General Catalogue 1906

Utah State University

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CATALOGUE

OF THE

AGRICULTURAL COLLEGE

OF UTAH

FOR

1906-1907

With List of Students for 1905-1906

LOGAN, UTAH

Published by the College
July, 1906
PLAN OF COLLEGE CAMPUS.

1. Main College Building.
2. Mechanic Arts Building
3. Experiment Station.
4. Dormitory.
5. President's Residence.
6. Director's Residence.
7. Farm Superintendent's Res.
8. Farm Cottages.
9. Cattle Barn.
10. Sheep Barn.
11. Piggery.
13. Vegetation House.
14. Tie Sheds.
15. Veterinary Hospital.
17. Boiler House.
18. Tennis Court.
19. Foot Ball Field.
20. Track.
22. Experiment Orchard.
23. Model Orchard.
25. Experiment Plats.
26. Horse Barn.
MAP OF
LOGAN CITY
AND
AGRICULTURAL
COLLEGE
OF UTAH

1-35 Agricultural College Buildings and Grounds.
27 Webster School.
28 Benson School.
29 Temple.
30 Court House.
31 Post Office.
32 Tabernacle.
33 Franklin School.
34 Haw School.
41 B. Y. College.
42 Woodruff School.
43 New Jersey Academy.
47 Ballard School.
49 Ellis School.
50 Depot.
## 1906.

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COLLEGE CALENDAR, 1906-1907.

FIRST TERM.

1906.

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

September 19, Wednesday: Instruction begins.

November 28, Wednesday: Thanksgiving recess begins.

December 4, Tuesday: Instruction resumed.

December 21, Friday: Holiday recess begins.

(at noon)

1907.

January 8, Tuesday: Instruction resumed. Winter courses begin.

January 26, Saturday: First term ends. Winter course in Agriculture ends.

SECOND TERM.

January 29, Tuesday: Second term begins.

February 22, Friday: Washington's birthday.

March 30, Saturday: Winter courses in Domestic Arts and in Mechanic Arts end.

April ——, ————: Arbor Day.

June 2, Sunday: Baccalaureate sermon.

June 3, Monday: Class day.

June 4, Tuesday: Commencement. Alumni Reunion.

June 5, Wednesday: Summer vacation begins.
BOARD OF TRUSTEES.

WILLIAM S. McCORNICK.......................... Salt Lake City
JOHN A. McALISTER................................ Logan
GEORGE C. WHITMORE.............................. Nephi
EVAN R. OWEN..................................... Wellsville
LORENZO N. STOHL................................ Salt Lake City
THOMAS SMART...................................... Logan
SUSA YOUNG GATES................................ Salt Lake City

OFFICERS OF THE BOARD OF TRUSTEES.

WILLIAM S. McCORNICK.......................... President
JOHN A. McALISTER.............................. Vice-President
JOHN A. BEXELL....................................
JOHN L. COBURN.................................. Assistant Secretary
ALLAN M. FLEMING................................ Treasurer
EVAN R. OWEN.....................................

STANDING COMMITTEES OF THE BOARD OF TRUSTEES.

Executive Committee.
William S. McCormick, George C. Whitmore, and Lorenzo N. Stohl.

Finance Committee.
George C. Whitmore, John A. McAlister, and Thomas Smart.

Committee on Buildings and Improvements.
John A. McAlister, Evan R. Owen, and Thomas Smart.

Committee on Agriculture.
George C. Whitmore, Evan R. Owen, and Thomas Smart.

Committee on Mechanic Arts and Domestic Science and Arts.
John A. McAlister, Susa Y. Gates, and Lorenzo N. Stohl.

Committee on Faculty and Courses of Study.
Evan R. Owen, George C. Whitmore, and Susa Y. Gates.
Officers of Administration and Instruction

THE COLLEGE FACULTY.

(Arranged in Groups in the Order of Seniority of Appointment.)

WILLIAM JASPER KERR, D. Sc.,
PRESIDENT.

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

JOSEPH JENSON, S. B.,
DIRECTOR OF MANUAL TRAINING IN MECHANIC ARTS.
Professor of Mechanical Engineering.

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

ALFRED HORATIO UPHAM, A. M.,
Professor of English Language and Literature.

ELMER DARWIN BALL, M. Sc.,*
Professor of Zoology and Entomology.

ROBERT WALLACE CLARK, B. Agr.,**
Professor of Animal Industry.

EDWARD WILLIAM ROBINSON,
Professor of Political Science and Transportation.

*On leave of absence. October 1, 1906.
**Withdraws from the College September 1, 1906.
AGRICULTURAL COLLEGE OF UTAH.

JOHN ANDREW BEXELL, A. M.,
SECRETARY BOARD OF TRUSTEES.
Professor of Commerce.

GEORGE WASHINGTON THATCHER,
Professor of Music.

ROBERT STARR NORTHRUP, B. S.,
Professor of Horticulture and Botany.

PETER A. YODER, M. A., Ph. D.,
DIRECTOR OF EXPERIMENT STATION.
Professor of Chemistry.

GEORGE THOMAS, A. B., Ph. D.,
Professor of History and Economics.

WILLIAM PETERSON, B. S.,
Professor of Geology and Physics.

WILLIAM JARDINE, B. S.,
Professor of Agronomy.

WALTER WESLEY McLAUGHLIN, B. S.,
Professor of Irrigation and Drainage.

HYRUM JOHN FREDERICK, D. V. M.,
Professor of Veterinary Science.

JAMES DRYDEN,
Professor of Animal Industry.

CHRISTIAN LARSON, M. S. A.,
Professor of Dairying.
AGRICULTURAL COLLEGE OF UTAH.

GEORGE PETER CAMPBELL, B. S.,
Professor of Physical Education.

FRANK RUSSELL ARNOLD, A. M.,
Professor of Modern Languages.

HOWARD R. PERRY, CAPT. U. S. A.,
Professor of Military Science and Tactics

LEANDER A. OSTIEN, M. A.,
Assistant Professor of Mathematics.

RHODA BOWEN COOK,
Assistant Professor of Domestic Arts.

HENRY JEROME STUTTERD,*
Assistant Professor of Drawing.

M. ELIZABETH WYANT, Ph. B.,
Assistant Professor of English Language and Literature.

ROBERT STEWART, B. S.,
Assistant Professor of Chemistry.

JOHN THOMAS CAINE, III., M.S.A.,
Assistant Professor of Animal Husbandry.

ELMER GEORGE PETERSON, B. S.,
Assistant Professor of Zoology and Entomology.

JOHN THOMAS CAINE, JR., B. S.,
REGISTRAR.
Instructor in English.

*On leave of absence.
AGRICULTURAL COLLEGE OF UTAH.

ELIZABETH CHURCH SMITH, B. L.,
Librarian.

RUTH EVELYN MOENCH,
Instructor in English and Physical Culture.

AUGUST J. HANSEN,
Foreman in Carpentry.

EDWARD PARLEY PULLEY, B. S.,
Instructor in Mechanical Engineering.

EDWIN AUGUSTUS WILLIAMS,
Foreman in Forging.

AMANDA HOLMGREN, B. S.,
Instructor in English.

WILLIAM ARTHUR JENSEN,
Instructor in Stenography and Typewriting.

DAVID EDMUND STEPHENS, B. S.,
Secretary to the President.

NIELS M. HANSEN, JR., S. B.,
Instructor in Civil Engineering.

GRACE FISHER, B. S.,
Instructor in Domestic Science.

JAMES TERTIUS JARDINE, B. S.,
Instructor in English.

CHARLES WALTER PORTER, B. S.,
Instructor in Chemistry.
NETTIE THATCHER SLOAN,
Instructor in Music.

WILLIAM FOGELBERG,
Instructor in Music.

JOSEPH A. SMITH, JR.,
Instructor in Music.

LOUIE EUGENIE LINNARTZ,
Instructor in Music.

ROY RUDOLPH, B. S.,
Instructor in Zoology.

JULIE WINGE OSTIEN, B. S.,
Instructor in History.

GERTRUDE VIBRANS,
Instructor in Sewing.

JONATHAN SOCKWELL POWELL,
Instructor in Drawing.

FREDERICK CHRISTIAN WANGSGARD,
Assistant in Forging.

INEZ POWELL,
Assistant in Household Science.

FRANK THATCHER,
Assistant in Carpentry.

JEDEDIAH H. GOFF,
Assistant in Forging.
AARON NEWEY, 
Assistant in Carpentry.

EFFIE SMITH, 
Assistant in Household Science.

NORA EGBERT, 
Assistant in Sewing.

FRED RUSSEL JENSON, 
Assistant in Commerce.

JOSEPH SPRAGUE BELL, 
Assistant in Commerce.

CHARLES BATT, 
Superintendent of Steam Heating and Water Works.

RASMUS OLUF LARSEN, 
Head Janitor.
THE COLLEGE COUNCIL.

THE PRESIDENT, Chairman.
THE REGISTRAR, Secretary.
PROFESSOR DALINDA COTEY.
PROFESSOR JOSEPH JENSON.
PROFESSOR WILLARD SAMUEL LANGTON.
PROFESSOR ALFRED HORATIO UPHAM.
PROFESSOR ELMER DARWIN BALL.
PROFESSOR ROBERT WALLACE CLARK.
PROFESSOR EDWARD WILLIAM ROBINSON.
PROFESSOR JOHN ANDREW BEXELL.
PROFESSOR GEORGE WASHINGTON THATCHER.
PROFESSOR ROBERT STARR NORTHROP.
PROFESSOR PETER A. YODER.
PROFESSOR GEORGE THOMAS.
PROFESSOR WILLIAM PETERSON.
PROFESSOR WILLIAM JARDINE.
PROFESSOR WALTER W. McLAUGHLIN.
PROFESSOR HYRUM JOHN FREDERICK.
PROFESSOR JAMES DRYDEN.
PROFESSOR CHRISTIAN LARSON.
PROFESSOR GEORGE PETER CAMPBELL.
PROFESSOR FRANK RUSSELL ARNOLD.
HOWARD R. PERRY, CAPT. U. S. A.
ASSISTANT PROFESSOR LEANDER A. OSTIEN.
ASSISTANT PROFESSOR RHODA BOWEN COOK.
ASSISTANT PROFESSOR M. ELIZABETH WYANT.
ASSISTANT PROFESSOR HENRY JEROME STUTTERD.
ASSISTANT PROFESSOR ROBERT STEWART.
ASSISTANT PROFESSOR ELMER GEORGE PETERSON.
ASSISTANT PROFESSOR JOHN T. CAINE, III.
EXPERIMENT STATION STAFF.

PETER A. YODER,
*Director and Chemist.*

JAMES DRYDEN,
*Poultryman.*

ELMER DARWIN BALL,
*Entomologist.*

ROBERT WALLACE CLARK,
*Animal Industry.*

WALTER WESLEY McLAUGHLIN,
*Irrigation Engineer.*

ROBERT STARR NORTHROP,
*Horticulturist.*

HYRUM JOHN FREDERICK,
*Veterinarian.*

WILLIAM JARDINE,
*Agronomist.*

JOHN T. CAINE, III.
*Animal Industry.*

CHRISTIAN LARSON,
*Dairyman.*

ROBERT STEWART,
*Assistant Chemist.*

JOSEPH EAMES GREAVES,
*Assistant Chemist.*

ELMER GEORGE PETERSON,
*Assistant Entomologist.*
AGRICULTURAL COLLEGE OF UTAH.

CHARLES WALTER PORTER,
Photographer.

JOHN STEPHENS,
Assistant Agronomist.

HENRY WALACE CROCKET,
Assistant Horticulturist.

GEORGE MELVIN TURPIN,
Assistant Chemist.

WILLARD CONRAD SNOW,
Assistant Chemist.

JOHN ANDREW BEXELL,
Secretary.

JOHN LATHAM COBURN,
Assistant Secretary.

FOREMEN.

JOSEPH BENSON,
Agronomy.

ANSON PERRY WINSOR,
Poultry.

Animal Industry.

JOSEPH T. ATKIN,
Southern Utah Experiment Station.

OLA LARSON,
Central Utah Experiment Station.
The President of the College is *ex-officio* a member of all standing committees.


4. *Engineering and Mechanic Arts.*—Professors Jenson, Langton, Mr. N. M. Hansen.

5. *General Science.*—Professors Thomas, Upham, Northrop, Mr. Porter.


7. *Farmers' Institutes.*—Professors Yoder, Cotey, Jenson, McLoughlin, Dryden.


10. *Students' Affairs.*—Professor Ostien, Mr. Caine, Miss Holmgren.


12. *Athletics.*—Professors Langton, Campbell, Jenson, Upham, W. Peterson.
Section of Campus and Buildings.
College Sheep Barn and Cattle Barn, From North-East.

Sheep Barn and Cattle Barn, From South-West.
Rear View of Poultry Building Before Completion of Yards.
Stalls in Cattle Barn.

Interior View—Cattle Barn.
INTERIOR VIEW—POULTRY BUILDING.

PIGGERY.
Class in Stock-Judging.

College Pure-Bred Cattle—Shorthorn, Guernsey, Holstein, Hereford.
Veterinary Science Class Room.

Vegetation House for Experimental Work in Agronomy and Irrigation.
Dairy—Showing Separators and Babcock Test.

Section of College Dairy.
HORTICULTURAL STUDENTS IN ORCHARD.
Offices, Department of Domestic Science and Arts.

View in Sewing Rooms.
College Sewing Rooms, With Samples of Students' Work.
SAMPLES OF STUDENTS' WORK IN SEWING.
1. Student Making Cake. 2. Student Making Bread. 3. Student Making Pie.
4. Samples of Fruit Bottled by Students. 5. Samples of Cake and Bread Made by Students.
LAUNDRY—STUDENTS IRONING.

LAUNDRY—A WASHING LESSON.
MECHANIC ARTS BUILDING—FROM SOUTH COLLEGE TOWER.
SAMPLE EXERCISES BY STUDENTS IN MECHANIC ARTS.
FORGING
AND MACHINE WORK.
VIEW IN CARPENTER SHOP—CABINET WORK AND PATTERN MAKING.
Sample Exercises by Students in Mechanic Arts. Wood Work.
Corner in Engineering Laboratory, showing 200,000 lb.-capacity Testing Machine.

Corner in Typewriting Room.

Office and Corner in Commercial Rooms.
Corner in Assaying Room.

Class Room, Mineralogy.
SECTION OF MINERALOGICAL LABORATORY.

SECTION OF MINERALOGICAL MUSEUM.
1. Registrar's Office. 2. Secretary's Office. 3. President's Private Office.
President's Office.

Faculty Room.
1. Entrance to Main Building. 2. Corridor, Main Building, First Floor. 3. Corridor at Entrance to Auditorium. 4. Corridor, Main Building, Second Floor. 5. Corridor, New Front of Main Building.
Reception Room—College Dormitory.

Student's Room—College Dormitory.
RESIDENCE OF THE PRESIDENT.

RESIDENCE OF DIRECTOR OF EXPERIMENT STATION.
CADET OFFICERS.
RIFLE TEAM AND OUTPOSTS.
COLLEGE FOOTBALL TEAM.

COLLEGE BASKETBALL TEAM.
AGRICULTURAL COLLEGE OF UTAH.

General Information.

The Agricultural College of Utah constitutes part of the public school system of the State. It comprises five different schools,—the School of Agriculture, the School of Domestic Science and Arts, the School of Commerce, the School of Engineering and Mechanic Arts, and the School of General Science; also the Agricultural Experiment Station, which, while not providing directly for instructional work, is one of the most important departments of the institution. The organization, purpose, and equipment of the College, together with the character and extent of the work offered, are described, so far as the limits of space will allow, in the following 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 lands 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 purpose 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 Agricultural 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, 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 pro-
visions 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 Building, and part of the south wing was completed. In September, 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 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, the Legislature passed a law providing an annual appropriation to the College of $1500 for the purpose of holding Farmers' Institutes in the different counties of the State. During this year, part of the Mechanic Arts Building was completed, and the forge shops were removed from the Main Building. In 1897, the Legislature made an appropriation 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, 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 and a vegetation house, and the purchase of further apparatus and of additional land for work in irrigation investigations.

In March, 1901, the Sub-Freshman Course and the elementary courses in Agriculture and Commerce were abolished, and regular three-year courses of high school grade were established in Agriculture, Domestic Science and Commerce, each leading to a certificate of graduation. The Manual Training Course in Mechanic Arts was increased from three to four years, and the Manual Training Course in Domestic Arts was increased from two to three years. An additional year's work was prescribed for admission to the baccalaureate courses, thereby raising the standard of the regular College work one year. These College courses in Agriculture, Domestic Science, Commerce, Engineering, and General Science, were made co-ordinate and were more clearly differentiated from the elementary or high school courses.

The Legislature of 1903 appropriated $110,975 for general maintenance and for additional buildings and equipment. An appropriation of $12,500 was also made for experimental work in dry farming, to be conducted by the College in different parts of the State. In March, 1903, the Board of Trustees established five schools: the School of Agriculture, the School of Domestic Science and Arts, the School of Engineering and Mechanic Arts, the School of Commerce, and the School of General Science. The College Council was also established and a more complete organization effected throughout all the departments of the institution.
The government of the College is vested primarily in the Board of Trustees, and, under their control, the three other administrative bodies,—the College Council, the College Faculty, and the Staff of the Experiment Station. These, in their several capacities, determine the policy and maintain the efficiency of the institution.

The Board of Trustees consists of seven members, appointed by the Governor with the approval of the State Senate. This board assumes the legal responsibility of the institution, cares for its general interests, and directs its course by the enactment of all necessary by-laws and regulations. Vested in it is the power to establish professorships and to employ the instructing force and other officers of the College.

Standing Committees of the Board of Trustees. Between sessions, the power of the trustees rests with an executive committee, whose actions are referred to the Board for their approval. Another committee is concerned with the funds and accounts of the College, while a third has general charge of all building and repairs throughout the institution. In addition to these, there are committees, largely advisory, having to do with the employment and service of College officers, and with the work of particular departments.

The College Council consists of the President of the Board of Trustees, the President of the College, and the professors, the associate professors, and the assistant professors. All the important questions of discipline and policy are considered by this body. Its duties extend to the arrangement and correlation of courses of study, the requirements for admission and graduation in the several courses, and the final measures of discipline in cases of flagrant violation of College rules.
The Standing Committees of the Council are, with two exceptions, representative of the several schools of instruction in the College. They have charge of the enrollment and progress of students in the respective schools, and have general direction of the work there carried on. The Committee on Scholarship and Graduation investigates the records of all candidates for certificates and degrees, and makes recommendations to the Council. To another committee of the Council is delegated the duty of arranging and carrying on Farmers' Institutes throughout the State.

The College Faculty includes the President, the professors, the associate professors, the assistant professors, the librarian, the instructors, and the assistants. As an administrative body it is concerned with the ordinary questions of methods and discipline and with various matters pertaining to the general welfare of the College. Through its standing committees it is in more intimate contact with the student body and with the life and interests of the college community.

The Standing Committees of the Faculty have delegated to them the immediate direction of various phases of college life. The conduct of the student in his college home and his regularity in performing college duties; the publications of the College and the students; the interests of the students on the athletic field, in the amusement halls, and in their various organizations—all these things are within the province of appropriate committees experienced in the management of such matters.

The Experiment Station Staff consists of the President of the College, the Director of the Station, and the chiefs, with their assistants, of the departments of Agronomy, Horticulture, Animal Industry, Entomology, Chemistry, Irrigation Engineering, and Poultry Culture. This body is employed in the investigation of problems peculiar to agriculture in this portion of the country, the purpose being to improve conditions and results. It is further responsible for the circulation, through private correspondence
and regular bulletins, of such information as is of practical value to the farming communities.

THE STUDENTS. The College is maintained at public expense for the public good. The students, therefore, are under a peculiar obligation to perform faithfully all their duties to the state, the institution, and the community. Most important of these is an active interest in all that concerns the moral and intellectual welfare of the College. Regularity of attendance, faithful attention to studies, and exemplary personal conduct are insisted upon at all times, and the administrative bodies of the College are fully empowered to secure these results.

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, vineyards, gardens, dairy, commercial rooms, kitchen, sewing rooms, different scientific laboratories, and carpentry, 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 be trained together 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, and completely surrounded by the Wasatch Mountains, and is one of the most beautiful and healthful valleys in the western region.

BUILDINGS AND GROUNDS.

The College buildings comprise the Main Building, the Experiment Station Building, the Mechanic Arts Building, the Dormitory, the Conservatory, the Veterinary Laboratory, four 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, 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 1,500; the administrative offices; the library and reading rooms; the gymnasium; the agricultural, zoological, botanical, chemical, and physical laboratories, museums and lecture rooms; the Station chemical laboratories and museum; the office and class rooms of the commercial department; the sewing and millinery rooms; the laundry, kitchen, and dining rooms; the museum and the offices of the department of domestic science; the dairy rooms; the armory and drill hall; the offices and class rooms of the department of civil engineering; and the class rooms for English, mathematics, modern languages and art.

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

The Mechanic Arts Building, situated just south of the Main Building, is a one-story brick structure, with the exception of the central part, which is two stories high. It has a ground floor area of 16,600 sq. ft., and is divided into four groups of rooms as follows:—for the wood working department—three rooms, with a floor area of 5,956 sq. ft.; for foundry work, forging, and carriage building—four rooms, with a floor space of 6,840 sq. ft.; for machine shop—one room, 2,158 sq. ft.; for draughting room (temporarily used as a testing laboratory), class rooms, office and library—five rooms, with a floor space of 3,376 sq. ft. There are also two store rooms, a coal and coke cellar, and a lockerroom. The second floor—2,500 sq. ft.—is divided into four rooms; viz., Mechanic Arts Museum, blue printing room, room for painting, varnishing and polishing wood work, and class room. The building is heated by steam, well lighted and ventilated throughout, and well equipped for all the work undertaken.
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 room 12 by 14 feet, exclusive of closet; reception rooms for students; a model kitchen; a dining room; a pantry, supplied with all modern conveniences; bath rooms; and rooms for the matron and for the employees. The rooms of this building are provided with steam heat and electric light, and each room has 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 Hospital, situated several hundred yards to the rear and east of the Main building, is a stone and frame structure, 18 feet wide and 42 feet long, two stories in height. It contains a well-equipped dispensary, an operating room, stalls, etc.

The Barns. There are four barns, for horses, cattle, sheep, and hogs. The horse barn is a wooden structure, 60 feet square, and contains model sanitary stables for horses, besides storage divisions for hay, grain, and seed, 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, 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 dimensions, with accommodations for seventy-five sheep, and storage room for feed. The hog barn is a wooden structure, 65 feet by 31 feet. It
contains two feed rooms, a cook room, an abattoir room, and twelve pens, each of which is provided with an outside run. This building accommodates sixty mature animals.

The Poultry Building covers 230 feet by 25 feet, with yards 100 feet wide on each side. The building is divided into two sections:—first, the brooder section, with a capacity for about one thousand chicks; second, the experimental section, with a capacity of over five hundred hens. The latter is divided into thirty-two pens; it is shut off from the public and used for conducting experiments on different problems and questions of poultry culture. The building is heated by a hot water system. In the front part are an office, a feed and weigh room, a store room and a sleeping apartment. The basement, 18 by 34 feet, is used only for incubators.

The land occupied by the College and its several departments embraces about 116 acres. Of this, thirty-five 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.

