly organized, and other improvements were made, adding to the facilities for thorough and efficient work. The legislature of 1901 appropriated $108,200 for general maintenance and various improvements, including the completion of the front of the Main Building, the construction of model farm buildings, a vegetation house and additional land for work in irrigation investigations, and additional apparatus.

POLICY.

It is the policy of the Agricultural College of Utah, in accordance with the spirit of the law under which it is organized, to provide a liberal, thorough, and practical education. The two extremes in education, empiricism and the purely theoretical, are avoided, the practical being based upon, and united with, the thoroughly scientific. All the practical work, on the farm, in the orchards, vineyard, gardens, dairy, commercial rooms, kitchen, sewing rooms, different scientific laboratories, and carpenter, forge, and machine shops, is done in strict accordance with scientific principles. In addition to the practical work of the different courses, students are thoroughly trained in the related subjects of science, and in mathematics, history, English, and modern languages. While the importance of practical training is emphasized, the disciplinary value of education
is kept constantly in view. It is recognized that the mind and eye and hand must together be trained in order to secure symmetrical development. The object is to inculcate habits of industry and thrift, of accuracy and reliability; and to foster all that makes for right living and good citizenship.

LOCATION.

The Agricultural College is located in Logan, Utah, the county seat of Cache County, which is one of the most prosperous agricultural counties in the state. The city has a population of about 6,000; it is noted for its freedom from vice, is quiet, orderly, clean, and generally attractive, with neat homes, good substantial public buildings, electric lights, and water system; the citizens are thrifty and progressive. The College is beautifully situated on a broad hill overlooking the city one mile east of main street, and commands a view of the entire valley and of its surrounding mountain ranges. The beauty of the location is perhaps unsurpassed by that of any other college in the country. A few hundred yards to the south is the Logan river, with its clear water and luxuriant grasses and shrubs. A mile to the east is a magnificent mountain range and a picturesque canyon. In other directions the towns and farms covering the green surface of Cache Valley, and seen through the clear atmosphere, constitute a delightful and impressive panorama. The valley is a fertile, slightly uneven plain, 4,500 feet above sea level, about twelve by sixty miles in dimensions, almost entirely under cultivation, completely surrounded by the Wasatch mountains, and one of the most beautiful and healthful valleys in the western region.
The College buildings comprise the Main Building, the Experiment Station Building, the Mechanic Arts Building, the Dormitory, the Conservatory, the Veterinary Laboratory, the Forcing House, three barns, the Poultry Building, and residences for the President of the College, the Director of the Experiment Station, and the Farm Superintendent, and cottages for farm laborers.

**The Main Building** is constructed of brick and stone. It is 360 feet long, nearly 200 feet deep in the central part, and four stories in height. It is heated by steam and lighted by electricity in every part. The rooms are light and pleasant and the halls spacious, extending on each floor the entire length of the building. This building contains the large auditorium, with a seating capacity of about 1500; a small auditorium, or society hall, which will seat 400; the administrative offices; the library and reading rooms; the general museum; the gymnasium; the biological, the botanical, and the physical laboratories and lecture rooms; the office and class rooms of the commercial department; the sewing and millinery rooms, the laundry, kitchen, and dining rooms, and the offices of the department of domestic science; the dairy rooms; the offices and class rooms of the department of civil engineering; and the class rooms for English, mathematics, and modern languages.

**The Experiment Station Building** is a brick structure, 45 feet long and 35 feet wide, two stories in height. It contains the laboratories of the Entomologist and the Horticulturist; the offices of the Director of the Station, the Agronomist, the Horticulturist, and the Poultry Manager; the library of the Professor of English; the mailing room; and a dark room for photographic work.

**The Mechanic Arts Building**, situated south of the Main Building, is 220 feet long by 40 feet wide, with the
central part, 40 feet wide, extending back 120 feet. It is one story high, except the central front part, which is two stories. The walls are of brick and the roof of corrugated iron. The building is heated by steam, and is well lighted and ventilated throughout. It contains the Station and College chemical laboratories, the power room, the forge room, the carpentry or bench room, the machine shops for wood and metal, and the office and class rooms of the director of manual training.

Adjoining the Mechanic Arts Building is a store room, 40 by 27 feet, two stories high.

The Dormitory is a brick and stone structure, 50 feet wide by 80 feet long, four stories in height. It contains thirty-three rooms for students, each 12 by 14 feet exclusive of closet; a reception room for students, 19 by 27 feet; a model kitchen; a dining room; a pantry, supplied with all modern conveniences; a laundry room; bath rooms; and rooms for the matron and for the employees. The rooms of this building are well lighted and ventilated, each room having two registers for ventilation.

The Conservatory is of the most modern type, 90 by 25 feet, and is filled with beautiful flowering and ornamental plants. There are three compartments of equal size, one for semi-tropical plants, such as ferns, palms, bananas, etc., one for roses, and one for carnations and other plants. The equipment is used to supplement class work in botany, floriculture, and horticulture.

The Veterinary Laboratory Building, situated several hundred yards to the rear and east of the main College building, is a stone and frame structure, 18 feet wide and 42 feet long, two stories in height. It contains a dispensary, an operating room, stalls, etc. It is heated by steam.

The Forcing House, adjoining the Veterinary Laboratory Building, is 16 feet wide by 25 feet long. Experimental work in growing vegetables is conducted here during the winter.
The Barns. There are three barns, one for horses, one for cattle, and one for sheep. The Horse Barn is a wooden structure, 60 feet square, and contains model sanitary stables for horses, besides storage divisions for hay, grain, and seeds, and rooms for carriages and wagons, farm implements, and machinery; also the farm foreman's room and repair shop. A ten-horse power electric motor furnishes power for grain threshing, feed grinding, and fodder shredding. The Cattle Barn is 106 feet by 104 feet. It is provided with the most modern equipment throughout, including iron stalls, cement floors and mangers, etc. There are accommodations for seventy-five head of cattle; also hospital rooms, feed rooms, a milk room, a root cellar, and storage room for hay and grain. The Sheep Barn is a modern building, 94 feet by 41 feet in extreme dimensions, with accommodations for seventy-five sheep, and storage room for feed.

The Poultry Building is 130 feet long and 10 feet wide, divided for experimental purposes into twenty-two pens. This building is provided with a hot water heating system for winter, also a boiler for cooking food, and an incubator cellar. There are four different makes of incubators and brooders, a bone mill, clover cutter, and other necessary appliances of a modern poultry plant. The principal breeds of poultry are kept, representing the American, Mediterranean, and Asiatic classes.

The land occupied by the College and its several departments embraces about 105 acres. Of this, twenty acres constitute the Campus, which is tastefully laid out and adorned with flower-beds, and individual specimens and groups of ornamental shrubs and trees, both evergreen and deciduous. There are broad stretches of lawn, and wide drives and walks leading gracefully from various parts of the Campus to the College buildings. During the summer the conservatory contributes its hardy plants for lawn decoration.
Adjoining the Campus on the southeast, near the main College building, is the Athletic Field of about four acres, used for baseball, football, and other athletic sports. The Farm comprises 65 acres; the Orchards, the Vineyards, and the small fruit and vegetable Gardens, nine acres; and the Forestry, seven.

All parts of the College grounds are used by the professors in charge of instruction in Agriculture and Horticulture for the purpose of practical illustration in their respective departments; they are also used for the work of the Experiment Station.

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EQUIPMENT.

The Department of Agronomy is provided with a large collection of agricultural plants and seeds, and other illustrative material. During the year a soil-physics laboratory will be equipped with balances, a soil compacting machine, apparatus for determining the water holding capacity of soils, specific gravity of soils, etc. The College farm is equipped with the best farming implements and machinery, including plows, cultivators, planters, cutters, shellers, grinders, a binder, a threshing machine, an electric motor, etc. For illustrative and experimental purposes, the farm is divided into 385 plats on which different classes and varieties of farm crops are grown.

For the work in Animal Industry, general use is made of the College barns, live stock, dairy, etc. The live stock consists of Clydesdale and Shire draft horses; Hereford, Short Horn, Holstein, and Jersey cattle; Shropshire, Cotswold, and Merino sheep; and Berkshire, Poland China, and Chester White hogs. A live stock class room is provided where the animals may be brought before the class for inspection and criticism. The Dairy occupies a floor space of about three thousand square feet, which is divided
into seven rooms for the various processes of dairy work. The department is equipped with the apparatus necessary for all the processes of butter and cheese making and milk testing. For butter making there are milk vats and heaters, hand and power separators, hand and power churns, a combined churn and worker, and a Mason butter worker. For cheese making there are four vats, gang and upright presses, and a curing room. Ample facilities are provided for illustrating the handling of milk for the milk trade, including the Star milk cooler, an intermittent pasteurizer, etc. The milk testing laboratory is as well equipped as any similar laboratory in the country. There are two steam and two hand Babcock testers, and nearly every type of Babcock test apparatus and glassware. There is also apparatus for testing the acidity of milk or cream and a delicate balance, used in testing cheese and butter. The department has an eight-horse power boiler and a six-horse power engine, and model cold storage rooms for butter and cheese. The model poultry house and equipment afford special facilities for illustrative and practical experimental work with poultry.

The Botanical Laboratory has a good supply of apparatus with which to do systematic and microscopic work. The herbarium contains 3,000 mounted and named specimens to which the students have access at all times. There are 700 samples of economic seeds for use in economic botany. The general equipment includes a compound microscope for each student's use; 15 Bausch and Lomb dissecting microscopes; microtome; hand section cutters; stains; slides; and everything necessary for successful botanical work. The orchard, with over 300 varieties of apples, pears, peaches, plums, apricots, and cherries; the vinyards, with 60 varieties of grapes, including the hardy and tender, or California, kind; the forestry experiment, containing many kinds of hardy trees and shrubs; and the small fruit and vegetable gardens, are all
used in connection with the work in botany and horticulture for practical illustrative purposes.

The Veterinary Laboratory is supplied with surgical instruments, a modern operating table, an operating room, box stalls for patients, the necessary medicine, etc. Among the more important surgical instruments are a complete set of dental instruments, mouth speculum, tracheal and roaring instruments, neurotomy set, thermocautery, castrating and spaying instruments, obstetrical and parturition instruments, postmortem and diagnostic instruments, and other material found in a well equipped hospital. In this laboratory the agricultural students have practice and observation in the treatment of animals.

The Domestic Science Department is provided with a model kitchen and all accessories; a dining room; offices; and sewing and millinery rooms, with the necessary machines, etc., required for thorough and practical work.

The equipment of the Commercial Department consists of hard wood counting-room desks, arranged in such a way that the students may either stand or sit while working; a complete set of modern banking furniture, permanent blank books, letter files, rubber stamps, copying press, college currency, etc. In connection with the bank there are completely furnished wholesale, freight, real estate, and insurance offices. The typewriting and stenographic rooms contain fourteen machines—seven Remington, five Smith Premier, and two Underwood—each provided with regular typewriting desks; also tables for practice in stenography.

The Civil Engineering Department is well equipped with instruments and apparatus for field practice in all the courses offered by the department. For the work in surveying there are two first class transits, two levels, a Johnson plane table, a planimeter, a clinometer, and other supplementary instruments, together with a full supply of chains, tapes, etc. For the work in hydraulics, the
equipment includes a number of water meters of different kinds, a hook gauge, water registers, etc. The excellent equipment on the experiment farm in the shape of measuring apparatus, and the many canals, rivers, and power plants in the immediate vicinity, afford excellent opportunity for very thorough training in hydraulic work. The drawing room is equipped with modern drawing desks and such other accessories as are needed for the office work. In the library are to be found a number of standard reference books in the various lines of engineering, and the standard professional periodicals are also available to the students.

The Mechanical Engineering and Mechanic Arts departments are well equipped for all of the courses offered. The bench room is provided with forty-five carpenters’ benches with full equipment of tools. In the forge room are twenty-four power-blast forges, with anvils and complete tool equipments; also hand-drills, cutting-off machines, tire upsetter, special swageblocks, etc. The wood-working machine room is supplied with nine ordinary turning lathes, one large turning lathe, one jig-saw, one universal saw-table, one wood-planer, one new two-spindle shaper and moulder, one band saw, one power mortiser and borer. In the iron-working machine room there are three large engine lathes, one speed lathe, one large drill press, one sensitive drill (made by students), one large iron planer, one universal milling machine, emery wheels, vises, and tool cutters of various kinds. For experimental work in power measurement a ten-horse power Flather hydraulic dynamometer is used.

The Biological Laboratories are located on the second floor with east and north exposures. They are well equipped for experimental work in the various courses in which the department offers instruction. The equipment includes, high-power Leitz and Bausch and Lomb microscopes; dissecting microscopes; condensers; micro-
tome; freezing apparatus; micrometers; micro-spectroscope; photo-micrographic camera; Thoma-Zeiss; hæmacytometer; hot air and steam sterilizers; incubator; refrigerators; paper and plaster manikins; a series of plaster models (human); analytical balance; a varied collection of microscopic slides; a well selected stock of microscopic glass-ware; utensils, dissecting instruments, media, and reagents.

The Chemical Laboratories occupy, temporarily, the north part of the Mechanic Arts Building. They are well equipped for elementary and advanced work in chemistry. In the College laboratories especial provision is made for the elementary study of the science. Individual desks, fitted with drawers and cupboards, and a very complete assortment of chemical glassware and chemicals, render the work in the laboratories easy and pleasant. There are also several valuable collections of gums, oils, coloring matters, foods, etc., that are important aids to the students in this department. The laboratories of the Experiment Station are excellently well equipped for advanced work. The extensive collection of apparatus includes, among other things, balances; silver calorimeter; half-shade polariscope; several sets of hydrometers; thermometers; spectroscope; vacuum pan; filter press; apparatus for gas and microchemical analysis; a large supply of platinum ware; several models of elutriators; a very complete set of apparatus for food and fodder analysis; stirring apparatus; steam and hot air drying ovens; microscopes; apparatus for soil analysis; and a large supply of Jena glassware, and chemically pure reagents. The laboratories are fitted with water, gas, hoods and all other conveniences.

The Mineralogical Laboratory and the Assaying Room are located in the basement of the main College building. They are equipped for the regular college courses in mineralogy and assaying. The equipment consists of a collection of the more common minerals, for
students' use; two fine sets of crystal models; a full supply of apparatus and reagents required in blowpipe analysis; several assay furnaces; rock crusher; grinding table; mortars; sieves; scorifier and cupel moulds; tongs; crucibles; chemicals; and the other necessary apparatus for the successful study of mineralogy and assaying.

The Physical Laboratory occupies a suite of three rooms on the second floor, which are used for class purposes and for elementary laboratory work; and a room on the ground floor, used for electrical and magnetic measurements. The equipment is fairly complete, consisting of all the necessary pieces of apparatus for class demonstration; a set of apparatus for elementary laboratory work, sufficient for sixteen students working on the same experiment; and all pieces required for an experimental course in heat and electricity. Some of the more important pieces are balances and weights by Sartorius; platform balances; an Atwood machine, with aluminum friction wheels and electrical attachments; centrifugal apparatus; working models of levers and pulleys; air pumps; thermometers in different scales; barometers; hydrometers; hydraulic press; porte lumiere; telescope; microscope; an assortment of lenses, mirrors, and prisms; spectroscope; sonometer; siren; tuning forks; organ pipes; Chladni's plates; electric static machine; Leyden jars; electroscope; electrophorus; magnetometer; galvanometers of tangent, sine, balastic, astatic, and D'Arsonval types; Wheatstone bridges, both box and wire forms; resistance boxes; standard resistance and standard cell; primary and storage cells of various kinds; Ruhmkorff coils; electric generators and motors; Crooke's tubes and Geissler tubes.

The College Museum occupies rooms on the top floor of the Main Building. Each year the Museum is enlarged by the contribution of friends of the College. It is supplied with a large number of specimens illustrative of geology and palæontology, vertebrate and invertebrate
zoology, mineralogy; also about four thousand five hundred species of the Rocky Mountain flora, and a large number of the woods of the United States. There is also an extensive collection of grains representing the produce of Utah and other states. A small collection of Indian and Polynesian products and curiosities has been made. Contributions of fossils, ores, animals, relics, or other material of value to the Museum will be highly appreciated. All gifts are labeled and preserved, and the name of the donor is kept on record.

The Art Room which, during the past year, has been newly fitted up at considerable expense, contains many valuable casts, most of which are reproductions of the works of the masters, together with many smaller casts suitable for the more simple work in drawing. A few reproductions of the paintings of the masters have been purchased, and the charts to be used in the work in design; also the tables, drawing boards, and cases necessary for the work.

The Library and Reading Rooms are on the first floor of the Main Building. The Library contains over 8,500 bound volumes and 7,500 pamphlets. Additions are made from time to time to meet the requirements of the several departments. The subjects covered are general literature, including poetry and fiction, travel, history, biography, and criticism; political economy; sociology; metaphysics; general science; and such of the special sciences as are included in the courses of the several departments. The Professor of English, whose private library contains about two thousand eight hundred volumes, allows to advanced students in his department the privilege of the use of his library under his direction. Other professors also accord access to their private libraries as occasion may require. The Reading Rooms are open to the students and the general public every college day throughout the year. They are furnished with reading-slopes for current
periodicals, and with reading-tables. Ninety of the best literary, scientific, technical and agricultural periodicals are taken by subscription. Through the liberality of the publishers, forty-seven of the Utah newspapers are regularly received; and ninety-four of the best agricultural papers of the country are sent to the library in exchange for the publications of the Experiment Station. These are all placed upon the reading-slopes for the use of readers. The principal dictionaries and encyclopedias, including the Encyclopedia Britannica, American Cyclopedia, Appleton's Cyclopedia of American Biography, Allibone's Dictionary of Authors, Encyclopedic Dictionary, Century Dictionary, are kept in cases in one of the reading rooms within easy access of the readers.

THE AGRICULTURAL EXPERIMENT STATION.

