893-4-2082

COLLEGE BULLETIN. ISSUED QUARTERLY. SERIES 1, NUMBER 42.

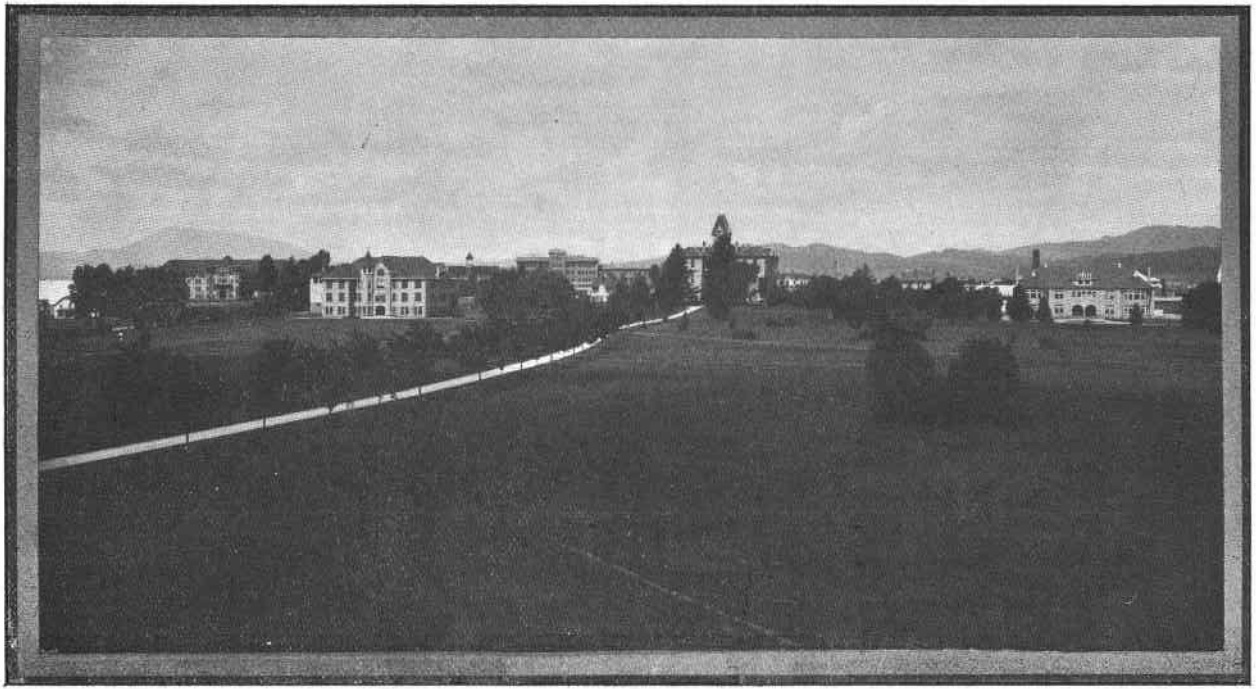
OREGON AGRICULTURAL COLLEGE

CATALOGUE

FOR

1910-1911

[Entered at the Postoffice, Corvallis, Oregon, as second-class matter.]



General Campus View

CATALOGUE

OF THE

Oregon Agricultural College

FOR

1910 - 1911

With List of Students for 1909-1910

CORVALLIS, OREGON

PUBLISHED BY THE COLLEGE
MAY, 1910

CALENDAR

1910

JULY

S	M	T	W	T	F	S
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
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31	--	--	--	--	--	--

AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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1911

JANUARY

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FEBRUARY

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MARCH

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APRIL

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30	--	--	--	--	--	--

MAY

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21	22	23	24	25	26	27
28	29	30	31	--	--	--
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JUNE

S	M	T	W	T	F	S
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18	19	20	21	22	23	24
25	26	27	28	29	30	--
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COLLEGE CALENDAR 1910-1911

1910.

July 20, Wednesday—Annual meeting of Board of Regents.

September 23, 24, 26, Friday, Saturday, Monday—Registration days.

September 23, 24, Friday, Saturday—Examination for admission.

September 27, Tuesday—Recitations begin.

November 24, Thursday—Thanksgiving Day; legal holiday.

December 21, Wednesday (noon)—Christmas recess begins.

1911.

January 3, Tuesday—Regular exercises resumed.

January 3, Tuesday—Winter short courses begin.

February 13-17, Monday to Friday (inclusive)—Farmers' week.

February 17, Friday—First semester ends.

February 28, Tuesday—Second semester begins.

May —, ———————— Military Inspection day.

May 30, Tuesday—Decoration Day; legal holiday.

June 11-13, Sunday to Tuesday—Commencement week.

BOARD OF REGENTS

OF THE

OREGON AGRICULTURAL COLLEGE

AND

EXPERIMENT STATION.

OFFICERS.

HON. J. K. WEATHERFORD, *President*.....Albany
HON. E. E. WILSON, *Secretary*.....Corvallis
HON. B. F. IRVINE, *Treasurer*.....Portland

EX-OFFICIO MEMBERS.

HON. F. W. BENSON, *Governor and Secretary of State*.....Salem
HON. J. H. ACKERMAN, *Supt. of Public Instruction*.....Salem
HON. CHARLES E. SPENCE, *Master of State Grange*.....Canby

APPOINTED BY THE GOVERNOR.

	TERM EXPIRES.
HON. JOHN D. OLWELL	Medford, 1912
HON. WILLIAM W. COTTON	Portland, 1912
HON. WALTER M. PIERCE	La Grande, 1912
MRS. CLARA H. WALDO	Macleay, 1915
HON. E. E. WILSON	Corvallis, 1915
HON. B. F. IRVINE	Portland, 1915
HON. J. T. APPERSON	Parkplace, 1918
HON. J. K. WEATHERFORD	Albany, 1918
HON. C. L. HAWLEY	McCoy, 1918

STANDING COMMITTEES

OF THE

BOARD OF REGENTS

EXECUTIVE COMMITTEE.

J. K. Weatherford, *Chairman;* J. T. Apperson, E. E. Wilson, W. W. Cotton.

FINANCE COMMITTEE.

J. T. Apperson, *Chairman;* W. M. Pierce, C. L. Hawley.

COLLEGE COMMITTEE.

B. F. Irvine, *Chairman;* W. M. Pierce, C. L. Hawley.

STATION COMMITTEE.

W. M. Pierce, *Chairman;* J. D. Olwell, W. W. Cotton.

INSTITUTE COMMITTEE.

J. D. Olwell, *Chairman;* C. L. Hawley.

OFFICERS OF ADMINISTRATION AND INSTRUCTION

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

ADMINISTRATIVE COUNCIL.

WILLIAM JASPER KERR, D. Sc.,
PRESIDENT.

JAMES WITHYCOMBE, M. Agr.,
DIRECTOR OF THE EXPERIMENT STATION,
Professor of Animal Husbandry.

ARTHUR BURTON CORDLEY, M. S.,
DEAN OF THE SCHOOL OF AGRICULTURE,
Professor of Zoology and Entomology.

GRANT ADELBERT COVELL, M. E.,
DEAN OF THE SCHOOL OF ENGINEERING AND MECHANIC ARTS,
Professor of Mechanical Engineering.

JULIET GREER, A. B.,
DEAN OF THE SCHOOL OF DOMESTIC SCIENCE AND ART,
Professor of Domestic Science.

JOHN ANDREW BEXELL, A. M.,
DEAN OF THE SCHOOL OF COMMERCE,
Professor of Business Administration.

COLLEGE COUNCIL.

(The members of the Administrative Council are also members of the College Council.)

FREDERICK BERCHTOLD, A. M.,
Professor of English Language and Literature.

JOHN B. HORNER, A. M., Litt. D.,
Professor of History and Political Science.

GORDON VERNON SKELTON, C. E.,
Professor of Civil Engineering.

EDWARD RALPH LAKE, M. S.*
Professor of Botany and Forestry.

*On leave of absence.

JOHN FULTON, M. S.,
Professor of General and Analytical Chemistry.

THOMAS HENRY CRAWFORD, A. M.,
Professor of Commercial Law.

CLAUDE ISAAC LEWIS, M. S. A.,
Professor of Horticulture.

FRED LEROY KENT, B. Agr.,
Professor of Dairy Husbandry.

CHARLES LESLIE JOHNSON, B. S.,
Professor of Mathematics.

EMILE FRANCIS PERNOT, M. S.,
Professor of Bacteriology.

CLARENCE MELVILLE McKELLIPS, Ph. C.,
Professor of Pharmacy.

GERARD TAILLANDIER,
Professor of Modern Languages.

U. G. McALEXANDER, Capt. 13th Inf., U. S. A.,
COMMANDANT,
Professor of Military Science and Tactics.

JAMES DRYDEN,
Professor of Poultry Husbandry.

HENRY DESBOROUGH SCUDDER, B. S.,
Professor of Agronomy.

HENRY MARTIN PARKS, B. S., E. M.,
Professor of Mining Engineering.

THOMAS MOONEY GARDNER, M. M. E.,
Professor of Electrical Engineering.

CHARLES EDWARD BRADLEY, M. S.,
Professor of Agricultural Chemistry.

EMMETT DUNN ANGELL,
DIRECTOR OF THE GYMNASIUM,
Professor of Physical Education.

WILLIAM FREDERICK GASKINS, B. S.,
Professor of Music.

WILLIAM ARTHUR JENSEN,
Recorder of the Faculties.

WILLIAM ROBINSON BOONE,
Professor of Piano.

EDWIN DeVORE RESSLER, A. M.,
DIRECTOR OF THE SUMMER SCHOOL,
Professor of Industrial Pedagogy.

GEORGE WILCOX PEAVY, M. S.,
Professor of Forestry.

FARLEY DOTY McLOUTH, B. S.,
Professor of Art.

WILLIBALD WENIGER, Ph. D.,
Professor of Physics.

RALPH DORN HETZEL, A. B., LL. B.,
Professor of Public Speaking.

HERBERT SPENCER JACKSON, A. B.,
Professor of Botany.

IDA BURNETT CALLAHAN, B. S.,
Assistant Professor of English Language and Literature.

MARK CLYDE PHILLIPS, B. M. E.,
SUPERINTENDENT OF HEAT, LIGHT, AND POWER,
Assistant Professor of Mechanical Engineering.

IDA ANGELINE KIDDER, A. B., B. L. S.,
Librarian.

NICHOLAS TARTAR, B. S.
Assistant Professor of Mathematics.

CHARLES ARTHUR COLE, M. S.,
Assistant Professor of Pomology.

ARTHUR LEE PECK, B. S.,
Assistant Professor of Landscape Gardening.

ELMER POLIC JACKSON, B. S.,
Assistant Professor of Technical Woodwork.

MARION SYDDUM VAN LIEW,
Assistant Professor of Domestic Science.

ERMINE L. POTTER, B. S.,
Assistant Professor of Animal Husbandry.

GEORGE ROBERT HYSLOP, B. Sc.,
Assistant Professor of Agronomy.

JUANITA ROSENDORF, B. S.,
Acting Registrar.

FACULTY.

(The members of the Administrative and College Councils are also members of the Faculty.)

HARRY L. BEARD, B. S.,
DIRECTOR OF CADET BAND,
Instructor in Mathematics.

LOREN BURTON BALDWIN, A. M.,
Instructor in English.

EARL VINCENT HAWLEY, B. S.,
Instructor in Electrical Engineering.

WILLIAM McCAULLY PORTER,
Instructor in Forging.

ELMER POLIC JACKSON, B. S.,
Foreman in Carpentry.

ARIEL MIRIAM EWING,
Instructor in Domestic Art.

HELEN HYDE TOBIN,
Instructor in Domestic Art.

CARL LAFAYETTE KNOPF, M. E.,
Instructor in Mechanical Engineering.

WINIFRED MAUDE WILLIAMS, B. Ph.,
Instructor in Public Speaking and in Physical Culture for Women.

EDWARD BENJAMIN BEATY, B. S.,
Instructor in Mathematics.

EARL PAUL HARDING, B. S.,
Instructor in Chemistry.

GENEVIEVE BAUM-GASKINS,
Instructor in Voice.

MYRTIE CLARK VAN DEUSEN,
Instructor in Domestic Science.

ARTHUR GEORGE BOUQUET, B. S.,
Instructor in Horticulture.

OTTO GERALD SIMPSON, B. S.,
Instructor in Dairy Husbandry.

SAMUEL HERMAN GRAF, E. E.,
Instructor in Mechanical Engineering.

WILFORD WOODRUF GARDNER, C. E.,
Instructor in Civil Engineering.

RENTON KIRKWOOD BRODIE, B. S.,*
Instructor in Chemistry.

HERBERT EDWARD COOKE, B. S.,
Instructor in Mining Engineering.

ROSE ZANDER ANGELL,
Instructor in Home Nursing.

EDGAR RAYMOND SHEPARD, A. M.,
Instructor in Physics and Electrical Engineering.

GEORGE CLYDE MATHEWS, A. B.,
Instructor in English.

EMMETT B. MOORE,
Instructor in Commerce.

ROBERT HENRY RODGERS, B. S.,
Instructor in Patternmaking.

GERTRUDE EWING McELFRESH, A. B.,
Instructor in English.

MYRTLE ELIZABETH KNEPPER, B. S.,
Assistant Librarian.

ANNA G. SABY, M. A.,
Instructor in Spanish and Latin.

SIDNEY WILLIS FRENCH, E. M.,
Instructor in Mining Engineering.

FLETCHER AMOS GOULD, B. S.,
Instructor in Civil Engineering.

MILO REASON DAUGHTERS, A. M.,
Instructor in General and Analytical Chemistry.

WILBUR LOUIS POWERS, M. S.,
Instructor in Agronomy.

EDWARD CLEVELAND CALLOWAY, B. S.,
Instructor in Pharmacy.

ALICE LEORA EDWARDS, B. S.,
Instructor in Zoology and Entomology.

HELEN MARGARET GILKEY, B. S.,
Instructor in Botany.

---

*On leave of absence.

JAMES ARBUTHNOT, B. S.,
Instructor in Physical Education.

MAY BABBITT-RESSLER,
Instructor in Piano.

FLORENCE BOWDEN,
Instructor in Latin and Music.

GEORGE R. SAMSON, B. S.,
Instructor in Animal Husbandry.

JULES FERNANDO MOREL, M. D. C.,
Instructor in Veterinary Science.

EDITH CARTER KUNEY, A. B.,
Instructor in Modern Language.

WILLIAM E. LAWRENCE, B. S.,
Instructor in Botany.

WILLIAM HOWARD EIS,
Instructor in Music.

Instructor in Electrical Engineering.

Instructor in Forestry.

Instructor in Mechanical Engineering.

Instructor in Zoology and Entomology.

Instructor in Chemistry.

Instructor in Mathematics.

Instructor in English.

Instructor in Chemistry.

ASSISTANTS.

HELEN MARGARET GILKEY, B. S.,
Assistant in Botany.

GLEN DEHAVEN, M. S.,
Assistant in Bacteriology.

FRANCES HUSTON, B. S.,
Assistant in Physical Culture for Women.

ALFRED GUINN LUNN,
Assistant in Poultry Husbandry.

JAMES KOEBER, B. S.,
Assistant in Agronomy.

FRED EDGERTON EWART, B. S.,
Assistant in Electrical Engineering.

IDA ROBINSON-MOORE,
Assistant in Commerce.

FRED EUGENE PERNOT, B. S.,
Assistant in Electrical Engineering.

.....
Assistant in Domestic Science.

.....
Assistant in Domestic Art.

OTHER OFFICERS.

WILLIAM HORACE KERR,
Manager of the Business Office.

GEORGE BRELSFORD KEADY,
Foreman Printing Plant.

LETTITIA PEARL LEONARD, B. S.,
Bookstore Clerk.

OTTO FRANK LUDWIG HERSE,
Assistant Printer.

JOHN HOLT EDWARDS,
Head Janitor.

JOHN G. TAYLOR,
Foreman Power and Heating Plant.

DOROTHY YEGAN,
Stenographer.

STANDING COMMITTEES.

The President of the College is ex-officio a member of all standing committees.

1. *Entrance Examinations*—Professors Tartar, McLouth, Mr. Baldwin.

2. *Scholarship and Graduation*—Professors Berchtold, Skelton, Kent, Weniger.

3. *Graduate Students and Advanced Degrees*—Professors Skelton, Cordley, Ressler, Weniger.

4. *Credentials and Advanced Standing*—Professors Ressler, Berchtold, Johnson.

5. *Catalogue*—Professors Berchtold, Johnson, Callahan.

6. *Schedules*—Professor Johnson, Mr. Beaty, Mr. Graf.

7. *Attendance*—Professors Fulton, McAlexander, Phillips.

8. *Dormitories* - Professors Bexell, Greer, Hetzel, Mr. Cooke, Mr. Ewart.

9. *Student Organizations and Activities*—Professor Hetzel, Mr. Baldwin, Miss Williams, Mr. Mathews.

10. *Student Domiciles*—Professor Horner, Mrs. McElfresh, Mr. Simpson.

11. *Social Entertainments*—Professors Bradley, Gaskins, McLouth, Callahan, Mr. Bouquet.

12. *Athletics*—Professors Angell, Cordley, Johnson, McKellips, Peavy, Mr. Pilkington.

13. *College Extension*—Professors Withycombe, Bexell, Dryden, Greer, Peavy.

14. *College Exhibits*—Professors Peavy, Cordley, Greer, Covell.

STAFF OF THE AGRICULTURAL EXPERIMENT STATION

WILLIAM JASPER KERR, D. Sc.,
PRESIDENT.

JAMES WITHYCOMBE, M. Agr.,
DIRECTOR.
Animal Husbandman.

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Entomologist.

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Horticulturist.

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Forester.

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Botanist and Plant Pathologist.

HERMAN VANCE TARTAR, B. S.,
Research Assistant in Chemistry.

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Assistant Horticulturist.

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Floriculturist and Landscape Gardener.

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Research Assistant in Plant Pathology.

EDWARD JACOB KRAUS, B. S.,
Research Assistant in Horticulture.

BERT PILKINGTON, B. S.,
Assistant Chemist.

WILBUR LOUIS POWERS, M. S.,
Assistant Agronomist.

JULES FERNANDO MOREL, M. D. C.,
Veterinarian.

RALPH WALDO REES, B. S.,
Research Assistant in Horticulture.

FRANK ROSS BROWN, B. S.,
Orchard Foreman

LYMAN BUNDY, B. S.,
Assistant Chemist.

GLEN DEHAVEN,
Assistant Bacteriologist.

ALFRED GUINN LUNN,
Assistant Poultryman.

HELEN LUCILE HOLGATE, B. S.,
Station Clerk.

Assistant in Entomology.

Farm Foreman

UNION BRANCH EXPERIMENT STATION.

ROBERT WITHYCOMBE, B. S.,
SUPERINTENDENT.

PAUL HERMAN SPILLMAN, B. S.,
Assistant Horticulturist.

UMATILLA BRANCH EXPERIMENT STATION.

RALPH WILMER ALLEN, B. S.,
SUPERINTENDENT.

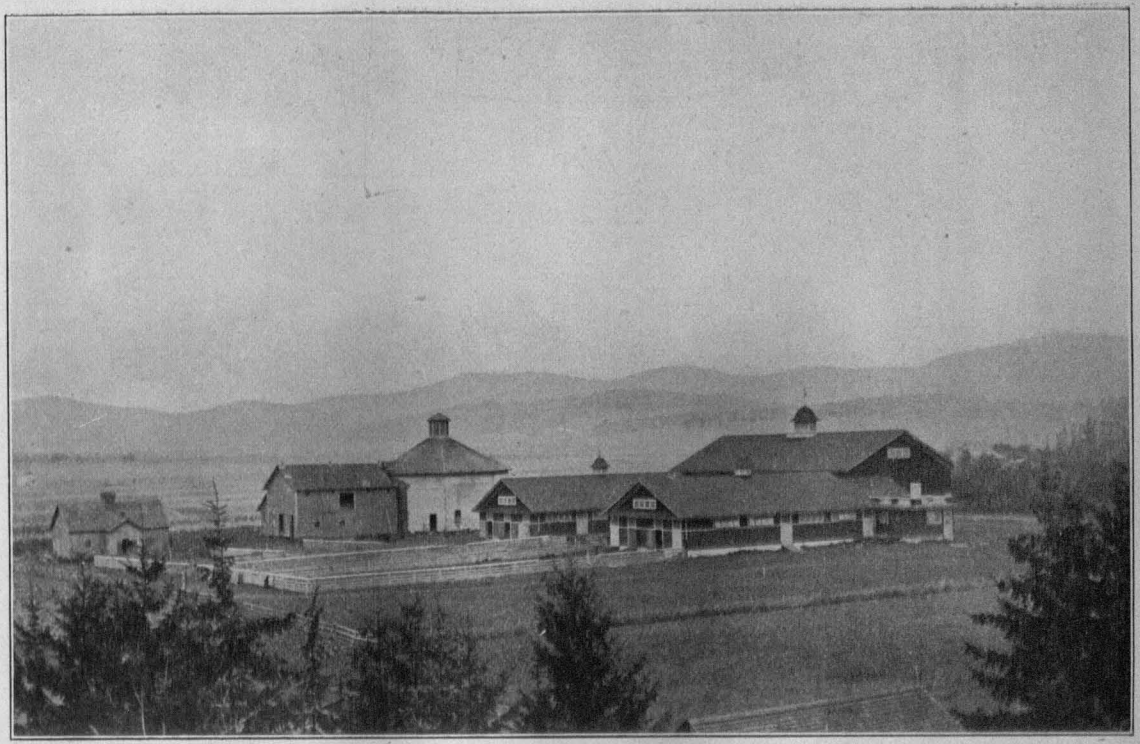
DRY-FARM BRANCH EXPERIMENT STATION.

H. J. C. UMBERGER,
SUPERINTENDENT.

ORREN BEATY, B. S.,
Foreman.

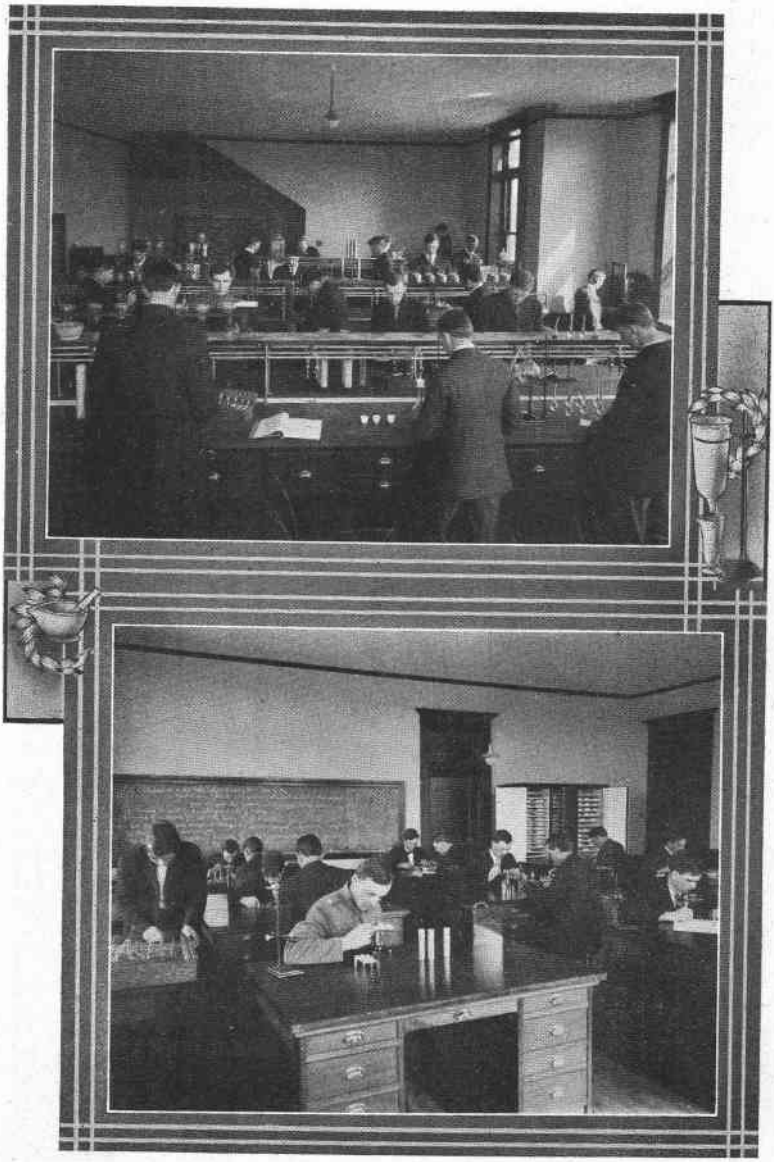
Agricultural Hall

Agronomy Building

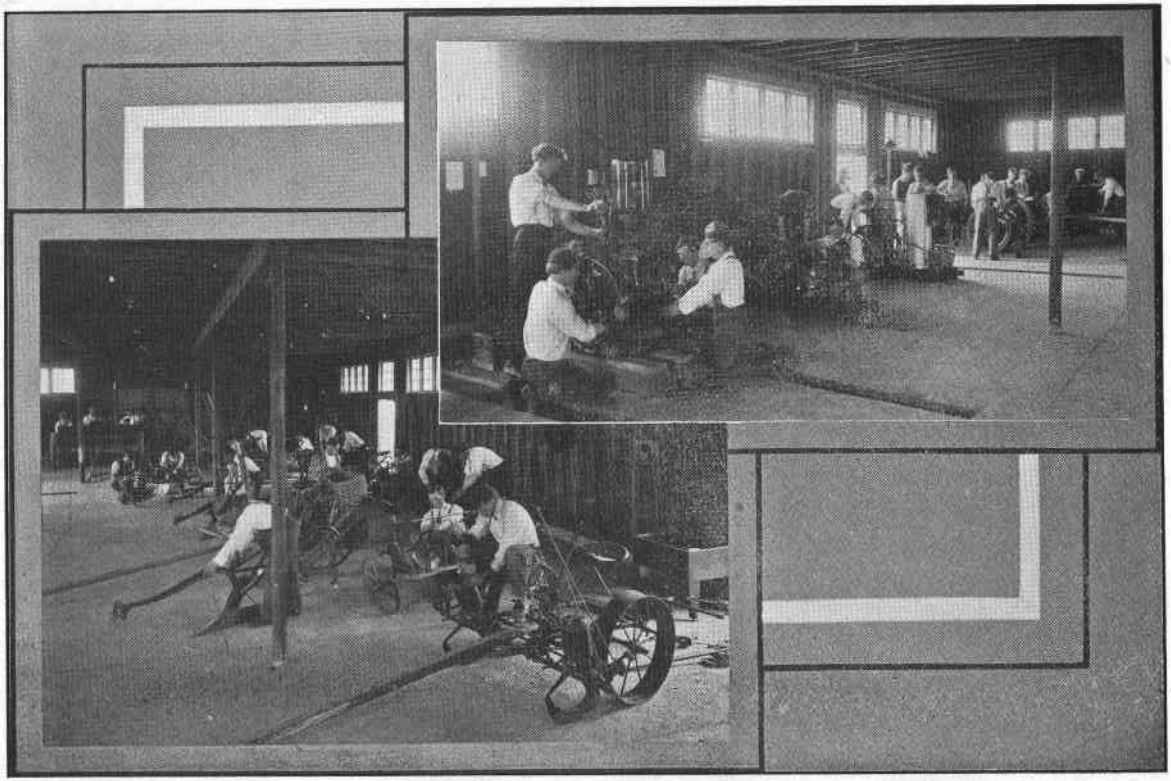


College Barns

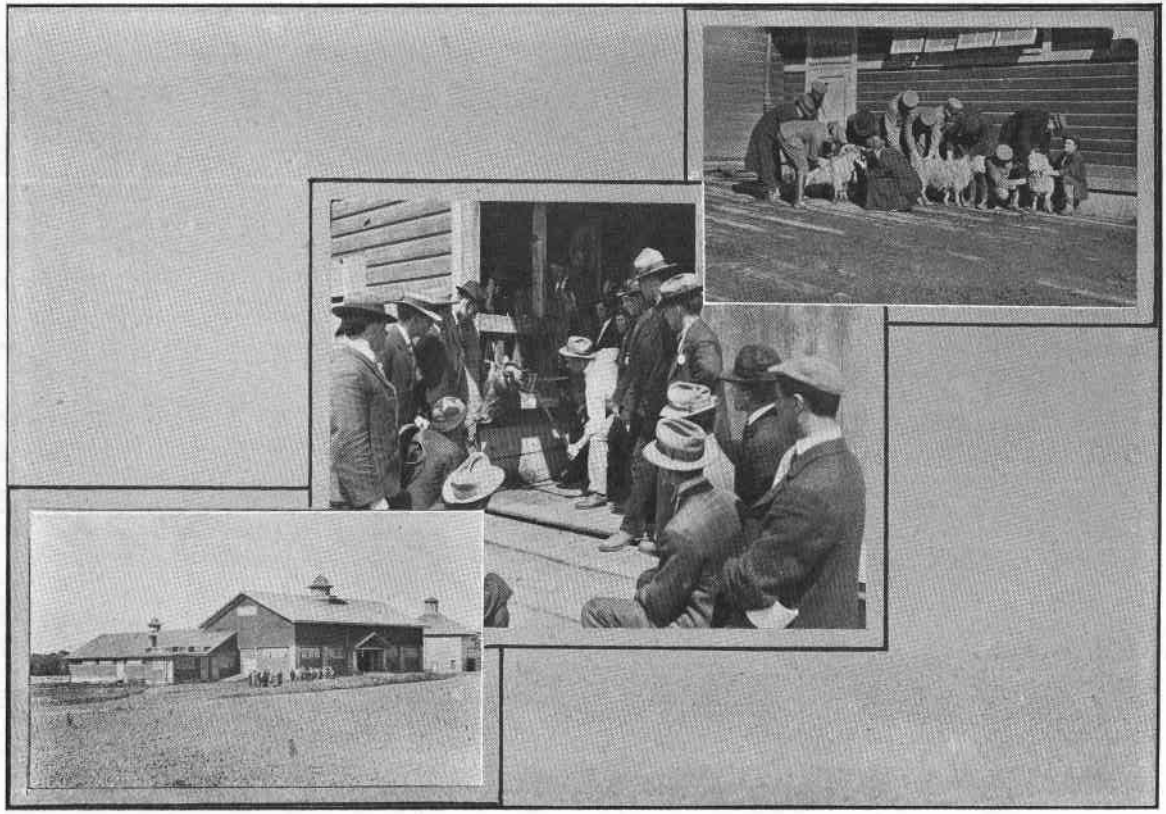
Views in Agronomy Laboratories



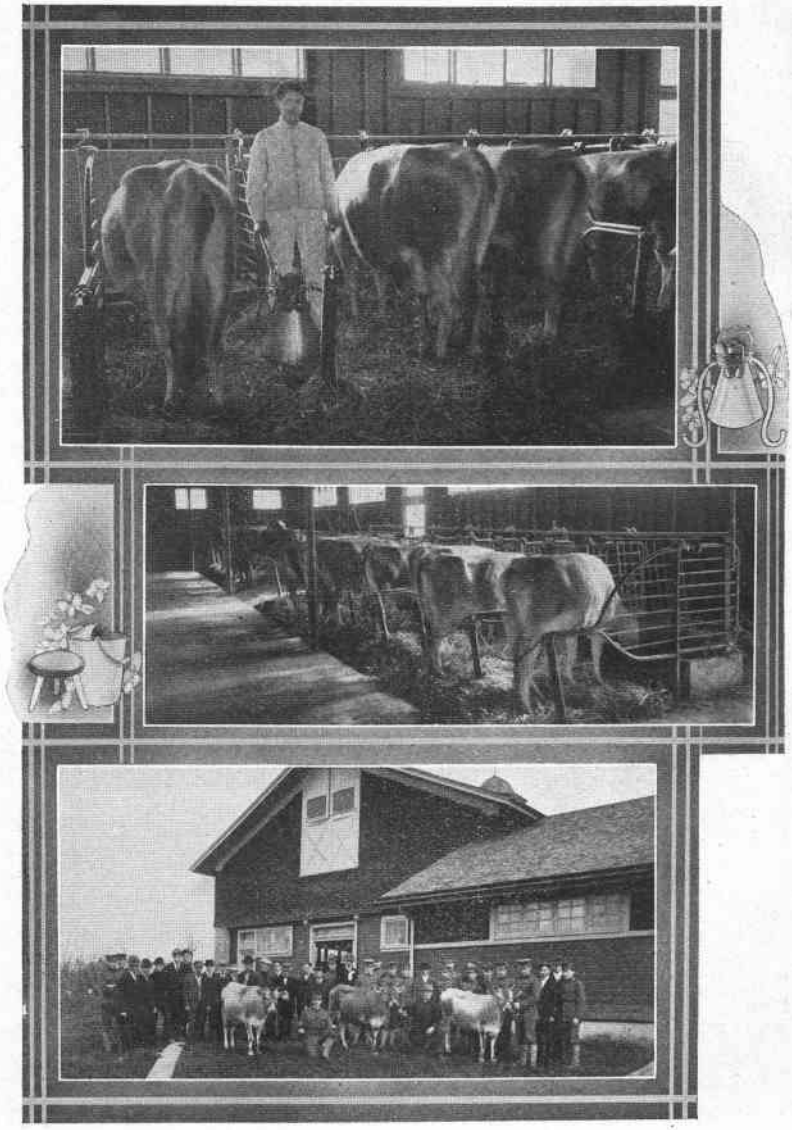
Agronomy—Testing Soils; Examining Commercial Seeds



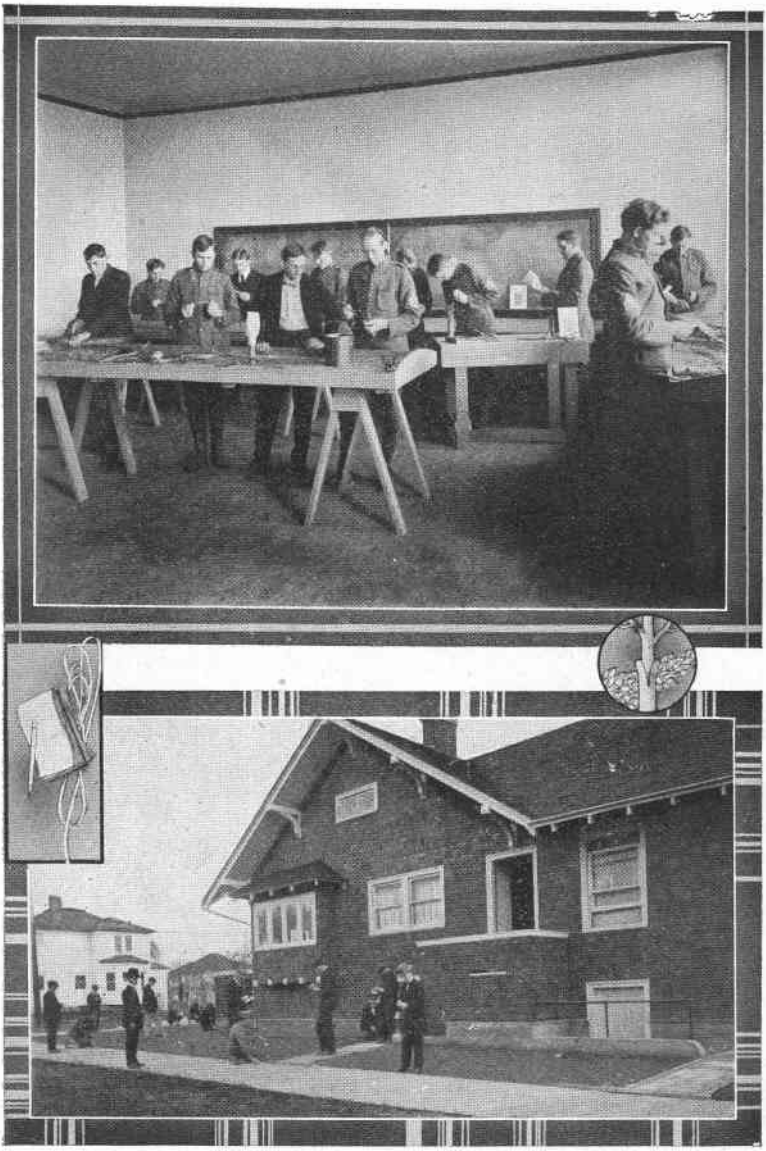
Views in Farm Mechanics Laboratory



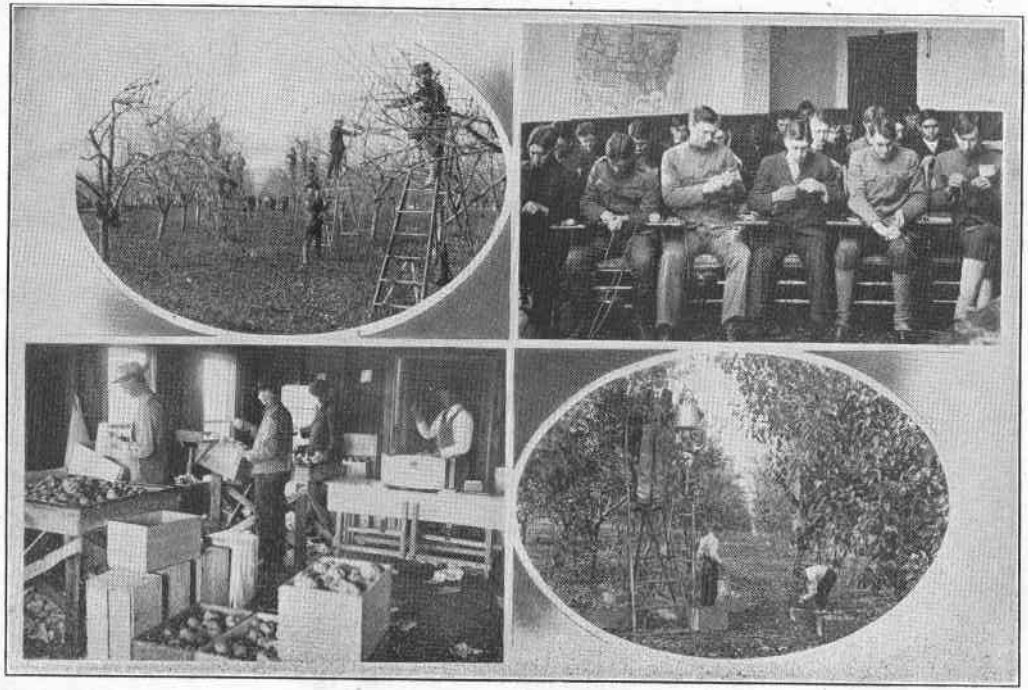
Classes in Animal Husbandry—Demonstrations and Judging



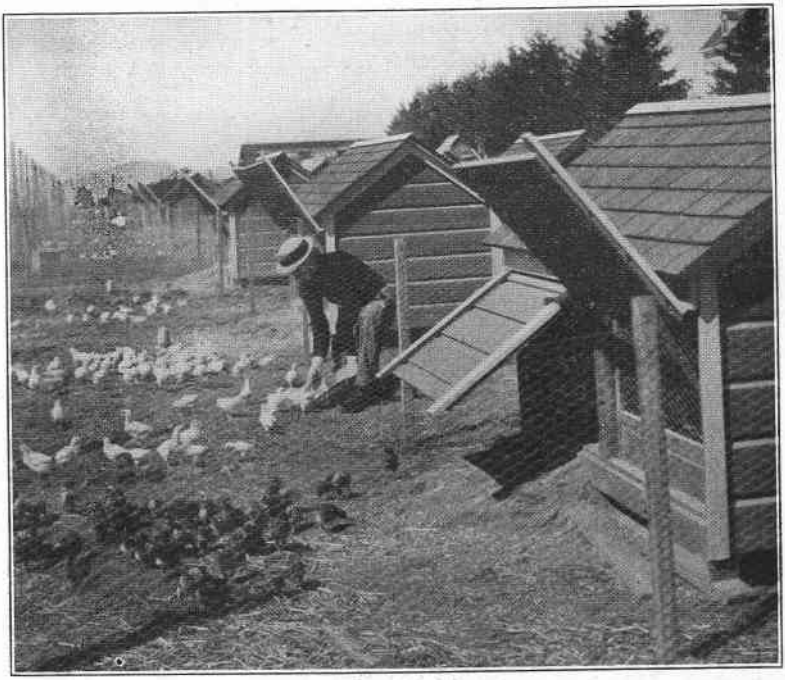
Dairy Scenes—Class in Stock Judging

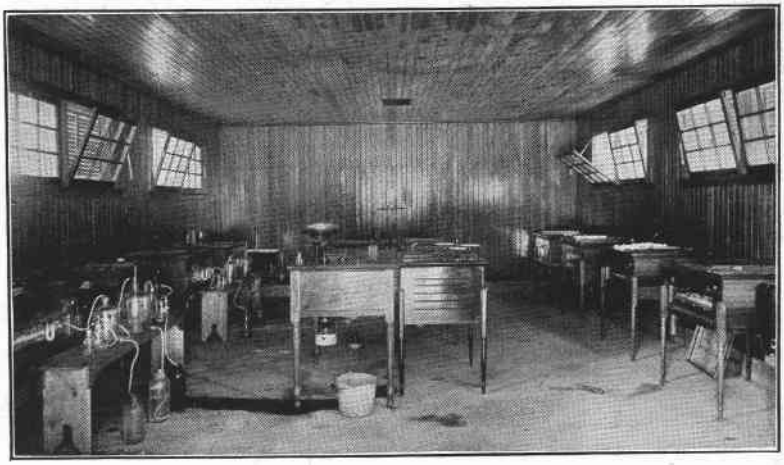


Courses in Walnut Grafting and Landscape Gardening

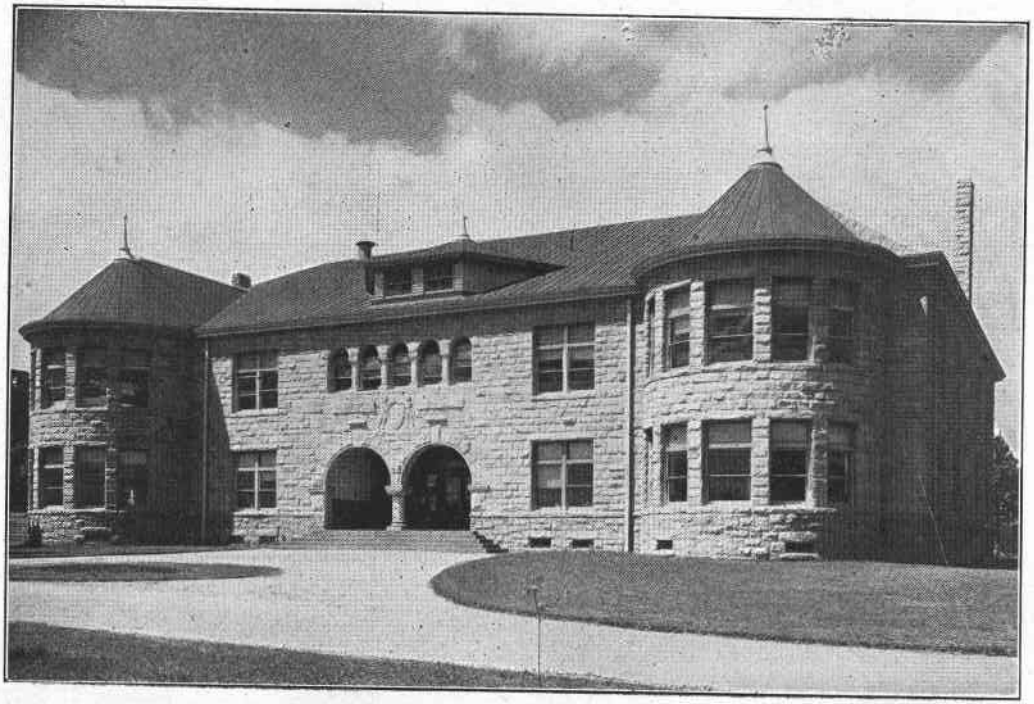


Horticultural Classes in Pruning, Grafting, Packing, Apple Harvesting

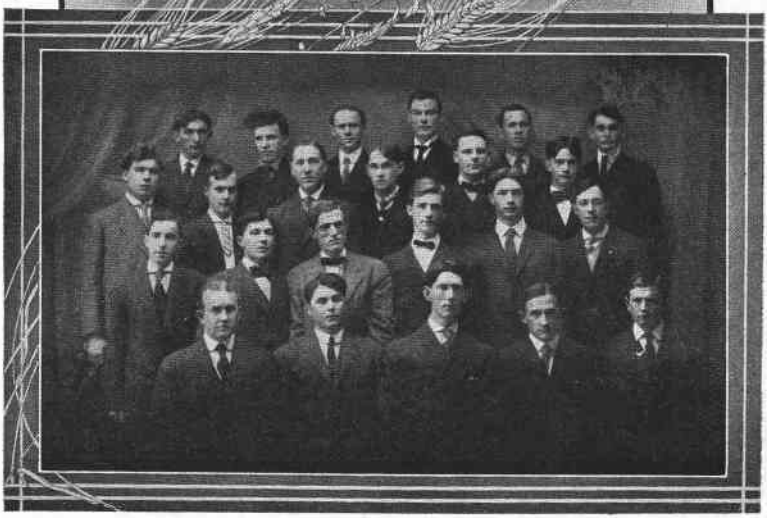




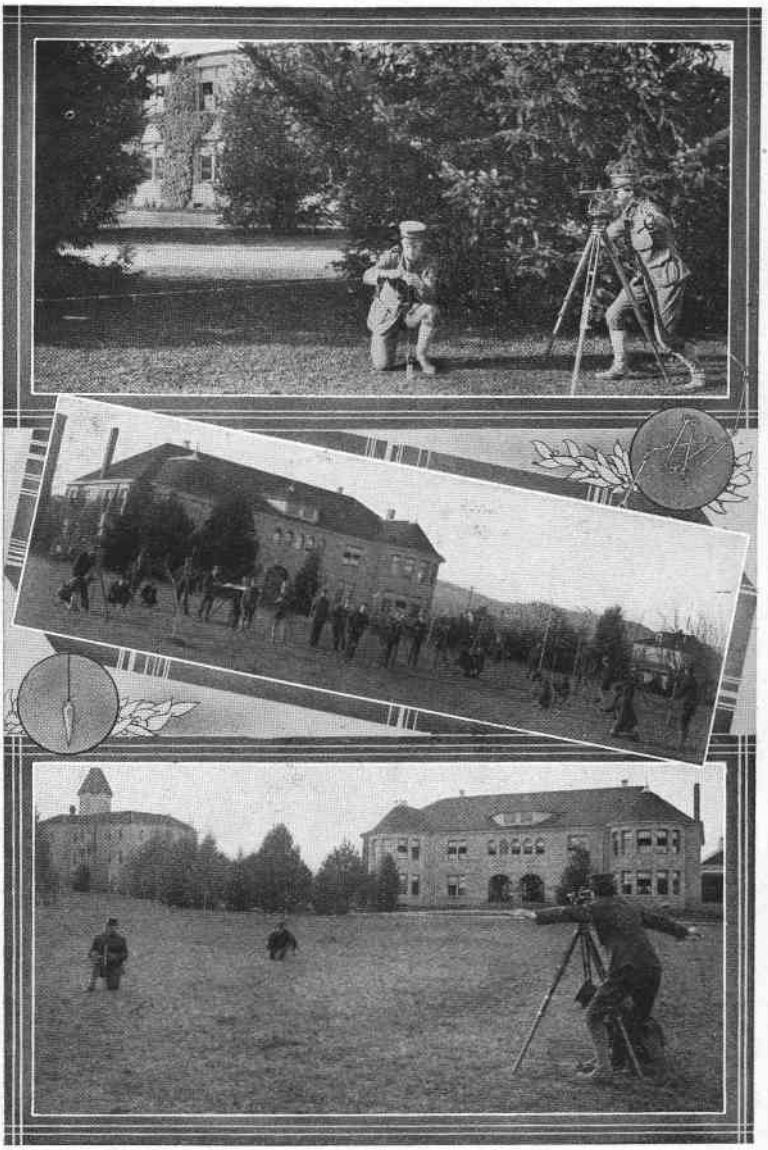
Poultry Plant—Colony Houses; Incubator House