Immediately east of the Main Building are the parade grounds and athletic field of about ten acres. The farms comprise 71 acres; the orchards, the forestry, the vineyards, and the small fruit and vegetable gardens, 10 acres. 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.
EQUIPMENT.

The Department of Agronomy is provided with a large collection of agricultural plants and seeds, and other illustrative material. The agricultural laboratory is equipped with balances, a self-registering dynamometer, an appliance for measuring the resistance to tractive force of incline and obstruction, a double-tree hitch apparatus, horse calipers, and apparatus for determining the water-holding capacity of soils, specific gravity of soils, etc. There is also a model of a horse arranged for determining, by experiments, the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc. An apparatus has been provided to demonstrate the influence of head diameter, length and bends on the rate of discharge of water through lines of tile and water pipe. 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 numerous 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 Hereford, Short Horn, Holstein, and Guernsey cattle; Shropshire, Dorset and Rambouillet sheep; and Berkshire, Poland China, Tamworth, Yorkshire hogs. 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 Wisconsin curd test, 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, continuous and intermittent pasteurizers, 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 testing apparatus. There is also apparatus for testing the acidity of milk or cream, and delicate balances, 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 affords 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 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 vineyard 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, all are 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, neureatomy set, thermo-cautery, castrating and spaying instruments, obstetrical instruments, postmortem and diagnostic instruments, and other material found in a well-equipped hospital. In this lab-
oratory the agricultural students have practice and observation in the treatment of animals.

The Department of Domestic Science and Arts is located in the Main Building, occupying the first floor of the south wing, besides several rooms in the basement. On the first floor are the office and reception room; a large lecture room; a laboratory and museum, provided with cabinets, charts, and about three hundred specimens showing the composition of food materials and the processes of their manufacture; a room for instruction in home nursing, with proper furnishings to give practice in making and changing beds for the sick and the general care of the sick room; four large sewing rooms, and a fitting room, furnished with the latest improved machines, small sewing tables, low chairs, cutting tables, tracing boards, electric irons, wardrobes and cupboards for holding unfinished work, large display cabinets for finished work, and cabinets containing samples showing the process of manufacturing wool, silk, cotton, and linen. In the basement are two large class kitchens, each containing twelve individual combined work-tables and cupboards, with gas stove on each. The equipment of these rooms includes two large two-oven coal ranges and a single coal range, an Aladdin oven, and an electric stove. There are ample pantries and store rooms, and all necessary utensils and modern conveniences for teaching cooking. The dining room is furnished with extension tables, chairs, sideboards, cupboards, fruit closet, and a generous supply of china, silver, and table linen. The laundry room is provided with stationary tubs, a Chicago clothes-drier, ironing tables, skirt boards, and other necessary furnishings.

The Commercial Department is completely equipped for thorough and efficient work in modern business courses. The entire third floor of the front of the Main Building is occupied by the department, covering a floor area of 7,225 square feet. Each room is specially designed and furnished for the work to be conducted in it. The furniture of the department consists of hard
wood counting room desks and counters, arranged in such a way that students may either sit or stand while at work. A complete set of modern banking fixtures, a wholesale house, a retail house, a commission house, a freight office, a real estate office, and an insurance office, with permanent blank books, letter files, rubber stamps, copying presses, college currency, blanks, etc., are provided by the College. The room for typewriting contains a full complement of standard machines, each provided with stand and copy-holder. The room for stenography is furnished with tables designed for convenience in practice work. The penmanship room and general class rooms are furnished with single desks.

**Engineering and Mechanic Arts** are taught with the assistance of a large and carefully selected equipment for practical work in shop, field and laboratory. The shops naturally demand the most extensive outfit. The carpentry rooms are supplied with seventy benches, with full sets of tools. The wood-working machinery includes fifteen pattern-maker's lathes, universal saw table, jig and band saws, planer, mortiser and borer, shaper, and sander; and there are the usual clamps, vises, blue-tables, veneer presses and other special tools required for a shop of this kind. For the work in forging there are provided twenty-three single and eight double forges, each with a complete equipment of anvil and tools. In addition, there are two furnaces, one belted power hammer, drills, special swages, cutting-off machines and leveling tables, with a considerable assortment of special tools. The equipment for foundry work includes iron-melting cupola, brass furnace, core oven, annealing furnaces, flasks, patterns, ladles, crucibles, and full sets of regular tools for flask and floor moulding. The outfit used in carriage building comprises, in addition to the required benches, a full supply of carriage-builders' tools, including hub-boring and boxing machines, spoke-tennoming machine, feloe-boring machine, tire-bender, etc. In the room devoted to machine work in iron are found six large engine lathes, three universal milling machines, a universal grinding machine, two speed lathes, a large radial drill press, a sensitive drill (built by students), two crank shapers, two
large planers, grindstones, and emery wheels; every machine hav­ing its regular equipment of tools and attachments. The tool room
is well supplied with drills, reamers, cutters of various kinds, files,
calipers, etc. The store-rooms contain a full stock of materials to
be used in the regular work of the various shops. All machinery,
including blast and exhaust systems for the forge shop and foundry,
is electrically driven.

The Engineering Laboratory is equipped with modern ap­paratus for experimental work on the strength and elasticity of
all kinds of engineering materials; on efficiency and lost work of
machines; on power losses by electrical and mechanical transmis­
sion; on the heating value of various kinds of fuels; and on flow
of air and gases. The apparatus used for this work is of the
highest order, and the results obtained are therefore reliable and
of permanent value as engineering data. All junior and senior stu­
dents are required to become familiar with the operation of this
apparatus and to run through a series of tests, all of which are
part of a general arrangement by the school to secure complete
and reliable data on matters which are modified by local conditions.
A fifteen horse-power gasoline engine for power and experi­
mental purposes, a 200,000 lbs. Riehle standard testing machine,
a standard cement testing machine, various electric machines,
complete electric measuring apparatus, dynamometers, power
scales, etc., may be mentioned as important parts of this equipment.

In Civil Engineering, in addition to the laboratory, the inter­
est naturally centers at two points, the apparatus provided for field
work, and the equipment of the draughting rooms. For the work
in surveying there are four first-class transits, three levels, a John­
son plane table, a planimeter, a clinometer and other supplement­
ary 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 equipment on the experiment farm in the shape of measuring
apparatus, and the many canals, rivers, and power plants in the im­
mediate vicinity, afford excellent opportunity for thorough train­
ing in hydraulic work. The draughting rooms are supplied with
draughting tables, special instruments, models, hand books, calculating tables, slide-rules, and such other accessories as are needed for office work.

A recent innovation is the establishment of a special Engineering Library, located in the Mechanic Arts Building. It contains the private library of the professor, with such other books from the general library as may be required for special study. Current engineering literature is placed at the disposal of junior and senior students in Engineering and advanced students in Mechanic Arts. A very extensive list of manufacturers' catalogues has been collected and classified, and forms an important part of this library.

The Bacteriological Laboratory is well equipped with modern apparatus for the work offered. Each student is provided with a high-power Leitz or Bausch and Lomb microscope with nose-piece and substage. One microscope with triple nose-piece, fitted with 1-12 and 1-16 oil-immersion objectives, Abbe condenser, and rotary and mechanical stage, is used for identification work. Other equipment includes an autoclave, hot air and steam sterilizers, incubator, refrigerators, aerobic plate apparatus, anaerobic tube apparatus, microtome, analytic balance, cages, permanent mounts, glassware, chemicals, stains and culture media.

The Zoological Laboratory is equipped with water and gas, high-power double nose-piece Bausch and Lomb microscopes, dissecting microscopes, condenser, camera lucida, rotary microtome, paraffine bath, freezing apparatus, microspectroscope, photomicrographic camera, haemacytometer, platinum wire, glassware, reagents, stains, etc. For the work in anatomy and physiology, in addition to the above, there are enlarged models of the eye, ear and brain; and a life-size paper mache manikin; an articulated and a disarticulated human skeleton, and one or more skeletons from each group of the vertebrates. In the work in zoology, the collection of mounted mammals and birds; alcoholic and dry specimens of reptiles, fish and the invertebrates; the Smithsonian material; and living forms from the aquaria are used. For the
work in entomology the exhibition collection of insects, the systematic collection of the department, and the private collection and library of the professor are available.

The Chemical Laboratories occupy the second floor of the north wing of the Main Building, and include ten rooms. One large room is devoted to the work in general chemistry and qualitative analysis, and two smaller rooms to work in organic chemistry and quantitative analysis. A pleasant room, centrally located with respect to laboratories, is used as the lecture room of the department. Adjoining the main laboratory and the lecture room are a large store room and a preparation room for the use of the instructor. On the east side of the wing, two large rooms and a store room are used for the work carried on by the Chemical Department of the Experiment Station. A room in the basement is used for the work in fire assaying.

The chemical laboratories are well equipped for elementary and advanced work in chemistry. In the College laboratories special 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 equipped for advanced work. The extensive collection of apparatus includes, among other things, balances; silver calorimeter; half-shade polarscope; 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 Physical Laboratory occupies a suite of rooms on the second floor. 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; spectroroscope; 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; Toepler-Holtz machine; one complete wireless telegraphy apparatus.

The College Museums are supplied with a large number of specimens illustrative of geology and paleontology, vertebrate and invertebrate zoology, and 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. Contributions of fossils, ores, animals, relics, or other material of value to the museums will be highly appreciated. All gifts are labeled and preserved, and the name of the donor is kept on record.

The Art Rooms contain 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 of drawing. A
few reproductions of the paintings of the masters are in the equipment, and charts to be used in the work in design; also the tables, drawing boards and cases necessary for the work.

The Library, with its offices and reading room, occupies the entire front of the second floor of the Main Building. The large, well-lighted reading room is furnished with tables, comfortable chairs, periodical filing cases, shelves for reference books, and the card cabinet. The books are shelved on the Library Bureau standard steel stacks, arranged in alcoves, where tables are provided for those wishing to do special study. The readers have free access to the shelves.

The library now contains about 15,121 bound volumes and a large number of pamphlets. There have been accessioned since July 1, 1905, 1,747 books; and 1,400 pamphlets have been filed. The books are classified by the Dewey decimal classification, and a dictionary card catalogue of the library is now completed. The shelf list is also on cards, and forms a classed catalogue for official use.

The Library is a designated depository for United States public documents, and receives substantially all documents printed by the government. There are ninety-two periodicals on the subscription list, besides some eighty which are received as exchanges for the publications of the College and the Experiment Station. Thirty-five newspapers of the state are regularly received and placed on file in the reading room.

THE AGRICULTURAL EXPERIMENT STATION.

The Agricultural Experiment Station is a department of the College, supported by Congressional appropriations, supplemented by the receipts from the sales of farm products, and by such appropriations as the State Legislature makes from time to time to carry out special lines of work, or for the establishment and support of sub-stations. 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 investigation 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. Special investigations for the purpose of encouraging the horticultural, dairy, and poultry industries, and of reclaiming the alkali and unirrigated lands of the state are also in progress.

By an act of the State Legislature of 1903, five experimental farms have been established in different parts of the state, for the purpose of demonstrating the possibilities of dry or arid farming on the soils of Utah. Another act, passed in 1905, established a central experimental farm, which has been located in Utah county. The work on all these sub-stations, including also the Experimental farm near St. George, in Washington county, is placed under the direction of the Experiment Station. In co-operation with the Department of Agriculture, this Station is carrying on extensive investigations in irrigation, drainage, in sugar beet seed production and in alkali land reclamation.

An annual report and four or five bulletins containing the results of the experiments of the station are published annually for free distribution among the people of the state.

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 at 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 to 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 benefited 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 investigation they may wish to undertake.

COLLEGE SOCIETIES.

Seven different societies are maintained by the students of the College—one doing general literary work, four following special lines, one a debating club, and one strictly social in its object. Of these, two are exclusively for women, three are for men, and two are open to both sexes.

The Sorosis Society is the oldest of the College societies now in existence, and is somewhat exclusive in its nature. It is open to women only, and its object is the general literary and social culture of its members. Weekly meetings are held, at which members usually occupy the time, with an occasional lecture from the outside. At least one public entertainment of a literary nature and several social functions are given each year. The society has elegant apartments in the College building, equipped and furnished by the members.
The Agricultural College Debating Club is open to all students who are interested in college debating work. Its object is practical training in debate.

The Agricultural Club is an organization of instructors and students interested in agricultural education. The object of this organization, which dates its existence in the College from November, 1901, is to promote social feeling among its members and to keep in touch with current events in agricultural science. One of the special features of the club work consists of lectures illustrated by stereopticon views. Meetings are held bi-weekly, and occasionally receptions are given during the year.

The Commercial Club has for its purpose to promote the interests of the Commercial School, to popularize the commercial courses, and to consider matters of interest not encountered in routine work. The club maintains an annual lecture course, given by prominent men throughout the state on topics of special interest to the business man. By social and literary contact, department loyalty is sought to be strengthened. All commercial students are eligible to membership.

The Engineering Society is an organization primarily intended to promote the interests of engineering in the College. While the principal effort is directed towards the professional subjects, the society has recently extended its scope to include social advantages as well. Membership is confined to the School of Engineering. Lectures are given by leading engineers of the state.

The Agricultural College Women’s League is an organization of students, instructors, and other ladies connected with the institution. Its object is to promote useful and agreeable relations among the women of the College and to afford an organized social center for united thought and action.

The Mechanic Arts Club. The students in Mechanic Arts maintain a club, the chief object of which is to encourage its mem-
bers to keep in touch with current shop and building practice, and to afford a means of closer acquaintance and association during and after their collegiate life. The Club meets fortnightly to hear lectures and discussions by leading artisans. The chief interest is usually supplemented by less formal social features.

ATHLETICS.

The Athletic Association is organized for the promotion of the general physical culture of the students, and the encouragement of an active spirit in favor of manly sports. To this end not only does the College maintain representative teams in the different sports, but the various schools of the institutions compete with each other, thus offering men of all degrees of physical ability an incentive in the proper care and development of their bodies. The association is sustained with universal interest, and is accomplishing excellent results. It has at its disposal a ten-acre plot of ground east of the College buildings, where tennis courts, a base-ball diamond, and a foot-ball field have been laid out. A quarter-mile running path is built around the foot-ball field. Lockers and baths are provided for those in training. For indoor exercise the gymnasium on the third floor is available, with a complete equipment of wands, dumb-bells, Indian Clubs, etc. Here an opportunity is given the men to take systematic drill in gymnastics under the direction of the instructor. A ten-lap board track has been built for work in track athletics during the winter. The drill hall may also be used for large classes in gymnastics. The men are assisted in their work by an instructor, whose aim is to help them make the most of the exceptional opportunities athletics offer for mental and moral as well as physical development. Those competing on the College teams must first pass a satisfactory physical examination.
AGRICULTURAL COLLEGE OF UTAH.

THE COLLEGE MAGAZINE.

The students of the College maintain, as the official organ of the College community, a monthly magazine, "Student Life." The scope of the publication is best indicated by the names of its six departments; viz., Literary, Editorial, Student Affairs, Department Notes, Locals, Alumni and Exchanges. The editorial staff and business managers are chosen from the student body, and receive the enthusiastic support of a large number of students, faculty, alumni, and friends.

STUDENTS' EXPENSES.

Tuition is free. 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 of $1.00 per credit hour.

The fee charged for a certificate of graduation is $2.50; and for a diploma, $5. 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 $3 to $4 per week. By renting rooms and boarding themselves, students are able to reduce the cost of room and board to less than $2.50 per week.

The College Dormitory has accommodation for sixty. The second floor is used exclusively for women, and the third floor for men, there being no communicating passage between the two. The building is equipped throughout with steam heat and electric lights, and each floor has bathroom and toilet accommodations. The cost of room and board, including fuel and light, is from $13 to $15 a month, according to the kind of room used. Students furnish their own bedding; also rug or carpet, if desired. Board is payable in advance every month. The Dormitory discipline corresponds as nearly as possible to that of home life. Boisterous and rude conduct is not allowed. Parents or guardians of students in the Dormitory may receive a monthly report.
Admission and Graduation.

CONDITIONS OF ADMISSION.

Graduates of the district schools, are admitted provisionally without examination to the College Preparatory Course, and to the three-year courses in Agriculture, Domestic Science, and Commerce, and to the Manual Training Courses in Domestic Arts and Mechanic Arts.

Candidates for admission must be at least fifteen years of age. In all cases, good moral character is a requisite for admission.

Persons eighteen years old or over, not graduated from the district schools, will be admitted to the technical work of the Manual Training courses in Domestic Arts and Mechanic Arts, prior to June, 1908, after which time, students who cannot show either by certificate or examination that they have completed the work of the eighth grade of the district schools will not be admitted to these courses. Until June, 1908, classes in the elementary branches will be maintained in order that the students referred to above may make up the regular entrance requirements.

Students who have completed the College Preparatory Course are admitted without examination to the Engineering courses, and to 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.

Students who have completed the first two years of the three-
year courses in Agriculture, Domestic Science, or Commerce, are admitted without examination to the regular four-year courses in Agriculture, Domestic Science, or Commerce, respectively. They are also admitted without examination to the Engineering courses, and to the General Science Course, being conditioned in any of the subjects not already completed of the College 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 transfer from one regular course to another by making up all the technical work not completed of the course to which they transfer. 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 College Preparatory Course. For a description of these subjects, see “College 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 Council.

CLASSIFICATION.

All regular students are classified as first, second, and third year students in Agriculture, Domestic Science, or Commerce; or as first and second year students in the College Preparatory Course; or as first, second, third, and fourth year students in the Manual Training courses in Mechanic Arts or Domestic 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 the three-year courses in Agriculture, Domestic Science, or Commerce, or the four-year course in Manual Training in Mechanic Arts, or the three-year course in Manual Training in Domestic 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 con-
ferred upon those who complete the regular four-year courses in General Science, Agriculture, Domestic Science, Commerce, Civil Engineering, and Mechanical Engineering, respectively.

To obtain a degree the student must have been in attendance at least one school year immediately preceding the time when the degree may be conferred. He must have completed all the prescribed work in one of the four-year college schedules. He must have acquired credits for electives according to the grade and number indicated in his schedule. He may be required to pass a satisfactory oral examination on the technical work of his course before a special committee appointed by the president. He must have no grade lower than D in any subject. Four-fifths of all his term grades must be C or better. He must have discharged all college fees.

He must be recommended for graduation by his school faculty and receive the favorable vote of the president and two-thirds of the members of the College Council. Prospective candidates for graduation will be notified not later than April 10th of their eligibility for graduation.
Schools and Courses of Study.

For the purpose of more efficient administration, the College is divided into five schools: The School of Agriculture, the School of Domestic Science and Arts, the School of Commerce, the School of Engineering and Mechanic Arts, and the School of General Science. These schools are not educationally separate, but are interdependent and together form a unit. They offer 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) College Preparatory Course, two years; (13) Special Winter Courses in Agriculture, Domestic Arts, Mechanic Arts, and Commerce.

THE SCHOOL OF AGRICULTURE.

The instruction in Agriculture is divided into the following departments: The Department of Agronomy, the Department of Irrigation and Drainage, the Department of Animal Industry and Dairying, the Department of Horticulture, and the Department of Veterinary Science. The courses of these departments are arranged especially with the view of enabling the student to lay a foundation upon which he can build a successful career as a
farmer, or develop into a specialist in Agronomy, Animal Industry and Dairying, or Horticulture. For the student who expects to return to the farm, a high school course, continuing through three years, has been arranged; and a college course leading to a degree is offered for those who desire to secure positions as farm managers, or as workers in agricultural faculties and in experiment stations. Farming, as commonly conducted in this inter-mountain region, consists of a union of all of the above divisions of the industry, and the three-year course confines itself to laying a foundation that will secure success on these farms; while the longer course enables the student to direct his efforts along the special lines with which he is most concerned.

In the junior and senior years, the student is allowed to specialize in Agronomy, in Irrigation and Drainage, in Animal Industry and Dairying, in Horticulture, or in Veterinary Science. In these years also a list of electives is offered, from which the student is permitted to select, with the consent of the Committee on Agriculture, a list of studies aggregating not less than sixteen hours a week.

Experience has shown that practically all of the students who take this course come from the farm, and it is assumed that they are acquainted with the various manual operations of farm work. The design of the course is, therefore, to teach the sciences that underlie practical agriculture, and sufficient mathematics, English, history, and other supplementary studies to develop the agricultural students to the intellectual level of the educated in other professions.

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 to such preparation. The subjects presented are those about which every one engaged in agricultural pursuits should have a definite knowledge. They embody the underlying principles and the best practice. The class room 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 SCHOOL OF DOMESTIC SCIENCE AND ARTS.

The courses in Domestic Science and Arts have for their object to train and broaden the minds of women, and to 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 efforts 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 toward home life rather than away from it. The State of Utah 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 baccalaureate courses, together with a broader culture in literature and modern languages than is offered in any other. Both in the preliminary work and in the advanced years,
special studies in the various lines of home science are prescribed in logical order and stand as the distinctive features of the course. The three-year course is arranged as preparatory to the advanced years of the degree course, and also graduates with certificates 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 years, 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 SCHOOL OF COMMERCE.

The purpose of the School of Commerce is to give opportunity for a liberal education with special emphasis upon the commercial phases of life. Persons who complete the Commercial courses should be better prepared to assume leadership and responsibility in business and in the various industries and professions. Two courses are offered: one of three years, leading to a certificate of graduation; the other of four years, leading to the degree of Bachelor of Science in Commerce. Students in the three-year course may emphasize the work in Accounting, receiving a certificate in Accounting, or they may emphasize the work in Stenography and receive a certificate in stenography. Those who have finished the three-year course in Accounting are admitted to the sophomore year as candidates for degrees. The sophomore year is a continuation of the required work, but the work of the junior and senior years is, to a great extent, elective. During the sophomore year each student is expected to arrange his general plan of work for the junior and senior years. He may select as his major some phase of (1) Political Economy, (2) Political Science, or (3) Accounting and Administration. His plan must be approved by the teacher in charge of the work selected and by the director of the School of Commerce, before May 1st of the
sophomore year. When the student's plan has been approved, his work is continued under the supervision of the professor in charge of the work selected.

For those who expect to enter the profession of law, the Commercial courses afford excellent preparation. Students who complete these courses will be prepared for position as teachers in commercial schools and in 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 SCHOOL OF ENGINEERING AND MECHANIC ARTS.

The School of Engineering and Mechanic Arts at present includes a four-year course in Civil Engineering and a four-year course in Mechanical Engineering, each leading to the degree of B. S.; also a four-year course in Mechanic Arts, leading to a certificate of graduation.

It is recognized that the first essential to an efficient and consistent course in engineering is a thorough fundamental training in the underlying principles of mechanical science, together with ample experience in the accepted methods of applying these principles to practical problems. With this in view, thorough courses in mathematics, physics, and theoretical mechanics constitute the work in the earlier years of the Engineering courses, while the junior and senior years are devoted chiefly to advanced specialization along the two lines of engineering. Problems of local interest, such as irrigation, power development, power transmission, etc., are made paramount.

The classroom work consists largely of lectures and discussions. Numerous problems are assigned to be reported in detail by each student. In these, the method and order of attack and presentation, rather than numerical results, receive the attention and criticism of the instructor. In the shops and laboratory,
opportunity is given for handling materials both in actual construction work and in testing for physical and mechanical properties; also for making tests on the efficiency of power-generating and transmission apparatus. In the field, practice is afforded in land, railroad, and hydrographic surveying. In all of this work the student is brought into contact with modern methods of manipulation and all results are compared for accuracy with accepted standards. The graphical and analytical methods are used throughout. Besides their practical value, the courses in Engineering have a high disciplinary value, and are especially adapted to develop originality of thought and action.