The Agricultural Experiment Station is a department of the College, supported mainly by Congressional appropriations, supplemented by the receipts from the sales of farm products. The Station was created for the special purpose of discovering new truths that may be applied in agriculture, and of making new applications of well established laws. It is, therefore, essentially a department devoted to research; and as such, it does the most advanced work of the College.

The Experiment Station is not, in the ordinary sense, an institution where model farming is carried on. It has a much higher purpose. The practices of the farmer, good and bad alike, are subjected to scientific tests, in order to determine why the one is bad and the other good. Acting on the suggestions thus obtained, new lines of investigations are begun, with the hope that truths of great value to the farmer may be discovered.
The Station has for its present object the study of the underlying laws of irrigation. On the farm, in the orchards, gardens, and barns, experiments are going on that, in time, will lead to the establishment of an art of irrigation that will be based on laws developed by scientific methods. Investigations for the purpose of encouraging the horticultural, dairy, and poultry industries, are also in progress.

The Experiment Station has a high educational value. Nearly all the members of the Station Staff are also members of the College Faculty, and the students, therefore, receive directly, and first hand, an account of the methods and results of the work of the Station. On the farm, in the gardens, orchards, barns, and laboratories, the students receive training in the application of scientific truths in the practical affairs of men. The opportunities that the Experiment Station offers for advanced work in several branches of science are of great importance. The methods of science have been carried into the operations of every human occupation; and the more fully scientific methods of accuracy, persistence, and adjustment are understood by a man, the greater, as a rule, will be his success in any walk of life. The scientific method and spirit characterize all the operations of the Station, and none can fail to be benefitted by a study of the experiments that go on at all times of the year.

The Station Staff are always glad to assist the advanced students of the institution in any investigations they may wish to undertake.

COLLEGE SOCIETIES.

The following societies are maintained by the students of the College, and afford opportunity for practice in oratory, debate, and parliamentary procedure: the Sorosis, for ladies; the Civil Engineering, for men; and the Debating, for both sexes.
STUDENTS’ EXPENSES.

Tuition is free. All students pay an annual entrance fee of $5. The privileges of the library and museum are free. In the laboratories, workshops, cooking rooms, and in typewriting, students are charged an incidental fee to cover the cost of materials used by them in their exercises. With proper care this expense need not exceed from $2 to $5 per year in each course.

The fee charged for a certificate of graduation is $2.50; the fee charged for a degree is $5. All the students are held responsible for any injury done by them to the College property.

Good board and rooms can be obtained in private houses for from $2.50 to $3.50 per week. By renting rooms and boarding themselves, students are able to reduce the cost of room and board to less than $2 per week.

The College DORMITORY has accommodation for seventy. The second floor is used exclusively for women and the third floor for men, there being no communicating passage between the two. The cost of room and board, including fuel and light, is from $2.75 to $4 a week, according to the kind of room used. Students furnish their own bedding and table napkins; also rug or carpet if desired. For particulars regarding dormitory accommodations, address Mrs. Karl R. Moench, Agricultural College, Logan, Utah.
Admission and Graduation.

CONDITIONS OF ADMISSION.

Candidates for admission to the Preparatory course, and to the Manual Training courses in Domestic Arts and Mechanic Arts, must be at least sixteen years of age; to all other courses, fifteen. Students are admitted to the Preparatory Course and to the Manual Training courses without examination, except such as may be necessary in order to determine the section in which they can work to the best advantage; the classes in these courses being divided into sections which are graded in such a way as to be especially adapted to those who are not prepared to enter any of the more advanced courses.

Graduates of the district schools, and those who have completed the Preparatory Course of the College, are admitted without examination to the Engineering Preparatory Course, and to any of the three year courses in agriculture, domestic science, and commerce. Other applicants for admission to these courses must pass a satisfactory examination in the subjects of the Preparatory Course.*

Students who have completed the Engineering Preparatory Course are admitted without examination to the Civil Engineering Course, the Mechanical Engineering Course, and the General Science Course. They are also admitted without examination to the four year courses in agriculture, domestic science, and commerce, being conditioned in the technical work preceding the freshman year in the course taken.

*For a description of these subjects, see Preparatory Course.
Students who have completed the first two years of any of the three year courses in agriculture, domestic science, and commerce, are admitted without examination to any of the regular four year courses in agriculture, domestic science, and commerce, respectively. They are also admitted without examination to the Civil Engineering Course, the Mechanical Engineering Course, and the General Science Course, being conditioned in any of the subjects not already completed of the Engineering Preparatory Course.

Those who have completed any of the three year courses are admitted without examination to the sophomore year in the corresponding courses leading to degrees. Students may be transferred from one regular course to another by making up all the technical work not completed of the course to which they are transferred. Students will be allowed to substitute technical work of one course for that of another only by permission of the Faculty.

Other students are admitted to any of the courses leading to degrees, either upon the certificate of accredited schools or upon satisfactory examination in the subjects of the Engineering Preparatory Course. For a description of these subjects, see "Engineering Preparatory Course" and "Departments of Instruction." By permission of the Faculty, students may be allowed upon entrance to substitute work in other courses for Drawing 1, History 2, Carpentry 5, and Forging 4a. Certificates from schools not accredited will be considered as the merits of each case may warrant.

Candidates for admission to advanced standing are required to pass satisfactory examinations in all the work of the preceding years, or to present satisfactory evidence of having completed an equivalent of such work in some other school or college.
SPECIAL STUDENTS.

Persons of mature years who, for satisfactory reasons, desire to pursue a special line of study, may be admitted as special students, provided they give evidence of ability to do the work desired. Special students may be allowed to graduate in any of the courses, on condition that they complete the required work and pass the necessary examinations.

REGISTRATION.

All students register at the beginning of the collegiate year for the work of the whole year. Changes in registration, and credit for work not registered, will be allowed only by special permission of the Faculty.

CLASSIFICATION.

All regular students are classified as first, second, and third year students in Agriculture, Domestic Science, Manual Training in Domestic Arts, or Commerce; or as first and second year students in the Engineering Preparatory Course; or as first, second, third, and fourth year students in the Manual Training Course in Mechanic Arts; or as freshman, sophomore, junior, and senior students in any of the four year courses leading to degrees; according to the lowest year in which they have subjects, provided such subjects are equivalent to one-third of all the work taken; otherwise in the next year above.
GRADUATION.

Students who complete any of the three year courses in agriculture, domestic science, commerce or manual training in domestic arts, or the four year course in manual training in mechanic arts, receive certificates of graduation. The degrees of Bachelor of Science, Bachelor of Science in Agriculture, Bachelor of Science in Domestic Science, Bachelor of Science in Commerce, Bachelor of Science in Civil Engineering, and Bachelor of Science in Mechanical Engineering, are conferred upon those who complete the regular four year courses in General Science, Agriculture, Domestic Science, Commerce, Civil Engineering, and Mechanical Engineering, respectively.

Instructors keep a record of recitations, marked according to the decimal system. In making up final examination percentages, this is counted one-third, the mid-term examination, one-third, and final examination for the term, one-third. But students who have been in a class only four-fifths, or less, of the term (or whose absences amount to one-fifth or more of the term) shall pass the whole subject on examination. In all courses, an average standing of not less than 75 per cent., with no grade less than 60 per cent. is required for graduation.

Students who completed the work of the Sub-Freshman Course in 1900-1901 will be admitted in 1901-1902 to freshman standing in any of the courses leading to degrees, being allowed to graduate upon the completion of the amount of work required as announced in the College catalogue for 1900-1901. Those who completed the work of the freshman, sophomore, or junior year in 1900-1901 will be allowed to continue their courses and graduate upon completion of the amount of work required at the time of entrance.
Residence of the President.

Faculty Room
Corner in Library

Section of Reading Room,
Society Hall.

Corner in Gymnasium. Class in Physical Culture.
Exhibit of Fruit from College Orchard at State Fair, 1900.

Section in Botanical Laboratory.
Veterinary Laboratory.

View in Biological Laboratory
View in Physical Laboratory.

View in Commercial Rooms.
Typewriting and Stenography.
View in College Kitchen.

Corner of College Dining Room.
1. View of Campus, showing Experiment Station Building, President's Residence, Director's Residence.
2. Laborers' Cottages
4. View in Orchard
5. Cattle Barn.
1. Student at Forge.  2. Student at Bench.  3. Apparatus Used in Irrigation Investigations.  
4. Students Making Flumes for Irrigation Investigations.  5. Students in Civil Engineering
Courses of Study.

The College offers the following courses: (1) Agricultural Course, four years; (2) Domestic Science Course, four years; (3) Commercial Course, four years; (4) Civil Engineering Course, four years; (5) Mechanical Engineering Course, four years; (6) General Science Course, four years; (7) Agricultural Course, three years; (8) Domestic Science Course, three years; (9) Commercial Course, three years; (10) Manual Training Course in Domestic Arts, three years; (11) Manual Training Course in Mechanic Arts, four years; (12) Engineering Preparatory Course, two years; (13) Preparatory Course, one year; (14) Special Winter Course in Agriculture.

The Agricultural Courses are arranged especially for the general education and scientific training of agriculturists. In arranging the work of instruction in the three year course, the first purpose kept in view has been to meet the needs of that large class who expect to make the farm their home. The agricultural work begins in the first year and continues through the second and third years, making a fairly complete practical course. Those who can attend only one, two, or three years, will thus be made acquainted with facts and principles that cannot fail to help them in their farm work. Thorough courses are also given in English and mathematics, with sufficient elementary science to enable the student readily to comprehend the agricultural work given.

In the advanced course leading to a degree, the student is given that fundamental knowledge of science which will enable him to understand and grapple with the deeper problems in agricultural practice. In the junior
and senior years the student is allowed to specialize either in Agronomy, in Animal Industry and Dairying, or in Horticulture. Those who complete this course are qualified to take positions as teachers and assistants in colleges and experiment stations, or as managers of large farms. This course, however, is designed not only to give special agricultural training, but to give a broad scientific education. The farmer in America is both proprietor and manager of his farm, and is moreover a citizen in a country where the citizen is sovereign. The education of such a man should be broad and suggestive. The Agricultural Course as arranged brings the student into contact with nearly all the specialists of the College, and opens to him many fields that invite future study and research.

The course is not arranged as a manual training course; but as practically all the students are from the farm, it is assumed that they are acquainted with the various manual operations of farm work. The aim is, therefore, to supplement this work by that technical training which, as a rule, the farm does not afford. Special emphasis is laid on the training of the faculties of observation, reason, and judgment; and from the first year of the course the student is made acquainted with those matters that will enable him to study profitably and with interest the best books and papers on agricultural topics.

The general and department libraries enable the student to become acquainted with a wide range of agricultural and related literature, while the laboratories of the College and the experiment station afford opportunity for training and experience that it would be impossible to get from books. The outline of the course and the description of the studies prescribed, will give a fuller understanding of the work offered.

A winter course in agriculture is provided, designed to meet the needs of young men of mature years, who desire to follow some agricultural pursuit, and who, though feeling the need of more thorough preparation for their
work, can devote only the winter season for such preparation. The subjects presented are those about which everyone engaged in agricultural pursuits should have a definite knowledge. They embody the underlying principles and the best practice. The classroom instruction is supplemented by practice in the live stock judging room, veterinary hospital, College dairy, agricultural and horticultural laboratories and greenhouses, and by visits of inspection to herds and farms and other places of interest.

The courses in Domestic Science and Arts have for their object to broaden the minds of women and enable them to meet more intelligently the home demands of modern life. When woman has learned to apply the principles of science to the problems of daily living, she will realize that housekeeping is an occupation worthy of the best effort of the brightest minds; and that the broadest courses in science, economics, and ethics can be applied to the betterment of home life. Formerly the higher education of woman led her away from the practical interests of the home. The recent establishment of domestic science courses in many leading colleges and universities shows a public demand for education towards home life rather than away from it. This state wisely established such courses when this college was first organized; and the favor with which the work has been received by the public shows the wisdom of the plans. The Domestic Science Course has been strengthened and improved each year, and better facilities for instruction and study have been generously provided. The four year course gives the same training in mathematics, in English, and in science as is given in other courses, together with a broader culture in literature and modern languages than offered in any others, in addition to the special studies in home science, which are its distinctive features. The three year course is arranged for the accommodation of those who are unable to complete the longer course. The Manual Training Course in Domestic Arts is offered for the
benefit of those young women who do not wish to take the studies of the regular college course but desire to devote more time to the subjects of especial interest to women. Such other studies as the student is qualified to pursue may, with the consent of the Faculty, be substituted for those offered in this course.

The primary object of the Commercial Course is to broaden the intelligence of accountants, and prepare students for positions as business men. These form a large class having a direct and important relation to the material, social, and political life of the nation. They should, then, have associated with their technical work a knowledge of those subjects that will give them an enlarged view of their varied relations as citizens of the state. The College, therefore, offers here a much broader general education than is common in commercial schools. The course is so arranged that students who complete the first three years, will receive a certificate of graduation, and on completion of the full course, the regular baccalaureate degree. Students who are unable to continue through the entire course, but finish the first three years, will be well prepared to do office work. The technical feature of the course is a thorough training in penmanship, typewriting, stenography, commercial calculations, bookkeeping, business economics, political economy, history of commerce, commercial law, commercial geography, constitutional and international law.

Those who expect to enter upon the profession of law will find this course affords an admirable preparation. Students who complete the course will be well prepared for positions as teachers in commercial and department schools where courses in commerce are given. The demand for thoroughly qualified teachers along this line of work is greater than the supply, and many desirable positions are open to those prepared to do the required work.

The Civil Engineering Course is designed to afford a training in those subjects which pertain to the profession
of the civil engineer, in regard to different classes of structure, and public works. The theoretical portion of the instruction is based largely on the courses given in the departments of Mathematics and Physics, and the results obtained are applied to practical problems in field work and engineering designs. The first two years are devoted to studies which belong naturally to the beginning years of undergraduate study, but the last two years are devoted largely to those subjects which have a more immediate relation to professional work. Unusual opportunities are afforded the student for practical hydrographic work by reason of the irrigation experiments on the station farm and the co-operation of the department with the Division of Hydrography of the United States Geological Survey and the United States Irrigation Investigations. Other prominent features of the course are the drawing room practice, and supplementary reading in the College library.

The aim of the Mechanical Engineering Course is to afford the student such training as will qualify him to deal intelligently with engineering problems in general, and prepare him for a professional career. The instruction in all branches aims to blend the theoretical with the practical, so that the student may become familiar not only with the purely scientific phase of the work, but with its application to modern practice. As early as possible the student is brought into contact with practical problems, the graphical as well as the analytical method being used throughout their solution. Besides the practical tendency of the course, it has a high disciplinary value, and is especially adapted to develop originality of thought and action. The more strictly professional work may be classified as mathematics, physics, applied mechanics, drawing, and shopwork. Sufficient work in English, history, and other general subjects is given throughout the course to meet all ordinary demands.

The General Science Course corresponds to the usual baccalaureate course in science in higher institutions
of learning. It is designed to furnish a liberal and thorough education, embracing the broad field of general science, mathematics, language, history, and literature. Scientific subjects characterize the work of the course. During the freshman year the students are thoroughly drilled in the subjects necessary to the more advanced special work of investigation. During the sophomore, junior, and senior years, students elect the subjects in which they have greatest interest; being allowed, under the direction of the committee on General Science work, to specialize in any of the subjects of chemistry, biology, mathematics, physics, etc.

The Manual Training Course in Mechanic Arts extends through four years, during the whole of which the students spend three hours daily in the workshop. While the general object is to give students taking the course a good elementary education, the special aim is to make tradesmen in three branches, carpentry, forging, and machine work. In the assignment of exercises in the shop and draughting room, the application of these exercises to practical construction or design is constantly kept in mind. In the shop, the method of instruction is to exhibit each new process before the class with such explanation as shall render each step plain. Then each student is supplied with material and scale drawing of the article to be made, and proceeds with his work under the constant supervision of the instructor. The principles of economy, neatness, and rigid accuracy are insisted upon in the construction of even the most trivial objects. Each student, whether specializing in wood or iron, is required to take at the beginning, one year in wood-work. In all cases, students are required to do at least one year’s work with hand tools before beginning machine work.

In the Engineering Preparatory Course students are thoroughly drilled in the subjects required for admission to the courses in Civil Engineering, Mechanical Engineering, and General Science.
The Preparatory Course is arranged to accommodate those young men and women who have been deprived of educational advantages until they have reached an age when they cannot advantageously attend the district schools. The special aim is to prepare the students for admission to the more advanced courses of the College, and to provide such training as will be of most value to those who are unable to continue their educational work beyond this course.
AGRICULTURAL COURSE.

This course leads to the degree B. S. in Agriculture.

**Freshman Year.**

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<tr>
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<tr>
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<td>5</td>
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<td>Bus. Customs</td>
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<td>Horticulture 1</td>
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**Sophomore Year.**

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<td>Botany 2</td>
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<td>Meteorology</td>
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**Junior Year.**

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<tr>
<td>Geology 1</td>
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**Senior Year.**

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*Animal Industry 7 or 10, Agronomy 4, or C. B. 5.
†Animal Industry 5 or Horticulure 2 b.
This course leads to the degree B. S. in Domestic Science.

**Freshman Year.**

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**Sophomore Year.**

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**Junior Year.**

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COMMERCIAL COURSE.

This course leads to the degree B. S. in Commerce.

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### CIVIL ENGINEERING COURSE.

This course leads to the degree B. S. in Civil Engineering.

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#### Junior Year

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### Agricultural College of Utah.

**MECHANICAL ENGINEERING COURSE.**

This course leads to the degree B. S. in Mechanical Engineering.

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GENERAL SCIENCE COURSE.

This course leads to the degree B. S.

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Total: 16

All the work of the sophomore, junior, and senior years is elective; but students are required to complete two years' work in modern languages, and to take an equivalent of five hours through one year in biology, five hours through one year in English, and one course in history and civics.
AGRICULTURAL COURSE.