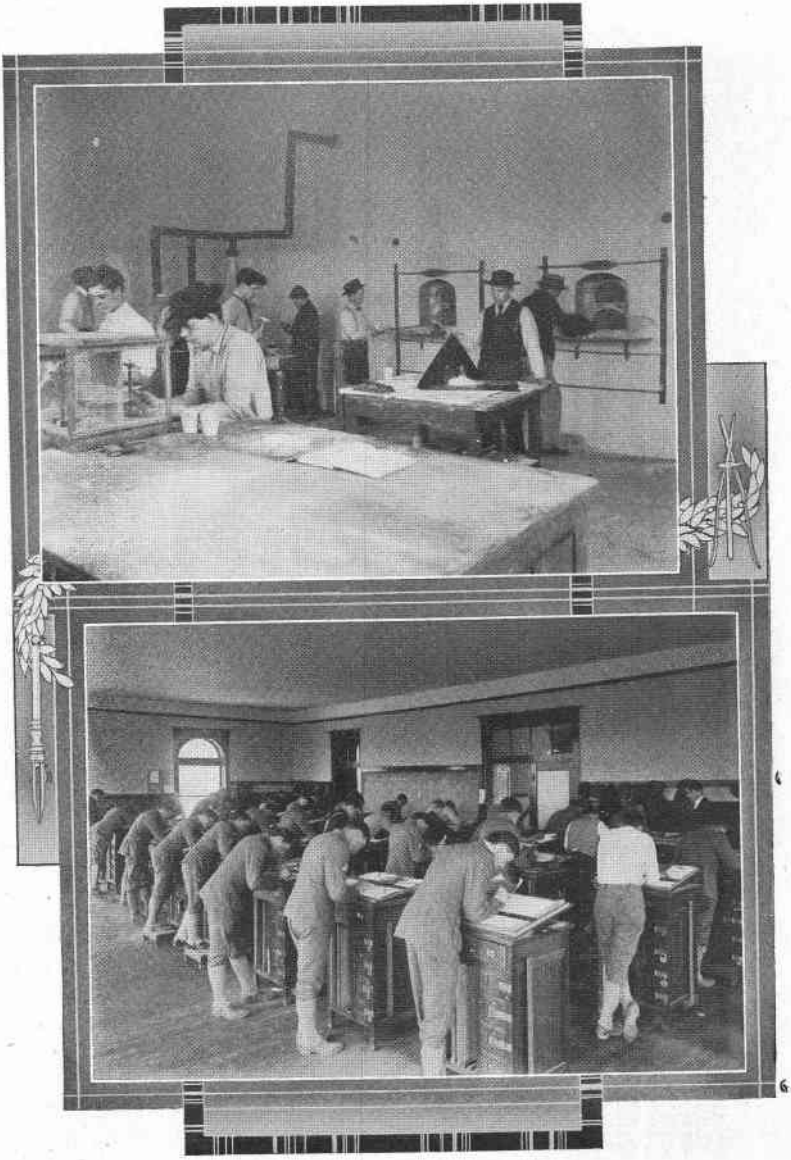
Mechanical Hall



American Institute Electrical Engineers—Mining Engineering Association

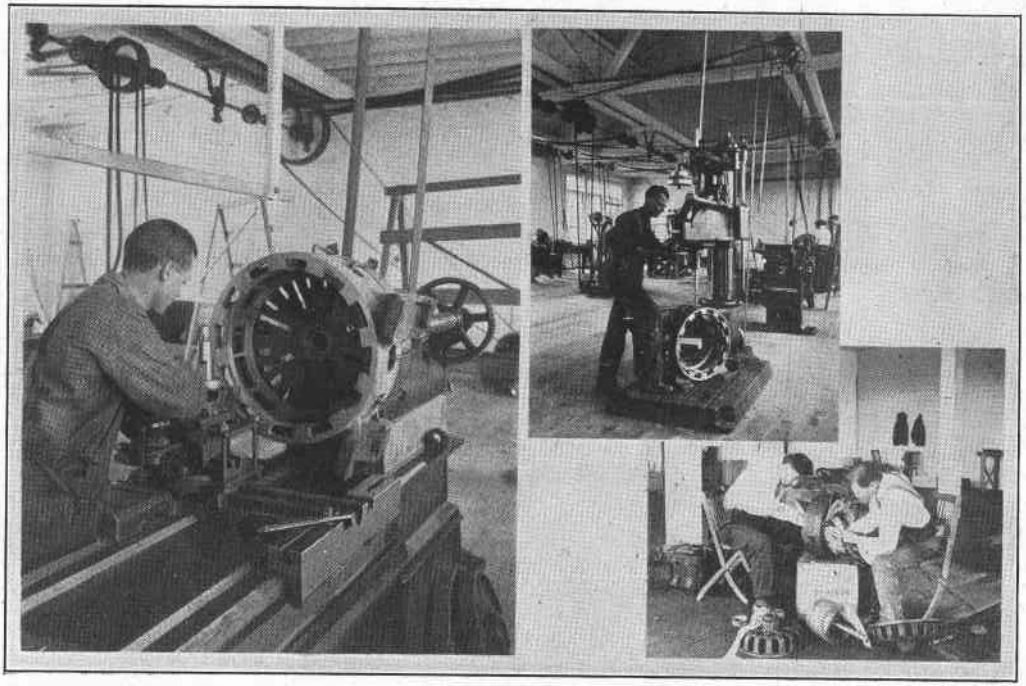


Civil Engineering—Students in Surveying



Classes in Assaying and Mechanical Drawing

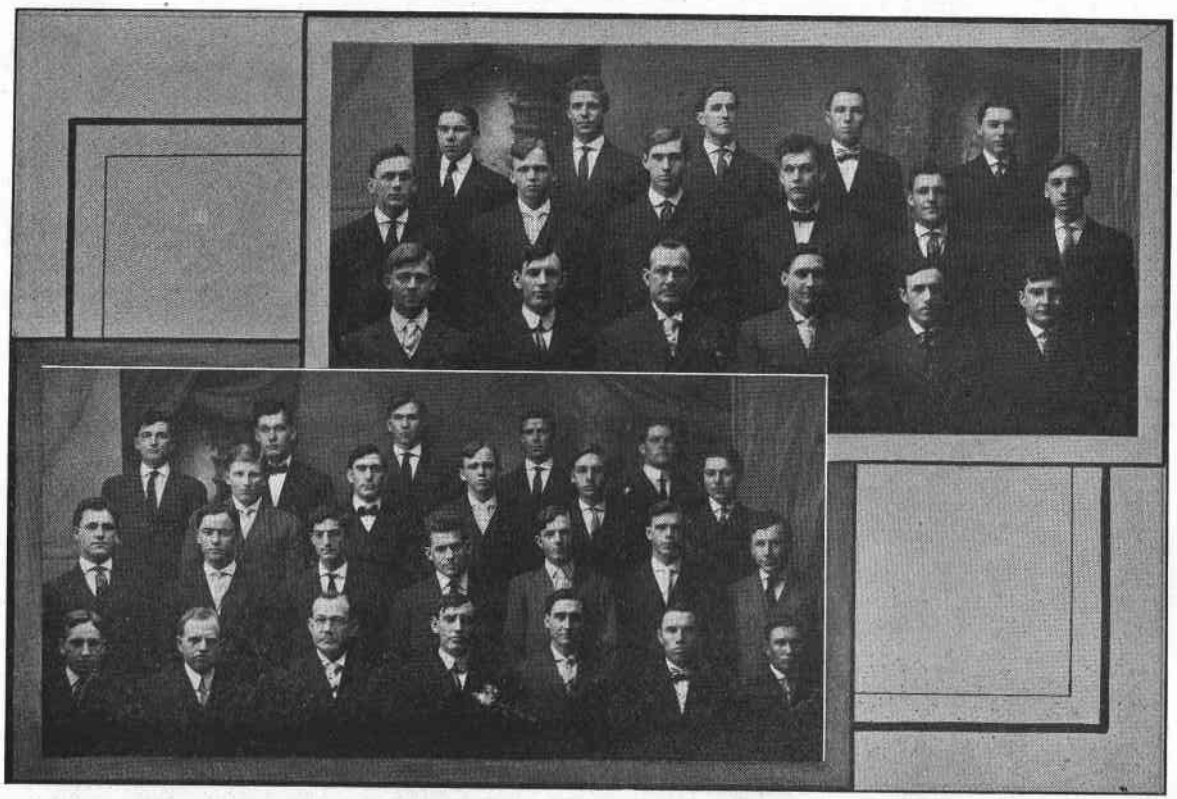
Experiments with Testing Machine—Lathe Work in Machine Shop



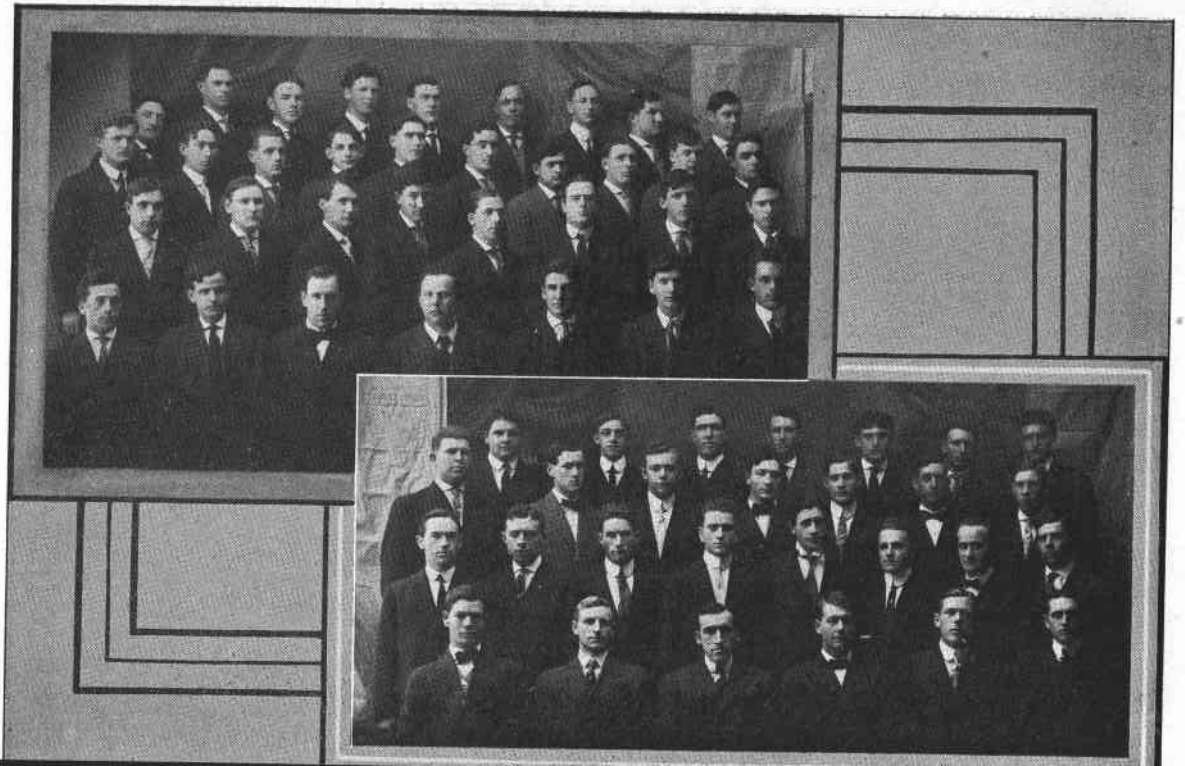
Views in Engineering Laboratory

Views in Carpentry Shop

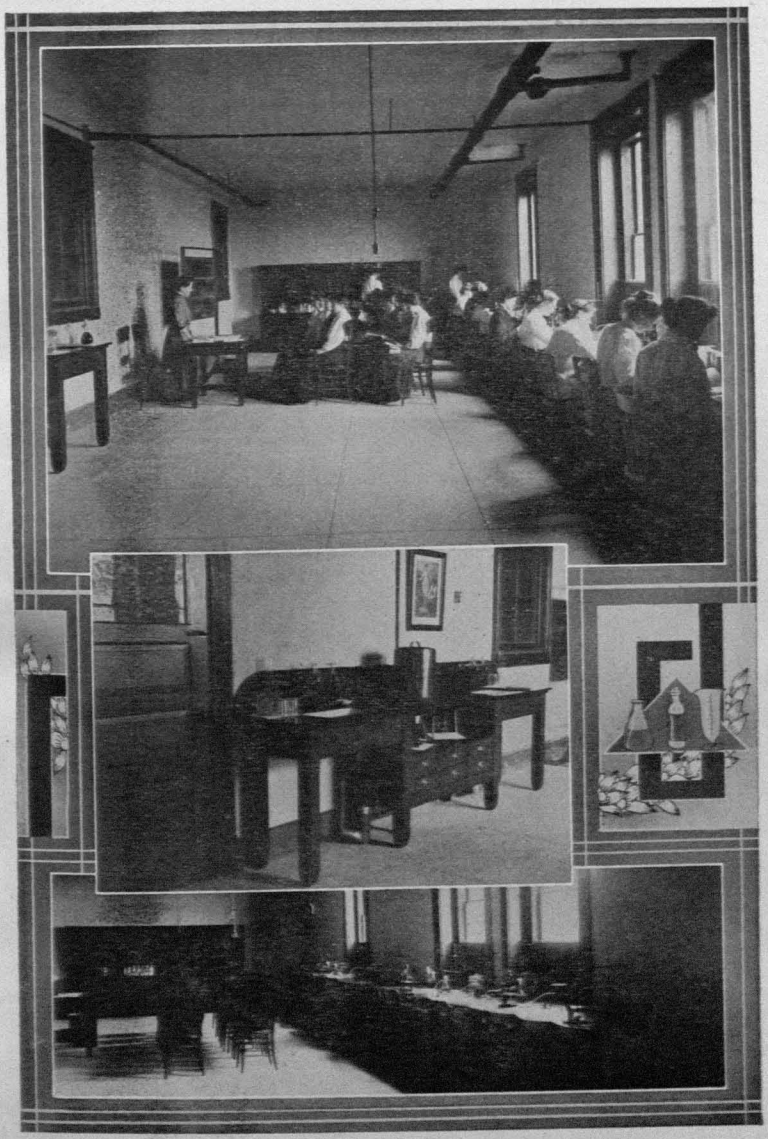
View in Forge Shop



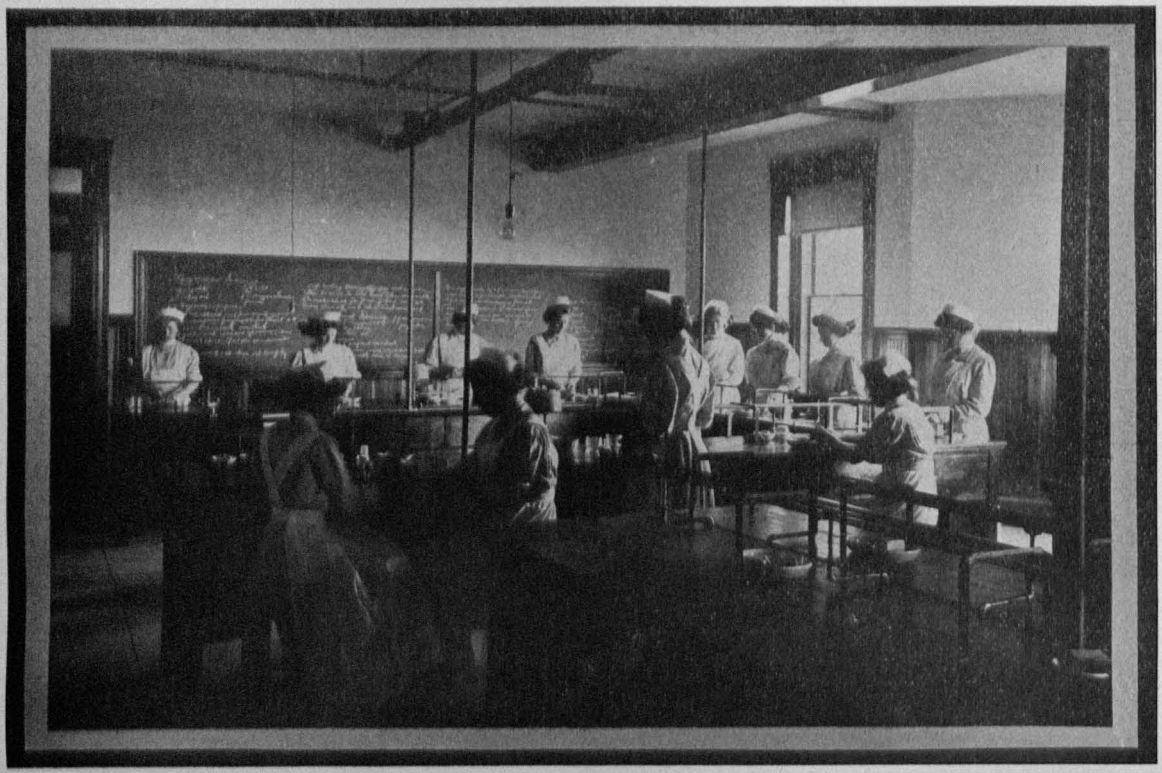
Engineering Associations—American Institute Electrical Engineers; Electrical Engineering Association



Waldo Hall—Domestic Science, Women's Dormitory

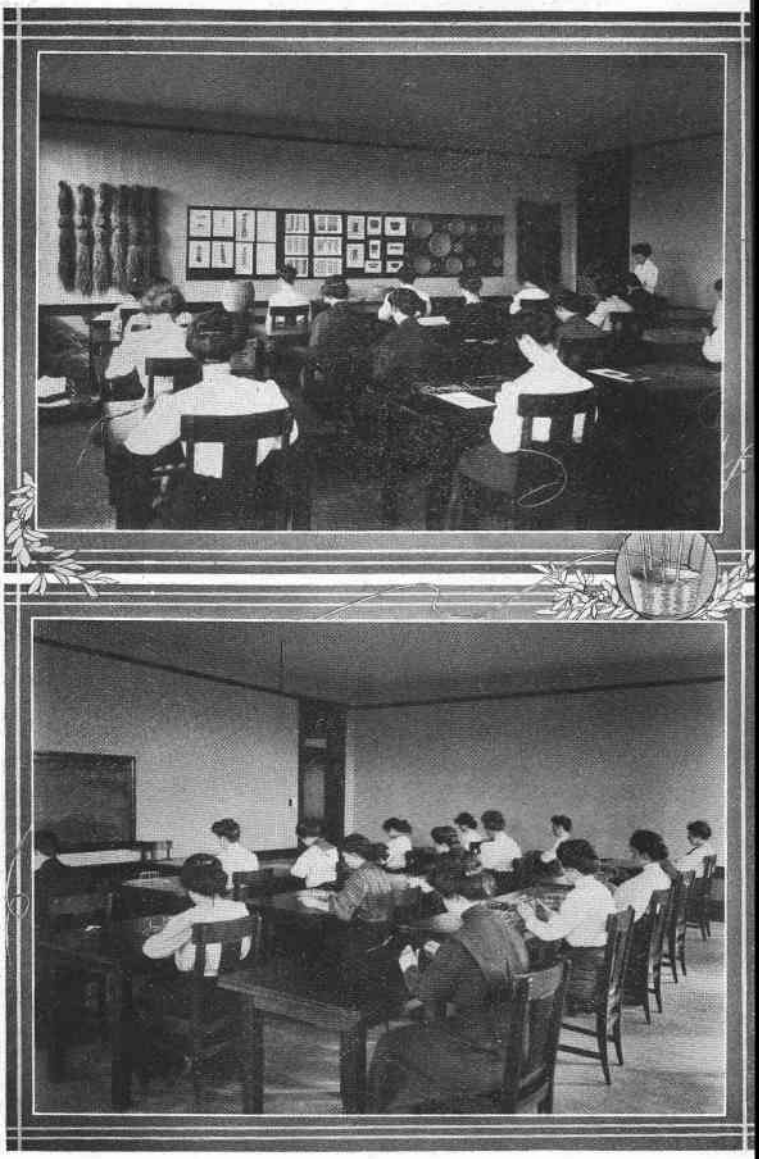


Classes in Household Bacteriology—Corners in Bacteriological Laboratory

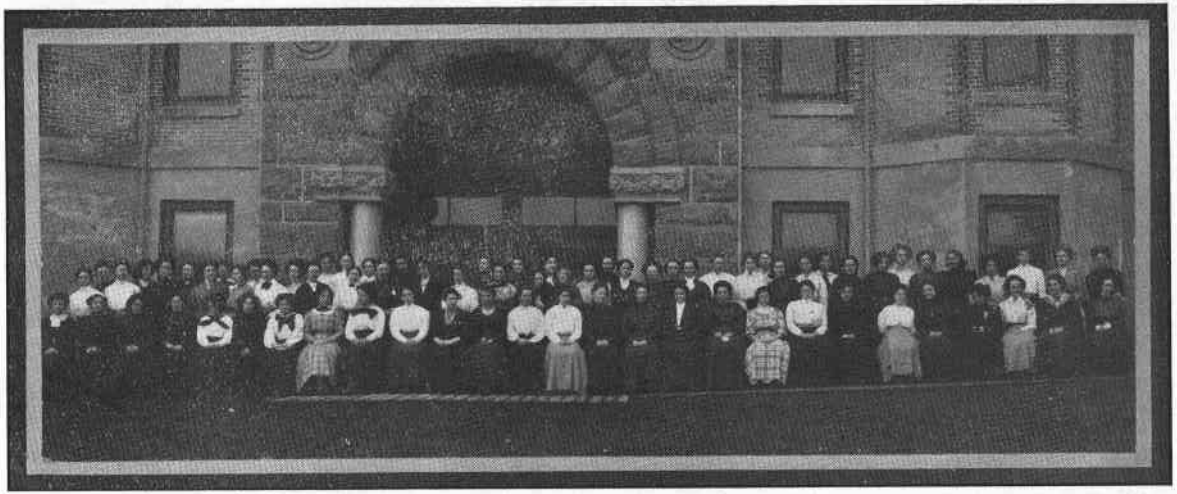


Class in Cookery

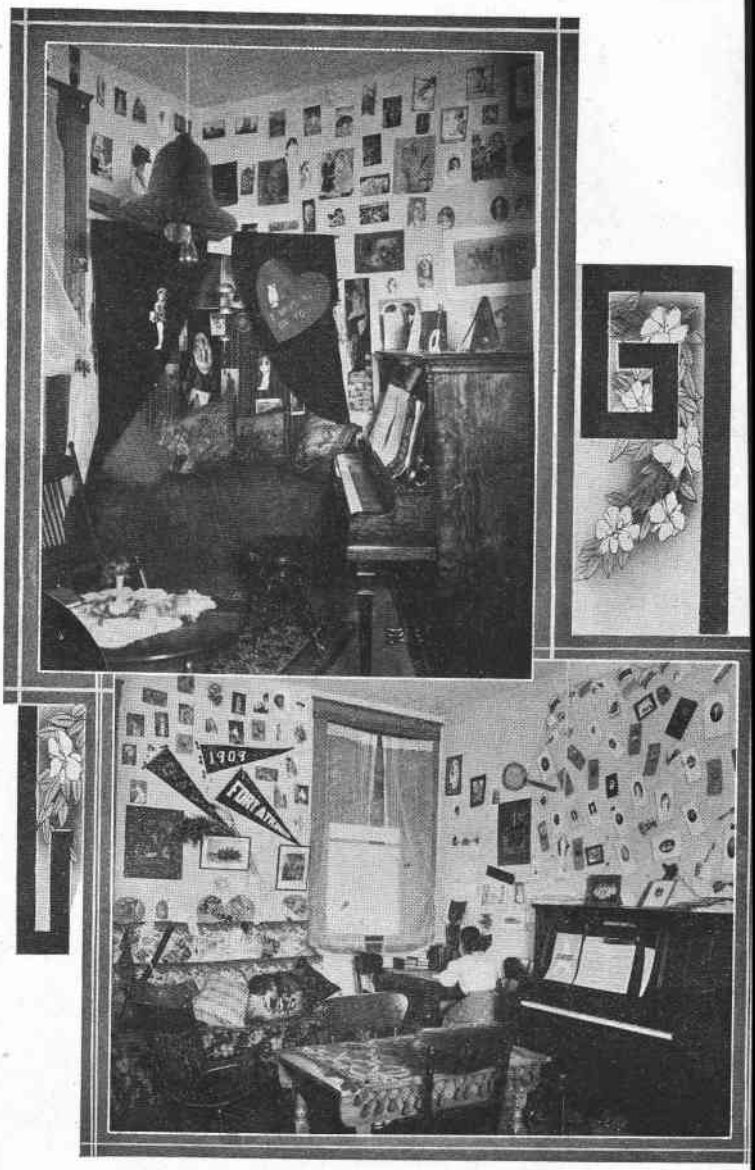
Class in Hand and Machine Sewing



Classes in Basketry and Weaving, and in Millinery



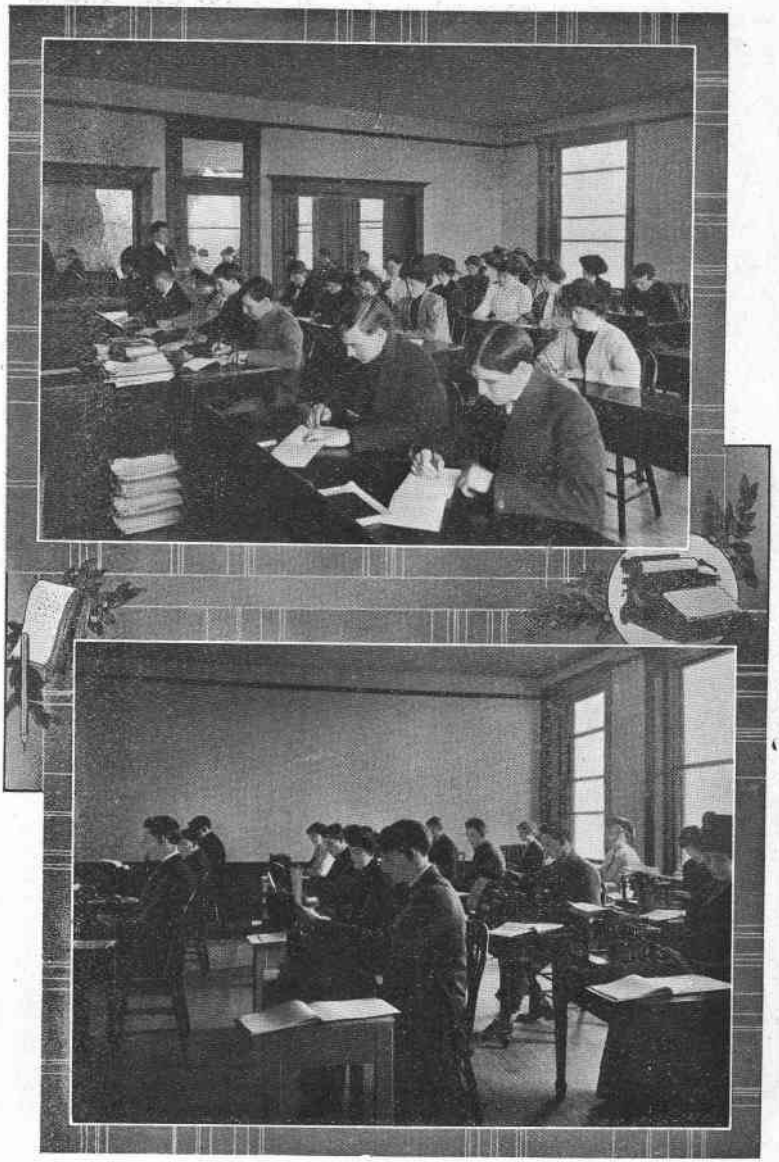
Waldo Hall Club



Student Rooms—Waldo Hall

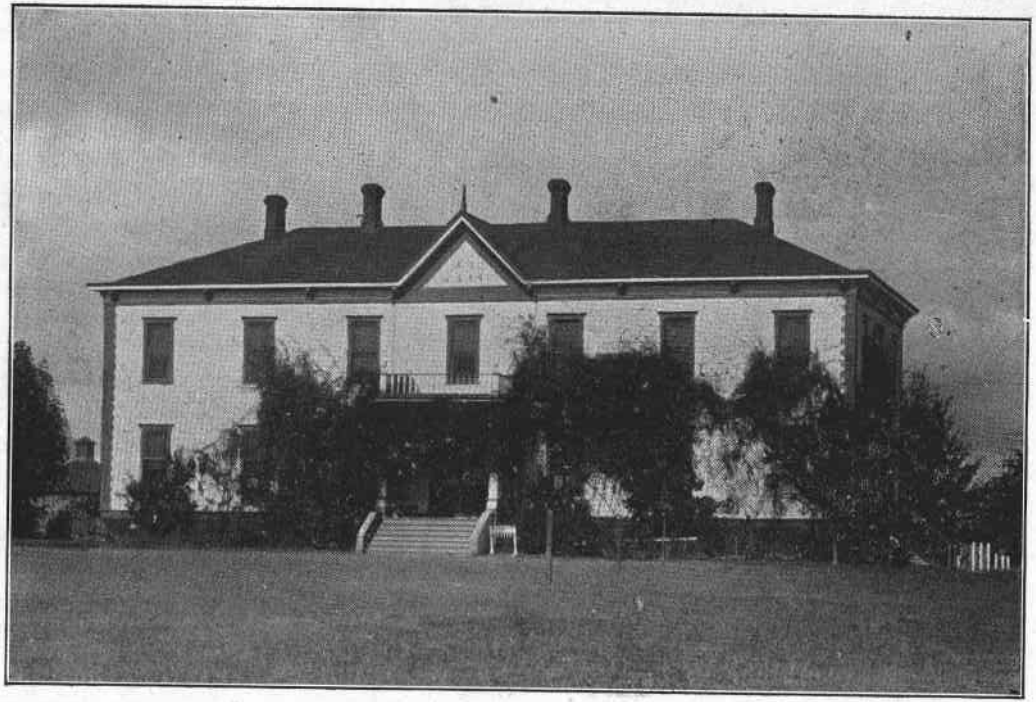
Margaret Snell Club

Class in Accounting and Business Administration

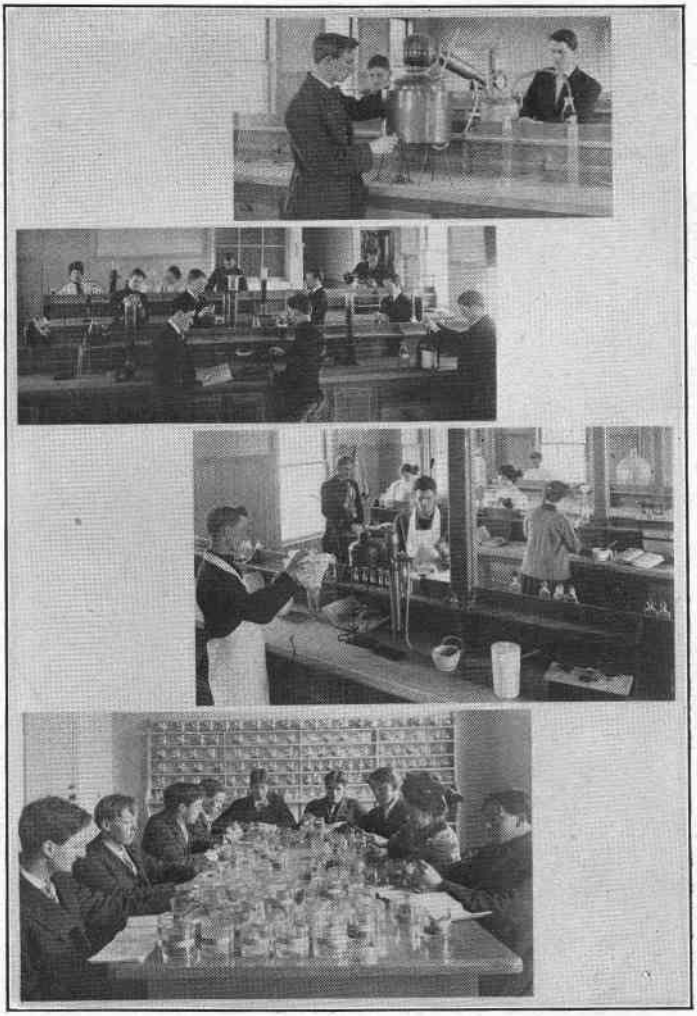


Classes in Stenography and Typewriting

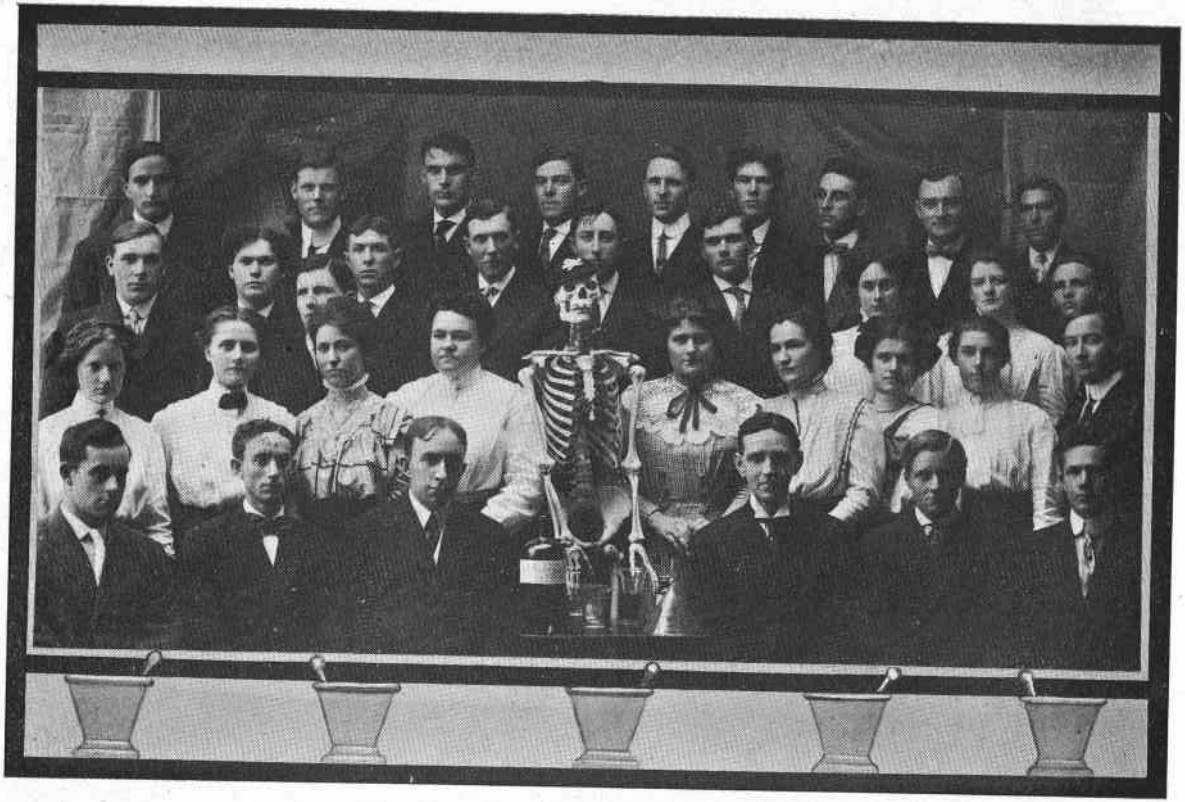
Commercial Club

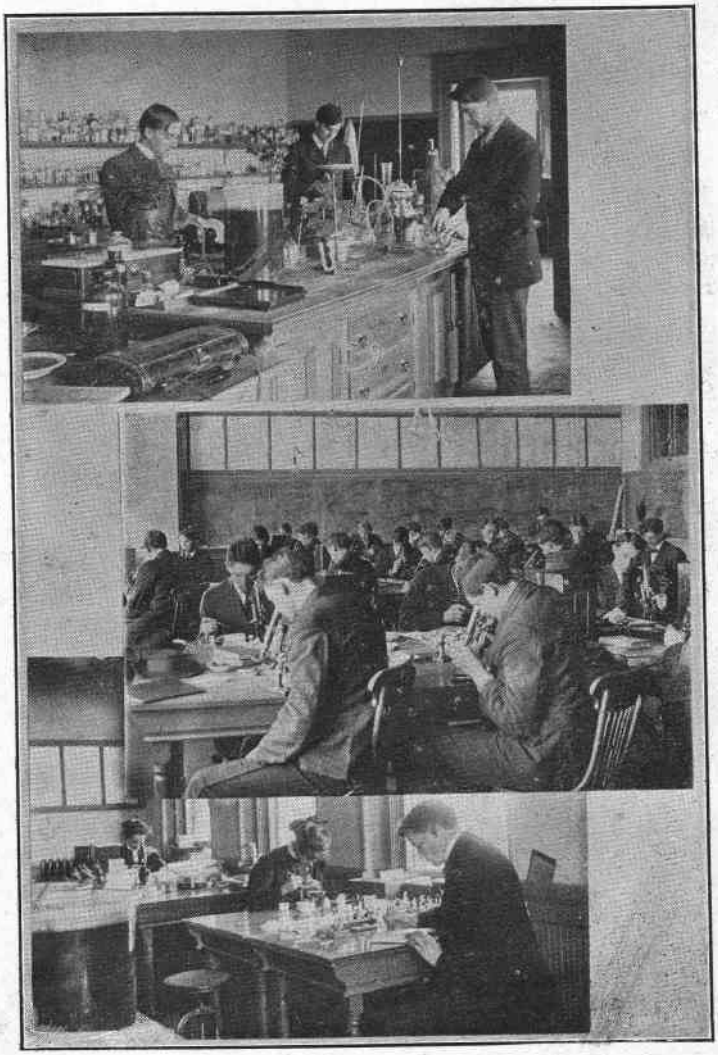


Pharmacy Building



Views in Pharmaceutical Laboratories

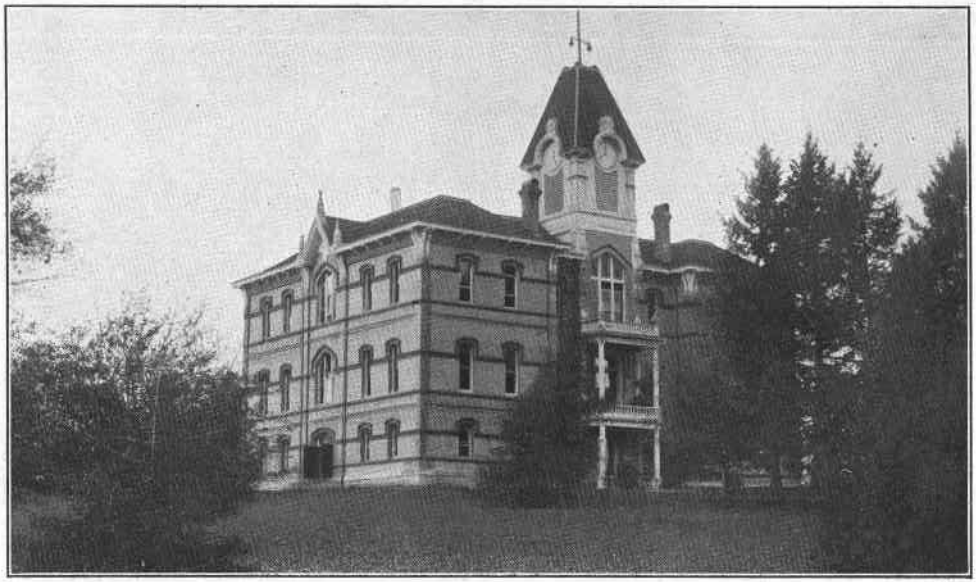




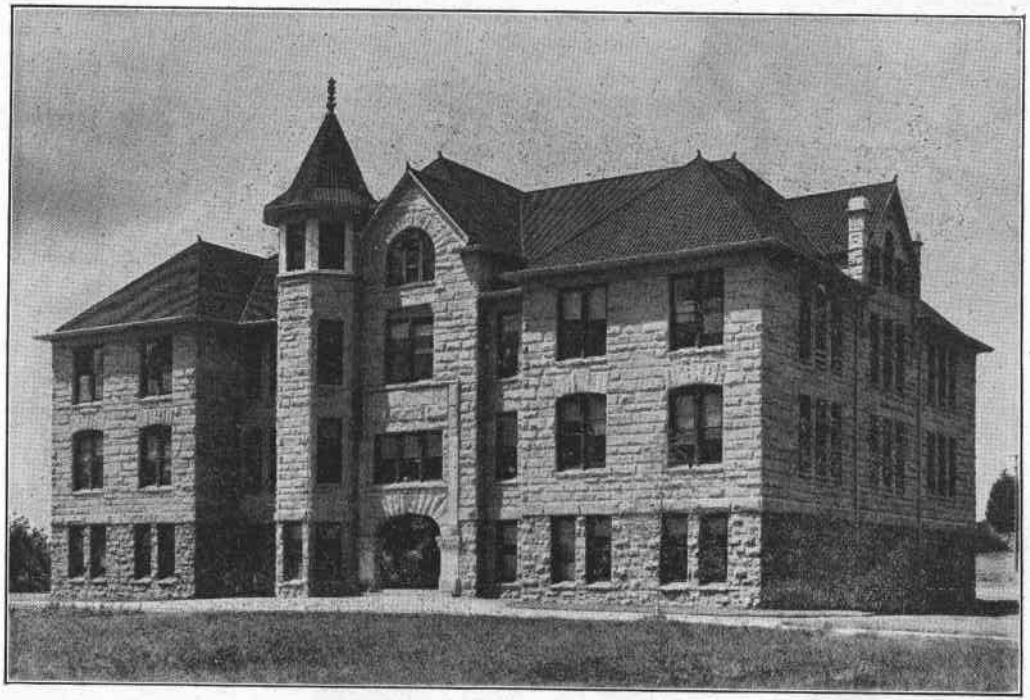
Views in Zoological Laboratories

Chemical Laboratory

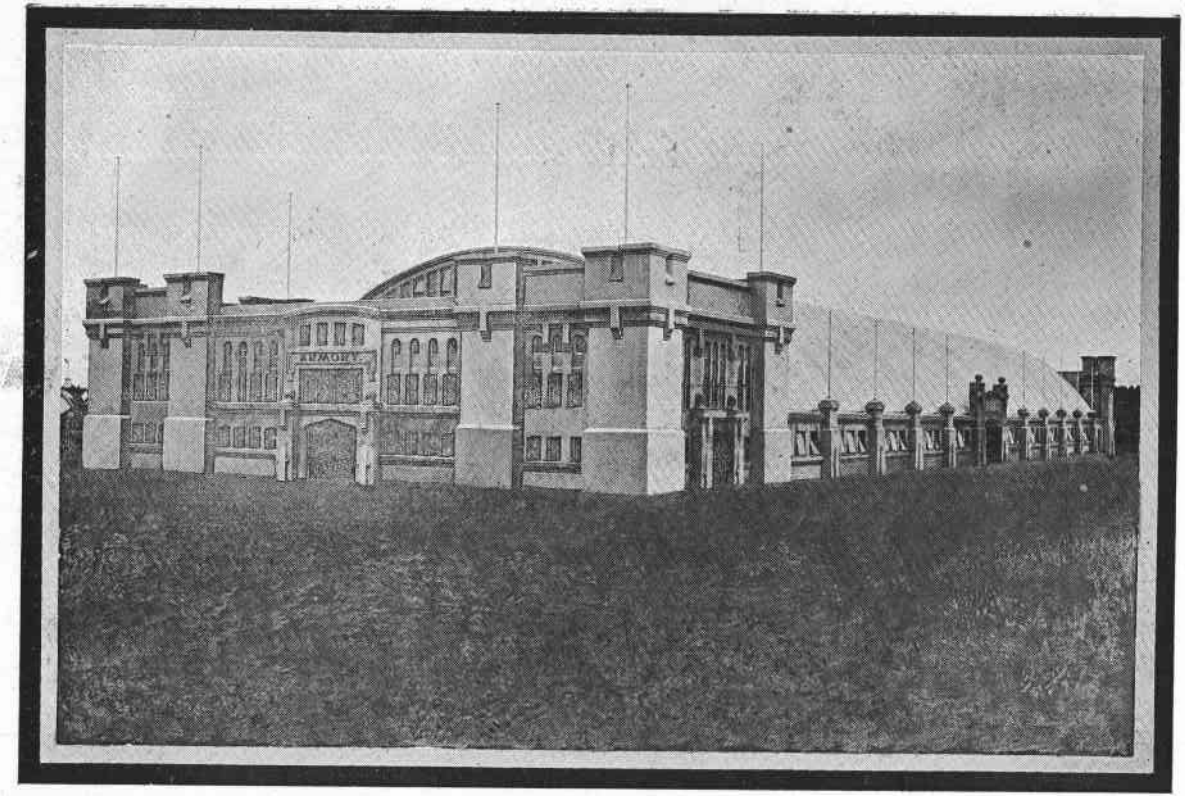
Drawing—Life Class; Engineering Students in Freehand Drawing



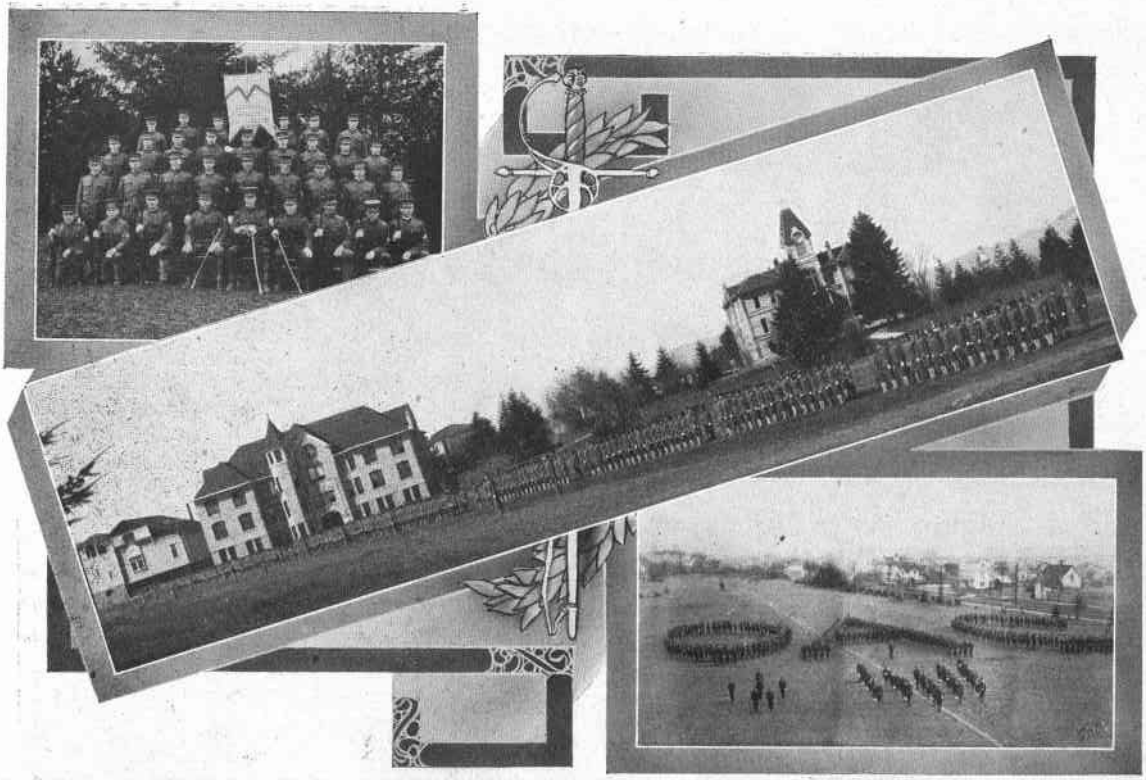
Administration Building



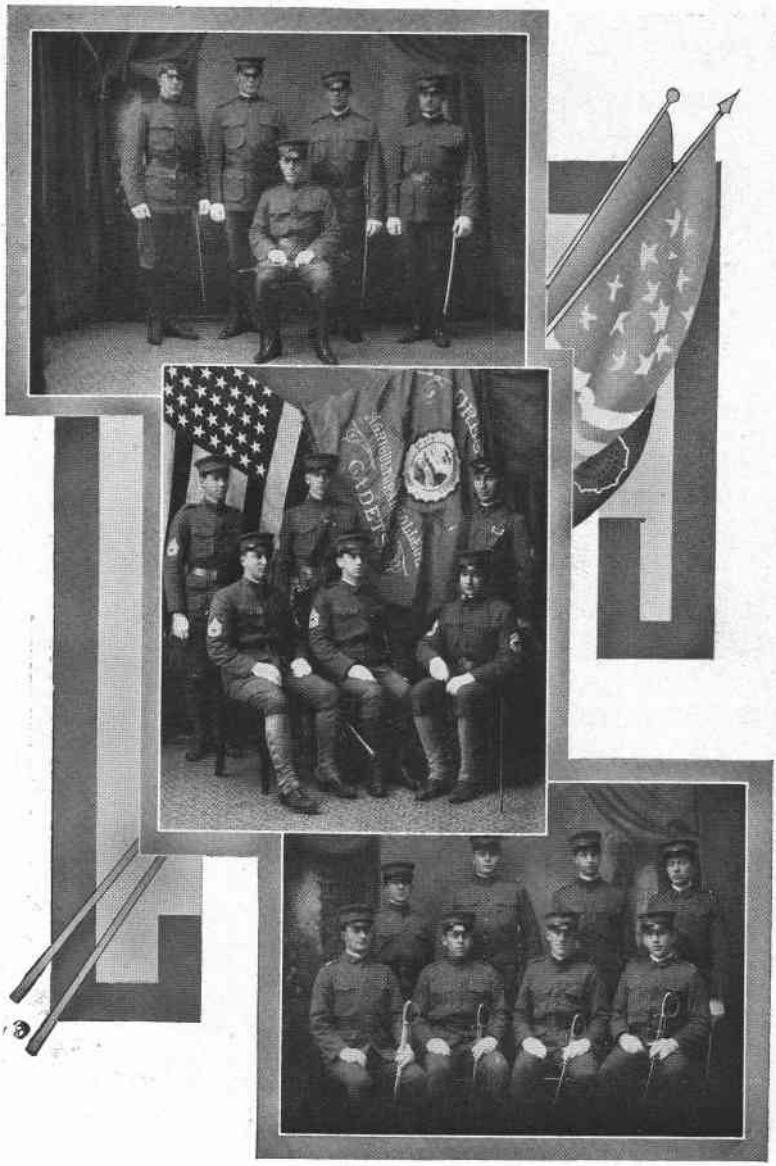
Science Hall



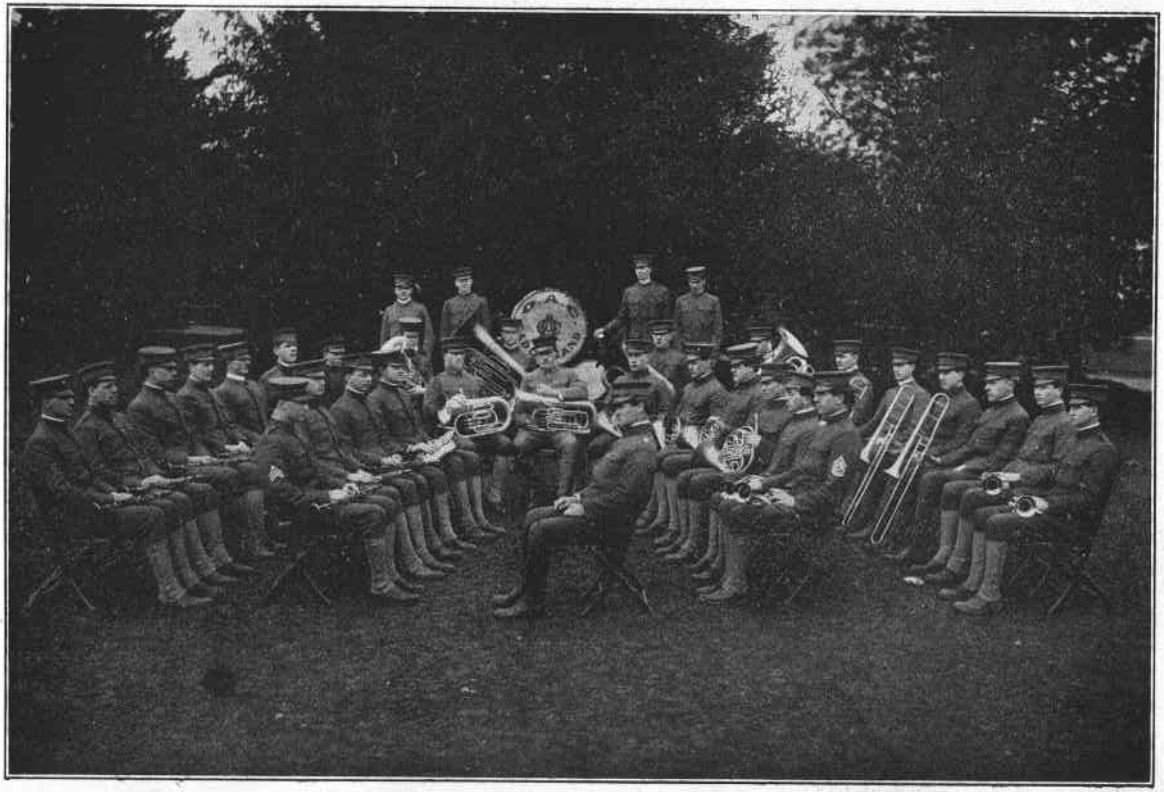
Armory



Military Science and Tactics—Banner Company; Regiment; The "Human" O. A. C.