The course in Mechanical Arts is intended to qualify students as artisans, and the practical work of the shops and draughting room is emphasized. The course admits of a three-fold specialization—in woodcraft, forging, and machine work in metals, with special courses in foundry practice, carriage building, cabinet making, sloyd, etc. In this work are developed correct methods of using tools and doing the mechanic's work neatly, efficiently and with rigid accuracy. Sufficient work is given in English, mathematics, and elementary science to represent a fair high school education. Students electing any branch of the Mechanic Arts Course are required to do at least two years work in that branch. No machine work is given until the student has shown a reasonable efficiency with hand tools. All products of the shop are the property of the department, students being permitted to take away specimens of their work only by special permission.
To carry out the work of the several technical schools of the College, an efficient instructing force and a complete modern equipment have been provided in the natural and physical sciences, as well as in mathematics, history, language, etc. This makes it possible to satisfy the growing demand for strong baccalaureate courses affording a broad general education in the earlier years, and admitting of specialization later, when the student has matured his plans. Such courses constitute the work of the School of General Science, and, paralleling the other degree courses of the College, lead to the degree of Bachelor of Science. The natural introduction to this work is the College Preparatory Course in English, mathematics, etc., with an option of physiography and botany or a language instead of shop work. The work of the freshman year is all prescribed, consisting of English, mathematics, physics, chemistry and library work—the solid essentials of the specialist along any line. Those who have begun a language the previous years are advised to continue it through the freshman year, and defer the physics until their sophomore work.

Beyond the freshman year, certain requirements are made, as described on page 60, tending further toward a well-rounded disciplinary training. With these restrictions, the whole field of college work lies open, with the understanding that the student will select some one major subject to which to direct his attention, and will group related courses around this, under the direction of the department in which he specializes. For convenience, the subjects offered have been grouped as below, and the requirement is that above the freshman year, the student shall complete ten hours of his work in his major subject, ten hours in subjects found in the same group, and the remainder as he shall elect. For graduation, seventeen hours are required in the freshman year, and the equivalent of sixteen hours through each of the following years. A subject marked * below cannot become a major in the General Science Course; and as required collateral work, the strictly technical studies are excluded.
AGRICULTURAL COLLEGE OF UTAH.

Science Group.

Physics.
Zoology and Entomology.
Geology and Mineralogy.
*Animal Industry.
*Agronomy.
*Domestic Science.
Chemistry.
Botany.

Mathematical Group.

Mathematics.
Chemistry.
*Engineering.
Physics.
Astronomy.

Literary Group.

English.
History.
Political Economy.
Languages.
Political Science.
*Commerce.

In THE COLLEGE PREPARATORY COURSE students are thoroughly drilled in the subjects required for admission to the courses in Engineering and General Science.
# AGRICULTURAL COURSE.

This course leads to the Degree of B. S., in Agriculture.

## Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>1st Term</th>
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<tbody>
<tr>
<td>Chemistry I</td>
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<tr>
<td>Mathematics 4</td>
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<tr>
<td>English 6</td>
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<td>3</td>
</tr>
<tr>
<td>Horticulture 2</td>
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</tr>
<tr>
<td>Animal Industry</td>
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<tr>
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## Sophomore Year

<table>
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<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Physics I</td>
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</tr>
<tr>
<td>English 7</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>German or French 1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Chemistry</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Entomology 2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Irrigation and Drainage I</td>
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<td>3</td>
</tr>
<tr>
<td>Agronomy 2</td>
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<td><strong>Total</strong></td>
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## Junior Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>German or French</td>
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</tr>
<tr>
<td>Zoology 2</td>
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</tr>
<tr>
<td>Animal Industry 4</td>
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</tr>
<tr>
<td>Agronomy 3</td>
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</tr>
<tr>
<td>Botany 3</td>
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<td>3</td>
</tr>
<tr>
<td>Elective</td>
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## Senior Year

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Economics</td>
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<tr>
<td>Geology</td>
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<td>Engineering 3a</td>
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<tr>
<td>Veterinary Science</td>
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<tr>
<td>Agronomy 4</td>
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<tr>
<td>Horticulture 3</td>
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<tr>
<td>Elective</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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</table>
DOMESTIC SCIENCE COURSE.

This course leads to the degree of B. S. in Domestic Science.

**Freshman Year.**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English 6</td>
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</tr>
<tr>
<td>Drawing 3</td>
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<td>Botany</td>
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<tr>
<td>Chemistry 1</td>
<td>5</td>
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</tr>
<tr>
<td>H. S. 8</td>
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<td>H. S. 9</td>
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<td>H. S. 5, 10, 12</td>
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**Sophomore Year.**

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<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>German or French</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Physics 1</td>
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<td></td>
</tr>
<tr>
<td>H. S. 11</td>
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<td>H. S. 12</td>
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<tr>
<td>Zoology 2</td>
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**Junior Year.**

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<tr>
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<tbody>
<tr>
<td>English 7</td>
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<tr>
<td>German or French</td>
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<td>Chemistry 2</td>
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<td>Bacteriology</td>
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<td>H. S. 13</td>
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**Senior Year.**

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<tr>
<th>Course</th>
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<tbody>
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<td>H. S. 14</td>
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<tr>
<td>Geology 2</td>
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<tr>
<td>Chemistry 4</td>
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<td>3</td>
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<tr>
<td>Elective</td>
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<td>H. S. 15</td>
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COMMERCIAL COURSE.

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

**Freshman Year.**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English</td>
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<tr>
<td>Mathematics</td>
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<td>Pol. Science</td>
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<td>Accounting and Adm. 3, or</td>
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<td>Stenography</td>
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**Sophomore Year.**

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<tr>
<td>Chemistry</td>
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<tr>
<td>Banking and Finance</td>
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<td>3</td>
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<tr>
<td>German, French, or Spanish</td>
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</tr>
<tr>
<td>Mathematics</td>
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**Junior Year.**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English</td>
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<td>3</td>
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<tr>
<td>German, French, or Spanish</td>
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<tr>
<td>Physics</td>
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**Senior Year.**

<table>
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<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Trade and Trans. 1</td>
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<tr>
<td>*Electives</td>
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<td>16</td>
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</tbody>
</table>

*During the Junior and Senior years, students may elect seven and thirteen hours respectively, but at least five hours of each year must be in the school of Commerce.*
### CIVIL ENGINEERING COURSE.

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

**Freshman Year.**

<table>
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**Sophomore Year.**

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**Junior Year.**

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MECHANICAL ENGINEERING COURSE.

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

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GENERAL SCIENCE COURSE.

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All of the work of the sophomore, junior, and senior years is elective; but students are required to complete two years of work in modern languages, and to take an equivalent of five hours through one year in English, of three hours in economics, and of four and one-half hours in zoology or in zoology and botany. Students who elect a language in the second year of the College Preparatory Course continue the language work in the freshman year, taking physics in the sophomore year. Beyond the freshman year, the student does the equivalent of at least ten hours through one year in some subject which he selects as a major, and an equal amount of closely related collateral work. To obtain a degree, the student must complete an equivalent of seventeen hours' work weekly during the freshman year, and sixteen hours for each of the other three years.
**AGRICULTURAL COURSE.**

Those who complete this course receive certificates of graduation.

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<td>Drill</td>
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<td>Animal Industry 1</td>
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<td>Botany 1</td>
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<td>Horticulture 1</td>
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*Students desiring to specialize in some one line may, upon recommendation of the Agricultural Committee, be allowed to omit either English 5 or Mathematics 3 and take additional work in Agriculture.*
DOMESTIC SCIENCE COURSE.

Those who complete this course receive certificates of graduation.

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Those who complete this course receive certificates of graduation.

**First Year.**

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*This option is open only to students in Stenography who take Typ. 2.
MANUAL TRAINING COURSE IN DOMESTIC ARTS.

Those who complete this course receive certificates of graduation.

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Those who complete this course receive certificates of graduation.

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<tr>
<td>Technology I</td>
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<tr>
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<td>Shop Work 5</td>
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<tr>
<td>Military Drill</td>
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<thead>
<tr>
<th>Third Year</th>
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<tr>
<td>*Technology 2 or</td>
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<tr>
<td>†Technology 4</td>
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* Taken by students who specialize in machinery or forging.
† Taken by students who specialize in carpentry.
# COLLEGE PREPARATORY COURSE.

**First Year.**

<table>
<thead>
<tr>
<th>Course</th>
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<td>History 1</td>
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<tr>
<td>Drawing 1</td>
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<tr>
<td>Military Drill, or</td>
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<tr>
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| Total                   | 17       | 17       |

**Second Year.**

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<tr>
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<tr>
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<td>Zoology 1</td>
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<td>History 2</td>
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<td>Forging 4a, or</td>
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<td>Physiography</td>
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<tr>
<td>Botany</td>
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<td>or * Language</td>
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<tr>
<td>Language</td>
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<tr>
<td>Military Drill, or</td>
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<tr>
<td>Physical Culture</td>
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| Total                   | 18 or 19 | 18 or 19 |

* Students may take German, French or Spanish, receiving a credit of three hours a week. This work must be continued in the freshmen year.
WINTER COURSES.

For the accommodation of persons who can attend school during the winter months only, the following special courses are provided, beginning January 8, 1907. The Agricultural Course will be for four weeks, at the conclusion of which students may enter the regular work in Agriculture beginning with the second term. The Domestic Arts, Mechanic Arts, and Commercial courses will be twelve weeks. The work is elective, the student being allowed, with the approval of the professor in charge, to select the studies desired.

Students who take any of the winter courses may elect such other regular College studies as they are prepared to pursue advantageously.

**AGRICULTURE.**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Soils and Farm Crops</td>
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</tr>
<tr>
<td>Stock Judging and Management</td>
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</tr>
<tr>
<td>Stock Feeding</td>
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</tr>
<tr>
<td>Dairying Lectures</td>
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<td>Dairying Practice</td>
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**DOMESTIC SCIENCE AND ARTS.**

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<td>Cooking Lectures</td>
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<td>Cooking Practice</td>
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<tr>
<td>Hygiene</td>
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**MECHANIC ARTS.**

<table>
<thead>
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<td>Carpentry B</td>
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**COMMERCE.**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Bookkeeping</td>
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<tr>
<td>Business Forms</td>
<td>2</td>
</tr>
</tbody>
</table>
AGRICULTURE.

Professor Ball.
Professor Northrop.
Professor McLaughlin.
Professor Jardine.
Professor Frederick.
Assistant Professor Caine.
Mr. Bolte.
Mr.

AGRONOMY.

1. Soils and Farm Crops. The instruction in this subject is quite general and elementary, but thoroughly practical and is intended to show how a knowledge of the natural sciences may be applied in farm practice. Lectures and recitations are supplemented by practical demonstrations in the laboratory, in the vegetation house and on the farm. Required of all first year students in Agriculture. Three hours a week, during the first term. Three hours credit.*

(a) Soils. A study of the origin, formation and classification of soils with reference to their agricultural value. Special attention is given to the peculiar soils of the arid region; the conditions of fertility and the circumstances that influence it; reclamation of arid and alkali lands; and methods by which the original soil fertility may be maintained.

(b) Farm Crops. A study of the conditions of germination and growth and the circumstances modifying these conditions; practical methods for increasing the yields of crops; con-
stittents of plants; sources and action of the various elements of plant food; the selection of crops for the arid region; the system of rotation best adapted to this state, taking into consideration the distribution of labor, the production of manure, and the extermination of weeds; summer fallow; and management of meadows and pastures. Students in this course are required to make plans for farms, keeping in view the distribution of labor and the maintenance of soil fertility. Frequent excursions are made to the College farms for noting the habits of growth of different farm crops.

2. Rural Engineering. This course embraces a discussion of the principles relating to the locating, arranging and equipping of farms, and the construction and operation of farm implements and machinery. Required of all students in Agriculture electing Agronomy as a major. Three hours a week during the second term of the sophomore year and of the third year in the Three Year Course.

(a) Laying Out the Farm. Principles underlying the selection of the farm, its survey, location of buildings, irrigation ditches, drains, roads, etc., and its division into fields and yards.

(b) Buildings and Fences. The arrangement, design, location and cost of farm buildings; 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.

(c) 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. Soil Physics. In this course the physical and chemical properties of soil receive attention; different methods of treatment are examined, as well as the influence of those methods upon moisture, texture, fertility and production. Further discussions include: soil texture as affecting capillarity; osmosis and diffu-
sion as affected by cultivation and cropping; determination of the absolute and apparent specific gravity of soils; the rate of percolation of water and of air through soils; the determination of temperature and moisture of various soils under field conditions; the effect of sub-soiling and various methods of tillage upon soil moisture and plant growth; the effect of different crops upon the soil and upon the succeeding crops; the effect of special and general farming upon the productive capacity of soils. Two recitations and one laboratory period per week. Required of all junior students in Agriculture. Three hours a week during the second term.

4. Soils and Crops. The instruction in this course is intended to show how a knowledge of the natural sciences may be applied in farm practice and at the same time be thoroughly practical. Lectures and class recitations are supplemented by demonstrations on the farm and in the laboratory.

(a) Soils. A study of the origin, formation and classification of soils with reference to their agricultural value. Special attention is given to the soils of the arid regions; the fertility of the soil and the influences that affect it; the reclamation of alkali lands, and methods by which the fertility of the land may be maintained.

(b) Farm Crops. A thorough study of the plant is made, beginning with the seed and following it through a complete cycle, or until it has reproduced itself; special attention is given to the germination of seeds; root development; the way in which a plant takes in its feed; and plant breeding and selection. This work is required of all students in Agriculture during the first term of the senior year.

6. 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. Re-
quired of all students in Agriculture electing Agronomy as a major. One hour a week through the year.

7. **RURAL ECONOMICS.** Required of all students in Agriculture electing Agronomy as a major. Three hours a week during the year.

(a) **History of Agriculture.** This 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 of other nations.

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

**IRRIGATION AND DRAINAGE.**

1. **IRRIGATION AND DRAINAGE.** (a)**Irrigation.** This course includes the measurement of water, methods of applying water, duty of water, methods of preventing losses of soil moisture, irrigation by pumping, and the effect of irrigation upon plant production.

(b) **Drainage.** A study is made of the requirements of land for drainage, methods of drainage, and the removal of alkali; and suggestions are given for laying out and building different kinds of under-drains. Required of sophomores in Agriculture. Three hours a week during the first term.

2. **IRRIGATION AND DRAINAGE.** (a) **Irrigation.** This course includes the measurement of water by various methods, methods of dividing water, canal management and construction, the location of laterals, methods of irrigation required by different soils, duty of water studies, the use of pumping machinery, the relation of soil moisture to plant growth, evaporation, seepage, and the building of farmers' reservoirs.

(b) **Drainage.** This course treats of the requirements of land for drainage, problems involved in laying out and putting in
a system of farm drains for the removal of water or alkali or both, draining districts, and drainage law. Elective to seniors in the Agricultural Course. Three hours a week.

3. Irrigation and Drainage. This course is designed to supplement courses 1 and 2, and will consist largely of individual work upon problems in irrigation and drainage. Students completing this course will be prepared to take up irrigation or drainage experimental work similar to that of the Federal Government and State Experiment Stations. Elective to students having taken courses 1 and 2.

ANIMAL INDUSTRY.

1. General Courses. In this course a study is made of the qualities of animals as indicated by external form. This work also includes score card practice, students being required to give reasons for their rating. Lectures are given on the breeds of live stock best adapted to Utah conditions; the fundamental laws of breeding; selection of live stock; feeding and management. Required of all first year students in the Three Year Course in Agriculture. Three hours a week during second term. Three hours credit.

2. Breeding. This course includes a study of the laws of heredity, correlation, reversion, variation, and fecundity, and of the methods of breeding, cross-breeding, in-and-in breeding, and 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 live-stock and poultry on the College farm are available for study and illustration. Elective to seniors in Agriculture. Three hours a week during the first term.

3. Breeds of Live Stock. The object of this course is to study the different breeds of horses, cattle, sheep, and swine for
the purpose of learning their qualities, characteristics, and adaptabilities. Required of freshman in Agriculture, and of third year students in the three year course. Three hours a week during the second term.

4. 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 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. Required of juniors in Agriculture. Three hours a week during the first term.

5. Dairying. Required of all second year students in the Three Year Course in Agriculture. Three hours a week during the first 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. Students taking this course must provide themselves with white duck suits and caps.
6. **Advanced Dairying.** This course consists of a study of special dairy products, and of experimental work in handling dairy products. Elective to students who have completed Course 5, and Bacteriology. Three hours a week during the second term.

**POULTRY CRAFT.**

This course consists of a series of lectures supplemented by practical work with fowls. Each student will go through the actual work of artificial incubation and brooding, crate fattening of fowls and will become thoroughly familiar with the management of a practical modern poultry plant by actual experience in the several operations. Plans and specifications for different types of poultry houses will be prepared and a similar plan of a complete poultry plant is required before the course is completed. The work will be practical rather than theoretical and will cover feeding, breeding, incubating and rearing chicks; dressing, marketing, diseases, etc. The work is required of second year students in the Three Year Course in Agriculture during the second term, and takes the equivalent of one recitation period three afternoons weekly. Certain portions of the work will require the attention of the student several times daily for a short period.

To those wishing to specialize in Poultry Husbandry, opportunity will be given to assist in experimental work. Elective courses in advanced work will be offered the junior and senior years, if a sufficient number of students apply for the work.

**VETERINARY SCIENCE.**

1. **General Course in Veterinary Elements.** This course considers briefly elementary anatomy and physiology of domesticated animals, and the common ailments of farm animals. A study is made of the most prevalent contagious diseases, their causes, symptoms, course diagnosis and treatment, besides sanitary measures for their suppression and prevention. The subject is taught by lectures and text books and is illustrated by observa-
tion and practice in the free clinics held weekly. Required of all second year students in the Three Year Course in Agriculture; elective to students of other courses. Three hours a week during the first term of the second year.

2. **Comparative Anatomy of the Domesticated Animals and Dissection.** The subject is taught by a series of lectures including the study of the bones, articulation muscles, circulatory apparatus, respiratory system, the organs of digestion, the urinary-genital organs, and the organs of special sense. The lectures are supplemented by demonstrations from mounted skeletons, prepared specimens, and charts. This study also comprises a comprehensive course in dissection. Each student will be required to dissect animals or parts as assigned and pass an examination before going to another part. Required of seniors in Agriculture. Elective to specials. Three hours a week during second term.

3. **Comparative Physiology of Animals.** This course consists of general physiology studied by the comparative method. The general properties of animal cells, their organs, development and growth with special physiology of the various organs and tissues of the animal body compared with the human, and common features pointed out and discussed. Three hours a week.

4. **Sanitary Science.** This course consists of a discussion of the following topics: The great plagues of history; the manner in which disease is propagated and spread, including the part played by meat and milk; the influence of soil configuration and climatic conditions; and the effect of environment, including ventilation, lighting, and draining of stables. Preventive measures, including disinfection, vaccination, and quarantine, and the methods of preventing the introduction and suppression of outbreaks of contagious diseases are discussed. Three hours per week during junior year. Elective to those who have completed Course 2.
5. Examination for Soundness. This work includes lectures and practical examinations. The student is made familiar with the method of examination, what to consider as unsoundness, etc. A systematic search for disease, the various conditions likely to be found in each part and the effect they may have on the use of the animal. Three lectures per week. Elective to those having completed Course 2.

6. Obstetrics. This course includes a review of obstetrical anatomy, reproduction, hygiene of pregnant animals, pathology of gestation, normal parturition, dystocia, obstetric operations, accidents of parturition, and diseases of the young animals. The college herd and the surrounding stock breeding community give opportunity for practical work. Elective to seniors in Agriculture and others who have completed Course 2. Three hours during second term.

7. Clinics. A free clinic is held at the Hospital once every week. All students taking any of the Veterinary courses are required to attend and assist in this work. The free examinations and treatment, with a nominal charge for Hospital treatment, give the student ample opportunity to apply the work of the class room in actual practice. There are numerous cases brought in each week from the surrounding rich stock growing country, furnishing the clinic with abundant material for actual practice.

Horticulture.

1. Propagation and Care of Plants. A study of the principles of plant increase, growth and development. In the laboratory, practice is given on such matters as pollination, seedage, grafting, budding, layerage, making of cuttings, etc., also the making and management of hot beds, cold frames and forcing houses, making of spraying mixtures and the general requirements of plants in the garden and under glass are discussed in a simple manner. The Principles of Plant Culture by Goff, is used
as a text and guide to an intelligent understanding of the work in hand. Required of first year students in the Three Year Course in Agriculture. Three hours a week during second term.

2. Pomology. (Fruit Growing) This course deals with the theory and practice of fruit growing. The subject is treated under two heads: The practical side is first considered in relation to selection of site for an orchard, reference being made to the soil, exposure, markets and general climatic conditions; also the planting and laying out of an orchard, profitable varieties, the general care and management, including such subjects as the cultivation, irrigation, pruning, and spraying are taken up. The systematic aspects of the subject will be treated in a series of lectures on the origin and classification of fruits. Practice will be given in the description and identification of all varieties obtainable. Besides the lectures and class room work, students will be given practical demonstrations in orchard and nursery practice, including such trips to leading orchards and nurseries as may be satisfactorily arranged. Reference works: American Fruit Growing, Thomas; Principles of Fruit Growing, Bailey; Bush Fruits, Card. Required of freshmen and of third year students in the Three Year Course in Agriculture. Three hours a week during first term.

3. Olericulture. (Vegetable Gardening.) This course treats of the origin, history and botanical relationships of garden vegetables. A study is also made of the location, requisites of soil, fertilization and general cultivation, the planting, transplanting, rotating, harvesting, storing and marketing of crops. Some instruction will also be given in the forcing of early vegetables. Reference works: Vegetable Gardening, Green; Principles of Vegetable Gardening, Bailey. Required of seniors in Agriculture. Three hours a week during first term.

4. Handcraft. The object of this course is to give a practical working knowledge of horticultural methods. It is elec-
tive to any student who desires to become familiar with plants and the various processes which the horticulturist makes use of to facilitate his work in the gardens, orchards and green houses. One laboratory period throughout the year.

5. **Greenhouse Management and Construction.** The purpose of the course is to include the work formerly given under the term Floriculture, such as the propagation and management of greenhouse plants, together with a complete study of vegetable and cut flower forcing and the construction and arrangement of greenhouses. Attention is given to the preparation of soils, propagation, planting, transplanting, trimming, and training of house plants; the treatment given bulbs and other plants used for winter decoration and window boxes, and the care during winter of plants used in borders and beds outside. Reference works: *Nursery Book*, Bailey; *Practical Floriculture*, Henderson; *Greenhouse Management and Greenhouse Construction*, Taft. For juniors in Agriculture who elect Horticulture as a major. Two hours a week during the second term.

6. **Landscape Gardening.** This course will be devoted principally to the home grounds. A study will be made of the principles governing the laying out of walks and drives, making of lawns, planting of shrubbery, designing of beds and borders, in short, everything relating to the ornamentation of the home grounds. Reference: *Principles of Landscape Gardening*, Waugh. Two hours a week during the second term.