Those who complete this course receive certificates of graduation.

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DOMESTIC SCIENCE COURSE.

Those who complete this course receive certificates of graduation.

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COMMERCIAL COURSE.

Those who complete this course receive certificates of graduation.

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MANUAL TRAINING COURSE IN DOMESTIC ARTS.

Those who complete this course receive certificates of graduation.

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MANUAL TRAINING COURSE IN MECHANIC ARTS.

Those who complete this course receive certificates of graduation.

**First Year.**

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**Second Year.**

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**Third Year.**

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<td>*(2) Forging 2, or</td>
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<td>*(3) Machine Work 3</td>
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**Fourth Year.**

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<td>History 1</td>
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<td>Animal Biology 1</td>
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<td>Drawing 6</td>
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*The numbers preceding the shop courses indicate the order in which students who intend completing the course are required to take the subjects; e.g., a student having elected (3) in the second term of the first year will be expected to continue with the subject marked (3) in each succeeding year. A student having taken carpentry during the first year, may elect (2) in the second year and continue with (2) through each succeeding year.*
### ENGINEERING PREPARATORY COURSE.

<table>
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<tr>
<th>First Year.</th>
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### PREPARATORY COURSE.

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<td>Geography 1</td>
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WINTER COURSE IN AGRICULTURE.

This course of study is composed of elective work, the student being allowed, with the approval of the professors in charge, to select those studies in which he has the greatest interest:

- Agronomy.
- Agricultural Chemistry.
- Animal Industry.
- Dairying.
- Entomology.
- Horticulture.
- Poultry.
- Veterinary Science.
Departments of Instruction.

AGRONOMY.

Assistant Professor Merrill.

1. Elementary Agriculture. This course is intended to show the relation of the natural sciences to agriculture and explain how these facts may be applied in farm practice. Special attention is given to the problems in agriculture peculiar to the arid region. The work is designed to give young men who remain at the College but a short time an idea of the importance and value of agricultural pursuits. Required of all first year students in agriculture. Three hours a week during the first term. T., F., S., at 9.

2. Rural Engineering. The course of instruction included under this head embraces the subjects of irrigation, drainage, buildings and fences, and machinery. Required of all second year students in agriculture. Three hours a week during the first term. T., Th., S., at 10:40.

   (a) Irrigation: In this course the subject is studied with reference to its history, its different methods, the time of application of water, and the water requirements of different crops. Students have excellent opportunities to study the work in irrigation at the Experiment Station.

   (b) Farm Drainage: A study is made of the practical effects of drainage, land needing drainage, and of the different problems involved in laying out and putting in a system of drains.

   (c) Buildings and Fences: The arrangement, de-
sign, location, and cost of farm buildings is explained; fences and gates—their necessity, cost, kinds, and construction; wood for gates and fences—time to cut, conditions favorable to decay, and methods of preservation; discussion of fence laws.

(d) Farm Machinery: Attention is given to the tools and machinery of the farm—hoes, spades, plows, harrows, cultivators, rollers, planters, cutters, grinders, mowers, rakes, binders, wagons, etc.; their development, design, construction, draft, efficiency, durability, and care. The department has a large collection of lantern slides which are used in illustrating this subject.

3. Soils and Farm Crops. This course is required of all third year students in agriculture. Five hours a week during the second term. Daily, at 10:40.

(a) Soils: The origin, composition, and physical and chemical properties of soils receive attention; different methods of treatment are examined, and the influence of these methods upon moisture, texture, fertility, and production; soil texture as affecting capillarity, osmosis, and diffusion, and as affected by cultivation and cropping. Special attention is given to the preservation of original soil fertility and the reclamation of alkali soils; and a general discussion of the proper use of different kinds of manure is presented. These lectures are supplemented by laboratory work, comprising the determination of the specific gravity of different soils, their water holding capacity, their adhesive and cohesive qualities, their capillary power, etc.

(b) Farm Crops: This is a study of the conditions of germination and growth and the circumstances modifying these conditions; the selection of crops for Utah; the system of rotation best adapted to the state, taking into consideration the distribution of labor, the production of manure, and the extermination of weeds; summer fallow; and the management of meadows and pastures. The laboratory and field work consists of a study of the vitality
of seeds and their preservation. The student makes observations, on the farm, on the habits of growth of the different farm crops.

4. **Soil Physics.** This work is intended for students wishing to specialize further along the lines of soil study, and must be preceded by Agronomy 3. It includes the determination of temperature, moisture, and soluble salt content of various soils under field conditions; the effect of subsoiling and various methods of tillage upon soil moisture and plant growth; the effect of different crops upon the soil and upon succeeding crops; the effect of special and general farming upon the productive capacity of soils. Required of all students in agriculture who elect Agronomy as a major. Three hours a week during the second term of the junior year.

5. **Agricultural Experimentation.** In this course students have access to the Experiment Station library, and make a study of the work of experiment stations and experimenters in this and other countries. The students are required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. Required of all students in agriculture electing Agronomy as a major. One hour a week throughout the junior year.

6. **Rural Economics.** Required of all students in agriculture electing a major in Agronomy: Three hours a week during the first term of the senior year.

   (a) **History of Agriculture:** The course covers the general development of the agriculture of those nations which have contributed most to agricultural progress. The development of Roman agriculture is specially emphasized influencing as it has the agricultural practices in other nations.

   (b) **Farm Management:** This course includes a discussion of special and general systems of farming, of dif-
ferent systems of rotation, laying out and improving farms, economic bestowal of labor, and the profitable use of machinery.

ANIMAL INDUSTRY.

PROFESSOR LINFIELD.
ASSISTANT PROFESSOR DRYDEN.

1. ANIMAL TYPES. The aim of this course is to study the qualities of the animal as indicated by the external form. The work also includes practice in keeping score cards and in handling the stock upon the College farm. Craig's Market Types. Required of all first year students in agriculture. Three hours a week during the first fourteen weeks of the second term. T., F., S., at 9.

2. GENERAL COURSE. This course consists largely of lectures illustrated by charts, photographs, and lantern slides. It includes a brief study of the history and characteristics of those breeds of live stock best adapted to Utah conditions; the laws of heredity; the feeding and management of different kinds of live stock; the selection and judging of live stock; compiling and study of pedigrees. Required of all third year students in agriculture. Three hours a week during the first term. T., Th., S., at 10:40.

3. PRINCIPLES OF HEREDITY. This course includes a study of the laws of heredity, law of correlation, reversion, variation, fecundity, the methods of breeding, cross-breeding, in-and-in breeding, selection. These laws are practically illustrated by their application to the improvement of the live stock on the farm. Practical work is given in the study of herd books, tabulation of pedigrees, and such other exercises as enable the students to learn the value of a pedigree, and how to keep the records of
any breeding herd. The crops, live stock, and poultry on the College farm are available for study and illustration. Elective to juniors in agriculture. Two hours a week during the first term.

4. Breeds and Breeding. The object of this course is to show the zoological relation of our domestic animals to the rest of the animal kingdom, emphasizing the principles illustrated in their development into specialized animals; and to study the different breeds of horses, cattle, sheep, and swine for the purpose of learning their qualities, characteristics, and adaptabilities. Elective to juniors in agriculture. Two hours a week during the first term.

5. Stock Feeding. This is a study of the principles underlying the profitable feeding of animals; the composition of plants, animals, and animal products. A study is made of the practices which give best results, as indicated by available data, gathered from the work of experiment stations in this and other countries. Special attention is devoted to the study of Utah conditions in the handling of live stock. The hygiene, care, and management necessary to successful feeding are also studied. In connection with this course the live stock, farm buildings, and other equipment are available for practice and advanced study. Elective to seniors in agriculture. Four hours a week during the second term.


(a) Milk. This course includes a thorough study of the methods used in testing, buying, and preserving milk for food or manufacturing purposes. The farm problem of milk production is studied in connection with the management of dairy cows.

(b) Butter: Factory and hand methods in butter production, creaming of milk by different methods, handling and ripening cream, churning, salting, working,
packing, and marketing are studied. The work of the class room is illustrated and applied in the College dairy.

(c) **Cheese:** The process of Cheddar cheesemaking is emphasized. The principles and practice necessary to make a uniform product and to overcome characteristic difficulties are described and illustrated in the class room and dairy. The methods of manufacture of other kinds of cheese, particularly of such kinds as may be made at the home dairy, are also studied.

7. **ADVANCED DAIRYING.** This course consists of a study of special dairy problems, and of experimental work in handling dairy products. Elective to students who have completed Course 6, and Animal Biology 8. Three hours a week during the second term.

8. **POULTRY MANAGEMENT.** This course includes a study of breeds of poultry, poultry buildings, feeding and management, and the practical operation of incubators and brooders. Required of all first year students in agriculture. Three hours a week during the last four weeks of the second term. T., F., S., at 9.

9. **BREEDS OF POULTRY.** This course is a more extended study of breeds, breeding, and types, including a study of the American Standard of Perfection, and practice in judging; rations; the best methods of handling for specific purposes; natural and artificial incubation; poultry diseases; buildings and appliances; and the practices of successful poultry keepers. Required of all third year students in agriculture. One hour a week during the first term. W., at 9:50.

10. **POULTRY EXPERIMENTS.** In this course special work is offered to those who wish to specialize in this branch of animal industry. The time of the student is devoted largely to assisting in experimental work and recording his observations on the same. Elective to students taking a major in Animal Industry. Three hours a week during the second term of the senior year.

11. **THESIS.** In their thesis work, students are allowed
to experiment with any of the live stock on the College farm, with poultry, or in the dairy work. Required of students who elect Animal Industry as a major. One hour a week during the senior year.

12. Winter Course. Students who take the winter course in Animal Industry are given the work covered by courses 1 and 2, but in a briefer and more elementary form. In dairying the work is about the same as in course 6 (a), (b), but is more elementary.

Horticulture.

Professor Close.

1. General Horticulture and Economic Entomology. The object of this course is to give the students as broad a grasp of these subjects from an economic standpoint as is possible in the time allotted to the work. Insect pests and plant diseases of the orchard and garden, together with remedies for each, are thoroughly discussed. Other phases of the work are, orchard management, cultivation, tree planting, pruning, location of orchards, and desirable varieties to be planted. Required of freshmen in agriculture. Three hours a week during the first term. (Also five hours a week to the winter course students in agriculture.) T., Th., S., at 9:50.

2. Propagation and Care of Plants. During the first term's work Principles of Plant Culture, by Goff, is used as a guide in the study of the principles underlying an intelligent understanding of the care, growth, and development of orchard and garden plants and trees. Instruction is also given in propagation by seeding, budding, grafting, layering, and by cuttings, and in the management of hot-beds and forcing houses. Required of seniors in agriculture who elect a major in Horticulture. Four hours a week during the first term.
3. Pomology and Orchard Management. In the second term the subjects of pomology and orchard management are taken up, including the choice of fruit lands, their cultivation, and the maintenance of fertility; the planting of orchards and other fruit plantations; choice of trees and selection of varieties; pruning; insect and fungus pests, and means of combating them. Required of seniors in agriculture who elect a major in Horticulture. Four hours a week during the second term.

4. Landscape Gardening and Forestry. Following the history of gardening, the practical side of ornamenting private and public grounds is taken up. This includes the making of lawns, drives, and flower and shrubbery beds; sodding, tree planting, etc. The native trees of Utah, together with desirable trees for introduction, are studied under the head of forestry. Required of seniors in agriculture who elect a major in Horticulture. Three hours a week during the first term.

5. Vegetable Gardening. The special requirements of the different vegetables both in the garden and in the forcing house are discussed. Green's Vegetable Gardening. Required of seniors in agriculture who elect a major in Horticulture. Three hours a week during the second term.

6. Floriculture. This course deals with the propagation and care of house plants, the planting and care of the flower garden, and home grounds. So far as possible, the work of the class room is supplemented by actual practice in the conservatory and on the College grounds. Taft's Greenhouse Management. Required of sophomore students in the Domestic Science Course. Three hours a week during the second term. T., Th., S., at 9.

7. Thesis. As far as possible the thesis work must show result of original investigation by the student under the direction of the Horticulturist. Required of seniors in agriculture who elect a major in Horticulture. One hour a week throughout the year.
BOTANY.

PROFESSOR CLOSE.

1. STRUCTURAL AND SYSTEMATIC BOTANY. The aim of the work in structural and systematic botany is to help students to become familiar with the higher plants, the terms used in describing them, and their classification. Students are provided with microscopes and dissecting instruments for laboratory work, but must furnish their own collecting and mounting outfits. Fifty mounted and named plants are required. Gray's *Lessons in Botany*. Required of second year students in the Agricultural and Domestic Science courses. Three hours a week during the second term. T., Th., S., at 10:40.

2. PHYSIOLOGICAL BOTANY. Plant anatomy and the functions, growth, and nutrition of plant organs are studied. All laboratory equipment and materials are furnished. Bessey's *Essentials in Botany*. Required of sophomores in the Agricultural and Domestic Science courses; elective to others. Five hours a week during the first term. Recitations, T., Th., S., at 9; laboratory, W., F., from 2 to 3:40.

ENTOMOLOGY.

PROFESSOR CLOSE.

1. GENERAL ENTOMOLOGY. In this course students are expected to acquire a general knowledge of the structure and classification of insects, especially the common insect pests. Insecticides and methods of applying them are given some consideration. Smith's *Economic Entomology*. Required of seniors in the Agricultural and Domestic Science courses; elective in the General Science Course. Two hours a week during the second term.
VETERINARY SCIENCE.

Assistant Professor Merrill.

1. Winter Course. During the winter months, beginning with the opening of school after the holiday recess, a course of thirty lectures is given on the science of health preservation of domestic animals. Some of the more common diseases and ailments are discussed. Attention is given to ideal sanitary conditions for different animals; and common errors are pointed out and corrections suggested.

2. Elementary Course. This subject is taught by lectures and text books on the diseases of domestic animals, and is illustrated by observation and practice at the free clinics. Part of the term is given to the study of the diseases and conditions that require surgical treatment—such as lameness, wounds, abscesses, tumors, and the like. A few lectures are given in which the various methods and principles of shoeing are discussed, as well as the proper treatment of the horse’s foot. Required of all third year students in agriculture. Four hours a week during the second term. T., W., Th., F., at 12:20.

3. Veterinary Anatomy. This subject is taught in part by lectures, and is illustrated by charts, skeletons, etc. During this term there is a complete dissection of a horse. Required of students electing Animal Industry as a major, and elective to students in the General Science Course. Four hours a week during the second term of the junior year.

4. Veterinary Medicine. This subject includes therapeutics and materia medica. Students are instructed in the compounding and administering of medicines. The course must be preceded by Veterinary Science 3. Finlay Dun’s *Materia Medica* is used as a text book. Required of students who elect Animal Industry as a major. Four hours a week during the first term of the senior year.

5. The Free Clinic. Every Monday during the
second term clinics are held to which diseased animals are brought for free treatment. Students are required to assist in the work and perform such operations as they are prepared for. Required of students taking any of the courses in Veterinary Science.

DOMESTIC SCIENCE.

PROFESSOR COTEY.
MRS. COOK.

The purpose of the following courses is to give instruction and practice in those subjects most intimately associated with the daily life of women at home.

I. HOUSEHOLD SCIENCE.

PROFESSOR COTEY.

1. LAUNDERING. The work consists of practice alternating with lectures. The practice includes plain white washing and removing stains, clear starching, best methods of doing up fine mull, of ironing shirts, cuffs, and collars, washing flannels, and cleaning silk and fine woolen goods. The lectures treat of the chemistry of the various materials used, and of hard waters and the process of softening them. Soaps, washing fluids, bleaching powders, bluings, and starch, are discussed in their scientific and practical relations to laundry work. Required of second year students in the Domestic Science Course, and in the Manual Training Course in Domestic Arts. Two hours a week during the first third of year. W., F., from 2 to 3:40.

2. COOKING I. The student receives instruction in selecting different cuts of meats and in the methods of cooking best adapted to them. Practice is given in roasting, braizing, broiling, in stews and pot roasts; in preparing fowls for cooking, and in making dressings; in
boning, larding and skewering, in making croquets, scallops, etc. Instruction is given in preparing soup stocks, in making cream soups, vegetable soups, and purees. Students are taught to prepare sauces suited to different kinds of meats and to make various meat pies, dumplings for stews, and noodles for soups. Required of second year students in the Manual Training Course in Domestic Arts. Two hours a week during the second third of year. Daily at 12:20.

3. Cooking II. Instruction is given in the making of various kinds of yeast, salt rising, wet and dry yeast; white and graham bread, corn bread, Boston brown bread; many varieties of rolls and buns. This work includes lessons in making baking powder and in making a great variety of the breakfast breads in which it is used; biscuits, muffins, gems, Johnny cake, pancakes, and waffles. Part of the term is devoted to plain pastry cooking. Required of second year students in the Manual Training Course in Domestic Arts. Two hours a week during the last third of year. W., F., from 2 to 3:40.

4. Cooking III. Practice is given in making a variety of layer and loaf cakes, sponges, cream puffs, cookies, jumbles and fancy cakes, plain pastry, puff paste, tarts, patties, etc. The student is also given practice in a great variety of baked, boiled, and steamed puddings; custards, blancmanges, whips, creams, jellies, etc. Instruction is given in laying tables for dinner and lunch parties, and in waiting on tables. A few lessons are given in making taffy and sugar candies with French cream fondant. The work includes instruction in cooking vegetables and serving dinners during both winter terms. Required of third year students in the Manual Training Course in Domestic Arts. Two hours a week during the last two thirds of year.

5. Fruit Work. This includes canning by various methods, and making all kinds of preserves and marmalade; different methods of making jellies, and experiments
with green and ripe fruits; the making of all kinds of ketchups, spiced fruits, sweet and sour pickles, table sauces and meat relishes; the preparing of fruit juices, cordials and syrups. The latter part of the term’s work is a course of lectures on the chemical nature of fruit, its acids and sugars; the value of fruit as food, and its action on the human system; the causes of fruit fermentation, and a study of antiseptics. Young women doing this work are required to make use of reference books in the library, and to write essays upon the food value of fruit. Required of third year students in the Domestic Science Course, and in the Manual Training Course in Domestic Arts. Two hours a week during the first third of year. T., Th., from 2 to 3:40.