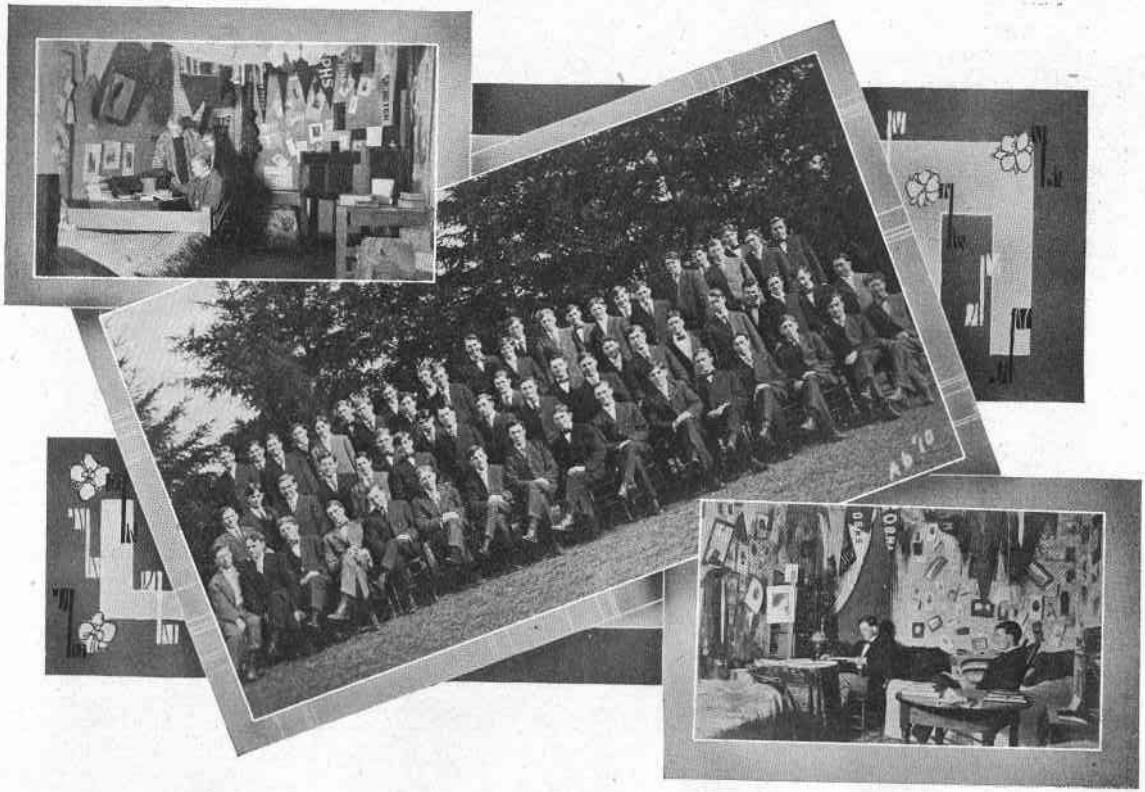


Cadet Officers—Staff Officers; Color Bearers; Field Officers

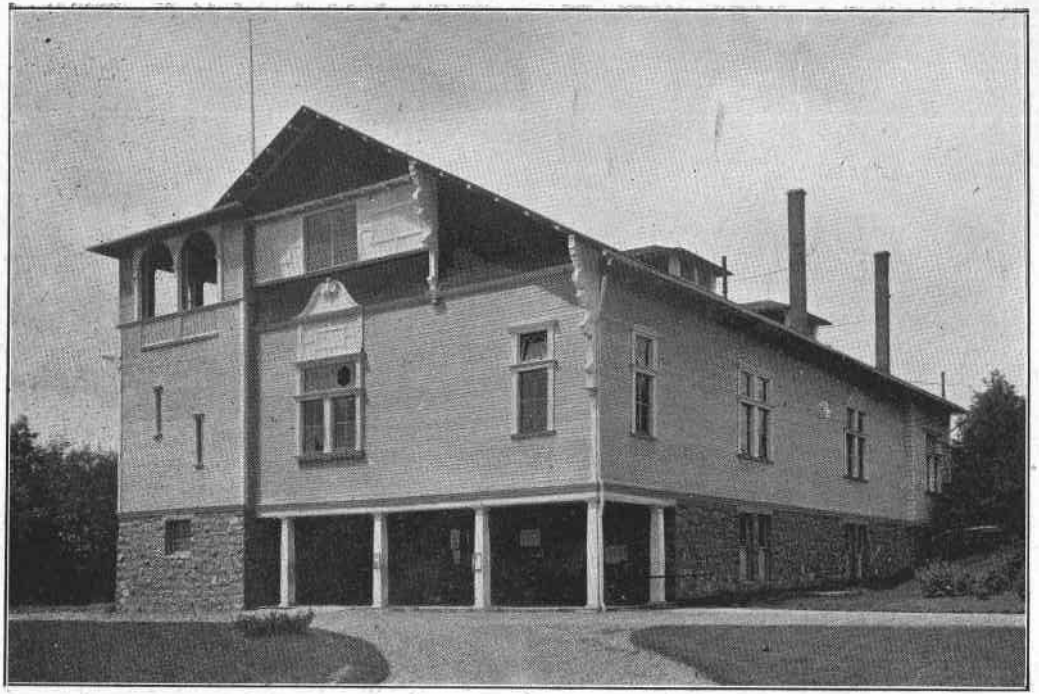


Cadet Band

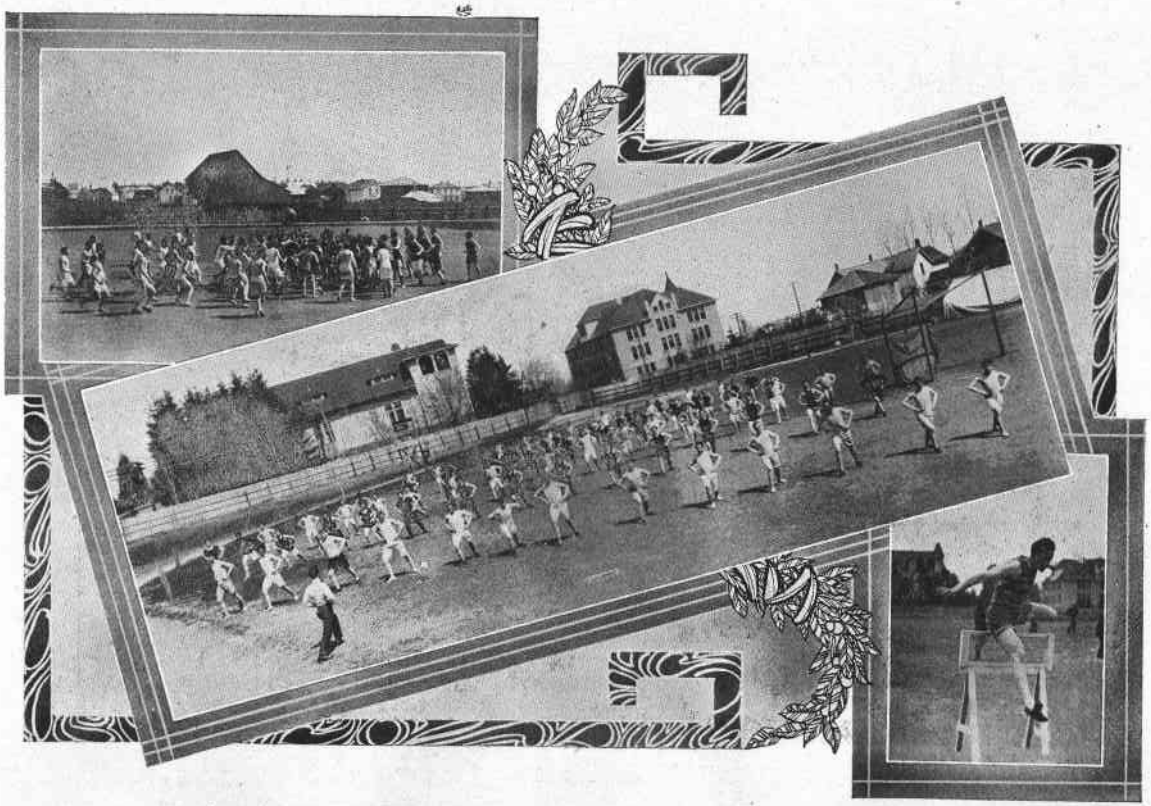
Cauthorn Hall—Men's Dormitory



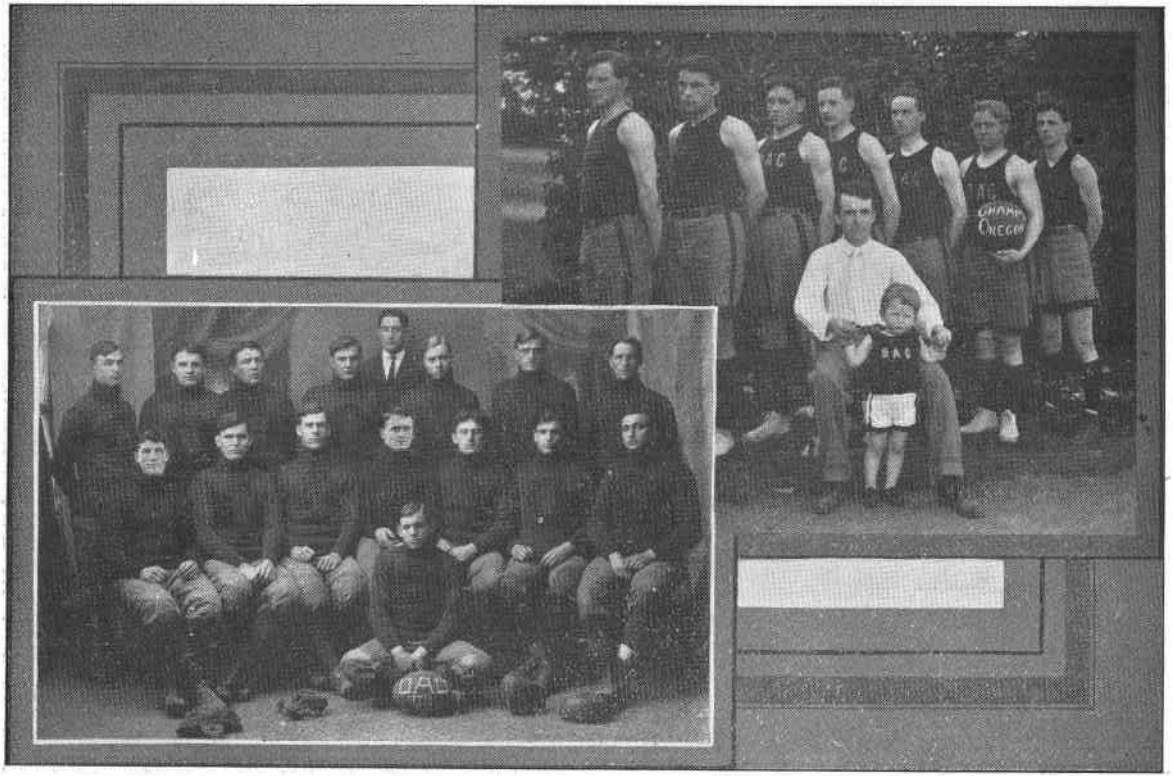
Cauthorn Hall Club—Rooms in Men's Dormitory



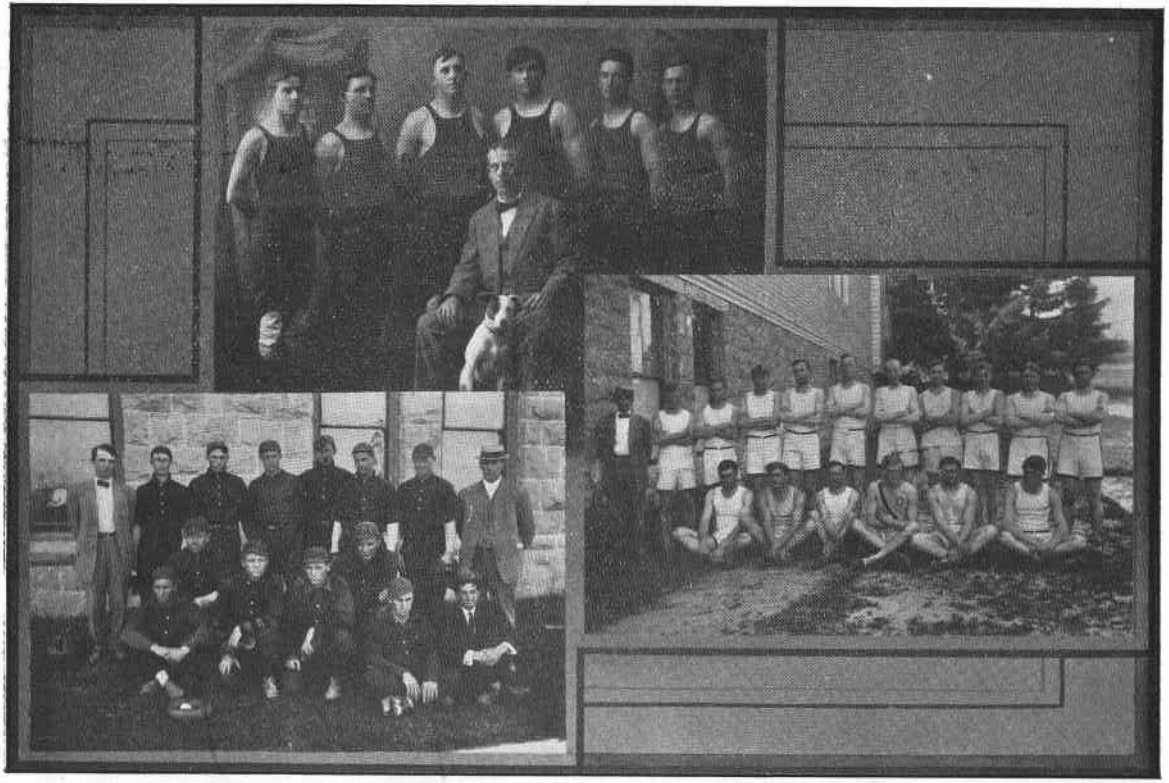
Gymnasium



Physical Education—Crowd Ball; Gymnasium Class in Open; Over the Hurdles

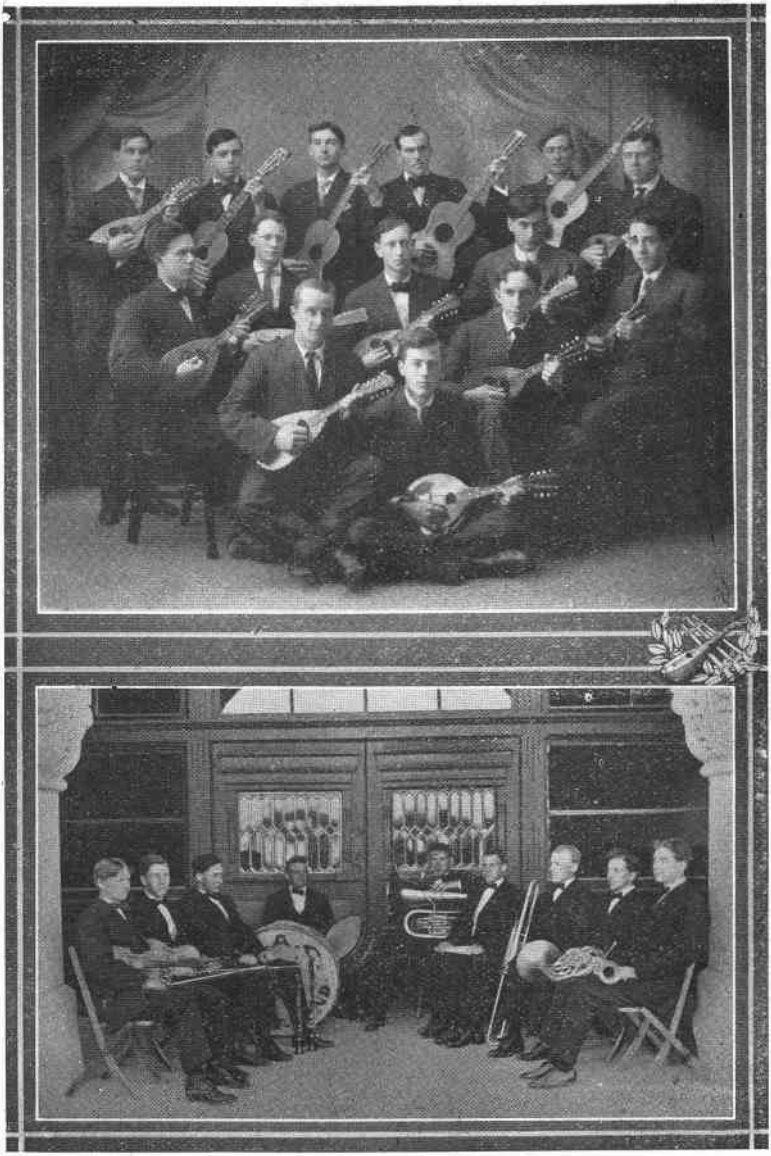


Athletic Teams 1909-10—Football; Basketball



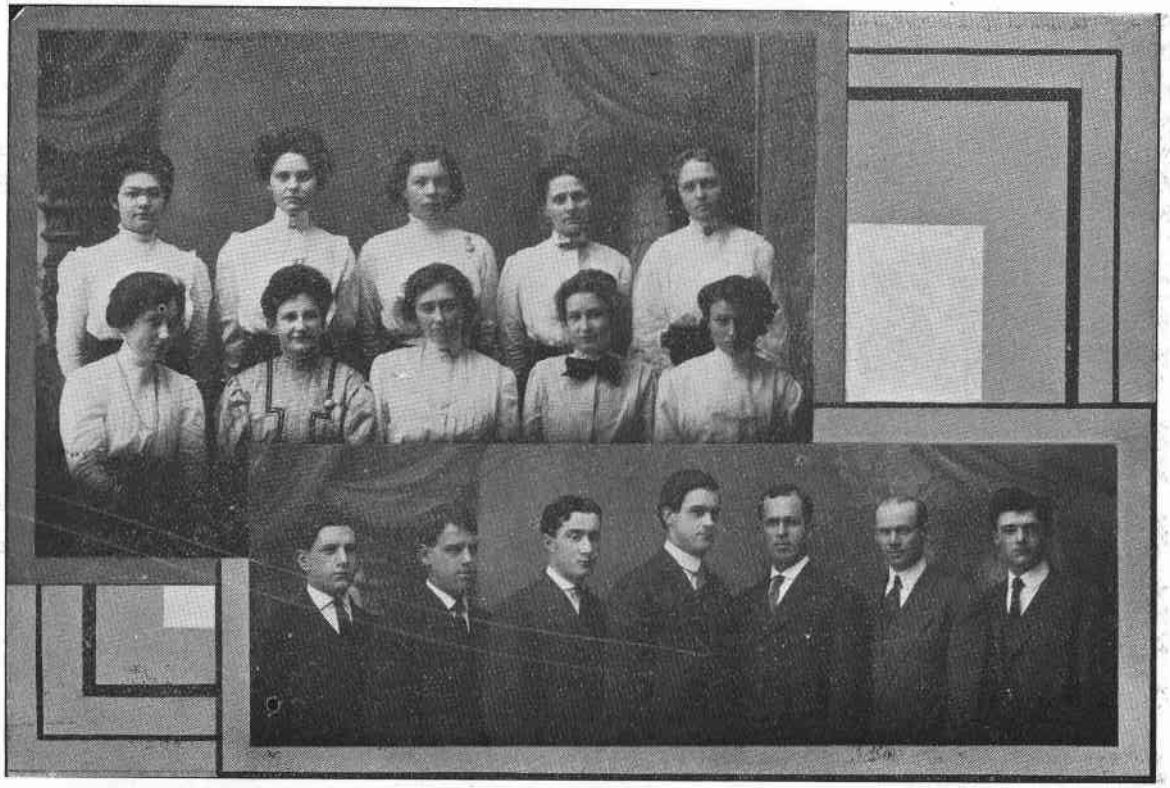
Athletic Teams 1909-10—Wrestling Team (Northwest Champions); Baseball Team (Northwest Champions); Track Team

Musical Societies—Ladies' Madrigal Club; Glee Club

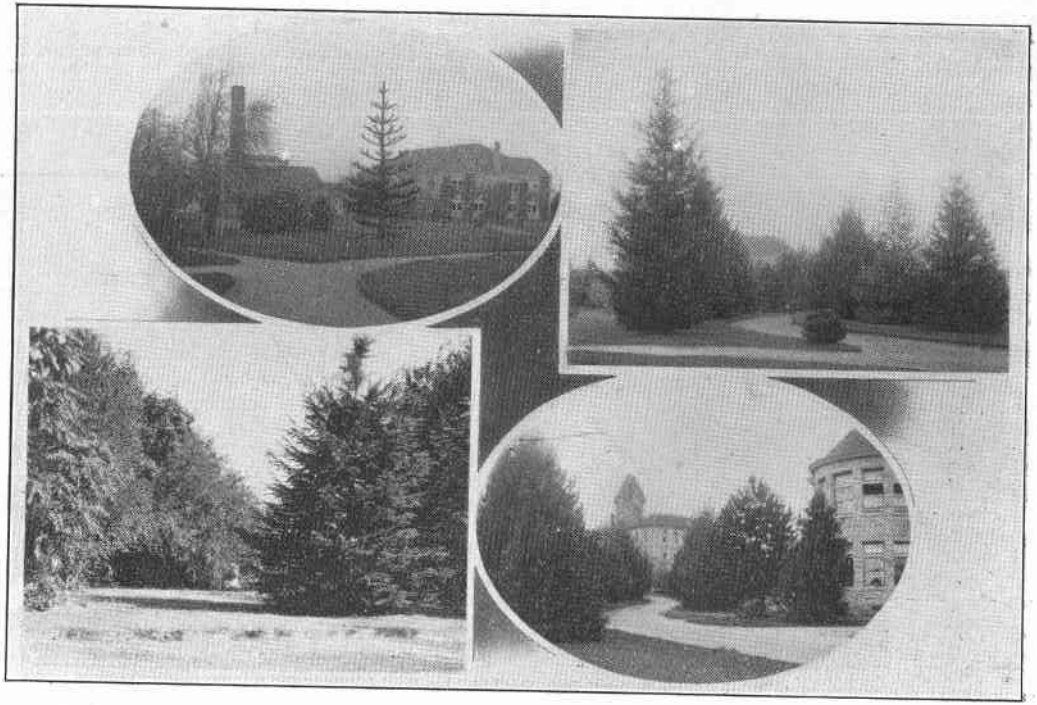


Musical Societies—Mandolin Club; College Orchestra

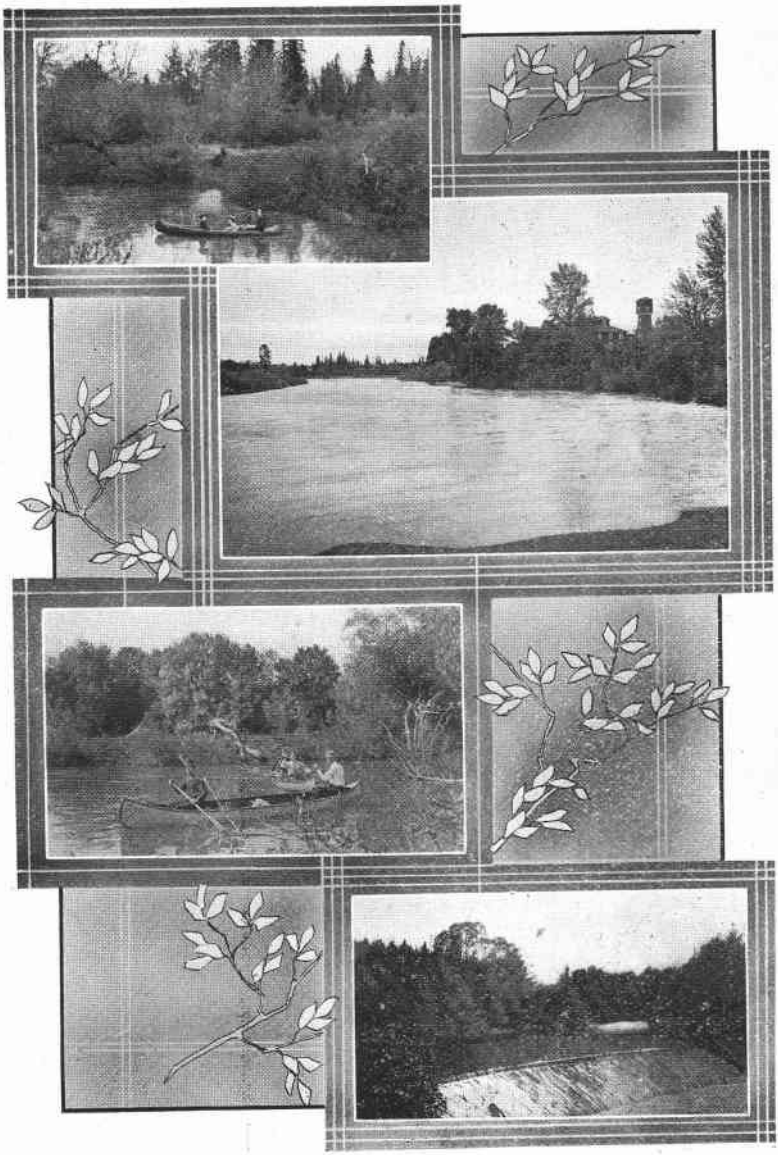
Shepard Hall—Exterior and Interior



Christian Associations—Y. W. C. A. Cabinet; Y. M. C. A. Cabinet



Views on College Campus



River Scenes near College Campus

Oregon Agricultural College

GENERAL INFORMATION

In pursuance of an Act of Congress, approved by President Lincoln, July 2, 1862, a grant of land was made to each State in the Union to the amount of thirty thousand acres, or its equivalent, for each Senator and Representative in Congress to which the State was entitled by the apportionment of the census of 1860. The proceeds under this Act were to constitute a perpetual fund, the principal of which was to remain forever undiminished; but the interest arising from said fund was to be inviolably applied by each State which should avail itself of the benefits of the Act, to the support and maintenance of a "College where the leading objects 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." Ninety thousand acres of land were apportioned to Oregon, and by an Act approved October 9, 1862, the Legislative Assembly of Oregon accepted the provisions of the congressional law.

The Land Grant Fund. The subsequent sale of this land has netted the College approximately $200,000. This at present is invested in securities bearing six per cent interest. The Act of Congress of 1862 explicitly states that no part of the funds so appropriated or the interest arising therefrom shall be used for the purchase, erection, or maintenance of any building or buildings.

The Hatch Fund. Under an Act of Congress, approved March 2, 1887, the College receives $15,000 a year for the maintenance of

an Agricultural Experiment Station, "to aid in acquiring and diffusing among the people useful and practical information on subjects connected with agriculture."

The Morrill Fund. On August 30, 1890, an Act was passed by Congress "to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts established under the provisions of the Act of 1862." This Act provided that in 1890 $15,000 should be paid to each of the land grant colleges, and that the amount so appropriated should be increased by the sum of $1,000 annually for ten years, and that thereafter the amount annually appropriated should continue to be $25,000. Under an Act of Congress, approved March 4, 1907, known as the Nelson Amendment, this fund is increased by the sum of $5,000 for the first fiscal year ending June 30, 1908, and by an additional $5,000 for each succeeding year until the total annual amount is $50,000.

The Adams Fund. An Act of Congress, approved March 20, 1906, appropriated an initial $5,000 for that year, and $2,000 additional for each year thereafter until the annual amount shall reach $15,000. This fund is "to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry" of the State and therefore supplements the Hatch Fund in the maintenance of the Experiment Station.

In addition to the income from the national government, the College is dependent upon the State Legislature for such appropriations as are required for the maintenance and development of the institution, in accordance with the provisions of the Acts of Congress, and in response to the industrial and educational demands of the State.

HISTORY.

As there were no State colleges in Oregon in 1868, the legislature of that year, which provided for the location of the land received under the Act of 1862, gave the interest on the funds derived from the sale of the land to the Corvallis College, a private institution in Benton County, which was then under the control of the

Methodist Episcopal Church, South. For a number of years, none of the land granted was sold, and the legislature made small annual appropriations for the support of the school.

In 1885, the church voluntarily relinquished its claim on the funds of the college, and the State assumed control of the institution. The legislature of that year provided for the "permanent location of the State Agricultural College at Corvallis in Benton County," on condition that the citizens of said county should, within four years, erect on the "farm containing thirty-five acres in the immediate vicinity of said city, known as the Agricultural College Farm, brick buildings for the accommodation of said State Agricultural College at a cost of not less than $20,000." During the summer of 1887, the corner stone of the building erected by the citizens of Benton County was laid by the Governor of Oregon, amid imposing ceremonies.

This structure, now known as the Administration Building, was the nucleus around which other buildings soon began to cluster as necessity and growing interest demanded. For a year or two there was ample room; but, as the institution grew, more land was needed and provided, and instead of thirty-five acres originally comprising campus and grounds, the institution now owns two hundred and twenty-four acres; and instead of one structure, there are now eighteen. There has also been an increase in the attendance from ninety-seven to upwards of sixteen hundred students. Twenty years ago, most of the students came from Benton and neighboring counties. Now, every county in Oregon, twenty other States, and six foreign countries are represented. The increase in the number of students called for an increase in the number of the faculty. This body, from the number of five in 1884, has grown until it now closely approaches the five-score mark. Other features usually found in connection with progressive educational institutions have grown in equal ratio. The courses have been strengthened, the standard has been advanced, and other improvements made from time to time, which have added to the thoroughness and efficiency of the work.

GOVERNMENT.

The general government of the College is vested primarily in the Board of Regents, and, under their control, in four other administrative bodies,—the Administrative Council, the College Council, the Faculty, and the Experiment Station Staff. These bodies, in the exercise of their respective duties, determine the questions of policy and regulate all matters relating to the interests of the institution.

The Board of Regents consists of thirteen members, of whom the Governor, the Secretary of State, the Superintendent of Public Instruction, and the Master of the State Grange are ex-officio members. The other nine members are appointed by the Governor with the approval of the State Senate, and hold office for a term of nine years. Under a law of the State Legislature, passed in 1885, the Board of Regents constitutes a body corporate, under the name of "The Board of Regents of the State Agricultural College, * * * with power to sue and be sued, and to make contracts," and to enact such regulations as may be necessary for the maintenance and development of the College.

The Administrative Council consists of the President of the College, the Director of the Experiment Station, and the Deans of the different Schools. The function of this Council is to consider and determine the larger questions of policy and administration.

The College Council is composed of the President of the College, the professors, and assistant professors. This body considers all general questions relating to the educational work and policy of the College; arranges and correlates the courses of study, and determines the requirements for admission and graduation. The different committees of the College Council, representing the several schools of instruction, have charge of the enrollment and progress of students in the respective schools, and investigate the records of all candidates for graduation.

The College Faculty includes the President, the professors, the assistant professors, the librarian, the instructors, and the assistants. It considers routine questions of method and discipline for which it is particularly well adapted, being in close contact with all that pertains to student interests and student life.

The Experiment Station Staff includes the President of the College, the Director of the Experiment Station, and the heads of the various departments of the School of Agriculture that are engaged in research and experimental work. The members of this staff are engaged in the investigation of problems encountered in the development of the agricultural interests of the State. They also distribute information regarding their investigations by means of correspondence, circulars and station bulletins.

The Students. The College does not undertake to prescribe in detail either its requirements or prohibitions. Students are met on a plane of mutual regard and helpfulness. Since the advantages of the institution are provided at public expense, the students are under special obligation to perform faithfully all their duties, not only to the College, but also to the State and to the community. Whenever the deportment of any student is such that his influence is inimical to the interests of the institution, he will be relieved from further attendance.

PURPOSE AND SCOPE.

The purpose of the College is to provide, in accordance with the Acts of Congress under which it is maintained, a liberal, thorough, and practical education,—an education that will afford the training required for efficient service in different branches of industry. The distinctive technical work covers the three great fields of production, manufacture, and commerce. Special attention is given to the application of science. All the practical work in the laboratories, in the shops, in the orchards, and on the farm, is based upon scientific principles. While the industrial or technical work is emphasized, the importance of a thorough general training, of mind development, and culture, is recognized in all of the work throughout the institution. The object is to meet the demand for a broad and general education, supplemented by special technical training.

The work, therefore, covers a broad field, including technical courses along the different lines of agriculture and forestry, commerce, pharmacy, engineering, and household technology; with the necessary training in the basic subjects of mathematics and the

natural and physical sciences; and also the general training in language, literature, history, and civics, which constitutes an essential part of a liberal education.

In all the work of the institution, the object is to train the mind, the eye, and the hand to act in unison; to unfold and coordinate the faculties of mind and body; to develop a symmetrical manhood and womanhood, and a just appreciation of clean, upright citizenship.

LOCATION.

The seat of the Oregon Agricultural College is Corvallis, a city of over five thousand inhabitants, situated at the head of navigation on the Willamette River. As the name implies, it is in the heart of the far-famed Willamette Valley. It is readily accessible by railway from all parts of the State; it has free mail delivery; there are many churches, and no saloons, and the moral tone is equal to that of any city within the boundaries of the State. It is a city of homes, and its people are justly proud of the great institution within their midst, and jealously guard its good name.

Situated on high, well-drained land, open to the invigorating sea-breeze, Corvallis is one of the most healthful cities in the State. It has never been visited by any dangerous epidemic disease, and the possibilities of such visitation in the future appear remote, for the city has a complete modern sewerage system and a first-class gravity water system, supplied from springs high up the slope of Mary's Peak, the tallest mountain in the Coast Range, some fifteen miles away to the west. The city and its environs are conducive to wholesome student and home life. It has an ample supply of pure mountain water for all domestic and sanitary purposes. The atmosphere is purified, and the climate ameliorated by almost constant ocean breezes,—warm in winter and cool in summer. The surrounding landscape elicits praise from all who behold its delightful charms as viewed in the extensive area of fertile fields, gardens and orchards. The wooded glens of the near-by foothills, and the rippling mountain brooks, or the more pretentious streams frequented by canoe, yacht, and launch parties are fruitful sources of recreation; while the magnificent distant views to the east, where the fir-clad Cascade Mountains, with their wealth of trees

and their perennially snow-capped sentinels, Hood, Jefferson, and the Three Sisters, present a constant panorama of picturesque mountain scenery. With such an environment, the city is truly an ideal location for a college and a home.

GROUNDS AND BUILDINGS.

The College Grounds comprise two hundred and thirty-five acres and occupy a slightly elevated and gently undulating site wholly within the western limits of the City of Corvallis. That part of the grounds, over forty acres in extent, lying immediately about the several buildings and usually designated as the lawns and campus, is tastefully planted with both native and exotic ornamental trees, shrubs, and herbs. The one hundred and eighty acres used for the farm, garden and orchard operations is so platted and planted as to meet the demands of the various lines of work and still conform to a general scheme of landscape embellishment. Broad drives and walks traverse the grounds in all directions, thus rendering every objective point easily accessible. The numerous magnificent specimen trees, groups of shrubbery and massed borders are a source of enjoyment as well as instruction to all those who frequent the grounds. The scheme of planting has been such as to give the grounds an air of peaceful activity, orderly effort, earnest purpose, and quiet refinement. Daily association with such scenes, for a period of years during the time when men and women are forming the habits of thought and action that will be theirs through life, is certain to have a deep-seated and subtle influence for good in moulding the character of future citizens.

The following brief descriptions will convey a general idea as to the principal buildings and the purposes for which they are used:

The Administration Building is a three-story brick structure 90x120 feet, containing thirteen recitation rooms, the library, and the offices of the President, the Registrar, and the Secretary. Centrally located and on a slight eminence, it commands an unsurpassed view of the campus, the City of Corvallis, the Willamette River, and the picturesque Cascades.

Science Hall, situated southeast of the Administration Building, and constructed of gray granite and sandstone, covers a ground

space of 85x125 feet, has three stories and basement, and contains twenty-nine rooms. It is one of the most substantial buildings on the grounds, and within it, at present, are the Dairy, Bacteriological, Forestry, and Chemical departments, with their various laboratories, recitation rooms and lecture halls, together with the general museums.

The Agricultural Hall stands southwest of the Administration Building and when completed will be the largest structure on the campus. It is an imposing edifice of brick and stone and will consist of the central or Administrative building, the north or Agronomy wing, and the south of Horticultural wing. All but the Horticultural wing will be completed and furnished ready for use at the opening of the school year.

The central or Administrative building is 66x140 feet, four stories and basement; and contains a total of forty-two conveniently arranged and well-lighted class rooms, laboratories and offices. Upon the first floor will be the offices of the Director of the Experiment Station, the Dean of the School of Agriculture, the mailing rooms, Agricultural library and, until the Horticultural wing is completed, the offices, research laboratories and four class rooms of the department of Horticulture. The second floor will be occupied by the departments of Horticulture, Industrial Pedagogy, and Animal Husbandry; the third floor, by the departments of Zoology and Entomology, and Poultry Husbandry; and the fourth flour, by the departments of Botany and Plant Pathology, and Art.

The north or Agronomy wing is 72x130 feet, and three stories high. It faces north and east, commanding splendid views of the valley and the College grounds. It is thoroughly modern in all its equipments, and while intended solely for the work in Agronomy, at present it accommodates temporarily, three departments, with parts of others. The first floor, occupied by the department of Agronomy, contains eight rooms, and is especially arranged for such work as Agrostology, soil physics, and kindred subjects. The second floor contains nine large rooms, particularly arranged for the work in Domestic Arts, as dressmaking, sewing, millinery, cutting, fitting, and modelling. The third

floor, with eight rooms, is fitted for the work of the course in Commerce, consisting of accounting, shorthand, typewriting, banking, merchandising and other phases of commerce.

The interior finish throughout is natural grain Douglas fir, burlap wainscoting, and tinted walls. Every room is provided with hot and cold water, electric lights, steam heat and specially designed furniture. The laboratories and class rooms are well equipped with desks, lecture chairs, tables and other apparatus; and all appliances are of the most recent design for the work in hand.

The Horticultural Building is a two-story frame structure, 30x36 feet, with accompanying glass houses having separate floor space of two thousand three hundred square feet. It is north of the Administration Building, and contains the offices and principal laboratories of the department of Horticulture.

Greenhouses. A new range of greenhouses, modern in every respect, has recently been constructed with a view to aiding the student in his studies in commercial greenhouse work. The range is made up of five even-span houses, three ninety feet long by twenty feet wide, and two thirty-three feet long by twenty feet wide, making the total area under glass 6,720 square feet. A modern hot water heating apparatus is being installed with valves and pipes so arranged that different temperatures can be maintained in every separate thirty feet of house in the three long houses. Each of the large houses has been divided into sections thirty feet long so that the entire space in each may be given up to a single crop. Of the two smaller houses, one will be given up to research work and one to the propagation of plants in general. The central building is large and conveniently arranged for all the various kinds of work that is to be met with in greenhouse establishments. Such crops as Carnations, Chrysanthemums, Violets, Palms, Ferns, general pot plants, and forced vegetables like tomatoes, lettuce, and cucumbers will be grown in these houses.

Mechanical Hall, about one hundred and fifty yards northeast of the Administration Building, is two stories high, 90x120 feet, and constructed of Oregon gray granite and sandstone. It is a fine, substantial building, well arranged and admirably adapted for the

purpose for which it is used. Besides recitation and lecture rooms for the classes in Mechanical, Electrical, and Civil Engineering, it contains the Art Rooms and the Physical Laboratories.

The Mechanic Arts Building is a modern, well-lighted structure of brick with cement foundations, 52x52 feet, two stories high, flanked by a one-story wing on the east, 40x220 feet, and a similar wing on the south, 40x200 feet. The central portion contains the office of the Dean, a display room for student work, a tool room for the machine shop, and a finishing room for the wood shop. On the second floor is a general drafting room, 30x50 feet, with a commodious blue-print and dark room adjoining. The south wing contains the main wood-working shop, 40x97 feet, a stock room, 30x40 feet, a carpenter shop, 20x40 feet, and the College printing plant, 40x50 feet. The east wing contains the machine shop, 40x80 feet, the blacksmith shop, 40x100 feet, store room for coal and iron, lockers, and toilet rooms.

The Mining Building is a small frame structure immediately south of the Administration Building and contains the Mining Engineering offices, the Geological and Mineralogical museum and a recitation room which will accommodate about twenty-five students.

The Mining Laboratory is situated immediately south of Shepard Hall. It is a one-story brick structure, 40x70 feet, and well lighted. This building has been remodeled recently, and now contains the Geological and Mineralogical laboratories, an assay laboratory, a furnace room, a weighing room and supply room for the work in Mining Engineering.

The Gymnasium is situated about two hundred yards south of the Administration Building. It is built of stone and wood, 70x120 feet. Its one large room is also used as a lecture hall, an assembly room, or a place for entertainments when large audiences are expected. It will accommodate fourteen hundred persons. In the basement are the dressing rooms, shower baths and offices. The main hall, which is twenty feet to the under side of the trusses, has an unobstructed floor area of 8,000 square feet. It is encircled by a suspended gallery, six feet wide.

The Armory is situated about two hundred yards south of the

Administration Building. It is the largest of its kind in the United States and is built of concrete and steel, 126x355 feet. The drill hall portion has an unobstructed area of 36,000 square feet. The arms room, offices, and drill hall afford facilities for the accommodation of 1,000 men.

The Pharmacy Building, about two hundred yards west of the Administration Building, is a two-story frame structure, containing two large laboratories, three lecture rooms, a machinery and drying room, a pharmacognosy room, store rooms, special laboratories and office. The whole building is amply lighted and ventilated, and affords adequate and suitable quarters for the department.

The Power Plant, a one-story brick building in the rear of Mechanical Hall, contains the requisite equipment for supplying the various buildings with heat, light and power. The apparatus installed in this building serves the purpose also of demonstration equipment in these special lines.

The New Heating Plant, located south of the Armory, is a one-story reinforced concrete building, with a concrete tunnel and conduits leading to the various buildings on the south side of the campus. It contains one two-hundred-fifty horse-power boiler with the necessary equipment for heating the buildings connected to same.

Waldo Hall, the women's dormitory, occupies a commanding site one hundred and fifty yards southwest of the Armory. It is a large building of striking proportions, with a cement foundation and basement wall, and a cream-colored, pressed-brick superstructure, three stories high. The dimensions are 96x240 feet; and it contains one hundred and fifteen rooms for students, besides a kitchen, dining room, parlors and Domestic Science laboratories. It is modern in all its appointments and finished throughout in natural grain Douglas fir, stained to conform to the color scheme.

Cauthorn Hall, the men's dormitory, is a well-proportioned frame building, situated on a sightly spot in the extreme western part of the campus. It is 160x50 feet, has three stories and basement, and contains sixty-two rooms, besides a large kitchen, dining room and reception rooms. Its furnishings and appointments are adequate

and in harmony with its use. Each floor is supplied with hot and cold water, baths, electric light, and steam heat.

Shepard Hall. The new Y. M. and Y. W. C. A. building was completed in time for the opening of the school year of 1908. The total cost was something over $22,000. The original plans have been somewhat modified, giving, in many respects, a better building than planned at first. This building contains in the basement a swimming pool, shower baths, lockers, banquet rooms, kitchen, wood room, and accessories. The first floor contains a large lobby which is used for a reading room, game room for social events, and general assembly. It also contains an office for the General Secretary, a public office, a cabinet and check room combined, a room for the Y. W. C. A., and one to be used jointly by the Athletic Association and the staffs of the different College papers. The second floor contains six rooms for the use of the literary societies. The third floor is devoted for the present to dormitory purposes. The building is known as Shepard Hall, and is a fitting tribute to the memory of Clay Shepard, who gave his life to the cause of cleaner, higher and truer citizenship as exemplified in student life.

Farm Buildings. The College farm is now well equipped with farm buildings, and modern facilities for conducting practical and scientific work in animal husbandry.

The New Barn recently constructed is commodious, modern, and attractive in design. It is a frame building, with cement foundation and brick pilasters. The main part is 50x100 feet, two stories high, with two wings extending to the south, each 46x80 feet, one story in height. There is also a milk-room, an engine-room, and a fuel-room. The building is utilized as a general barn, and will accommodate nine horses and seventy cattle, with sufficient space for the storage of feed. On the first floor of the main portion are located the horse stalls, bins for storing the various grains and mill feeds, a seed-room and space for vehicles. The concrete basement is of sufficient dimensions to permit the storing of about one hundred tons of roots. The second floor has a storage capacity for one hundred tons of loose hay. A prominent feature of the barn is the cow stable. This is strictly modern, well lighted and well ventilated, with concrete floor, thirty individual, tubular-iron,

adjustable stalls, and two commodious box stalls. The aisles are wide, and thus not only furnish an abundance of air space for the animals, but they also afford visitors an excellent opportunity to view the stock. The milk and engine rooms are conveniently situated but sufficiently isolated for proper sanitation. This building is lighted by electricity, well supplied with water, thoroughly sewered and furnished with an elaborate system of bell traps.

The old barns were moved and remodeled so as to harmonize with the new structure. They contain rooms for housing machinery, sheds for fattening cattle, and a commodious piggery.

The Poultry Houses. On a ten-acre tract of land, lying southeast of Cauthorn Hall, and west of Waldo Hall, there have been erected several buildings specially planned for the needs of the department of Poultry Husbandry. These buildings comprise an incubator house, with a capacity of twenty-four incubators and complementary apparatus, and thirty colony houses for laying stock and growing chicks. The colony houses are movable and constructed upon a plan that could be adopted by any farmer. The colony brooding coops are also portable, and are used for investigations in both natural and artificial brooding.

EQUIPMENT.

It is impossible, in the brief space that is devoted to this topic, to give more than a bird's-eye view of the equipment of the institution. However. the following data have been so arranged as to give the prospective student a very good general idea of the comprehensive equipment that the institution possesses for carrying forward its designated work.

Agronomy. The new Agronomy Building provides spacious and well lighted offices, class rooms, laboratories, store rooms, and other facilities for this work. The large soil laboratory is newly equipped with the most modern apparatus for an exhaustive study of the physical properties of soil and of problems of soil fertility. Abundant desk and locker room, supplied with running water, gas, compressed air, and electricity, is furnished for sections of fifty students. Compound microscopes, compacting machines, aspirators,

percolators, capillary tubes, mulch cylinders, electric centrifuges, shakers, and sifters, electrically heated air baths, thermometers, soil sieves, scales, analytic balances, chemical apparatus, pots and wire baskets, and greenhouse room, form part of the equipment for the work in Soil Physics and Soil Fertility. Soil surveying and mapping outfits, soil survey charts of the United States, and specimens of the chief soil types of Oregon and of the United States are being assembled.

For the work in Crop Production, another large laboratory is provided with special grain-judging compartment desks, sufficient to accommodate sections of thirty students. Part of the apparatus used for the several courses in this subject are grain sampling and mixing machines, complete sets of compound microscopes, dissecting microscopes, and large, mounted field lenses, general and special germinating chambers, various types of germinators, grain tester, grain receptacles of all kinds, and complete sets of seed and plant specimens. Each student is provided with samples of both the seed and the plant of all of the important field crops and weeds of Oregon and of the United States.

Farm Mechanics is provided for in a separate building on the farm, fitted with shafting and power, and fully equipped with all classes and types of tillage implements, manure spreaders, seeding, harvesting, and power machinery, farm engines of all kinds, together with apparatus for testing these machines. Drain tiles, surveying instruments, tile and ditching tools are furnished for drainage and irrigation work.

The Agronomy class rooms have demonstration tables, lantern facilities, illustrative charts of various kinds and a new reference library.

Animal Husbandry. The barns and accessory buildings on the farm, used jointly with the department of Agronomy, meet the requirements for comprehensive work in Animal Husbandry. The stock available for illustration and demonstration purposes, includes typical specimens of Jersey, Holstein, Guernsey, Ayrshire, and both beef and milk types of Shorthorn cattle; draft horses; Cotswold and Shropshire sheep; and Yorkshire and Berkshire swine. In addition to the College stock, students are afforded an opportunity

to examine, score, test, and otherwise study the splendid specimens of the various other breeds kept by private breeders and stockmen on neighboring farms. The department possesses extensive sets of lantern slides, maps, charts and the necessary minor apparatus for conducting the various lines of lecture, laboratory, field, and research work necessary to the broad courses of study in the several phases of Animal Industry.

Dairy Husbandry. This department occupies about one-half of the first floor of the Agricultural Hall. At the left of the main entrance is the office and recitation room, and to the right are located the dairy rooms proper. The main work room, located in the northwest corner, is 24x44 feet, with cement floor sloping toward the center. This room is equipped with seven of the latest styles of cream separators, suitable for farm use. These machines are mostly loaned to the department, and are replaced whenever in the opinion of the dealers there have been important changes in the construction of later models. There are also combined churns and workers, box churns, table workers, receiving and ripening vats, Pasteurizer and cooler, and the necessary apparatus for the manufacture of full cream Cheddar cheese.

Adjoining the main work room are lockers for students' use, a well-lighted boiler room equipped with vertical boiler and engine, and a wood and store room. In the northeast corner of the building is the testing laboratory, equipped with all the modern devices for testing milk and its products, such as hand and turbine Babcock testers, curd test, moisture-determination apparatus, cream scales, and automatic acid measures. Two commodious cheese curing rooms, 10x16 feet and 12x16 feet, respectively, complete the quarters of the Dairy Department.

Horticulture. Laboratories and class rooms for the department of Horticulture are located principally in the new Agricultural Building. They consist of a Pomology laboratory specially equipped with tables and accessories for classifying, describing and judging fruits and vegetables; special drafting laboratory, containing tables, cabinets, lockers, etc., for students in Landscape Gardening, Greenhouse Construction, and Commercial and Practical Pomology; and a packing laboratory containing the newest and most approved

appliances for skilful handling of fruits, including box machines, grading and packing tables, and fruit presses. The Plant Propagation laboratory is well equipped with tables, benches, vices, etc., for budding and grafting. The Floriculture laboratory contains apparatus for mixing of soils and fertilizers, seeding, transplanting, bedding, and preparing flowers and vegetables for the market. Lecture rooms are provided with facilities for illustrated lectures by means of lanterns, photographs and charts. The department is fortunate in possessing a good laboratory and general assortment of tools for conducting field exercises in Pomology, Landscape Gardening, and Truck Gardening.

Poultry Husbandry. The equipment of this department consists of a number of poultry houses of different types; about 300 fowls of several breeds and varieties, sixteen incubators of six different makes, bone and clover cutters, trap nests, cramming machines, and various other appliances that are necessary for practical poultry keeping. There are also sets of charts, lantern slides and photographs, illustrating breeds of fowls, poultry farms and houses.

Forestry. The department of Forestry occupies the third floor of Science Hall (old Agricultural Hall). It has a complete herbarium of the forest trees of the Pacific Coast, as well as a cone collection representing the important commercial conifers of the United States. It has apparatus for applying preservatives to timbers by the open tank method, timber testing machinery, incubators for testing tree seeds, wood specimens, stereopticon and slides, compound and low power microscopes, hypsometers, increment borers, scale sticks, calipers, surveyors' compasses and chains, pack outfits, axes, saws, drafting tables, and other equipment necessary for efficient laboratory and field work. A nursery has been established on the College farm, in which native and exotic timber-tree seedlings are being grown. The City Water Company of Corvallis has placed a timbered tract of eighty acres at the disposal of the College for demonstration purposes.

Domestic Science. This department is located on the basement floor of Waldo Hall, occupying the entire floor, except that part used for the hall dining room and kitchen. There are two large school kitchens, a lecture room, and 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. The school kitchens are equipped with work tables, cupboards, ranges, gas stoves and all necessary utensils and modern conveniences for teaching cookery. The dining room is furnished with an extension table, chairs, cupboards, china, silver and table linen. The department is also provided with a large laundry, equipped with stationary tubs, ironing boards, skirt boards and other necessary furnishings.

Domestic Art. A large portion of the second floor of the Agronomy Building is allotted to the work in Domestic Art, containing rooms for hand and machine-sewing, cutting and fitting, millinery, household decoration, etc. The machine rooms are furnished with the latest improved machines; and the sewing rooms are provided with tables, electric irons, wardrobes and cupboards for holding unfinished work, large display cabinets for finished work, and cabinets for the collection of samples showing the processes of manufacture of cotton, wool, silk and linen.

Civil Engineering. In addition to joint use with the Mechanical department of the testing laboratories and blue print rooms described elsewhere, this department has for its exclusive use a suite of four well-lighted rooms, suitably arranged on the second floor of Mechanical Hall. This suite includes an office, a recitation and a lecture room, an instrument room and a drafting and designing room.

The drafting and designing room, 28x47 feet, is well lighted and fully equipped with thoroughly modern and convenient drawing tables, supplied with individual lockers for instruments and other apparatus. The instrument room is conveniently arranged, having an individual glass-front case for each instrument and its accompanying equipment, which includes marking pins, tape, range-poles, notebook, etc. The instrumental equipment includes the following: twelve transits, five of which are provided with solar attachment ; eight levels, four plane-tables, one compass and two current meters, all high-class instruments of various standard makes and styles; a sufficient supply of level and stadia rods, range-poles, tapes, chains, plain and prismatic compasses, aneroid barometers, clinom-

eters, planimeters, plumb-bobs, hand levels, etc., together with a well-selected assortment of specifications and blue print plans of engineering structures for illustrative purposes.