7. **Forestry.** The study of trees in relation to soil, environment, altitude, humidity, temperature and winds. Their distribution, means of propagation, the starting of windbrakes, shelter belts and forest plantations and the trees and shrubs of Utah are given attention. Reference works: *Forestry of Minnesota*, Green, and *First Book of Forestry*, Both. Two hours a week during the first term.
8. **Plant Breeding.** This course is elective to Seniors in Agriculture who wish a more thorough knowledge of the principles governing the improvement of plants under cultivation. One hour a week during the first term will be devoted to a careful study of the laws relating to the improvement of plants. One laboratory period each week will also be devoted to practical work on the emasculation and crossing of plants. Reference work: *Plant Breeding*, Bailey. Two hours a week during first term.

9. **Plant Evolution.** Following Plant Breeding and as a sequel to it will be given a course dealing with the evolution of plants, particular attention being paid to the origin and domestication of those commonly cultivated. Reference work: *Evolution of our Native Fruits and Survival of the Unlike*, Bailey. Two hours a week during the second term.

10. **Investigation.** Senior students in Agriculture who elect Horticulture as a major will be allowed to carry on investigational work along horticultural lines in which they have special interest. This course will require an equivalent to one laboratory period each week, the work being done at the time best suited to the students if compatible to the best interests of the work in hand.

**Entomology.**

1. **Economic Entomology.** This course consists of a series of lectures on the injurious and beneficial insects of the region. Life-histories will be discussed and specimens of all stages studied. Of the injurious species, the character of the injury, methods of prevention, remedies, etc., will be emphasized. The student will become familiar with the use of different kinds of spraying apparatus and the preparation of spraying mixtures and other insecticides. Smith’s *Entomology* and Comstock’s *Manual* will be used as reference texts. Required of second year students in the Agricultural Course and elective to others. Three recitations a week during the first term. Three hours credit.
2. **General Entomology.** The work of this course will consist of a careful study of typical examples of each group, collecting, mounting, and classifying in all orders, and the working out of life-histories of injurious species and the application of remedies. Required of sophomores in the Agricultural Course and elective to others. Two hours throughout the year. Omitted in 1906-07.

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**Domestic Science and Arts.**

Professor Cotey.
Assistant Professor Cook.
Miss Fisher.
Miss Vlbrans.
Miss Powell.
Miss Smith.
Miss Egbert.

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**Household Science.**

1. **Laundering.** The work consists of practice alternating with lectures. The practice includes plain white washing and removing stains; laundering table linen; clear starching; best methods of doing up fine mull; ironing shirts, cuffs, and collars; washing flannels; and cleaning silks 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, bluing, and starch are discussed in their scientific and practical relations to laundry work. Required of first year students in the Domestic Science Course, and in the Manual Training Course in Domestic Arts. Four hours a week during the first third of the year.

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, and boiling, and 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.

Students taking this course share in the work of serving lunches in the way described in paragraph ten, Cooking V. Required of first year students in the Manual Training Course in Domestic Arts. Five hours a week during the second third of the year.

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 first year students in the Manual Training Course in Domestic Arts. Six hours a week during the last third of the year.

4(a) **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 the winter months. A "high tea" is prepared in the spring. Required of second year students in the Manual Training Course in Domestic Arts. Five hours a week during the last two-thirds of the year.
4(b) Cooking IV. The work in this year includes a course in plain chafing dish cookery; also a course in hospital diets and sick room cookery. During the year the pupils are required to serve a five-course dinner. The pupils work together, plan the menu, do the marketing, and prepare and serve the best meal they can with a given sum of money. Required of third year students in the Manual Training Course in Domestic Arts. Four hours a week throughout the 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. Four hours a week during the first third of the year.

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.

A museum of several hundred samples of foods is used to illustrate these lessons.

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, and carving and serving foods. The principles taught in the class are put into practice by each student in
the kitchen. Required of first year students in the Manual Training Course in Domestic Arts. Five hours a week throughout the year.

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. Three hours a week throughout the year.

8. HYGIENE, 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 term.

9. THEORY OF COOKING. The purpose of this course is to give instruction in the best methods of selecting, preserving, and cooking all common food material. 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 the second term.

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. An individual tea is also served with a given sum of money. Required of third year students in the Domestic Science Course. Four hours a week during the last two-thirds of the year.

II. THE SCIENCE OF NUTRITION. This is a study of foods, their chemical composition, characteristics, and 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, Hutchinson, 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 foods is used as an aid to the study. Required of sophomore students in the Domestic Science Course. Three hours a week during the second term.

12. COOKING VI AND INVALID DIET. Cooking VI covers work in salads, ices, desserts, and fancy breads and includes the serving of an individual dinner for a given sum of money. Two students are allowed $3.50 to provide a six-course dinner for ten persons. They plan the menu, do the marketing, prepare and serve the best dinner they can for the money. The work in Invalid Dietaries determines the best food to be given in diseases, with practice in their preparation and serving. The preparation of liquid diet, light diet, and convalescent diet is taught as in hospital training schools. Invalid Cooking by Mary Boland; Food in Health and Disease, by Yeo; Dietetics, by Thompson, and similar works are used as texts. Required of sophomore students in the Domestic Science Course. Six hours a week during the second term.

13. SANITATION. The course embraces a study of the conditions necessary to a healthful home—fresh air, pure water, heat-
ing, 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 juniors in the Domestic Science Course. Three hours a week during the second 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 special value to students of this class, are found in the library. Required of seniors in the Domestic Science Course. Three hours a week during the second term.

15. **Advanced Cooking and Dietetics.** This advanced work in cooking includes a chafing dish course, some lessons in camp cookery, experiments in slow cooking with Aladdin oven, the preparation and serving of an elaborate Thanksgiving or Christmas dinner, with advanced work in dietetics. Required of seniors in the Domestic Science Course. Four hours a week throughout the year.

Additional courses in practical cooking will be arranged for students who wish to devote more time to that subject than is allowed in the regular courses.

**SEWING.**

1. **Hand and Machine Models.** During the first term of the first year, in the Manual Training Course, the student makes a set of models covering the full course in hand sewing; involving practice in basting, overcasting, backstitching, hemming, felling, gathering and stroking gathers, in making gussets, buttonholes, loops, eyelets, sewing on hooks and eyes, and practice in patching,
darning, blanket stitch, slip stitch, chain stitch, French hem, French seam, etc. Instruction is given in the care and use of various machines, and regular practice in running, hemming, felling, gathering, puffing, tucking, quilting, etc. Talks are given on the position of the body and care of the eyes while sewing, on color, and on the nature and manufacture of materials used. Required of the first year students in the Manual Training Course in Domestic Arts. Ten hours a week during the first term.

2. Plain Sewing. During the second term, drawers, skirt and underwaist are cut and made. The student is taught to cut from patterns made according to the system used throughout the course, and to fit and finish a dress of washable material; also to cut, fit, and finish one shirtwaist. Required of first year students in the Manual Training Course in Domestic Arts. Ten hours a week during the second term.

3. Dressmaking. This course includes draughting from measurements, patterns for waists, skirts, sleeves, etc.; practice in cutting and basting; also cutting, fitting, and finishing a worsted dress and fancy waist. Required of third year students in the Manual Training Course in Domestic Arts. Eleven hours a week during the first term.

4. Designing, Cutting, and Fitting. Instruction is given by talks on grace in design of costume, and harmony of color. Further practice is given in cutting and fitting. Required of third year students in the Manual Training Course in Domestic Arts. Eleven hours a week during the second term.

5 (a). Advanced Dressmaking. Further work 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.
5 (b). **HISTORY OF COSTUME.** This is a study of the covering for the body, how it came into use, materials from which it was made, what each tribe of people wore, and the changes in costume from pre-historic times to the nineteenth century. Required of third year students in the Manual Training Course in Domestic Arts. Ten hours a week during the first term.

6. **ART NEEDLE WORK.** This consists of hemstitching, drawn work, Kensington embroidery. Required of third year students in the Manual Training Course in Domestic Arts. Ten hours a week during the second term.

7. **ART NEEDLE WORK.** Roman cut work, jeweled embroidery, Mount Mellick embroidery, and modern lace making. Required of third year students in Manual Training Course in Domestic Arts. Ten hours a week during the first term.

8. **HAND STITCHES.** During the first part of the year, the student makes a set of models, covering the full course in hand sewing, and involving practice in basting, overhanding, overcasting, back stitching, hemming, felling, gathering and stroking gathers, in making gussets, buttonholes, loops, eyelets, in 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 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. Five hours a week during the first term.

9. **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. Five hours a week during the second term.

10. **MACHINE WORK.** The students are taught to adapt and use patterns; to cut, fit, and finish a dress of washable ma-
terial; and to cut, fit, hang, and finish one lined skirt of worsted material. Required of second year students in Domestic Science. Four hours a week during the first twelve weeks of the first term, and six hours a week during the next six weeks.

II. Dressmaking. This course includes plain draughting from measurements, practice in cutting and basting, and cutting, fitting, and finishing one fancy waist. Required of second year students in Domestic Science. Six hours a week during the second term.

COMMERCE.

PROFESSOR BEXELL
PROFESSOR ENGLE.
PROFESSOR THOMAS.
PROFESSOR ROBINSON.
MR. JENSEN.
MR. BELL.

POLITICAL ECONOMY.

I. General Courses.

1. Economics I. Discussion of wealth, nature and requisites of production, diminishing returns from natural agents, labor and its increase, efficiency of production, credit, interest, wages, the industrial manager, prices, rent, socialism, taxation, the national debt, free trade, protection, bimetallism, United States notes, banking, the National Banking System, the labor problem, and co-operation. Bullock’s Economics. Required in the third year of the Commercial Course. Three hours a week throughout the year.

2. Economics II. Three main purposes are kept in view in this course: a clear analysis of the mechanism and functions of
industrial society; a fundamental discussion of wealth and monopoly— their origin, uses, and abuses; a dispassionate discussion of economic questions that have become political questions. Much reading and many theses are required. Hadley’s *Economics* and the *Ashley Series*. Required of seniors in all College courses except Commerce. Three hours a week throughout the year.

3. **Sociology.** The main topics treated are the subject matter of sociology, relation of sociology to other subjects, sociology as a science, division of sociology, society regarded as a contract, society as an organism, physical basis of society, association, meaning of association, the social mind, causes of social activity, industrial organization of society, the family, the state, the individual, external description of social development, processes of social development, natural selection in human society. The texts are Gidding’s *Principles of Sociology* and Fairbank’s *Introduction to Society*. Elective in junior and senior years. Two hours a week throughout the year.

**II. Banking and Finance.**

1. (a) **Money.** Money as a commodity, coinage, legal tender, gold standard, International Monetary Conferences, Colonial bills of credit, Revolutionary bills of credit, greenbacks, Confederate currency, silver dollars, panic of 1893, present conditions, etc. Required of sophomores in the Commercial Course. Three hours a week during the first half of the first term.

    (b) **Banking.** Functions of a bank, the clearing house system, early American banks, the Bank War, the Safety Fund Bank, the national bank system, state banks, savings banks, loan and trust companies, present problems, etc. Required of sophomores in the Commercial Course. Three hours a week during the second half of the first term.

2. (a) **Funding Operations and Corporation Finance.** Money funds and credit, obtaining funds by inheritance, ex-
change, sales of commercial credit, long time paper, etc. Fund­ing operations by the United States Treasury, the savings bank, building and loan associations, commercial banks, trust companies, brokers, and insurance companies. The general practice in fund­ing corporations and other large business enterprises. Required of sophomores in the Commercial Course. Three hours a week during the first half of the second term.

(b) **THEORY AND PRACTICE IN PUBLIC FINANCE.** History of financial systems, theories of public expenditures, various methods and practices of taxation and other sources of income, public credit, relation of our Federal Treasury to our monetary system. Required of sophomores in the Commercial Course. Three hours a week during the second half of the second term.

3. (a) **COMMERCIAL ORGANIZATIONS.** Business men's associations, manufacturers' associations, commercial clubs, boards of trade, various stock exchanges, clearing houses, etc. The methods of business and extensive influence of these organizations. This course is principally research work to determine best methods of procedure in establishing large business enterprises and manipulating large amounts of stock and capital. Elective. Three hours a week during first third of the year.

(b) **TRUSTS AND MONOPOLIES.** A general research course in studying the present business and financial practices of monopolies, combinations and trusts, with a view of determining the cause and effect of the evils, and also of the virtues of such organizations. Elective. Three hours a week during second third of the year.

(c) **DEPRESSIONS, PANICS AND CRISES.** Causes and indications of prosperity and depression, prevention of crises and remedies when they occur, history of crises and depressions in the United States, study of the best methods of business practice in prosperity or depression. Elective. Three hours a week during last third of the year.
4 (a) **History of Finance.** A brief survey of financial history to 1865. Study of the inflation period, struggle for resumption of specie payment, the silver problem, the surplus revenue of 1888, the two laws of 1890, the expulsion of gold, the panic of 1893, government loans and tariff of 1894, bond syndicate operations, the present financial situation. Elective. Two hours a week during first half-year.

(b) **Securities, Investment and Speculations.** A general study of the stock markets of the world, together with present indications in private and public finance. Intended primarily for a final survey of the financial situation. Elective. Two hours a week during second half-year.

5. **Insurance.** An elementary course in theory, practice and history of insurance. A study of the history of risks, the different forms of insurance and annuity companies, policies, premiums, mortality tables, statistics, etc. The mathematical side of the subject is outlined under Accounting 5. Elective to juniors and seniors. Three hours a week during the second term.

**III. Production and Manufacture.**

1. **Commercial Geography and Materials of Commerce.** The main topics treated are: basis of the work, natural conditions affecting commerce, human control of commerce, transportation and commercial routes. There is a discussion of the leading countries of the world under the following heads: Climate, natural features, distribution of leading products, vegetable food products, vegetable and animal fibres, wood crop, minerals, manufacture, agriculture; distribution, necessities and advantages of freight rates, seaports, railroads, canals; trade tendencies, brief historical summaries, cause for shifting of trade centers, present trade tendencies and new regions now being opened, navigation, ocean routes, and such collateral topics as may be necessary to supplement the work outlined. This course presupposes a fair
knowledge of mathematical and political geography, and a minimum knowledge of general history. Required of all Commercial students in the second year. Two hours a week throughout the year.

2 (a) **Production and Manufacture I.** This course deals with the comparative and extensive sides of the subject. There is a brief survey of latent commercial possibilities, as follows: surface indications, unexplored regions, probable demands upon the earth through future inventions, possible outcome of inhospitable regions and of desert areas, effect of known latent resources upon the expectations and policies of mankind. Present resources of leading nations are then considered, together with their influence upon trade routes. There follows a discussion of competing economic systems, past and present, and of the relation of social and political development of industrial mechanisms. Elective. Five hours a week until holidays.

(b) **Production and Manufacture II.** This is the intensive course, concerned with direct and indirect production. There is a careful study of the productive and manufacturing processes through which such representative commodities as wheat, cotton, sugar beets, tobacco and lumber pass in going from the producer to the consumer. The work in indirect production considers cotton and woolen goods, steel, boots and shoes, etc. Elective. To continue from holidays to the end of the year. Five hours a week.

3. **Economics of Machine Industry.** This course includes a brief treatment of the history and development of machinery and a discussion of the economic and social effects of labor-saving invention upon society. The influence of labor-saving machinery upon concentration of capital, and its effects upon the labor of men, women, and children receives careful attention. Among the books consulted are Habson's *Evolution of Capitalization*, Wright's *Industrial History of the United States*, and Ely’s *Evolution of Industrial Society*. Elective to juniors and seniors. One term. Three hours a week.
IV. Trade and Transportation.

1. History of Commerce. The development of commerce in Egypt, Greece, Rome, Florence, Mediaeval Europe, etc., down to and including the commercial nations of modern times. Special attention is given to materials and machinery of commerce, to trade routes, and to the relations between commercial developments and other branches of the history of civilization. Required of senior students in the Commercial Course. Three hours a week during the first term.

2 (a) Merchandising. A practical study of business methods, treatment of retailing, wholesaling, commission business, jobbing, etc.

(b) Domestic Trade. This course considers self-sustaining and dependent localities and their products, together with the exchange of products, and its causes and results.

(c) Transportation and Communication. Railroads, canals, lakes, rivers, oceans, etc. Telegraphs, telephones, cables, wireless telegraphy, mail, etc.

(d) Foreign Trade and Relations. Our surplus, foreign needs, consular service, expense of marketing, reciprocity, tariffs, etc. Required of candidates for degree in Commerce with Trade and Transportation as major. Elective. Five hours a week throughout the year.

3. Theory and Practice in Advertising. A study of the fundamental principles of modern advertising. Special emphasis will be laid on the peculiarities of composition in newspaper and circular advertising, proof-reading, effectiveness of design, illustrations, coloring and display; proper distribution of funds for various forms of advertising, various devices used in so-called "follow up" systems; store and window display, card writing, etc.
Propositions will be submitted to students from local printers and merchants for actual "write ups" during the special advertising seasons. Occasional illustrated lectures will be given. Elective to juniors and seniors. Three hours a week during the second term.

**POLITICAL SCIENCE.**

1. **Civil Government.** Our European ancestors, origin of states and state institutions, English and American governments compared, state and foreign service, the treasury, money and coinage, banks, the post office, the executive departments, legislation, the constitution, federal and state powers, political parties, party issues, etc. Required of second year students in the Commercial Course. Three hours a week throughout the year.

2. (a) **Commercial Law.** Formation of contracts; dealing with offer and acceptance, form and consideration, capacity of parties, reality of consent, and legality of object. Operation of contracts, including limit of contractual obligations and assignment. Interpretation, rules of evidence, and rules of construction. Discharge of contracts; the agreement, performance, breach, impossibility of performance, and operation of law.

   (b) **Laws of Bills and Notes.** Maker's, acceptor's, drawer's and indorser's contracts; proceedings before, upon, and after dishonor; accommodation paper; grantor and surety; holder's position; defense; equities, etc.

   (c) **Corporation Law.** Kinds, formation, powers, liabilities, ownership, shares, subscriptions, calls, notice, transfers, management, officers, directors, contractual powers, dividends, dissolutions, etc.

   (d) **Partnership Law.** Formations of partnership, essentials, liabilities of members, capital, profits, good-will, individual and firm liabilities of members, capital, profits, good will, individ-
ual and firm property, agency for partners, usage, majority, torts of partners, dissolution, winding up, priority, distribution, etc. Required of freshmen in the Commercial Course. Three hours a week throughout the year.

3 (a) CONSTITUTIONAL LAW. The Constitution; the rise of the American Union; distribution and powers of the government; powers of Congress; powers of the Executive; the judicial department; checks and balances of governments; government of the territory; the admission of new states; amendments to the constitution; civil rights and their guarantees; protection of persons accused of crime; protection of contracts and property, etc.

(b) INTERNATIONAL LAW. Persons concerned, rights and duties of states, territorial jurisdiction, jurisdiction on high seas, agents of the state, nationality, treaties, settlement of disputes, war and its effects, military occupation, hostilities, neutrality, contraband, blockade, etc. Elective. Three hours a week during the second term.

4 COMPARATIVE STUDY OF GOVERNMENTS. A comparative study of the various systems of government; Greece, Rome, Great Britain, Germany, France, Switzerland, United States, etc. Required of seniors in the Commercial Course. Three hours a week during the second term.

ACCOUNTING AND ADMINISTRATION.

1. THEORY OF ACCOUNTS. The law of debit and credit, illustrated by correspondence with offices; practice in ruling, checking, construction of balance sheets; practice in letter writing making out bills, invoices, receipts, bills of lading, legal forms, etc. A portion of each period will be devoted to short and rapid methods of commercial calculation. Required of first year students in the Commercial Course. Five hours a week throughout the year. Two hours credit.
2. **Practical Accounting and Business Practice.** A thorough and complete course in all the essentials of accounting as practiced in modern business houses. Great stress will be laid on correspondence and the construction of legal and commercial papers. Five budgets must be prepared by each student during each term. A portion of each period will be devoted to rapid calculation. Inter-communication business is carried on between fellow-students and commercial schools in the leading lines of business, affording excellent drill in correspondence and office practice. Given in the second year of the Commercial Course. Two hours daily throughout the year. Four hours credit.

3. **Advanced Accounting and Business Management.**

   (a) **Corporation Accounting and Auditing.** A practical application of previous courses in accounting as applied to corporation accounting. Manufacturing, railroading, and merchandising receive special attention.

   (b) A thorough study of bank accounting and auditing. Various systems are studied and compared. Office practice and inter-communication work similar to that described under Accounting 2 form a part of this course. The college maintains completely equipped offices in banking, transportation, real estate, brokerage, commission, retailing, and wholesaling. When all the theoretical work and the business practice is completed, the student is placed as manager of one of these offices and is held responsible for all its operations. Each student must pass through at least three offices during the year. Five budgets similar to those described under Accounting 2 are required each term. A portion of each period is devoted to rapid calculations. Given in the third year of the Commercial Course. Two hours daily. Four hours credit.

4 (a) **Public Accounting and Administration.** A general course in analyzing accounts of various typical corporations in connection with a reference book course along similar lines.
Emphasis is given to such accounts as usually necessitate expert accounting and public auditing.

(b) The organization of individual business, corporations, and bodies politic; detection of waste and fraud; preparation of reports, etc. Elective after Accounting 3. Two hours daily throughout the year. Four hours credit.

5. **Higher Commercial Mathematics.** Application of the progressions to commercial problems, construction of formulas relating to annuities, sinking funds, the various problems of insurance, theory of probabilities, construction and use of various tables and statistics; the use of logarithms in commercial computation, etc. Elective after Accounting 4. Three hours a week during the first term.

**STENOGRAPHY.**

1. **Stenography.** 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 to ordinary handwriting. Other important features are no position writing, no shading, and no detaching of vowels. These advantages enable the students to master the principles in a short time and to begin work from actual dictation early in the course. The dictation covers business correspondence in various branches. Optional with Accounting 2 to second year students in the Commercial Course. Five hours a week throughout the year. Four hours credit.

2. **Stenography II.** After a thorough review of the text book, various forms of correspondence, legal documents, speeches, specifications, editorial matter, court testimony, etc., are taken up. This course is designed especially for students, with the necessary preparation, who desire to qualify for the United States Civil Service, or for reporting work. A study of public meetings, court procedure, and reporting of public meetings and trials in Logan
and vicinity. Much transcribing on the typewriter. Optional with Accounting 3 to third year Commercial students. Five hours a week throughout the year. Four hours credit.

**TYPEWRITING.**

1. **TYPEWRITING I.** Beginning with simple exercises, the student learns correct fingering with other manipulation of the typewriter. Special attention is given to proper care and mechanism of the machine. Optional with Penmanship to first year students in the Commercial Course. One hour a week with much practice between recitations. One hour credit.

2. **TYPEWRITING II.** This is a special course for those taking Stenography. In addition to the elementary principles given in Typewriting I, students make copies of correctly written correspondence, legal forms, etc.; also personal composition and dictation. As soon as a moderate speed is attained, the work includes transcription of shorthand notes. One hour daily throughout the year. Two hours credit.

3. **TYPEWRITING III.** A special course for those who show skill and ability to write rapidly and accurately. Students receive dictation, writing same on the typewriter. Technical typewriting, as used in various branches of business, including tabulating, spacing, etc., is a feature of this course. Elective after Typewriting I.

**PENMANSHIP.**

1. This course aims to develop a practical handwriting. Much stress is laid on movement, position of hand and body, etc. Beginning with easy movement drills, the student is led into more difficult exercises, completing with words and short disconnected sentences. Designed for first year students in the Manual Training Courses, and for Winter course students. Daily. Two hours credit.
2. A somewhat advanced course designed especially for Commercial students who have the principles of Course 1 well grounded. Commercial correspondence is made a special feature. Artistic writing, lettering, and engrossing receive attention. One hour credit. Optional with typewriting.