6. Foods. Foods are studied as to their sources, processes of manufacture, conditions in which they are found in the market, and methods of cooking best adapted to each. Talks are given on marketing and the selection of foods, and their care before cooking. Sanitary conditions of the kitchen and store rooms are discussed. General rules of measuring and mixing food materials and their proper proportions and combinations are taught, along with the best methods of baking and boiling; deep and shallow frying; carving and serving food. The principles taught in the class are put into practice by each student in the kitchen. Required of second year students in the Manual Training Course in Domestic Arts. Four hours a week throughout the year. Daily, at 9.

7. Sanitation and Hygiene. The lectures on these subjects treat of sanitary conditions about the home; dangers from damp and unclean cellars, foul drains and sinks; ventilation, heating and lighting; instructions especially necessary to women on the care of personal health; home nursing, with illustrative lessons on changing beds for the sick. Required of third year students in the Manual Training Course in Domestic Arts. Two hours a week throughout the year.
8. **Home Nursing and First Aids to Injured.** These subjects are taught by lectures and enforced by illustrations, with references to such authorities as Park, Wilson, Nightingale, Stoney, Hampton, Shaw, Canfield, and Stockholm. Required of third year students in the Domestic Science Course. Five hours a week during the first third of year. Daily, at 9:50.

9. **Cooking IV.** The purpose of this course is to give instruction in the best methods of selecting, preserving, and cooking all common food materials. All principles learned in the class room are demonstrated in the kitchen. William's *Chemistry of Cookery*, Richard's *Chemistry of Cooking*, and various bulletins issued by the United States Government are used as texts. Required of third year students in the Domestic Science Course. Five hours a week during second third of year. Daily, at 9:50.

10. **Cooking V.** This course includes all kinds of plain and some fancy cooking, and covers in a general way all the subjects with which a housekeeper in moderate circumstances needs to be familiar. Demonstration lessons are given at various times throughout the term, on subjects difficult of treatment in the general practice. A three-course lunch is served daily during the winter months. Members of the class take turns in presiding as hostess at the table, carving and serving plates and looking after the needs of the guests; they also take turns in waiting upon the table. The confidence and skill thus acquired are invaluable to them. Required of third year students in the Domestic Science Course. Two hours a week during the second third of year. T., Th., from 2 to 3:40.

11. **The Science of Nutrition.** This is a study of foods, their chemical composition, characteristics, digestibility; the way in which they nourish the body; the effect of age, climate, and occupation on the amount and kind of food required. Books on food by such authors as Yeo,
Smith, Sir Henry Thompson, Green, Atkinson, Youmans, Parks, and Hoy are used for reference. Constant use is made of government bulletins on the composition and digestibility of foods. A full set of charts and bottles illustrating the composition of food are used as aids to the study. Required of third year students in the Domestic Science Course. Five hours a week during the last third of year. Daily, at 9:50.

12. DIETETICS AND INVALID COOKING. The course aims to determine the best foods to be given in diseases, with practice in their preparation and serving. The preparation of liquid diet, light diet and convalescent diet is taught the same as in hospital training schools. Invalid Cooking, by Mary Boland; Food in Diseases, by Yeo; How to Feed the Sick, by Dr. Gatchell, and other similar works, are used as texts. Required of third year students in the Domestic Science Course. Two hours a week during the last third of year. T., Th., from 2 to 3:40.

13. SANITATION. The course embraces a study of the conditions necessary to a healthful home—fresh air, pure water, heating, lighting, and drainage. Household Sanitation, issued by the Collegiate Alumni Association, is used as a text book, together with the Sanitarian. Reports of various boards of health are used as reference books. Required of seniors in the Domestic Science Course; elective to others who have had course 12. Five hours a week during the first term.

14. HOUSEHOLD ECONOMICS. Lectures are given on the convenient arrangement and economical furnishing of rooms; the best methods of doing all kinds of housework, with a view to economy of time and strength; the duties of mistress and servants; the entertainment of guests; and many other subjects of interest to the home-maker. Books by prominent writers on these subjects, and a number of periodicals of especial value to students of the class, are found in the library. Required of seniors in the Domestic
Science Course; elective to others who have completed Course 13. Five hours a week during the second term.

II. SEWING.

MRS. COOK.

Besides the general advantages derived from industrial education, the object of this branch is to give a practical training in the sewing which every household requires. Neatness of work is insisted upon. The student provides material and makes her own garments.

1. Hand Stitches. During the first part of the first year, the student makes a set of models, covering the full course in hand sewing, and involving practice in basting, overhanding, overcasting, backstitching, hemming, felling, gathering and stroking gathers, gusset, buttonholes, loops, eyelets, patching, darning, blanket stitch, slip stitch, blind stitch, herring bone stitch, feather stitch, chain stitch, French hem, French seam, etc. Talks are given on the position of the body and the care of the eyes while sewing, on color, and on the nature and manufacture of materials used. Required of first year students in the Domestic Science Course, and in the Manual Training Course in Domestic Arts. Two hours a week during the first term in the Domestic Science Course, and three hours a week during the first third of year in the Manual Training Course in Domestic Arts. In the Domestic Science Course, daily at 10:40; in the Manual Training Course in Domestic Arts, daily, from 2 to 3:40.

2. Machine Work. The student is taught the use and care of various machines. Regular practice is given in running, hemming, felling, gathering, puffing, tucking, quilting, etc. Drawers, skirt, and underwaist are cut and made. Required of first year students in the Domestic Science Course and in the Manual Training Course in Domes-
tic Arts. Two hours a week during the second term in the Domestic Science Course, and three hours a week during the second third of year in the Manual Training Course in Domestic Arts. In the Domestic Science Course, daily, at 10:40; in the Manual Training Course in Domestic Arts, daily, from 2 to 3:40.

3. Machine and Hand Work. The student is taught to cut from a pattern made for each pupil, according to the system used throughout the course, and to fit and finish a dress of washable material; also to cut, fit, hang, and finish one lined skirt of worsted material. Required of second year students in the Domestic Science Course, and of first year students in the Manual Training Course in Domestic Arts. Two hours a week during the second third of year in the Domestic Science Course, and three hours a week during the last third of year in the Manual Training Course in Domestic Arts. In the Domestic Science Course, W., F., S., at 10:40, and T., Th., at 12:20; in the Manual Training Course in Domestic Arts, daily, from 2 to 3:40.

4. Dressmaking. The students are taught to adapt and use patterns, and to make use of dress cutting systems, in draughting, cutting, fitting, and making a worsted dress and fancy waist. Required of second year students in the Domestic Science Course and in the Manual Training Course in Domestic Arts. Two hours a week during the last third of year in the Domestic Science Course, and three hours a week during the first term in the Manual Training Course in Domestic Arts. In the Domestic Science Course, W., F., S., at 10:40, and T., Th., at 12:20; in the Manual Training Course in Domestic Arts, daily, from 9:50 to 11:30.

5. Designing, Cutting, and Fitting. Instruction is given by talks on grace in the design of costume, and in harmony of color. Further practice is given in cutting, and fitting. Required of second year students in the Manual Training Course in Domestic Arts. Three hours a week during the second term. Daily, from 9:50 to 11:30.
6. ADVANCED DRESSMAKING. Further work is done in practical costume making, cutting, basting, fitting, pressing, trimming, and finishing. Draughting from measurements, patterns for waists, skirts, sleeves, princess gowns, jackets, coats, etc., forms a large part of the work. Required of third year students in the Manual Training Course in Domestic Arts. Three hours a week during the first term.

7. FANCY WORK. This consists of hemstitching, drawn work, Kensington embroidery, Roman cut work, Spanish laid work, jeweled embroidery, Bulgarian embroidery, and modern lace making. Required of third year students in the Manual Training Course in Domestic Arts. Three hours a week during the second term.

COMMERCIAL COURSE.

PROFESSOR FARIS.
ASSISTANT PROFESSOR ROBINSON.
MR. NORTON.

1. BOOKKEEPING I. Required of first year students in the Commercial Course. Two hours a week throughout the year. Daily, at 10:40.

(a) Science of Accounts: The course of instruction in the science of accounts embraces a careful study of the fundamental principles of bookkeeping. The principles of debit and credit are thoroughly developed by means of repeated drills and lectures. Journal and day-book entries are given careful attention. Much care and practice in penmanship, ruling, spacing, arrangement of work, etc., with special reference to figures, is exacted, thus giving students, in addition to principles on which the work is based, that manual training necessary for neat, accurate and rapid bookkeeping.
(b) *Practical Bookkeeping:* In this work a regular laboratory method is used. Each student assumes the responsibility of a bookkeeper, and actually keeps books according to the shortest and most approved methods in various kinds of business—such as grocery, general merchandise, jobbing, commission, etc.—including a thorough course in corporation work. College currency, bills of exchange, notes, checks, deeds, leases, mortgages, receipts, invoices and all other forms of commercial paper incident to the several kinds of business are used. All banking is done directly with the college bank. The work is largely individual, and may be so arranged that no two students will arrive at the same result. Every step in the progress of a student is carefully examined, and by a rigid system of checking accuracy is exacted.

2. **Bookkeeping II.** Optional with Stenography I to second year students in the Commercial Course. Three hours a week throughout the year. Daily, from 2 to 3:40.

(a) *Business Practice:* Students form a business community, and each one not only keeps books but conducts and manages a business. All transactions are made either by correspondence or face to face with members of the class. Well furnished offices are run for the accommodation of the business circle. Students conduct the several offices, first as bookkeepers and then as managers. Careful attention is paid to the laws of Utah, and all business forms and transactions are made to conform to the statutes of the state. Among other features a corporation is organized and conducted as a General Mercantile Co., complying strictly with the laws of the state governing such institutions.

(b) *Business Methods:* The fundamental principles of bookkeeping are here applied according to modern ideas of business, with its complex and exacting requirements. The subjects of banking, securities, exporting and importing, railroading, business correspondence and every
day business transactions, are carefully examined from a practical point of view. Blanks and business forms of many kinds are placed in the hands of students for discussion and reproduction.

3. **Bookkeeping III.** The duties, qualifications and requirements of expert accountants, are carefully studied. Books suitable for different kinds of business with the most approved ruling, special columns, etc., are discussed. Much practical work is given in opening and closing sets of books used in various business enterprises. Optional with Stenography II to third year students in the Commercial Course. Two hours a week throughout the year. Daily, from 2 to 3:40.

4. **Commercial Calculations.** This consists of a review and drill on the fundamental principles of arithmetic, weights and measures, the metric system, percentage, profit and loss, commission, interest, discount, storage, equation of accounts, partnership settlements, and all problems that the average business man is called upon to solve. Short methods are studied, and practical devices presented. Required of second year students in the Commercial Course. Three hours a week throughout the year. T., F., S., at 12:20.

5. **Commercial Law.** This embraces a study of the customs, law, nature, formation, operation, interpretation, and discharge of contracts; including agency, partnership, corporation, bills, notes and checks, purchase and sale of personal property, guarantee or suretyship, limitation of the time to sue, commission merchants and brokers, agreements for personal services, bailments, insurance, telegraphic communication, patents, copyright, trade marks, real estate conveyances, and the business and legal forms that are used to carry on trade. Required of third year students in the Commercial Course. Three hours a week throughout the year. T., Th., S., at 9:50.

6. **Commercial Geography.** The subjects of mathematical, physical, and political geography are briefly re-
viewed with particular reference to their relation to climate, productions, transportation, commercial centers, etc. The student makes a careful study of the principal countries of the world from which such staple articles of commerce as food, textile and mineral substances, metals, and manufactured products are obtained. Internal and ocean communications with reference to seaport cities and markets are emphasized. There is no subject connected with commerce more interesting than commercial geography. It is a live subject, and any one who reads, sees, and thinks will not want for material to assist in making the subject attractive and beneficial. Required of third year students in the Commercial Course. Two hours a week throughout the year. W., F., at 9:50.

7. Business Customs. The fundamental principles of account keeping are applied in this course by means of practical work in the use of different forms and blanks pertaining to actual business. Instruction and practice are given in simple bookkeeping as related to farm accounting, in the principles of banking, in the use of notes and checks, in ordinary commercial law, such as leases, contracts, and papers commonly used, with special reference to marketing farm products and buying farm supplies, including actual experience in following market fluctuations, studying crop reports and results, from the standpoint of cause and effect. Required of third year students in the Agricultural Course. Three hours a week during the second term. Daily, at 9:50.

8. History of Commerce. The purposes of this course are to convey a general knowledge of the origin and early development of commerce; to trace its influence on the world's civilization; to show the effects of great discoveries, inventions, public works, legislative enactments, and other important influences by which the progress of commerce has been effected. A thorough research of the commercial history of our own country is required. Special stress is placed on the consular system and com-
commercial relations of the United States. The student is led to a clear understanding of the beginning of commerce as the inevitable outcome of man's needs and desires. Required of sophomores in the Commercial Course. Three hours a week during the first term.

9. CONSTITUTIONAL AND INTERNATIONAL LAW. In this course, after a review of civil government, a study is made of the leading cases of constitutional law that have been passed upon by the Supreme Court of the United States. The great debates pertaining to the Constitution and the opinion of the constitutional lawyers are read and discussed. Students are lead to investigate the relation that our government bears to other governments of the world. The rights and duties of nations as independent political communities, and a systematic outline of the existing rules of international conduct, by which the harmony of the national state-system of Christendom is maintained, are made a prominent feature of the course. Required of sophomores in the Commercial Course. Three hours a week during the second term.

10. TRANSPORTATION. This subject deals with those questions of railroad, canal, river, lake, and ocean transportation which have become matters of public concern. The history and management of railroads, canals, and steamship lines is given careful attention. The effect of improved methods of transportation upon internal and foreign commerce is considered. Government ownership combinations, competition, legislation, and the policies pursued by other nations are given careful attention. Required of seniors in the Commercial Course. Five hours a week during the first term.

11. BANKING AND FINANCE. The theory of banking, ancient and modern, is first studied, after which a comparison is made of the system in use in the leading commercial nations. Crises and their causes are made a prominent feature of the course. Monetary units, coins, and coinage of different nations are discussed. A careful
study of the legislation of the United States Congress pertaining to finance and banking is made. Required of seniors in the Commercial Course. Five hours a week during the second term.

12. **STENOGRAPHY I.** This is an elementary course in the Gregg system of shorthand. The system is adapted perfectly to the hand, the shape of the characters being based upon movements common in ordinary handwriting. Other important features are, no position writing, no shading, and no detaching of vowels. These advantages enable the student to master the principles in a short time and to begin work from dictation early in the course. Business letters constitute the greater part of the dictation exercises. In addition to the regular class drill, individual instruction is given, enabling the student to work to the best possible advantage. *Gregg's Shorthand* and supplementary publications. Optional with Bookkeeping II to second year students in the Commercial Course. Three hours a week throughout the year. Daily, from 2 to 3:40.

13. **STENOGRAPHY II.** All the time allotted to this work is devoted to practice in writing and transcribing business letters, legal work, depositions, lectures, and general matter. The aim is to prepare students for positions as stenographers upon completion of the course. Musick's *Universal Dictation Course* and other works of reference. Optional with bookkeeping III to third year students in the Commercial Course who have completed Course 12. Two hours a week throughout the year. Daily, from 2 to 3:40.

14. **TYPEWRITING.** The work includes instruction in the care and mechanism of the typewriter; exercises in fingering; practice in writing business letters, legal forms, specifications, tabulated statements, and general work; and manifold writing. Three different kinds of machines are used, all having the "universal" keyboard. Required
of second year students in the Commercial Course. Two hours a week throughout the year. Two sections: section 1, daily, at 9; section 2, daily, at 9:50.

CIVIL ENGINEERING.

PROFESSOR SWENSDEN.
MR. BEERS.

1. SURVEYING. This course embraces the study of the general methods of farm, city, railway, topographic, and hydrographic surveying. The practical work in the field and drawing room receives particular attention. The advanced work of the course includes a treatment of the establishment of grades in railway and canal work, railroad curves, determination of the meridian, and triangulation and coordinate surveys. Raymond's *Plane Surveying*, and Searle's or Trantwine's field book. Required of sophomores in the Civil Engineering Course, and of seniors in the Agricultural Course who elect a major in Agronomy. Three hours a week throughout the year.

2. ROADS AND PAVEMENTS. The location, construction, and maintenance of country roads; the pavement of city streets, materials used and methods of construction. Byrne's *Highway Construction*. Required of juniors in the Civil Engineering Course. Five hours a week throughout the year.

3. HYDRAULICS. A thorough study of the theories of hydraulics; the flow of water through orifices, weirs, pipes, and open channels; measurement and division of water; and the theories of hydrodynamics and hydrostatics. Merriman's *Hydraulics*. Required of juniors in the Civil Engineering Course. Three hours a week throughout the year.

4. IRRIGATION I. The location, design, construction,
and operation of irrigation canals; design and construction of dams, reservoirs, head-gates, etc.; the duty of water, subdivision systems, and other subjects relating to irrigation systems. Required of seniors in the Civil Engineering Course. Three hours a week during the first term.

5. Irrigation II. This course deals especially with the problems in irrigation relating to the farm; the measurement and division of water, design of subdivision systems, methods of application of water. Required of seniors in the Agricultural Course who elect Agronomy as a major. Three hours a week during the second term.

6. Water Power. A general treatment of the theories of hydraulic motors. The development of water power, design and construction of penstocks, pipe lines, power houses, etc. Frizell's *Water Power*. Required of seniors in the Civil Engineering Course. Three hours a week during the second term.