Electrical Engineering. The laboratory of this department occupies a large part of the west half of the first floor of Mechanical Hall, and is divided into several rooms; one for testing, one for instruments, and another for supplies. Besides the equipment therein, including generators, motors, and other apparatus, the machinery in the College Power Plant, and sub-station, with its 10,000-volt step-down transformers, is available for study and testing purposes. Three-phase electrical energy is supplied by the long distance transmission line or by the local generating units, as desired.

In the laboratory is a 6½x15 foot switchboard, consisting of three asbestos wood panels on which are mounted a number of voltmeters and ammeters for direct and alternating current; a power factor meter; a frequency meter, and synchroscope; a set of synchronizing lamps; circuit breakers; switches; and a large number of plug terminals, the leads of which extend to the eight machine platforms; two slate panels with instruments and switches for direct current machines; and an arc light regulating panel. Immediately adjacent thereto is a controller, auto-transformer and rheostat rack, six feet high by sixteen feet in length.

The machine platforms just mentioned are four feet wide by fourteen feet long, and have upon them the following equipment: one five, one seven and one-half, and three ten-horse power, three-phase, induction motors; two five, two seven and one-half, two ten, and two twelve and one-half kilowatt, 125-volt direct current generators; one ten-kilowatt double current generator, and one two-kilowatt rotary converter; two two and one-half kilowatt induction motor generator sets; one two and one-half kilowatt synchronous motor generator set; one seven and one-half kilowatt revolving field alternator with three additional rotors, and one seven and one-half kilowatt revolving field alternator, from both of which current of single, two, three, four, six and twelve phases may be taken; one fifteen-arc light constant current dynamo; one five-arc light regulating transformer; one 110,000-volt high ten-

sion testing transformer; and several transformers and compensators.

The instruments available are ample in number and range, and consist of direct and alternating current voltmeters and ammeters; milli-voltmeters and shunts; wattmeters and watt-hour meters; and the following precision instruments for standardizing: one ammeter and one voltmeter operating on the Kelvin balance principle; one poly-phase and two single-phase indicating wattmeters, and one 100-ampere manganin shunt.

Mechanical Engineering. The department laboratories contain the apparatus necessary for the work in calibration, strength of materials, testing of lubricants, power engineering, and hydraulics. Among the more important pieces the following may be mentioned:

For preliminary work and calibration: Thacher calculating instrument, several high-grade planimeters, gage tester, device for calibrating indicator springs, torsion transmission dynamometer, etc.

For work on materials: A 50,000-pound Riehle universal testing machine fitted with autographic recording device, a high-grade Riehle recording extensometer, Olsen impact machine and rattler for testing road metals, standard rattler for paving brick, a 1,000-pound Fairbanks cement testing machine with other apparatus for complete standard tests on cement; in addition to the above there are the usual testing machine accessories and fittings needed for standard work.

Various tests may be made on lubricants, bearing metals, and different types of bearings by means of a Golden bearing and oil dynamometer. There are also provided the usual minor pieces, such as flash point apparatus, viscosimeter, etc.

For the work in steam and power engineering there is available the equipment of the College Power Plant, which consists of a bank of three fire-tube boilers supplying steam to the heating system and to a forty-horse-power Ideal automatic high speed engine. The engine room has been converted into a power laboratory and contains, in addition to the engine mentioned above, a 7x8 throttling engine, a three-horse-power gasoline engine, an eight-inch Reeco-Ericson hot air pumping engine, a large exhaust fan, a

blower, and a part of the hydraulic equipment of the department.

All the engines are fitted with brakes of various kinds, and other auxiliaries for testing. The power plant also affords facilities for testing feed pumps, injectors, feed water heaters, etc. Of smaller apparatus there might be mentioned five indicators, one a Trill instrument with continuous drum; reducing motion, and high pressure piston, two steam calorimeters, fuel calorimeter, flue gas sampling and analysis apparatus, two pyrometers, draft gages, recording and indicating pressure gages, etc.

Part of the hydraulic equipment is located in the power laboratory; this apparatus consists of several steam pumps, a centrifugal pump, 12-inch Doble laboratory water motor, hydraulic ram, two meters, and other small apparatus. The College water supply is now taken from the city mains and some hydraulic tests are carried out at the pumping plant, which has become part of the laboratory equipment. Measurements of neighboring streams are also made both by the weir method and by current meter.

The Wood Shop, supplied with the best machines and tools the market affords, contains twenty-four double benches of modern design, accommodating forty-eight students. Each bench is provided with patent rapid action vises for holding the work, and is furnished with two sets of hand tools, consisting of rip saws, cut-off saws and back saws, planes, chisels, paring gouges, marking gauges, try squares, hammers, dividers, and oil stones. The machine equipment of this shop consists of fifteen wood-turning lathes, each furnished with a set of tools; one iron saw-table with rip and cut-off saws, one band saw, one jig saw, 24-inch surface planer, 16-inch glue joiner, four-sided 4-inch moulder, power mortiser and borer combined, post boring machine, swinging arm sander, two grindstones, one concave for gouges and one straight for plane irons and chisels; there are also two glue tables with clamps of various sizes and one steam and gas glue heater of three gallons capacity; the power is furnished by two three-phase induction motors of fifteen horsepower each.

The Forge Shop contains forty-two down-draft forges of the most improved pattern. Blast is furnished by a steel pressure blower driven by a 10-horsepower induction motor, and the smoke and

gases are removed by an 80-inch exhaust fan, driven by a 20-horsepower motor. Each forge is provided with anvil, hammers, hardies, tongs and other small tools. There are also swedge blocks and vises at convenient points in the room for general use.

The Machine Shop contains one 24x24-inch iron planer, one 15-inch shaper, one 12-inch shaper, one universal milling machine, one universal tool grinder, one wet tool grinder, one radial drill, one 20-inch drill press, one sensitive drill press, one 20-inch engine lathe, one 16-inch engine lathe, one 16-inch universal turret lathe, one 14-inch modern geared lathe, five 14-inch engine lathes, two 10-inch speed lathes, one shop saw, one automatic knife grinder, and twelve bench vises. A 20-horsepower induction motor furnishes the power. A tool room adjacent contains the small tools, such as twist drills, taps, dies, reamers, calipers, gauges and scales. These tools are given out to students on the check plan.

Mining Engineering. This department occupies two buildings; the small structure south of the Administration Building contains the Mining Engineering office and recitation rooms, while the other, just west of the Administration Building, contains the laboratories in Geology, Mineralogy, Metallurgy, and Assaying. The department possesses the following geological and mineralogical collections:

A Mineral Type Collection, consisting of about twelve hundred and fifty well characterized and labeled specimens used by the students for purposes of study and comparison; a Working Collection of minerals, consisting of about four thousand unlabeled specimens similar to those in the Type Collection, used by the student for study and determination; an Exhibit Collection of minerals, consisting of large and attractive specimens of minerals and rocks; a Crystal Collection, containing about eight hundred natural crystal forms; a Crystal Model Collection, consisting of forty-eight large glass crystal models and about five hundred wooden models used in the study of Crystallography; a Blowpipe Collection, containing minerals and materials used in blowpiping; the United States Geological Survey Educational Series of Rocks; Foote Rock Collection; a Working Collection of Rocks, containing

unlabeled specimens for the use of the student in the work of petrology.

The assaying and metallurgical laboratory is equipped with two double muffle coal furnaces, two gasoline muffle furnaces, two gasoline crucible furnaces, one combination gasoline furnace, one Parr's pyrometer, button balances, one of the new balances having a multiple rider attachment, pulp balances, cupel machines, crushers, grinders, sampling apparatus and all necessary appliances for a modern assay laboratory.

For the work in Mine Surveying the department is equipped with two highly improved mining transits with auxiliary side or top telescopes, two Brunton pocket transits together with necessary minor equipment incidental to mine surveying work.

The department has recently received, through the generosity of the Hardsocg Wonder Drill Company, Ottumwa, Iowa, one Hardsocg Hammer Drill (Model 19c), with full complement of steel. The Ingersoll Rand Company of New York has also loaned to the department one new Davis Calyx Core Drill, a large machine drill used in prospecting. This machine is a very valuable addition to the mining equipment. The department also has a complete outfit of hand drilling tools.

Commerce. This department is completely equipped for thorough and efficient work in modern business courses. Each room is specially designed and furnished for the work to be conducted in it. The furniture of the department consists of individual desks and counters, a complete set of modern banking fixtures, a wholesale house, a retail house, a commission house, freight, real estate and insurance offices. Permanent blank books, letter files, rubber stamps, copying presses, college currency, blanks and similar material are provided by the College. The room for typewriting contains twenty standard machines, each provided with approved conveniences for the operator. The room for stenography is furnished with tables designed for convenience in practice work; also equipment for illustrating various systems of filing. The department of Political Economy is developing a commercial museum for use in the various courses in social science.

Pharmacy. In addition to the usual outfit of desk apparatus for

the individual student, the department is supplied with a number of special pieces of apparatus for general use, as pharmaceutical stills, from the simple retort to the complicated vacuum still; drug mills, for hand and power; suppository machines, for fusion and for compression; tablet machines, mould and compression; pill machines; tincture presses; capsule filling machine; percolators and much minor apparatus.

Zoology. The laboratories of this department occupy the following rooms on the third floor of the new Agricultural Hall: two offices, research laboratory for entomology, physiological laboratory, general laboratory for zoology, two lecture rooms, vault and photographic dark room. The general laboratory is equipped with desks with individual drawers to accommodate 280 student; each desk is provided with compound microscopes, dissecting microscopes, and various minor pieces of apparatus. The physiological laboratory is similarly equipped for 225 students and in addition is provided with an articulated skeleton, a dissectible human skull, a complete Azoux model of the human body, greatly enlarged Azoux models of the brain, eye, ear, and other organs, a set of the celebrated Leukart zoological charts, and a good supply of specimens and dissections for illustrating the work in physiology. The entomological laboratory contains the entomological collections, a portion of the department library, and although used as a research laboratory for the head of the department and assistants, it is fully equipped for ten or twelve advanced students. It is provided with high grade compound and dissecting microscopes, a Minot rotating microtome, a Minot automatic precision microtome, water bath, 5x7 view camera, 4x5 micrographic camera, laboratory balances, eye-piece, and stage micrometers, and an abundant supply of minor instruments.

The museum, which occupies most of the fourth floor of Science Hall, contains, in addition to a beautiful collection of native birds, a small collection of mounted mammals, a collection of bird skins from Alaska, a large collection of eggs of native birds, a small collection of fishes and reptiles, a considerable number of marine invertebrates, including a small but beautiful collection of Philip-

pine shells, an extensive collection of native insects, and numerous specimens of a miscellaneous nature.

Chemistry. The department of Chemistry occupies nearly all of the south wing of Science Hall, and one room in the basement of the central portion. In this latter room, aside from desk space for seventy-two students, is a 150-light Terrill gas machine that supplies gas for the different laboratories throughout the building. The main lecture room is situated on the third floor, and has a seating capacity of one hundred and fifty. It is provided with lecture tables that are supplied with gas, electricity and water. Adjoining the lecture room is a small preparation room, in which is kept all special apparatus used for lecture demonstration, as well as supplies for the agricultural laboratory. This room is supplied with all the necessary apparatus for the proper elucidation of the principles of this branch of chemistry.

The organic laboratory is fitted for twenty-four students. Each student has a drawer and locker, a sink, a Richards' filter pump, a full set of reagent-bottles, individual gas and water outlets. Next to this laboratory is a room set apart for fuel and gas analysis and for photographic chemistry. The special apparatus of this room consists of Orsats' bulbs, and pipettes, Winkler's burettes, the latest forms of Hempel's bulbs, Victor Myers', Dumas', and Hoffman's apparatus for molecular weight determination, Beckman's cryoscope, Landsberger's ebulliscope, Parr's latest form of calorimeter, analytical and torsion balances, and the usual small pieces that accompany the above.

The largest room in the building is the main general laboratory, which will accommodate three hundred and ninety students, in four sections. Adjacent to this laboratory is a store room amply stocked with all necessary supplies and apparatus. The weighing room contains eight analytical balances of the best type for student use, and is well lighted and ventilated. The quantitative laboratory, which will accommodate seventy-two students in three sections, is in the basement, and adjoins the store room. It is fully supplied with various kinds of calibrated ware, as flasks, burettes, cylinders, urinometers, lactometers, hydrometers, and barometers; centrifuges for rapid separation of precipitates, blast lamps for

fusions, muffles for incinerations, tables for glass working, and much minor apparatus.

For work in Agricultural Chemistry an entire room is set aside. This room is fitted with gas, water and electricity, condensers for distilled water, batteries, extraction apparatus for fats, nitrometers, Kjeldahl apparatus, hot water filtering apparatus, grinders for fodders, steam and air baths, calorimeter, polariscope, Westphal and analytical balances, coarse balances for rough work, hot-plates, and minor apparatus. This is one of the strongest divisions in the department and is lacking in nothing that makes a fully equipped agricultural chemical laboratory.

Bacteriology. The equipment of the bacteriological laboratory consists of modern apparatus for teaching bacteriology in all its phases. There are compound microscopes of the highest grades, incubators, steam sterilizers, an autoclave, hot-air sterilizers, dissecting microscopes, microtomes, counting apparatus, hydrogen gas apparatus for growing anaerobes, water baths, centrifuges, paraffin baths, balances, desiccators, blood counting apparatus, fermentation tubes, test tubes, flasks and other glassware.

Botany and Plant Pathology. This department is located on the fourth floor of the new Agricultural Hall and occupies a suite of six rooms including office, herbarium room, culture room, general student laboratory, advanced student laboratory and Experiment Station laboratory for research in Plant Pathology. The rooms of the department are provided with new furniture. The general student laboratory is provided with ten large student tables, each of which will accommodate four students. Individual drawers are provided in each desk to accommodate seven sections or a total of two hundred eighty students. Compound and dissecting microscopes are provided for each student. The advanced laboratory is provided with six similar tables, and in addition provision is made for experimentation in Plant Physiology.

The research laboratory in Plant Pathology will also serve as an instructor's preparation room for certain of the material used in advanced classes in Histology and Morphology, etc. This laboratory is equipped with a modern autoclave, Arnold sterilizers, electrically heated incubator and paraffin ovens, various types of

microtomes and the other usual equipment of a modern laboratory of Plant Pathology.

The Phanerogamic herbarium of several thousand mounted and many thousand unmounted plants is particularly rich in Oregon forms, while containing quite extensive collections of the New Mexico, California, Michigan, Washington, and Alaska floras. The herbarium is being rapidly enlarged by exchange, particular attention is being given to the accumulation of economic material including the forest and shade trees of North America, agricultural plants of the world, pharmaceutical plants, weeds and grasses of economic importance. Large and miscellaneous collections of the various groups of cryptogamic plants are being assembled. Particular attention is being given to the collection of parasitic fungi for use in the work in Plant Pathology. A private collection of about five thousand specimens of fungi particularly rich in parasitic forms has been temporarily loaned by H. S. Jackson for the use of students and instructors.

A large amount of class study material is preserved in alcohol for the use of classes. A well selected collection of microscopic slides, photographs, and lantern slides is provided and is being rapidly enlarged. The equipment for Plant Physiological work includes all the essential apparatus for a modern laboratory course.

Physics. The physical laboratory has a good working equipment for the study of general physics, the apparatus being such as to allow a qualitative or quantitative verification of all of the important laws by the student. In addition to the equipment of the general laboratory, there are many pieces of apparatus intended mainly for class room demonstration. Instruments are also available for the usual work in electric measurements and the standardizing of electrical instruments.

Drawing. The department of Drawing occupies three commodious, well-lighted class studios on the third floor of the new Agricultural Hall. These rooms have north light, are perfectly heated and ventilated, and are well furnished with studio furniture; such as easels, drawing tables, portfolio racks and similar accessories. The class studios are equipped with cast forms for models; the collection is quite extensive and consists of casts of geometric

figures and a carefully selected assortment of block-casts of hands, feet and heads; casts of architectural pieces, fruit, foliage, flowers, heads, masks, arms, hands and feet; and a number of full figure pieces in full and bas-relief. There is also a good collection of still life objects and draperies for light and shade, pen, ink, and color study.

The Library occupies two-thirds of the second floor of the Administration Building. The reading and general reference room is large, well lighted, and extends entirely across the building, and is supplied with about two hundred leading magazines and newspapers. Through the courtesy of the editors, a large number of farm, orchard, stock and home journals and county newspapers of Oregon are received regularly at the reading room. The book stacks, occupying an adjacent room, contain about five thousand volumes of standard works of history, biography, engineering, agriculture, natural science, general literature and reference, and about 1,500 reports and other publications from the Agricultural Colleges and Experiment Stations of all the States, and ten thousand bulletins and pamphlets. It is a designated depository of United States Government publications, of which it has about five thousand volumes. Over two thousand of these were received as a gift from the library of the late United States Senator Dolph.

Practical use of the books has led to the establishment of small reference libraries kept in the rooms of the following departments: General Chemistry, Agricultural Chemistry, Animal Husbandry, Agronomy, Horticulture, Botany and Forestry, Bacteriology, Zoology, Pharmacy, Civil, Mechanical, Electrical and Mining Engineering. Each department library is in charge of the head of that department, to whom application must be made for the use of the books.

All books are classified and catalogued according to the Dewey decimal system. Books may be drawn for home use by all officers and students of the College. Books may be kept by the students for two weeks with the privilege of a renewal and by officers for any reasonable time. All students have free access to the shelves of the reference library in the reading room, but apply at the delivery desk for other works which they may desire.

The reference library consists of encyclopaedias, dictionaries and standard reference books in the different departments of study, together with books designated by professors for collateral reading in the various courses of instruction. A small collection of books for cultural reading is also kept in the reading room. In the same room and accessible to all readers is the card catalogue of the general library, including the books of the department libraries. The catalogue is one of authors and subjects under one alphabet on the dictionary plan.

The Gymnasium is equipped with lockers and dressing rooms with accommodations for a thousand men. In the shower-bath room, hot and cold water is available throughout the year. The floor of the gymnasium is surmounted by a balcony running-track, and a splendid playing space is provided for basket-ball and other indoor games.

The equipment includes horizontal bars, vaulting horses and bucks, parallel bars, swinging rings, dumb bells, Indian clubs, wands and chest weights. For those interested in combative sports, a wrestling mat is provided. The athletic field adjoining the gymnasium has within its bounds a quarter mile running-track, football gridiron and baseball diamond. Bleachers and grandstand accommodate the spectators.

Directly opposite the Gymnasium is located the new Armory with a dirt floor over one hundred yards long and fifty yards wide. The dirt running-track in the Armory is an eighth of a mile long. These facilities afford opportunities for all of the athletic teams to train every day in the year. There are galleries for the spectators and at indoor winter meets, 2,000 spectators can be easily accommodated. The regular gymnasium classes are taken to this indoor athletic field for part of their work in physical education.

THE EXPERIMENT STATION.

The Station bears an important relation to the College, as the scientific investigations conducted at the Station strongly support the instruction given in the class room. Aside from the original investigations of economic significance to agriculture, the work

of the Station affords daily object lessons in modern farm practices.

About one hundred and fifty acres of land are devoted to the use of Station workers. This land is utilized by the various departments represented in the Station organization, including the departments of Chemistry, Agronomy, Horticulture, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, and Entomology. Each department is actively engaged in the scientific investigation of problems presented by the different branches of agriculture.

As an illustration of the comprehensive character of this work, the following investigations, taken at random from the list of those now being conducted by the Station workers, may be cited. The value of such work, as an object lesson to the students in the various fields of agriculture, can hardly be over-estimated. There are experiments with long and short rotation systems for the improvement of soil fertility; tests to ascertain the adaptability and value of alfalfa for soiling and pasture; tests to determine the adaptability of kale as a winter succulent feed for dairy cows and other stock; experiments in breeding wheat for increase in both quantity and quality of yield, and improvement in adaptation to soil and climatic conditions of the Willamette Valley; experiments in testing the value of irrigation in Western Oregon for general farm crops; tests for comparing the merits of Loganberries and Phenomenal berries; variety tests of strawberries; experiments in cross pollination of apples; co-operative work in the investigation of gummosis of the cherry; a study of the effects of the lime-sulphur spray under varying conditions; investigations of apple tree anthracnose, peach spot, potato blight, and celery leaf blight; a study of machine milking as compared with hand milking; investigations as to the relation of speed, the temperature, and the fat content of milk to the cream produced by hand separators; co-operative investigations with the department of bacteriology relative to the best manner of using "cultures" in butter and cheese-making; experiments in incubation to discover, if possible, the cause or causes of the great losses in artificial incubation; comparisons between hen-hatching and incubator-hatching; the humidity conditions of natural and artificial

methods of incubation; carbonic acid gas as a factor in incubation; feeding experiments to determine the value of various forage crops and cereals for the growing and fattening of hogs; experiments in the feeding of dairy cows; experiments in grazing and fattening swine; investigations in the economical production of beef and mutton.

COLLEGE SOCIETIES.

One of the most important factors in rounding out the results and benefits of a college course is the society, club, or association work. Because of the diverse interests of college life and the varied tastes of the students, the following organizations are maintained by students and faculty:

The Student Body Assembly. This is an organization of the entire student body, working under a constitution and by-laws approved by the faculty, and having general authority over all student enterprises. In order to secure an effective administration of the business coming within its jurisdiction, there are permanent committees on athletics, publications, oratory and debate, and such special committees as the assembly may by vote determine. Officers are elected yearly, and nominations and elections are conducted in a manner similar to that of the State electorate.

The Literary Societies. These twelve organizations—Sorosis, Pierian, Feronian, Utopian, Clionian, and Adelphae, for women; and Amicitian, Jeffersonian, Philadelphian, Zetagathian, Athenaeum, and Hesperian, for men—have the common purpose of promoting literary work among the students. The weekly literary programs and occasional joint meetings tend to this end. To stimulate interest in debate and oratory, there are held during the year inter-society, inter-collegiate and inter-State contests. Gold medals are presented to the winners in the two latter events, and the successful society in the former receives the "Gatch Cup." This is the silver cup that was presented in 1901 by Dr. Thomas M. Gatch, then President of the College, to the society that had received highest honors in the season's debates. Annually this cup is to go to the successful society in the debates, but is ultimately to become the property of the society winning it three years in

succession. Many and determined have been the battles for its possession, but the cup is still without a permanent home.

The Christian Associations. The religious work of the College is well cared for by the Young Men's and Young Women's Christian Associations, these organizations being particularly strong. The construction of Shepard Hall, the new student building, has materially increased the scope and added to the effectiveness of the work. The Associations aim to provide a moral atmosphere and pleasant social advantages for the students. Religious meetings are held in the rooms of these organizations every Sunday afternoon, and Bible Study classes are regularly conducted. On registration days, committees are on hand to assist students in adjusting their work satisfactorily, and securing comfortable quarters in good homes. Those who wish to make their way through college, will find the employment agencies always ready and glad to assist them as far as possible in procuring positions. For further information concerning these or other matters, address the General Secretary, Y. M. C. A., Corvallis.

The Athletic Association. This organization, maintained by the students through the student body assembly, encourages wholesome competition in the various outdoor and indoor sports and pastimes. It has charge of all details pertaining to the conduct of intercollegiate athletics in which the College may be interested. A committee of the faculty has general supervision over the whole subject of athletics, thus insuring a sound and conservative management.

The Oratorical Association. This body has immediate charge of all business pertaining to the competitive work in oratory and debate. Schedules, dates, prizes, conditions of competition and all similar matters are in its care.

The Dramatic Club. This club was organized for the purpose of offering special training in elocution and dramatic art. Membership is open to all students who desire to pursue work in these fields. Platform exhibitions will be given and standard plays presented during the College year.

The Sphinx. This is a senior honor society. Membership is

acquired by election based on prominence in student activities and scholastic excellence.

The International Club. This is an organization of foreign and American students. It is a local chapter of the Association of Cosmopolitan Clubs of the World. Its purpose is to provide social and educational advantages for its members and to promote international friendships. At present, nine nations are represented in the local chapter.

The Camera Club. The aim of this organization is the advancement of "camera craft." The regular discussions cover topics pertaining to lenses, cameras, camera outfits, plates, films, printing papers, negatives, lantern-slides, transparencies, and general technique, photographs for scientific purposes, photographic illustration, and demonstrations of material and processes.

Vorwaerts. This is the German club, membership in which is restricted to students in second-year or advanced German. Its object is to familiarize its members with the use of German, especially in conversation. To this end, all conversation in the regular weekly meetings is carried on in this language, and programs consisting of German plays, songs, readings, and the like are features of the club work.

The Agricultural Club. This club was established for the purpose of advancing interest in the various phases of agriculture, and promoting the investigation and discussion of both general and special agricultural subjects. Suitable programs are prepared for each meeting, and whenever practicable, leading authorities on practical agriculture are engaged to address the members.

The Lewelling Club. This is the horticultural club conducted under the auspices of the Horticultural Department. There is no regular organization, except an executive committee, which has power to transact such business as requires action on the part of the club. It is open to all students interested in horticulture.

Delta Theta Sigma. There is established at this College a local chapter of this national honorary agricultural fraternity. The aim of the society is to advance the study of agricultural subjects by giving honorable recognition to students taking the lead in the

work. Elections to membership are made by the faculty from the junior and senior classes.

The Forest Club. This is an association of students and instructors, "formed for the purpose of promoting the forestry interests of the State." In order to carry out its purpose, it meets twice each month for the discussion of current forestry literature, magazine articles, news items, legislation, and general progress movements pertaining to forests, forest service, forest products, forest industries, lumbering, and the lumber trade.

The Civil Engineering Club. This is an organization within the department of Civil Engineering. The active membership is drawn from the junior and senior classes, and the privilege of associate membership is extended to the members of the two lower classes. It meets weekly for the discussion of subjects of interest to the civil engineer.

The Electrical Engineers. This is a College branch of the American Institute of Electrical Engineers. The aim of the organization is to discuss the topics contained in the monthly proceedings of the A. I. E. E., and in this way develop an intimate knowledge of the activities of the national organization, thereby coming into closer touch with the practical problems in the engineering world and becoming better fitted for their life work.

The Miners' Association. This body has for its object the discussion of technical engineering subjects; the review of current mining literature; the presentation of original papers by the active members; and occasional lectures on special mining topics by men outside of the College.

Mechanical Engineers. This is a College branch of the American Society of Mechanical Engineers. The purpose of the association is to keep in touch with the practical problems of the engineering world.

The Margaret Snell Club. This is an organization for the purpose of bringing the girls of the Domestic Science and Art course into closer touch with each other and with the problems concerning their work. The meetings are devoted to the discussion of various questions in Domestic Science and Art, and to the presentation of lectures by authorities on these subjects.

The Commercial Club. This is a student organization within the School of Commerce. The purpose of the club is to bring its members into close relation with current methods and events in the commercial world. This is accomplished by discussions of topics pertaining to commerce by members of the club, and by addresses at various times during the year by men prominent in the fields of law and business. Active membership is open to the juniors and seniors of the school, and associate membership may be enjoyed by the underclassmen.

Science Club. This club is an association of faculty members and students who are interested in scientific work. It meets once a month for the purpose of discussing scientific subjects. Membership is open to all students taking work in the sciences.

The Pharmaceutical Association. The main purpose of this organization, which consists of the pharmacy students, is to bring its members into close relation with the current events of the pharmaceutical world. This is brought about by discussions in the meetings of topics pertaining to pharmacy, and by addresses at various times during the year by prominent pharmacists and salesmen of the State.

COLLEGE PUBLICATIONS.

Two classes of publications are issued from the College; one, official, published by the College authorities; the other, unofficial, and published by various student organizations.

The College publications include:

The Catalogue. Published at the close of the College year and containing much general and specific information as to the courses of study, equipment and instruction;

The Summer School. The announcements contain specific information of expenses, courses of instruction, character of the work presented, and the requirements that prospective students must meet;

The Winter School. The announcements carry such information regarding the winter courses as may fully present the advantages of these courses to the public;

The Department Circulars. These contain specific and technical

information, relating to the courses of study, departmental instruction, and those features of particular interest that appeal to the specialists along the several lines of industry represented by the various departments of the College;

The Station Bulletins. A series of special reports upon experimental investigations in agronomy, horticulture, dairying, animal husbandry, poultry husbandry, insect pests, plant diseases, and special subjects of interest to the husbandman.

The student publications comprise:

The Barometer. In March, 1896, the literary societies of the College began the publication of a monthly periodical, the "O. A. C. Barometer." The enterprise has met with deserved success, and "the organ of the student body" is now issued as a four-page, five-column semi-weekly. It publishes the "news of the College," literary and scientific articles, and is of general public importance as representing the interests, character and accomplishments of the student body of the College.

The Orange. This is the annual publication of the junior class, and made its initial appearance in 1907. It is a high-class publication, bound in flexible leather, and fully illustrated with photo-engravings, pen and ink sketches, line and wash drawings. It is a compendium of college life as seen by the juniors, brimful of wit, humor, sarcasm, sentiment and good will.

The Oregon Countryman. A monthly magazine published by the Agricultural and Domestic Science and Art students under the supervision of the faculties of these courses. Besides dealing with the work of the various departments in a practical manner, it contains articles of scientific value contributed by the Experiment Station workers. Successful men and women of the State contribute articles for each issue. Agricultural education in the secondary schools and nature-study work are strong features.

The Student Engineer. A magazine devoted to engineering and the mechanic arts. Its purposes are to record the engineering progress in the Northwest; to furnish news; to discuss methods relating to the mechanic arts; to publish records of scientific work done by the students in this institution; and to publish any matter of special technical and scientifc interest. Items of interest will

be found for civil, mining, mechanical, and electrical engineers, and for others who are engaged in technical pursuits. The journal is under the supervision of the faculty of the School of Engineering and Mechanic Arts, but the work and responsibilities of publication are borne by the staff, elected by the students of the School of Engineering.

STUDENT EXPENSES.

FEES.

Tuition is free. The regular College fees required of all students, with the exception of special students in Music, are as follows:

Entrance fee, payable annually on registration	$5.00
Diploma fee on graduation	5.00
Incidental (Student) fee, payable each semester	2.00
Entrance fee for Winter Short Courses	1.00

Students are charged small fees in the different laboratory courses to cover the cost of material used; and deposits are required to cover cost of breakage in laboratory courses where breakages are likely to occur. These fees are payable at the beginning of each semester. At the end of the semester deduction is made for actual breakage and the balance of the deposit is refunded to the student. The fees and deposits charged each semester in the different courses are as follows:

FEES AND DEPOSITS.

1910-1911.

	Fees.	Deposits.
Agronomy:		
Course C	$ .25	
Courses 3, 6, 10, 13	.50	
Courses 5, 12	1.00	$2.00
Course 9	1.00	
Course 15	1.00	3.00
Bacteriology:		
First semester	No fees	
Second semester	.50	1.00

Botany:		
Courses A, B, 1, 2 (per credit)	.50	
Courses 1, 2, 3, 4, 5, 8, 9, 10, 11	1.00	
Courses 6, 7	1.50	2.00
Business Administration:		
Courses A, B, C, D, E, F, 1, 2, 3, 4, 5, 6, 9	1.00	
Chemistry:		
Courses 5, 7, 8, 12, 13, 14, 15, 17, 18	3.00	2.00
Courses 1, 2, 3	3.00	1.50
Course 4	3.00	1.50
Course 6	3.00	1.50
Courses 10, 11	4.00	1.00
Dairy Husbandry:		
Courses A, 1	1.00	2.00
Courses B, 2, 3, 8, 10	1.00	
Course 11 (Special Winter Course)	3.00	2.00
Domestic Science:		
Courses E, F, 3, 8, 15, 16	.50	
Course 6	1.00	
Courses 19, 20	1.50	
Courses 12, 13	2.00	
Courses A, B, C, D, 1, 2, 7	3.00	
Courses 4, 5, 10, 14	3.50	
Domestic Art:		
Courses A, B, 1, 2, 5, 6, 14, 15, 17	.50	
Courses C, D, 3, 4, 16	.75	
Course 18	1.00	
Courses 7, 8, 9, 10	2.00	
Courses 11, 12	3.00	
Drawing:		
All courses in Freehand Drawing	.50	
Engineering:		
Civil—Courses 1, 3, 5, 7	1.00	
Electrical—All laboratory courses	2.50	5.00
Mechanical—Courses 11, 12	2.50	2.50
Mining—Course 7	10.00	

Forestry:		
Courses 11, 12	1.50	
Summer Camp	5.00	
Geology:		
Courses 3, 4, 6, 8	1.00	
Courses 1, 2	3.00	
Horticulture:		
Course 1	1.00	
Course 11	2.50	
Pharmacy:		
Courses 6, 7, 11	5.00	1.00
Physics:		
Courses A, B, 7, 8	.75	
Courses 3, 4, 5, 6, 9	1.50	
Courses 1, 2	1.25	
Courses 11, 12		2.00
Penmanship:		
Courses A, B, 1, 2	1.00	
Physical Education:		
All courses	1.50	

(All students using Gymnasium pay a fee of $1.50 per semester for which they are given use of all equipment, baths, and are furnished with towels, soap, and medical supplies for injuries.)

Shopwork:		
Courses A, B, C, D, E, F, G, H, I, O, P, and 5, 6, 9, 10, 12, 13	3.00	2.00
Courses J, K	5.00	
Courses L, 7, 8	2.00	
Courses 1, 2, 3, 4, 11	2.00	2.00
Stenography:		
Courses A, B, C, 1, 2, 3, 4, 5, 6, 7, 8	2.00	
Zoology, Entomology, and Physiology:		
Courses 1, 2, 3, 4, 5, 6	1.00	
Mechanic Arts (Winter Course):		
Woodwork	3.00	
Blacksmithing	3.00	

BOARD AND ROOM.

Board and room accommodations may be had either in private family or in the College dormitories.

Women's Dormitory. Waldo Hall, with its large, airy parlors, halls, music and play rooms, is a pleasant residence for the young women who come from distant homes. The building is supplied throughout with pure mountain water, hot and cold in each room, electric lights, steam heat and all modern conveniences. The rooms are furnished with an iron bedstead, a mattress, a chiffonier, a table, and chairs. Such other materials as are needed to make the furnishings complete, including pillows, pillow cases, sheets, blankets, bed spread, are furnished by the student; and many of the students prefer to make the rooms more homelike by bringing rugs, curtains, pictures, sofa cushions, etc. These latter articles, however, are not at all necessary. The rooms are cheerful and comfortable without additional furniture. The bed rooms average about 12 feet by 15 feet, with one window 3 feet by 7 feet. Many of the rooms are larger, and a few of them have two windows. Each student also furnishes her own towels and table napkins. Students who room together may choose to have a double bed or two single ones. Their preference must be indicated with application for a room. No definite promise for a single room can be made, the privilege of rooming alone depending upon the number of applications for rooms. The many advantages of having a room-mate should not be overlooked by the student in making her plans for her college life.

The conditions of living in Waldo Hall are such that the College considers it a distinct advantage to the women students to live in the dormitory. A wholesome, busy, student atmosphere is maintained. Reasonable freedom is allowed, but week nights are reserved for study. All girls entering the College are expected to live in the dormitory unless their parents reside in the city, or they are given special permission to live with relatives or friends who assume the responsibility of their care.

The expenses of living, for each student, in Waldo Hall are as follows:

Room deposit	$3.00
Room rent per semester—	
Single room	10.00
Double room	5.00
Board per week, payable monthly in advance	3.50
Use of laundry, per semester	.50

Students who are planning to enter the School of Domestic Science and Art, or to live in Waldo Hall, are asked to write for special circulars giving more detailed information than will be found in the Catalogue.

Men's Dormitory. Cauthorn Hall, as a home for young men while in College, offers many inducements. There is room for about one hundred students. Accommodations in this Hall are similar to those described for the Women's Dormitory, the rooms being furnished with iron bedstead, mattress, chiffonier, table, and chairs. Students furnish bed clothing and other articles as desired. The Hall is conducted on the club plan, all business connected with the management of the club being in the immediate charge of a Manager and Steward elected by the members of the organization. This plan has proved to be very popular and successful, so much so, that more than twice as many students have been turned away than it was possible for the Hall to accommodate. The building, though having been in use for many years, is yet very substantial and, with the late improvements, is very comfortable. It is heated with steam heat, has hot and cold water on every floor, with all modern lavatory conveniences. The club rents the building from the College at the rate of $5.00 per student per semester. The club purchases all the supplies in as large quantities as possible, and at the best possible advantage. The club also pays for all heating, lighting, and water supply. Each person pays his portion of the actual cost of living, which may be varied from time to time as the club wishes. The actual cost of living for the past year, including all expenses, is about $16.85 per calendar month, or $3.90 per week. Not only does the Hall afford a very comfortable home while in College at minimum

cost, but it is a place where friendships are formed which are never forgotten in after years.

Private Board. Board and room may be secured in private family in the City of Corvallis for from $3.50 to $4.50 per week. Good accommodations for self-boarding, or for club-boarding, can also be secured in the city. By clubbing, or renting rooms and boarding themselves, students materially reduce the cost of living. Students, however, will not be permitted to live at places not approved by the Faculty.

PERSONAL EXPENSES.

The personal expenses of students vary. Many students are able to go through the College year on a comparatively small amount. Books, including drawing instruments, will amount to between $10 and $25 per year. Each male student, immediately upon registration, is required to supply himself with military uniform, the cost of which will be approximately as follows: suit and cap, $15; tan shoes, $3.25; leggings, $1; gloves, 25c per pair; total $19.50. The uniform is very serviceable and is more economical than civilian clothing. Women pursuing work in physical culture are required to provide themselves with a gymnasium suit, consisting of blouse-waist and bloomers, with the regulation gymnasium shoes; the cost of the suit will be about $3.50. This suit should be serviceable for a number of years. The students in Domestic Science work provide themselves with cookery costume, consisting of dull blue dress, with white cap and apron. Students may make their own costumes, under the direction of the instructors in Domestic Art. The material will cost approximately $5.00.

SELF-SUPPORT.

Each year a number of students earn part or all of their expenses. The College employs a number of students in janitorial, farm, orchard, campus, laboratory, and clerical work. The two Christian Associations, the Y. M. C. A. and the Y. W. C. A., conduct an employment bureau; and, with the assistance of the College officials, do everything possible to help worthy students in the matter of securing employment. The policy of the College

is to reduce all necessary expenses to the minimum, and in this way to aid those whose means are limited. In this respect the conditions are favorable; but it is advised that persons entering the institution have definite resources sufficient to meet their expenses for a time at least. Students who desire to file their application for employment should write to the Secretary of the Y. M. C. A., care of the Oregon Agricultural College.

CONDITIONS OF ADMISSION

SECONDARY COURSES.

To enter these courses, applicants must have completed the work required in the eighth grade of the public schools. These courses are established for the benefit of persons who desire industrial training; and no students will be admitted to them except those who live in parts of the State where no provision is made in the public high schools for industrial work. The minimum age of those entering the Secondary courses in Agriculture, Forestry, Mechanic Arts, Domestic Science and Art, and Commerce; and the special winter courses in Agriculture, Mechanic Arts, and Domestic Science and Art, is fifteen years. Those entering as special students must be at least eighteen years of age.

Good moral character is a requisite for admission. Students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal.

DEGREE COURSES.

For admission to the freshman class in any course in the College, the applicant must be at least sixteen years of age and must have completed all the subjects prescribed in the first and second years of the Oregon State high school course, or their equivalent. Applicants who have not completed Plane Geometry and Drawing will be given an opportunity to make up such deficiency during their freshman year.

The following credits are entrance requirements for admission to the freshman year: English 2, Algebra 1½, Plane Geometry 1, Drawing ½, Bookkeeping ½, Electives 3½. A credit represents the work of thirty-six weeks with five recitations a week and forty-five minutes to the recitation. Certificates from accredited high schools and academies will be accepted in lieu of examinations. Students who have completed any of the Secondary industrial courses offered by the College may be admitted without examination to the corresponding degree courses.

LIST OF ACCREDITED SCHOOLS.

High Schools.

Albany
Ashland
Astoria
Athena
Baker City
Ballston
Bandon
Bay City
Bend
Bonanza
Brownsville
Burns (County)
Canyon City
Central Point
Coburg
Condon
Coquille
Corvallis
Cottage Grove
Cove
Creswell
Crook (County)
Dayton
Drain
Echo
Elgin
Enterprise (County)
Eugene
Falls City
Forest Grove
Fossil
Frankton
Grants Pass
Grass Valley
Gresham (District 4)
Haines
Halsey
Harney (County)
Harrisburg
Heppner
Hermiston
Hillsboro
Hood River (District 2)
Hood River (District 3)
Independence
Ione
Irrigon
Island City
Jacksonville
Jefferson
Junction City
Klamath Falls (County)
Lafayette
La Grande
Lakeview
Lebanon
Lexington
Lostine
Marshfield
McMinnville
Medford
Monmouth
Muddy Creek
Myrtle Creek
Myrtle Point
Nehalem
Newberg
North Bend
North Powder
Nyssa

Ontario
Oregon City
Parkplace
Pendleton
Portland
Prineville (County)
Roseburg
Salem
Scio
Seaside
Sheridan
Silverton
Springfield
St. Helens
St. Johns
Sumpter
The Dalles
Tillamook
Toledo
Union
Wallowa (County)
Wasco
Weston
Wheeler
Woodburn

Academies.

Allen Preparatory School
Hill Military Academy
Pendleton Academy
Portland Academy
St. Helen's Hall
Tualatin Academy

ENTRANCE REQUIREMENTS.

English.

The examinations in freshman English will include questions in grammar and elementary rhetoric, based on the work in English as given in the tenth grade of an Oregon High School; and, in addition, one or more essays, to test the student's readiness and accuracy of expression.

One of the essays, to be written at the examination, will be on some theme connected with one or more of the books in the following list:

Burke's *Speech on Conciliation with America*
Shakespeare's *Julius Caesar*
Shakespeare's *Merchant of Venice*
Macaulay's *Essay on Addison*
Macaulay's *Essay on Johnson*
George Eliot's *Silas Marner*
Coleridge's *The Ancient Mariner*
Carlyle's *Essay on Burns*

In every case, knowledge of the book will be regarded as less important than the ability to write good English.

The other test in composition will consist of the writing of two paragraphs of about one hundred and fifty words each on some familiar topics, to test the applicant's ability to use the English language. These topics will be chosen by the candidate from a considerable number, perhaps six or eight, set before him in the examination paper. There should be correct spelling, capitalization, punctuation and paragraphing. Applicants notably deficient in any one of these fundamentals can not be accepted.

Read three or more books from the following list for 1911:

Irving's *Life of Goldsmith*
Dickens' *A Tale of Two Cities.*
Goldsmith's *The Vicar of Wakefield*
Bunyan's *The Pilgrim's Progress*
Emerson's *Essays* (selections)
Hawthorne's *The House of Seven Gables*
Thackeray's *Henry Esmond*
Ruskin's *Sesame and Lilies*
Burroughs' *Essays* (selections)

Candidates presenting exercise books containing compositions or other written work properly certified to by the instructor, will be given credit for such work.

Mathematics.

For entrance into the freshman year, a thorough working knowledge of the following topics in Algebra is required: additon, subtraction, multiplication and division of positive and negative numbers, use of parentheses, factoring, highest common factor, lowest common multiple, fractions, fractional and literal equations, simultaneous equations, problems involving linear equations with one or more unknown numbers, graphical representation of simultaneous linear and quadratic equations, involution, evolution, theory of exponents, radical expressions, imaginary numbers, quadratic equations, problems involving quadratic equations with one unknown number, equations in the quadratic form, factoring of quadratic equations, solution of quadratic equations by factoring,

simultaneous quadratic equations, problems involving simultaneous quadratic equations with two unknown numbers.

The requirements in Plane Geometry are the five books of Wentworth's Plane Geometry, or of any other standard text on the subject. That the student may be trained to think for himself, and not be dependent upon the published proofs of the text, much importance is placed upon the proving of original exercises. It is strongly advised that students preparing for entrance examination in Geometry, devote considerable time to the study of original exercises.

Bookkeeping.

The entrance requirements for the freshman year in Bookkeeping are, a thorough knowledge of the rules of journalizing; posting; drawing and interpreting simple commercial forms.

Drawing.

Students having one-half credit in drawing will be admitted to the freshman year without condition, as stated under Entrance Requirements. All others will be required to take Drawing A and B or C.

ADVANCED STANDING.

Certificates of work completed in other institutions of recognized standing may be received in lieu of examinations for advanced standing, to the extent that such work is equivalent to the corresponding work required in the College courses.

SPECIAL STUDENTS.

Persons of the required age may be admitted as special students, provided they give satisfactory evidence of proper preparation for the studies desired, and have not already been admitted to the College, nor, having applied for admission, been rejected. 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.

IRREGULAR STUDENTS.

Applicants who meet all the entrance requirements may be admitted as irregular students, upon presenting satisfactory evidence that they are unable, because of poor health, or outside business or professional duties, to take a full course.

REGISTRATION.

All candidates for admission must present themselves for registration at the College on September 23 and 24, 1910. Registration at a later date will be permitted only on the presentation of a satisfactory reason for the delay. Students in all courses register at the beginning of the collegiate year for the work of the entire year. Credit for work not so registered, and changes in registration, will be allowed only by special permission of the College Council.

GRADUATION.

The degrees of Bachelor of Science in Agriculture, in Forestry, in Domestic Science and Art, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering, in Mining Engineering, in Commerce, and in Pharmacy, are conferred upon those who have satisfactorily completed the respective four-year courses. A graduate in any of the courses may receive the bachelor's degree in any other course by completing the studies required in that course.

Advanced degrees are conferred upon graduates of this College, or other colleges and universities of approved standard, as follows: (1) Civil Engineer (C. E.), Electrical Engineer (E. E.), Mechanical Engineer (M. E.), and Mining Engineer (E. M.), upon those who have satisfactorily completed one year's graduate work in the respective engineering courses; (2) the degree of Master of Science (M. S.) in Agriculture, in Domestic Science and Art, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering, and in Mining Engineering, upon those who satisfactorily complete two years' graduate work in the respective courses, at least one of which shall be in residence at the College; and who prepare a thesis, based upon original research, which shall show scholarly acquirements of a high order.

COURSES OF STUDY

The Oregon Agricultural College offers the following courses of study, each of which extends over four years, and leads to the degree of Bachelor of Science: Agriculture, including degree courses in Agronomy, Animal Husbandry, Dairy Husbandry, Horticulture, Poultry Husbandry, Agricultural Chemistry, Bacteriology, Entomology; Forestry; Domestic Science and Art; Mechanical Engineering; Electrical Engineering; Mining Engineering; Civil Engineering; Commerce; Pharmacy.

In addition to the above courses, provision has been made for the following secondary courses: Two-year courses in Agriculture, Forestry, Mechanic Arts, Domestic Science and Art, and Commerce.

During the year there are also offered the following short courses: A six-week course in Agronomy; a six-week course in Animal Husbandry; a six-week course in Horticulture; a six-week course in Dairying; a six-week course for Forest Rangers; a six-week course in Domestic Science and Art; Farmers' Week, and a six-week Summer School for Teachers.

COURSES IN AGRICULTURE.

The School of Agriculture offers a two-year course in secondary Agriculture; a four-year course leading to the degree of Bachelor of Science; a six-week winter course in Agronomy; a six-week winter course in Animal Husbandry; a six-week winter course in Dairying; a six-week winter course in Horticulture; and a Farmers' Week.

The two-year course is provided especially for those who have no opportunity to pursue their public school course beyond the eighth grade, or who from necessity or choice, desire, upon completing the work of this grade, to obtain as quickly as possible a working knowledge of the principles of agricultural science and practice. The technical instruction given during the course includes courses in Agronomy, Animal Husbandry, Horticulture, Dairy

Husbandry, Botany, Physiography, Business Administration, Drawing, Woodwork and Blacksmithing. Courses in English, Mathematics and History are provided so that students who finish these subjects and who so desire will be fully prepared to enter upon the degree course. This course also offers exceptional opportunities to teachers who desire to prepare themselves to teach elementary agriculture in the public schools. Such persons, if they so desire, may, upon registering as Special Students, be allowed to elect a complement of courses in Agricultural and Industrial Pedagogics, and thus be enabled to obtain a maximum of technical training in a minimum of time.

The four-year course is a continuation of the Secondary course; but students who have completed the work of the tenth grade of the public schools, including Plane Geometry and Drawing, will be permitted to register without conditions.

The various subjects of instruction may be conveniently arranged into three groups, each of which requires approximately one-third of the student's time: (a) Sciences related to agriculture, i. e., Botany, Zoology and Entomology, Chemistry, Physics, and Bacteriology; (b) technical agricultural subjects, i. e., Agronomy, Animal Husbandry, Dairy Husbandry, Horticulture, Poultry Husbandry, and Veterinary Science; (c) non-technical subjects, i. e., English Language and Literature, Mathematics, History, Economics, Modern Languages, Drawing, and similar subjects.

The subjects of the first group are designed to furnish the student with an insight into the principles of agricultural science. In the second group he learns of the application of these principles and also studies, both theoretically and practically, various subjects of agricultural technology. The subjects of the third group tend further to develop the student's intellect, broaden his view, and train him in good citizenship.

To indicate briefly the nature of the work, it may be stated that in the courses in Agronomy, the student studies the origin, structure, fertility, cultivation, and improvement of various soils; the history, growth, culture, improvement, and value of the different field crops; the structures, machinery, drainage, and irrigation of the farm; and the history, economics, methods, and business

principles of farm management. There is also a thorough course in Business Administration, which will be given by the School of Commerce. In the course in Animal Husbandry, consideration is given to the history and characteristics of the various breeds of live-stock; the principles of breeding; the principles and practices of feeding with particular reference to conditions in this State; and by almost constant practice in stock judging, the student is made familiar with the good points of the various breeds. In Horticulture the student studies the problems of the orchard and garden, such as choice of site, soils, planting, pruning, choice of varieties, sprays and spraying, and thinning; he obtains instruction and practice in the propagation of plants by various methods; in the harvesting, packing, storage and marketing of fruits; he may study the principles of plant breeding or the construction and management of greenhouses or the culture of small fruits and vegetables for market or canning purposes. In Dairy Husbandry he studies the secretion, composition, and separation of milk; the proper handling of milk and cream; and obtains abundant practice in the use of the Babcock and other tests, in butter and cheese making and in creamery practice. A department of Poultry Husbandry has recently been organized, and now offers to students exceptional opportunities to specialize in this line. The instruction will include a study of breeds, the principles of feeding, housing and incubation, and will be supplemented by practical work on the farm. The organization of a department of Veterinary Science has been authorized by the Board of Regents.

The aim of the two and four-year courses is to train young men to become successful farmers, stockmen, and fruit growers; to prepare them to become specialists in some branch of agricultural college or experiment station work; or to fit them to become teachers of agriculture in the public schools. In short, they offer to those who have faith in the farm and in rural life, opportunities for intellectual development and technical training equal to those provided for the educated in other professions.

The courses extending through one week and six weeks are designed for special purposes, and it is the aim in each to furnish the greatest amount of special information in the least possible

time. They are provided especially for those who desire technical training in some particular phase of agriculture, but have not the time nor the opportunity to pursue either of the degree courses.

SECONDARY COURSE IN AGRICULTURE.

First Year.

	Semesters. 1st.	2nd.
Advanced Grammar I, II (English A B)	3	3
Classics I, II (English C, D)	2	2
Algebra I, II (Mathematics A, B)	5	5
Ancient History (History A)	3	
Mediaeval and Modern History (History B)		3
Drawing I, II (Art A, C)	2	2
Soils (Agronomy A)	1	
Crops (Agronomy B)		1
Stock Judging (Animal Husbandry A)	2	
Farm Dairying I (Dairy Husbandry A)		2
Elementary Orchard Practice (Horticulture A)	2	
Elementary Plant Propagation and Vegetable Gardening (Horticulture B)		2
	20	20

Second Year.