SPECIAL LECTURES.

A series of about ten lectures on practical business subjects will be given during the year by prominent business men throughout the state. All Commercial students are expected to attend these lectures.

ENGINEERING AND MECHANICAL ARTS.

Professor Jensen.
Mr. Hansen.
Mr. Pulley.
Mr. Williams.
Mr. Wangsgard.
Mr. Thatcher.
Mr. Goff.
Mr. Newey.

ENGINEERING.

Note.—The Legislature of the State of Utah at its last session passed a law amending Section 2087 of the Revised Statutes of Utah, 1898, relating to the courses of study that shall be offered by the Agricultural College. This law prohibits the College from offering courses in Engineering; but provides that courses of instruction shall be offered in “elementary surveying,” and “in irrigation as applied to the measurement, distribution, and application of water for agricultural purposes.”
The Board of Trustees, at a meeting held at the College on July 8, 1905, decided that the institution is under obligation to allow students who have already entered the institution for engineering to continue their courses and graduate upon completion of the work required at the time of entrance.

1a. **Mechanical Drawing.** 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 and of second year students in the Manual Training Course in Mechanic Arts. Prerequisite, Drawing 1, 2 or 3. Six hours a week throughout the year. Two hours credit.

1b. **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 intersections; shades and shadows; and applications to stereotomy, sheet-metal work, and other structural problems. Required of sophomores in the Engineering courses. Six hours a week throughout the year. Two hours credit.

1c. **Drawing and Design.** In this course the work is adapted to the line of shop work which the student is pursuing. It is intended to give practice in design with consideration of 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 third year students in the Manual Training Course in Mechanic Arts who have completed Drawing 5. Nine hours a week throughout the year. Three hours credit.

2a. **Elements of Mechanism.** This includes a consideration of the various forms of motion and its production; link mo-
tions, 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 second term. Three hours credit.

2b. 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. Two hours a week during the first term; four hours a week during the second term. Three hours credit in second term.

2c. Machinery. This course will afford an opportunity to apply the general principles of mechanism and machine design to a more detailed study of a particular type of machinery. The selection of the type to be studied will be left largely to the individual student. The following types are suggested:—a more detailed study of steam machinery in general; locomotive construction; mining machinery; cotton and wool manufacturing machinery, etc. The work will consist of:—(a) prescribed reading; (b) study of catalogues and bulletins of manufacturers; (c) draughting board designs; (d) visits of inspection to such installations as are within reach. Regular hours will be assigned for consultation with the instructor, whose function will be to aid in getting materials for study and to render such criticism and aid as will secure thorough and thoughtful work and reasonable progress. A definite scheme must be submitted and approved at the beginning of the year, and adhered to throughout the course. The course will be arranged according to the time at the disposal
of the student, with ten hours a week throughout the year as a minimum. No student will be admitted to this course who has not completed all the technical work of the regular course in Mechanical Engineering.

3a. **Elementary Surveying.** The general methods of plane and topographic surveying and the use, care, and adjustments of instruments. The practical work in the field receives particular attention. Raymond's *Plane Surveying*. Required of sophomores in Engineering courses and of seniors in Agriculture. Six hours a week during the first term. Three hours credit.

3b. **Advanced Surveying.** This course deals especially with the advanced problems of city, railway, and hydrographic surveying. Raymond's *Plane Surveying* and Searles' or Trautwine's field book. Required of all sophomores in the Civil Engineering Course. Six hours a week during the second term. Three hours credit.

4a. **Mechanics.** In this subject are treated the general laws of statics and dynamics as illustrated in the composition and resolution of force, determinations of centers of gravity, moments of inertia, dynamics of a particle and of rigid bodies, friction, mechanics of fluids, wind pressure and graphical statics. Required of juniors in the Engineering courses. Four lectures and three hours laboratory a week during the second term. Four hours credit.

4b. **Applied Mechanics.** This course includes a discussion of the materials of engineering and their use in engineering structures, the 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 analyses of roof and bridge trusses and modern high-framed
buildings. The subject is concluded with the discussions of the continuous girder, the elastic arch, and the general theory of elasticity. Required of seniors in the Engineering courses. Four lectures and three hours laboratory a week throughout the year. Five hours credit.

4c. HIGH FRAME BUILDING. This course consists of a complete design of a modern high steel frame building, based upon the theory of stresses in framed structures, and upon modern practice. The instruction will consist of twelve or fifteen lectures, and an equivalent of six hours per week for one-half year in the draughting room. Students who have completed 4b are eligible.

5a. HYDRAULICS. A thorough study of the general theories of hydraulics, the flow of water through pipes, weirs, orifices and open channels, the measurement of water power, the dynamic pressure of flowing water; together with an introduction to the general theories of water power. Merriman's *Hydraulics*. Required of juniors in the Engineering courses. Three hours a week throughout the year.

5b. IRRIGATION I. The location, design, construction, and operation of irrigation canals; design and construction of dams, reservoirs, headgates, etc.; the duty of water; subdivision systems, and other subjects relating to irrigation systems. Wilson's *Manual of Irrigation*. Required of seniors in the Civil Engineering Course. Three hours a week during the first term.

5c. 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.

5d. WATER SUPPLY AND SEWAGE. A detailed study of the questions pertaining to public water supplies, reservoirs, fil-
tration, 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 sewage disposal. Fanning's *Water Supply Engineering*. Required of seniors in the Civil Engineering Course.

Four hours a week during the second term.

5e. **Hydraulic Laboratory.** This course is intended to apply the theoretical work of Courses 5 a, b and d, to practical problems in the 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. Four hours a week throughout the year. Two hours credit.

6a. **Pattern Making and Foundry Practice.** This is an elementary course in making patterns of pipe fittings, groove pulleys, hangers, core boxes, etc.; followed by practice in moulding and running simple castings, including some work in core baking, annealing, etc. Required of sophomores in the Mechanical Engineering Course; open to others who have completed Carpentry 5. Ten hours a week during the second term. Three hours credit.

6b. **Machine Work.** This course consists of selected exercises from Courses 2 and 3 in machine work, Mechanic Arts. Required of juniors in the Mechanical Engineering Course. Six hours a week throughout the year. Two hours credit.

7a. **Steam Engineering.** This course begins with a consideration of the elements of a steam power plant, followed by a more detailed study of engines and boilers according to type and adaptability to different services. A careful study is made of the thermodynamics of heat engines, including refrigerating machines. Standard methods of engine and boiler testing, and modern practice in design and construction are also considered. Re-
quired of seniors in the Mechanical Engineering Course. Three hours a week throughout the year.

7b. Heating and Ventilating. This course will consist of a complete design of a modern heating and ventilating plant, according to one of the approved systems. The instruction will consist of three lectures a week for one-half of the year. An equivalent of not less than six hours a week one-half of the year in the draughting room will be required. Students who have completed 7a are eligible.

8a. Power. This course considers the sources of power; prime moves in general 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. In connection with the classroom work, laboratory experiments are made in the performance and efficiency of mechanical apparatus of various kinds, and in the efficiency of fuels, in gas analysis, etc. Tests of heating and power plants are made as opportunity is afforded. Required of seniors in the Mechanical Engineering Course. Three hours a week throughout the first term.

8b. Hydraulic Motors. This course deals with the general theory of hydraulic motors; the efficiency of the various leading types and their adaptability to special purposes; and the installation and operation of hydraulic power plants. Required of seniors in the Engineering courses. Two hours a week through the second term.

9. 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. Three hours a week during the second term.
10. 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. Special consideration is given to construction with reinforced concrete. Baker's *Masonry Structures*. Required of seniors in the Civil Engineering Course. Three hours a week during the first term.

II. Electrical Transmission of Power. This course consists of lectures and assigned readings on the phenomena of the electric circuit, with sufficient study of the production of the commercial current to understand the causes of loss in a transmission line. Required of juniors in the Engineering courses. Three lectures and three laboratory hours a week during the first term. Four hours credit.

15. Engineering Contracts and Specifications. This course deals with the general forms of contracts for construction. Some decisions of the courts in engineering contract cases will be discussed. Familiarity with proper forms and consistent specifications for material and work will be had by means of "plans, specifications, and contracts," worked out by the students. Required of juniors in Engineering courses. One lecture per week.

MECHANIC ARTS.

1. Technology.

Required of all second year students in the Manual Training Course in Mechanic Arts. This course is intended to give the student an understanding of the nature of production and physical properties of the constructive materials with which he has to work. The course consists chiefly of two lectures a week throughout the year. Two hours credit.

2. The aim of this course is to give the student a practical knowledge of the various forms of motion, its production and modifications as used in the class of machinery he expects to handle. Open to fourth year students, in the Manual Training Course in Mechanic Arts, who specialize in Forging or Machine Work.
III. Carpentry.

1. (a) Rudimentary exercises in sawing, ripping, planing, mortising, dovetailing, and general joinery, 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. Open to first year students in the Manual Training Course in Mechanic Arts. Fifteen hours a week during the first term. Five hours credit.

(b) Sharpening and adjusting carpenter's tools, and saw filing, followed by practice in making panels, doors, and sashes, and in simple cabinet work, constitute the work of this course. Open to first year students in the Manual Training Course in Mechanic Arts. Fifteen hours a week during the second term. Five hours credit.

2. Open to second year students in the Manual Training Course in Mechanic Arts who have completed Course I (b). Fifteen hours a week throughout the year. Five hours credit.

(a) Plain cabinet making, concluding with a model carpenter's work bench. First term.

(b) Wood turning and other machine work in wood, and the construction of a standard carpenter's tool chest. 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, special parts, such as a section of wall, including doors and windows, hips and valleys in roofs, etc., are built in 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). Fifteen hours a week throughout the year. Five hours credit.

4. In this course the student is allowed to specialize in cabinet making, including carving, fitting and finishing, or in inside finishing of houses, or in 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 2. Fifteen hours a week throughout the year. Five hours credit.

5. This course consists of selected exercises from Courses 1 (a) and 2 (b). Required of all second year students in the College Preparatory Course who intend to take Engineering; also of all second year students in Agriculture. Six hours a week during the first term. Two hours credit.

III. Forging.

1. Open to first year students in the Manual Training Course in Mechanic Arts. Fifteen hours a week throughout the year. Five hours credit.

(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 in 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 second year students in the Manual Training Course in Mechanic Arts who have completed Course 1. Fifteen hours a week throughout the year. Five hours credit.

(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 in this course consists of filing, chipping, hand fitting, polishing, and general vise work; also special forms of forging, such as wicket gates, cultivator teeth, andirons, etc.

3. The work of this course consists of practical carriage building and advanced forging. Open to fourth year students in the Manual Training Course in Mechanic Arts who have completed Course 2. Fifteen hours a week throughout the year. Five hours credit.

4 (a) The work of this course consists of selected exercises from Course 1. Required of second year students in the College Preparatory Course who intend to take Engineering. Six hours a week throughout the second term. Two hours credit.

4 (b) This course consists of selected exercises from Course 1 (a), followed by work in horse-shoeing and in repairing agricultural implements. Required of second year students in the Agricultural Course. Six hours a week during the second term. Two hours credit.

IV. Machine Work.

1. Open to first year students in the Manual Training Course in Mechanic Arts. Fifteen hours a week throughout the year. Five hours credit.

(a) This course consists of special work in chipping, filing, scraping and hand fitting, including work in dressing and tempering machine cutters. First term.

(b) In this course preliminary exercises in straight and taper turning, drilling and planing are given, accompanied by instruction in the care and use of machinery. Second term.

2. Open to second year students, in the Manual Training Course in Mechanic Arts, who have completed Course 1. Fifteen hours a week throughout the year. Five hours credit.

(a) The work of this course consists of exercises in boring and chucking in the lathe, thread cutting, polishing and milling. Shaft couplings, tap wrenches and gear wheels are sample exercises. First term.
(b) This course consists of the manufacture of parts of machinery, such as eccentrics, engine connecting rods, and cranks. Second term.

3. Open to third year students, in the Manual Training Course in Mechanic Arts, who have completed Course 2. Time and credit same as for Courses 1 and 2.
   (a) The work of this course is principally that of making mandrels, taps, spiral drills, counter bores and the grinding of hardened parts of machines on the universal grinding machine. First term.

   (b) The work of this course affords practice in making fluted reamers, grinding and making milling cutters, special attention being paid to the forms of the cutting edges. Second term.

4. The work in this course is that of actual machine construction; factory methods being emphasized. 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. Time and credit same as for Courses 1 and 2.

V. Foundry Work.

1. This course consists in thorough practice in moulding and general foundry work, including iron and brass casting. The patterns chosen illustrate a wide range of work, the course being intended to give a general knowledge of foundry practice. Elective. Six hours a week during the first term. Two hours credit.

2. This course will consist of special moulding, especially such work as will be required in connection with the work of machine design. Elective. Six hours a week during the second term. Two hours credit.

VI. Sloyd.

This course in Sloyd is intended primarily for younger students who are not sufficiently developed physically to carry the
heavier work of the regular Mechanic Arts courses. It is also well adapted for teachers who desire to qualify themselves for teaching Sloyd in the district schools. The best Swedish and American methods are followed.

1. (a) Simple household and school-room articles, such as pointers, bread-boards, clothes-horses, foot-stools, scoops, etc., constitute the exercises of this course. Elective. Four hours a week during the first term. Two hours credit.

(b) The work of this course consists of elementary turning and scrolling, simple carving, and the completion of a small cabinet. Elective to students who have completed 1 (a). Four hours a week during the second term. Two hours credit.

CHEMISTRY.

- Professor Yoder.
- Assistant Professor Stewart.
- Mr. Porter.

1. GENERAL CHEMISTRY. Required of sophomores in the Commercial Course and of freshmen in all other College courses, except Civil and Mechanical Engineering. Nine hours a week throughout the year. Five hours credit.

   (a) Elementary Chemistry. This course deals with the important facts and fundamental theories of chemistry, and with the application of chemistry in the arts and manufactures. The laws of chemical combination, the writing of reactions, and 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: (a) 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; (b) of the preparation of a number of organic compounds to illustrate the methods of work of the organic laboratory. Required of juniors in the Domestic Science Course. Prerequisite: Chemistry 1. Six hours a week throughout the year. Four hours credit.

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. Required of sophomores in the Agricultural Course. Prerequisite: Chemistry 1. Three hours a week throughout the year.

4. Chemistry of Food 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. Prerequisite: Chemistry 1 and 2. Six hours a week throughout the year. Three hours credit.

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 water, 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. Credit is given according to the work done.

6. Analysis of Foods and Feeding Stuffs. In this course, various articles of food, or farm products used for food, are analyzed to determine quantitatively the different constituents, as proteids, carbohydrates, fats, crude fibre, etc. In this work the Methods of Analysis adopted by the Association of Official Agricultural Chemists are in the main followed. Besides this work, numerous exercises in the detection of adulterants are carried out, and, if desired, the sanitary analysis of water will be included. Elective. Prerequisites: Course 1, and preferably Courses 2 and 5. In connection with the work going on in the Experiment Station laboratory, there is excellent opportunity for students to pursue this course. The course is especially valuable to students of
Domestic Science or of Agriculture, by giving them a scientific basis for judging the dietetic value of any food, or for determining a proper ration for man or beast. A direct aim of this course, also, is to fit the students for positions as analysts in agricultural experiment station chemical laboratories, or food inspection laboratories. Credit is given according to the work done.

7. **Advanced Qualitative Analysis.** This is a laboratory course, supplementary to the brief Course 1 (a) in Qualitative Analysis, and is recommended to those General Science students who specialize in Chemistry. Elective. Prerequisite: Chemistry 1. Nine hours a week during the first or second term. Three hours credit.

8. **Advanced Theoretical Chemistry.** Lectures and recitations on some of the fundamental laws and theories of chemistry, including atomic theory, kinetic theory of gases, Avogadro's hypothesis, relation of gaseous, liquid, and solid states, solution pressure and vapor pressure, osmotic pressure, thermo-chemical relations, electrolytic dissociation, chemical equilibrium, law of mass action, isomerism and isomorphism, etc. Elective. Prerequisites: Chemistry 1 and 2. It is desirable to have completed Chemistry 5 also before taking this course. Three hours a week during the first term.

9. **History of Chemistry.** This course, or Chemistry 10, or a combination of these two courses, according to the desires of the students, will follow Chemistry 8 during the second term. Prerequisites as in Chemistry 8. Three hours a week.

10. **Industrial Chemistry.** Lectures and assigned reading on special chemical industries; e.g., the manufacture of sulfuric acid and soda, commercial fertilizers, lime and cements, glass and porcelain, pigments, sugar, starch, alcohol, soap, explosives, etc. It is not proposed in this course to deal exhaustively with many industries, but with a few industries for illustration,
to enable the students to get an idea as to what is required of a chemist or a superintendent of such a factory, and to give him some drill in searching out the best and most profitable methods of conducting any chemical industry. Elective. See Chemistry 8 and 9 for the time and the prerequisites of this course.

11. ASSAYING. The fire and wet methods of assaying continue and supplement the work of Course 5 in quantitative analysis. This course includes a study of the principles of fluxing and their application to typical silicious, barytic, and pyritic ores; the assaying of rich, medium, and low grade silver, gold and lead ores by means of the "nitre," "nail," and "roasting" methods, and the comparison of results; the assaying of copper mattes and bullion by the combined dry and wet methods; and an explanation of mine, mill, and smelter assays. The wet methods of assaying are the ordinary methods of volumetric analysis so modified as to be applicable to the several purposes of the "assay requirements," and will include the rapid determination and estimation of silver, lead, copper, iron, silica, sulphur, zinc, lime, manganese, cobalt, nickel, etc. Large numbers of "smelter checked" samples are given as exercises to the students to assay. The practice in "fire" and "wet" assaying, as given by this course, aims to make of the student a practical and capable assayer. Elective. Prerequisites: Chemistry 1, and preferably Chemistry 5 and 7. A fee of $10 for the year will be charged in this course.

12. PHOTOGRAPHY. A course in practical photography will be offered, consisting principally of practical work by the students, introduced and supplemented by lectures and demonstrations by the instructor. The students will be given the use of a camera, and will expose plates or films under various conditions as to light and subject in and out doors, develop plates and films, study effect of over and under-exposure and over and under-development, print pictures on the several classes of paper, as "blue-print" paper, "printing-out" paper, and "development" paper, tone with gold and with platinum, make transparencies and lantern slides,
and enlarge or reduce pictures. Fees will be charged to cover cost of material consumed. One hour a week during the second term. Elective to students having had one term's work in Chemistry. Students desiring it will be given opportunity for more advanced experimentation along the several phases of photography.

13. 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.

14. INTRODUCTION TO ELEMENTARY CHEMISTRY. This course is organized especially for such as cannot spare the time to take the regular course in elementary chemistry and yet wish to get an introduction to some of the principles of the subject, and gain some familiarity with the more common elements and inorganic compounds. It is required of the third year students in the three-year Course in Agriculture and of freshmen in the Civil and Mechanical Engineering courses. Five hours a week throughout the year. Three hours credit is allowed in the courses in which it is required. No credit is allowed in other College courses.

ZOOLOGY.

PROFESSOR BALL.
ASSISTANT PROFESSOR PETERSON.
MR. RUDOLPH.

1. ELEMENTARY ANATOMY AND PHYSIOLOGY. In this course the structure and function of the different parts of the human
body are carefully considered, special attention being given to the principles that underlie the care of the body. Dietary studies, ventilation, exercise, use of medicines, and other hygienic topics are treated in special lectures. In the laboratory the students first become familiar with the human skeleton and then work out the fundamental unity of the vertebrate plan through a comparison of a series of skeletons. During the second term they take up the microscopic study of tissues and examine fresh material from the butcher's shop. Martin's *Human Body*. Required of all second year students, except in the Manual Training Course in Mechanic Arts, of fourth year students in this course. Two recitations and two hours laboratory a week throughout the year. Two hours credit.

2. **General Zoology.** Required of juniors in the Agricultural Course, of sophomores in the Domestic Science Course and of students in the General Science Course. Two lectures and three hours laboratory a week throughout the year. Three hours credit.

   (a) **Invertebrate Zoology.** In each group of the invertebrates a typical example is taken up in detail and from this, as a basis, the related forms are considered and correctly associated. In the laboratory, representative examples of each group are studied and dissected. Special attention is given to Protozoa, *Hydra*, *Spongilla*, and other fresh water forms. First term. Thompson's *Outlines of Zoology*.

   (b) **Vertebrate Zoology.** In this course a detailed study is made of the different groups of the vertebrates, special attention being given to their origin and development. In the laboratory, typical examples of the lower groups are dissected and the remainder of the time is spent in a systematic study of the birds and mammals of Utah. Second term.

3. **Biology.** This course includes lectures on distribution of animals, environment, struggle for existence, natural selection, mimicry, protective coloration and resemblance, warning colors,
adaptation, development, degeneration, parasitism, dimorphism, heredity, sex, instinct and reason, and kindred subjects connected with evolution. Jordan and Kellog's *Animal Life* will be used as a reference work. Elective to those who have completed Course 2. Two lectures a week throughout the year. Omitted in 1906-07.

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 physiology. Elective to those who have completed Course 2, and Chemistry 1. Three hours a week (lectures, conferences, and laboratory work) during the second term.

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 seniors in the Agricultural Course, and to others who have completed Course 2. Three hours a week during the first term.

6. **Embryology.** In this course the general principles of development are discussed, beginning with the cell, maturation, fertilization, karyokinesis, etc., and taking up the development of the gastrula in the different classes of the vertebrates. In the laboratory the student will trace the development of Ascaris, the frog, chick, and rabbit. Elective to seniors in the Agricultural Course, and to others who have completed Course 2. Three hours a week during the second term.
7. **Advanced Vertebrate Zoology.** In this course the student will take up the comparative anatomy of the higher vertebrates and will become familiar with the classification of the more common forms of the amphibians, reptiles, birds, and mammals of the Intermountain region. One recitation and three hours laboratory a week during the first term. Two hours credit.

**BOTANY.**

**Professor Northrop.**

1. **Elementary Morphological and Histological Botany.** The aim in this course will be to so familiarize the short course student with the purposes and functions of the different organs of the higher plants, that he is thoroughly able to understand the various principles upon which a proper handling of them depends. Microscopes and dissecting instruments are provided, and the course is so arranged that elementary students can easily become sufficiently proficient in this study to enable them to do a much higher grade of work in the succeeding courses offered in the departments of agronomy and horticulture. Required of first year students in the three-year Course in Agriculture. Three hours a week during the first term.

2. **Morphological and Systematic Botany.** This course is intended to make students familiar with the higher plants and terms used in describing them. The first half of the term is spent in a comparative study of the organs of plants, the succeeding week being devoted to the naming and classifying of the common, native species. An herbarium of fifty mounted and named specimens of these species is required from each student. This course is required of second year College preparatory and first year Domestic Science students and is elective to others. Three hours a week during second term.
3. **Plant Histology and Physiology.** A study of plant anatomy, protoplasm, the cell and various tissues, the plant body and the chemical constituents and processes. The functions of growth, such as the absorption of food, movement of water in the plant, respiration, fermentation, changes of color and the effect of gases and changes of temperature, etc., on the life of plants, will also be discussed. All laboratory equipment and materials will be furnished. Bessey's *Essentials in Botany* is used as a text. Required of juniors in Agriculture and elective to others. One lecture and two laboratory periods a week during the second term.