7. Water Supply and Sewerage. A detailed study of the questions pertaining to public water supplies, reservoirs, filtration, distribution systems, classes of water pipes, and the design of water supply systems. The course also includes a study of the problems relating to drainage, construction and capacity of sewers, and sewerage disposal. Fanning's *Water Supply Engineering*. Required of seniors in the Civil Engineering Course. Three hours a week during the first term.

8. Hydraulic Laboratory. This course is intended to apply the theoretical work of courses 3, 4, 5, and 6 to practical problems; measurement of water, establishment of lines and grades for canals, aqueducts, and pipes; rating of meters; making of estimates, etc. Required of seniors in the Civil Engineering Course. Two hours a week throughout the year.

9. Masonry Structures. This course includes a treatment of the materials used in masonry structures; a discussion of the theories relating to retaining walls, dams, arches, and other masonry structures. Baker's *Masonry*
Structures. Required of seniors in the Civil Engineering Course. Three hours a week during the second term.

10. Thesis. This usually consists of a report of the student's investigation in some special line of work connected with his course, or it may consist of a paper on some branch of civil engineering. It is expected to be a somewhat exhaustive treatment of the subject considered.

MECHANICAL ENGINEERING.

Professor Jenson.
Mr. Pulley.

1. ELEMENTS OF MECHANISM. This includes a consideration of the various forms of motion and its production; link motions, and their modifications as used in machinery; cam and wiper outlines; wheel trains and aggregate motions; design and construction of gear teeth; mechanism of special machinery. This subject deals with the purely geometrical relations of machinery, rather than with the form and design of articulating parts. Required of juniors in the Mechanical Engineering Course. Five hours a week during the first term.

2. ANALYTICAL MECHANICS. In this subject are treated the general laws of statics and dynamics as illustrated in the composition and resolution of forces, determinations of centers of gravity, moments of inertia, dynamics of a particle and of rigid bodies. Required of juniors in the Mechanical Engineering Course. Five hours a week during the second term.

3. APPLIED MECHANICS. This course begins with a discussion of the materials of engineering and their use in engineering structures, derivation of formulae for stress in members, and a careful comparison with the results of experimental research in the strength of materials. This is followed by a study of stresses and strains in framed
structures, analytical and graphical methods being used in all cases. These are illustrated by complete analysis of roof and bridge trusses and modern high framed buildings. The subject is concluded with discussions of the continuous girder, the elastic arch, and the general theory of elasticity. Required of seniors in the Mechanical Engineering Course. Five hours a week throughout the year.

4. Steam Engineering. This begins with a study of the various forms of valve gears now in common use, which is followed by the study of the various forms of engines; the principles of thermodynamics according to the mechanical theory of heat and its application to the steam and other vapor engines, boilers and boiler design and construction; also methods of testing steam engines and steam boilers. A careful study is made of such data as have been secured from reliable tests in lieu of making actual tests. Required of seniors in the Mechanical Engineering Course. Three hours a week throughout the year.

5. Machine Design. In this course are considered the effects of the moving parts of machinery; such as, the reciprocating parts of the steam engine, flywheels, governors, etc., and the general principles of design in machinery, carrying into effect the principles of the course in mechanism combined with those of the course in applied mechanics. The theory of design is supplemented throughout by the practical design of specific parts. Required of seniors in the Mechanical Engineering Course. Five hours a week throughout the year.

6. Power. This course considers the sources of power, prime movers and their efficiencies, methods of distribution and transmission, with a careful study of losses due to friction, dissipation, etc., power measurement, and power absorption, by various methods of working machinery; also a careful study of lubricants and their
economy as such. Required of seniors in the Mechanical Engineering Course. Two hours a week throughout the year.

7. Dynamo Machinery. This course consists of lectures and assigned readings on the theory and practice of dynamo construction, special attention being given to forms and systems now in use. Shop methods will be illustrated as far as possible. Required of juniors in the Mechanical Engineering Course. Three hours a week during the second term.

8. Thesis. In general a graduating thesis in this course should consist of the execution of an original design with a descriptive dissertation, or a discussion of some current engineering problem, or the result of some original research, experimental or theoretical. Required of seniors in the Mechanical Engineering Course. One hour a week throughout the year.

MECHANIC ARTS.

Professor Jenson.
Mr. Hansen.
Mr. Griffin.
Mr. Pulley.

I. CARPENTRY.

Mr. Hansen.

1. (a) Rudimentary exercises in sawing, ripping, planing, mortising, dovetailing, and the application of these to simple articles of furniture, furnish the details of this course. Correct methods of using and handling tools are emphasized. Required of all first year students in the Manual Training Course in Mechanic Arts. Five* hours a week during the first term. Daily, from 9:50 to 12:20.

*In all the courses in Mechanic Arts, each hour's credit represents three hours work in the shops.
(b) Sharpening and adjusting carpenter's tools, and saw filing, followed by practice in making panels, doors, and sashes, and in sample cabinet work, constitute the work of this course. Open to first year students in the Manual Training Course in Mechanic Arts. Five hours a week during the second term. Daily, from 9:50 to 12:20.

2. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course 1 (b). Five hours a week throughout the year. Daily, from 9:50 to 12:20.

(a) Plain cabinet making, concluding with a standard carpenter's tool chest. First term.

(b) Wood turning and other machine work in wood. Second term.

3. In this course the principles and practice gained in the foregoing courses are applied to frame house building. If possible, practice in building a regular house is given; but when such opportunity cannot be had, small scale building is done at the shops. Open to third year students in the Manual Training Course in Mechanic Arts who have completed Course 1 (b), and preferably Course 2 (a). Five hours a week throughout the year. Daily, from 9:50 to 12:20.

4. In this course the student is allowed to specialize in cabinet making, including carving and fitting and finishing, or in inside finishing of houses, or special work in stair building. In whichever branch he may specialize he is required to finish a complete design. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 3. Five hours a week throughout the year. Daily, from 9:50 to 12:20.

5. This course consists of selected exercises from courses 1 (a) and 2 (b). Required of all second year students in the Engineering Preparatory Course and in the Agricultural Course. Two hours a week during the first term. T., Th., S., from 2 to 3:40.

6. This is an elementary course in pattern making.
Patterns of pipe fittings, groove pulleys, hangers, and core boxes are sample exercises of the course. Required of sophomores in the Mechanical Engineering Course; open to others who have completed Course 5. Three hours a week during the second term. Daily, from 2 to 3:40.

II. FORGING.

Mr. Griffin.

1. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course 1 in Carpentry. Five hours a week throughout the year. Daily, from 9:50 to 12:20.
   (a) This course consists of preliminary exercises, such as drawing, bending, twisting, and shaping, followed by exercises in iron welding and making iron tools. Accuracy in methods and results is insisted upon. First term.
   (b) The work of this course consists of practice in steel and iron welds, steel and steel welds and general work in steel tool forging and dressing. Chisels, punches, reamers, hammers, tin shears, nippers, etc., are sample exercises. Second term. Prerequisite, Course 1 (a).

2. Open to third year students in the Manual Training Course in Mechanic Arts who have completed Course 1. Five hours a week throughout the year. Daily, from 9:50 to 12:20.
   (a) This course consists of elementary work in horseshoeing and spring building, and in making and repairing different kinds of agricultural and other implements. First term.
   (b) The work of this course consists of filing, chipping, hand fitting, and polishing, and general vise work; also practice in special forms of forging, such as wicket gates, cultivator teeth and irons, etc.
3. The work of this course consists of practical carriage building. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 2. Five hours a week throughout the year. Daily, from 9:50 to 12:20.

4. (a) The work of this course consists of selected exercises from Course 1. Required of second year students in the Engineering Preparatory Course. Two hours a week throughout the second term. T., Th., S., from 2 to 3:40.

(b) This course consists of selected exercises from Course 1 (a), followed by work in horseshoeing and in repairing agricultural implements. Required of second year students in the Agricultural Course. Two hours a week during the second term. T., Th., S., from 2 to 3:40.

III. MACHINE WORK.

Professor Jenson.
Mr. Pulley.

1. This course consists of selected exercises from Forging 1, the same as Forging 4 (a), followed by the vise work of Forging 2 (b). Open to first year students in the Manual Training Course in Mechanic Arts who have completed Course 1 (a) in Carpentry. Five hours a week during the second term. Daily, from 9:50 to 12:20.

2. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course 1. Five hours a week throughout the year. Daily, from 9:50 to 12:20.

(a) This course consists of preliminary exercises in straight and taper turning, drilling, planing, and milling, accompanied by instruction in the care and use of machinery. First term.

(b) The work of this course consists of boring and
chucking in the lathe, thread cutting, polishing, etc., and such other exercises on other machines as will be required in making shaft couplings, tap wrenches, etc. Second term.

3. Open to third year students in the Manual Training Course in Mechanic Arts who have completed Course 2. Five hours a week throughout the year. Daily, from 9:50 to 12:20.

(a) The work of this course consists chiefly of making taps, spiral drills, fluted reamers, and mandrils, with practice in finishing tempered articles on the universal grinding machine. First term.

(b) This course consists of the manufacture of parts of machinery, such as engine connecting rods. Second term.

4. The work of this course consists of practice in actual machine construction. Speed lathes and sensitive drills may be taken as sample exercises. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 3 (b). Five hours a week throughout the year. Daily, from 9:50 to 12:20.

5. This course consists of selected exercises from courses 2 and 3. Required of juniors in the Mechanical Engineering Course. Two hours a week throughout the year. T., Th., S., from 2 to 3:40.

ANIMAL BIOLOGY.

Professor Gowans.

1. Elementary Anatomy and Physiology. The purpose of this course is to familiarize the student with the important principles of the science of physiology, and furnish a basis for the study of hygiene. The student is encouraged to make a practical application of the laws upon which his health and proper physical development de-
pend. Martin's *Human Body, Briefer Course*. Required of second year students in the Agricultural, Domestic Science, Commercial, and Engineering Preparatory courses; and of fourth year students in the Manual Training Course in Mechanic Arts. Two hours a week throughout the year. Two sections: section 1, recitations, W., F., at 10:40; laboratory, Th., from 12:20 to 2; section 2, recitations, T., Th., at 10:40, laboratory, S., from 12:20 to 2.

2. *Zoology*. The laboratory work consists of the dissection of a number of types, which are studied in considerable detail. The lectures and recitations are based upon the laboratory work and consider the important characteristics of the principle groups of animals, especially morphology and physiology, the principles of classification, and the general principles of zoology. Required of sophomores in the Agricultural Course; elective to others who have taken Course 1. Three hours a week throughout the year. Recitations, T., Th., at 9:50; laboratory, W., F., from 11:30 to 1:10.

3. *General Biology*. The lectures deal with some of the general principles of biology. The laboratory work during the first term consists of the detailed study of a few representative vegetal and animal organisms, and during the second term, of an introduction to practical normal histology and elementary embryology. This course must be preceded by Course 1, and either preceded or accompanied by Course 2. Required of those who elect a major in Biology, and as a prerequisite to courses 5, 6, and 7; elective to others. Five hours (two lectures and three laboratory periods) a week throughout the year.

4. *Advanced Physiology*. The subjects discussed are, the phenomena of life; the physiology of the cell; chemical composition of the body; the physiology of nutrition; irritability and contractility; physiology of the circulation; physiology of the nervous system and sense organs. The laboratory work is an introduction to experimental
5. **Histology.** A minute study of the elementary tissues, excepting the nervous system. Some time in the beginning is devoted to the preparation of stains, hardening, fixing and other fluids, each student being required to prepare the reagents for his own use. A typical mammal is used for material. Prepared slides of human tissues are furnished the student. The course includes methods of fixing, decalcifying, staining, imbedding, sectioning, mounting, and drawing. Elective to those who have completed Course 3. Five hours a week during first term.

6. **Comparative Anatomy and Embryology of the Vertebrates.** This course is based upon Wiedersheim's *Comparative Anatomy of Vertebrates,* and Foster and Balfour's *Embryology.* The course aims to consider more thoroughly than is possible in Course 2 the subject of vertebrate zoology. Elective to those who have taken courses 2 and 3. The extent of this course will be arranged to suit the convenience of students.

7. **Neurology.** The course includes general histological technique, as in Course 5, and some special neurological methods not included in that course. (a) A study of the comparative structure of the brain and nervous system of the higher and lower animals; (b) histology of the nervous system and sense organs. Elective to those who have completed courses 3 and 5. Five hours a week during the second term.

8. **Bacteriology.** This course consists of a study of elementary technique; the non-pathogenic bacteria; the work on yeasts and moulds; and the examination of air, water, and soil. Required of juniors in the Domestic Science Course, of students in the Agricultural Course who elect a major in Animal Industry, and of students in
the General Science Course who elect a major in Biology; elective to others. Three hours a week during the first term.

9. Pathogenic Bacteria. Required of juniors in the Domestic Science Course and of students in the General Science Course who elect a major in Biology; elective to others who have completed Course 8. Three hours a week during the second term.

10. Soil Bacteriology. After considering the elementary technique, this course deals with the examination of soils. The nitrifying organisms and the relationship of bacteria to soil fertility are discussed. Required of seniors in the Agricultural Course who elect a major in Agronomy; elective to others. Three hours a week during the first term.

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CHEMISTRY.

Professor Widtsoe.
Assistant Professor Yoder.

1. General Chemistry. Required of sophomores in the Commercial Course and of freshmen in all other courses. Five hours a week throughout the year. Recitations, T., Th., S., at 9; laboratory, T., Th., S., from 2 to 3:40.

(a) Elementary Chemistry: This course deals with the important facts and fundamental theories of chemistry, and with the applications of chemistry in the arts and manufactures. The laws of chemical combination; the writing of reactions, and the solving of stoichiometrical problems are given special, careful consideration. Students taking this course must also take courses 1 (b) and 1 (c).

(b) Elementary Practical Chemistry: This course supplements Chemistry 1 (a) and furnishes the necessary practical preparation for qualitative analysis. The non-
metallic elements, mainly, are studied with reference to their combinations with each other; their reactions are verified, and the facts and theories of the lecture room are tested by experiments.

(c) **Qualitative Analysis:** This course runs parallel with and supplements the descriptive study of the metals and their compounds. Under the direction of the instructor the students apply with their own hands the reagents necessary to determine the composition and properties of chemical compounds. They thus gain a practical knowledge of the methods of chemical analysis and manipulation. Each student is required to analyze and report on a number of unknown substances. This work is deemed extremely important from an educational as well as from a practical point of view.

2. **Organic Chemistry.** This course consists of a brief survey of the more important reactions and compounds of the fatty and aromatic series of hydrocarbons and their derivatives, together with a full discussion of the nature and influence of molecular structure. Opportunity is given the student to prepare a number of organic compounds which illustrate in their preparation the methods of work of the organic laboratory. Required of juniors in the Domestic Science Course. Three hours a week throughout the year.

3. **Agricultural Chemistry.** This course consists of lectures and assigned readings on the chemical problems of agriculture. The aim is to make the student familiar with our present knowledge of the composition of the plant; the sources of plant food; the composition of the animal; the principles of animal nutrition; and the chemical nature of soils, waters, dairy products, etc. In the laboratory are taught the methods of agricultural analysis. Required of juniors in the Agricultural Course. Three hours a week throughout the year.

4. **Chemistry of Foods and Cookery.** In this course, foods and methods of cooking are studied experimentally,
with especial reference to human nutrition. The common foods, both animal and vegetable, are separated by physical and chemical means, into their constituents, after which the effects of different methods of cooking upon the various constituents are investigated. Wine, beer, tea, coffee, milk, and other drinks are also examined, and separated into their constituent parts. Spices and condiments are studied with the especial purpose of learning simple methods for the detection of the common adulterants. Some attention is also given to the effect of different kinds of heating apparatus upon the chemical changes that take place during cooking. Required of seniors in the Domestic Science Course; elective to others. Two hours a week throughout the year.

5. Quantitative Analysis. This is mainly a laboratory course, giving the student practice in the typical methods of proximate and ultimate quantitative chemical analysis. It aims also to give, in familiar talks, a due appreciation of the importance of accuracy in chemical work, and of the relation of quantitative analysis to theoretical chemistry. After the necessary introductory practice, samples of waters, soils, ores, agricultural products, and foods are analyzed and reported upon. The work of the Experiment Station chemical laboratory furnishes a good opportunity for the study of methods of analysis. Elective to those who have completed Course 1.

6. Research Work. The laboratories of the College and the Experiment Station are open to students, with the necessary preparation, who desire to pursue special independent studies in the domain of chemistry. The researches carried on by the chemical department of the Experiment Station are of great aid to students who are engaged in the solution of scientific problems. Elective to those who have completed courses 2 and 5.
AGRICULTURAL COLLEGE OF UTAH.

GEOLOGY AND MINERALOGY.

MR. PETERSON.

1. General Geology. The instruction given is intended to familiarize the student with the physiographic changes now in progress and the agencies which produce them, with the origin and structure of the various materials composing the earth's crust, and with the chronological succession of the great formations. Work in paleontology with a careful study of the development of the continent from the earliest geological time comprises most of the second term's work. Several field trips are made for the purpose of demonstrating the principles of dynamical and structural geology and to collect and study some of the many fossils in which our ledges abound. Required of juniors in the Agricultural Course; elective to others. Three hours a week throughout the year.

2. Structural Geology. The work in this course consists of a study of the earth's crust with respect to the actual arrangement of the materials composing it; the source, classification, and characteristics of stone, used as building material, with some stress laid upon stratification, cleavage, disintegration, etc., as it may affect the work of the engineer. Each principle is supplemented by field and laboratory work. Required of juniors in the Civil Engineering Course. Three hours a week throughout the year.

3. Economic Geology. The object of the course is to give the students some idea of the mineral resources of the United States, together with the mode of occurrence and importance of the non-metallic materials of economic value. Much of the information is taken from the reports of the United States Geological Survey. Elective to students who have completed Courses 1 and 2, and Chemistry 1.

4. Mineralogy. This course is a systematic study
of the common minerals with some of the general principles of ore deposition. Some stress is laid upon the minerals produced in the state. Blow-pipe analysis and determinative mineralogy constitute the laboratory work. Required of seniors in the Agricultural and Domestic Science Courses. Two hours a week during the first term.