Rhetoric and Composition I, II (English E, F)	3	3
Classics III, IV (English G, H)	2	2
Algebra III, Geometry I, II (Math. C, D, E)	5	5
Business Methods I, II (Bus. Ad E, F)	2	2
Farm Dairying II (Dairy Husbandry B)	2	
Elementary Farm Mechanics (Agronomy C)		2
Veterinary Science (Animal Husbandry B)	1	
Practical Stock-Feeding (Animal Husbandry C)		2
Plant Relations (Botany C)		2
Physiography A	3	
Woodwork V (Shopwork G)	2	
Blacksmithing III (Shopwork L)		2
	20	20

DEGREE COURSE IN AGRICULTURE.

Freshman Year.

	Semester. 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading I, II (English 3, 4)	2	2
Trigonometry II (Mathematics 2)	3	
General Chemistry I (Chemistry 1)	4	
General Chemistry II (Chemistry 2)		4
Principles of Botany I, II (Botany 1, 2)	3	3
Basic Agronomy (Agronomy 1)	3	
Crop Production (Agronomy 2)		2
Plant Propagation (Horticulture 1)		2
Stock Judging II (Animal Husbandry 1)		2
Woodwork X (Shopwork 4)	2	
Blacksmithing VI (Shopwork 7)		2
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.

General Physics I, II (Physics 1, 2)	3½	3½
Modern Language I, II (French, German, or Spanish)	3	3
Rural Economics (Political Economy 10)		3
Agricultural Botany (Botany 5)		3
Zoology I, II (Zoology 1, 2)	3	3
Agricultural Chemistry I, II (Chemistry 10, 11)	2½	2½
Drainage and Irrigation (Agronomy 3)		3
Live Stock Management (Animal Husbandry 2)	3	
Milk and Cream Testing (Dairy Husbandry 1)	2	
Orchard and Garden Practice (Horticulture 2)	3	
Elementary Bacteriology (Bacteriology 1)	1	
	21	21

Junior Year.

Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1

Modern Language III, IV (French, German, or Spanish)	3	3
Major Electives, not over	7	7
Minor Electives, not less than	5	5
Theoretical Instruction I, II (Military Science 1,2)	1	1
	17	17

Senior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
Major Electives, not over	8	8
Minor Electives, not less than	6	6
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

TRANSITION COURSE IN AGRICULTURE.

1910-1911.

Junior Year.

	Semester. 1st.	2nd.
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language III, IV (French, German, or Spanish)	3	3
General Physics I, II (Physics 1, 2)	3½	3½
Major Electives	5	5
Minor Electives	3½	3½
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
Modern Language V, VI (French, German or Spanish)	3	3
Major Electives, not over	6	6
Minor Electives, not less than	5	5
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

All students working for degrees will be required to carry 17 credits throughout the Junior and Senior Years. Subjects other than those prescribed must be elected upon consultation with the head of the department with whom the major is taken. The major must be elected in one of the following departments: Animal Husbandry, Agronomy, Dairy Husbandry, Horticulture, Poultry Husbandry, Agricultural Chemistry, Bacteriology, Entomology, or Botany. The minors may be elected from any of the above departments, or from the departments of English, Mathematics, Physics, Commerce, or Civil Engineering. Students who so desire, may elect a course in General Agriculture upon consultation with the Dean of the School of Agriculture.

COURSE IN FORESTRY.

The forests of Oregon constitute a source of wealth second only to agriculture. The fast vanishing timber supply of other sections of the United States points clearly to the concentration of the demand for that product on the forests of this and other states of the Northwest. The evidence of an approaching timber famine is already apparent in the keen competition for the possession of forest lands, and it will become more apparent as the supply of forest products decreases. The sharp advance in the price of stumpage during the past few years, together with a better conception of what can be accomplished through forestry methods, has impressed timber owners with the desirability of adopting improved methods of managing and utilizing their properties.

The timber land of the State, both in private and in public ownership, has a two-fold value to the commonwealth. It carries immense wealth in the present stand of timber, and it has the potential value of being able to reproduce a forest when the present stand is removed. The forest land, then, like agricultural land, with wise management can be made to yield a perpetual revenue.

To meet the needs of the State in the conservation and development of its forest resources, the College has provided a regular course of four years which will be supplemented with a winter

short course. While the purpose of the four-year course is to supply the student with all the technical instruction practicable, it takes full cognizance of the fact that a forester should also be prepared for citizenship. To this end, the course of study covers a field more liberal than that of a purely technical course. The aim of the course, then, is to train a force of men fitted to do a good work in bringing the forest resources of the State to the highest degree of continued productiveness.

SECONDARY COURSE IN FORESTRY.

First Year.	Semesters, 1st.	Semesters, 2nd.
Advanced Grammar I, II (English A, B)	3	3
Classics I, II (English C, D)	2	2
Algebra I, II (Mathematics A, B)	5	5
Ancient History (History A)	3	
Mediaeval and Modern History (History B)		3
Elementary Drawing (Art A)	2	
Scientific Drawing I (Art C)		2
Business Methods I, II (Business Administration E, F)	2	2
Elementary Forestry I, II (Forestry A, B)	3	3
	20	20

Second Year.		
Rhetoric and Composition I, II (English E, F)	3	3
Classics III, IV (English G, H)	2	2
Algebra III, Geometry I, II (Mathematics C, D, E)	5	5
Silviculture I, II (Forestry C, D)	2	2
Plant Relations (Botany C)		2
Veterinary Science (Animal Husbandry B)	1	
Civil Government (Political Science A)	2	
Elementary Commercial Law II (Political Science C)		2
Mechanical Drawing I (Mechanical Engineering 1)	3	
Woodwork V (Shopwork G)	2	
Blacksmithing III (Shopwork L)		2
Range Management (Animal Husbandry 6)		2
	20	20

DEGREE COURSE IN FORESTRY.

Freshman Year.

	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics (English 3, 4)	2	2
Trigonometry I and College Algebra I (Math. 1, 4)	5	
Plane Surveying I (Civil Engineering 1)		5
General Chemistry I (Chemistry 1)	4	
General Chemistry II (Chemistry 2)		4
Principles of Botany I, II (Botany 1, 2)	3	3
General Forestry (Forestry 1, 2)	3	3
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.

Modern Language I, II (French, or German)	3	3
General Physics III, IV (Physics 3, 4)	5	5
Zoology I, II (Zoology 1, 2)	3	3
Plant Histology (Botany 3)	3	
Morphology and Taxonomy of Seed Plants (Botany 4)		3
Silviculture III (Forestry 3, 4)	3	4
Topographic Surveying (Civil Engineering 5)	4	
General Geology (Geology 3)		3
	21	21

Junior Year.

Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language II, IV (French or German)	3	3
Plant Physiology I, II (Botany 6, 7)	3	3
Principles of Plant Pathology (Botany 8)	3	
Diseases of Forest and Shade Trees (Botany 11)		3
Introductory Entomology (Zoology 8)	3	

Forest Entomology (Zoology 11)		3
Mensuration and Survey I, II (Forestry 5, 6)	3	3
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Composition of Addresses (Public Speaking 3)	2	
Elements of Steam Engineering (Mech. Eng. 9)	2	
Management I, II (Forestry 7, 8)	5	5
Utilization (Forestry 9)	2	
Lumbering (Forestry 10)		5
Dendrology (Forestry 11)	3	
Wood Technology (Forestry 12)		3
Wood Preservation (Forestry 13)	2	
National Forest Administration (Forestry 14)		3
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

Note.—Substitutions for other courses:

Camp management, Forestry 15, no credit.

Field work, Forestry 16. Eight weeks between the junior and senior years, 4 credits.

COURSES IN DOMESTIC SCIENCE AND ART.

The purpose of the School of Domestic Science and Art is the discovery and development of woman's potentialities which are frequently neglected in her education and the solution of problems in her life not usually solved by her education.

The school aims to make the woman it graduates a woman of culture and broad interests, able to cope successfully with life's problems, particularly those distinctly her own. With this aim in view it offers courses in English, Mathematics, History and the Languages, as well as courses in the sciences fundamental to the understanding of proper cooking and hygienic living; also courses in Art to train the eye and the hand and to form a basis for

constructive art work, such as is appropriate to courses in Basketry, Weaving, House-Construction and Decoration. The student has an opportunity frequently to apply her class work to real problems in decoration for social functions and in the preparation of the refreshments for such entertainments as are given by the College. This work should also prepare a woman to deal successfully with various phases of professional work along the lines of Domestic Science and Art in which there is a growing demand for well trained women.

SECONDARY COURSE IN DOMESTIC SCIENCE AND ART.

First Year.

	Semesters, 1st.	2nd.
Advanced Grammar I, II (English A, B)	3	3
Classics I, II (English C, D)	2	2
Algebra I, II (Mathematics A, B)	5	5
Ancient History (History A)	3	
Mediaeval and Modern History (History B)		3
Drawing I, II (Art A, C)	2	2
Plain Cookery I, II (Domestic Science A, B)	3	3
Plain Sewing I, II (Domestic Art A, B)	2	2
	20	20

Second Year.

Rhetoric and Composition I, II (English E, F)	3	3
Classics III, IV (English G, H)	2	2
Algebra III, Plane and Solid Geometry (Math. C, D, E)	5	5
Drawing III, IV (Art D, E)	2	2
Essentials of Botany I, II (Botany A, B)	2	2
Cookery, Serving, Simple Dietetics I, II (Dom. Sci. C, D)	2	2
Sewing, Simple Dresses and Millinery I, II (D. A. C, D)	3	3
Laundering I, II (Domestic Science E, F)	1	1
	20	20

DEGREE COURSE IN DOMESTIC SCIENCE AND ART.

Freshman Year.

	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading I, II (English 3, 4)	2	2
General Chemistry (Chemistry 3)	4	
Elementary Organic Chemistry (Chemistry 4)		4
Botany I, II (Botany 1, 2)	3	3
English History (History 1)	3	
United States History (History 2)		3
Science of Cookery I (Domestic Science 1)	3	
Science of Cookery II (D. S. 2) or Simple Dietetics (D. S. 3)		3
Sewing I, II (Domestic Art 1, 2)	2	2
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.

Exposition and Argumentation (English 5)	3	
The Essay (English 6)		3
Modern Language I, II (French, German, or Spanish), or Latin I, II	3	3
Physics VII, VIII (Physics 7, 8)	3	3
Chemistry of Foods (Chemistry 14)	4	
Zoology III (Zoology 3)		3
Design I, II (Art 2, 3)	2	2
Simple Dressmaking, Hand Sewing and Millinery I, II (Domestic Art 3, 4)	3	3
Advanced Cookery I, II (Domestic Science 4, 5)	3	3
Laundering III (Domestic Science 6)		1
	21	21

Junior Year.

English Literature I, II (English 7, 8)	3	3
Modern Language III, IV (French, German, or Spanish), or Latin III, IV	3	3
Physiology and Hygiene I, II (Zoology 4, 5)	3	3
Home and Private Business Management (Bus. Adm. 9)	2	
Floriculture (Horticulture 29)	2	
Landscape Gardening (Horticulture 30)		2
Dressmaking and Tailoring (D. A. 5), or Special Cookery (D. S. 7)	2	
Home Nursing (Domestic Science 8)		1
House Construction and Decoration (D. A. 6)		3
Basketry I, II (D. A. 7, 8) 2 credits each semester		
or		
Marketing (D. S. 9) and	2	
Home Problems (Domestic Science 10)		2
	17	17

Senior Year.

American Literature I, II (English 9, 10)	2	2
General Psychology (Psychology 1)	3	
Bacteriology I, II (Bacteriology 6, 7)	2	2
House Sanitation (Domestic Science 11)		2
Vegetable Gardening and Small Fruit Culture (Hort. 31)		3
Thesis	2	2
Electives	8	6
	17	17

SECONDARY COURSE IN MECHANIC ARTS.

The Secondary Course in Mechanic Arts is designed to meet the needs of those students who desire industrial training. It is open to those who have completed the eighth grade State examinations, provided they do not come from places where local high schools are offering the same line of work. It is thought that this course will be helpful to those who desire to become workers in wood or

metal; to those who wish to teach industrial work in the schools of the State, or elsewhere, as well as to those who intend to take one of the degree courses later. The scope of the work is necessarily more limited than in the degree courses, but special stress is laid upon the industrial features. The tendency of modern education is toward industrial training. Many believe that this training should begin in the common schools. If so, colleges and secondary schools must supply teachers who are proficient in this work.

In this course, one-third of the student's time must be given to the distinctively industrial work. Woodwork is required during the first year, but considerable latitude is allowed in the selection of the work of the second year.

The student is brought into actual contact with the work itself by being required to become proficient in the construction of useful articles of wood and metal. The purpose throughout is to combine the training of mind, hand, and eye in a manner that will enable the student to formulate plans rapidly and execute them skilfully.

First Year.

	Semesters, 1st.	2nd.
Advanced Grammar I, II (English A, B)	3	3
Classics I, II (English C, D)	2	2
Algebra I, II (Mathematics A, B)	5	5
Ancient History (History A)	3	
Mediaeval and Modern History (History B)		3
Drawing I (Art A)	2	
Machine Sketching (Art B)		2
Woodwork I, II (Shopwork A, B)	5	5
	20	20

Second Year.

Rhetoric and Composition I, II (English E, F)	3	3
Classics III, IV (English G, H)	2	2
Algebra III, Geometry I, II (Math. C, D, E)	5	5
Elementary Physics I, II (Physics A, B)	3	3

Business Methods I, II (Bus. Ad. E, F)	2	2
Woodwork III and IV (Shop. C, D), Patternmaking I, II (Shop. E, F), Woodwork VI, VII (Shop. H, I) Woodwork XI XII (Shop. O, P), or Blacksmithing I, II (Shop. J, K)	5	5
	20	20

COURSE IN CIVIL ENGINEERING.

The purpose of this course is to give the student thorough theoretical instruction, accompanied by as much laboratory and field practice as possible. The course includes such basic studies as English, Mathematics, Chemistry, Physics, Drawing, Materials of Engineering, Applied Mechanics and Hydraulics, in addition to the technical work given by this department. During the sophomore and junior years the student may take either German, French or Spanish. In addition to the required studies, the student has opportunity, during the senior year, to elect from the other engineering courses subjects that may be of special interest to him.

Recognizing the value of drawing to the professional engineer as a means of expressing his ideas and of carrying out his plans, and also as a means by which the young graduate may enter some of the most desirable positions, the department lays special emphasis upon this subject. Besides the general course given in Mechanical Engineering and required of students in the course in Civil Engineering, three additional and more technical courses are required in the Civil Engineering course. One of these, a course in Lettering and Title Design, is given by the department of Art, the others by this department. Much additional drawing is required in connection with the preparation of plans and working drawings as part of the office work of the higher technical courses.

The work in Field Surveying begins with the freshman year, and continues through the sophomore year, with from six to ten hours of field practice a week. The student serves in subordinate positions at first, and gradually advances as a knowledge of the

instruments is acquired until he is placed in charge of field parties and is held responsible for the results accomplished. During the freshman year he is given practice in land surveying and leveling, and in topographic and railroad surveying during the sophomore year. At all times conscientious attention to duty, accuracy and speed will be demanded. Every student keeps full and accurate notes of all work done in the field. These, after being criticised, are transcribed and filed with the instructor.

In the study of Highways, special reference is made to the conditions and needs in Oregon. Due consideration is given to the drainage, and maintenance of dirt and gravel roads. In consequence of the vast area of the State, this class of roads must, of necessity, constitute the greater part of its highways for many years. The courses in theoretical and applied hydraulics cover a period of one and a half years. The various irrigation projects of Oregon offer excellent opportunities for study and work to our students and graduates.

DEGREE COURSE IN CIVIL ENGINEERING.

Freshman Year.

	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading (English 3)	2	
Trigonometry I, College Algebra I, II (Math. 1, 4, 5)	5	5
Spherical Trigonometry (Mathematics 3)	1	
General Chemistry I (Chemistry 1)	4	
General Chemistry II (Chemistry 2)		4
Mechanical Drawing I (Mechanical Engineering 1)	3	
Descriptive Geometry (Mechanical Engineering 2)		3
Plane Surveying I (Civil Engineering 1)		5
Freehand Lettering and Title Design (Art 1)	2	
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.

Analytic Geometry, Calculus I, II (Math. 6, 7, 8)	5	5
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
General Physics III, IV (Physics 3, 4)	5	5
Modern Language I, II (French, German, or Spanish)	3	3
Topographic Surveying (Civil Engineering 5)	4	
Railroads I, II (Civil Engineering 6, 7)	1	5
Engineering Drawing I, II (C. E. 3, 4)	2	2
	21	21

Junior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
Modern Language III, IV (French, German, or Spanish)	3	3
Statics and Dynamics (Mechanical Engineering 5)	4	
Strength of Materials (Mechanical Engineering 6)		2
Hydraulics (Mechanical Engineering 7)		2
Materials of Engineering (M. E. 8)	2	
Engineering Laboratory (M. E. 11, 12)	2	2
Highway Construction (Civil Engineering 8)	3	
Engineering Seminar I (Civil Engineering 16)		1
Masonry and Foundations (Civil Engineering 9)		4
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Roofs and Bridges I, II (Civil Engineering 10, 11)	4	4
Sanitary Engineering (Civil Engineering 12)	3	
Water Supply Engineering (Civil Engineering 13)	3	
Contracts and Specifications (Civil Engineering 15)		1
Irrigation Engineering (Civil Engineering 14)		4
Engineering Seminar II, III (Civil Engineering 17, 18)	1	1
Electives	5	6
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

TRANSITION COURSE IN CIVIL ENGINEERING.

(Effective for the year 1910-1911)

Junior Year.

	Semesters, 1st.	2nd.
Analytic Geometry, Calculus I, II (Mathematics 6, 7, 8)	5	5
Argumentative Themes (Public Speaking 1)	1	
Presentation (Public Speaking 2)		1
Modern Language III, IV (French, German, or Spanish)	3	3
Topographic Surveying (Civil Engineering 5)	3	
Railroads I, II (Civil Engineering 6, 7)	2	5
Engineering Geology (Geology 4)		3
Materials of Engineering (Mechanical Engineering 8)	2	
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	18

Senior Year.

Statics and Dynamics (Mechanical Engineering 5)	4	
Strength of Materials (Mechanical Engineering 6)		2
Hydraulics (Mechanical Engineering 7)		2
Engineering Laboratory (M. E. 11, 12)	2	2
Highway Construction (Civil Engineering 8)	5	
Masonry and Foundations (Civil Engineering 9)		5
Engineering Seminar I, II (Civil Engineering 16, 17)	1	1
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
Electives	4	4
	17	17

COURSE IN ELECTRICAL ENGINEERING.

It is a fact well known to engineers that the development of water power in Oregon has only begun, and when all of the streams are generating electrical energy for railways, lighting and manufacturing purposes, there will be several millions of horse power continually in the service of mankind. The value of the output of the large hydro-electric plants then in operation will be enormous.

Owing to the depletion of the coal supply with the progress of time, the water wheel must ultimately be substituted for the steam engine in the manufacturing of many products. Processes in the reduction of metals; in the making of abrasives; and in the manufacture of chemicals, including nitric acid and nitrates, for fertilizers, may all be carried on in this State to advantage because of the cheapness of electrical energy obtained from the mountain streams. The field of electro-chemistry is a promising one to those who have tastes leading them in that direction. The installation and operation of power systems will require the employment of many highly trained young men.

Because of these great opportunities much stress is laid upon the studies which will best fit the student for his chosen work. The course is so designed, however, that theory given in the class room is supplemented by its practical application in the shops and laboratories.

The first two years are devoted to the same studies as are required in Mechanical Engineering. At the beginning of the third year the real professional work is taken up and continued to the end of the course. A study is made of the structure and principles involved in the design of the several types of dynamos, and electrical appliances; of the operation of machines and apparatus; of their commercial applications; and of the phenomena incident to the use of high tension alternating currents, the College substation of a long-distance transmission line being available for illustrative and testing purposes.

DEGREE COURSE IN ELECTRICAL ENGINEERING.

Freshman Year.

	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics I, II (English 3, 4)	2	2
Trigonometry I, College Algebra I, II (Math. 1, 4, 5)	5	5
General Chemistry I (Chemistry 1)	4	
General Chemistry II (Chemistry 2)		4
Mechanical Drawing I (Mechanical Engineering 1)	3	

Descriptive Geometry (Mechanical Engineering 2)....		3
Woodwork VIII (Shopwork 1).....	3	
Patternmaking III (Shopwork 2).....		3
Library Practice (Library 1).....	1	
Hygiene (Physical Education 9).....		1
	21	21

Sophomore Year.

Analytic Geometry and Calculus I, II (Math. 6, 7, 8)..	5	5
General Physics III, IV (Physics 3, 4).....	3	3
Argumentative Themes, Presentation (Public Speaking 1, 2).....	1	1
Modern Language I, II (French, German, or Spanish)..	3	3
Mechanical Drawing II (Mechanical Engineering 3)..	4	
Mechanism (Mechanical Engineering 4).....		4
Blacksmithing IV (Shopwork 5).....	3	
Machine Shop (Mechanical Engineering 9).....		3
	21	21

Junior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4).....	2	2
Modern Language III, IV (French, German, or Spanish)	3	3
Statics and Dynamics (Mechanical Engineering 5)....	4	
Strength of Materials (Mechanical Engineering 6)....		2
Hydraulics (Mechanical Engineering 7).....		2
Electrical and Magnetic Measurements (Physics 9)...	2	
Steam Machinery (Mechanical Engineering 10).....		2
Dynamo-Electric Machinery (Electrical Engineering 1)	3	
Alternating Currents (Electrical Engineering 2).....		3
Electrical Engineering Laboratory I, II (E. E. 4, 5)..	2	2
Theoretical Instruction I, II (Military Science 1, 2)..	1	1
	17	17

Senior Year.

American Literature (English 8, 9)	2	2
Advanced Alternating Currents (E. E. 3)	3	
Power Plants (Electrical Engineering 11)		3
Electrical Design I, II (Electrical Engineering 9, 10)	3	3
Electrical Engineering Laboratory III, IV (E. E. 6, 7)	2	2
Electrical Distribution (Electrical Engineering 8)	2	
Thesis (Electrical Engineering 16)	1	1
Telephony (Electrical Engineering 15)		2
Storage Batteries (Electrical Engineering 14)		1
Thermodynamics (Mechanical Engineering 15)	3	
Engineering Laboratory II (M. E. 12)		2
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

TRANSITION COURSE IN ELECTRICAL ENGINEERING.

Junior Year.

	Semesters, 1st.	2nd.
Analytic Geometry, Calculus I, II (Math. 6, 7, 8)	5	5
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language I, II (French, German, or Spanish)	3	3
Steam Machinery (Mechanical Engineering 10)		2
Electrical and Magnetic Measurements (Physics 9)	2	
Dynamo-Electric Machinery (E. E.)	3	
Alternating Currents (Electrical Engineering 2)		3
Electrical Engineering Laboratory I, II (E. E. 4, 5)	2	2
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Composition of Addresses (Public Speaking 3)	2	
Modern Language III, IV (French, German, or Spanish)	3	3

Statics and Dynamics (Mechanical Engineering 5)....	4	
Strength of Materials (Mechanical Engineering 6)....		2
Hydraulics (Mechanical Engineering 7).....		2
Advanced Alternating Currents (E. E. 3).....	3	
Power Plants (Electrical Engineering 11).....		3
Electrical Design (Electrical Engineering 9, 10).....	2	2
Electrical Engineering Laboratory III, IV (E. E. 6, 7)	2	2
Thesis (Electrical Engineering 16).....		2
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

COURSE IN MECHANICAL ENGINEERING.

The course in Mechanical Engineering has for its purpose the preparation of young men for positions of usefulness and responsibility in the industrial life of the country.

The Pacific Northwest is just now entering upon a period of rapid progress in the building of railroads, the development of water power, the marketing of forest products, and the upbuilding of manufactories; all of which require men conversant with the general principles of engineering. It is the purpose of all engineering courses to contribute to this general advancement by turning out graduates equipped with the necessary knowledge and skill to make them active factors in this great work.

It is the general plan of the course in Mechanical Engineering to lay a broad foundation in English, Mathematics, Chemistry, and Physics, accompanied by Drawing and Shopwork, during the first two years of the course. The work of the last two years is more technical and professional in its nature consisting in a study of the principles involved in the development of power by steam engines, water wheels, gas and gasoline engines, and steam turbines. It also involves a critical study of the design of machines and materials entering into their construction, as well as tests to determine their efficiency.

Instruction is given by means of lectures, recitations, and laboratory exercises. The scientific principles involved in machines and mechanical movements are taught in the class room

as well as the application of mathematics to the solution of problems in mechanical engineering. In the shops, the student learns the use of tools and the value of different methods of doing work from the standpoint of economical construction. In the drafting room, he learns to make working drawings and blueprints of machines, and to formulate designs of his own.

With these advantages to aid him, the ambitious student should be able to take and maintain a position in the general industrial and engineering development which is the leading and characteristic feature of the age in which we live.

DEGREE COURSE IN MECHANICAL ENGINEERING.

Freshman Year.	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading (English 3, 4)	2	2
Trigonometry I, College Algebra I, II (Math. 1, 4, 5)	5	5
General Chemistry I, II (Chemistry 1, 2)	4	4
Mechanical Drawing I (Mechanical Engineering 1)	3	
Descriptive Geometry (Mechanical Engineering 2)		3
Woodwork VIII (Shopwork 1)	3	
Patternmaking III (Shopwork 2)		3
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.		
Analytic Geometry and Calculus I, II (Math. 6, 7, 8)	5	5
General Physics III, IV (Physics 3, 4)	5	5
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language I, II (French, German, or Spanish)	3	3
Mechanical Drawing II (Mechanical Engineering 3)	4	
Blacksmithing IV, V (Shopwork 5, 6)	3	3
Mechanism (Mechanical Engineering 4)		4
	21	21

Junior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
Modern Language III, IV (French, German, or Spanish)	3	3
Statics and Dynamics (Mechanical Engineering 5)	4	
Strength of Materials (Mechanical Engineering 6)		2
Hydraulics (Mechanical Engineering 7)		2
Materials of Engineering (M. E. 8)	2	
Engineering Laboratory I, II (M. E. 11, 12)	2	2
Machine Shop I, II (Shopwork 9, 10)	3	3
Steam Machinery (Mechanical Engineering 10)		2
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Machine Design I, II (M. E. 13, 14)	4	4
Thermodynamics (Mechanical Engineering 15)	3	
Hydraulic Motors (Mechanical Engineering 18)	2	
Internal Combustion Motors (M. E. 16)		2
Steam Turbines (Mechanical Engineering 17)		2
Thesis	1	2
Electives	6	6
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

TRANSITION COURSE IN MECHANICAL ENGINEERING.

Junior Year.

	Semesters, 1st.	2nd.
Analytic Geometry and Calculus I, II (Math. 6, 7, 8)	5	5
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language III, IV (French, German, or Spanish)	3	3
Plane Surveying I (Civil Engineering 2)		3
Mechanism (Mechanical Engineering 4)	3	
Materials of Engineering (Mechanical Engineering 8)	2	

Steam Machinery (Mechanical Engineering 10).....		2
Machine Shop I, II (Shopwork 9, 10).....	2	2
Theoretical Instruction I, II (Military Science 1, 2)...	1	1
	17	17

Senior Year.

Statics and Dynamics (Mechanical Engineering 5)....	4	
Strength of Materials (Mechanical Engineering 6)....		2
Hydraulics (Mechanical Engineering 7).....		2
Engineering Laboratory I, II (M. E. 11, 12).....	2	2
Machine Design I, II (M. E. 13, 14).....	4	4
Theoretical Instruction III, IV (Military Science 3, 4).	1	1
*Electives	6	6
	17	17

*Students will be required to elect a modern language or Public Speaking 3, 4.

COURSE IN MINING ENGINEERING.

The course in Mining Engineering is planned to give the student a thorough knowledge of the principles which form the groundwork of the sciences of Mining and Metallurgy.

It is the aim of the Mining Engineering department in arranging the courses to give the student first a drill in the fundamental studies common to all engineering courses, such as Mathematics, Chemistry, English, Physics, Drawing, Mechanics, etc. In the latter part of his course he applies the principles of these fundamental studies to the more distinctive technical subjects, such as Mineralogy, Geology, Mining, Mine Surveying, Metallurgy, and Ore Dressing.

The methods of instruction include the ordinary lecture, textbook, and recitation work, supplemented, as far as possible, by problems and illustrations drawn from actual mining and metallurgical practice. The successful mining engineer deals largely with concrete problems, hence the laboratory method of instruc-

tion is given a very important place in the training of the student. A portion of the last two summers is devoted to summer school work in Mine Surveying, and Mining and Metallurgical inspection. The students are required to keep systematic notes on the summer work, and to turn in to the professor in charge a complete report. On these trips of inspection, visits are made to plants which exemplify, often on a large scale, the application of principles taught in the class room to problems of commercial operation.

The technical training for the mining engineer is broad rather than highly specialized. Aside from the basic subjects common to all engineering courses, he must be well grounded in the principles of Chemistry, Metallurgy, and Geology. A student who pursues the Mining Engineering course to completion is able to choose his life work from among a number of distinct industrial lines; for example, he may choose his work in the management, investigation and exploitation of mines; he may choose his work in Ore Dressing, which covers the separation of the valuable minerals from the waste; he may go into metallurgical lines where he extracts the metal from its ores and puts it in shape for the market; or he may choose his work along geological lines and work either for the National Government or for private corporations.

DEGREE COURSE IN MINING ENGINEERING.

Freshman Year.	Semesters, 1st.	Semesters, 2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading I (English 3)	2	
Trigonometry I, College Algebra I, II (Math. 1, 4, 5)	5	5
General Chemistry I, II (Chemistry 1, 2)	4	4
Mechanical Drawing I (Mechanical Engineering 1)	3	
Descriptive Geometry (Mechanical Engineering 2)		3
Plane Surveying I (Civil Engineering 1)		5
Woodwork IX (Shopwork 3)	3	
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.

Analytic Geometry and Calculus I, II (Math. 6, 7, 8)	5	5
Physics III, IV (Physics 3, 4)	5	5
Argumentative Themes, Expression (Pub. Speaking 1, 2)	1	1
Qualitative Analysis II (Chemistry 6)	3	
Quantitative Analysis II (Chemistry 8)		3
Crystallography and Blowpipe Analysis (Geology 1)	4	
Determinative Mineralogy (Geology 2)		4
General Geology (Geology 3)		3
Blacksmithing VII (Shopwork 8)	3	
	21	21

Junior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
Statics and Dynamics (Mechanical Engineering 5)	4	
Strength of Materials (Mechanical Engineering 6)		2
Hydraulics (Mechanical Engineering 7)		2
Fire Assaying (Mining Engineering 7)	4	
Mine Surveying and Mining Law (Mining Eng. 2)		3
General Metallurgy (Mining Engineering 8)	3	
Mining I (Mining Engineering 3)		3
Electives	3	4
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Petrology (Geology 6)	3	
Economic Geology (Geology 5)		3
Mining II (Mining Engineering 4)	3	
Ore Dressing I, II (Mining Engineering 5, 6)	3	3
Engineering Laboratory I, II (M. E. 11, 12)	2	2
Contracts and Specifications (Civil Engineering 15)		1
Thesis	1	2
Electives	4	5
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

TRANSITION COURSE IN MINING ENGINEERING.

1910-1911.

Junior Year.

	Semesters, 1st.	2nd.
Analytic Geometry and Calculus I, II (Mach. 6, 7, 8)	5	5
Argumentative Themes, Expression (Pub. Speaking 1, 2)	1	1
Crystallography and Blowpipe Analysis (Geology 1)	4	
Determinative Mineralogy (Geology 2)		4
Fire Assaying (Mining Engineering 7)	4	
General Geology (Geology 3)		3
Electives	3	3
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	18	17

Senior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
Statics and Dynamics (Mechanical Engineering 5)	4	
Strength of Materials (Mechanical Engineering 6)		2
Hydraulics (Mechanical Engineering 7)		2
Petrology (Geology 6)	3	
Economic Geology (Geology 5)		3
Metallurgy of Gold and Silver (Mining Eng. 10)	3	
Ore Dressing I (Mining Engineering 5)		3
Electives	4	4
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

COURSE IN COMMERCE.

The most progressive colleges and universities are now offering courses in commerce and finance. These courses have rapidly gained favor in response to an almost universal demand for

thoroughly trained men to assume leadership in the commerce of the world.

The School of Commerce has been established in harmony with this modern tendency in education. Its aim is to do for the business man what the trade school does for the mechanic, what the school of engineering does for the engineer, or what the school of law does for the lawyer. It does not claim to turn out finished business men or "captains of industry," but men who shall seek and be prepared to assume, the responsibilities of commercial and financial leadership after a comparatively short apprenticeship and practical experience.

A thorough business course, therefore, covers more than a study of bookkeeping, commercial law, and penmanship, though all are subjects of the greatest importance. Thorough courses in English, economics, modern languages, mathematics, natural sciences, etc., are equally important. In fact, all are in a sense only means to one end: to facilitate the profitable exchange of commodities in the form of property or service. Hence the advantage of incorporating business courses into the curricula of the higher institutions of learning where courses in the basic subjects are already given.

The professional courses offered by the School of Commerce have been arranged and selected with special reference to two classes of students: the prospective business manager, and the office employee. The latter studies chiefly the methods and technique of commerce, while the former lays special stress on the principles of economics and commerce. Two distinct courses are offered: a two-year course leading to a certificate of graduation, and a four-year course leading to the degree of Bachelor of Science. The Theory and Practice of Accounts, Stenography, and Commercial Law, are the principal technical subjects in the two-year course; while Economics, Trade and Transportation, Banking and Finance, Political Science, International Relations, and Public Accounting and Administration, are the professional subjects in the degree course. Special stress is laid on English in both courses, and the cultural development of the student is duly emphasized.

But while the School of Commerce emphasizes work preparatory to commercial pursuits, the fact that there is a business side to

every vocation has been recognized by providing, in the second year of the Secondary courses, a two-hour course in Business Methods, especially adapted for the farmer, mechanic, housekeeper, professional man, etc. The exceptional laboratory and library facilities of the department are enjoyed by all students alike.

The Commercial course is especially attractive as a preparation for law; for teachers of commercial subjects; for public accountants; for administrative secretaries; and as a preparation for the Civil Service.

SECONDARY COURSE IN COMMERCE.

First Year.

	Semesters, 1st.	2nd.
Advanced Grammar and Composition I, II (Eng. A, B)	3	3
Classics I, II (English C, D)	2	2
Algebra I, II (Mathematics A, B)	5	5
Ancient History (History A)	3	
Mediaeval and Modern History (History B)		3
Business Forms I, II (Business Administration A, B)	4	4
Penmanship I, II (Penmanship A, B)	1	1
Drawing I, II (Art A, C)	2	2
	20	20

Second Year.

Rhetoric and Composition I, II (English E, F)	3	3
Classics III, IV (English G, H)	2	2
Algebra III, Geometry I, II (Math. C, D, E)	5	5
Plant Relations (Botany C)		2
Civil Government and Administration (Political Sci. A)	2	
Business English (English 11)	3	
Elementary Commercial Law I (Political Science B)		3
Practical Bookkeeping I, II (Bus. Adm. C, D), or Theory and Practice of Stenography (Sten. A, B)	5	5
	20	20

DEGREE COURSE IN COMMERCE.

Freshman Year.	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading I, II (English 3, 4)	2	2
Commercial Arithmetic (Mathematics 9)	3	
Trigonometry II (Mathematics 2)		3
General Chemistry I, II (Chemistry 1, 2)	4	4
Business English (English 11)	3	
United States History (History 2)		3
Office Facilities and Practice I, II (Bus. Adm. 1, 2)	4	4
Advanced Penmanship I, II (Penmanship 1, 2)	1	1
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.		
General Physics V, VI (Physics 5, 6)	4	4
Modern Language I, II (French, German, or Spanish)	3	3
Elements of Economics (Political Economy 1)	3	
Commercial Geography (Political Economy 2)		3
Advanced Accounting and Business Management (Bus. Adm. 3)		
Corporation Accounting and Auditing (Bus. Adm. 4)		
or Theory and Practice of Stenography I, II (Sten. 1, 2)	6	6
Zoology I, II (Zoology 1, 2)	3	3
Freehand Lettering and Title Design (Art 1)	2	
Typewriting III (Stenography 7)		2
	21	21

Junior Year.		
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language III, IV (French, German, or Spanish)	3	3
Money and Banking (Political Economy 3)	3	
Corporation and Public Finance (Political Economy 4)		3
Business Organization and Management (Bus. Adm. 5)	4	

Theory and Practice of Advertising (Bus. Adm. 6)....		
or Advanced Stenography I, II (Sten. 3, 4).....	4	4
Electives	5	5
Theoretical Instruction I, II (Military Science 1, 2)...	1	1
	17	17

Senior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4).....	2	2
Modern Language V, VI (French, German, or Spanish)	3	3
Advanced Economics (Political Economy 5).....	3	
History of Commerce I, II (Political Economy 6)....		3
Commercial Law I, II (Political Science 1, 2).....	3	3
Electives	5	5
Theoretical Instruction III, IV (Military Science 3, 4).	1	1
	17	17

COURSE IN PHARMACY.

It is now so generally recognized and so universally admitted as to need but passing comment, that in order to attain to any degree of success in a scientific profession, it is necessary to be thoroughly trained in the science upon which the profession is based.

With reference to the profession of pharmacy, it may truly be said that it is one of applied sciences, since the pharmacist has constant use for a knowledge of the sciences of chemistry, of physics and botany. It is, therefore, of utmost importance to the individual who has decided to enter upon a pharmaceutical career, that he begin properly in the matter of an education. The institution in which the study of the natural sciences is prominently featured is, without doubt, the one best qualified to afford him the training suited to his particular needs. In this connection, attention is directed to colleges of the land-grant, or agricultural type. Financed by state and Federal Government, the material welfare of institutions of this class is assured. With unusual facilities in the way of laboratories and equipment, and with an

instructional force selected especially for the purpose, they are prepared to offer exceptional advantages for mental and manual training in those professions having for their foundation a knowledge of the sciences.

In recognition of the fitness of conditions and of an apparent need for such instruction, the Oregon Agricultural College, in 1898, added to its curricula, a Course in Pharmacy, the purpose of which is to afford the young men and women of the State an opportunity of obtaining a thorough training in the theoretical and practical features of this profession.

The course comprehends instruction in class and lecture room, in extensive practice in the laboratory, and excursions afield in botany. The value of laboratory practice is fully appreciated; it is in this connection that facts mentioned in text-book and lecture are brought to the student's notice in a way that the importance is emphasized, the significance demonstrated, and the fact itself fixed in the mind. In the pharmaceutical laboratories, the student becomes experienced in the manufacture of medicinal preparations and in filling prescriptions. In the laboratories of chemistry, of botany, of bacteriology, of physics, and of biology, he gains valuable experience in connection with each of these related sciences. It is expected, and not without reason, that owing to the nature and extent of the instruction given, graduates of this course will be qualified to assume positions of trust and responsibility in the professional world. Not only is this training of benefit to the pharmacist, but it forms an ideal pre-medical course.

The enactment of the Pure Food and Drug Law of 1906 has opened a new and attractive field for those who are proficient in chemical and pharmaceutical knowledge. Laboratories for the examination of food and drug samples are being established in the various large cities of the country by the Federal Government. Positions in these laboratories are, in many instances, held by graduates of pharmacy.

Two courses are offered; one of four years, leading to the degree of Bachelor of Science in Pharmacy. The other is a short course, of two years, for the completion of which a certificate is given.

A clause in the revised pharmacy law of this State, enacted by the Legislature, session of 1907, stipulates that a candidate for registration as a licentiate of pharmacy, before being eligible for examination by the State Board of Pharmacy, must have had four years of practical experience in a store where prescriptions and medicines are dispensed. Three years of such experience are required of the candidate for registered assistant pharmacist. The Oregon Board of Pharmacy, by special resolution, has granted students who complete the four-year course in Pharmacy at this institution, the privilege of taking the senior examination as given by the Board, and to those who complete the two-year course, the privilege of the junior examination, the regulation with reference to store experience being waived.

The Laue Prize. Mr. John M. A. Laue, prominent in business and professional circles of Portland, prompted by the desire to encourage students to strive for a high degree of attainment and efficiency, has very generously established an annual prize of $50, to be divided between the two students in the Pharmacy Course of this institution who shall make the best showing in their work. The prize is so apportioned that $35 is awarded to the one in the four-year course who shall have the highest standing, and $15 to the one of like standing in the two-year course.

DEGREE COURSE IN PHARMACY.

Freshman Year.

	Semesters, 1st.	2nd.
Rhetoric I, II (English 1, 2)	3	3
Advanced Classics and Reading I, II (English 3, 4)	2	2
Principles of Botany I, II (Botany 1, 2)	3	3
Zoology I, II (Zoology 1, 2)	3	3
Latin I, II (Latin 1, 2)	3	3
General Chemistry I, II (Chemistry 1, 2)	4	4
Drawing I, II (Art A, C)	2	2
Library Practice (Library 1)	1	
Hygiene (Physical Education 9)		1
	21	21

Sophomore Year.

American Literature I, II (English 9, 10)	2	2
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language I, II (French, German, or Spanish)	3	3
Qualitative Analysis (Chemistry 5)	4	
Organic Chemistry (Chemistry 9)		4
Plant Histology (Botany 3)	3	
Morphology and Taxonomy of Seed Plants (Botany 4)		3
Physiology and Hygiene I, II (Zoology 4, 5)	3	3
Office Facilities and Business Practice I, II (Business Administration 1, 2)	4	4
Advanced Penmanship I, II (Penmanship 1, 2)	1	1
	21	21

Junior Year.

Modern Language III, IV (French, German, or Spanish)	3	3
Quantitative Analysis I (Chemistry 7)	3	
Pharmaceutical Analysis (Chemistry 12)		3
General Physics V, VI (Physics 5, 6)	4	4
General Pharmacy (Pharmacy 1)	2	
Nomenclature (Pharmacy 2)	1	
Therapeutics and Doses (Pharmacy 5)	2	
General Pharmacy (Pharmacy 6)		4
Pharmacognosy I, II (Pharmacy 3, 4)	1	2
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
General Bacteriology (Bacteriology 4)	3	
Practical Bacteriology (Bacteriology 5)		3
General Pharmacy (Pharmacy 7)	2	
Materia Medica and Toxicology I, II (Phar. 8, 9)	3	3
Prescription Practice I, II (Phar. 10, 11)	3	5

Theoretical Instruction (Military Science 3, 4)	1	1
Electives	3	3
	17	17

TRANSITION COURSE IN PHARMACY.

Junior Year.

	Semesters, 1st.	2nd.
Argumentative Themes, Presentation (Public Speaking 1, 2)	1	1
Modern Language I, II (French, German, or Spanish)	3	3
Composition of Public Addresses (English 5)	1	
Argumentative Themes (English 6)		1
Quantitative Analysis I (Chemistry 7)	3	
Pharmaceutical Analysis (Chemistry 12)		3
Physiology and Hygiene (Zoology 4, 5)	3	3
General Pharmacy (Pharmacy 1)	2	
Nomenclature (Pharmacy 2)	1	
Therapeutics and Doses (Pharmacy 5)	2	
General Pharmacy (Pharmacy 6)		4
Pharmacognosy I, II (Pharmacy 3, 4)	1	2
Theoretical Instruction I, II (Military Science 1, 2)	1	1
	17	17

Senior Year.

Composition of Addresses, Extempore Speaking (Public Speaking 3, 4)	2	2
General Bacteriology (Bacteriology 4)	3	
Practical Bacteriology (Bacteriology 5)		3
Quantitative Analysis I (Chemistry 7)	3	
Pharmaceutical Analysis (Chemistry 12)		3
General Pharmacy (Pharmacy 7)	2	
Materia Medica and Toxicology I, II (Phar. 8, 9)	3	3
Prescription Practice I, II (Pharmacy 10, 11)	3	5
Theoretical Instruction III, IV (Military Science 3, 4)	1	1
	17	17

DEPARTMENTS OF INSTRUCTION

AGRONOMY.

Professor Scudder.
Assistant Professor Hyslop.
Mr. Powers.
Mr. Koeber.

Agronomy is the science of the fields and the crops of the fields. Instruction in this science is offered by the department of Agronomy in the following subjects:

(a) Soils; their origin, structure, fertility, cultivation, and improvement.

(b) Field Crops; their history, growth, culture, improvement and value.

(c) Farm Mechanics; the structures, machinery, drainage, and irrigation of the farm.

(d) Farm Management; the methods, business principles, history, and economics of farming.

In every subject, instruction is accomplished equally through class room, laboratory and field work; theory is checked by practice. For the latter methods of instruction, the finely equipped laboratories of this department, the various soil conditions, numerous experimental crops, and extensive structures of the Experiment Station farm, offer excellent facilities. The large and newly equipped laboratories for the courses in Field Crops and the courses in Soils, in the new Agronomy building, and for Farm Mechanics in the new barn, are not excelled by those of any institution in the country.

The Secondary courses in Agronomy deal only with the practical application of the underlying principles of agriculture to specific conditions—aiming to give the less well prepared student as much information as possible in a short time concerning those practices most vital to successful farming—to send him back to the farm

better prepared to cope with its problems. These courses serve also to prepare the student for collegiate Agriculture.

The object of the collegiate courses in this department is to give the student such mastery of all the subjects relating to the soil, field crops, farm mechanics, or farm management as will help prepare him for the highest type of practical farming or for a successful career in professional agriculture such as is found in the U. S. Department of Agriculture, or in the State Experiment Stations and Agricultural Colleges. So far this department has had more calls for capable agronomists than it has been able to fill, positions paying all the way from $75 to $150 per month.

Agronomy 1, 2, and 3, are prescribed for all collegiate agricultural students. The succeeding courses are the majors and minors offered to the upper classmen in Agriculture who elect Agronomy as their specialty. Majors and minors are then determined upon by conference between the student and the head of the department. Liberal electives in other departments ar permitted where advisable.

A. **Soils.** A brief history of the origin of soils; the fertility of soils; the most valuable chemical constituents; their exhaustion and replenishment; the most important physical factors; their deterioration or improvement. The physical components; their relative value and amounts in soil mixtures. Practice in judging the chief soil types of Oregon. The effects upon soils of tillage, manuring, crop rotation, drainage and irrigation.

The Secondary course; first year; first semester; one credit; one laboratory period.

B. **Crops.** A brief consideration of the adaptability, relative value, and best methods of growing the chief cereal, grass, legume and succulent crops of Oregon for grain, pasture, meadow, soiling, silage or seed purposes. Investigation of the sources of crop seed and the importance of seed purity and germinating power, with methods of testing same. Eradication of the most common weed enemies of the field crops.

The Secondary course; first year; second semester; two credits; one recitation; one laboratory period.

C. **Elementary Farm Mechanics.** A study of some of the me-

chanical principles involved in farm operations and their application in labor saving devices for farm work. The structure and uses of the best types of farm machines. The designing and construction of barns, silos, hog houses, sheep sheds. Fencing problems; the division of fields; the location of farm buildings and lanes.

The Secondary course; second year; second semester; two credits; one recitation; one laboratory period.

1. **Basic Agronomy.** This course is, of necessity, elementary and general in its nature—an introduction to agriculture—seeking to interest the new student in farm life through first knowledge of the fields, the crops, the mechanics of the farm; or in agriculture as a science, through the wide range for scientific study and investigation it offers, the possibilities in the fields still unexplored; or to interest him in agriculture as a business, through its profits as a practice, and its opportunities as a profession. During the semester, instruction is given in the elementary facts concerning the origin and formation of soils; soil moisture, heat and air; common soil processes, physical and chemical; plant foods and soil fertility; tillage, crop rotation and manuring; important soil bacterial action; the benefits derived from drainage and irrigation; common farm machines, their use and care. The course will close with a brief survey of the agriculture of the State. Instruction will be given through lectures and notes, text and recitation, laboratory, and field observations.

Freshman year; first semester; three credits; two recitations; one laboratory period.

2. **Crop Production.** The study of the chief field-crop seeds of Oregon; wheat, barley, oats, corn, vetch, clover, alfalfa, grasses, etc., their vitality, germination, preservation, growth, and reproduction; preliminary judging; seed bed and seeding; climate and soil; culture and rotation; weed enemies, their prevention and eradication; harvesting, marketing, and profits; distribution and value to the State; methods of crop improvement. Class room, laboratory, and field work.

The course in Agriculture; freshman year; second semester; two credits; one recitation; one laboratory period.

3. **Drainage and Irrigation.** The history of drainage and of irrigation; road, field, and sanitary drainage on the farm; the different systems of drainage and of irrigation; methods of locatcating, installing, operating, and maintaining drainage and irrigation conduits; cost, efficency, and profits; the effect on crops and soils; laws governing. Lectures, notes, readings, and field work.

Sophomore year; second semester; three credits; two recitations; one laboratory period.

4. **Soil Physics.** Advanced study of the geology of soils—origin, formation, composition, and classification. Soil moisture and fertility, and their conservation. The various physical processes of the soil—surface tension, osmosis, capillarity, diffusion, etc. The effects of the various crops and the different methods of culture upon the texture, aeration, temperature, moisture and plant food supply of the soil, and the resulting alteration in crop producing power. The influence of washing, drainage, and irrigation upon soils.

Elective; junior year; first semester; three credits; three recitations.

5. **Soil Physics Laboratory.** Work in the laboratory will consist of the determination and comparison of such physical properties in the various soil types as, specific gravity, water retention, capillarity, organic content, etc.; the effect of mulches, rotations, and cropping; soil sampling and judging; the mechanical analysis of soils.

Note.—Animal Husbandry and Dairy Husbandry students will be permitted, where it is necessary, to take either the lecture or laboratory course in Soil Physics, separately.

Elective; junior year; two credits; two laboratory periods.

6. **Cereal Crops.** A study of grains with special reference to those of Oregon and the varying conditions of soil and climate under which they are grown; the culture and rotation best adapted to each; the various methods of harvesting and storage; the judging of grain; grading for market; markets and uses of each crop; improvement of crop seed; plant breeding.

Elective; junior year; first semester; five credits; three recitations; two laboratory periods.

7. **Forage Crops.** A less technical study of the legumes, grasses, and succulent crops, the course being especially adapted to the needs of the students in Animal and Dairy Husbandry. The adaptability and value of each of the forage plants as pasture, hay, soiling, or silage crops, together with the practical methods of growing each and the planning of rotations that will maintain fertility, will be fully discussed.

Elective; junior year; second semester; two credits; two recitations.

8. **Farm Mechanics.** Field and power machinery. The construction and use of all classes of modern farm machinery; tillage and seeding implements; harvesting, threshing, grinding, cutting, and pumping machinery; farm engines of all kinds. Special attention will be given to the principles involved in the economic operation of engines and power machines.

Elective; junior year; second semester; three credits; three recitations.

9. **Farm Mechanics Laboratory.** The examination, setting up, testing, and field operation of all the more complicated farm machines, such as harvesting and power machines, and engines. Each student will be made capable of locating trouble in a complicated machine or of running an engine properly. Comparative tests of the efficiency and cost of operation of different types of engines and power machinery, as far as the time will permit.

Elective; junior year; two credits; two laboratory periods.

Note.—Animal Husbandry, Dairy Husbandry, and Horticultural students will be permitted, where it is necessary, to take either the lecture or laboratory course in Farm Mechanics, separately.

10. **Farm Structures.** Farm buildings, fences, and roads. The design and construction of farm houses, barns, granaries and silos; their arrangement and cost. The various kinds of fencing; cost, construction and quality. Road building and maintenance and cost of same. The laboratory will include practical work in concrete construction and the drawing of building plans and specifications.

Elective; junior year; three credits; one reciation; two laboratory periods.

11. **Climatology.** Practical meteorology; observing and recording local weather; a study of the climate of Oregon and the effect of climate upon agriculture; class room and laboratory work.

Elective; junior year; second semester; one credit; one laboratory period.