4. **Plant Pathology.** The value of a knowledge of the fungi parasitic on the higher plants is of great importance. For this reason this course is offered as an elective to those having had Courses 1 and 2. The commoner forms of fungi will be studied, thus enabling the student to understand the nature of the organisms which affect the cultivated crops and to apply more intelligently the means for controlling them. Elective to any student who has finished Botany 3 satisfactorily. Two laboratory periods a week during the second term.

**GEOLOGY.**

**Professor Peterson.**

1. **Physiography.** This course is intended to develop observation, and give an appreciative knowledge of nature's work in and about the earth. The subjects studied will include:—the earth in space, the structure of the earth, land forms, erosions, lakes and lake basins, glaciation, the sea and its work, the atmosphere and the effect of physiographic conditions on the distribution and character of life. An effort will also be made to give each student some knowledge of the common rocks. Gilbert and Brigham's text will form the basis of the work. Optional in the second
year of the College Preparatory Course. Two hours a week throughout the year.

2. **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. A careful study of the development of the North American continent from the earliest time will comprise most of the second term's work. Several field trips will be made and enough field practice given to introduce the methods by which the geological phenomena of a given area may be interpreted. Leconte's *Elements of Geology*, fifth edition, will be used as the text book. Required of seniors in the Agricultural and Domestic Science courses; elective to others. Three hours a week throughout the year.

3. **Structural Geology.** The work in this course will begin with a classification of the common rocks, and a careful study of their characteristics, source and economic value. Work will then be taken up along the lines of structural and topographical geology, with stress laid upon the problems of stratification, cleavage, faulting, disintegration, etc., as it may affect the work of the engineer. Each principle is supplemented by field and laboratory work. Vol. 1 of Chamberlain & Salisbury's *Geology* will form the basis of the work. Required of juniors in the Civil Engineering Course. Two hours a week throughout the year.

4. **Economic Geology.** The object of this course is to give the student some idea of the mineral resources of the United States. The work will include a careful study of the vein-forming minerals, origin of ore deposits, mining terms and methods, the source, production and economic value of iron, gold, platinum, silver, copper, lead, zinc, mercury, tin, aluminum, etc.; also the sources, with outlines of the processes of preparation, and economic value of coal, petroleum, natural gas, asphaltum, building
stones, cements, soils, clays, mineral fertilizers, mineral water, fuller's earth, lithographic stone, precious stones, etc. Much of the information will be taken from the Reports of the United States Geological Survey. Elective to students who have completed Courses 2 to 5 and Chemistry 1. Two hours a week throughout the year.

5. MINERALOGY. This course is a systematic study of the common minerals as outlined in Dana's Manual. The student is furnished with excellent specimens of all the minerals studied, for both tests and comparisons. The course is essentially individual laboratory work in blow pipe analysis and determinative mineralogy. Elective to those who have completed Chemistry 1. Two hours a week during the year.

PHYSICS.

PROFESSOR PETERSON.

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. The lectures are illustrated by experiments performed by the instructor, and many problems are worked in and out of class. The laboratory work consists of numerous experiments, chiefly quantitative, performed by each student. Carhart and Chute's *High School Physics*; Snyder and Palmer's *One Thousand Problems in Physics*. Required of sophomores in the Domestic Science and Agricultural courses, and of juniors in the Commercial course. Two recitations and one laboratory period each week throughout the year. Three hours credit.

2. ELEMENTARY PHYSICS. This course is designed for freshmen students in the Engineering Course. Much stress is placed upon the fundamental principles of the work, and time
enough is taken to go into the theoretical side of the question as well as to work out concrete problems. Three recitations and two laboratory periods per week. Five hours credit.

3. **General Physics.** This is a more advanced course than Physics I. Stress is laid on the subjects of mechanics, heat, and electricity. Carhart's *University Physics*, 2 vols. Required of sophomores in the Engineering courses; elective to others. Four hours a week throughout the year. Three hours credit.

4. **Direct Currents and Magnetic Measurements.** This course is primarily intended for students specializing in electrical science, but may be taken by others who have the necessary preparation. Most of the work will be in the laboratory, lectures being given from time to time as required. The laboratory work consists of accurate measurements of current strength, resistance, electromotive force, mutual induction, and the magnetic properties of iron. Two hours a week throughout the year.

5. **Electromagnetism and Alternating Currents.** The methods and aim of this course are similar to those of Course 3. All students in Mechanical Engineering are urged to take Courses 3 and 4 whenever a proper adjustment of their work can be made. Two hours a week throughout the year.

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**MATHEMATICS AND ASTRONOMY.**

**Professor Langton.**
**Assistant Professor Ostien.**
**Mr. McKay.**

Note.—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, or projective geometry will be given.

1. ARITHMETIC. This course consists of a thorough treatment of elementary arithmetic. Required of students not graduated from the district schools, who are admitted to the Manual Training Courses. Five hours a week throughout the year. Four sections.

2. ARITHMETIC AND ALGEBRA. Required of second year students in the Manual Training Course in Mechanic Arts, third year students in the Manual Training Courses in Domestic Arts, and first year students in all other courses. Five hours a week throughout the year. Five sections. One section will give special attention to Commercial Arithmetic.

(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. 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. 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 a week throughout the year. Two sections.
(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. *New Complete Algebra*—Wells. First term.

(b) *Plane Geometry.* This course includes the general properties of polygons; problems of construction, and determination of areas; regular polygons and circles, with problems in construction, and methods for determining the ratio of the circumference to the diameter; and maxima and minima. Special attention will be given to the development of the power of logical thinking, and of accuracy and conciseness of expression. *The Essentials of Geometry*—Wells. Second term.

4. *Geometry, Algebra, Trigonometry.* Required of sophomores in the Agricultural and Domestic Science Courses, of juniors in the Commercial Course, and of freshmen in other courses. Five hours a week throughout the year.

(a) *Solid Geometry.* Wells' *Geometry.* First third of year.

(b) *Advanced Algebra.* This course is a continuation of Course 3 (a), 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 formulae, the solution of plane and spherical triangles, and practice in the use of logarithmic tables. Lyman and Goddard'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.

(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 formulae 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 formulae of the integral calculus; application in rectification of curves, quadrature of plane and curved surfaces, cubature of volumes, etc.

6. **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 equation. Required of juniors in the Engineering courses. Three hours a week during the first term.

7. **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 Brinchen'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 and 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; homology. Cremona's *Projective Geometry;* Russell's *Treatise on Pure Geometry;* Lachlan's *Modern Pure Geometry.* Elective to those who have completed Course 5. Five hours a week throughout the year.
8. **Plane and Solid Analytic 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 of 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.

9. **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 5. Five hours a week throughout the year.

10. **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 *Encyclopaedia Britannica,* and other works of
Reference. Elective to students who have completed Course 9. One hour a week throughout the year.

II. 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.

12. Practical Astronomy. A continuation and completion of Course II. 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 11. Two hours a week throughout the year.

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**English Language and Literature.**

Professor Upham.
Assistant Professor Wyant.
Mr. Caine.
Miss Moench.
Miss Holmgren.
Mr. Jardine.

I. 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. Buehler’s, *A Modern English Grammar*. Required of students, not graduated from
the district schools, who are admitted to the Manual Training courses. Five hours a week throughout the year. Three sections.

2. **Reading and Spelling.** In this work there are several ends in view. The pupil is carefully trained to understand and appreciate what he reads, and at the same time particular attention is given to developing a vocabulary and forming a habit of correct expression. Written summaries and reproductions are required and due care is given to spelling. The reading is as follows: Section 1:—Dickens—*Christmas Carol*, Lowell—*Vision of Sir Launfal*, Coleridge—*Ancient Mariner*, Burroughs, Warner and Thoreau—*Essays*, Addison—*Sir Roger de Coverley*, Hawthorne—*Tales of the White Hills*, Stevenson—*Treasure Island*, Cooper—*Last of the Mohicans*. Sections 2 and 3:—Eliot—*Silas Marner*, Guerber—*Myths of Greece and Rome*, Pope—*Homer's Iliad*, Shakespeare—*Merchant of Venice*, Scott—*The Lady of the Lake*, Irving—*Life of Goldsmith*, Lytton—*Last Days of Pompeii*. Required of students, not graduated from the district schools, who are admitted to the Manual Training Course. Five hours a week throughout the year. Four sections.

3. **Grammar and Composition II.** The study of grammar is completed in this course. There is a thorough review of the parts of speech, and attention is given to the principles of syntax, and to the construction and analysis of sentences. Later in the year an elementary text-book in rhetoric is introduced, and the student is drilled in the correct use of words and sentences. Material for composition work is drawn from the text-book, and from the lessons in English Classics and U. S. History. Kimball—*The English Sentence*; Merkley—*A Modern Rhetoric*; Supplementary Reading—Long's *American Poems*. Required of all first year students. Five recitations a week throughout the year. Four hours credit. Six sections.

Idylls of the King, Scott—Ivanhoe, Goldsmith—Vicar of Wakefield. This course aims at a thorough understanding of the material, and encourages the student in giving his own expression of the thoughts there found. The elementary qualities of style are explained and illustrated. Occasional written exercises are required, and memory passages are assigned. Required of all first year students, except in the Manual Training Courses, of second year students in these courses. Two hours a week throughout the year. Six sections.

5. Rhetoric and Composition. It is intended to make this an extremely practical course in the writing of English. Lectures and recitations, based on an advanced text-book, give continued attention to the principles of rhetoric. The reading of prescribed pieces of prose and poetry, in and out of class, affords contact with the best models. The composition work proper consists of at least three short exercises a week, more or less related to the other work of the course. A longer theme is required each month. These exercises are criticised and returned, and private conferences are given the writers as often as possible. Adams Sherman Hill—The Principles of Rhetoric; Milton—Paradise Lost, Book II; Macaulay—Essay on Milton; Shakespeare—Macbeth; Burke—Conciliation with America. Required of all second year students except in the Manual Training courses, of third year students in these courses. Five hours a week throughout the year. Three sections.

6. The History of English Literature. A general survey of the progress of English literature from the Anglo-Saxon period to the present time. Important movements and significant authors are studied at considerable length, with due attention to social and political relations, and to contemporary foreign literature. The work is carried on by lectures and recitations, a large amount of work being prescribed for reading and discussion. Pancoast's Introduction to English Literature is used as a textbook. Required of sophomores in Agriculture and of freshmen
in all other courses. Three hours a week through the year. Two sections.

7. **Advanced Rhetoric.** This course aims to combine various essential features of training in English, for which no opportunity has been previously afforded. During the first half-year, two hours a week are given to the history and principles of literary criticism, and to the forms of prose discourse, placing considerable emphasis on argumentation. One hour each week is devoted to instruction in public speaking, which in the second half-year gives place to practical debating. The recitation work of the second term deals with the English language, being chiefly concerned with the following points:—the history of the language; the development of the literary language from a dialect; the sources of our vocabulary; the processes of change in the meaning of words. Saintsbury—*Loci Critici. Specimens of Prose Composition* (four volumes), published by Holt and Co.; Clark and Blanchard—*Practical Public Speaking*; G. P. Baker—*Principles of Argumentation* (Revised Edition); Greenough and Kittredge—*Words and Their Ways in English Speech*. Required of juniors in the Agricultural, Domestic Science and Commercial courses, and of General Science students. Three hours a week throughout the year.

8. **The Elizabethan Movement.** This course offers an opportunity for more advanced work in one particular period of English literature. Beginning with the rise of the Renaissance spirit in England, it will give particular attention to the drama of Shakespeare and his contemporaries, and then follow the decline of the movement to the Closing of the Theatres, 1642. If possible, the Restoration period will be studied in its relation to this movement. Lectures, prescribed reading, and theses. Elective. Two hours a week throughout the year.

9. **The Romantic Movement.** Similar to English 8 in method and requirements. English Romanticism is considered from its reactionary beginnings at the middle of the eighteenth
century to its diffusion among the writers of the Victorian period. Foreign parallel and influences are carefully noted. Elective. Two hours a week throughout the year.

10. CHAUCER AND SHAKESPEARE. This is a course in careful detail study. The first term is devoted to Chaucer's Canterbury Tales, including the Prologue. Matters of grammar, pronunciation, sources, social and political allusions, and literary art, all receive attention. Prominence is given to Chaucer's place in the development of the language. The second term is occupied with the interpretation of four plays of Shakespeare in somewhat the same manner. Three hours a week throughout the year.

11. ANGLO-SAXON AND MIDDLE ENGLISH. This course is designed to furnish a basis for advanced study of the English language, and to acquaint the student with early literature in English. The text-book in Anglo-Saxon is Bright's Anglo-Saxon Reader; that in Middle English is Emerson's Middle English Reader. Elective. Three hours a week throughout the year.

12 (a) AMERICAN LITERATURE. This course deals with the literary works produced in America from the foundation of the colonies to the present time, particular emphasis being given to the past century. The contemporary development in England is constantly kept in view. Lectures, prescribed reading, and reports. Elective. Three hours a week during the first term. Pancoast—Introduction to American Literature; Page—Chief American Poets.

(b) VICTORIAN POETS. A course of detailed study for those who have a general knowledge of these poets and wish to consider them at their best. Particular attention is given to Browning and Tennyson. Elective. Three hours a week during the second term.

13. ELOCUTION I. This course includes class-room work in voice-culture, gesture, and the principles of expression. The mem-
orizing, interpretation, and delivery of a number of selections are required. Clark and Chamberlain's *Principles of Vocal Expression and Literary Interpretation* is used as a text book. The reading comprises; Arnold's *Sohrab and Rustum*; Rostand's *Cyrano de Bergerac*; Sheridan's *School for Scandal*. Elective to students who have completed English 4.

14. **ELOCUTION II.** The advanced course in Elocution is intended for those who have completed the elementary work and desire to continue under individual instruction. The student may choose between two lines of work. One of these includes a further study of the general laws of expression and the principles of art; the cutting of short stories, novels, and plays for public reading; the interpretation and presentation of more advanced readings. Hauptman's *Sunken Bell*, and Shakespeare's *King Lear* and *As You Like It* will be read. The other line of study is intended to prepare for public speaking. Representative English and American orations will be studied for correct delivery, and effective passages will be analyzed. Original work will be required in the toast, short speech, formal address, and debate. Special study will be made of Shakespeare's *Coriolanus* and *Julius Caesar*.

**MODERN LANGUAGES AND LATIN.**

**PROFESSOR ARNOLD.**

The elementary courses in this department aim to give the student an accurate knowledge of the grammar of the language studied; the ability to translate with readiness from English and into English; and the ability to understand the spoken language and to converse upon simple topics, with proper pronunciation. To attain this end the language studied is as far as possible made the language of the class room; specimens of lyric poetry are committed to memory; much practice is afforded in
prose composition both oral and written; and grammar is studied throughout the course.

The more advanced courses are intended to give the student the ability to read the language without translating, to compose in it and to obtain some speaking facility, as well as to become familiar with some of the classics and scientific works.

NOTE.—Students who intend to study only one language will find it most advantageous to take French if they are following the Domestic Science Course; Spanish, if they are following the Commercial Course; and German, if they are doing work in Agriculture or Engineering.

1. FIRST YEAR FRENCH. Fraser and Squair's French Grammar, Part I; Snow and Le Bon's Easy French, form the basis of the grammatical work and that in conversation. Three or four modern texts are read, such as Dumas' Les Trois Mousquetaires; About's Le Roi des Montagnes and Halevy's L'Abbe Constantin. Optional with German and Spanish in the Commercial Course and with German in all other courses. Five hours a week throughout the year. Three hours credit.

2. SECOND YEAR FRENCH. Francois' French Composition is the basis of a grammatical review and of writing in French. Lavisse's Histoire de France is used as subject matter for conversation, while the work in reading consists in translating works of the more important of the nineteenth century authors, such as Hugo, Balzac, Flaubert, Daudet, Anatole France, Maupassant and Loti, with one play of Dumas, fils, one of Augier and one of Pailleron. During the second half year a weekly composition in French is required. Open to those who have completed Course I or an equivalent. Three hours a week throughout the year.

3. THIRD YEAR FRENCH. The object of the course is a systematic study of French literature with Doumée's Histoire de la Literature Francaise as basis. Weekly compositions in French
will be required, based on outside reading. The class work will be the reading and discussion of as many of the plays of Racine, Corneille and Moliere as possible, with lectures in French by the instructor. The course may be taken with credit two years in succession, as it will alternate with work on the nineteenth century poets. Open to those who have completed Courses 1 and 2 or an equivalent. Three hours a week throughout the year.

4. **Scientific and Historical French.** Translation of monographs on scientific subjects by recent French writers as contained in standard French scientific magazines; sight reading and rapid translation of topics from French writers on history and economics. Open to those who have completed Courses 1 and 2 or an equivalent. Two hours a week throughout the year.

**SPANISH.**

1. **First Year Spanish.** Hills's and Ford's *Spanish Grammar*; Matzke's *First Spanish Readings*; Valdes' *Jose*; Alarcon's *El Capitan Veneno*. Optional with French or German in the Commercial Course. Five recitations a week throughout the year. Three hours credit.

2. **Second Year Spanish.** Ford's *Spanish Composition*; Picatoste's *Historia de Espana* as basis for conversation; rapid reading of such modern texts as Valera's *Comendador Mendoza*; Galdos' *Dona Perfecta and Electra*; Breton's *Quien es ella?*; and one classical play. Open to those who have completed Course 1. Optional as Course 1. Three hours a week throughout the year.

**GERMAN.**

1. **First Year German.** The first half year Becker's *Elements of German* and the second half Bernhardt's *German Composition* form the basis of the grammatical and written work.
The work in reading begins with Wenkebach's *Glueck Auf*, and is followed by three or four easy texts such as Gerstäcker's *Germelshausen*, Hauff's *Das Kalte Herz*, Heyse's *L'Arrabrata* and Reihl's *Fluch der Schoenheit*. Several poems are memorized. This course is optional with French and Spanish in the Commercial Course and with French in all other College courses. Five recitations throughout the year. Three hours credit.

2. **SECOND YEAR GERMAN.** Bernhardt's *German Composition* is finished and work in original German composition is begun. Andrea's *Erzaelungen aus der deutschen Geschichte* is used as basis for conversation and foundation for future understanding of German literature. Many texts are rapidly read, selected from the works of Riehl, Sudermann, Wildenbruch, Freytag, Heine, and other nineteenth century authors, with one scientific text. Three hours a week throughout the year.

3. **THIRD YEAR GERMAN.** A systematic study of German literature is begun with Keller's *Bilder aus der deutschen Literatur* as basis. As much as possible of the work of Lessing, Schiller, and Goethe is read and discussed. Open to those who have completed Courses 1 and 2 or an equivalent. Three hours a week throughout the year.

4. **SCIENTIFIC GERMAN.** The work will consist of rapid reading of scientific texts with the study of cognates, beginning with Walther's *Meereskunde* and Lassar-Cohn's *Chemie im taeglichen Leben*, and followed by monographs by Cohn, Helmholz, Dubois-Raymond, and other German scientists. Two hours a week throughout the year. Open to those who have completed Courses 1 and 2 or an equivalent.

**LATIN.**

The following courses in Latin are offered to students in three year courses, and to students in College courses who have not presented parallel courses as entrance requirements.
1. **First Year Latin.** Collar and Daniell’s *First Year Latin; Viri Romae.* Drill on essentials of Latin grammar; comparison with English grammar, acquiring of vocabulary; English words derived from Latin; selections for reading. Five hours a week throughout the year.

2. **Second Year Latin.** Greenough, D’Ooge and Daniell’s *Second Year Latin; D’Ooge’s Latin Composition based on Caesar; Bennett’s Latin Grammar;* selected readings from Part 1, *Second Year Latin;* an equivalent of four books from selections from Caesar; oral and written composition. Attention is given to etymology of English derivatives and cognates; accuracy and facility in translation into idiomatic English; sight translation. Open to students who have completed Course 1. Five hours a week throughout the year.

3. **Third Year Latin.** Cicero’s Orations:—four against Catiline; Oration in behalf of the Poet Archias; Pompey’s Military Command. Advanced composition based on completed passages; study of the life and time of Cicero; sight translation. Open to those who have completed Courses 1 and 2, or an equivalent. Three hours a week throughout the year.

4. **Fourth Year Latin.** Virgil’s Aeneid; study of meter and versification; vocabulary and grammar of the poet; Virgil’s life and friends; comparison of the great epic poems of Homer, Virgil, Dante and Milton; comparison of translations; passages from the Aeneid translated into English in the meter of the original; sight reading; advanced prose composition. Open to those who have completed Courses 1, 2, and 3, or an equivalent. Three hours a week throughout the year.
1. **Greek and Roman History.** This course is intended chiefly as an introduction to Greek and Roman history. Thorough text-book work is required. Such reading is done as is necessary to supplement the text. It is the purpose of this work gradually to give the student a broad view of history. In this course the lines of historical study usually followed will be taken up. Greek history occupies the first term, Roman history the second. West's *Ancient World* is the text. Required of first year students in Domestic Science, Commerce, and College Preparatory courses. Three sections, three hours a week throughout the year.

2. **United States History I.** This course includes a study of social life, economic conditions, political development, and historical literature. Lectures are occasionally given. Library work is required. The text is Channing's *Student's History*. Required of second year students in the Domestic Science and College Preparatory courses, and second year students in Manual Training in Domestic Arts. Two sections, three hours a week throughout the year.

3. **United States History II.** This course includes the history and interpretation of our national constitution, the relation of our state constitutions to the national government, governmental forms, supreme court decisions as influencing the course of our government; and a careful survey of all those features in American history necessary to intelligent citizenship. Hart's *Actual Government* is the text. Required of second year students in Agriculture, and fourth year students in Mechanics Arts. Three hours a week throughout the year.

4. **American History.** In this course an attempt is made
to develop the history of North America and of South America as an integral whole. Historical details of individual nations are subordinate to comprehensive views of the relations existing between nations. As far as practicable, the history of North America is organized in relation to United States History, while that of South America is developed in relation to Brazil and Chili. Elective to juniors in the Commercial Course.

5. **English History.** In this course racial traits, constitutional growth, social life at different stages, English conservatism, colonial systems, and pauperism are some of the topics discussed. A leading aim in the course is to teach the philosophy of history concretely. Research work is an important feature. Elective to those who have completed Course 1. Three hours a week throughout the year.

6. **Modern European History.** This course includes a discussion of European history from Charlemagne to the present time. Among the topics discussed are: the growth of monarchies, the French Revolution, formation of the German Empire, development of the Swiss Confederation, the Napoleonic wars, etc. West’s *Modern European History* is the text. Required of second year students in Commerce. Three hours a week throughout the year.

7. **Philosophy of History.** This course deals with causal relations, fundamental principles, comparative discussions of civilizations, relations of geography and history, historical sources, and appropriate tests of the truthfulness of data. Droysen’s *Principles of History*. Elective to those who have completed Courses 1, 2, 5 and 6. Three hours a week during one term.

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**Art.**

**Mr. Stutterd.**  
**Mr. Powell.**

1, 2, 3. **Free-Hand Drawing.** These courses are purely individual, and are varied to meet the needs of the line of work
the student is pursuing. Required of first year students in the Agricultural and College Preparatory courses, of second year students in the Manual Training Course in Mechanic Arts, and, during the first term, of third year students in the Domestic Science course. Five hours a week throughout the year. Two hours credit. Each course subdivides into the following parts:

(a) *Elementary Drawing.* This work includes drawing with charcoal, pencil, or pen and ink, in outline, mass, or light and shade, from simple objects, casts, flowers, plants, birds, animals, etc. Study of the simple principles of light and shade, proportion, perspective—both linear and aerial—texture, color, etc.