5. ASSAYING. The dry and wet methods of assaying for the common metals are outlined, and much practice is given in the actual work with specimens from widely different localities. Elective to students who have completed or are taking Course 4.

METEOROLOGY.

ASSISTANT PROFESSOR DRYDEN.

1. METEOROLOGY. This course includes an elementary study of air pressure, humidity, temperature, rainfall, evaporation, wind velocity, theory of storms, methods of forecasting, and a general study of the United States Weather Service, with special reference to the relation of climate to health and to agriculture. The reading of the weather instruments in use at the College is made a part of the work. Required of sophomores in the Agricultural and Domestic Science Courses. Two hours a week during the second term. W., F., at 9.

[The College receives the telegraphic weather forecasts from the forecast official of the Department of Agriculture located at San Francisco. The forecasts are telegraphed each day (Sundays and holidays excepted) at government expense. The signal flags are displayed from the flagstaff of the College in full view of the valley below. These forecasts or warnings are of great value to the farming community. In 1893 the percentage of verifications of the fore-
casts of the Pacific coast division was 83.7. For Utah, which is part of this division, the percentage was likewise 83.7. Great value is placed upon these forecasts by the Department of Agriculture at Washington. From their timely warnings much property is saved both on sea and land. The Department considers that $10,000,000 is a conservative estimate of the value of property saved in 1895. Doubtless some means will be devised in the near future whereby these forecasts will be made more accessible to the farming community. An explanation of the flag signals is shown on the third page of the cover.

PHYSICS.

PROFESSOR SNOW.

1. ELEMENTARY PHYSICS. The object of this course is to enable every student to obtain a practical acquaintance with laboratory methods of work, and with the elementary facts and laws which are the foundation of the science and physics. The lectures are illustrated by experiments performed by the instructor, and numerous problems are worked in and out of class. The laboratory work consists of about forty-five experiments, chiefly quantitative, performed by each student. Hall and Bergen's Text Book of Physics. Required of sophomores in the Domestic Science Course, and of freshmen in all other courses. Three hours a week throughout the year. Recitations, W., F., at 9; laboratory, W., F., from 2 to 3:40.

2. GENERAL PHYSICS. This is a more advanced course than Physics 1. Stress is laid on the subjects of mechanics, heat, and electricity. Hastings and Beach's General Physics. Required of sophomores in the Civil Engineering and Mechanical Engineering Courses; elective to others. Three hours a week throughout the year.
3. **Electrical Measurement.** This course is arranged for those students in the General Science Course who elect Physics as a major. Elective to students who have completed Course 2, and Mathematics 5. Three hours a week throughout the year.

4. **Thermometry and Physical Optics.** This course is arranged for those students in the General Science Course who elect Physics as a major. Elective to students who have completed Course 3 and Mathematics 5. Four hours a week throughout the year.

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**MATHEMATICS AND ASTRONOMY.**

President Kerr.

Assistant Professor Langton.

Mr. Peterson.

The elective courses in mathematics are not all given each year, but vary from year to year to suit the convenience of students who desire to specialize in mathematical science. Any elective course not applied for at the beginning of the year by at least three students properly prepared may not be given. If applied for by the requisite number of students, additional courses in quaternions, determinants, theory of equations, projective geometry will be given.

1. **Arithmetic.** This course consists of a thorough treatment of elementary arithmetic, based on Cook and Cropsey’s *Lessons in Arithmetic*, supplemented by many practical problems. Required of all students in the Preparatory Course, and of first year students in the Manual Training courses in Mechanical Arts and Domestic Arts. Five hours a week throughout the year. Four sections: section 1, daily, at 12:20; section 2, daily, at 2; section 3, daily, at 9; section 4, daily at 9:50. Mr. Peterson.

2. **Arithmetic and Algebra.** Required of second
year students in the Manual Training Course in Mechanic Arts, third year students in the Manual Training Course in Domestic Arts, and first year students in all other courses. Five hours a week throughout the year. Four sections: section 1, daily, at 10:40, Assistant Professor Langton; section 2, daily, at 9, and section 4, daily, at 2, Professor Gowans; section 3, daily, at 9:50, Assistant Professor Merrill.

(a) Advanced Arithmetic: Special attention is given to the nature, origin, and development of number. The class recitation hour is devoted to thorough consideration of the fundamental processes of arithmetic, including contracted methods of multiplication and division, common and decimal fractions, factors and multiples, mensuration, the metric system of weights and measures, square and cube root, proportion, percentage and interest, and practical problems. Wells's Academic Arithmetic. First term.

(b) Algebra: This course includes a thorough treatment of the fundamental operations, use of parentheses, factoring, highest common factor, lowest common multiple, fractions, and simple equations. Wells's Essentials of Algebra. Second term.

3. ALGEBRA, GEOMETRY. Required of third year students in the Commercial Course and the Manual Training Course in Mechanic Arts, and of second year students in all other courses, except the Manual Training Course in Domestic Arts. Five hours per week throughout the year. Two sections: section 1, daily, at 9:50; section 2, daily, at 9. Assistant Professor Langton.

(a) Higher Algebra: After a brief review of the subjects treated in course 2 (b), the following subjects are considered: Simple equations, inequalities, involution and evolution, theory of exponents, radicals, quadratic equations, ratio and proportion, progressions, and binomial theorem. Wells's Essentials of Algebra. First term.

(b) Plane Geometry: This course includes the gen-
eral properties of regular polygons, their construction, perimeters, and areas; regular polygons and circles, with problems for construction; maxima and minima; and methods for determining the ratio of the circumference to the diameter. Wells’s *Plane Geometry*. Second term.

4. **Geometry, Algebra, Trigonometry.** Required of sophomores in the Agricultural, Domestic Science, and Commercial courses; of freshmen in all other courses. Five hours a week throughout the year. Daily, at 12:20. Assistant Professor Langton.

   a) *Solid Geometry:* Philips and Fishers’ *Geometry*. First third of year.

   b) *Advanced Algebra:* This course is based on Wells’s *College Algebra*, and includes a thorough drill in the most important principles of higher algebra required in the engineering and other courses. Second third of year.

   c) *Trigonometry:* The deduction of general trigonometric formulæ, the solution of plane and spherical triangles, and practice in the use of logarithmic tables. Wells’s *Trigonometry*. Last third of year.

5. **Analytic Geometry, Calculus.** Required of sophomores in the engineering courses; elective to others who have completed Course 4. Five hours a week throughout the year. Professor Snow.

   a) *Analytic Geometry:* The analytic geometry of the straight line, the circle, and the conic sections, including a discussion of the general equations of the second degree, and some special examples in transcendental and higher plane curves.

   b) *Differential Calculus:* The development of the fundamental principles and formulæ of the differential calculus; applications to various problems in plane geometry and analysis, such as indeterminate forms, maxima and minima, curvature, expansions of functions in series, evolutes and involutes, and curve tracing.

   c) *Integral Calculus:* Integration of various forms; development of the formulæ of the integral calculus; ap-
plication in rectification of curves, quadrature of plane and curved surfaces, cubature of volumes, etc.

6. **Descriptive Geometry.** The representation of problems, and the solution of problems relating to geometrical magnitudes in space, including orthographic projections and development; projections of plane and solid figures; curved surfaces and tangent planes; shades and shadows; construction of maps; solutions of problems relating to geometrical magnitudes. Required of sophomores in the engineering courses. Two hours a week throughout the year. Professor Jenson.

7. **Differential Equations.** This course is arranged to meet the special requirements of engineering students, and includes a treatment of the theory and methods of the solution of total differential equations, with a short introduction to partial differential equations. Required of juniors in the engineering courses. Three hours a week during the first term.

8. **Modern Geometry.** This course treats the most important theorems and examples connected with harmonics, anharmonics, involution, projection (including homology) and reciprocation, including the following: Harmonic ranges and pencils; conics and focal projections; anharmonic ratios; homographic ranges; anharmonic properties of points on a conic, of tangents of a conic; poles and polars, reciprocation; properties of triangles; Pascal’s and Brianchon’s theorems; homographic ranges on a conic; ranges and pencils in involution; involution of conjugate points and lines; involution range on the conic, of a quadrangle, of a quadrilateral; constructions of the first and second degree; the principle of continuity; circular points and lines; real and imaginary projection, generalization by projection, and homology. Cremona’s *Projective Geometry*, Russell’s *Treatise on Pure Geometry*, and Lachlan’s *Modern Pure Geometry*. Elective to those who have completed Course 5. Five hours a week throughout the year.
9. **Plane and Solid Analytical Geometry, Advanced Course.** This course includes the equations and properties of the point, right line, and plane, of the sphere, cylinder and cone, and of the paraboloids, ellipsoids, and hyperboloids; the modern algebraical methods of the conic sections; a short discussion of the general theory of higher plane curves and surfaces; applications of the differential and integral calculus to problems involving functions of two or more variables, such as development in series and transformation of functions, curvatures, areas of surfaces, volumes of solids, etc. The work of this course will consist in the discussion of portions of Salmon's *Conic Sections, Higher Plane Curves, and Analytic Geometry of Three Dimensions.* Elective to students who have completed Course 5. Five hours a week throughout the year.

10. **Differential and Integral Calculus, Advanced Course.** This course embraces the elements of the theory of functions of imaginary variables; the various methods of integration, systematically treated; the elements of the theory of the elliptic functions; the mechanical and geometrical applications of the calculus treated more fully than in Course 5; and some of the more important cases of Differential Equations. Todhunter's *Differential Calculus* and Williamson's *Integral Calculus.* Elective to students who have completed Course 9. Five hours a week throughout the year.

11. **History and Philosophy of Mathematics.** This course deals with the origin, development, and logical relation of the various subjects of mathematical science, including a series of synoptic lectures, which may be roughly outlined as follows: Mathematics among the ancients; Descartes and the discovery of analytic geometry; Newton, Leibnitz, and the calculus; Hamilton and the invention of quaternions; modern geometry; mathematics and mathematicians of the United States. Ball's *History of Mathematics,* Comte's and Bledsoe's *Philosophy of Mathematics,*
the *Encyclopædia Britannica*, and other works of reference. Elective to students who have completed Course 9. One hour a week throughout the year.

12. **General Astronomy.** This course deals with the general facts and principles underlying the science of astronomy, with solutions of many problems, particularly those relating to the determination of latitude, longitude, and time. Instruction is given by means of recitations and lectures. Young's *General Astronomy*. Elective to students who have completed Course 4. Two hours a week throughout the year.

13. **Practical Astronomy.** A continuation and completion of Course 12. Theory and use of instruments—sextant, transit instrument, zenith telescope, and equatorial; various methods of determining longitude and latitude; graphical methods of predicting eclipses, etc. Doolittle's *Practical Astronomy*; Clarke's *Geodesy*. Elective to those who have completed courses 5 and 12. Two hours a week throughout the year.

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**ENGLISH LANGUAGE AND LITERATURE.**

**Professor MacEwan.**

Mr. Caine.

Mr. Hill.

Miss Moench.

Miss Baker.

1. **Grammar and Composition I.** This work includes orthography; the parts of speech; the construction, analysis, and punctuation of easy sentences; the correction of common errors in language; and the writing of brief compositions. The written work is in part suggested by the text book, and in part correlated with the lessons in reading
and in geography. Hyde's *Lessons in English, Second Book*. Required of all preparatory students. Five hours a week throughout the year. Four sections: section 1, daily at 9:50, and section 4, daily at 2, Mr. Hill; section 2, daily, at 9, and section 3, daily at 12:20, Mr. Caine.

2. **READING AND SPELLING.** The following books are read: *The Lady of the Lake, The Sketch Book, The Vicar of Wakefield, Pope's Homer's Iliad, I, VI, XXII, XXIV, The De Coverly Papers, The Merchant of Venice, Silas Marner*. The purposes of the work are the acquisition of a vocabulary, a knowledge of the contents of the books, and correct oral expression. Written summaries and reproductions are required, and due attention is given to spelling. *Student's Series of English Classics; Handy Edition*. Required of all preparatory students. Five hours a week throughout the year. Four sections: section 1, daily, at 9, and section 3, daily at 2, Miss Baker; section 2, daily, at 9:50, and section 4, daily at 12:20, Miss Moench.

3. **GRAMMAR AND COMPOSITION II.** This is more advanced work in grammar and composition. The grammar work includes a fairly complete study of etymology; the chief facts of syntax; and the construction, analysis, and punctuation of more difficult sentences. Considerable attention is given to the correction of sentences, faulty in either syntax or arrangement. The work in composition includes all exercises suggested in the text books used, as well as essays and briefer written exercises on subjects drawn from the English classics used in reading, and from the work in United States History. Attention is also given to orthography. Hyde's *Two Book Course: Book II*, Strang's *Exercises in English*. Required of all first year students. Five hours a week throughout the year. Four sections: section 1, daily, at 9, and section 4, daily, at 12:20, Mr. Hill; section 2, daily, at 9:50, and section 3, daily, at 2, Mr. Caine.
4. READING OF ENGLISH CLASSICS. The books read are those prescribed for study and practice in the uniform college entrance requirements: Macaulay—Essay on Milton, Essay on Addison; Milton—Minor Poems, Paradise Lost, I-III; Shakespeare—Macbeth; Burke—Speech on Conciliation with America. The reading is done with reference, first, to such oral expressions as shall evince a general understanding of the thought; next, with reference to a more exact knowledge of the language—the meaning of words and sentences, the elementary qualities of style, the important allusions, and the general plan or structure of the production. Written exercises consisting of outlines, reproductions, imitations, appreciations, and comparisons are required; and fine passages are committed to memory and spoken before the class. College Entrance Requirements. Required of all first year students. Three hours a week throughout the year. Four sections: section 1, daily, at 9:50, and section 3, daily, at 10:40, Miss Baker; section 2, daily, at 2, and section 4, daily, at 9, Miss Moench.

5. RHETORIC AND LITERATURE. Required of all second year students. Five hours a week throughout the year. Two sections: section 1, daily, at 9, and section 2, daily, at 9:50. Professor MacEwan.

(a) The English Sentence. After a rapid review of etymology, considerable attention being given to the formation of the verb and grouping of verb forms, the structure of the English sentence is carefully explained. Special attention is given to the order of words and other elements, difficult constructions, idioms, and abbreviated sentences. To connect this work with literature, and to afford constructive exercises, outlines of several books of The Iliad are required, first in topics, then in simple sentences, then in sentences containing more complicated elements, and finally in connected discourse. MacEwan's Essentials of the English Sentence; Bryant's Homer's Iliad.
(b) Elementary Rhetoric. This work includes a study of all the processes of literary composition—the choice of a subject, the statement of a theme, the collecting, selecting, and arranging of material, the revising of plan and of detailed expression, as well as a study of the elements of style and of the different forms of discourse. Constructive work is required applying in both oral and written exercises, all principles studied. The preparation of manuscript for the printer is taught in connection with the written work. Weekly exercises are required especially illustrating the laws of description and narration. The Iliad, and other poems previously read, furnish material for reproduction and for the study of versification. Practical Rhetoric.

(c) Literature. The first work in literature follows the elementary rhetoric, and is a critical study of the short, complete classics, essays, poems of various kinds, speeches, sketches and stories. Enough of each author and his times is told in familiar lectures, to awaken interest, and show the occasion of the production. In this work constant reference is made to rhetorical principles, and the style of different authors is carefully compared, and both style and form are studied with reference to the thought and sentiment. Essays in description and narration are still required, along with essays on topics suggested in the study of literature. The texts vary from year to year. Satisfactory collections are Syle's *From Milton to Tennyson, Masterpieces of British Literature, Masterpieces of American Literature.*

6. Forms of Discourse. Instead of more advanced work in the general principles of style and composition, the general principles of description, narration, exposition and argumentation are studied; and to illustrate and enforce these, some masterpieces in each department are critically examined. The handbooks of English readings published by Holt & Co., furnish literature well adapted for the study of description, narration, and exposition.
Speeches of Burke and Webster furnish suitable material for the study of argumentation. Frequent oral and written exercises make the work entirely practical; and during the last ten weeks of the year, debates, written and oral, are had on questions of general interest. Baldwin's *Specimens of Prose Composition*; Brewster's *Specimens of Narration*; Lamont's *Specimen's of Exposition*; MacEwan's *Essentials of Argumentation*. Required of freshmen. Three hours a week throughout the year. T., Th., S., at 10:40.

7. **History of English Literature**: This comprises a general survey of the field of literature in English, from Chaucer to The Lake School. Sufficient attention is paid to the leading authors of the different periods to make evident the chief characteristics of their thought and style. The growth of literary forms is carefully noted, and such comparative study is made as time allows. Considerable time is given to the critical reading of such texts as illustrate typical forms, and at the same time characterize great epochs: Chaucer's *Prologue* and *Knight's Tale*; Spencer's *Faery Queen, I*, and some minor poems; Shakespeare's *Hamlet or Lear*, and *Tempest*; Bacon's *Essays*; Milton's *Paradise Lost I-IV* (review) and *Samson Agonistes*; Dryden's *Religio Laici* and *Mac Flecknoe*; Pope's *Rape of the Lock* and one *Epistle*; typical eighteenth novel; some passages from the prose satirists; characteristic poems from Burns. Much of the study is reported to the class in essays, each student presenting one biographical, and two critical essays during the year. Halleck's *English Literature*; Maynard's *English Classic Series*. Required of students in the Agricultural, Domestic Science, Commercial, and General Science courses. Three hours a week throughout the year.