12. **Soil Fertility.** The effect of the various crops upon the fertilit yof the soil. The maintenance or improvement of fertility by the use of fertilizers and manures. The composition and value of the different fertilizers and manures. The effect of various rotations upon fertility. The fertility of the different types of Oregon soils; their plant food requirements and comparative values; methods of improvement of each. The effects of different systems of farming. Analysis, field plot, wire basket, and pot culture investigations.

Elective; senior year; first semester; five credits; three recitations; two laboratory periods.

13. **Agrostology.** A study of the grasses, legumes, and other forage crops. Methods of seeding for meadow, pasture, and soiling crops; maintenance of meadows and pastures; harvesting, curing, storing, baling, and using the various meadow crops; grazing, siloing, and soiling. The comparative structure and identification of the different forage plants; their adaptability to different conditions of soil and climate. Examination of commercial seed for viability and purity. The identification of weed seed. The production of forage crop seed.

Elective; senior year; first semester; five credits; three recitations; two laboratory periods.

14. **Farm Management.** A study of the various systems of extensive, intensive, and mixed farming, and the conditions under which each prospers or fails; methods of successful farmers; the application of business methods to farm operations; farm accounts; farm labor; economic management of fields, stock, structures, crops, and machines; markets and marketing; relation of farming to other industries.

Elective; senior year; second semester; five credits; five recitations.

15. **Advanced Work.** This course embraces all advanced work

of any kind in any branch of Agronomy that the individual student wishes and is fitted to pursue further than is possible in the courses offered above. It is especially designed to meet the needs of senior and graduate students in Agronomy, as preparation for positions as farm managers, or machine experts, or for the Government, agricultural college, or experiment station service. The subjects which this course offers for advanced study and investigations are:

a. Soils; mechanical analysis, soil surveying, soil fertility problems.

The advanced student specializing in soils may study the various soil types of Oregon through mechanical analysis, and other physical tests; may undertake field work in soil surveying and mapping; or, through wire basket, pot culture, and field plot tests, may determine the effects of various systems of cropping, or fertilizing, or of soil bacteria, upon soil fertility.

b. Crop Production; special crops, field experimentation, plant breeding.

In this subject a complete study may be made of some special crop in which the student is interested or on which information is lacking. Methods of field experimentation may be compared and carried out; or plant breeding theories and their practical use in commercial seed production may be made the subject of investigation.

c. Farm Mechanics; farm power machinery, harvesting machinery, rural architecture, concrete work, road and fence construction, drainage engineering.

For the student with inclinations toward mechanics or engineering, a wide field is offered in advance work in testing the efficiency and cost of running various types of farm power machines and engines; or of becoming an expert on harvesting machinery; or he may specialize in the designing of a complete series of farm buildings; or do a half year's practical work in drainage engineering, working out a system for some given area.

d. Farm Management; farming systems, irrigation farming, dry land farming, rural economics.

In this branch of Agronomy there is a rapidly growing demand

for men of special knowledge concerning the methods of crop production under the two extremes of soil moisture conditions found in irrigation farming and dry land farming. Special attention is given in these two courses to their application to Eastern Oregon conditions.

Elective; senior or graduate year; first or second semester, or both; one to five credits.

Minor electives in other departments: Animal Husbandry, five credits; Bacteriology, three credits; Botany, three credits; Engineering, three credits; Entomology, three credits; Geology, three credits.

ANIMAL HUSBANDRY.

Professor Withycombe.
Assistant Professor Potter.
Mr. Samson.

The object of the course in Animal Husbandry is to fit the student for the actual rearing of live stock on the farm so that he may raise the highest grade of stock in the most economical manner. The student is thoroughly grounded in the underlying principles so that he may successfully continue his study after he leaves school, but the practical details are thoroughly discussed and a special effort is made to keep the student in close touch with the financial phases of the live stock industry. Students who make this work their specialty are not expected to devote their entire time to live stock but are to familiarize themselves with the production of the common farm crops, maintenance of the fertility of the soil, and the handling of farm machinery and like topics so that when they graduate, they will be equipped for practical farm work.

Scientists and practical farmers are agreed that the fertility of the soil cannot be maintained economically, if at all, without live stock. The rearing of live stock requires more skill and knowledge than grain or hay farming, and while the profits are much larger when the business is properly handled, there is also more danger of a loss due to improper management or ignorance; hence the

necessity of a thorough training before embarking in this line of work.

The following courses are offered:

A. **Stock Judging.** I. A study of animal form by score practice and comparative judging. The student is given an understanding of various points to be considered in judging cattle, sheep, swine, and horses. The work consists almost exclusively of actual practice with the animals at the barns.

The Secondary course; first year; first semester; two credits; two laboratory periods.

B. **Veterinary Science.** A study of the treatment and prevention of the common diseases of farm live stock. Special attention is given to sanitation and the prevention of diseases.

The Secondary course; second year; first semester; one credit; one recitation.

C. **Practical Stock Feeding.** A study of the elementary principles of stock feeding. The various feed stuffs obtainable in Oregon are discussed and compared as to their value for the different kinds of stock. Some time is devoted to the different methods of preparing the feed and the various systems of feeding.

The Secondary course; second year; second semester; two credits; two recitations.

1. **Stock Judging.** II. The various types of farm animals are studied by the score card method and by comparative judging. Practically the entire time is devoted to studying the animals at the barns. The student is made familiar with the desirable types of cattle, sheep, swine, and horses.

Freshman year; second semester; two credits; two laboratory periods.

2. **Live Stock Management.** A careful study of the practical details of the care and management of live stock; stabling; grooming; sanitation; practical feeding, and kindred details of live stock farming.

Sophomore year; first semester; three credits; two recitations; one laboratory period.

3. **Breeds of Stock.** I. The study of the history of the various breeds of cattle and sheep, their origin and characteristics. Each

breed is taken up and studied separately from its early history. The environment under which they were produced, the original stock, and the men who were instrumental in establishing the breed are given careful consideration, as well as the present states of the breed and the work of present day breeders. The leading families or strains and the most prominent animals are discussed in detail. The lecture work is accompanied by comparative judging in which special attention is given to breed type and to the differences in conformation of the various breeds.

Elective; junior year; first semester; four credits; three recitations; one laboratory period. Not given in 1910-11.

4. **Breeds of Stock.** II. The study of the breeds of horses, swine, and dairy cattle. A continuation of A. H. 3.

Elective; junior year; second semester; four credits; three recitations; one laboratory period. Not given in 1910-11.

5. **Live Stock Marketing.** The study of the various problems of marketing live stock; preparation of stock for market; shipping; market grades and classes; market terms and reports; together with a detailed study of the leading markets open to farmers of Oregon.

Elective; junior year; first semester; two credits; two recitations.

6. **Range and Herd Management.** A study of the details of management of live stock. Special attention is given the handling of stock in large herds and to the problems of the range.

Elective; junior year; second semester; three credits; two recitations; one laboratory period.

7. **Principles of Breeding.** The study of the principles of breeding as related to the development of our domestic animals. Among the topics discussed are variation, transmission of variations and modifications, fecundity, in-an-in breeding, crossing, and like topics. Some time is devoted to the study of pedigrees and to the methods of registration employed by the various breeds associations.

Prerequisite: At least one semester of Zoology.

Elective; senior year; first semester; five credits; five recitations.

8. **Principles of Stock Feeding.** The study of the chemical and

physiological principles of animal nutrition including digestion, assimilation, metabolism and also the composition of feed stuffs and the function of the various classes of compounds found in feed stuffs in the animal body. Special attention is devoted to the study of nutritive ratios, feeding standards, compounding rations, and the general significance of the chemical composition of the feeds.

Prerequisite: Chemistry 8 and 10.

Elective; senior year; first semester; two credits; two recitations.

9. **Beef Production.** A study of the feeds and methods of feeding adapted to the production of beef. Special attention is given to the results obtained in the tests conducted by the various experiment stations.

Prerequisite: A. H. 8.

Elective; senior year; first fifth of the second semester; one credit; five recitations.

10. **Mutton and Wool Production.** A study of feeding for the production of mutton and wool as in A. H. 9.

Prerequisite: A. H. 8.

Elective; senior year; second fifth of the second semester; one credit; five recitations.

11. **Pork Production.** A study of the methods of feeding for pork production as in A. H. 9.

Prerequisite: A. H. 8.

Elective; senior year; third fifth of the second semester; one credit; five recitations.

12. **Milk Production.** A study of feeding for the production of milk, as in A. H. 9.

Prerequisite: A. H. 8.

Elective; senior year; fourth fifth of the second semester; one credit; five recitations.

13. **Horse Feeding.** A study of practical horse feeding, as in A. H. 9.

Prerequisite: A. H. 8.

Elective; senior year; last fifth of the second semester; one credit; five recitations.

14. **Research Work.** In this course the student is expected to

select some line for individual investigation either by library methods or otherwise. The object is partly to allow the student to study some particular line in which he is especially interested and partly to give him training in studying out problems for himself as he will have to do after leaving school. This course is open only to those who are taking Animal Husbandry as their major or who have taken practically all of the regular courses in Animal Husbandry.

Elective; senior year; second semester; credits according to arrangement.

15. **Animal Husbandry Literature.** A study is made of the various books, periodicals and bulletins pertaining to Animal Husbandry. The student is made familiar with the leading books and information which he may obtain from those sources. A special study is made of the periodicals dealing with live stock, their standing, influence, and the part of the country and kind of farming to which they are best adapted. Some attention is given to the bulletins of the state stations and of the U. S. Department of Agriculture; methods of obtaining these bulletins and where and how to obtain any desired information. The student cannot be expected to read all the available material along Animal Husbandry lines but rather to become familiar with the various sources of information, so that when any particular question arises he will know at once the books, periodicals, or bulletins that will give him the most authoritative information on that subject.

Elective; senior year; first semester; three credits; three recitations.

16. **Advanced Breed Study. I.** A study is made of the breeds of beef cattle and sheep with special reference to the prominent strains and families, noted animals, and leading breeders of the present day. The distribution, popularity, and general standing of the breeds in Oregon are also discussed. The lecture work is accompanied by practice in judging from the breed type standpoint.

Elective; junior year; first semester; two credits; one recitation; one laboratory period.

17. **Advanced Breed Study. II.** A continuation of Course 16, but with reference to swine, horses, and dairy cattle.

Elective; junior year; second semester; two credits; one recitation; one laboratory period.

18. **Advanced Stock Judging.** This course consists of practical judging of all kinds of stock with an occasional visit to surrounding fairs and stock farms.

Open only to students who have completed all the other courses in judging offered.

Elective; senior year; second semester; two credits; two laboratory periods.

19. **Seminar I.** Semi-monthly meetings are held in which papers on Animal Husbandry subjects are read and discussed. These papers are prepared under the supervision of the department, although considerable latitude is allowed in the selection of subjects and the manner of presentation.

Elective in junior and senior years; first semester; one-half credit.

20. **Seminar II.** This is a continuation of course 19.

Second semester; one-half credit.

DAIRY HUSBANDRY.

Professor Kent.
Mr. Simpson.

It is the purpose of the department of Dairy Husbandry to effect an improvement in the dairy industry, for which a large part of the State is so well fitted. More cows and better ones, as well as more and better dairy products, is the ultimate aim of the instruction and the experimentation carried on by this department.

In order to meet the needs of the industry and the demand for information, the department offers the following courses:

The four-year course, designed to qualify students for agricultural college and experiment station work, for inspectors of dairy products and dairy establishments in city, State, or Government service, or as managers of creameries or large dairy farms;

The six-week course, designed to fit students to become operators of creameries, cheese factories, and dairy farms.

Besides these courses, dairy instruction will form a portion of the work offered to students in the Secondary course in Agriculture, also to students in Domestic Science and Art.

The laboratories for the technical work in dairying are located on the first floor of the Agricultural Hall, and comprise a main work-room for butter and cheese making, a milk testing laboratory, boiler and engine room, cheese-curing and storage rooms, class room and office. A large variety of cream separators gives the student an opportunity to judge of the respective merits of the leading machines of this class now on the market. Churns, Pasteurizer, testers, and other apparatus, all in practical operation, are at hand for purposes of instruction.

The dairy wing of the new college barn has accommodations for thirty cows, being equipped with the Drown iron stall, cement floors and mangers, and drainage to permit of thorough and rapid cleaning with water when desirable. There are also boiler, storage and separating rooms, comprising an aggregate floor space 16x33 feet.

The dairy herd, which is used for experimental and demonstration purposes, consists of typical representative animals of the leading dairy breeds, including the Jersey, Guernsey, Holstein, Ayrshire, and the milking type of Shorthorn.

One of the largest commercial creameries in the State is located at Corvallis, an opportunity thus being presented for the study ot manufacturing problems as they exist under every-day creamery conditions.

The following courses are offered:

A. **Farm Dairying I.** A general study of the secretion, composition, and adulteration of milk; methods of separation, determination of fat, ripening of cream, churning, and preparing butter for the market.

The Secondary course; first year; second semester; two credits; one recitation; one laboratory period.

B. **Farm Dairying II.** Additional work along lines indicated in Course A; farm cheese making; operation of milking machines, and other dairy machinery; herd records.

The Secondary course; second year; first semester; two credits; one recitation; one laboratory period.

1. **Milk and Cream Testing.** A study of the Babcock test as applied to milk and cream, and other milk products; the use of Farrington's and Mann's acidity tests; fermentation tests; use of the lactometer; composite sampling and testing.

Sophomore year; first semester; two credits; one recitation; one laboratory period.

2. **Advanced Butter Making.** A study of the physical and chemical properties, composition and separation of milk; effect of different degrees of acidity of the cream upon the resulting butter; the principles of churning, packing, and marketing butter; and the operation of churns and separators.

Required of students electing Dairy Husbandry as a major; junior year; first semester; five credits; three recitations; two laboratory periods.

Prerequisites: Course 1; Chemistry 10, 11.

3. **Cheese Making.** A study of the importance of the quality and composition of milk in the manufacture of Cheddar cheese; the principles involved in setting, cutting, heating, milling, etc.; special shapes and sizes; the construction and ventilation of curing rooms.

Required of students electing Dairy Husbandry as a major; junior year; second semester; three credits; two recitations; one laboratory period.

Prerequisites: Course 1; Chemistry 10, 11.

4. **Research Work.** A study of various authorities on dairying, together with the work of Experiment Stations along the same line. Some original investigation will also be included in this course.

Required of students electing Dairy Husbandry as a major; senior year; first semester; two credits.

Prerequisites: Courses 1, 2; Chemistry 10, 11.

5. **Factory Management.** Consists of location, organization, construction, drainage, and ventilation of creameries and cheese factories; creamery refrigeration, and general management. The object of this course is to fit the student to superintend or manage large factories or other dairy establishments.

Required of students electing Dairy Husbandry as a major; senior year; first semester; three credits; recitations, and inspection of dairy establishments.

Prerequisites: Same as for course 4.

6. **Technology of Milk.** A study of the utilization of milk and its products, such as the preparation of condensed, certified, modified, and hygienic milk, milk sugar, casein; and the food value of milk and its products.

Required of students electing Dairy Husbandry as a major; senior year; second semester; two credits; two recitations.

Prerequisites: Courses 1, 2; Chemistry 10, 11.

7. **Dairy Herd Management.** Best methods of feeding for milk production; principles governing the construction of stables, stalls, and ties; systems of keeping, feeding, breeding, and milk production records; manner of disposal of milk produced; rearing the dairy calf; selection and care of bulls.

Elective for students in Dairy Husbandry, Animal Husbandry, and Agronomy; senior year; second semester; two credits; two recitations.

8. **Preparation of Ice Cream and Ices.** A study of the preparation of ice cream, sherbets, and ices, made on a private or commercial scale.

Elective; senior year; second semester; one credit; recitations and laboratory.

Prerequisite: Course 1.

9. **Thesis.** Original work on some dairy subject may be worked out in co-operation with the departments of Chemistry, Bacteriology, or Animal Husbandry. Students should consult the head of the Dairy department concerning thesis subject not later than the beginning of their senior year.

Required of students electing Dairy Husbandry as a major; senior year; second semester; two credits.

10. **Home Dairying.** A study of the secretion, composition and characteristics of milk; methods of separation; care of milk and cream; preparation of ice cream and ices.

Elective in the course in Domestic Science and Art; second semester; two credits; recitations and laboratory.

Dairy Husbandry students will be required to take laboratory work in Agricultural Chemistry, second semester, junior year, said subject being allowed on credits for major study. It is recommended that such students carry this subject throughout the junior year.

11. **Short Course.** Students passing the work required in the six-week course will receive a Dairy Certificate after one season's subsequent employment in a creamery or cheese factory, provided their monthly reports to the Dairy Department are made as required, and that the condition of the factory upon personal inspection by a representative of the department, is found in a satisfactory condition. (See Winter Courses.)

HORTICULTURE.

Professor Lewis.
Assistant Professor Cole.
Assistant Professor Peck.
Mr. Bouquet.
Mr. Kraus.
Mr. Rees.
Mr. Sprague.
Mr. Gilkey.

The scope of the work in Horticulture is very broad, giving instruction in Pomology, Olericulture, Floriculture, Landscape Gardening, and School Gardening. In these courses the student is first thoroughly grounded in the fundamentals and is then allowed to specialize as he may desire. Thus, he may fit himself for station or Government work, or enter the many lines in business open to him, such as fruit growing, truck gardening, floriculture, or landscape gardening, for in all these lines are spelndid opportunities throughout the Pacific Northwest. At the present time there are openings for young men to become managers of orchards or to develop fruit lands for outside investors; those having a taste for teaching, can find a broad field in college or rural work or as supervisors of horticulture. The required work for students

electing Horticulture covers a wide range, giving the student a thorough training not only in plant propagation and the general principles of orchard management and vegetable growing, but in floriculture and landscape gardening as well, thus broadening his views and interesting him in the aesthetic and all that pertains to more beautiful surroundings.

The courses consist of lectures, reference readings, field exercises, and laboratory work. Much stress is placed upon the practical phases of all the work. In all courses, horticultural truths are illustrated by practice whenever possible. Students are given field and laboratory exercises in all such phases as planting, seeding, budding, grafting, cultivating, thinning, pruning, harvesting, and packing.

Well equipped laboratories and class rooms, orchards containing many varieties of fruit, vegetable gardens, a large campus well supplied with ornamental shrubbery, forcing-houses, and a good reference library, are some of the features enabling the department to offer thorough courses.

The following courses are offered:

A. **Elementary Orchard Practice.** A course dealing with the first principles of fruit growing, in which the practical phases are emphasized, stress being laid on such phases of orcharding as harvesting, packing, pruning, spraying, establishing of orchards, and the essentials of small fruit culture.

The Secondary course; first year; first semester; two credits; one recitation; one laboratory period.

B. **Elementary Plant Propagation and Vegetable Gardening.** In this course the requirements of the Secondary student are kept in mind, the work leading up to more advanced courses in the freshman and sophomore years. The propagation of the common plants used in horticulture is studied; and practical laboratory exercises are given in the planting of seed, making of cuttings, and the ordinary methods of budding and grafting. The last part of the semester is devoted to a study of the first principles of vegetable gardening.

The Secondary course; first year; second semester; two credits; one laboratory period.

1. **Plant Propagation**, consists of a very thorough study of the propagation of plants used in horticulture, including a study of soils used in nursery and seed bed; seeding and transplanting; multiplying of plants by separation and division, soft and hard wood cuttings, layerings, and many forms of budding and grafting. The greenhouses, laboratories, orchards, and campus offer splendid opportunities and furnish abundant material for practical work.

Freshman year; second semester; two credits; one recitation; one laboratory period.

2. **Orchard and Garden Practice.** Problems concerning the home orchard and garden are dealt with in this course, the aim being to give those students who cannot further pursue a horticultural course, the necessary training to develop ideal home orchards and gardens; at the same time the work is fundamental for students desiring to pursue horticultural studies further. The common orchard and garden problems, such as selecting a site, setting and cultivating the orchard, pruning, spraying, and choosing varieties, are considered.

Sophomore year; first semester; three credits; two recitations; one laboratory period.

6. **Floriculture.** An elementary course in the cultivation of greenhouse and home plants and of the common annuals and perennials used in outdoor work. The course is designed to broaden the views of those students who are unable to take advanced courses in Floriculture, and to make them more useful citizens.

Required of Agricultural juniors electing Horticulture as a major; first semester; two credits; one recitation; one laboratory period.

10. **Landscape Gardening.** All students should be interested in everything that pertains to decoration of the home, the improvement of school grounds, the beautifying of streets, and the establishment of recreation grounds and parks. In this course the general principles of landscape gardening are so treated as to apply to the upbuilding of the aesthetic in every-day life.

Required of Agricultural juniors electing Horticulture as a

major; second semester; two credits; one recitation; one laboratory period.

POMOLOGY.

3. **Practical Pomology.** Especially offered for those students desiring training in commercial orcharding; deals largely with problems connected with the growing and handling of our leading fruits. Such problems as choice of soil, cultivation, irrigation, use of cover crops, thinning, proper varieties and best methods of orchard management will be thoroughly studied. This is purely a lecture course, the laboratory work being offered in courses 4 and 5.

Elective; junior year; first semester; three credits, three recitations.

4. **Orchard Practice I.** A Saturday morning course, dealing only with the practical phases of orchard management. The various orchard problems, such as harvesting, packing, pruning, and the handling of small fruits, are taken up according to season. Every student beginning this work is required to become familiar with fruit packing to the extent that he can put up a first-class box of fruit. Students especially proficient will be allowed to take up outside work for remuneration under departmental supervision. This course is open only to juniors and seniors electing Horticulture as a major.

Elective; junor year; first semester; two credits; two laboratory periods.

5. **Orchard Practice II.** This is a continuation of course 4.

Elective; junior and senior years; second semester; two credits; two laboratory periods.

7. **Grape Growing.** A special course in Viticulture, devoted to the best methods of growing, harvesting, and packing the American and European types of grapes. Such phases as exposure, elevation, soils, use of resistant stock, pruning, harvesting, packing, shipping, and storing are included. The manufacture of by-products will also be treated.

Elective; junior year; first semester; two credits; two recitations.

8. **Small Fruit Culture.** In this course a study is made of the problems concerned with the growing and marketing of such fruits as the strawberry, currant, gooseberry, raspberry, blackberry, Loganberry, and cranberry. A large collection of small fruits in the college orchard aids materially in the study.

Elective; junior year; second semester; three credits; three recitations.

9. **Nut Culture.** Nut culture is becoming a very important branch of Horticulture. In this course a special study will be made of the culture of such nuts as the walnut, filbert, almond, pecan, and the peanut. Instruction is very largely by lectures on the special adaptability of the Pacific Coast to nut culture. Laboratory periods will be given on the most successful methods of grafting nuts.

Elective; junior year; second semester; two credits; two recitations.

11. **Systematic Pomology.** The description, nomenclature, and classification of native and sub-tropical fruits and nuts is studied. In addition, training is given in judging and displaying fruits. Special stress will be laid on the variation of fruits, caused by soil, elevation, etc. For this study fruits will be collected from the various parts of the State.

Elective; senior year; first semester; two credits; one recitation; one laboratory period.

12. **Commercial Pomology.** This course deals with the problems of marketing fruits, methods of packing, transportation, and storage, the building of packing and storage houses. A study of associations as a factor in the handling of fruit, of market requirements, and of the handling of by-products, makes this course decidedly valuable.

Elective; senior year; first semester; two credits; two recitations.

13. **Seminar I.** This is a course especially arranged for senior and graduate students in Horticulture. A study is made of some of the advanced problems. Articles from the leading magazines on horticultural subjects, also station and Government publications are reviewed. A course of lectures and class drill is given in outlining and conducting experiments and investigations.

Required of Agricultural seniors and advanced students having their major in Horticulture; first semester; one credit.

14. **Seminar II.** Required of Agricultural seniors and advanced students having their major in Horticulture.

Senior year; second semester; one credit.

15. **History and Literature of Horticulture.** A study is made of the literature and history of Horticulture from the time of the Egyptians to modern times.

Elective; senior year; first semester; two credits; two recitations.

16. **Plant Breeding.** This course embraces a study of the theories as related to plant breeding, and their application to the practical aspects of the work, such as cultivation, selection, acclimatization, hybridizing, and pollination. Lectures, reference reading, and practical problems given in laboratory and field. Juniors electing this course begin orchard and garden investigation and plant breeding that can be continued during the senior year.

Elective; junior and senior years; second semester; three credits; two recitations; one laboratory period.

17. **Sub-tropical Pomology.** A study of the culture of such sub-tropical fruits as oranges, figs, and olives.

Elective; senior year; second semester; two credits; two recitations.

32. **Advanced Plant Breeding.** Largely a laboratory course in greenhouses, orchards, and gardens. Open only to students who have completed Horticulture 16. Practical problems of plant breeding studied in course 16 will be continued in this course.

Senior year; second semester; three credits; one recitation; two laboratory periods.

33. **Advanced Pomology.** This is in the nature of a finishing course in Pomology. It will include a series of examinations covering the subject of Pomology to test the student's knowledge of this subject. A series of lectures dealing with advanced problems concerned with such subjects as fruit soils, pruning, orchard fertility, pollination, irrigation, and a review of the past season's market reports and the lessons they teach; the latest development of Horticulture as shown in bulletins, reports, etc. This course

will include many discussions on vital topics concerning Horticulture.

Elective; senior year; second semester; three credits; three recitations.

VEGETABLE GARDENING.

Students taking their major in this course are required to take Horticulture 6, 10, 19.

18. **Principles of Vegetable Gardening.** In this course a study is made of the history and the botanical relationship of vegetables, as well as the best methods of growing them, including such phases as location, soils, cultivation, and forcing of common vegetables. Lectures, supplemented by exercises in field and laboratory.

Elective; junior year; second semester; three credits; two recitations; one laboratory period.

20. **Forcing Vegetables.** A course dealing with the problems connected with the forcing of such vegetables as lettuce, cucumbers, tomatoes, rhubarb, and melons, in cold frames, hot-beds, and greenhouses. Lectures and exercises in the greenhouses.

Elective; senior year; second semester; two credits; one recitation; one laboratory period.

21. **Systematic Olericulture.** Description, nomenclature, and classification of vegetables. Exercises are given in displaying and judging vegetables.

Elective; senior year; first semester; one credit; one laboratory period.

22. **Truck Gardening.** Only the purely commercial aspects of vegetable gardening are offered in this course. Such phases as capital, labor, rotation, tools, harvesting, and storing, will be considered, as well as other problems involved in the growing of vegetables on an extensive scale for market or cannery. Attention is also paid to a study of vegetable markets and methods of marketing.

Elective; senior year; first semester; three credits; two recitations; one laboratory period.

34. **Commercial Truck Gardening.** A continuation of course 22.

Elective; senior year; three credits; two recitations; one laboratory period.

35. **Vegetable Gardening Soils.** This work deals with a study of the types of market gardening and trucking soils, their adaptability to various vegetables, manner of handling, fertilizing, etc. Attention is paid to the manner of making and caring for artificial soils and composts.

Elective; junior year; first half second semester; one credit; one recitation; one laboratory period.

36. **Vegetable Fertilization.** In this course a study is made of the methods of fertilizing vegetables. The value of the various manures for gardening purposes is considered, and special attention paid to the use of commercial fertilizers on the market garden and truck farm. Lectures and exercises in the selection of materials, compounding formulas, amounts, mixing, and application in the field.

Elective; junior year; second half second semester; one credit; one recitation; one laboratory period.

LANDSCAPE GARDENING.

Students taking their major in Landscape Gardening are required to take Horticulture 6, 10, History of Architecture, Plain Surveying 1, Topographical Surveying 5, Mechanical Drawing 1, and Drawing 1.

23. **Annuals and Perennials.** A study of the culture and value of the hardy annuals and herbaceous perennials, and their use in Floriculture. Horticulture 1 is a prerequisite of this course required of those taking Landscape Gardening as a major.

Elective; junior year; first semester; three credits; one recitation; two laboratory periods.

25. **Plant Materials.** A course of study covering the use of trees and shrubs in Landscape Design. This course is also a continuation of course 23. All landscape gardeners should become thoroughly familiar with plants in both active and dormant conditions; and this course, given in the fall and winter, offers exceptional opportunities for studies along this line.

Elective; senior year; first semester; two credits; two laboratory periods.

26. **Theory and Design I.** This course deals with the technical and professional side of landscape gardening as related to the establishment and improvement of private estates, public grounds, parks, and cemeteries. The lectures given deal with the principles of landscape as applied to actual problems. Field exercises and excursions are conducted for illustrating the work. Horticulture 1, 10, 23, History of Architecture, Drawing 1, Mechanical Drawing 1, are prerequisites of this course.

Elective; senior year; first semester; three credits; one recitation; two laboratory periods.

27. **Theory and Design II.** This is a continuation of course 26.

Elective; senior year; second semester; two credits; one recitation; two laboratory periods.

28. **Field Practice in Landscape Gardening.** This course includes the application of the general principles of theory and design to practical problems in the field. Plain Surveying and Topographical Surveying 5, are prerequisites of this course.

Elective; senior year; second semester; two credits; two laboratory periods.

FLORICULTURE.

Students taking their major in Floriculture are required to take Horticulture 6, 10.

19. **Greenhouse Construction.** A course especially adapted for students specializing in Floriculture and Truck Gardening. The problems connected with the building of greenhouses, hot-beds, and cold frames, are dealt with; also, selection of materials; the various systems of heating and ventilating, and the value of the various types of buildings. Lectures and laboratory exercises in greenhouse and drafting room are conducted.

Elective; junior year; second semester; three credits; one recitation; two laboratory periods.

24. **Forcing Flowers.** In this course are studied the propagation, and problems of culture, such as soils, ventilation, and heat, connected with the forcing of plants used in the florist's trade. Horticulture 19 is a prerequisite of this course.

Elective; senior year; first semester; three credits; one recitation; two laboratory periods.

37. This is a continuation of Horticulture 24.

Elective; senior year; second semester; three credits; one recitation; two laboratory periods.

Special work can be arranged for students taking their major in Horticulture.

29. **Floriculture.** Instruction is given in various subjects as, proper soils, planting of seed, transplanting, making of cuttings, cultivation, principles of heating and ventilation, control of insect pests and diseases, connected with the cultivation of the common household and dooryard flowers. In addition, such problems as the grouping and arranging of flowers, so as to obtain the best color harmonies and most pleasing effects while growing, as well as for decoration purposes, are included. The lectures are supplemented by reference readings and laboratory periods in greenhouse and garden.

Course in Domestic Science and Art; junior year; first semester; two credits; one recitation; one laboratory period.

30. **Landscape Gardening.** The general principles of Landscape Gardening are taught, the aim being to give the student sufficient foundation to understand landscape gardening as applied to home decoration, to interest the student in the home beautiful, the improvement of our public school grounds, and city and village streets. A study is made of photographs, and famous landscape paintings, showing good taste and design in various phases of landscape gardening. Lectures and reference readings are supplemented by field exercises.

Course in Domestic Science and Art; second semester; two credits; one recitation; one laboratory period.

31. **Vegetable Gardening and Small Fruit Culture.** In this course such problems as care of soil, seeding, rotation, fertilizing, and the selection of the best varieties of vegetables and small fruits for use in the home garden are considered. Lectures, laboratory and fitld exercises.

Course in Domestic Science and Art; second semester; three credits; two recitations; one laboratory period.

POULTRY HUSBANDRY.

Professor Dryden.
Mr. Lunn.

In recognition of the importance of the poultry industry and to meet the demands of young men who aim to give special attention to this industry after leaving college, a department of Poultry Husbandry was established. Poultry-keeping is a part of every well regulated system of diversified farming and at the same time offers opportunities for profit-making as a special business. The plant at the College gives exceptional opportunities for a study of the practical as well as the theoretical side of the poultry industry.

1. **Poultry Husbandry I.** This course includes a study of breeds of domestic poultry, their history and classification. The laying and market qualities of different breeds will be emphasized. The laboratory work of this course will consist of feeding and preparing fowls for market; killing, dressing, packing, and marketing the finished product; and judging practice with utility breeds will be given.

Elective; first semester; four credits; two recitations; two laboratory periods.

2. **Poultry Husbandry II.** In this course the housing of poultry will be discussed; plans of different types of houses will be studied. It will also include a study of poultry foods and feeding with reference to egg production and meat production. Incubation, natural and artificial, will be treated. Practice will be given in planning and building poultry houses and appliances. The student will have practice in operating incubators and brooders. He will have charge of a pen of fowls, for which he will keep all necessary records. Practical work will also be given bearing upon the management of the poultry plant. By arrangement, the student may be given work in planning and conducting experiments. A study of the principles of feeding will be taken up in the class room and the students will be given practice in preparing rations in the laboratory.

Elective; second semester; four credits; two recitations; two laboratory periods. Prerequisite: Poultry Husbandry I.

VETERINARY SCIENCE.

Dr. Morel.

The design of this department is to establish a high grade course of veterinary medicine for Agricultural students. The curriculum of instruction is based upon the rules and regulations of the United States Department of Agriculture.

The object of the course is to enable the student to prevent disease, diagnose existing pathological conditions, arrest outbreaks of contagious and infectious diseases among domestic animals, give medical attention in emergency cases, and take care of the sick.

The course is given during the junior and senior years. Comparative Anatomy and Veterinary Physiology—the fundamental branches of medicine—are taught during the junior year; Comparative Medicine, Surgery, Obstetrics, Pathology and Materia Medica will be given in the senior year. The students of this department will be expected to be present at all the clinics,—medical and surgical—and will have an opportunity to diagnose various diseases and assist in the surgical operations. Special attention will be given to lameness and obstetrics, and the students will be called upon to perform obstetrical operations under the supervision of the Veterinary Surgeon in charge.

1. **Comparative Anatomy.** Anatomy is taught in the most practical manner possible. The lectures are illustrated by fresh dissections, models, plates, blackboard drawings, etc. Anatomy, being the foundation of all medical knowledge, is fully explained in its relation to medicine and surgery. The course includes lectures, recitations, quizzes, and dissecting.

Junior year; first semester; three credits; three recitations.

2. **Veterinary Physiology.** The subjects of principles of nutrition, hygiene and animal locomotion are covered carefully. The work in this branch consists in a thorough study of those fundamental principles of general physiology.

Junior year; second semester; three credits; three recitations.

3. **Principles and Practice of Comparative Medicine.** This

course comprises the control of infectious diseases, diagnosis, clinics, preventive medicine.

Senior year; first semester; three credits; three recitations.

4. **Surgery**. This course includes lectures on diagnosis, clinics, surgical restraint, soundness, lameness, shoeing, dentistry and obstetrics.

Senior year; second semester; three credits; three recitations.

5. **Materia Medica**. This is a synopsis of Veterinary Materia Medica; toxicology and therapeutics will be taught. Special attention will be given to the most common drugs in use, poisons and antidotes, hygienic and prophylactic therapeutics.

Elective.

6. **Meat Inspection**. A short course in meat inspection will be given to students who desire to pursue this study.

Elective.

FORESTRY.

Professor Peavy.
Mr. ————.

The aim of the College in establishing a course in Forestry was principally to train young men in that profession, adapting the instruction as far as practicable to the solution of the peculiar forestry problems existing in our State and in the Northwest generally. It is realized fully that European forestry methods are not advisable at the present stage of economic development in this region. Practices in vogue abroad will be examined only as they apply to the fundamental principles of forestry. At the same time it is being made very clear that closer utilization, through the application of scientific methods, both in logging and in milling, is proftable business. Timber owners are becoming convinced that prospective high prices of lumber warrant them in so cutting their holdings as to conserve the young stuff, too small to mill with profit now, for a future harvest.

This indicates, in part, the field for the forester in this region. It is as certain as the law of supply and demand that, with the advancing value of timber, the call for trained men to manage forest properties will increase. Railroads and other large corporate owners of timbered lands are employing professional foresters to administer their holdings. The Federal Forest Service is rapidly raising the professional standard of its field force and, through the natural elimination of unprepared men and the inevitable increase in numbers which efficiency in administration demands, for years to come, will afford employment for a large number of trained men.

The College is located in the heart of a timbered region, offering exceptional opportunities to the forestry student to study conditions on the ground. Virgin forests and second growth stands are easily accessible. Logging operations can readily be reached from Corvallis, while two mills in the city offer an opportunity for studying milling methods. Wood distillation plants, creosote works and factories for the production of finished wood products can be reached in a few hours' travel. The City Water Company of Cor-

vallis has placed an eighty acre tract of forest land at the disposal of the College, for the demonstration of scientific forestry methods.

All students registered in the department of Forestry are required to participate in the activities of the "Forest Club." This organization meets twice each month and has for its purpose the discussion of current forestry literature, legislation, and all other matters pertaining to the progress of the forestry movement.

A. **Elementary Forestry I.** Covering in an elementary way the fundamental principles of forestry; the forest as a resource; the influence of a forest cover on soil and climate and stream flow; the aesthetic value of the forest; an elementary discussion of the development of forestry in Europe; the forestry movement in the United States.

The Secondary course; first year; first semester; three credits; three recitations.

B. **Elementary Forestry II.** A continuation of course A.

The Secondary course; first year; second semester; three credits; three recitations.

C. **Elementary Silviculture I.** The conditions favoring forest growth; the reproduction of the forest naturally and artificially; the collection of forest tree seeds; seed sowing; seed storage; general nursery practice; field planting. The natural extension of the forest.

The Secondary course; second year; first semester; two credits; two recitations.

D. **Elementary Silviculture II.** A continuation of course C.

The Secondary course; second year; second semester; two credits; two recitations.

1. **General Forestry I.** A study of economic causes leading to the development of scientific forestry in Europe. Conditions in the United States pointing to the necessity for the application of improved methods; the natural forest; the forest improved by man; the national, state and private forests; the economic importance of forestry with special reference to American conditions.

Freshman year; first semester; three credits; three recitations.

2. **General Forestry II.** A continuation of course I.

Freshman year; second semester; three credits; three recitations.

3. **Silviculture I.** Description of the forest; the soil, climate and other factors of the site; factors governing forest growth and distribution; the influence of the forest on stream flow, climate and soil; the economic loss from erosion; the life history of a tree and of forest types; artificial and natural regeneration; seed collection; seed testing; nursing practice; seed storage; forest planting; the application of silvicultural methods to the growing crop.

Sophomore year; first semester; three credits; two recitations; one laboratory period.

4. **Silviculture II.** A continuation of course 3.

Sophomore year; second semester; four credits; two recitations; two laboratory periods.

5. **Mensuration and Survey I.** The determination of the contents of logs in cubic feet and in board measure; the study of log rules; methods of scaling timber; methods of computing the contents of entire felled trees; height measurements; volume tables; form factors; estimating the contents of entire stands; the growth rate of individual trees and of the forest; yield tables. Each student will be required to estimate, map and describe a given stand of timber.

Junior year; first semester; three credits; two recitations; one laboratory period.

6. **Mensuration and Survey II.** A continuation of course 5.

Junior year; second semester; three credits; one recitation; two laboratory periods.

7. **Management I.** The business of administering the forest; the policy of Federal, State and private owners; a review of forest mensuration, including methods of determining the volume of single trees and of stands; the costs of forest produts; the present value of the future crop; the value of young growth; the preparation of a working plan for a given area of timbered land, including a valuation survey, map, and forest description; the protection of the forest from fire, insect attacks and other injuries; the organization of the forest force for effective work.

Senior year; first semester; five credits; three recitations; two laboratory periods.

8. **Management II.** A continuation of course 7.

Senior year; second semester; five credits; three recitations; two laboratory periods.

9. **Utilization.** The use of the secondary wood products; the chemical products of wood; wood distillation; the utilization of waste; the tanbark industry; the manufacture of cooperage stock, shingles, lath, matches, veneer, shipping crates, charcoal, etc.

Senior year; first semester; two credits; one recitation; one laboratory period.

10. **Lumbering.** The history of the lumber industry, including a study of the methods used in different regions; special attention to lumbering operations in the Northwest; the transportation of logs from the woods to the mill; the use of steam machinery in skidding and hauling; driving; the methods of milling; seasoning and grading; the costs of logging and milling with reference to some definite operation. During the course each student will be required to prepare a thesis from data collected by personal study of some extensive logging and milling business.

Senior year; second semester; five credits; two recitations; three laboratory periods.

11. **Dendrology.** Classification and identification of forest trees; silvic characteristics of commercial species; forest regions of the United States; relative importance of timber species; life history and requirements of trees.

Senior year; first semester; three credits; one recitation; two laboratory periods.

12. **Wood Technology.** Microscopic structure of wood; defects due to knots, decay, and checks; structural changes due to seasoning; identification and classification of commercial woods; experimental study of the strength of timbers; the relation between moisture content and strength; chemical properties of wood.

Senior year; second semester; three credits; one recitation; two laboratory periods.

13. **Wood Preservation.** Primary causes of decay; the relation of moisture content to durability; surface application of preservations; the preservation of wood through impregnation with preservatives; the open tank method of treating timbers; economic effects.

Senior year; first semester; two credits; one recitation; one laboratory period.

14. **National Forest Administration.** A study of the methods of administering the Federal Forests; the organization of the administration force on the forest; fire patrol; timber sales; grazing; the forest homestead law; special uses of forest resources; permanent improvements.

Senior year; second semester; three credits; three recitations.

15. **Camping and Packing.** Correct methods of managing a camp; camp fires; camp cooking; field equipment; care of saddle and pack stock; packing.

Senior year; no credit; given as opportunity permits.

16. **Field Work.** Between the junior and senior years each student will be required to devote eight weeks to actual work in the field. This period will be given to the practical work required of foresters, as estimating, mapping and preparing forest descriptions; rough topographic and plane surveying; examination of logging problems; study of site conditions in relation to forest types; camping and packing.

An equivalent amount of field work may be offered as a substitute for this course. Four credits.

SCHOOL OF DOMESTIC SCIENCE AND ART.

Professor Greer.
Assistant Professor Van Liew.
Miss Van Deusen.
Miss Tobin.
Miss Ewing.

SECONDARY COURSE.

Domestic Science.

A. **Plain Cookery I.** Cooking of types of all common foods with thorough study of the underlying principles involved; vegetables with special consideration of the best methods by which flavor and attractive appearance may be maintained; cooking of cereals, serving of uncooked cereals; eggs in various ways, scrambled, poached, boiled, and in omelets, plain, meat and jelly; the use of eggs in desserts, salads, sandwiches, with a consideration of their dietetic value; simple flour mixtures, such as muffins, popovers, biscuits, and pancakes. Lessons in the care of the kitchen, including cleaning of utensils, stoves, sinks and refrigerators will be given and their proper care emphasized at all times.

First year; first semester; three credits; one recitation; two laboratory periods.

B. **Plain Cookery II.** A continuation of course A. Meats, the best method of cooking to develop flavor; value of broiling, boiling and roasting. Lessons in the making of soups, plain cake and bread will also be given during this term.

First year; second semester; three credits; one recitation; two laboratory periods.

C. **Cookery, Serving, Simple Dietetics I.** An elaboration of courses A, B, with attention given to good combinations in serving such as fish and puddings with their appropriate sauces; which vegetables to serve with certain meats, such as peas with lamb, apples with pork, and rice with chicken for palatability and proper proportion of food principles. Practice in the cooking and serving of meals for home occasions will give an opportunity for the selection of menus in which will be considered the best combination of soups, meats, salads and desserts.

Second year; first semester; two credits; two laboratory periods.

D. **Cookery, Serving, Simple Dietetics II.** A continuation of course C, with attention to the preparation of refreshments for special occasions, such as luncheons, receptions, and dances. The care of the dining room and its appointments, and table decorations, will be studied. The preparation and serving of food for common disorders in digestion; bran and gluten biscuits, broths, gruels, junkets, custards, egg and milk combinations will receive consideration.

Second year; second semester; two credits; two laboratory periods.

E. **Laundering I.** This course deals with the principles of laundry work through practical application. The subjects considered are: treatment of hard water, choice of starch, bluing and soap, laundering of bed, body, and table linen.

Second year; first semester; one credit; one laboratory period.

F. **Laundering II. Laundering and Household Economics.** Pertains to dresses, waists, skirts, collars and cuffs, silks and flannels, removal of stains, cleaning of laces and colored embroideries. Soaps and other laundry reagents will be made in class. Lectures on equipment and care of house laundry will be given. Practical cleaning and pressing of garments and practical cleaning and care of house furnishings will be required of the students.

Second year; second semester; one credit; one laboratory period.

Domestic Art.

A. **Plain Sewing I.** Both hand and machine sewing, to give the student a knowledge of the principles of construction and execution; training in neatness, accuracy, and economy of material. Hemstitching of towels and running will require of the student the development of good judgment and the power of producing regularity in stitches; hemming of towels and napkins, making of laundry bags and the apron, collar, cuffs and cap for cookery costume will give practice in simple sewing and prepare the student for more difficult work.

First year; first semester; two credits; two laboratory periods.

B. **Plain Sewing II.** Continuation of course A. The articles used in hand sewing and some simple embroidery stitches will be

taught on such articles as corset covers, ties, collars, belts. For practice in machine sewing and construction, simple undergarments and dressing jackets or kimonos will be made.

First year; second semester; two credits; two laboratory periods.

C. **Sewing Simple Dresses and Millinery I.** This course will require of the student more original and individual work, greater power of execution, ability to adapt principles already learned to new problems. Each student will make an unlined dress for school or evening wear, also an attractive hat suitable to wear with the dress made in class or one that will meet her own immediate need.

Second year; first semester; three credits; three laboratory periods.

Prerequisites: Courses A and B.

D. **Sewing, Simple Dresses and Millinery II.** Continuation of course C. Practice in drafting skirt, waist and sleeves, making of a more elaborate dress and hat. A variety of summer hats will be made by the class to show the use of different materials and the styles appropriate to the occasions for which they are planned.

Second year; second semester; three credits; three laboratory periods.

DEGREE COURSES.

Domestic Science.

1. **Science of Cookery I.** The cooking of simple foods such as vegetables, cereals, flour mixtures, eggs, meats, and fish will be supplemented by class discussion of methods and results. The reading of books and bulletins, the study of chemical and physical phenomena occurring in cooking. The care of food materials, such as milk, meat, fish, eggs and vegetables will be discussed. Practical methods of cleaning the kitchen and its furnishings, the refrigerator, stove, and utensils. This course will be adapted to the needs of the student, depending upon whether or not she has had a previous course in cookery.

Freshman year; first semester; three credits; one recitation; two laboratory periods.

2. **Science of Cookery II.** A continuation of course 1 for those students who have had only one semester's work in cookery.

Freshman year; second semester; three credits; one recitation; two laboratory periods.

3. **Simple Dietetics.** Comparison of food requirements of plant and animal life; study of composition of foods with relation to body, and elements necessary for work and repair; study of balanced dietary; essentials of a good menu, combination of foods for single meals, meals for one day and for one week.

Freshman year; second semester; three credits; two recitations; one laboratory period.

Prerequisite: Domestic Science A, B, and 1, or equivalent.

4. **Advanced Cookery I.** This course will be in advance of previous courses in its adaptation to the more mature minds of the students. Emphasis will be laid on good combinations in serving through the making of menus, cooking and serving of meals for every-day use and social occasions; attention will be given to the care of the dining room, table laying and serving. Theoretical work explaining bacterial actions such as souring of milk and bread, ripening of cheese and vinegar, spoiling of fruit, study of changes brought about by yeast in bread, and fermentation industries.

Sophomore year; first semester; three credits; one recitation; two laboratory periods.

Prerequisites: Domestic Science 1, and 2 or 3; Chemistry 3, 4.

5. **Advanced Cookery II.** Continuation of course 4 in practical cookery, theoretical work and serving. Preparation of dishes for such special occasions as picnic parties, birthday luncheons, and banquets; special problems in cooking with limitations as to numbers, expense, and time of preparation.

Sophomore year; second semester; three credits; one recitation; two laboratory periods.

6. **Laundering III.** Subject matter and treatment practically the same as that of courses E and F. Higher ideals in work, better technique and better power of accomplishment will be expected in this course, which will be adapted to the teaching of this subject as well as to home use.

Sophomore year; second semester; one credit; one laboratory period.

7. **Special Cookery.** Infant diet will be studied with reference to the condition of organs and agencies in digestion; modified milk and infant foods, from beef juices, barley gruel, fruit juices, eggs, and cereals, will be made. General care in abnormal conditions requiring attention on the part of the mother, will be considered. Invalid cookery, including the preparation and serving of foods adapted to common diseased conditions of the digestive and circulatory systems; dishes from gluten flour, oysters, eggs, fruits, and milk will be made. This work will be of service to students of home nursing.

Elective; junior year; first semester; two credits; two laboratory periods.

8. **Home Nursing.** Lectures, demonstrations, and practice in home nursing problems such as dressing cuts and burns, bandaging, arrangement of the sick room, bed making, restoration from fainting and drowning, general care in cases of fever and other common diseases.

Junior year; second semester; one credit; one laboratory period.

9. **Marketing.** Consideration of the economical purchase and preservation of foods; familiarity with the various types of markets; practice in obtaining raw materials for various purposes in both large and small quantities.

Elective; junior year; first semester; two credits; two laboratory periods.

10. **Home Problems.** A course dealing with the practical application of knowledge in cooking, serving, marketing, and laundering. It will consist largely in independent work in planning and preparig meals to family sized groups, in the model suite of rooms, and in taking entire care of these rooms, being an adaptation of previous training to home life. Special problems adapted to those desiring training for institutional work will be given.

Elective; junior year; second semester; two credits; two laboratory periods.

11. **House Sanitation.** The consideration of such problems as the best and least expensive methods of heating, ventilating, and lighting; also good plumbing and systems of supplying hot and cold water and carrying away waste water. All practical applications

will be based upon a thorough understanding of the fundamental physical principles involved.

Senior year; second semester; two credits; two recitations.

12. **Advanced Dietetics I.** A study of the physiology of alimentation; mechanical, chemical, and psycho-chemical process of digestion and foods as related to the body.

Elective; senior year; two credits; two recitations.

13. **Advanced Dietetics II.** A study will be made of food principles and the proportions present in common foods. This course will include the compiling of good menus, calculation of dietetic value of a variety, and the actual serving of these menus, comparing theoretical and actual food value; also the study of special diets for children, students and hard working men. The best books on this subject will be read. Students will prepare a food museum showing food constituents present in their relative proportions in one pound each of twelve typical foods.

Elective; senior year; second semester; two credits; two laboratory periods.

14. **Fancy Cookery.** This course involves so-called fancy cookery; puff paste, cream puffs, aspic jellies, boning of fowls, chafing dish delicacies, lobster a la Newburg, Welsh rarebit, fancy desserts, cakes and wafers.

Elective; senior year; second semester; two credits; two laboratory periods.

15. **Household Economics and Management I.** This course deals with care of the house, including best methods of cleaning metals, woods, glass, floor and wall coverings, and the study of the construction and care of stoves, ice boxes, fireless cookers, etc.

Elective; senior year; first semester; one credit; one laboratory period.

16. **Household Economics and Management II.** Deals with the management and organization of the household, the expenditure of the income, the comparison of cost of fuels and other household expenditures, work and domestic service, and household accounts.

Elective; senior year; second semester; one credit; one laboratory period.

17. **Normal Methods I.** A course in methods of teaching, consisting of lectures and observational work with criticism.

Elective; senior year; first semester; one credit; one recitation.

18. **Normal Methods II.** A continuation of course 17. Schools of different grades in the vicinity, both city and country, will be visited by the students with the purpose of deciding in which grades cooking and sewing should be taught and giving the necessary information for planning intelligent courses of study for such grades.

A Saturday morning class of children will be held in the College school kitchens and sewing rooms. The members of the Normal Methods class will, in turn, teach this class and later discuss it in their own class period, so that all may receive some benefit from each class taught.

Elective; senior year; second semester; three credits; one recitation; two laboratory periods.

19-20. **Plain Cookery for Foresters I and II.** The aim of this course is to give a general knowledge of underlying principles of cookery and their application to foods that are used in camp life. A study will be made of cooking processes best adapted to camp conveniences and methods of purchasing and the preservation of foods.