(b) *Advanced Drawing.* This includes the same principles applied to higher forms. Drawing from casts of the full length figure; sketching from nature—human, animal and landscape. The Agricultural students draw from the different breeds of livestock. Painting in water color or pastel from objects, flowers, plants, birds, animals, etc.

(c) *Design. The Applied Arts.* Principles of art in everyday things. Study of the composition of line, tone, and color applied to products of the different crafts, as tiles, pottery ware, textiles, ceramics, wall-paper, mosaics, bookcovers, etc. Planning and development of original motives and patterns by the students. Creating decorative forms from geometrical figures; selecting, conventionalizing and arranging flowers, birds, animals, and the human figure. Study of historic design. The Domestic Science students do designing for lace work, embroideries, rugs, tablecloths, etc.; the principles of art applied to household decoration. Mechanical Arts students make designs for carved wood, wrought iron, stained glass, etc.

4. **ILLUSTRATING.** Magazine, newspaper and commercial illustrating. This includes pen and ink drawings, wash drawings for half tones, water colors and oils, crayon drawings, lettering, show card writing, designs, titles, numbers, book plates, caricatures, and cartoons.

5 (a) *Composition.* Study of the composition of line, tone,
and color applied to architecture, sculpture and painting. Original compositions by the students, using as motives, objects, flowers, plants, birds, animals, human figures, and landscape forms. Study of the work of the masters, with consideration given to conception and execution.

(b) **SPECIAL WORK IN ART.** Open to those who have taken a general course and wish to follow some particular line. This includes drawing in all mediums; modeling; painting in oil, water color, and pastel; designing and composition, in their different branches. Five hours a week throughout the year.

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**LIBRARY WORK.**

**MISS SMITH.**

The subject includes the study of general reference books, such as encyclopedias, dictionaries, atlases, cyclopedias of special subjects, indexes to periodicals and general literature, handbooks of information and public documents. Talks will be given on classification and cataloguing of the books in the library, explaining their arrangement on the shelves and the use of the card catalogue. Practical questions will be given to the students to be looked up in the reference books. The object of the course is to familiarize the student with the library and to teach him how to obtain information quickly. Required of freshmen in the General Science Course. Elective to others. One hour a week throughout the year.
AGRICULTURAL COLLEGE OF UTAH.

GEOGRAPHY.

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 in its effect upon nations is considered, as are also the classifications of mankind, animals, and plants. Required of students not graduated from the district schools, who are admitted to the Manual Training Courses. Three hours a week throughout the year.

MUSIC.

PROFESSOR THATCHE R.
MRS. SLOAN.
MR. FOGELBERG.
MR. SMITH.
MRS. LINNARTZ.

The following courses in music are arranged with the two-fold idea of laying a sure foundation for professional work along any of the lines of the delightful art, and to fit the student for the proper application and fullest enjoyment of the beautiful classic compositions of famous composers. Theory of music as exemplified in the study of harmony, counterpoint and musical form, will be considered, and as far as possible, urged upon the student in both vocal and instrumental departments. Ensemble work may be had in the quartette, choir, band, and orchestra organizations, all of which have been successfully conducted during the past year. These advantages, together with those furn-
ished by free concerts and recitals, constitute the strongest features of a Conservatory course and will be open to any and all students of the College.

A certificate of graduation will be given upon the completion of any of the following courses:

**Four Year Piano Course.** Completion of regular four years' work as prescribed, together with one year of vocal and one year of harmony.

**Four Year Vocal Course.** Completion of four years' regular prescribed work, together with two years of piano and one year of harmony.

**Four Year Violin or Violoncello Course.** Completion of four years' regular prescribed work, together with two years of piano and one year of harmony.

**Four Year Composition Course.** Regular prescribed work, together with three years on piano, violin, cello, or cornet.

**Voice Culture and Art of Singing.**

**First Year.** *Breathing,* study of vowel forms, elementary vocalization, easy songs.

**Second Year.** Vocalization, solfegio songs.

**Third Year.** Vocal studies, songs, arias, solo parts in easy operas, first year harmony, piano.

**Fourth Year.** Advanced studies, English classic songs, German and Italian songs, arias, piano, etc.

**Pianoforte.**

**First Year.** Position, hand culture, rhythm, scales, elementary week from Gurlitt, Beyer, Czerny and others.

**Second Year.** Easy studies and sonatinas by Bertini, Clementi, Kuhlau, Kohler, Loeschorn, easy pieces.

**Third Year.** Studies by Czerny, Dorn, Hiller, Gobbært,
and Craemer, Sonatas by Mozart, Haydn and others; first year voice and singing.

**FOURTH YEAR.** Studies by Craemer, Kessler, Clementi, Gradus and Parnassum, solo pieces by Schubert, Mendelssohn, Chopin, Raff and others; first year harmony.

**ORGAN.**

**FIRST YEAR.** A standard method, and easy studies and pieces.  
**SECOND YEAR.** Parallels piano course; carefully selected pieces suitable for the organ.

**VIOLIN.**

**FIRST YEAR.** Part of Henning's method for violin; little solos and duets.  
**SECOND YEAR.** Balance of Henning's method; studies by Kayser; easy solos and duets; orchestra practice, first year piano.  
**THIRD YEAR.** Studies by Kayser and Fiorilli, more advanced pieces; orchestra; second year piano.  
**FOURTH YEAR.** Balance studies by Fiorilli, together with Kreutzer method; advanced solos; and first year harmony.

**VIOLONCELLO.**

**FIRST YEAR.** Part of Kummer's method for Violoncello with easy pieces.  
**SECOND YEAR.** Balance of Kummer's method; easy studies by Dotzauer; easy pieces; orchestra practice, first year piano.  
**THIRD YEAR.** Studies by Dotzauer; pieces moderately difficult, cello parts to easy trios and quartettes; orchestra, second year piano.  
**FOURTH YEAR.** Balance of studies by Dotzauer; pieces of more advanced grades; cello parts to trios, quartettes, etc.; orchestra, harmony.
AGRICULTURAL COLLEGE OF UTAH.

CORNET AND OTHER BRASS INSTRUMENTS.

The course of study for these various instruments corresponds in general with that for string instruments.

MANDOLIN AND GUITAR.

First Two Terms of ten weeks each: first, second and third positions; part of a standard method, and easy pieces.

Last Two Terms. Balance of method; more advanced work and ensemble playing.

HARMONY AND COMPOSITION.

First Year. Text "Tone Relations," Goetschius; first year of piano or other solo instruments.

Second Year. Advanced harmony; simple counterpoint; melody writing; second year piano, violin, etc.

Third Year. Counterpoint; smaller forms; vocal and instrumental; third year piano, violin, etc.

Fourth Year. Large forms: instrumentation.

CHOIR AND GLEE CLUBS.

Time devoted to practice: five hours a week for Choir; two hours a week for Glee Clubs; either counting towards graduation.

BAND AND ORCHESTRA.

Five hours a week will be devoted to this work, counting towards graduation.

In addition to the foregoing, a "Choir Leader's Class" will be conducted by Director Thatcher, and (presupposing a fair knowledge of notation, keys, and intervals) will embrace the following: tone production as applied to the human voice, breathing, arrangement of choir, balance of parts, elements of time beating, reading and interpretation of small scores, and practices.
# AGRICULTURAL COLLEGE OF UTAH.

## TUITION.

(No entrance fee will be charged special students in music)

*For Term of Fifteen Weeks—Payable in Advance.*

## VOICE.

<table>
<thead>
<tr>
<th>Class</th>
<th>Lessons per Week</th>
<th>Cost</th>
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## VIOLONCELLO.

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## CORNET AND BAND INSTRUMENTS.

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</table>
MANDOLIN AND GUITAR.

One lesson a week........................................................................ 7.50
Two lessons a week........................................................................ 10.00

HARMONY.

Class of four; one lesson a week.................................................. 7.50
Class of five; two lessons a week.................................................. 10.00

CHOIR LEADER'S CLASS.

Two lessons a week........................................................................ 7.50

MILITARY SCIENCE AND TACTICS.

COMMANDANT—CAPTAIN—U. S. ARMY.
COMMISSIONED OFFICERS FOR 1905-6.

First Lieutenants—E. E. Munk (Adjutant), C. E. Fleming
(Quartermaster), W. J. Conger and W. Booker Preston.
Sergeant Major—W. L. Jones.

All male students of the College, except those physically dis-
abled, are required to take the prescribed work in the military de-
partment, which work may be completed in two years. The course
consists of practical instruction in infantry drill, including the
school of the soldier; company and battalion drill; target practice,
for which the government makes an annual allowance of ammu-
nition; instruction in first aid to the injured; practice marches;
and a summer camp, modeled after the encampments held by the
regular army and our National Guard.

Theoretical instruction by recitations and lectures is given on
military subjects during the winter term, according to regulations
issued by the War Department. The government furnishes rifles
for infantry drill and two three-inch cannons for artillery instruc-
tion. A uniform, consisting of cap, dark blue blouse and trousers, and white gloves, must be worn by the cadets. Arrangements have been made by which this uniform can be obtained through the Secretary of the College at actual cost, about fifteen dollars. Cadets are required to wear the prescribed uniform when at drill or when receiving any military instruction. The uniform may be worn when not on military duty, provided no part of civilian dress is worn with it. This regulation applies to all students of the College, whether enrolled in the Military Department or not. The attention of students intending to enter college is called to the fact that this uniform has been found more serviceable than civilian clothes of the same price, and that all students must be prepared to order the uniform when they enter.

Regular drill and instruction occurs five hours a week. That the benefit derived from this course is appreciated today more than ever is shown by the fact that nearly a hundred of our higher institutions of learning throughout the country have military departments in charge of an officer of the regular army.

PHYSICAL EDUCATION.

PROFESSOR CAMPBELL.
MISS MOENCH.

It is the aim of the Department of Physical Education to foster hygienic habits among the students, and to direct their exercise that they may have a physical development fit to support and make efficient the mental development which they seek in attending the institution. This is accomplished, first, by giving them the needed opportunity for gymnastic exercises; second, by encouraging athletic games, thereby stimulating an interest in their physical efficiency and in the pleasure of physical activity; and, third, by giving them a guiding knowledge of the principles of physical education. All the work is based upon a careful physical examination and strength test.
PHYSICAL EDUCATION FOR MEN.

1. Open to all male students of the institution. Three hours a week. One hour credit.
   (a) GYMNASIUM EXERCISES. These consist of vigorous drills with dumb bells, Indian clubs, wands, etc., and gymnasium games under the supervision of the instructor.
   (b) LECTURES. The gymnasium work is supplemented by lectures on personal hygiene, the physiology of exercise, first aid to the injured, etc.

PHYSICAL EDUCATION FOR WOMEN.

Two years of physical education is required of all women students of the College. The work of the courses is arranged, as far as possible, with reference to the needs of the individual student as indicated by the physical examination and study of personal tendencies. The hygienic, corrective, and educative effects of exercise are sought in the arrangement of movements.

Students are required to wear full gymnasium costume, consisting of blouse, divided skirt and slippers. Costumes are ordered through the Secretary of the College and furnished to the student at actual cost, which is about $3.

FIRST YEAR COURSE. The aim of this course is to overcome physical defects, to establish a correct carriage of the body, to strengthen the muscles, and to relieve the tension of brain work. The course consists of relaxing exercises, mat exercises, corrective movements, adapted from the German and Swedish systems, exercises with light apparatus, marching, dancing, and games.

SECOND YEAR COURSE. A continuation of the first year course. The variety of movements is increased according to the ability and progress of the student. Prescribed individual exercises with the developing appliances, athletics, etc.
Winter Courses.

AGRICULTURE.

1. AGRONOMY. This course will embrace a discussion of the following topics: the atmosphere as a source of plant food; the soil—its formation and classification, the compounds it contains as sources of plant food; the plant—how it grows, feeds, and matures, and the animal food product it yields; how to maintain the fertility of Utah soils; rotation of crops; irrigation in its relation to the production of crops. Five hours a week.

2. JUDGING AND MANAGEMENT OF LIVESTOCK. A discussion of the various types of livestock; their adaptability for various purposes on the farm, and the principles involved in their improvement. As much time as possible is given to the practical handling and judging of the living animals on the College farm. Craig's Judging Live Stock. Five hours a week.

3. FEEDING LIVE STOCK. The principles underlying the successful feeding of live stock on the farm and the practical applications of Utah conditions. Jordan's Feeding Animals. Five hours a week.

4. DAIRYING. A discussion of the composition and properties of milk; milk testing; milk fermentation, etc. The manufacture of butter and cheese is fully explained. Wing's Milk and Its Products. Five hours a week.

5. DAIRY PRACTICE. Those who wish to specialize in dairying have opportunity for ample practice in the College dairy, which is well equipped with modern apparatus.
6. **Poultry.** The instruction covers breeds of poultry, foods and feeding, buildings and management. Where desired, arrangements can be made for practice in operating incubators. Five hours a week.

7. **Horticulture.** The subject of horticulture is treated in a course of lectures covering the following subjects: selection of varieties; soil adaptation; preparation for planting; care and cultivation; commercial orcharding; picking, packing, and marketing fruit; orchard disinfection, including a careful study of prevalent orchard diseases and injurious insects, and the means of combating them; pruning of trees and treatment of tree wounds, to be demonstrated by practical work in the College orchard; top-grafting of mature trees; orchard irrigation and conservation of moisture; drainage of orchard lands; fertilization of trees for growth and for fruit, etc. Five hours a week.

8. **Economic Entomology.** This course is designed as an introduction to the more advanced work in entomology. In addition to the lectures and text-book work, students receive some training in the use of the microscope. Special attention is given to the general principles involved in dealing with injurious insects. Five hours a week.

9. **Veterinary Science.** Instruction is given on how to locate and detect the more common ailments of our domestic animals, and methods of prevention and curing are discussed. Those diseases most frequently met with in this inter-mountain region receive special attention. Consideration is given to ideal sanitary conditions for different animals; and common errors are pointed out and corrections suggested. Students taking this course are expected to attend the clinic each Monday. Five hours a week.

10. **Irrigation and Drainage.** This course is designed especially for the requirements of the farmer who can spend but a limited time in the school room. The work in irrigation includes
methods of irrigation, division and measurement of water, prevention of loss of soil moisture by evaporation and seepage, and some effects of irrigation upon plant growth and crop production. A few lectures will be given on methods of draining water-logged and alkali lands, with a discussion of the cost and results of under-drainage. Five hours a week.

II. Farm Accounting. The importance and necessity of keeping accounts on the farm are emphasized. Methods are discussed and developed. Business forms and customs are studied, and after the underlying principles have been mastered, practical work in accounting is given. Five hours a week.

DOMESTIC SCIENCE AND ARTS.

1. Cooking Lectures. Preceding the cooking practice, one lecture is given each day. These lectures treat of the composition of foods and the general chemistry of cooking; rules for measuring and mixing; best methods of baking and boiling; deep and shallow frying; marketing and the selection of food; carving and serving food. The study of bills of fare, nutritive value of different foods, and of foods that are appropriately served together, is included in this course. The regular time allowed each class for practice is two two-hour periods a week. Special arrangements will be made, however, for those who wish to devote more time to this course; also for those who wish to perfect themselves in any particular line of cooking. Five hours a week.

2. Cooking Practice. This course includes practice in all kinds of plain and pastry cooking, and some fancy cooking and confectionery making. Demonstration lessons are given on breakfast breads and hot cakes; croquettes of various kinds; dressing for fowls; boning, skewering, and larding meats; braizing, roasting, broiling, and other methods of cooking meats; the preparation of soups, sauces, salads, and salad dressing, together with
other subjects difficult of treatment in class practice. A three
course lunch is served daily throughout the term by the mem-
bers of the cooking classes. The young ladies take turns in presid-
ing at the table as hostess, and also in waiting upon the table.
The skill and confidence that they acquire by this practice, is of
great value to them. Four hours a week.

3. **Hygiene.** Lectures are given on the sanitary conditions
best for the home; the danger from damp and unclean cellars;
fool drains and sinks; the necessity for pure air and sunlight in
the house. Talks are given on diet; regularity of habits; the
necessity for a regular and sufficient amount of sleep; the care of
personal health; home nursing and hospital methods. There are
illustrative lessons on changing beds for the sick. Three hours a
week.

4. **Dairying.** Instruction in cheese and butter-making, on
both the factory and home dairy plans, is given in the College
dairy. For lectures and plan of work, see Agricultural Courses.

5. **Sewing.** This course includes hand and machine sew-
ing, the students completing as much of the work outlined in
Courses 1 and 2 in Sewing as they can do successfully in the time
allowed for the work.

6. **Dressmaking.** Gowns are cut out, basted and made en-
tirely by the students. Students furnish material and make their
own garments. Five hours a week.

7. **Designing, Cutting and Fitting.** Instruction is given
by talks on grace in design of costumes and harmony of colors.
Special attention is given to hygienic modes of dress. The stu-
dents are taught to make drawings of the costumes they design;
they also learn to draft patterns from measurements. Further
practice is given in cutting and fitting. Five hours a week.

8. **Fancy Work.** This course includes Kensington em-
broidery, Roman cut work, Spanish laid work, drawn work, jew-
eled embroidery, and modern lace making. Five hours a week.
MECHANIC ARTS.

1. CARPENTRY A. Rudimentary exercises in sawing, ripping, planing, mortising, dovetailing, and joinery, furnish the details of this course. Correct methods of using and handling tools are emphasized. Fifteen hours a week.

2. CARPENTRY B. Sharpening and adjusting carpenter's tools, and saw filing, followed by simple cabinet work, constitutes the work of this course. Fifteen hours a week.

3. CARPENTRY C. This course consists of work in elementary cabinet making. School tables, bookcases, etc., are representative exercises. Open to students who have completed Courses A and B or their equivalent.

4. FORGING A. This course consists of preliminary exercises, such as drawing, bending, twisting, and shaping, and welding and making iron tools. Accuracy in methods and results is insisted upon. Fifteen hours a week.

5. FORGING 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. Prerequisite, Forging A. Fifteen hours a week.

6. FORGING C. This course consists of horseshoeing, carriage and farm implement repairing. Open to students who have completed Forging A and B or their equivalent.

COMMERCE.

1. BOOKKEEPING. An elementary course in the principles of accounting by single and double entry. Drill in commercial arithmetic, penmanship, business customs, etc. For further description
see Accounting 2, of which this is a modified course. Ten hours a week.

2. Business Forms. The fundamental principles of accounting are applied in this course by means of practical work in the use of different forms and blanks pertaining to actual business. Given in connection with Accounting 1. Five hours a week.

3. Commercial Law. A study of the nature of law, common and statutory law, contracts, agency, bailments, bankruptcy and insolvency, insurance, negotiable papers, partnerships, corporations, etc. Two lectures a week.


THE SUMMER SCHOOL.

The College maintains, as an integral part of its work, a summer session, beginning on the first Monday following Commencement Day, and continuing for five weeks. Every department of the College is represented, the courses of instruction being arranged to meet the peculiar needs of summer students. For the benefit of teachers, special courses are provided in pedagogy, psychology, sloyd, and nature study, in addition to the regular work in Agriculture, Domestic Science, etc. College students desiring to make up conditions or prepare for advanced work are given all assistance possible. The entire equipment of the institution is available for the summer session, and every care is taken to preserve the standard and the spirit of the College. No admission requirements are prescribed, but students in all departments are directed by instructors to those courses in which they may pursue work to the best advantage. No one is advised to elect more than four courses. Students will receive such credits on the College register as the quality and amount of work done may warrant. Arrangements have been made with County Superintendents
throughout the State to accept summer school credits in individual subjects in lieu of examination. In addition to the routine work of the session, a course of daily lectures is provided, appealing both to teachers and to the general public, and covering a wide range of interesting subjects. An entrance fee of $2.50 is charged for each course for which the student registers. Board and rooms can be secured throughout the city at the usual prices, and the College Dormitory also is open to summer students at a nominal rate.
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 1906-7.

Charles W. Porter, '05, President.
John L. Coburn, '05, First Vice-President.
May Maughan, '03, Second Vice-President.
William Jardine, '04, Secretary.
Blanche E. Caine, '05, Treasurer.
Thirteenth Annual Commencement.

WITH DEGREES.

Bachelor of Science in Domestic Science.—Minnie Peterson, Logan, Utah.

Bachelor of Science in Commerce.—Mildred Forgeon, Logan, Utah.

Bachelor of Science in Civil Engineering.—Irvin Allred, Spring City, Utah.

WITH CERTIFICATES.


AGRICULTURAL COLLEGE OF UTAH.

CATALOGUE OF STUDENTS.

In the following list A. stands for Agriculture; C., for Commerce; D. S., for Domestic Science; E., for Engineering; G. S., for General Science; M., for Music; M. A., for Mechanic Arts.

**GRADUATES.**

<table>
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<tr>
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<tr>
<td>Bowman, Verna Pearl</td>
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<td>Caine, Blanche Elise</td>
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<td>Coburn, John Leatham</td>
<td>Wellsville</td>
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<td>Farr, Eva.</td>
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<td>Greaves, Joseph Eames</td>
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<td>Holmgren, Amanda</td>
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<td>Jardine, James Tertius</td>
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<td>Peterson, Elmer George</td>
<td>Baker City, Oregon</td>
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<td>Porter, Charles Walter</td>
<td>Morgan</td>
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<td>Rudolph, Mary Edith</td>
<td>Taneytown, Maryland</td>
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<td>Rudolph, Roy Everett</td>
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**SENIORS.**

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<tr>
<td>Allred, Irvin (E.)</td>
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<td>Forgeon, Mildred (C.)</td>
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<td>Peterson, Minne (D. S.)</td>
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**JUNIORS.**

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<tr>
<td>Kearns, James Leonard (C.)</td>
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<td>Lee, Stuart (A.)</td>
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<td>Mathews, Fred (A.)</td>
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<td>Moench, Frank Moses (E.)</td>
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<td>Olson, Aaron Brigham (C.)</td>
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<td>Peterson, Preston Geddes (A.)</td>
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<td>Powell, Inez (D. S.)</td>
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<td>Riter, Benjamin Franklin (C.)</td>
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SOPHOMORES.

Austin, Torrey Lynn (E.) .................................................. Liberty, Ida.
Barrows, Harry Percy (A.) ................................................ Ogden
Beck, Wilford Williams (E.) .............................................. Newton
Carver, Heber (E.) ......................................................... Ogden
Chambers, Edward (E) ..................................................... Smithfield
Dee, Florence Emily (D. S.) .............................................. Ogden
Evans, Sarah (D. S.) ....................................................... Malad, Ida.
Farrell, Francis David (A.) .............................................. Logan
Fenn, Ray Randolph (E.) ................................................ Provo
Fleming, Charles Elliott (A.) .......................................... Logan
Fonnesbeck, Leon (G. S.) ................................................ Logan
Gardner, Wilford Woodruff (E.) ....................................... Afton, Wyoming
Gentry, Ralph (E.) ......................................................... Coalville
Hansen, Alva (C.) .......................................................... American Fork
Hayball, Nellie (G. S.) ..................................................... Logan
Hillman, Robert Cown (C.) ............................................. Oxford, Ida.
Homer, Russell King (G. S.) .......................................... Logan
Horton, John Raymond (G. S.) ....................................... Ogden
Hudman, Ellis (E.) ........................................................ Slaterville
Hunter, Joseph Greenwood (E.) ...................................... American Fork
Jacobson, Eunice Estella (G. S.) ...................................... Logan
Jensen, Fred Russell (C.) ............................................... Manti
Jensen, Hans Ephraim (C.) ............................................. Ephraim
Newey, Aaron (E.) ........................................................ Logan
Orr, Richard Robert (E.) ................................................ Clover
Smith, William Richard (A.) ........................................... Logan
Sorenson, Charles James (C.) ......................................... Hyrum
Turpin, George Melvin (A.) ........................................... Murray
Wallace, Cadmus (C.) .................................................... Sugar City, Ida.