8. **Literary Masterpieces**: The work of this course is the study of longer masterpieces. The work has varied from year to year, according to the preparation and demand of the students, and the convenience of the
instructor. Usually all the important forms of literature have been laid under contribution—the drama, the epic, the lyric, the novel, the essay, biographical and critical, the oration, and history—about six recitations being given to each piece selected. The work of the class room has been largely a report of students, either oral or written on what they have done by themselves. The following texts, changing somewhat from year to year, have constituted the course: Two plays of Shakespeare; Browning’s *Blot in the Scutcheon*; Byron’s *Childe Harold*; De Quincy’s *Revolt of the Tartars*; selected poems of Wordsworth, Burns, Browning, and Tennyson; George Eliot’s *Silas Marner*; Tennyson’s *Princess*; Macaulay’s and Carlyle’s *Essay on Johnson*; Carlyle’s *Essay on Burns*; Burke’s *Speech on American Taxation*; Webster’s *Reply to Hayne*; Southey’s *Life of Nelson*; Motley’s *Peter the Great*. Required of students in the Domestic Science and General Science courses; elective to others who have completed courses 1-7. Two hours a week throughout the year.

9. **NINETEENTH CENTURY AUTHORS.** A critical study is made of either Browning’s or Tennyson’s poems. Such poems are read as best exhibit the author’s genius and literary art, and at the same time afford material for the study of poetic form. Or, a comparative study is made of the poetry of Wordsworth and Byron, with occasional excursions into the poetry of Burns, Shelley, and Keats, for further comparison. *Cambridge Edition of the English Poets.* Elective to students who have completed courses 1-7. Two hours a week throughout the year.

10. **SHAKESPEARE AND THE DRAMA.** Ten plays are read, with reference to plot, structure, characterization, technique, and general literary qualities. Freytag’s *Technique of the Drama.* Hudson’s, Rolfe’s, the Arden, or other college editions of Shakespeare. Elective to students who have completed courses 1-7. Two hours a week throughout the year.
11. ELOCUTION. The principal aim in this course is to develop easy, natural readers, who will be able to express the thought of the author in a clear and impressive manner. It also includes practical work in recitation and impersonation. Each student is expected to learn and present a recitation to the class once each month, or as often as the number in the class will allow. Elective to students who have completed Course 4.

MODERN LANGUAGES.

PROFESSOR MOENCH.

The courses in modern languages are designed to give the student a technical knowledge of the German, French, and Spanish languages, sufficient to read and to speak them with facility and accuracy; to present the general facts of the literary history of each language with a detailed statement of special important epochs; and to give the student, by occasional lectures illustrated by the stereopticon, some idea of the cities, customs, and life of the people whose language is studied.

I. GERMAN.

1. ELEMENTARY Course. — Practice is had in pronunciation, and systematic drill is given in grammar with special reference to syntax. The latter part of the course is given to reading Schiller’s *Das Lied von der Glocke* and about 150 pages of easy prose, with special reference to scientific matters. Optional with French or Spanish in the Commercial Course, and with French in all other college courses. Three hours a week throughout the year.

2. INTERMEDIATE Course. A scientific reader is used; and Schiller’s *Wilhelm Tell*; Lessing’s *Minna von Barn-
helm and Nathan der Weise are read, in connection with German composition. Optional, as Course 1. Three hours a week throughout the year.

3. Advanced Course. Scientific reading, and the reading of Goethe's Faust, will be accompanied with essays on literary and philosophical subjects suggested by the reading. Conversation is practiced through the entire three years and is made a feature of importance. Elective to those who have completed courses 1 and 2. Three hours a week throughout the year.

II. FRENCH.

1. Elementary Course. An outline of the essentials of French grammar is given along with exercises on pronunciation; translations are made from French into English and from English into French; easy prose selections are read from representative writers. Optional with German or Spanish in the Commercial Course, and with German in all other college courses. Three hours a week throughout the year.

2. Advanced Course. Scientific readers and other reading matter are used, with readings from the various classic authors, as Corneille, Racine, and Molière. Conversation is made a marked feature. Optional, as Course 1. Three hours a week throughout the year.

III. SPANISH.

1. Elementary Course. Considerable time is given to the colloquial Spanish. The close relations of the United States with Central and South America and the various islands where Spanish is spoken, have increased the value of a speaking knowledge of this language. The essentials of Spanish grammar are taught; readings are selected from Spanish authors, and are made the basis of
conversation. Optional with German or French in the Commercial Course. Three hours a week throughout the year.

2. ADVANCED COURSE. The more advanced work includes business correspondence, commercial terms and conversation, and readings from Spanish newspaper and magazine articles of the day. Open to those who have completed Course 1. Three hours a week throughout the year.

HISTORY AND CIVICS.

PROFESSOR ENGLE.

The purpose of this department is to arouse interest in historical investigation, to prepare for citizenship, to give information concerning the structure and mechanism of industrial society, to stimulate students to engage in research work, and to lead them into correct methods of investigating historical, sociological, and governmental problems.

1. UNITED STATES HISTORY. This course includes a study of the social life, political parties, territorial expansion, biography of leading characters, industrial development, military history, and historical literature of the United States. Lectures are given upon text book topics that need fuller elucidation. Reading in the library is encouraged; written reviews on historical works are required. Concurrent and contemporaneous history receive proper attention. Fiske's *United States History*. Required of first year students in the Engineering Preparatory, and Domestic Science courses, and of third and fourth year students in the Manual Training courses in Mechanic Arts, and Domestic Arts, respectively. Three hours a week throughout the year. Four sections: section 1, T.,
Th., S., at 2; section 2, W., F., at 10:40, Th., at 2:50. section 3, T., F., S., at 9; section 4, W., Th., F., at 9:50.

2. General History. In this course a brief outline is given of the world's history. The history of Oriental nations, Greece, Rome, the Middle Ages, and Modern Europe is considered. The origin and development of religions, political institutions, art, philosophy, education and laws, and social life receive proper attention. Limited and well defined impressions are sought after. The work is supplemented by appropriate lectures. Great and overshadowing events receive proper emphasis. Swinton's *Outlines of the World's History*. Required of second year students in the Manual Training Course in Domestic Arts, the Commercial Course, and the Engineering Preparatory Course. Three hours a week throughout the year. Two sections: section 1, T., Th., S., at 10:40; section 2, T., Th., F., at 12:20.

3. Civil Government. This course deals with the science of government. Origin, development, and changes in governmental institutions are carefully studied. Comparative views are taken. The evolution of civil government in the United States receives a large share of attention. Our local institutions are shown to have their origin far back in English history. This course is closely correlated with American history. Required of students in the Commercial and General Science courses. Two hours a week throughout the year. W., S., at 12:20.

4. Economics. Production, distribution, and exchange of wealth are the leading topics in Economics. They are presented in such a manner as to throw light upon the practical problems of commercial and agricultural life. Questions relating to finance, banking, and exchange receive a discussion wholly of a scientific nature. This course is closely correlated with industrial history. Bullock's *Introduction to Economics*, and the *Ashley Series*. Required of juniors in the Agricultural and Commercial courses. Three hours a week throughout the year in the
Agricultural Course, and five hours a week during the second term in the Commercial Course.

5. **Sociology.** This course presents a fundamental discussion of the elements of society—their origin, growth, relations, and interactions. The mechanism of society as it appears in modern times is typically discussed. Celebrated theories of society are briefly reviewed. Among the points emphasized are social composition, social constitution, and the principle of association. Small and Vincent's *Sociology*. Required of juniors in the Commercial Course. Five hours a week during the first term.

6. **Industrial History of the United States.** United States history is here reviewed solely as an outgrowth of inventions, manufactures, commerce, and navigation. The effect of inventions upon industrial activity and civilization in general is traced with care. The Civil War is explained as an outgrowth of conflicting industrial systems. Wright's *Industrial History of the United States*. Elective to those who have completed courses 1, 2, and 3. Three hours a week during the first term.

7. **Constitutional American History.** The work in this subject includes the evolution and interpretation of our national constitution, the relation of the commonwealth constitutions to our national government, governmental forms as they develop from early colonial activity, and the relative value of written and unwritten constitutions. Supreme court decisions as influencing the course of our government are studied. Thorpe's *Constitutional History*. Elective to those who have completed courses 1, 2, and 3. Three hours a week during the second term.

8. **English History.** This is distinctively an advanced course. Much preparative work is required. Racial characteristics, literary development, constitutional growth, social life at different stages, English conservatism, origins, contributions, colonial system, art,
architecture, poor laws, and pauperism, are some of the topics that are discussed. One chief aim in this course is to teach the philosophy of history concretely. Research work is made an important feature. Suggestive texts: Gardiner's *History of England*; Droysen's *Principles of History*; Green's *Shorter History of England*. Elective to those who have completed courses 1 and 2. Three hours a week throughout the year.

9. **Philosophy of History.** This course deals with causal relations, fundamental principles, comparative discussions of civilizations, historical values, relation of geography and history, historical sources, and appropriate tests of the truthfulness of facts. Droysen's *Principles of History*. Elective to those who have completed courses 1, 2, and 3. Three hours a week during one term.

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**DRAWING.**

**Miss Richards.**

The work in drawing is varied to meet the needs of the several classes for whom it is designed.

1. **Free Hand Drawing I.** Required of all first year students in the Agricultural and Engineering Preparatory courses. Two hours a week throughout the year. Two sections: section 1, (1,2) daily, at 12:20; section 2, (3,4) daily, at 2:50.

   (a) **Elementary:** This work embraces drawing in outline and in mass from simple casts and objects, particular attention being paid to proportion and the simple rules of perspective; the history of art and architecture; sketching in pencil and charcoal from life and objects; the history of painting and the study of composition. First term.

   (b) **Advanced:** This embraces more advanced work
in light and shade, drawing from full figure casts, modeling in clay, sketching in pencil and charcoal, the students making sketches to bring to class; work in color by students who have attained reasonable efficiency in drawing. Second term.

2. **Free Hand Drawing II.** Required of second year students in the Manual Training Course in Mechanic Arts. Two hours a week throughout the year. Daily, at 2.
   
   (a) *Elementary:* This includes drawing in outline and mass from simple casts and objects, as in Course 1 (a); the history of art and architecture, its relation to the industrial arts; the study of industrial design. First term.
   
   (b) *Advanced:* The same work is given in light and shade, drawing, modeling, and sketching, as in Course 1 (b). Original work in design is an important feature of the course.

3. **Free Hand Drawing III.** Required of third year students in the Domestic Science Course. Two hours a week throughout the year. Daily, at 9.
   
   (a) *Elementary:* This includes drawing in outline and mass, as in Course 1 (a); the history of art, architecture, and painting; the study of household decoration and the use of color. First term.
   
   (b) *Advanced:* This embraces more advanced work in light and shade, drawing, modeling, and sketching, as in Course 1 (b); dress and its relation to art; design. Second term.

4. **Mechanical Drawing I.** This course is intended as a preparation for the work which follows in the courses in engineering. It consists of a thorough drill in the elementary principles of projection, including linear perspective and the more common conventions of engineering drawing. Required of freshmen in the engineering courses who have had Drawing I. Three hours a week throughout the year. T., Th., S., at 9:50. Mr. Pulley.

5. **Mechanical Drawing II.** This is the introductory course in mechanical drawing for students taking the
Manual, Training Course in Mechanic Arts. It consists of simple projections, orthographic, isometric and oblique, and linear perspective. These are illustrated as far as possible by making working drawings of the simpler exercises of the shopwork. Required of third year students in the Manual Training Course in Mechanic Arts who have completed Course 2. Two hours a week throughout the year. W., Th., F., at 12:20. Mr. Pulley.

6. Drawing and Design. In this course the work is adapted to the line of shopwork which the student is pursuing. It is intended to give practice in design with consideration for proper proportion for strength as well as for aesthetic qualities. In this course the student is expected to make his own designs for his work in the shops. Required of fourth year students in the Manual Training Course in Mechanic Arts who have completed Drawing 4 or 5. Three hours a week throughout the year. T., Th., S., at 10:40. Mr. Pulley.

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Psychology.

In this course the life of the normal individual is considered. Especial attention is given to those problems that have a living interest for the student, and find illustration in his every day life. The principal topics discussed are the relation of mind and body, habit, attention, memory, imagination, association of ideas, instinct, reasoning, emotion, will, and time and space phenomena. Elective in the General Science Course.

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Geography.

Assistant Professor Robinson.

To get an intelligent conception of the natural resources of countries, the physical features receive special
attention. Astronomical and geological features are presented as far as the course will permit. The principal changes that have wrought the present conditions are studied and the atmosphere and water receive attention. Map drawing and frequent reviews are features of the course. Commerce and its effect upon nations are considered, as are also the classifications of mankind, animals, and plants. Required of all students in the Preparatory Course, and of first year students in the Manual Training Course in Mechanic Arts. Five hours a week throughout the year. Four sections: section 1, daily, at 2; section 2, daily, at 12:20; section 3, daily, at 10:40; section 4, daily, at 9.

MILITARY SCIENCE AND TACTICS.

All male students of the College, except those physically disabled, are required to take two years' work in the military department. The government furnishes Springfield cadet rifles and equipment for infantry drill, and two three-inch rifled cannons for artillery instruction. A uniform, consisting of campaign hat, dark blue blouse, light blue trousers, and white regulation gloves must be worn by the cadets. Arrangements have been made for obtaining this uniform through the Secretary of the College at actual cost. The cost of the uniform is about $13.50. All students of the College taking drill are required to obtain the prescribed uniform, which must be worn upon all occasions of drill, or when students are receiving any other military instruction.

The attention of students intending to enter College is called to the fact that this uniform has been found more serviceable than a suit of civilian clothes of the same price, and students are required to make arrangements so as to be able to order this uniform when they enter.
Twice a week throughout the year, the officers of the department meet for discussion of matters relating to military work, and for recitations in the United States Infantry drill regulations.

1. **INFANTRY DRILL.** This includes all the movements described in the drill regulations of the U. S. Army, from the gymnastic instruction in the setting-up exercises, the school of the soldier, the bayonet exercise, to the drill by company and battalion; exercise in estimating distances by sign and also by sound; target practice with rifle, for which the government makes an annual allowance of ammunition; instruction in signaling with flag, and in military telegraphy.

2. **ARTILLERY DRILL.** This embraces drill in the manual of the piece, and target practice when practicable.

3. **CALISTHENICS.** During the winter months systematic progress cannot be made in the regular drill work. The purpose of the department, during this time, is to maintain the ground already covered. With this object in view, the regular drill is given only twice a week. However, during the remainder of the time, a thorough course is given in military calisthenics. The object of this course is to give the cadets a healthy body with a proper military carriage. Required of all cadets.

4. **THEORETICAL INSTRUCTION.** During the second term of the second year, a systematic course is given in military science, by means of lectures. The following texts are used in this course: Califf’s *Notes on Military Science*; Hamilton’s *Elementary Principles Connected with the Art of War*; Wagner’s *Tactics*.

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**PENMANSHIP.**

**MR. MAUGHAN.**

The course in penmanship consists of blackboard and
individual instruction. Required of all students in the Preparatory Course, and of first year students in the Manual Training courses in Mechanic Arts and Domestic Arts. Two sections: section 1(1, 2), daily, at 10:40; section 2 (3, 4), daily, at 2:50.

VOCAL MUSIC.

Mr. Mitton.

A chorus of mixed voices, and also a male chorus, is organized, composed of all students who wish to join; and instruction in choral work of a high order is given. Every effort is made to cultivate a taste for music and to assist the students in acquiring a knowledge of the same. A military band will be organized at the beginning of the year and arrangements will be made for regular instruction and practice.

PHYSICAL CULTURE.

Miss Moench.

The chief aim in this department is not so much to develop muscle as to relieve the mental strain. Special attention, however, is given to any desiring a course for development or to overcome physical defects.

The exercises consist of military, fancy and calisthenic marching; Swedish and free gymnastics; light and heavy work with apparatus; Indian clubs, dumb-bells, wands, pulley weights, rings, parallel and horizontal bars, ladder, ropes, horse, etc.
Library and Museum Accessions.

Library Additions.

Among those to whom the Library is indebted for books and other favors received during the year 1900-1901 are: Hon. J. L. Rawlins, Hon. F. J. Cannon, Hon. W. H. King, Hon. Thomas Kearns, Hon. George Sutherland, Professor J. F. Engle, the several National Departments and Bureaus at Washington, and colleges and universities of the United States and Canada.

In addition to local and state newspapers, sent to the College through the courtesy of the publishers, and a large number of periodicals received at the Experiment Station library in exchange for the publications of the Station, the following magazines are placed in the reading room upon subscription:

LITERARY MAGAZINES.

Contemporary Review.  Journal of Education.
Cosmopolitan.  Literary Digest.
Critic.  Literary News.
Dial.  Literary World.
Education.  Nineteenth Century.
Fortnightly Review.  Outlook.
SCIENTIFIC AND TECHNICAL MAGAZINES.

American Gardening.
American Kitchen Magazine.
American Machinist.
American Historical Review.
American Naturalist.
American Veterinary Review.
Art Education.
Botanical Gazette.
Breeder's Gazette.
Cabinet Maker and Upholsterer.
Carpentry and Building.
Country Gentleman, The
Dietetic Magazine.
Electrician.
Engineering Magazine.
Farmer's Magazine.
Forester.
Good Housekeeping.
House Beautiful, The

Johns Hopkins University Studies.
Journal of American Folk Lore.
Journal of Association of Engineering Societies.
Machinery.
Nature.
Political Science Quarterly.
Popular Science Monthly.
Quarterly Journal of Economics.
Sanitarian.
School Review.
Science.
Scientific American—Supplement.
Studies in Historical and Political Science.
Werner's Magazine.
Alumni Association.

The Alumni Association was organized in June, 1899. All those who hold degrees in any of the courses of the College are eligible to membership. In the first two classes, three students were graduated with the degree of Bachelor of Civil Engineering (B. C. E.) Since 1895, five prescribed courses have been offered, but the degree in each has been Bachelor of Science (B. S.), the particular course being specified in the diploma.

OFFICERS FOR 1901-1902.

WILLIAM H. HOMER, '00, President.
W. W. McLAUGHLIN, '96, First Vice-President.
MAMIE SMITH, '97, Second Vice-President.
MATTIE STOVER, '01, Secretary.
OSBORNE WIDTSOE, '97, Treasurer.