Elective; junior or senior year; first and second semesters; one laboratory period.

Technical Cookery. For women desiring knowledge of practical cookery for home use. A study of common types of food and their preparation in palatable and attractive forms. One lesson per week. Two terms of twelve lessons each. Fee, $2.50 per term.

Domestic Art.

1. **Sewing I.** Similar to courses A, B, but requiring better technique, broader comprehension of work and greater power of accomplishment than courses A. B. Both hand and machine sewing will be taught on articles such as aprons, towels and runners, napkins and tray cloths and a set of underwear.

Freshman year; first semester; two credits; two laboratory periods.

2. **Sewing II.** A continuation of course 1. This course is for

those students who come prepared with a year's work in sewing, and in the second semester is given for those who have had Dom. Art I. It is a continuation of Domestic Art I and will consist of more advanced work along the same lines. Drafting will be given, and a child's dress and plain shirtwaist suit will be made.

Freshman year; second semester; two credits; two laboratory periods.

3. **Simple Dressmaking and Hand Sewing and Millinery I.** The drafting and making of dresses, including infants' and children's clothing, also the construction of bonnets and hats suitable for various occasions. Design, technique, appropriation of colors and material will be emphasized; attention will be given to hand sewing and embroidery where such is applicable.

Sophomore year; first semester; three credits; three laboratory periods. Prerequisites: Sewing (Domestic Art A, B, and C, D), or Sewing (Domestic Art 1, 2).

4. **Simple Dressmaking and Hand Sewing and Millinery II.** A continuation of Domestic Art 3.

Sophomore year; second semester; three credits; three laboratory periods.

5. **Dressmaking and Tailoring.** Drafting and making of costumes for various occasions, calling, dinner, dances, etc., giving experience in handling various materials and a scope for originality, good taste, beauty and appropriateness in design and costume, also the development of technique.

Elective; junior year; first semester; two credits; two laboratory periods. Prerequisites: Domestic Art 1, 2, 3, 4.

6. **House Construction and Decoration.** The application of art principles to the construction and furnishing of all parts of the house; the practical work will consist in the making of house plans, giving careful attention to the arrangement, that both convenience and beauty obtain, also the selection of materials for furnishings, woodwork, papering, furniture, rugs, curtains; expense, appropriateness, combining of colors and various textures receiving careful consideration.

Junior year; second semester; three credits; one recitation; two laboratory periods.

7. **Basketry I.** A form of decorative art which involves the construction of such articles as will require careful consideration of color, form and design, affording opportunities for the expression of the originality of the individual in the making of reed, raffia, ash and sweet grass baskets.

Elective; junior year; first semester; two credits; two laboratory periods.

8. **Basketry II.** A continuation of course 7, requiring the completion of a large problem or the beginning of a more difficult one than previously attempted.

Elective; junior year; second semester; two credits; two laboratory periods.

9. **Advanced Basketry and Weaving I.** A continuation of courses 7 and 8, involving larger and more difficult problems in basket weaving; also the weaving of fabrics on a hand loom of ordinary form.

Elective; senior year; first semester; two credits; two laboratory periods.

10. **Advanced Basketry and Weaving II.** A continuation of course 9.

Elective; senior year; second semester; two credits; two laboratory periods.

11. **Handwork and Weaving I.** A course involving the construction of useful and beautiful articles illustrating what the mind and hand can conjointly do, thus making the most of the student on his executive as well as his reflective side. This work involves splicing of rope, knotting, braiding, netting, bead work, crocheting, embroidery and weaving.

Elective; senior year; first semester; two credits; two laboratory periods.

12. **Handwork and Weaving II.** A continuation of course 11.

Elective; senior year; second semester; two credits; two laboratory periods.

13. **Textiles.** A series of lectures on the manufacture of textiles. The materials used in making the various kinds, their uses, both practical and decorative, will be given consideration.

Elective; junior and senior years; second semester; one credit.

14. **Normal Sewing.** This course is offered for students desiring to teach sewing. Courses of sewing will be planned for children of different ages; each article of the course being made by the class so that each student will know intimately the problems connected with it. The best methods of presenting the work to the children will be taught.

Elective; senior year; first semester; two credits; two laboratory periods. Prerequisites: Domestic Art 1, 2, 3, 4, 5.

15. **Children's Dressmaking.** Making of clothes suitable for children of different ages, including infants' clothing. Handwork will be applied where desirable. Emphasis will be laid on appropriateness and attractiveness.

Elective; senior year; second semester; two credits; two laboratory periods. Prerequisites: Domestic Art 1, 2, 3, 4, 5.

16. **Advanced Dressmaking and Tailoring.** Making draped gowns, drafting and making tailored waists, skirts and coats. Requires excellence in technique and perfect accuracy in construction.

Elective; senior year; first semester; three credits; three laboratory periods. Prerequisites: Domestic Art 1, 2, 3, 4, 5.

17. **Costume Design.** Special application of art principles to the designing of costumes and hats with a series of lectures on the "History of Costume Design."

Elective; senior year; first semester; two credits; two laboratory periods.

18. **Special Millinery.** Construction of children's hats and caps, women's bonnets and evening hats.

Elective; senior year; second semester; two credits; two laboratory periods.

CIVIL ENGINEERING.

Professor Skelton.
Mr. Gardner.
Mr. Gould.

1. **Plane Surveying I.** This course includes recitations, lectures, field and office work in the theory and practice of plane surveying. The theory and construction of the different surveying instruments are studied and practice will be given in making their tests and adjustments. The United States public land surveys and land laws are studied. Forms of field notes, methods of balancing and plotting surveys, computing areas and like work, will have due consideration. Proper emphasis will be placed upon chain surveying. Surveys will be made of assigned plats and descriptions prepared. Resurveys will be made where more than ordinary difficulty is encountered in the interpretation of descriptions and existing evidence.

The courses in Civil Engineering, Mining Engineering, and Forestry; freshman year; second semester; five credits; until April 15, four recitations; one laboratory period; after April 15, five laboratory periods.

Prerequisites: Mathematics 1 and Mechanical Engineering 1.

2. **Plane Surveying II.** This course is a condensation of course 1, and is designed for students in the courses in Agriculture and Mechanical or Electrical Engineering. The greater part of the time is spent by the student in the field with the various instruments. Exercises relating to farm surveying, drainage, irrigation, and road construction, occupy most of the time. Areas are computed, profiles are constructed and estimates formed.

Elective; second semester; three credits; three laboratory periods, in the field or office.

Prerequisite: Mathematics 1.

3. **Engineering Drawing I.** A continnation and extension of the previous work in drawing with special reference to application in Civil Engineering. Practice in tracing and in blue and black process printing will be given.

Sophomore year; first semester; two credits; two laboratory periods.

Prerequisites: Mechanical Engineering 1 and 2; Art 1.

4. **Engineering Drawing II.** This course is a continuation of course 3.

Sophomore year; second semester; two credits; two laboratory periods:

Prerequisite: Civil Engineering 3.

5. **Topographic Surveying.** This course will include the execution of a complete topographic survey of an assigned tract, including base line measurement, transit, stadia and plane table work, platting and finishing the map.

The courses in Civil Engineering and Forestry; sophomore year; first semester; four credits; five laboratory periods, until the Christmas holidays.

Prerequisites: Civil Engineering 1; Mechanical Engineering 1; Art 1.

(During fall semester, junior year, 1910-1911.)

6. **Railroads I.** Theory of economic grades, circular and spiral curves, turnouts, earthwork computations, and similar topics.

Sophomore year; first semester; one credit; five recitations, from the Christmas holidays to the end of the semester.

Prerequisites: Civil Engineering 1 and 5.

(During fall semester, junior year, 1910-1911.)

7. **Railroads II.** This course is a continuation of course 6. A reconnaissance and location survey of a line several miles in length will be made, maps and profiles constructed, and estimates formed.

Sophomore year; second semester; five credits; two recitations; three laboratory periods.

Prerequisite: Civil Engineering 6.

(During spring semester, junior year, 1910-1911.)

8. **Highway Construction.** This course includes a consideration of the fundamental principles of location, construction, and maintenance of roads, as well as a thorough study of the materials used in road and street building.

Junior year; first semester; three credits; three recitations.

(During the first semester, senior year, 1910-1911; five credits; four recitations; one hour drafting room.)

9. **Masonry and Foundations.** A study of the properties of stone, brick, lime, cement, and concrete as building materials and of their uses in foundations, retaining walls, piers, and dams; the theory of the masonry arch, retaining wall and dam. Recitations, lectures, and work in cement laboratory.

Junior year; second semester; four credits; three recitations; one laboratory period.

(During senior year; second semester, 1910-1911; five credits; four recitations; one period laboratory or computing room.)

10. **Roofs and Bridges I.** Both analytical and graphical methods will be applied to the determination of the stresses in roof trusses under static and wind loads and in simple bridge trusses under static and moving, concentrated and distributed, loads.

Senior year; first semester; four credits; two recitations; two laboratory periods.

Prerequisites: Mechanical Engineering 5 and 6.

11. **Roofs and Bridges II.** This course is a continuation of course 10. Draw-bridges, cantilever and suspension bridges, and reinforced concrete arch.

Senior year; second semester; four credits; two recitations; two laboratory periods.

12. **Sanitary Engineering.** Drainage systems for populous districts, including chemical and bacterial purification of sewage; collection and disposal of garbage; street cleaning; separate and combined water carriage system; surveys, plans, and specifications; law of flow and determination of size and capacity; brick, terra cotta, cement, and concrete sewers.

Senior year; first semester; three credits; two recitations; one laboratory period.

Prerequisite: Mechanical Engineering 7.

13. **Water Supply Engineering.** Water supply for populous districts; gravity and pumping systems; pumping machinery, standpipes, reservoirs, and purification works; the preparation of plans, specifications, and contracts.

Senior year; first semester; three credits; two recitations; one laboratory period, designing and computing room.

Prerequisite: Mechanical Engineering 7.

14. **Irrigation Engineering.** Precipitation, run-off, and stream-flow; quantity of water required; measurements of flow in open channels; distribution systems, headworks and storage reservoirs, and other like topics. Study of a typical project including the preparation of plans and specifications.

Senior year; second semester; four credits; three recitations; one laboratory period.

15. **Contracts and Specifications.** A study of the general principles and laws of contracts as applied to engineering, including the preparation and study of specifications and contracts based upon engineering structures designed by the individual student.

Senior year; second semester; one credit; one recitation.

16. **Engineering Seminar I.** The members of the junior and senior classes in the course in Civil Engineering, and the professor and instructors, constitute the Civil Engineering Seminar which meets once a week. The purpose of this seminar is to bring the student in touch with engineering literature and practice. To this end, a number of journal reviews and papers on engineering subjects will be presented and freely criticised each week. The work will follow a previously arranged program.

Junior year; second semester; one credit.

(During the first semester, senior year, 1910-1911.)

17. **Engineering Seminar II.** See course 16.

Senior year; first semester; one credit.

(During second semester, senior year, 1910-1911.)

18. **Engineering Seminar III.** See course 16.

Senior year; second semester; one credit.

Courses 10, 11, 12, 13, 14, and 15 are given during the year 1910-1911 only to the fifth year or graduate classes.

ELECTRICAL ENGINEERING.

Professor Gardner.
Mr. Hawley.
Mr. Shepard.
Mr. Ewart.
Mr. Pernot.

1. **Dynamo-Electric Machinery.** In this course the student becomes familiar with the fundamental laws of electric and magnetic circuits; the structure of generators and motors; estimation of resistances, losses, and efficiencies; armature windings; and the types of machines suited to modern requirements.

Junior year; first semester; three credits; three recitations.

Prerequisites: Physics 3 and 4; Mathematics 7 and 8.

2. **Alternating Currents.** In this course alternating currents are considered both from a mathematical and graphical standpoint. It includes the measurement of power; study of the action of resistance, inductance and capacity in series and parallel circuits; effect of variation of frequency and wave form; the general theory of alternators, transformers, induction motors, converters, and their construction.

Junior year; second semester; three credits; three recitations.

Prerequisites: E. E. 1; Mathematics 7 and 8.

3. **Advanced Alternating Currents.** The action and operation of alternating current generators; motors of synchronous and induction types, and transmission lines are considered mathematically; the Steinmetz symbolic method of solution of problems being used.

Senior year; first semester; three credits; three recitations.

Prerequisite: E. E. 2.

4. **Electrical Engineering Laboratory I.** Construction of direct current dynamos and motors and their operation; the applications of ammeters, voltmeters, and wattmeters to the measurement of power are made familiar to the student. Field and armature resistances, and characteristic curves are obtained. Commercial tests are made.

Junior year; first semester; two credits; two laboratory periods.

Prerequisites: Physics 3 and 4; Mathematics 7 and 8.

5. **Electrical Engineering Laboratory II.** Study of alternating current circuits, instruments, and machines; determination of candle-power of arc and incandescent lamps; commercial testing.

Junior year; second semester; two credits; two laboratory periods.

Prerequisite: E. E. 4.

6. **Electrical Engineering Laboratory III.** Advanced direct and alternating current testing, including that of single and polyphase alternators; synchronous and induction motors; transformers; synchronizing, and transmission line operation.

Senior year; first semester; two credits; two laboratory periods.

Prerequisite: E. E. 5.

7. **Electrical Engineering Laboratory IV.** Continuation of E. E. 6.

Senior year; second semester; two credits; two laboratory periods.

Prerequisite: E. E. 6.

8. **Electrical Distribution.** The different types of electric circuits and systems of wiring from an economic standpoint; aerial and underground construction; house wiring, and best forms of illumination.

Senior year; first semester; two credits; two recitations.

Prerequisites: E. E. 2 and 5.

9. **Electrical Design I.** Required of each two students who take this subject, a design of a direct current generator, consisting of four tracings of design plates which they have made on detail paper, and a complete report on same, giving all computations and dimensions, which is accompanied by a sheet of predetermined performance curves. Each student is required to design a transformer and make a report upon same. Number of plates required per student taking this course is three.

Senior year; first semester; three credits; three laboratory periods.

10. **Electrical Design II.** Required of each two students, the design of an alternator or rotary converter, and an induction motor. Four tracings per student; two reports.

Senior year; second semester; three credits; three laboratory periods.

Prerequisite: E. E. 9.

11. **Power Plants.** Principles governing the location of power plants, both steam and hydraulic; the economics of transmission; selection and installation of generating units; railway construction and rolling stock; management and testing of complete plants are considered. Time is devoted to the study of estimates, specifications, and superintendence. A design of a steam electric or hydro-electric power station and distribution system. An engineering report upon such design is required to complete this subject.

Senior year; second semester; three credits; three recitations.

Prerequisite: E. E. 3.

12. **Seminar I.** Weekly meetings are held for the discussion of articles appearing in current periodicals and scientific papers.

Elective; senior year; first semester; one credit.

13. **Seminar II.** Elective; senior year; second semester; 1 credit.

14. **Storage Batteries.** The several types of storage batteries are studied from chemical, physical, and commercial standpoints.

Senior year; second semester; one credit; one recitation.

15. **Telephony.** The underlying principles of the transmission of intelligence by electrical means, and the methods of operation of the telegraph, telephone, wireless telegraph, wireless telephone, and their relative values commercially, are studied.

Senior year; two credits; two laboratory periods.

16. **Thesis I.** Most of the preliminary reading and planning is done during the first semester, while the actual investigation or construction work occurs in the second semester.

Senior year; first semester; one credit.

17. **Thesis II.** A continuation of course 16.

Senior year; second semester; one credit.

18. **Electro-Chemistry.** Electric heating and electrolytic processes for the manufacture of chemicals and metals are discussed. Different types of electric furnaces and storage batteries are considered.

Elective; senior year; second semester; two credits; two laboratory periods.

MECHANICAL ENGINEERING.

Professor Covell.
Assistant Professor Phillips.
Mr. Jackson.
Mr. Porter.
Mr. Knopf.
Mr. Graf.

1. **Mechanical Drawing I.** The use of instruments and the elementary principles of mechanical drawing are taught by a graded series of plates, including simple practice sheets, geometric constructions, principles of orthographic projection, shading, the helix with its application to screw-threads, and finally the complete development of a working blue-print of some simple device from sketches. Particular attention is given to freehand lettering, general neatness, and accuracy.

All courses in Engineering; freshman year, and Secondary course in Forestry; second year; first semester; three credits; three laboratory periods.

2. **Descriptive Geometry.** This work consists in the graphical solution of problems involving the projection of lines, surfaces, and solids.

All courses in Engineering; freshman year; second semester; three credits; two recitations and one laboratory period.

Prerequisite: Mechanical Drawing 1.

3. **Mechanical Drawing II.** A continuation of course 1, including mechanical lettering, line shading, isometric and oblique projection, gear curves and their application to spur, bevel, and worm gearing. Following this is the preparation of a typical set of working drawings, tracings, and blue-prints of a complete machine. Rapid and business-like execution of work is insisted upon at all times.

The courses in Electrical and Mechanical Engineering; sophomore year; first semester; four credits; four laboratory periods.

4. **Mechanism.** A study of mechanical movements, including

velocity ratios; transmission of motion by linkwork, gearing, cams, and belting.

The courses in Electrical and Mechanical Engineering; sophomore year; second semester; four credits; two recitations; two laboratory periods.

Prerequisite: Course 2.

(During 1910-1911 this course will be required only in the first semester of the junior year in Mechanical Engineering; three credits; two recitations; one laboratory period.)

5. **Statics and Dynamics.** This course treats of the action of forces upon bodies at rest or in motion. Many original problems are worked and the practical applications pointed out.

All courses in Engineering; junior year; first semester; four credits; four recitations.

Prerequisites: Mathematics 5 and 6.

6. **Strength of Materials.** A study of the strength of materials with special reference to their use in such engineering structures as beams, trusses, girders, and shafting.

All courses in Engineering; junior year; second semester; two credits; two recitations.

Prerequisite: Course 5.

7. **Hydraulics.** This course deals with theoretical hydraulics, including statical pressure, immersion, flotation, and steady flow through pipes and orifices, as well as over weirs and in open channels. Bernoulli's theorem is taken as the basis for calculation of flow in pipes and through orifices, with such modifications as are required to allow for frictional and other resistances.

All courses in Engineering; junior year; second semester; two credits; two recitations.

Prerequisite: Course 5.

(During 1910-1911 courses 5, 6, and 7 will be given in the senior year of all Engineering courses instead of the junior year.)

8. **Materials of Engineering.** This is largely a lecture course dealing with the materials used in engineering structures. Iron, steel, brick, cement, timber, and stone are discussed with reference to their physical properties and adaptability to the purposes of engineering construction.

The courses in Civil and Mechanical Engineering; junior year; first semester; two credits; two recitations.

Prerequisites: Physics 3 and 4.

9. **Elementary Steam Engineering.** It is the purpose of this course to teach the elementary principles of steam engineering, in as practical a manner as possible, to students who are not taking one of the engineering courses. The scientific principles are taught by means of recitations, but a large part of the work consists of laboratory exercises, where the student comes into actual contact with steam machinery and learns to operate and care for it.

The course in Forestry; junior year; first semester; two credits; one recitation and one laboratory period.

10. **Steam Machinery.** This course treats of steam boilers, feed water heaters, injectors, mechanical stokers, steam engines, governors, valve gears, indicators, and indicator diagrams. The purpose is to make the student familiar with the forms of these devices, which are of prime importance in a power plant, and to solve problems concerning their installation and use.

The courses in Electrical and Mechanical Engineering; junior year; second semester; two credits; two recitations or an equivalent.

Prerequisites: Physics 3 and 4.

11. **Engineering Laboratory I.** A brief study of experimental investigation; discussions on the reduction of data so obtained; mechanical calculating devices; the preparation of neat and accurate reports.

The calibration of gages, weirs, indicator springs, planimeters, and other measuring instruments is followed by the usual tests on the materials of construction. These include transverse, tensile, compressive, and torsion tests, of timber, iron, and steel, as well as the various standard tests on cements, stone, brick, and road materials.

The courses in Civil and Mechanical Engineering; junior year; and in Mining Engineering, senior year; first semester; two credits; two laboratory periods:

(During the year 1910-1911: the courses in Civil and Mechanical

Engineering; senior year; first semester; two credits; two laboratory periods.)

12. **Engineering Laboratory II.** A continuation of the preceding course, including tests of lubricants, calorific power of fuels, composition of flue gases, exercises in steam calorimetry, and in valve setting by the aid of the indicator.

Efficiency tests of steam, gas, and air engines, boilers, pumps, and centrifugal blowers. In hydraulics: efficiency tests of a Doble wheel, centrifugal pump, and hydraulic ram; determination of stream flow by weir and current meter.

The courses in Civil and Mechanical Engineering; junior year; Mining and Electrical Engineering; senior year; second semester; two credits; two laboratory periods.

Prerequisite: Course 11.

(During year 1910-1911: the courses in Civil and Mechanical Engineering; senior year; second semester; two credits; two laboratory periods.)

13. **Machine Design I.** This course is elementary and consists largely in applying the principles discussed in mechanism and in mechanics to the design of machine parts, riveted joints, fastenings, belting, and shafting.

Senior year; first semester; four credits; two recitations; two laboratory periods.

Prerequisites: Courses 4 and 6.

14. **Machine Design II.** A continuation of course 13, devoted to the design of complete machines, steam engines, machine tools, pumping machinery, and their installation.

Senior year; second semester; four credits; four laboratory periods.

Prerequisite: Course 13.

15. **Thermodynamics.** This course treats of the laws governing the transformation of heat into work, particularly in the steam engine. The general laws of thermodynamics are discussed and a number of practical problems are solved.

The courses in Electrical and Mechanical Engineering; senior year; first semester; three credits; three recitations or lectures.

Prerequisites: Mathematics 5 and 6; Physics 3 and 4.

16. **Internal Combustion Motors.** In this course the application of thermodynamics to gas and oil engines is studied with reference to economy of operation and the results are compared with those obtained from the steam engine. The properties and cost of fuels are discussed, as well as the methods of carburation and ignition.

Senior year; second semester; two credits; two recitations.

Prerequisite: Course 15.

17. **Steam Turbines.** The steam turbine has taken its place as one of the important factors in transforming energy into work. Hence, the principles involved in its construction and operation should be well understood by engineering students. This course considers flow of steam through pipes and nozzles and its action on turbine buckets. The effects of superheating are noted and some attention is given to steam turbine design.

Senior year; second semester; two credits; two recitations.

Prerequisite: Course 15.

18. **Hydraulic Motors.** The application of the principles of theoretical hydraulics and mechanics to the development of power by means of water wheels, is discussed. The different types of turbines and impulse wheels are considered with reference to their forms and adaptability.

Senior year; first semester; two credits; two recitations.

Prerequisite: Course 7.

(During 1910-1911: courses 15, 16, 17, and 18 are required only of students taking the fifth or graduate year.)

SHOP WORK.

A. **Woodwork I.** Mechanic Arts Course. This course in woodwork will be divided into three parts, carried on simultaneously.

a. A lecture course on methods and materials used in Mechanic Arts, including bench equipment, use and care of bench tools; carpentry and laying out work; joinery or putting work together; fastenings, structure and defects of wood; methods of cutting and seasoning; furniture construction and design; wood finishing, painting, staining, varnishing, waxing, and polishing. This will require one hour a week.

b. One hour a week will be devoted to mechanical drawing

and a study of drawings to enable the student to make drawings of the articles which he is called upon to make in the shop and to interpret drawings in general.

c. A woodwork course, including joinery, primary construction work, furniture construction and finishing. The purpose of this course is to instil a knowledge of the principles of joinery by teaching the use and care of woodworking tools, to develop skill in their use by means of progressive exercises. The application of the joints is shown in the construction of finished products. All of the operations must be methodically and accurately performed, and the finished product have a neat and workmanlike appearance.

Secondary course in Mechanic Arts; first year; first semester; five credits; one recitation; four laboratory periods.

B. **Woodwork II.** A continuation of course A.

The Secondary courses in Mechanic Arts; first year; second semester; five credits; one recitation; four laboratory periods.

C. **Woodwork III.** Mechanic Arts course. Those who desire to specialize in woodwork may do so by devoting the whole time allotted to industrial work to this branch. Such students will continue along the same lines as indicated in courses A and B and during the second year will enter upon high grade cabinet work.

The Secondary course in Mechanic Arts; second year; first semester; five credits; five laboratory periods.

D. **Woodwork IV.** A continuation of course C.

The Secondary course in Mechanic Arts; second year; second semester; five credits; five laboratory periods.

E. **Patternmaking I.** Mechanic Arts Course. Those who prefer patternmaking to cabinet work may devote the second year to that subject, following the plan outlined under C and D.

The Secondary course in Mechanic Arts; second year; first semester; five credits; five laboratory periods.

F. **Patternmaking II.** A continuation of course E.

The Secondary course in Mechanic Arts; second year; second semester; five credits; five laboratory periods.

G. **Woodwork V.** This course will be equivalent to the first six weeks of the Mechanic Arts course (A) and must be taken at the same time.

It consists of six lectures on the care and use of bench tools, six lessons in mechanical drawing, and twenty-eight laboratory periods in the practical use of the various tools in the way of planing, sawing, chiseling, etc.

In this course each student is required to have a drawing board, T-square, compass, lead pencil and three sheets of mechanical drawing paper, the cost of which will not exceed one dollar.

The Secondary course in Agriculture and Forestry; second year; two credits; two laboratory periods.

H. **Woodwork VI.** Work leading to a course in Architecture. Requirements for entrance, two-year course in Secondary Manual Training or Mechanic Arts course (A) or its equivalent.

This course will consist of one lecture each week, three hours of drawing per week, embracing mechanical, perspective, and design work.

Practical experience in the use of the steel square in laying out braces, rafters, and trusses, ready for the framing, will be made a strong feature of the course. The laying out and building to scale forms and arches for concrete piers, columns, arches, and foundations will be taken up along with the framing and constructing of summer cottages, suburban homes, barns, septic tanks, and different styles of fencing and other necessities about the well-kept home.

This course will be given on Saturdays and may be taken in lieu of Secondary Mechanic Arts courses C, E, or G. However, unless twenty or more students desire to take the course, it will not be given, on account of limited shop room.

The Secondary course in Mechanic Arts; second year; first semester; five credits; five laboratory periods.

I. **Woodwork VII.** This is a continuation of course H, and is given in the Secondary course in Mechanic Arts; second year; second semester; five credits; five laboratory periods.

J. **Blacksmithing I.** The student is taught to make and manage the forge fire, to shape iron by bending, upsetting, drawing, and welding. The course also includes occasional lectures on the principles involved in managing the fire and in forging.

Elective; second year of the Secondary courses in Mechanic Arts; first semester; five credits; five laboratory periods.

K. **Blacksmithing II.** A continuation of course J; devoted to making useful articles and tools of iron and steel. A large part of the time is given to making and tempering steel tools. This course is also accompanied by lectures on the different grades of steel and the effects of heat treatment.

Elective; second year of Secondary course in Mechanic Arts; second semester; five credits; five laboratory periods.

Prerequisite: Course J.

L. **Blacksmithing III.** After completing the preliminary exercises, the student enters upon work having direct application to farming and forestry, such as the mending of farm implements, making chains, clevices and hooks, ironing whiffletrees and neck-yokes, and sharpening tools.

Required in the Secondary courses in Agriculture and Forestry; second year; second semester; two credits; two laboratory periods.

M. **Steam-fitting and Plumbing I.** This course is intended as an aid to those who desire to follow the occupation of steam-fitting or plumbing. The practical work includes the installation of piping ror steam, water, or gas; a study of the principles involved in expansion, radiation, and water hammer. The work in plumbing takes up the construction of bends, traps, and various types of wiped joints; also a study of ventilation; the proper arrangement of soil and water pipes, hot water boilers and tanks.

Elective; second year; first semester; five credits; five laboratory periods.

N. **Steam-fitting and Plumbing II.** This is a continuation of Course M.

Elective; second year; second semester; five credits; five laboratory periods.

(During the year 1910-1911 these courses will not be given.)

O. **Woodwork XI.** This course is intended for those who wish to teach or supervise manual training work in the secondary schools.

The work consists of laboratory exercises accompanied and supplemented by lectures on the care and use of manual training

equipment; methods and materials used in manual training, and comparison of equipment and courses in manual training.

This course has special reference to the work of manual training in the first, second, third, and fourth grades of the public schools.

Secondary Mechanic Arts course; second year; first semester; five credits; one recitation; four laboratory periods.

P. **Woodwork XII.** A continuation of course O, applying to the manual training work of the fifth, sixth, seventh, and eighth grades.

Secondary Mechanic Arts course; second year; second semester; five credits; one recitation; four laboratory periods.

1. **Woodwork VIII.** This course, though designed for the Mechanical and Electrical Engineering students, is divided into two courses (a) and (b), because of the lack of Secondary Manual Training in Mechanic Arts in some parts of the State and the presence of it in other parts.

(a) Students who have not had the advantage of Secondary Manual Training in Mechanic Arts will enter the class in bench work for the first semester or until they have developed sufficient skill to enter the advanced work.

(b) Students who have had a year or more of Secondary Manual Training in Mechanic Arts work will enter the class in wood turning preparatory to pattern work.

The course on bench work will consist of a series of exercises in planing, sawing, and chiseling, preceded by a lecture course explaining each step in advance.

The course in wood turning is taken in conjunction with lectures on the lathe, its care and management, and the care and use of the turning tools.

After acquiring sufficient skill in turning between centers and chuck turning, the primary principles of patternmaking will be taken up, which is the main feature of the course.

Required in Mechanical and Electrical Engineering courses; freshman year; first semester; three credits; three laboratory periods.

2. **Mechanical and Electrical Patternmaking III.** The students

in Engineering will take up the art of patternmaking where they left off at the close of the first semester, beginning with simple exercises and advancing until they have made patterns for various parts of machines and other structures, such as engine cylinders, gear wheels, pulleys, dynamo frames, and special patterns as assigned. The lectures explain the principles of moulding directly related to patternmaking; the shrinkage of metals, warping and twisting of woods, glue and other fastenings; the making of cores and core boxes; methods of marking and storing patterns; and how to estimate the weight of iron castings.

The courses in Electrical and Mechanical Engineering; freshman year; second semester; three credits; three laboratory periods.

3. **Woodwork IX.** This course is designed for Mining and Civil Engineering students, and consists primarily of a series of constructive exercises in carpentry and joinery, accompanied by one lecture a week dealing with the care and use of bench tools; the use of the steel square in framing and laying out work. The first constructive exercises are designed to teach the use of the various hand tools as well as the forms of joints and ties used in truss and bridge framing, dictated by good engineering practice.

Upon completing this series of exercises, the preceding joint work will be developed into trusses and bridges which upon being completed will be placed in the testing laboratory for experimental purposes.

During the latter part of the semester the Mining Engineering students specialize in mine timbering, and the Civil Engineering students in cement forms and trusses for foundation and arch construction.

Mining course; freshman year; first semester; three credits; three laboratory periods.

4. **Woodwork X.** This course is equivalent to that in the Winter Short Course in Mechanic Arts, and on account of shop room and limited instructing force, will have to be taken at the same time, or during the first seven weeks of the second semester. The purpose of this course is to give instruction in the care and use of modern woodwork benches and their equipments. Six lectures will be given in this course, each lecture preceding its prac-

tical application. Skill in the manipulation of tools cannot be obtained in this short time, but instruction and practice will be given in snarpening chisels, planes and other edge tools; in jointing, setting, and filing hand-saws, and in the use of the steel square as in the elementary principles of carpentry. As much stress will be placed on planing, sawing, and chiseling exercises as time will permit.

The courses in Agriculture and Forestry; freshman year; second semester; two credits; two laboratory periods.

5. **Blacksmithing IV.** The student is taught to make and manage the forge fire; to shape iron by bending, upsetting, drawing, and welding. Many useful articles are made, consisting of hooks, staples, rings, clevices, and chains.

The courses in Mechanical and Electrical Engineering; sophomore year; first semester; three credits; three laboratory periods.

6. **Blacksmithing V.** This is a continuation of course 5, and is devoted to more advanced work, consisting largely of work in steel. The principles of hardening and tempering are taught and applied in making hammers, chisels, drills, cutting tools for the shop, and in doing special work as assigned.

The course in Mechanical Engineering; sophomore year; second semester; three credits; three laboratory periods.

7. **Blacksmithing VI.** A course for students in Agriculture. After completing the first exercises, the student enters upon work having a direct application to farming, such as the mending of farm implements, making and mending of chains, clevices, and hooks; ironing of whiffletrees and neckyokes; sharpening of tools.

The courses in Agriculture and Forestry; freshman year; second semester; two credits; two laboratory periods.

8. **Blacksmithing VII.** A course for students in Mining Engineering. After learning the care and management of the forge fire, the student will devote his time to making and tempering cold chisels, rock drills, picks, etc.

The course in Mining Engineering; sophomore year; first semester; two credits; two laboratory periods.

9. **Machine Shop I.** The work in the machine shop includes

both bench work and machine work. Upon first entering the shop, the student is taught the principles of chipping, filing, and hand finishing. This occupies the first half of the semester. Machine work is then taken up through a series of exercises on lathe, shaper, planer, drill press, and milling machine. As soon as accuracy and proficiency are shown on the part of the student, he is assigned to construction work upon engines, dynamos, motors, or machine tools.

The course in Mechanical Engineering; junior year; first semester; and in the course in Electrical Engineering; sophomore year; second semester; three credits; three laboratory periods.

10. **Machine Shop II.** A continuation of course 9, devoted to machine construction and milling machine work. Special attention is paid to economical shop methods of doing work.

The course in Mechanical Engineering; junior year; second semester; three credits; three laboratory periods.

11. **Machine Shop III.** A course for students in Electrical Engineering. Special attention is given to the mechanical construction of dynamos, motors, and laboratory apparatus.

The course in Electrical Engineering; junior year; first semester; two credits; two laboratory periods.

12 and 13. **Machine Shop IV and V.** These courses are a continuation of the work outlined in the junior year, and are intended for those who desire to devote further time to this branch, or for those who are engaged upon construction work in the preparation of theses.

Elective; three credits; three laboratory periods.

Prerequisites: Courses 9 and 10.

MINING ENGINEERING AND GEOLOGY.

Professor Parks.
Mr. Cooke.
Mr. French.

GEOLOGY.

1. **Crystallography and Blowpipe Analysis.** This course is intended as a preliminary one, and is a preparation for the work in Determinative Mineralogy, which follows. Only such portion of the subject is especially emphasized as is of practical value in the determination and proper understanding of minerals. The student is given a thorough drill in the more practical portion of the subject. The course is presented through lectures, textbooks, laboratory work, and individual quizzes. In the laboratory work, each student is required to become thoroughly familiar with crystal forms and combinations by working with the wooden crystal models, and later, with the aid of a pocket lens and contact goniometer, to determine the crystal forms of a greater number of natural crystals.

Sophomore year; first semester; four credits; two recitations; two laboratory periods.

Prerequisites: Chemistry 1 and 2; Mathematics 1 and 4.

2. **Determinative Mineralogy.** In this course, about one hundred and sixty of the most important mineral species are presented by lectures, in which special emphasis is laid on the recognition of minerals by means of their physical properties and crystal forms. The course is not intended to train the student to determine any mineral whatever, but rather to recognize at sight, with the aid of a pocket lens and knife, such minerals as are likely to be met with in actual mining work. With this object in view, as thorough a drill as time will allow is given in the actual handling and determination of minerals in the laboratory. In the work, each student is expected to handle, determine, and be examined on, approximately twelve hundred individual specimens.

Sophomore year; second semester; four credits; two recitations; two laboratory periods.

Prerequisite: Geology 1.

3. **General Geology.** This study deals with the principles of dynamical, structural, stratigraphic, and historical geology. It includes a discussion of the different agencies, such as atmospheric, aqueous, igneous, and organic, which have been instrumental in producing the earth in its present form and structure. Students make excursions to places of geological interest to verify points discussed in the class room.

Sophomore year; second semester; three credits; three recitations.

Prerequisites: Mathematics 1, 4, and 5; Chemistry 1 and 2.

4. **Engineering Geology.** This includes a discussion of the principles of dynamical and structural geology, as well as a study of the more common minerals and rocks, special emphasis being laid upon structural materials.

Course in Forestry; sophomore year; elective in the course in Civil Engineering; senior year; second semester; three credits; three recitations.

Prerequisites: Mathematics 1, 4 and 5; Chemistry 1 and 2.

5. **Economic Geology.** This course deals with the application of the science of geology in industrial relations and operations. It requires an elementary knowledge of chemistry, mineralogy, and geology, and includes the discussion of the mode of occurrence and origin of minerals and ore bodies, especially those containing the precious metals. Attention is also given to other natural products of economic value, such as coal, iron, petroleum, and building stones.

Senior year; second semester; three credits; three recitations.

Prerequisites: Geology 1, 2, 3, and 6.

6. **Petrology.** The object of this course is to drill the student on all of the more commonly occurring rocks in such a way as to render their identification reasonably accurate. The methods pursued are purely those applicable to the hand specimens without aid of microscopic sections. The subject is presented by means of lectures and textbooks, supplemented by laboratory work.

Senior year; first semester; two credits; one recitation; one laboratory period.

Prerequisites: Geology 1, 2, and 3.

7. **Petrography.** This course takes up the optical properties of minerals and follows Petrology by a study of thin sections of rocks by the petrographic microscope. It is an elective course, to be limited to such students as are specially qualified to take it.

Prerequisites: Geology 1, 2, 3, and 6.

8. **Agricultural Geology.** This course deals with the origin and nature of soils from a geological standpoint entirely. A study is first made of the main groups of rocks with reference to structure and chemical composition, and followed by a study of rock weathering and the products derived from rock decay.

Senior year; first semester; three credits; three recitations.

Prerequisites: Chemistry 1 and 2.

MINING ENGINEERING.

1. **Excavating and Tunneling.** This study deals with discussions of the various methods of excavating and breaking ground, prospecting, boring, tunneling, and shaft sinking. The various tools used in excavating, boring, and drilling, and the use of explosives in breaking ground, are described in detail in the class room.

Junior year; first semester; three credits; three recitations.

Prerequisites: Geology 1, 2, and 3.

2. **Mine Surveying and Mining Law.** This course supplements the course in General Surveying (Civil Engineering 2), taken in the Civil Engineering department. The student is taught the methods used in locating and patenting mining claims, and in underground surveying. Instruction is given in carrying the meridian into the mine, laying out the workings, keeping notes, estimating areas and tonnage, the plotting of notes, construction of maps, and many other duties which are usually assigned to the mining engineer. Also a considerable time is given to the study of the laws regulating the location, possession, and operation of mineral rights in the United States. This will serve as preliminary to the more pracitcal work in connection with the summer school.

Junior year; first semester; three credits; one recitation; two laboratory periods.

Prerequisite: Civil Engineering 2.

3. **Mining I.** This is a study of the various methods used in securing the mineral products, as well as the general management of mines. The subject includes methods of timbering; methods of mining, pumping, ventilation, transportation, hoisting, mine sampling, and reporting; installation of machinery, and surface improvements. The subject is presented largely through lectures and directed reference work.

Junior year; second semester; three credits; three recitations.

Prerequisites: Geology 1, 2, and 3.

4. **Mining II.** This course takes up in detail the cost of extracting gold, silver, copper, iron, and other metal ores, as well as coal, from mines under varying conditions.

Senior year; first semester; three credits; three recitations.

Prerequisite: Mining I.

5. **Ore Dressing I.** A discussion of the various methods of concentration and the mechanical preparation of ores for metallurgical treatment. The subject is studied under the following main divisions: jaw and gyratory breakers; rolls; stamps; special, and fine grinding apparatus; sizing apparatus, such as the various types of screens and classifiers; concentrating machinery, including jigs, tables, and vanners.

Senior year; first semester; three credits; two recitations; one laboratory period.

Prerequisites: Mining Engineering 2, 3, and 12; Physics 3 and 4.

6. **Ore Dressing II.** A continuation of Ore Dressing I.

Senior year; second semester; three credits; two recitations; one laboratory period.

Prerequisites: Geology 2 and 3; Mining Eng. 7; Physics 3 and 4.

7. **Fire Assaying.** Instruction is given in the assaying of gold, silver, and lead in ores and metallurgical products by scorification and crucible methods. The student is given a thorough drill in the theory and reactions involved, supplemented largely by laboratory work, the subject being treated from a scientific and rational point of view rather than from the "rule of thumb." Each student is required to make a large number of assays upon previously sampled pulps, which he must check within very close limits.

Junior year; first semester; four credits; one recitation; three laboratory periods.

Prerequisites: Chemistry 1, 2, and 6; Geology 2.

8. **General Metallurgy.** This course is an outline of the metallurgy of all the common metals except iron, and is devoted to a description of the processes of obtaining the metals from their ores, as well as the refining of the metals. Some of the detailed parts of the study are: the physical properties of metals; refractory materials; construction and operation of the various types of furnaces; fuels, calorimetry, and pyrometry.

Elective; first semester; three credits; three recitations.

Prerequisite: Geology 2.

9. **Metallurgy of Iron and Steel.** This course is a discussion of the iron industry as we find it today. It includes the manufacture and purification of pig iron; manufacture of wrought iron and crucible steel; Bessemer, open-hearth, cementation and crucible processes for steel; mechanical treatment of steel; heat treatment of steel, etc.

Junior year; second semester; three credits; three recitations.

Prerequisites: Chemistry 1 and 2; Physics 3 and 4.

10. **Metallurgy of Gold and Silver.** This course, as the name indicates, is a study of the different processes for separating gold and silver from their ores. It includes the stamp mill and amalgamation, the cyanide process, hyposulphate process, chlorination process, and other miscellaneous processes.

Junior year; second semester; three credits; three recitations.

Prerequisite: Geology 2.

11. **Metallurgy of Copper.** This is a more advanced course in metallurgy, and includes a thorough and detailed study of the underlying principles upon which methods are based, rather than descriptions of processes or apparatus. It is the aim in this course to deal largely with the reasons why instead of the means how. Although the work deals extensively with copper, the principles are common to the whole subject of metallurgy.

Elective; first semester; three credits; three recitations,

Prerequisite: Geology 2.

12. **Mining Engineering Summer School.** Immediately after the close of the College year in June, the junior and senior students go into some prominent mining district for a few weeks of summer work in surveying, and mine and metallurgical inspection. Visits are made to mills and smelters in operation. The work is planned to develop the student's power of observation, and the ability to report concisely such observation. A large part of the time is devoted to making a survey of some mine.

COMMERCE.

Professor Bexell.
Professor Crawford.
Professor Horner.
Professor Hetzel.
Mr. Moore.
Mr. Mathews.
Mr. .....

BUSINESS ADMINISTRATION.

A. **Business Forms I.** In this course the student becomes familiar with a great variety of labor saving forms used in the modern business office; the actual forms used by typical concerns in all parts of the country are studied and compared. Manifolding and labor saving devices of all kinds are studied with constant view to secure greater accuracy and to diminish work.

Secondary course; first year; first semester; four credits; four recitations.

B. **Business Forms II.** The preparation and study of business forms; construction of balance sheets and reports.

Secondary course; first year; second semester; four credits; four recitations.

C. **Practical Bookkeeping I.** The laws of debit and credit reviewed and illustrated by correspondence and office practice, exercise in checking, construction and interpretation of balance sheets; much practice in commercial correspondence; writing bills, invoices, receipts, bills of lading, legal forms, etc. W. and R. New Illustrative Bookkeeping. Commission and wholesale.

Secondary course; second year; first semester; five credits; five laboratory periods.

D. **Practical Bookkeeping II.** A thorough course in the essentials of accounting as practiced in modern business houses.

Secondary course; second year; second semester; five credits; five laboratory periods.

E. **Business Methods I.** (a) Accounting and business manage-

ment; farm bookkeeping and business forms; organization of a model farm from a financial point of view; marketing products; transportation and markets; household and personal accounts.

(b) Farm Arithmetic. Measurement of land and description of boundaries; measurement of lines, stocks, etc.; conversion of cubic measures into measures of weight and capacity; computation of inventories, bills, and pay rolls; dairy arithmetic, etc.

Secondary courses in Agriculture and Mechanic Arts; second year; Forestry; first year; first semester; two credits; two recitations.

F. **Business Methods II.** The general principles of common and statutory law are discussed and explained; special phases of law affecting the farm, such as titles to real estate, deeds, mortgages, county records, etc.; landlord and tenant; eminent domain, and right of way; water rights and boundaries; laws governing shopping, insurance, banking, etc.; court proceedings.

Secondary courses in Agriculture and Mechanic Arts; second year; Forestry; first year; second semester; two credits; two recitations.

1. **Office Facilities and Business Practice I.** This course is similar to course A, but considerably more work will be required for the same credit. Students who have completed courses A, B, C, and D may elect stenography instead of courses 1 and 2.

Freshman year; first semester; four credits; four laboratory periods.

2. **Office Facilities and Business Practice II.** This work is carried on between fellow students and commercial schools in the leading lines of business, affording excellent drill in correspondence and office practice.

The College maintains completely equipped offices in banking and wholesaling. On completion of the theoretical work and the business practice, the student is placed as manager of one of the offices and held responsible for all its operations.

Freshman year; second semester; four credits; four laboratory periods.

3. **Advanced Accounting and Business Management.** A thorough study of bank and advanced accounting and auditing. Va-

rious systems are studied and compared. Office practice and intercommunication work similar to that described under courses 1 and 2 form a part of this course; but here the student assumes the management of the office, while the routine work is done by less advanced students. Recitations, lectures, and reports.

Sophomore year; first semester; six credits; five laboratory periods.

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

(b) **Cost Accounting.** The theory and practice of cost accounting. The various methods used in England and America.

Sophomore year; second semester; six credits; five laboratory periods.

5. **Business Organizations and Management.** (a) Firms and Joint Stock Companies. A study of the internal management of a large business; the different duties of the various departments; the advantages of different methods of organization as regards economy and the preservation of good will. Value of trade-marks, patents, local interest, etc.

(b) Corporations. The growth of corporations; their causes and forms; the promotion, financiering, incorporation, and capitalization of corporate consolidation; their organization and securities; position and relation of stockholders and directors; receiverships and reorganizations.

Junior year; first semester; four credits; four recitations.

6. **Theory and Practice of Advertising.** A study of the fundamental principles of modern advertising. Special emphasis is given to the peculiarities of composition in newspaper and circular advertising, proof-reading, effectiveness of design, illustration, coloring, and display, follow-up systems, etc.

Junior year; second semester; four credits; four recitations.

7. **Public Accounting and Auditing I.** This is a research course under the direction of the professor in charge. Special stress is laid on preparation for Certified Public Accountancy. The course

embraces the following subjects: (1) a general course in analyzing accounts of various typical corporations, and the installation of systems best suited to the business in hand; (2) the solution and discussion of a series of difficult problems selected from C. P. A. examinations.

Elective; senior year; first semester; three credits; three recitations.

8. **Public Accounting and Auditing II.** The principles governing an audit of partnerships and corporations of any magnitude according to approved professional methods. The organization and methods of a typical firm of public auditors. The order of procedure in an actual audit. The auditor's reports and certificates. Actual audit of local concerns whenever practicable.

Elective; senior year; second semester; three credits; three recitations.

STENOGRAPHY.

A. **Theory and Practice of Stenography I.** (a) Gregg shorthand. This is an elementary course in the Gregg system of shorthand. The system is adapted perfectly to the hand, and enables the student to master the principles in a short time and to begin work from actual dictation early in the course.

(b) Touch typewriting. Beginning with simple exercises, the student learns correct fingering by the touch, or "sightless" method. Special attention is given to proper care and mechanism of the machine. The various standard makes of machines are studied and compared.

Second year; first semester; five credits; five laboratory periods.

B. **Theory and Practice of Stenography II.** A continuation of course 1, with special emphasis on the application of principles. Dictation, covering various lines of simple business correspondence, is given and must be transcribed on the machine.

Second year; second semester; five credits; five laboratory periods.

1. **Stenography I.** After a thorough mastery of the textbook, dictation and advanced letters are taken up. Great care is given to the arrangement and neatness of the transcribed notes. The

student will also be required to do some manifolding in connection with this course.

Sophomore year; first semester; six credits; five laboratory periods.

2. **Stenography II.** A continuation of course 1. In connection with this course, the student must also do some stencil work and become familiar with the mimeograph and neostyle.

Sophomore year; second semester; six credits; five laboratory periods.

3. **Advanced Stenography I.** (a) Reporting and office practice. After a thorough review of the textbook, various forms of correspondence, legal documents, speeches, specifications, editorial matter, court testimony, etc., are taken up. Each student will be called upon to serve as secretary to different members of the Faculty from two to four weeks during the last semester of his course.

(b) Typewriting, Manifolding, and Filing. An advanced course for those who specialize in stenography. In addition to the elementary principles given in Stenography A and B the student makes copies of correctly written correspondence, legal forms, etc.; also personal composition and dictation. Much time is devoted to manifolding and filing.

Junior year; first semester; four credits; four laboratory periods.

4. **Advanced Stenography II.** (Continued.)

Junior year; second semester; four credits; four laboratory periods.

5. **Reporting and Office Practice I.** Reports of lectures. The student is required to submit not less than twenty verbatim reports of lectures and addresses during the year. The reports must be properly transcribed and submitted to the teacher for approval.

Elective; senior year; first semester; three credits.

6. **Reporting and Office Practice II.** In this course the student is required to spend a large share of his time in the courts, and to render at least twenty verbatim reports, properly transcribed. A large amount of additional legal work will be required.

The finished work of the entire course must be passed on by the dean and the professor in charge.

Elective; senior year; second semester; three credits; three recitations.

7. **Typewriting III.**

Sophomore year; second semester; two credits; two laboratory periods.

POLITICAL ECONOMY.

1. **The Elements of Economics.** A discussion of wealth; nature and requisites of production; exchange and distribution; the relation of the production of raw material to manufacturing and exchange of products; diminishing returns from natural agents; labor and its increase; efficiency of production; credit, interest, wages, prices, and rent; taxation, public debt, free trade, and protection; money and banking; the labor problem and co-operation.

Sophomore year; first semester; three credits; three recitations.

2. **Commercial Geography.** The main topics treated are; natural conditions affecting commerce, human control of commerce, transportation and commercial routes; 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, 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 of general history.

Sophomore year; second semester; three credits; three recitations.

3. **Money and Banking.**

(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 and problems.

(b) **Banking.** Practice and legal principle of banking, methods of raising capital, modes of organizing national and state banks, trust and finance companies, clearing houses, their practice, regulations, and importance, resources of a bank, and modes of lending

them, duties of directors, president, cashier, tellers, bookkeepers, etc., public and private examinations and audits.

Junior year; first semester; three credits; three recitations.

4. **Corporation and Public Finance.**

(a) **Funding Operations and Corporation Finance.** Money, funds, and credit, obtaining funds by inheritance, exchange, 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 of funding corporations and other large business enterprises.

(b) **Public Finance.** History of financial systems, theories of public expenditures, various methods and practices of taxation and other sources of income, public credit, relations of the Federal Treasury to our monetary system, the preparation of financial budgets and reports form an important part of this course.

Junior year; second semester; three credits; three recitations.

5. **Advanced Economics.** (a) Lectures and recitations. Three main purposes are kept in view in this course: a clear analysis of the mechanism, functions, and philosophy of industrial society; a discussion of the fundamentals of wealth and monopoly, their origin, uses, and abuses; a dispassionate discussion of economic topics that have become political questions. Much reading and many reports are required.

(b) **Research Course.** Special stress is laid on the economic history of the United States. Reading of reports and theses under the direction of the professor in charge.

Senior year; first semester; three credits; three recitations.

6. **History of Commerce.** (a) Trade. The development 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. The principles of modern wholesaling and retailing are discussed, and a description given of brokerage, jobbing, the commission business, general and special stores, department stores, and mail order houses.

(b) Transportation. A study of the American railway system, the several branches of the railway service, and the questions of public aid and public control. A study of inland navigation and ocean shipping, with special reference to the United States. Lectures, assigned readings, and reports.