FRESHMEN.

Abbott, George (E.) ....................................................... Farmington
Ball, Wilbur Mansfield (A.) ............................................ Trent, South Dakota
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AGRICULTURAL COLLEGE OF UTAH.

Stoops, Herbert Morton (G. S.) ........................................ Logan
Taylor, Thomas Gabriel (E.) ........................................... Far West
Thomas, William Henry (G. S.) ......................................... Malad, Ida.
Walker, William Lawrence (E.) ......................................... Eden
Walters, Edward Haslam (G. S.) ......................................... Logan
Wendleboe, Leo Paul (E.) ................................................ Logan
Wheeler, Jerome (A.) ..................................................... Slaterville
Wright, John Franklin (A.) ............................................... Nephi

SPECIALS.

Bexell, Mrs Dena (C.) ..................................................... Logan
Blair, Samuel (G. S.) .................................................... Lewiston
Boothe, Louis Hyrum (M.) ................................................ St. Charles, Ida.
Cameron, Isabelle (M.) ................................................... Carey, Ida.
Crockett, Henry Wallace (A.) ............................................ Logan
Crockett, John Alvin (A.) ................................................ Logan
Dahle, Ernest Edwin (G. S.) ............................................. Logan
Dahle, Norman Edward (G. S.) ......................................... Logan
Davis, Mary V. (G. S.) .................................................... Logan
Egbert, Maude (C.) ........................................................ Logan
Eliason, Nora (M.) ........................................................ Logan
Gardner, Josephine (M.) .................................................. Pine Valley
Gilpin, Grace (C.) .......................................................... Corinne
Gray, Clyde Martinus (M.) .............................................. Pocatello, Ida.
Greenhalgh, Mable (M.) .................................................. Logan
Hirst, Charles Terry (G. S.) ............................................. Logan
Izatt, Catherine (D. S.) ................................................... Logan
Jones, Ricy Howell (C) .................................................... Logan
Linnartz, Mrs. L. E. (M.) ................................................ Logan
McCraner, Henry (G. S.) ................................................ Smithfield
McKay, Thomas Evans (A.) ............................................. Ogden
Ostien, Mrs. Julie Winge (G. S.) ....................................... Logan
Peterson, Mattie Othelio (G. S.) ....................................... Logan
Peterson, Wallborg (M.) ................................................ Logan
Porter, Mrs. Alberta (G. S.) ............................................. Logan
Powell, Mrs. Mada (D. S.) ................................................ Logan
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AGRICULTURAL COLLEGE OF UTAH.

First Year.

Albrethsen, Adolph ................................................................. Picabo, Ida.
Allen, Merle ................................................................. Cove
Arthur, Evan B. .................................................. St. John
Austin, Clarence ........................................... Salt Lake City
Bangerter, Frederick Lorenzo ........................................ Granger
Batt, William .............................................................. Logan
Benson, Willis ............................................................. Newton
Brinkerhoff, George, Jr. ........................................ Thurber
Christensen, Ray .................................................... Gunnison
Clotworthy, Leonal ................................................................. Heber
Cook, Junius Melvin ................................................ Ogden
Cox, Almer Burns .............................................................. Fairview
Cox, George W. .............................................................. Salt Lake City
Crafts, Elmer .............................................................. Cedar Valley
Edwards, Leroy ............................................................ Gunnison
Ellsworth, Preston Blair ........................................ Louisville, Ida.
Froerer, Frederick .............................................................. Huntsville
Harris, Guy Frederick ............................................................ Deweyville
Harris, William Zera ................................................ Richmond
Haskell, David Eligher ............................................................. Newton
Hobson, Ivan Leslie ............................................................. Logan
Hoggan, Alma John .............................................................. Logan
Holden, James Almon ................................................ Colonia Diaz, Mexico
Homer, Brigham Ezra ................................................ Poplar, Ida.
Jackson, Victor Orin ............................................................ Randolph
Johnson, Arthur .............................................................. Kanab
Jones, William LeRoy M. ................................................ Mt. Sterling
Kartchner, Charles .............................................................. Logan
Knighton, Lynn Kearns ................................................ Gunnison
Knighton, Ross Kearns ................................................ Gunnison
Martin, Julius Patrie .............................................................. Salt Lake City
Murdock, Alva Pierce ........................................................ Heber
Peterson, Jesse L. ............................................................. Mendon
Reese, Parley ............................................ Brigham
Tippetts, John Ray ...................................... Lake Shore
Tovey, George Chivers .............................. Malad, Ida.
Turpin, Leroy ................................................. Murray
Wagstaff, John Alexander ....................... American Fork
Washburn, Thomas ........................................ Monroe
West, Archie James .................................. Salt Lake City
Whitmore, Arthur Lawrence .................... Price
Winsor, Anson Perry .................................. Enterprise
Winsor, Luther Murkins ............................ Enterprise

**Winter Course.**

Anderson, Nelson William .......................... Mt. Pleasant
Barton, Arthur G. ........................................ Ferron
Butcher, Arthur George ............................ Kaysville
Fielding, Thomas A. ................................ Mancos, Colorado
Livingston, Archie D. .................................. Manti
Martin, Francis Arthur ............................. Wilson
Martineau, Mrs. Emeline ............................ King
Martineau, Nephi ......................................... King
Nielsen, Peter Agaard ................................ Salt Lake City
Olson, William Arthur ................................ Mt. Pleasant
Packer, Ira W. .............................................. Corinne
Robins, Emmett .......................................... Salina
Seeley, John Leo ......................................... Mt. Pleasant
Wagstaff, William George ......................... Murray
Washburn, Orson Pratt ............................... Monroe

**DOMESTIC SCIENCE.**

**Third Year.**

Christensen, Esther ........................................ Newton
Vibrans, Gertrude Marie ............................... Cokeville, Wyo.

**Second Year.**

Adams, Catherine Maria ............................... Layton
Barber, L'Aprile ........................................ Cardston, Canada
Breeden, Fannie Marshall ................................................. Salt Lake City
Cooper, Della .................................................................. Dempsey, Ida.
Farrell, Loraine .................................................................. Logan
Jones, Letitia ...................................................................... Malad
Mathisen, Sophia E. ............................................................... Ovid, Ida.
Matthews, Ruby Ethel ............................................................. Logan
Nibley, Annie .................................................................... Logan
Roberts, Janie Caroline .......................................................... Layton
Smith, Frances ...................................................................... Logan
Stoops, Josephine Curtis ......................................................... Logan

First Year.

Adams, Katie ........................................................................ Layton
Cole, Zina Rachel ................................................................ Willard
Daniels, Anna ...................................................................... Malad, Id.
Davidson, Nellie ................................................................ Greenville
Jones, Mame ........................................................................ Logan
Jones, Sarah Cecelia ................................................................. Malad, Ida.
Justesen, Norma Fay .............................................................. Osceola, Nevada
Lund, Annie ........................................................................ Logan
Mathisen, Anna .................................................................. Ovid, Ida.
Peck, Julia Ann ...................................................................... Malad, Ida.
Reese, Lillian Cecelia .............................................................. Malad, Ida.
Roberts, Phebe .................................................................... Layton

COMMERCE.

Third Year.

Bell, Joseph Sprague ............................................................ Park City
Judd, Robert Lund ................................................................. St. George
Olson, John Emil ................................................................ Logan
Pearson, Roy Curtis ................................................................ Moore, Ida.
Phillips, William ................................................................ Salina
Skeen, Alfred David .............................................................. Plain City
Whitmore, Junius Leo .............................................................. Price
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AGRICULTURAL COLLEGE OF UTAH.

First Year.

Adams, Delbert Hyrum ........................................ Layton
Andrews, Junius ............................................... Logan
Anhder, Eva Almanie ........................................ Hyrum
Ballif, John Lyman, Jr. ....................................... Rexburg, Ida.
Beaman, Eugene ............................................... Stockton
Belnap, Amos ................................................... Ogden
Bingham, Danford Leroy ..................................... Ogden
Birch, Herbert Ezra ........................................... Wellington
Call, Omer Mathew ............................................ Rigby, Ida.
Carpenter, Alfonso ........................................... Kamas
Carpenter, Martin ............................................. Kamas
Clark, Samuel Elias .......................................... St. Charles, Ida.
Ellison, Delbert ............................................... Layton
Flack, James Milton ......................................... Logan
Gibbs, Francis Parley ....................................... Portage
Greaves, Harley ............................................... Preston, Ida.
Gutting, Campton ............................................. Blackfoot, Ida.
Hanson, Erlese Peter ......................................... Providence
Hansen, Radie .................................................. Logan
Hatch, John ..................................................... Vernal
Holmes, Alfred Hugh .......................................... Rock Springs, Wyoming
Jamison, William Flave ...................................... Lewiston
Jessen, Henry Wesley ......................................... Wellington
Johnson, David Ervin ......................................... Garden City
Justeson, Barney Traverse .................................. Osceola, Nev.
Kellogg, Howard ............................................... Rock Springs, Wyo.
Lowe, Rosella .................................................. Franklin, Ida.
Lund, Lettie ................................................... Logan
Madsen, Ezra ................................................... Bear Lake, Ida.
Morgan, John Dever .......................................... Collingston
Morris, George William ..................................... Neeley, Ida.
Mortensen, John William .................................... Levan
McBride, Warren Grover .................................... Tooele
McCausland, Georgina Emily ................................ Logan
Nelson, Jennett ................................................ Logan
Nichols, Earl ........................................ Wallsburg
Outzen, Clarence Albert ................................ Richfield
Owens, Thomas Evan .................................. Malad, Ida.
Page, Cora ........................................... Payson
Paxman, Burdell ...................................... Silver
Peterson, Helga ....................................... Mendon
Plant, Henry Thomas, Jr. ............................ Richmond
Pratt, Isabelle ....................................... Blackfoot, Ida.
Preston, Fred .......................................... American Fork
Smart, Melvin Shives ................................ Salt Lake City
Sprouse, Nellie May .................................. Garden City
Swauger, Floyd ........................................ Mackay, Ida.
Swauger, Frank ........................................ Mackay, Ida.
Taylor, Vera Evelyn .................................. Baker City, Oregon
Thomas, Espy ......................................... Malad, Ida.
Thomas, Seth ......................................... Malad, Ida.
Wood, Jesse ........................................... Fielding
Wright, Leslie ......................................... Lago, Ida.

Winter Course.

Ball, Thomas Gladstone ................................ Wasatch
Baxter, Stephen Hopkins ................................ Wellsville
Colby, Legrand Collins ................................ Mendon
Coons, Thaddeus ....................................... Heber
Jenkins, Laddell ...................................... Parker, Ida.
Jensen, Alma .......................................... Mantua
Mathisen, Alma ...................................... Ovid, Ida.
Rasmussen, Henry .................................... Mantua
Richards, Frederick William ........................ Fielding
Rosenbaum, David Howell ............................ Brigham
Roundy, Lauren Shadrach ............................ Kanab
Tarbet, Willard ...................................... Logan
Warr, Albert .......................................... Kamas
### Fourth Year

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### Third Year

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### Second Year

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Krebs, Emma .............................................................. Providence
Leigh, Jennie ............................................................... Cedar City
Mathews, Etta ............................................................. Eureka
Mathews, Margaret ......................................................... King
Moench, Janie Elizabeth ................................................ Logan
Nebeker, Eva Magdelane ................................................ Logan
Nelson, Minnie Ann ....................................................... Thayne, Wyo.
Parke, Lavinna ............................................................ Riverside
Quayle, Blanche .......................................................... Dingle, Ida.
Rosenbaum, Myrtle ...................................................... LaGrand, Oregon
Skeen, Isabell .............................................................. Plain City
Stratford, Pearl ........................................................... Logan
Sullaway, Sara Vina ....................................................... Mt. Home, Ida.
Wright, Clara ............................................................... Franklin, Ida.
Wright, Ella ................................................................. Franklin, Ida.

First Year.
Adamson, Hilda ............................................................. American Fork
Greenhalgh, Cora Elma ................................................... Logan
Laub, Phyllis ............................................................... Fielding
Mitchell, Learretta ....................................................... Logan
Nelson, Essie Jean ........................................................ Logan
Nowacki, Rose Ella ....................................................... Mackay, Ida.
Richards, Rena Luella .................................................. Fielding
Robinson, Anna .......................................................... Richmond
Shepherd, Elizabeth Jane ................................................ Kamas
Smith, Mary Enone ...................................................... Salt Lake City
Smith, Priscilla ............................................................ Salt Lake City
Sprouse, Geneva ........................................................ Garden City
Wood, Emma ............................................................... Trenton

Winter Course.
Arthur, Emily Bennett .................................................. St. John
Halquist, Mary ............................................................ Richmond
Hansen, Millie ............................................................ Logan
MECHANIC ARTS.

Fourth Year.

Egbert, Samuel Roy .............................................. Logan
Taylor, John ..................................................... Salt Lake City

Third Year.

Aldous, Alfred Evan .............................................. West Weber
Aldous, Sidney Edgar ............................................. Huntsville
Cain, John ........................................................ Eureka
Carter, Wesley James ............................................ Deweyville
Frederickson, Alma .............................................. Colonia Diaz, Mexico
Goff, Jedediah H. ................................................ Logan
Leslie, Joseph Wilford ........................................... Fountain Green
Mattson, George Bert ............................................ Poplar, Ida.
Mitchell, Edgar Bentley ......................................... Logan
McLeod, William F. ............................................... Eureka
Olson, Charles Henry ............................................. Crescent
Rowland, Thomas Greaves ........................................ Logan
Sandgreen, George Edward ...................................... Pleasant Grove
Wangsgaard, Fred Christian ..................................... Huntsville

Second Year.

Anderson, William Sherman ...................................... Moroni
Armitage, Herbert Stansfield ................................... Briston, Montana
Beck, Alma ........................................................ Spanish Fork
Burnett, George Randall .......................................... Ogden
Chugg, Joseph Orley ............................................. Ogden
Cole, LaMont ...................................................... Paris, Ida.
Crookston, Nicholas Lee .......................................... Logan
Frew, William Amos, Jr .......................................... Hooper
Gleed, Edward Reese ............................................. Lima, Montana
Hess, Seymour B. ................................................ Fielding
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Moore, Arthur Harold ........................................ Weston, Ida.
Murphy, Jacob Edward ........................................ Salina
Nielson, Loren Andrew .......................................... Sanford, Colorado
Outzen, Jesse Richard .......................................... Richfield
Outzen, Martin William .......................................... Richfield
Paddock, John Stephen .......................................... Wisdom, Mont.
Patrick, John Hulet ............................................ Springville
Peterson, Alfred Christian ....................................... Mendon
Quinney, George ................................................ Logan
Sneddon, James Yates ........................................... Aguilar, Colorado
Stevens, Marion R. ............................................... Holden
Styer, William Delp ............................................. Logan
Swenson, Helga .................................................... Pleasant Grove
Taylor, Jesse ........................................................ Loa
Taylor, Robert Allen ............................................. Fremont
Turner, Simpson Montgomery ................................... Logan
Williams, Percy Julian ........................................... Ophir

Winter Course.

Anderson, Frank ................................................. Morir
Beckstead, Alexander ............................................ West Jordan
Bennett, Delbert ................................................... Hooper
Blake, Fred .......................................................... Hooper
Bragger, Oliver ..................................................... Willard
Buchanan, Archibald Lester ..................................... Venice
Cawley, Claude ..................................................... Wilson Lane
Cooper, Dwight Homer ........................................... Dempsey, Ida.
Cox, Amasa Bruce ................................................ Fairview
Dobbs, Lewis Harrison ........................................... Bingham
Frew, Walter Scott ................................................ Logan
Gilette, Lawrence Augustus ..................................... Tooele
Hansen, Torbin ..................................................... Logan
Holmes, William ................................................... Wilson
Janes, Royal ........................................................ Hyrum
Jorgensen, Wilford A. ............................................ Logan
Nyberg, Victor ....................................................... Chester
Olsen, Wilford Benjamin.........................................................Moroni
Patterson, Ray ........................................................................Hooper
Powell, Milton .........................................................................Logan
Randolph, Roy Wilford ..............................................................Halleck, Nev.
Rasmussen, Howard ....................................................................Chester
Richards, Arthur ........................................................................West Jordan
Smith, LeRoy ................................................................................Greenville
Stoddard, Walter Bert .................................................................Providence
Tibbitts, Edwin ............................................................................Parker, Ida.
Warner, Frank John .....................................................................Wales
Wells, Hugh ..................................................................................Tilden, Ida.
Wright, Cyril James .....................................................................Franklin, Ida.

COLLEGE PREPARATORY.

Second Year.

Casto, William Henry, Jr...............................................................Custer, Ida.
Child, Linzy Clark ........................................................................Lima, Montana
Conger, Walter James ...................................................................Ogden
Daniels, Edward Earl ....................................................................Logan
Evans, David William ...................................................................Malad, Ida.
Finlayson, Vernon Alexander ........................................................Logan
Grue, Joseph ..............................................................................Plain City
Johnson, John William ..................................................................Marysville, Ida.
Jones, William Stark .....................................................................Brigham
Kerr, Ivin Earl ..............................................................................Ora, Ida.
Kerr, Robert Mortimer ..................................................................Ora, Ida.
Kewley, Robert James ...................................................................Logan
Malm, John Siegfried ....................................................................Custer, Ida.
Mortimer, William .........................................................................Logan
McDonald, Alice Isabel ...............................................................Salmon, Ida.
Nebekker, Herbert John ...............................................................Logan
Nebekker, Shirley .........................................................................Logan
Peterson, Dean Freeman ................................................................Scipio
Phelps, Oscar ...............................................................................Mesa, Arizona
Peirce, Lisle Kenneth ...................................................................Brigham
Pond, Bertrand Thorne .......................................................... Lewiston
Preston, Alexander Pyper ......................................................... Logan
Riter, William Corlett ............................................................... Logan
Roberts, Loa E. .................................................................... Salt Lake City
Robinson, David Earl ............................................................... Logan
Stewart, James Haslam .............................................................. Logan
Stewart, Lynn D. ...................................................................... Benjamin
Stewart, Robert Haslam ............................................................ Logan
Swenson, Dan Arthur ............................................................... Pleasant Grove
Thomas, Guy Leland ................................................................ Logan
Turner, Franklin David ............................................................. Logan
Wrigley, Robert Lacourn ........................................................... American Fork
Wyatt, Franklin A. ................................................................... Wellsville

COLLEGE PREPARATORY.

First Year.

Brown, Frank Martin ................................................................. Liberty, Ida.
Burbank, Sydney Raht ................................................................ Black Rock
Coburn, Elmo Preston ................................................................. Wellsville
Cole, Winslow Charles ................................................................ Willard
Dickson, Bartlett Davis .............................................................. Cowley, Wyoming
Dickson, James Barnard ............................................................. Rock Springs
Dunlop, Scott Barratt .................................................................. Logan
Egbert, Archie ........................................................................... Logan
Egbert, Ivan ............................................................................... Logan
Harris, Lester ............................................................................ Beaver
Hartvigsen, Hyrum Jacob .......................................................... Downey, Ida.
Johnson, Fred Oscar ................................................................ Logan
Johnson, Mary Louise ............................................................... Logan
Knapp, Alma Johnston ............................................................... Moroni
Martineau, Vere Loraine .......................................................... Logan
Monsen, Lawrence Christian ...................................................... Richmond
Monsen, Miriam .......................................................................... Malad, Ida.
Morgan, Francis Holmes ........................................................... Willard
McAlister, Clair H. H. ................................................................. Logan
Peterson, Charles O. ................................................................ Logan
AGRICULTURAL COLLEGE OF UTAH.

Philbrick, Oliver Augustus ................................................. Fossil, Oregon
Porter, Ralph Orlando ....................................................... Porterville
Smith, Wesley Ensign ......................................................... Logan
Spencer, Clara Jennett ......................................................... Porterville
Taylor, Phebe Estella ............................................................. Fremont
Tovey, James ....................................................................... Malad, Ida.
Wondershek, Minnie ............................................................ Hailey, Ida.
Woolley, Vern Clark ............................................................ Grantsville

SUB-PREPARATORY.

Bowman, Albert Elijah .......................................................... Ogden
Brough, Lewis Roy .............................................................. Lyman, Wyo.
Caine, George Ballif .......................................................... Logan
Calhoun, William Albert .................................................... Bellevue, Ida.
Chipman, Reed John .......................................................... Magrath, Canada
Cotant, George William ...................................................... Halleck, Nev.
Crane, William ................................................................. Draper
Davis, Alice Mae ................................................................. Coquelle, Oregon
Evans, Howard .................................................................... Garland
Gessel, Henry ......................................................................... Logan
Grunder, John ......................................................................... Logan
Hampton, Orlando .............................................................. Franklin, Ida.
Henderson, Adelbert ........................................................... Clifton, Ida.
Henderson, Marion ............................................................. Clifton, Ida.
Izatt, Angus ........................................................................... Logan
Kerr, Leona ........................................................................... Logan
Lofthouse, Charles Edwin .................................................. Paradise
Lowe, Robert Downey .......................................................... Franklin, Ida.
Lundberg, Samuel Albert .................................................... Logan
Mantey, Julius Robert .......................................................... Picabo, Ida.
Martensen, Alfred Alvin .......................................................... Mayfield
Murray, Joseph Woodward .................................................. Wellsville
McNeil, William J. ................................................................ Logan
Newburger, John Joseph ..................................................... Logan
Ormond, William .................................................................... Logan
Parker, Henry George .......................................................... Rock Springs, Wyo.
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**SPECIALS.**

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**SUMMER SCHOOL.**

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Holladay, Mabel ......................................................... Smithfield
Johnson, Harriett ...................................................... Mesa, Arizona
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Larson, H. Christine ....................................................... Mink Creek, Ida.
Maughan, Julia Annette ................................................ Logan
Maughan, Lavinia ................................................................ Logan
Merrill, Alva Retta .......................................................... Richmond
Miles, George Edwin ...................................................... Smithfield
Montgomery, Priscilla ..................................................... Ogden
Montierth, Caroline ....................................................... Thatcher, Arizona
Peterson Hermes ................................................................ Pleasant Grove
Peterson, Margaret ......................................................... Hyrum
Powell, Inez ...................................................................... Logan
Roberts, Vida Margaret .................................................. Layton
Simonds, Lillian .................................................................. Logan
Smith, George Young ...................................................... Smithfield
Stuart, Stella Mae ............................................................ Wardboro, Ida.
Telford, Mildred .............................................................. Richmond
Thomas, Olga Elydia ........................................................ Logan
Walters, Jane ..................................................................... Wellsville
Williamson, May .............................................................. Wellsville

**SUMMARY BY YEARS.**

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