CLASS OF 1900.*

Crawford, Stanley.................. Manti.
Fleming, Burton Percival.......... Logan.
Homer, Rose....................... Oxford, Idaho.
Jensen, Joseph William............. Newton.
Maughan, Elizabeth Collins....... Petersboro.
Nelson, William................... Newton.
Taylor, George Francis............ Plain City.

*Former classes were announced in Catalogue for 1900-1901.
Eighth Annual Commencement.

GRADUATES, 1901.

WITH DEGREES.

Blanche Cooper, (General Science in Domestic Science) ............... McCammon, Idaho.
Esther Catherine Evans, (General Science) ......................... Malad, Idaho.
Mary Almeda Perry, (General Science) ............................. Vernal.
Charles Bailey Smith, (General Science in Civil Engineering) . Boise, Idaho.
Mattie Evangeline Stover, (General Science) ........................ Logan.

WITH CERTIFICATES.

Loyal Tarbet, (Manual Training Course in Mechanic Arts) .... Logan
Catalogue of Students.

SENIORS.
Cooper, Blanche .................. McCammon, Idaho.
Evans, Esther ................... Malad, Idaho.
Perry, Almeda ................... Vernal.
Smith, Charles Bailey ........... Boise, Idaho.
Stover, Mattie Evangeline ...... Logan.

JUNIORS.
Bithell, Joseph James .......... Salt Lake City.
Brown, Charles Franklin ....... Loa.
Holmgren, Amanda .............. Brigham City.
Irvine, Robert Leo ............. Logan.
Morgan, Samuel Perry .......... Franklin, Idaho.
Stewart, Robert ............... Plain City.

SOPHOMORES.
Caine, John Thomas ............. Logan.
Christensen, George A .......... Newton.
Howell, Joseph Maughan ........ Wellsville.
Maughan, Alice Farnes .......... Petersboro.
Maughan, Josephine Farnes ...... Petersboro.
Maughan, May ................... Logan.
Merrill, Ambrose, Pond .......... Richmond
Merrill, Preston Reynolds ...... Richmond.
Nebeker, Aquilla Chauncey ...... Laketown.
Parker, Harry Cooper ........... Wellsville.
Santschi, Eugene .......... Castle Gate.
Webster, Ella Lillian .......... Montpelier, Idaho.

FRESHMEN.

Adams, Hugh Robert .......... Logan.
Beckstead, Bertie .......... Swan Lake, Idaho.
Bennett, Harry ............ Blackfoot, Idaho.
Caine, Blanche Elsie .......... Logan.
Cannon, Read Tenney .......... Salt Lake City.
Cooper, Coral .............. McCammon, Idaho.
Crawford, Edmund .......... Manti.
Crozier, Harry Cullen .......... Point Lookout.
Davis, Richard Bowen .......... Cherry Creek, Idaho.
Duncan, Leonard Ellsworth .......... American Fork.
Egbert, Samuel Leroy .......... Logan.
Goodwin, Sarah Logan .......... Logan.
Greaves, Joseph Eames .......... Preston, Idaho.
Hess, Charles E ............. Georgetown, Idaho.
Hunsaker, Israel, Jr .......... Honeyville.
Hunsaker, Orpha .......... Honeyville.
Jacques, Norman Albert .......... Logan.
Jardine, William .......... Cherry Creek, Idaho.
Lish, Emma .......... Deweyville.
Lowe, Millie .......... Franklin, Idaho.
McCausland, Charles Arthur .......... Logan.
Marshall, Harvey M .......... Logan.
Maughan, Ella .......... Logan.
Neilson, Neils Peter .......... Logan.
Patterson, Joseph Peter .......... Bloomington, Idaho.
Paulson, Nels Peter .......... Logan.
Pierce, Eugenio Snow .......... Brigham City.
Reeder, Aletha ................................ Hyde Park.
Reeder, Nettie ................................ Hyde Park.
Schvaneveldt, Alonzo .......................... Preston, Idaho.
West, Frank L .................................. Ogden.
West, Ray B .................................... Ogden.

**SPECIAL.**

Benson, Joseph ................................. Logan.
Brown, Alexander .............................. Lanark, Idaho.
Brown, George .................................. Lanark, Idaho.
Christensen, Florence ........................ Newton.
Clark, Edward John ............................. King.
Cohn, Max David ................................ Oneida, Idaho.
Cooper, Robert McEwan ....................... Nephi.
Eames, Ezra ..................................... Logan.
Elsinore, James Austin ...................... American Fork.
Farrell, Vendla ................................ Logan.
Fryar, Allen Porter ............................ Soda Springs, Idaho.
Groesbeck, Marion ............................. Logan.
Groesbeck, Susie ............................... Logan.
Hansen, Corinne ................................. Salt Lake City.
Hansen, Nellie Page ........................... Logan.
Hellewell, George Edward .................... Downey, Idaho.
Hellewell, Mary Ann ........................... Downey, Idaho.
Holmgren, Lydia ................................. Brigham City.
Janes, May ....................................... Hyrum.
Knox, Eva ........................................ Logan.
Lafount, Elsie Edith ........................... Logan.
Loughney, Clarence ............................. Ogden.
Moore, Harvey L ............................... Syracuse.
Nebeker, Ella .................................... Logan.
Nebeker, Myrtie ................................ Sigurd.
Parkinson, Albert H ............................ Franklin, Idaho.
Parkinson, Leonard G .......................... Franklin, Idaho.
Rawson, Elsa Sabre ............................. Kanesville.
Rossiter, Ernest Crabtree .................... Providence.
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<tr>
<td>Sullivan, Julia Melvina</td>
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Harrison, Eliza ................. Liberty, Idaho.
Hellewell, James Burrup .......... Downey, Idaho.
Hepworth, James Edward .......... Salt Lake City.
Hillhouse, Robert William ....... Rockland, Idaho.
Hiltbrand, John ................ Logan.
Howard, Edward Lorenzo ....... Rockland, Idaho.
Howard, Lila .................. Rockland, Idaho.
Howell, Sarah Hettie .......... Yost.
Jacobson, Marie Caroline ....... Cokeville, Wyoming.
James, Robert Henry .......... Logan.
Jardine, James Tertious ....... Cherry Creek, Idaho.
Johanson, James William ....... Morgan.
Johnson, Hans Chris ............ Bancroft, Idaho.
Jones, Archie Taylor ........... Dayton, Idaho.
Kerr, William Horace .......... Logan.
Knox, John Gatlin .............. Logan.
Long, Walter J ................ Hebron, Nebraska.
Loughney, Blanche .............. Ogden.
Lowe, Laura ................... Franklin, Idaho.
Lundberg, Fred L ............... Logan.
McGregor, James Davis ......... Perry, Idaho.
McGregor, William Campble .... Perry, Idaho.
McKelvey, James J ............. Houston, Idaho.
McMurray, John ................. Oakley, Idaho.
McNiel, Marian ................. Logan.
Mather, Howard Artemas ....... Salmon, Idaho.
Mathews, Alma Mahonri ......... Providence.
Merrill, Frank Thomas .......... Mapleton, Idaho.
Miller, Melvin Parley ........ Murray.
Montrose, Pearl ............... Weston, Idaho.
Montrose, Sanie ............... Weston, Idaho.
Munk, Elizabeth ............... Logan.
Nielson, Teresa ................. Preston, Idaho.
Olsen, John ................... Logan.
Olsen, Wilford .................. Weston, Idaho.
Peery, Frank S ................ Ogden.
Peterson, Elmer George .......... Baker City, Oregon.
Peterson, Mattie Othelia ........ Smithfield.
Rawson, Martha Elizabeth ....... Ogden.
Redford, Thomas Lloyd .......... Wellsville.
Rhodes, John Fitz .............. Salt Lake City.
Robinson, Jennie Leah .......... American Fork.
Sanders, Pearl .................. Pocatello, Idaho.
Smart, Iva ........................ Franklin, Idaho.
Smith, James Henry ............ Boise, Idaho.
Sneddon, Robert ................ Diamondville, Wyo.
Stevenson, Minnie Josephine ... Plymouth.
Stewart, Ella .................... Plain City.
Stewart, Mary ................... Plain City.
Tarbet, David ................... Logan.
Taylor, Ulysses Carl ........... Willard.
Thatcher, Sarah Wooley ......... Logan.
Trevethan, Thomas .............. Salt Lake City.
Winkler, Ernest ................ Mt. Pleasant.
Wrathall, Clyde ................ Grantsville.
Yates, Lulu ..................... Logan.

MANUAL TRAINING.

MECHANIC ARTS.

Third Year.

Affleck, Adam Alonzo ............ Logan.
Archibald, Joseph Henry ......... Wellsville.
Bailey, Jim ...................... Kemmerer, Wyoming.
McCulloch, Oliver ............... Logan.
Agricultural College of Utah.

Tarbet, Loyal ................ Logan.
Toombs, Roy Chandler ......... Carlin, Nevada.

Second Year.

Dahle, Fred ................ Logan.
Fisher, John Ira ............. Bountiful.
Sidwell, Lafayette Mills ..... Manti.
Smith, Joseph Franklin ....... Wardboro, Idaho.
Wangsgard, James Henry ...... Huntsville.

First Year.

Allen, Elijah William ........ Cove.
Allen, Joseph Elijah .......... Cove.
Anderson, Charles Joseph ..... Grantsville.
Barron, Franklin Henry ...... Logan.
Casto, Raymond R ............. Custer, Idaho.
Crookston, Nicholas Oscar ... Greenville.
Davis, Lehi Thomas .......... Castle Gate.
Eliason, John ................. Deseret.
Fife, Luther Lechonius ...... Providence.
Fonnesbeck, Victor Christian .. Logan.
Gabrielsen, Hans Martin ..... Logan.
Gustaveson, Ernest August ... Grantsville.
Hansen, Seth Alfred .......... Logan.
Hart, Henry Jason ............ Bloomington, Idaho.
Hepworth, Samuel Leroy ...... Salt Lake City.
Jensen, Casper Smith .......... Richmond.
Johansen, Fred ............... Logan.
Johnson, Hans ................ Deweyville.
Kidman, Frederick James ..... Mendon.
Langton, Seth Alma .......... Logan.
Maughan, George ............. Greenville.
Mawhinney, Hugh Sloan ...... Park City.
Miller, Alma David .......... Providence.
Morgan, George Edward ........ Franklin, Idaho.
Palmer, Parley .................. Aurora.
Petersen, Oliver Larsen .......... Petersboro.
Quayle, William Littelfair ...... Logan.
Raymond, Alonzo ................. McAmmon, Idaho.
Reese, David, Jr. ................ Castle Gate.
Reeves, Charles .................. Brigham City.
Ridlen, John Warren ............. Knoxville, Iowa.
Robbins, Cyrus McAlister ....... Snowville.
Ross, Ray Arthur ............... Kanesville.
Smith, Leroy ..................... Greenville.
Tanner, Ivan Lee ............... Indianola.
Taylor, David M. ............... Payson.
Thorley, Harry Alldridge ...... Cedar City.
White, John Rodney ............. Smith.
Wildes, Richard ................. Coalville.
Willis, Arthur Merrinell ....... Kanara.
Wright, George William ......... Franklin, Idaho.
Young, William .................. Castle Gate.

Winter Course.

Davis, Earl Atha ................. Wallsburg.
Fuhriman, Godfrey Jared ........ Providence.
Hansen, Victor Levant .......... Bear River City.
Hoppie, Fred ..................... Tecoma, Nevada.
Hughes, Robert .................. Samaria, Idaho.
Lambert, Royal Ellsworth ...... Idaho Falls, Idaho.
Latham, Oliver David ........... Antelope, Idaho.
Ledingham, Albert ............... Newton.
Lloyd, Charles Alfred .......... Wellsville.
May, Alma Oluf .................. Newton.
Nyman, Andrew ................... Greenville.
Redford, Abraham Knight ....... Logan.

DOMESTIC ARTS.

Second Year.

Eames, Sarah ..................... Preston, Idaho.
AGRICULTURAL COLLEGE OF UTAH.

Edwards, Etta ........................................ Willard.
Greaves, Hattie ....................................... Preston, Idaho.
Mattson, Emma Elida ................................. St. Charles, Idaho.
Merrill, Jesse ......................................... Mapleton, Idaho.
Nebeker, Effie ......................................... Logan.
Powers, Lydia May ...................................... Smithfield,
Stewart, Grace ......................................... Logan.
Stewart, Stella ......................................... Logan.
Wright, Verena ......................................... Franklin, Idaho.

First Year.

Benson, Eva ............................................ Logan.
Burnett, Margaret Ellen ............................... Eden.
Bybee, Maud ............................................ Lewiston.
Bybee, Ruth ............................................. Lewiston.
Christiansen, Jennie ................................... Hyrum.
Cook, Lydia Luetta ..................................... Garden City.
Davis, Annie J ......................................... Malad, Idaho.
Evans, Ann ............................................... Layton.
Gorder, Hilda Linna .................................... Morgan.
Hansen, Nettie .......................................... Logan.
Hawkins, Alice .......................................... Samaria, Idaho.
Jones, Sadie ............................................ Wellsville.
Lindsay, Nettie .......................................... Eden.
McKensie, Crissie ...................................... Paradise.
Marble, Esther .......................................... Deweyville.
Marble, Flora ........................................... Deweyville.
Merrill, Bertha ......................................... Swan Lake, Idaho.
Morrell, Mary Salina ................................... Logan.
Rainey, Inez Leone ..................................... Richmond.
Raymond, Ione ......................................... McCammon, Idaho.
Smith, Julia Charlotte ................................. Preston, Idaho.
Sponberg, Matilda ...................................... Preston, Idaho.
Stephens, Lydia ........................................ Malad, Idaho.
Wilson, Margaret Helen ............................... Eden.
Winter Course.

Dalrymple, Debora .................. Montpelier, Idaho.
Hansen, Meda ....................... Collinston.
Olsen, Mary Esmerelda ............. Plain City.
Olsen, Rinda ........................ Brigham City.
Thomasson, Louise .................. Logan.

ELEMENTARY AGRICULTURE.

First Year.

Crismon, George Whicker ............ Salt Lake City.
Dopp, Carlos ........................ Lewiston.
Ford, Alfred ........................ Wallsburg.
Gorder, Norman Andrew .............. Morgan.
Miller, Arnold David ................ Syracuse.

Winter Course.

Frew, John F ....................... Hooper.
Frew, William Amons ................. Hooper.
Green, Alma L ...................... Menan, Idaho.
Haslam, George ..................... Wellsville.
Justesen, Rasmus O ................ Spring City.
Peterson, Edward Larson ............ Petersboro.
Taylor, Parley Pratt ............... Harrisville.

PREPARATORY.

Abel, Robert ....................... Lewiston.
Ball, Susie ........................ Wasatch.
Black, William Henry ............... Kanosh.
Blanchard, Henry ................... Logan.
Busenbark, Mabel Doris ............ Collinston.
Christensen, Lewis Peter .......... Shelley, Idaho.
Clark, Elijah ...................... St. Charles, Idaho.
Cohn, Jerome Guy ................... Oneida, Idaho.
Edmunds, Lorenzo ................... Salt Lake City.
Elam, Millard ...................... Kemmerer, Wyoming.
Evans, Emma Cecilla ............... Layton.
Fensky, Gottlieb .................. Phickr Jurod, Russia.
Fife, Albert ....................... Providence.
Fife, Walter ....................... Providence.
Findlay, John Fuller .............. Kanab.
Gorder, Walter Andrew ............ Morgan.
Green, John F ...................... Layton.
Green, Margaret Davinie ........... Layton.
Halvorson, Cris Henry ............. Castle Gate.
Halvorson, Joseph ................. Castle Gate.
Hellewell, Janetta Iris ........... Downey, Idaho.
Hemmert, Esther ................... Thayne, Wyoming.
Howell, Luther Maughan ........... Wellsville.
Ingram, John Edward .............. Kanara.
Iverson, Orlando ................... Brigham City.
Janes, Edith ....................... Hyrum.
Jeppesen, Nels Peter .............. Geneva.
Johnson, Charley .................. Helper.
Jones, John William .............. Malad, Idaho.
Keller, Heber ...................... Mink Creek, Idaho.
Kidman, Hyrum ..................... Petersboro.
Mathews, Leon ..................... Providence.
Matthews, Parley Pratt .......... Grantsville.
McCracken, James Lauder .......... Smithfield.
McCulloch, Bert ................... Logan.
McDermaid, William ............... Diamondville, Wyo.
McNeil, William ................... Logan.
Macfarlane, William Chatterly ... St. George.
Madsen, Howard Peter ............. Manti.
Madsen, Parley Christian .......... Manti.
Meakin, Frederick Orson .......... Lehi.
Mecham, Leonidas Smart .......... Chesterfield.
Moore, Thomas Ellis .............. Castle Rock.
Neeley, Alfarette ................. Honeyville.
Nielsen, Hyrum Carl .............. Preston, Idaho.
Olafson, Oscar ................ Logan.
Owens, Simon Madison .............. Laurel, Montana.
Parsons, Adrian ................ Thomas, Idaho.
Pathe, Ottie ...................... Salt Lake City.
Patterson, Amy Eldora ............ Bloomington, Idaho.
Petersen, Levi Larson ............ Petersboro.
Pond, Casper Whittle ............ Gentile Valley, Idaho.
Rawlins, Orson W ................ Murray.
Sampson, Irving ................ Silver City, Idaho.
Smed, Thornley .................. Soda Springs, Idaho.
Spidell, Bessie Ray ............. Riverdale, Idaho.
Spidell, Ira Ossian ............. Riverdale.
Stephenson, Susan Marie ........ Mapleton, Idaho.
Thompson, Edward ................ Bear River City.
Thoresen, Eugene ................. Hyrum.
Tibbitts, George Samuel .......... Providence.
Welker, Gena ..................... Bloomington, Idaho.
Wursten, John .................... Logan.

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