Senior year; second semester; three credits; three recitations.

7. **Production of Raw Materials.** A survey of latent commercial possibilities, surface indications, unexplored regions, probable demands upon the earth through future inventions; possible reclamation 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. Agriculture, Forestry, Mining, and Fishing receive special attention.

Elective; junior or senior year; first semester; three credits; three recitations.

8. **Manufacturing.** A study of manufacturing processes through which such 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. The history, development, and economic effects of labor-saving inventions.

Elective; junior or senior year; second semester; three credits; three recitations.

9. **Insurance.** Origin, purpose, development and growth of the various kinds of insurance, especially Fire, Life, and Casualty; the various plans, policies, and rates will be discussed; computation of tables, and the various phases of actuarial practice will receive attention.

Elective; junior or senior years; first semester; three credits; three recitations.

10. **Rural Economics.** (a) The fundamental principles of Production, Distribution, and Exchange, with special reference to rural life.

The financial management of the farm receives special attention.

(b) **Rural Law.** (See Political Science 6.)

The course in Agriculture; sophomore year; second semester; three credits.

POLITICAL SCIENCE.

A. **Civil Government and Administration.** (a) Civil Government. Our European ancestors; origin of states and state institutions. English and American governments compared; federal and state constitutions; state and foreign service; the executive departments; federal and state powers; political parties and issues.

(b) Federal and State Administration. A survey of the administrative activities of federal, state, and municipal governments; governments from the sociological point of view. The financial operations, preparation of budgets and reports, will be considered.

Secondary course; second year; first semester; two credits; two recitations.

B. **Elementary Commercial Law I.** An elementary course, covering the law of contracts; negotiable instruments; agents; partnership, real estate, etc. Adapted for students with limited preparation.

Secondary course; second year; second semester; three credits; three recitations.

C. **Elementary Commercial Law II.**

Secondary course in Forestry; second year; second semester; two credits; two recitations.

1. **Commercial Law I.** (a) Contracts in General. Formation of contracts; offer, acceptance, form, and consideration; competence of parties, consent, and legality of subject matter. Operation of contracts, including limit of obligations and assignments; interpretation, rules of evidence and construction; discharge of contracts; the agreement performance, breach of contract, etc.

(b) Negotiable instruments. Maker's, acceptor's, drawer's, and indorser's contracts; proceedings before, upon, and after dishonor; proceedings in protesting; accommodation papers; grantor and surety; holder's position, defense, equities, agency insurance, etc.

Senior year; first semester; three credits; three recitations.

2. **Commercial Law II.** (c) Partnership Law. Formation of

partnerships, essentials, liability of members, capital, profits, good-will, individual and firm property; agency for partners; dissolution, winding up, priority of distribution, etc.

(d) Corporation Law. Kinds, formation, powers, liabilities, ownership, shares, subscription, calls, notice, transfers, management, officers, directors, contractional powers, dividends, dissolution, are discussed fully from the legal point of view. The Case method is used throughout the entire course. Lectures, discussions, and reports.

Senior year; second semester; three credits; three recitations.

3. **Constitutional Law and Politics.** (a) Constitutional Law. The Constitution; rise of the American Union; distribution and powers of the Government; powers of Congress; powers of the executive; the judicial departments; checks and balances of governments; governments of territories and colonies; admission of new states; amendments to the Constitution; civil rights and their guarantees; protection of persons accused of crimes; protection of contracts and property, etc. Lectures, readings, reports and thesis.

(b) American Politics. Origin of political parties in the United States; changes, growth and development; party platforms.

Elective for juniors and seniors; first semester; three credits; three recitations.

4. **Comparative Study of Governments.** A comparative study of the various systems of government; Greece, Rome, Great Britain, Germany, France, Switzerland, and the United States.

Elective for seniors; second semester; three credits; three recitations.

5. **International Law.** Persons concerned; rights and duties of states; territorial jurisdiction; jurisdiction on the high seas; agents of the state treaties; settlements of disputes; war and its effects; military occupation; neutrality, contraband, blockades, etc.

Elective for seniors; second semester; three credits; three recitations.

6. **Rural Law.** The general principles of common and statutory law are discussed and explained. Special phases of law affecting the farm, such as titles to real estate, deeds, mortgages, etc.; landlord and tenant; eminent domain, and rights of way; water

rights, and boundaries; laws governing shipping, insurance, banking, etc.; court proceedings.

Part of Economics 10; one credit if taken alone. Given in connection with Rural Economics; second third of second semester.

7. **International Trade and Transportation.** (a) Commercial Treaties. An historical and critical study of important commercial treaties; protective tariffs, and the theory of reciprocity; a survey of the chief questions connected with the history of our foreign relations from the appointment of the Committee on Foreign Relations in The Continental Congress to the present time.

(b) The Consular Service. The growth and importance of the consular service; the appointment, distribution, duties, and necessary qualifications of consuls. Studies and discussions of consular reports.

(c) International Transportation. The course deals especially with the merchant marine of the principal nations of the world. Importance of ship subsidies, inland, waterways, canals, etc.

Elective; junior or senior year; second semester; four credits; four recitations.

Thesis: A thesis will be required in each of the elective courses. An additional credit may be earned in certain courses by writing a thesis on an approved subject. The subject must be announced by the dean to the College Council during the first semester, and a finished copy must be in the hands of the professor in charge not later than May 1st. When approved, a bound (either typewritten or printed) copy must be deposited in the College Library.

Special Lectures. A series of lectures on practical business subjects will be given during the year by prominent business men of the State. Following is a tentative list of subjects during the present year: Present Problems in Finance; Organization of a Bank; Oraganization of a Railroad; Organization of a Department Store; The Fishing Industry of Oregon; The Lumber Industry of Oregon; The Business Side of Farming; Commercial Expansion of the United States; Duties and Responsibilities of the Public Accountant; Captains of Industry; The Industrial Manager; Duties and Responsibilities of the Bank Cashier; Education for Business; The Power of Advertising.

PENMANSHIP.

A. **Penmanship I.** Students entering the first year are expected to have acquired a good hand in the grades, but considerable time is devoted during the first year to mastering the best form of business writing and lettering.

Secondary course; first year; first semester; one credit; two practice periods.

B. **Penmanship II.** A continuation of course A.

Second semester; one credit; two practice periods.

1. **Advanced Penmanship I.** Special emphasis is laid on rapid business writing, correct forms of business papers, lettering and designing.

Freshman year; first semester; one credit; two practice periods.

2. **Advanced Penmanship II.** A continuation of course I.

Second semester; one credit; two practice periods. Required of all commercial students; elective to others.

PHARMACY.

Professor McKellips.
Mr. Callaway.

1. **General Pharmacy I.** This course is a general introduction to the subject of Pharmacy, given by means of a series of lectures wherein the student is made familiar with the conditions which led to the origin of the practice of Pharmacy as a profession separate and distinct from that of medicine. Attention is directed to the purposes of the profession, to the scientific principles underlying it, and to the proper means for comprehending these facts with a view to their intelligent application. The drugs, chemicals, and prepared medicines of the U. S. Pharmacopoeia are made the subject of a series of recitations.

Junior year; first semester; two credits; two recitations.

2. **Nomenclature.** The Latin language is universally recognized as the language of science. The names of all plants and animals and of many natural objects in the material world are recorded in this language. These Latin names, in so far as they have connection with the profession of pharmacy, are made the subject of systematic study.

Junior year; first semester; one credit; one recitation.

3. **Pharmacognosy I.** This subject deals with the scientific classification of the plants and animals which furnish the crude drugs used in pharmacy. The relation existing between the various drugs is shown, and the student is thoroughly drilled in memorizing the classification and in learning from what part of the world the drugs are obtained. He is instructed as to what particular portion of the plant or animal finds use in medicine and learns to recognize by some physical characteristic—appearance, odor, taste, etc.—samples of all the important drugs. Extensive cabinets of sample drugs are kept for this purpose.

Junior year; first semester; one credit; one recitation.

4. **Pharmacognosy II.** Continuation of Course 3.

Junior year; second semester; two credits; two recitations.

5. **Therapeutics and Doses.** The definition of medical and therapeutical terms, the classification of medicines into groups according to their therapeutical action, and the consideration of the subject of dosage, are matters to which the attention of the student is directed at this time.

Junior year; first semester; two credits; two recitations.

6. **General Pharmacy II.** A continuation of Pharmacy 1, to which is added the feature of laboratory practice. The student takes up the various classes of pharmaceutical preparations and becomes familiar with the correct manner of their manufacture.

Experience has demonstrated the value of the laboratory as a factor in technical and scientific education. For this reason the course in pharmacy as offered at this institution is one in which this feature is given unusual prominence.

From crude drugs, as barks, leaves, roots, and seeds, the student manufactures finished pharmaceuticals, such as tinctures, fluid extracts, elixirs, tablets, pills, etc.

Using the United States Pharmacopoeia as a laboratory manual, the student has the official requirements for purity and strength constantly before him, his attention thus being directed to these matters in a practical way.

Junior year; second semester; four credits; one recitation; three laboratory periods.

7. **General Pharmacy III.** A continuation of course 6, in which the manufacture of the more difficult pharmaceuticals is taken up. Attention is given to the higher class of toilet preparations, as well as to galenicals.

Senior year; first semester; two credits; two laboratory periods.

8. **Materia Medica and Toxicology I.** As indicated by the name, this course is devoted to the study of "Medicinal Materials." All substances which find general use in medicine are here given attention. All are classified with respect to the action they have upon the human system. Crude drugs are grouped according to the plant constituents—alkaloids, glucosides, volatile oils, oleoresins, etc.—which they contain. Pharmaceutical preparations are studied with respect to composition and strength; chemicals, according to solubility, medicinal activity, and incompatibility.

The student is drilled in the recognition of pharmaceutical preparations and of chemicals. The many common names, or synonyms, in use in connection with materia medica are memorized.

One hour a week is devoted to the consideration of Toxicology. The different classes of poisons—caustics, iritants, convulsants, paralysants, narcotics, asphyxiants, etc.—are taken up and studied according to the characteristic symptoms they produce, the method of counteracting and preventing their harmful effects, and the antidote peculiar to each. This course is especially designed to meet the needs of the pharmacist. Provisions of the law regulating the sale of poisons within the state are explained in detail.

Senior year; first semester; three credits; three recitations.

9. **Materia Medica and Toxicology II.** A continuation of course 8.

Senior year; second semester; three credits; three recitations.

10. **Prescription Practice I.** This work is sometimes spoken of as "extemporaneous pharmacy," and is justly regarded as the division of the profession belonging to the expert. The ability to compound, properly, intricate formulas at a moment's notice, is an art that can be acquired only by persistent study and painstaking practice. Opportunity for practice of this nature is here given. Prescriptions written by practicing physicians in various parts of the country have been collected. These afford the student practice in reading, itself often a matter of difficulty. Prescriptions presenting various types of incompatibility are compounded, as are others which afford experience in overcoming manipulative difficulties.

Senior year; first semester; three credits; three recitations.

11. **Prescription Practice II.** A continuation of course 10.

Senior year; second semester; five credits; two recitations; three laboratory periods.

ZOOLOGY, ENTOMOLOGY, AND PHYSIOLOGY.

Professor Cordley.
Miss Edwards.
Mr. ————

The instruction in this department is designed to give a general survey of the field of Zoology. It aims to develop an interest in the study of native birds, insects and animals, their relation to the plant world, to each other and to man's welfare. By means of lectures, laboratory work, and field observations, the student becomes familiar with the structure and habits of a few representative forms, learns something of their relationships and of the relative economic importance of the various groups and of the biological laws which govern their development. The work is adapted so far as possible to the particular needs of students in Agriculture and Domestic Science and Art. Exceptional opportunities are offered to those who desire to teach Physiology or Nature Study in the public schools. In connection with the courses in Pharmacy, the required work forms a valuable pre-medical course.

The instruction in General and Economic Entomology is intended to provide the student with sufficient training to enable him to identify the common insect pests, understand their habits and life-histories, and apply the most approved methods for their control. The lectures upon Crop Pests also deal with the principal insect diseases of crops and their control.

Advanced students in Entomology are provided with excellent opportunities for special instruction and research work.

The laboratories of the department occupy seven rooms on the third floor of Agricultural Hall and are well supplied with apparatus, reference books, bulletins, periodicals and collections.

1. **Zoology I.** A field and laboratory study of invertebrate animals. The work begins with the study of the single-celled forms, since it is believed that the student can thus best gain the desired conception of the origin of the activities of higher animals. Consideration is likewise given to the economic importance of these

low forms, and their relation to certain diseases of men and of domestic animals. Particular attention is given to the habits of animals, parasitic upon man or upon domestic animals, such as the liver-fluke, tape-worms, trichina and other nematodes; to those which attack cultivated plants like the nematode root-worms, mites, insects, etc.; and to those having food value, i. e., clams, oysters, crawfish, shrimps, crabs, and lobsters. Such other types are studied as are considered necessary to give the student a proper perspective of the invertebrates as a whole and to illustrate various biological laws.

The courses in Agriculture, Commerce, Forestry, and Pharmacy; sophomore year; first semester; three credits; one recitation; two laboratory periods.

2. **Zoology II.** A continuation of course 1, but dealing with such vertebrate types as amphioxus, lamprey, fishes, frogs, snakes, birds, and mammals. Together with course 1, it is designed to give the student a general idea of the animal kingdom as a whole, and of the relative economic importance of the various groups.

The courses in Agriculture, Commerce, Forestry, and Pharmacy; sophomore year; second semester; three credits; one recitation; two laboratory periods.

3. **Zoology III.** A brief course designed to give the students in Domestic Science and Arts some conception of the structure and physiological activities of animals, as a basis for the work in physiology and hygiene. Particular attention is also given to those forms, such as the housefly and mosquito, which are of importance from the standpoint of public and private sanitation.

The course in Domestic Science and Art; sophomore year; second semester; three credits; two recitations; one laboratory period.

4. **Physiology and Hygiene I.** This course includes a study of the chief functions of the human body and of the principles of hygiene. As a foundation for the study of function, the laboratory course includes some work upon the gross anatomy and the histology of the various tissues and organs of a typical mammal. It also includes experiments and demonstrations with foods as the source of energy, their digestion and absorption, the composition

and circulation of the blood, nerve-muscle reactions, etc. Special emphasis is placed upon the relation of pure air, mental and physical habits, food, dress, bathing, work, and recreation to health and work capacity.

The course in Domestic Science and Art; junior year; and the course in Pharmacy; sophomore year; first semester; three credits; one lecture; two laboratory periods. Elective in the course in Agriculture.

5. **Physiology and Hygiene II.** A continuation of course 4. Courses 4 and 5 are especially valuable to those who expect to teach physiology in the public schools, and in connection with the work in Pharmacy, form a valuable pre-medical course.

The course in Domestic Science and Art; junior year; and the course in Pharmacy; sophomore year; second semester; three credits; one recitation; two laboratory periods. Elective in the course in Agriculture.

6. **Physiology of Domestic Animals I.** A study of the physiology of the sheep, ox, horse, and swine, with special reference to the problems of care, feeding and breeding, giving the physiological basis of the technical study of these subjects. The sheep is dissected to give the necessary knowledge of anatomy, and the important organs of each type are studied where important differences exist.

Elective in the course in Agriculture; junior year; first semester; three credits; one recitation; two laboratory periods.

7. **Physiology of Domestic Animals II.** A continuation of course 6.

Elective in the course in Agriculture; junior year; second semester; three credits; one recitation; two laboratory periods.

8. **Introductory Entomology.** An introduction to the study of insects by lectures, laboratory and field exercises. The laboratory work consists of a preliminary study of the anatomy of the grasshopper with comparative work upon other types. Sufficient field work in collecting, and laboratory work in properly mounting and classifying insects, is provided to make the student familiar with the principal orders of insects. In this and succeeding courses in

Entomology the rearing of economic and other forms is carried on parallel with other work to gain familiarity with the development and habits of insects. Each student is required to familiarize himself with the life history, habits and means of controlling some insect of economic importance.

Elective in the courses in Agriculture and Domestic Science and Art; required in Forestry; junior or senior year; first semester; three credits; one recitation; two laboratory periods.

Students taking major work in Entomology will add two additional laboratory periods.

9. **Entomology of Orchard and Small Fruits.** An intensive study of the more important insect enemies of the apple, pear, prune, plum, cherry, currant, gooseberry, bramble fruits and strawberry, and the critical examination of the methods to be employed in combating them. Each important pest will be studied in the field and laboratory with the view to become thoroughly familiar with the appearance of the insect and its work in all its stages of development.

Elective in the course in Agriculture; junior or senior year; second semester; three credits; two recitations; one laboratory period.

Prerequisite: Zoology 7.

10. **Entomology of Truck and Field Crops.** A similar intensive study of the insect enemies of celery, onion, beets, cabbage, kale, clover, vetch, potato, hops, corn, wheat, and oats.

Elective in the course in Agriculture; junior or senior year; second semester; three credits; two recitations; one laboratory period.

Prerequisite: Zoology 7.

11. **Forest Entomology.** A study of the insects destructive to forest trees and forest products, and the insect enemies of reforestation and the measures by which the injuries may be avoided or reduced.

The course in Forestry; junior year; second semester; three credits; two recitations; one laboratory period.

Prerequisite: Zoology 7.

12. **Advanced Entomology I.** This course is designed for those who desire to specialize in Entomology. The instruction includes lectures and reference reading upon the biology of the principal families of insects, supplemented by laboratory studies of typical life-histories. Considerable time is devoted to studying the habits of insects, particularly injurious species, in the field; to collecting, rearing, mounting, and classifying them; and to becoming familiar with entomological methods and literature.

Elective in the courses in Agriculture and Domestic Science and Art; junior year; second semester; five credits; two recitations; three laboratory periods.

13. **Advanced Entomology II.** A continuation of course 11.

Elective in the courses in Agriculture and Domestic Science and Art; senior year; first semester; five credits; two recitations; three laboratory periods.

14. **Advanced Entomology III.** A continuation of courses 11 and 12.

Elective in the courses in Agriculture and Domestic Science and Art; senior year; second semester; five credits; two recitations; three laboratory periods.

In connection with courses 11, 12 and 13, the student will be required to present a thesis detailing the results of a systematic study of some restricted group of insects or of the biology of some particular species or group of species.

15. **Beekeeping I.** A brief course in the principles of beekeeping with practical work in the apiary. Special attention will be given to the relations between beekeeping and orcharding.

Elective in the courses in Agriculture and Domestic Science and Art; first semester; one credit; one laboratory period.

16. **Beekeeping II.** A continuation of course 15.

Elective in the courses in Agriculture and Domestic Science and Art; second semester; one credit; one laboratory period.

17. **Animal Parasites.** A course of lectures, demonstrations, and collateral reading upon the principal parasites of domestic animals, such as the liver-fluke, tape-worms, stomach worms, hook worms,

ticks, scab, mites, lice, flies and bots, and the means of preventing infestation and reducing injury from these pests.

Elective in the course of Agriculture; junior or senior year; second semester; one credit; one recitation.

Prerequisites: Zoology 1 and 2.

Offered in 1912.

18. **Embryology.** A study of the development of the chick designed particularly to make the student more proficient in microscopical methods, such as killing, fixing, imbedding, sectioning, staining, reconstruction from serial sections.

Elective in the courses in Agriculture and Domestic Science and Art; junior or senior year; second semester; three credits; one recitation; two laboratory periods.

19. **Game Breeding and Protection.** A laboratory and reading course in the study of the best methods of stocking forest tracts and their waters with game fishes, birds and mammals; the breeding habits, propagation and protection of game; the recognition of the more important game fishes, birds, and mammals; together with a critical study of the laws of the various states relating to game.

Course in Forestry; junior or senior year; first semester; one credit; one laboratory period.

Offered in 1912.

20. **Seminar I.** Senior and graduate students in Entomology. Reading, discussing and abstracting the leading articles upon Entomology as they appear in the scientific journals, horticultural press, current magazines and experiment station literature.

Senior year; first semester; one credit.

21. **Seminar II.** A continuation of course 20.

Senior year; second semester; one credit.

Any of the above courses may be elected as a minor upon consultation with the instructor. Students electing major work for a degree in this department will be required to take courses 1, 2, and 3 and to carry an equivalent of five credits throughout the junior and senior years. Graduate courses leading to the Master's degree may be arranged for upon consultation with the head of the department and the Committee on Advanced Degrees.

CHEMISTRY.

Professor Fulton.
Mr. Harding.
Mr. Brodie.
Mr. Daughters.

The beginners' courses, Chemistry 1, 2, and 3, consist essentially of the proof of some of the well known chemical laws, such as the law of conservation of matter, the law of definite proportions and of multiple proportions, the Law of Boyle, and the Law of Charles. The student attains skill in the manipulation of apparatus, and in the management of equipment in general. From this elementary work he proceeds to qualitative analysis, in the study of which he is taught to separate and identify the different elements composing the mass, and, in the case of metals, to learn of their properties, their uses, the different methods of obtaining them from their ores, and the combinations in which they occur in nature.

If he has shown suitable proficiency, he advances to quantitative analysis, which is the determination of the amounts of the ingredients. He is taught both methods of analysis, volumetric, or the method by solution, and the gravimetric, or the method by precipitation and weighing. On completing these courses, the student is fairly well prepared to take up advanced work in any particular line. He can proceed in agricultural chemistry, which treats of the analysis of soils, manures, cattle foods, dairy products, etc., or he can take up the subject from the inorganic side in the analysis of minerals, fuels, oils, gas, etc., or he can view it from the pharmacist's standpoint, in analyzing drugs. And, finally, as a graduate student, he may proceed intelligently along original lines of study and research.

1. **General Chemistry I.** This course deals with the general principles of the science and extends through the divisions known as the non-metals.

All Degree courses except Domestic Science and Art; freshman year; first semester; four credits; two recitations; two laboratory periods.

2. **General Chemistry II.** Descriptive. This is a continuation of course 1.

All Degree courses except Domestic Science and Art; freshman year; second semester; four credits; two recitations; two laboratory periods.

3. **General Chemistry III.** This course is arranged especially for the students of the department of Domestic Science and Art.

Freshman year; first semester; four credits; two recitations; two laboratory periods.

4. **Elementary Organic Chemistry.** This is a brief course in Organic Chemistry, and is provided for the students of the department of Domestic Science and Art.

Freshman year; second semester; four credits; two recitations; two laboratory periods.

5. **Qualitative Analysis I.** This course consists largely of laboratory practice in the ordinary processes of separating and identifying *ions*.

The course in Pharmacy; sophomore year; first semester; four credits; one recitation; three laboratory periods.

6. **Qualitative Analysis II.** A course provided for mining students.

Sophomore year; first semester; three credits; three laboratory periods.

7. **Quantitative Analysis I.** This is a course designed for students in Pharmacy, and consists of instruction in both gravimetric and volumetric analysis of pharmaceutical products.

Junior year; first semester; three credits; one recitation; two laboratory periods.

8. **Quantitative Analysis II.** This is a course in analysis for Mining students, and consists of gravimetric analysis of limestones, iron, lead, zinc, arsenic and antimony ores, coal, and as much of other work as time will permit.

Sophomore year; second semester; three credits; one recitation; two laboratory periods.

9. **Organic Chemistry.** This course consists of the study of the more typical and simple organic compounds and is designed for

Pharmacy, and such students of Agriculture as desire to take up Physiological Chemistry, and Veterinary Science.

Sophomore year; second semester; four credits; two recitations; two laboratory periods.

10. **Agricultural Chemistry I.** A course consisting of lectures, recitations, and laboratory work, dealing with the more important phases of Chemistry as related to Agriculture.

The course in Agriculture; sophomore year; first semester; two and one-half credits; one recitation; one and one-half laboratory periods.

11. **Agricultural Chemistry II.** A continuation of course 10.

The course in Agriculture; sophomore year; second semester; two and one-half credits; one recitation; one and one-half laboratory periods.

12. **Pharmaceutical Analysis.** This is an extension of Quantitative Analysis II, dealing with the determination of alkaloidal drugs and galenical preparations.

Junior year; first semester; three credits; one recitation; two laboratory periods.

13. **Urinalysis and Toxicology.** This course is for Pharmacy students, and consists of the chemical examination of urine, and the methods of identifying the alkaloidal and mineral poisons.

Elective; course in Pharmacy; senior year; first semester; three credits; one recitation; two laboratory periods.

14. **Chemistry of Foods.** An advanced course for the students of the School of Domestic Science and Art, consisting of practice in the best methods as applied in food analysis, and in detection of common adulterants. Opportunities for research work will be given if desired.

The course in Domestic Science and Art; sophomore year; first semester; four credits; one recitation; three laboratory periods.

15. **Chemistry for Engineers.** This course is particularly for students in Mechanical and Electrical Engineering. It consists of the analysis of coal, oil, gas, and of their calorific powers; also the technical analysis of flue gases.

Elective; junior or senior year; second semester; two credits; two laboratory periods.

16. **Electro-Chemistry.** This is a course for advanced Mining students, and consists of the application of the electric current to solutions of the different metals in metallurgical analysis.

Elective; junior or senior year; first semester; two credits; two laboratory periods.

17. **Chemistry of Commerce.** A practical study of the chemical processes involved in the production of various commodities, including iron, steel, copper, and other metals; soaps, dyes, paints, and the like. The course is intended to familiarize the student with the application of chemistry to modern industries.

Elective; course in Commerce; junior or senior year; either semester; three credits; three recitations.

18. **Mineral Analysis.** This course may be taken by any one desiring advanced work in Quantitative Analysis. It consists of the theoretical and practical study of the most approved methods of determining the composition of complex compounds. Time: to be arranged.

Elective; junior or senior year; either semester; four credits; one recitation; three laboratory periods.

BACTERIOLOGY.

Professor Pernot.
Mr. DeHaven.

The science of bacteriology has reached a stage in its development where it is within the reach of all students taking a collegiate course. A knowledge of the subject has heretofore been confined principally to the medical profession; but since its relation to agriculture and the domestic arts has become better understood, the teaching of the subject has been added to the curriculum of higher institutions of learning.

Bacteria play such an important role in the economy of nature, and are so closely associated with our every-day lives, both in

health and disease, that it becomes essential for a modern student to acquire a knowledge of what bacteria are and what they do. This College has a well-equipped bacteriological laboratory for the investigation and study of bacteria in all their relations to the industries.

1. **Elementary Bacteriology** consists of a series of lectures and laboratory demonstrations to familiarize the students with the underlying principles of bacteriology as applied to every-day life.

The course in Agriculture; sophomore year; first semester; one credit; one recitation.

2. **Major Bacteriology.** Beginning with the first semester of the junior year, a student may take bacteriology through the two semesters of that year, then continue advanced work through the two semesters of the senior year. The subject is first studied theoretically to prepare the student for subsequent work.

Elective; junior year; first semester; five credits; five recitations.

3. **Laboratory Practice.** A continuation of course 2. The laboratory work begins by familiarizing the student with all bacteriological apparatus and its use, then gradually advancing into making culture media; filling and plugging tubes; sterilizing; plate culture work; study of colonies; planting on various media; study of morphology and classification.

Elective; junior year; second semester; five credits; five laboratory periods.

4. **General Bacteriology.** This is the regular, required course in Bacteriology for Pharmacy students, fitting them to carry on any ordinary bacteriological work. The course is a series of recitations and lectures covering the subject in a theoretical way.

The course in Pharmacy; senior year; first semester; three credits; three recitations.

5. **Practical Bacteriology** is a continuation of general bacteriology. It is a course in practical laboratory work in making culture media; plate cultures; a study of colonies; planting on various media; quantitative analysis; classification; examination of pathological specimens; examination of sputum.

The course in Pharmacy; senior year; second semester; three credits; one recitation; two laboratory periods.

6. **Bacteriology I.** This course deals with the sanitation of the home; water supply; sewers and drains; ventilation and hygiene of the sick room.

Course in Domestic Science and Art; senior year; first semester; three credits; three recitations.

7. **Bacteriology II.** This course relates to the study of yeasts; fermentation; principles of canning; care of milk and food; utilization of waste products; vinegar making; preservation of meats.

Course in Domestic Science and Art; senior year; second semester; three credits; three laboratory periods.

8. **Dairy Bacteriology.** This is the study of bacteria in their relation to milk and milk products. The course considers the source of invasion; reaction upon milk; control of growth; usefulness of certain varieties.

Elective; senior year first semester; two credits; two recitations.

9. **Economic Bacteriology.** This course treats of the economic use of pure cultures of micro-organisms in butter-making; methods of perpetuating pure cultures for starters; controlling flavor of cheese by the use of pure cultures of selected organisms; enzymes in curing cheese; preserving cheese and butter; laboratory demonstrations in detecting pathogenic bacteria in milk, impure milk, and milk from diseased cows.

Elective; senior year; second semester; two credits; two recitations.

10. **Soil Bacteriology.** A course of lectures and recitations in the general subject relating to micro-organisms of the soil, nitrifying germs of the legumes, how cultivated and used in inoculating, care of the organisms in the soil, value of organisms in manure.

Elective; senior year; first semester; two credits; two recitations.

11. **Pathological Bacteriology.** This is a study of pathogenic bacteria infecting domestic animals. The course includes a consideration of laboratory demonstrations with guinea pigs inoculated with infectious organisms; symptoms and lesions formed; infection and contagion; principles of immunity.

Elective; senior year; second semester; two credits; two laboratory periods.

12. **Technical Bacteriology.** A course of lectures and laboratory work in pathogenic germ diseases of live stock and poultry. Topics for consideration are a study of vaccines; their manufacture and use; nitrifying bacteria of leguminous plants; bacteria in the soil; bacteriological analysis of water.

Elective; senior year; first semester; five credits; one recitation; four laboratory periods.

13. **Advanced Bacteriology.** This course includes advanced work along the lines of original investigation; pathological bacteriology; experimental bacteriology; sanitation; immunity and prevention of disease; use and application of antiseptics; practical disinfection.

Elective; senior year; second semester; one recitation; four laboratory periods.

14. **Thesis Bacteriology.** A thesis may be selected in this subject, beginning with the first semester, junior year, major bacteriology, and continuing through four semesters.

Elective; junior and senior year; two credits for each semester.

All theses must be the result of original investigations.

The major course equals a course in bacteriology in any of the medical schools, and is recommended to those students who contemplate studying medicine, dentistry, or professional nursing.

BOTANY AND PLANT PATHOLOGY.

Professor Jackson.
Mr. Lawrence.
Mr. Griffin.
Miss Gilkey.

The courses offered in the department of Botany and Plant Pathology aim not only to give the student a broad knowledge of plants, their structure, activities and relationships; but to show wherein the science of Botany is related to the problem of every-

day life and the home, and to the practice of Agriculture, Pharmacy, Forestry, and Domestic Science and Art.

In the arrangement of work in the courses offered, the point of view of the several groups of students is kept constantly in mind and the work adapted to their needs. In order to make this possible in courses taken by students pursuing different lines of work, separate sections are provided.

The work of the department is carried on by means of recitations, lectures and laboratory work. Texts and reference books are used mainly as an aid in correlating the facts brought out in the study of the plants in the laboratory. Living plants are used wherever possible. Drawing is made an important feature of the laboratory work, because the student, in order to draw accurately, must have observed clearly.

Particular attention is given to students desiring to take their major work in this department. Exceptional opportunities are offered to students who wish to prepare themselves for teaching Nature Study and Botany in the public schools and to those who wish to specialize in Botany and Plant Pathology preparatory for investigation work.

A. **Essentials of Botany I.** This course provides an introduction to Plant Life and deals with the nature of plants; their structure; how plants grow and are propagated; how plants absorb and manufacture food; their relation to each other and to their environment; kinds of plants, etc.

Throughout the course the relations of Botanical Science to every-day life, to household science, home gardening, etc., will be emphasized.

The Secondary course in Domestic Science and Art; second year; first semester; two credits; one recitation; one laboratory period.

B. **Essentials of Botany II.** A continuation of Botany A.

The Secondary course in Domestic Science and Art; second year; second semester; two credits; one recitation; one laboratory period.

C. **Plant Relations.** A study of plants in their mutual relationships, their relations to animal life and to man, and to their physical environment.

The Secondary courses in Agriculture, Commerce, and Forestry; second year; second semester; two credits; two recitations.

1. **Principles of Botany I.** This course aims to present in a broad laboratory course the fundamental principles of Botany. The higher plants are first traced in their development from the seed to flower, special effort being made to correlate the study of morphology, histology, and physiology of the various parts. The morphology, evolution, and classification of plants will then be traced from lower to higher forms. Finally, the relation of plants to their environment and their use in nature and to man will be studied. Throughout the course the economic relations of botanical study will be emphasized. The work will be adapted in the several sections to meet the needs of the several groups of students.

The courses in Agriculture, Forestry, Pharmacy, and Domestic Science and Art; freshman year; first semester; three credits; one recitation; two laboratory periods.

2. **Principles of Botany II.** A continuation of Botany 1.

The courses in Agriculture, Forestry, Pharmacy, and Domestic Science and Art; freshman year; second semester; three credits; one recitation; two laboratory periods.

Note.—Botany 1 and 2 are required as a prerequisite for all the following courses.

3. **Plant Histology.** This is a course dealing with the microscopic structure of plants. A study of the cell, cell contents, and the types of tissues will be made. Students will become familiar with the technique of preparing permanent microscopic slides free hand, and with the aid of the microtome.

(a) Arranged to meet the needs of Forestry students leading to the study of Forest Technology. Special attention will be given to the structure of woods.

The course in Forestry; sophomore year; first semester; three credits; one recitation; two laboratory periods.

(b) Arranged to meet the needs of Pharmacy students as a preparation for more advanced work in the microscopic study of crude drugs and their adulteration.

The course in Pharmacy; sophomore year; first semester; three credits; one recitation; two laboratory periods.

4. **Morphology and Taxonomy of Seed Plants.** Designed to meet the needs of a study of Special Morphology and Taxonomy of Seed Plants by Pharmacy and Forestry students.

(a) Adapted especially to the requirements of Forestry students. The morphology and taxonomy of Gymnosperms and Angiosperms will be studied. Special attention will be given to a study of the plant families making up the forest flora.

The course in Forestry; sophomore year; second semester; three credits; one recitation; two laboratory periods.

(b) Adapted to the needs of the students in Pharmacy. The student will be made familiar with the morphology and relationships of the plant families containing medicinal plants leading to the study of Pharmacognosy.

The course in Pharmacy; sophomore year; second semester; three credits; one recitation; two laboratory periods.

5. **Agricultural Botany.** This course presents to Agricultural students the fundamental botanical principles underlying Agricultural Practice and serves as an introduction to advanced work in Plant Physiology, Plant Breeding, Systematic Pomology and Olericulture, Agrostology, etc. The laboratory work will consist largely of a morphological and taxonomic study of agricultural plants.

The course in Agriculture; sophomore year; second semester; three credits; one recitation; two laboratory periods.

6. **Plant Physiology I.** An advanced course in Experimental Plant Physiology. The student is taught by lectures and actual experiments the physiology of crop production. The discussion and experiments cover such topics as absorption, photosynthesis, digestion, respiration, translocation, growth, reproduction, irritability, etc.

Designed to meet the needs of students in Agriculture and Forestry; elective; junior or senior year; first semester; three credits; one recitation; two laboratory periods.

7. **Plant Physiology II.** A continuation of course 6.

Elective; junior or senior year; second semester; three credits; one recitation; two laboratory periods.

8. **Principles of Plant Pathology.** The following are some of the topics to which attention is given in this course, the causes of disease in plants; the principles of plant disease control; fungicides and their use; dissemination and geographical distribution of plant diseases; their economic importance; disease resistance; methods of culture of parasitic fungi and bacteria, etc. In the laboratory opportunity will be given for the study of plant diseases producing organisms and their botanical relationship, methods of inoculation, etc.

Elective in the course in Forestry; junior year; in the course in Agriculture; junior or senior year; first semester; three credits; one recitation; two laboratory periods.

Note.—Preparatory for, and required as a prerequisite to, Botany 9, 10, 11.

9. **Diseases of Tree and Small Fruits.** A detailed study will be made of the cause and control of all the important fungous, bacterial and physiological diseases. Particular attention will be given to the diseases of those trees and small fruit crops of importance in the Northwest. The laboratory work will include a careful study of the gross appearance and the effect on the host of various diseases as well as a microscopic study of the organisms causing the trouble and their relation to the tissues of the host.

Designed primarily for students specializing in Horticulture.

Elective; junior or senior year; second semester; three credits; one recitation; two laboratory periods.

10. **Diseases of Vegetable and Field Crops.** This course is similar in general to Botany 9, but deals with diseases of vegetable and field crops.

Elective; junior or senior year; second semester; three credits; one or two recitations; one or two laboratory periods at the discretion of the instructor.

11. **Diseases of Forest and Shade Trees.** A study of the diseases of forest and shade trees and of the decay of structural timber is taken up in this course. Designed to meet the needs of students in Forestry and Landscape Gardening.

Elective in the course in Forestry; junior year; in the course in Agriculture; junior or senior year; second semester; three credits; one or two recitations; one or two laboratory periods at the discretion of the instructor.

12. **Taxonomic Study of Farm Weeds and Grasses.** This course aims to familiarize the students with the structure and classification of farm weeds and grasses. A detailed study will be made of well-selected types. The student will make a collection and identify as many specimens as time will permit.

Elective; junior or senior year; second semester; two credits; two laboratory periods.

Note.—This course should precede Agronomy 13 (Agrostology).

13. **Seminar I.** For advanced or graduate students in Botany and Plant Pathology. The work will consist of reports on advanced studies and abstracts of articles appearing in Experiment Station literature, scientific journals, or the agricultural press.

First semester; one credit.

14. **Seminar II.** A continuation of course 13.

Second semester; one credit.

15. **Research.** Opportunity will be given students who desire to specialize in Botany and Plant Pathology to take up work not given in the regular courses, or to take up the investigation of special problems.

Senior year; first and second semesters; one to five credits.

Note.—Any of the courses outlined above, except A, B, C, 1, and 2, may be taken as a minor upon consultation with the head of the department. Students who elect work in Botany and Plant Pathology as a major study will be required to offer Botany 1 and 2, or their equivalent, as a prerequisite, and to carry an equivalent of five credits throughout the junior and senior years.

PHYSICS.

Professor Weniger.
Mr. Shepard.

A. **Elementary Physics I.** A high school course in Physics adapted to students just beginning Geometry.

The Secondary course in Mechanic Arts; second year; first semester; three credits; two recitations; one laboratory period.

B. **Elementary Physics II.** A continuation of course A.

The Secondary course in Mechanic Arts; second year; second semester; three credits; two recitations; one laboratory period.

1. **General Physics I.** A course in general Physics, descriptive rather than mathematical in character, adapted especially to students of Agriculture. A good working knowledge of geometry is the only prerequisite.

The course in Agriculture; sophomore year; three and one-half credits; two lectures; one recitation; one laboratory period. Transition course; junior year; first semester.

2. **General Physics II.** A continuation of course 1, during the second semester.

3. **General Physics III.** This course is similar in many respects to course 1, but is more technical in its nature, being designed particularly for Engineering students. A working knowledge of trigonometry is required for entrance.

The course in Forestry; all courses in Engineering; sophomore year; first semester; five credits; two lectures; two recitations; one laboratory period.

4. **General Physics IV.** A continuation of course 3.

The course in Forestry; all courses in Engineering; sophomore year; first semester; five credits; two lectures; one recitation; one laboratory period.

5. **General Physics V.** The lectures and recitations in this course are identical with those of course 1, but more laboratory work is required.

The course in Commerce; sophomore year; the course in Pharmacy; junior year; first semester; four credits; two lectures; one recitation; one laboratory period.

6. **General Physics VI.** A continuation of course 5.

The course in Commerce; sophomore year; the course in Pharmacy; junior year; second semester; four credits; two lectures; one recitation; one laboratory period.

7. **General Physics VII.** A brief descriptive course with such applications as are of greatest interest to students in Domestic Science and Art.

The course in Domestic Science and Art; junior year; first semester; three credits; two recitations; one laboratory period.

8. **General Physics VIII.** A continuation of course 7.

The course in Domestic Science and Art; junior year; second semester; three credits; two recitations; one laboratory period.

9. **Electrical and Magnetic Measurements.** A laboratory course in the exact determination of electrical and magnetic quantities, calibration of instruments, etc. Two credits; two laboratory periods.

The course in Electrical Engineering; junior year; first semester; two credits; two laboratory periods.

10. **Heat and Light.** An advanced course, taking up the phenomena of heat and light in detail, including recent discoveries.

Elective; first semester; credit to depend upon work done.

11. **Electricity and Magnetism.** An advanced course, taking up the theory of electrical measuring instruments, etc., with suitable practice in the laboratory.

Elective; second semester; credit to depend upon work done.

MATHEMATICS.

Professor Johnson.
Assistant Professor Tartar.
Mr. Beard.
Mr. Beaty.
Mr. ————

A. **Algebra I.** The work of the course includes a drill in the fundamental operations, use of parentheses, special rules of multiplication and division, factoring, highest common factor, lowest common multiple, and fractions.

The Secondary courses; first year; first semester; five credits; five recitations.

B. **Algebra II.** The topics studied are solution of fractional and literal equations, problems involving linear equations, simultaneous linear equations involving two or more unknown numbers, problems involving simultaneous linear equations, graphical representation, inequalities, involution, evolution, theory of exponents, radical expression, and imaginary numbers.

The Secondary courses; first year; second semester; five credits; five recitations.

C. **Algebra III.** After a short review of the topics which precede quadratic equations, the following subjects are carefully treated: Quadratic equations, problems involving quadratic equations with one unknown number, equations in the quadratic form, theory of quadratic equations, factoring of quadratic expressions, solution of quadratic equations by factoring, graphical representation of quadratic expressions with one unknown number, simultaneous quadratic equations, problems involving simultaneous quadratic equations with two unknown numbers, and graphical representation of simultaneous quadratic equations.

The Secondary courses; second year; first semester; two and one-half credits; alternates with course D.

D. **Geometry I.** Courses D and E include all that is found in Shutts' Plane and Solid Geometry. The constant aim is to develop in the student the power of logical reasoning, and of clearness and

accuracy of expression. To this end many original exercises are studied, and at all times demonstrations and proofs are freely discussed in the class room.

The Secondary courses; second year; first semester; two and one-half credits; alternates with course C.

E. **Geometry II.** This is a continuation of course D.

The Secondary courses; second year; second semester; five credits; five recitations.

1. **Plane Trigonometry I.** This course includes functions of acute angles, right triangles, functions of any angle, relations between functions, inverse functions, trigonometric equations, and oblique triangles. Considerable time is devoted to the deduction of trigonometric formulae, study of trigonometric identities, and the solution of practical problems.

All Engineering courses; freshman year; first three-fifths first semester; three credits; five recitations.

2. **Plane Trigonometry II.** This course is arranged especially for students in Agriculture and Commerce.

Freshman year; Agriculture; first semester; three credits; three recitations; Commerce; second semester; three credits; three recitations.

3. **Spherical Trigonometry.** The course in Civil Engineering; freshman year; last half of first semester; one credit; two recitations.

4. **College Algebra I.** After a brief review of radical expressions, theory of indices, and quadratic equations, graphical representation and mathematical induction are studied.

All Engineering courses; freshman year; last two fifths of first semester; two credits; five recitations.

5. **College Algebra II.** This course is a continuation of course 2, and consists of a treatment of the binomial theorem, progressions, permutations and combinations, complex numbers, partial fractions, logarithms, continued fractions, and theory of equations. A short time at the end of the semester may be devoted to the study of analytic geometry.

All Engineering courses; freshman year; second semester; five credits; five recitations.

6. **Plane Analytic Geometry.** The topics studied are the point, the straight line, polar coordinates, transformation of coordinates, the circle, conic sections, tangents, discussion of general equations of the second degree, problems in loci, and higher plane curves.

All Engineering courses; sophomore year; first three-fifths of first semester; three credits; five recitations.

7. **Calculus I.** The fundamental principles of the differential calculus are developed and applied with special reference to the needs of Engineering students.

All Engineering courses; sophomore year; last two-fifths of first semester; two credits; five recitations.

8. **Calculus II.** Among the subjects presented are: evaluation of indeterminate forms, maxima and minima, change of independent variable, direct integration, definite integrals and applications; integration by parts, integration of trigonometric forms, etc.; applications to finding the lengths and areas of curves, surfaces, and volumes of solids of revolution, etc.; double and triple integration and application. In this course, as in course 7, great stress is laid upon practical applications, and a large number of practical problems are solved.

All Engineering courses; sophomore year; second semester; five credits; five recitations.

9. **Commercial Arithmetic.** A review of all the essential operations. Special stress is laid on short methods; daily drills in rapid calculation; construction of labor-saving tables; computation of estimates, partnership settlements, average, etc.

The course in Commerce; freshman year; first semester; three credits; five recitations.

ENGLISH LANGUAGE AND LITERATURE.

Professor Berchtold.
Assistant Professor Callahan.
Mr. Baldwin.
Miss Williams.
Mrs. McElfresh.
Mr. ————

The objective points toward which all efforts in the study of English tend are: The study of English as a means of communication between man and man; the study of English as literature; and the study of English as language.

A cursory glance at this division might suggest the first part as the all important point, i. e., the study of English in its full scope as a means of expression with the pen and the lips. Experience has taught, however, that students of English who wish to become well grounded in the knowledge and use of their mother tongue can not safely neglect any one of these points. For he who studies the art of composition will be greatly helped in his work, if he knows the exact meaning of the words and is familiar with the classics of his native tongue.

Knowledge of the principles of the art of composition as applied by the best writers will assist the student to avoid his own crudities, and will enable him to communicate what he has to say in a better form than he would otherwise employ. By the shortcomings of others he should learn what to guard against, and by their achievements what to seek in his own compositions, be these simple daily or weekly letters to friends or parents, or be they themes, essays, orations, dissertations or contributions to current thought.

What his text-book helps him to do consciously, familiarity with superior writers should help him to do unconsciously; for we may get good from a master of English by unconscious absorption, just as we acquire good manners by associating with gentlemen and ladies. No mind can fail to be stimulated by contact with greater minds, whether living or dead. Their pages feed the

powers of thought and strengthen the power of expression, thus enabling the student to think, to talk, and to write to more purpose.

The college graduate of today, when taking his place in the arena of the world, is expected to have, and usually has, thoughts and opinions of his own. To render these ideas of use to his fellow men, and thus to himself, he must be able to give them adequate expression. This the study of Grammar, Rhetoric, Forensics, Oratory, and Literature will help him to do, as all of these branches call for close and accurate observation, correct inference, and sharp discrimination.

A. **Advanced Grammar.** This course is designed to make the expression of ideas a pleasure to the student. The work consists of spelling, writing, and analysis and synthesis of simple grammatical constructions. Written exercises prepared under rules of form are required constantly, to obtain flexibility and confidence in expression. There is daily drill in sentence analysis and construction to give the student a clear idea of the principal parts of sentences. Punctuation and capitalization form a part of the daily drill work. Every expression, while the student is discussing the recitation work, must be complete. As far as possible, the weak points in the individual's language will be corrected. Practice in the correction of written work is given to enable the student to see his own mistakes more readily.

The Secondary courses; first year; first semester; four credits; four recitations.

B. **Composition.** The aim of this course is to ground students thoroughly in the elements and fundamentals of composition. Capitalization and punctuation reviewed; the importance of letter-writing emphasized; principles governing sentence structure, paragraph structure, and theme structure studied, with certain classical models always in the foreground; in short, to develop power of expression and individuality as spontaneously and naturally as possible. A reasonable amount of written work will be required, more especially to illustrate the forms of composition. To be taken in connection with English D, and supplemented by it.

The Secondary courses; first year; second semester; two credits; two recitations.

C. **Classics I.** The aim of this elementary course is to cultivate in the student a taste for reading; to assist him in the interpretation of the simpler classics of our literature; and to encourage him to express his own thoughts clearly and without embarrassment. Masterpieces of prose and poetry are studied and some collateral reading is required.

The Secondary courses; first year; first semester; one credit; one recitation.

Paradise Lost, Books I and II, Milton.

Snowbound, Whittier.

D. **Classics II.** A continuation of Classics I.

The Secondary courses; first year; second semester; three credits; three recitations.

The Iliad, Lang's Translation.

The Pilgrim's Progress, Part I, Bunyan.

The Merchant of Venice, Shakespeare.

The Vision of Sir Launfal, Lowell.

E. **Rhetoric and Composition I.** Open to students who have had courses A, B, C, D, or their equivalent.

A review of the principles of grammar; exercises in syntactical construction; principles governing the structure of the whole composition; analysis and outlines of specimens of easy classic prose and poetry, with a view to illustrating theme structure; writing of short compositions in class on "read up" matter; and a preparation of a theme each week, in the narrative or descriptive forms, with attention to sentence structure, spelling, punctuation, and paragraph arrangement.

The Secondary courses; second year; first semester; three credits; three recitations.

F. **Rhetoric and Composition II.** A continuation of course E. Intensive study of the Paragraph, the Sentence, and the Word; study of synonyms; paragraph writing, with a view to applying the principles governing the development of the topic statement; elementary themes, weekly, in the expository and argumentative forms.

The Secondary courses; second year; second semester; three credits; three recitations.

G. **Classics III.** Principles of literary criticism; interpretative study of literary classics; analysis and rendering. George Eliot's Silas Marner, Irving's Sketch Book, Scott's The Lady of the Lake, Coleridge's Ancient Mariner constitute the list of classics from which selections for study will be made.

All Secondary courses; first semester; two credits; two recitations.

H. **Classics IV.** Continuation of the methods of work employed in the first semester. A selection of three classics will be made for study from a list consisting of Shakespeare's As You Like It, Addison's De Coverley Papers, Dickens' A Tale of Two Cities, and Macaulay's Lays of Ancient Rome.

All Secondary courses; second semester; two credits; two recitations.

1. **Rhetoric.** Study of the elements and principles involved in effective discourse. The study of words; the sentence; the paragraph; descriptive, narrative, and expository forms of composition with written exercises in each. Careful attention to making plans and outlines. Descriptions and narrations written on demand in class, under limit. Personal conferences with the instructor on all written work are an important part of the course.

All degree courses; freshman year; first semester; three credits; three recitations.

Prerequisites: English A, B, C, D, E, F, G, H.

2. **Advanced Rhetoric.** Study and practice in expository writing in class; drill in careful, orderly arrangement of material; outlines of plans, introductions, conclusions; study of effective paragraphings; importance of color and action; illustration and exemplification; bi-weekly and monthly themes with personal conferences.

All degree courses; freshman year; second semester; three credits; three recitations.

Prerequisities: English 1, 3.

3. **Advanced Classics and Reading I.** Principles of literary criticism; advanced interpretative study of literary classics; analysis and rendering.

All degree courses; freshman year; first semester; two credits; two recitations.

Hamlet, The Tempest, Carlyle's Essay on Burns, Macaulay's Essay on Addison.

4. **Advanced Classics and Reading II.** A continuation of course 3.

All degree courses; freshman year; second semester; two credits; two recitations.

Macbeth, Lear, Macaulay's Essay on Johnson, Emerson's Essays (selected).

5. **Exposition and Argumentation.** A continuation of course 2, with principal emphasis on Argument. Reading and analysis of forensic masterpieces. Drill in principles of definition, restriction and exclusion; study of value of evidence and proof as support of a proposition; recognition of the difference between assertion and argument; the relation of main and subordinate support to a proposition; difference between inductive and deductive proof; exposition continued.

The course in Domestic Science and Art; sophomore year; first semester; three credits; three recitations.

Burke's On Conciliation with America, Webster, Lincoln.

6. **The Essay.** This is perhaps the most instructive, helpful, and profitable of the forms of discourse. A careful study of the works of the masters of this difficult form: Emerson, Lowell, Stedman, DeQuincey, Macaulay, Matthew Arnold, and Ruskin; study of the paragraph; occasional written exercises, with the essays read as guides, to acquire correctness and facility of expression.

The course in Domestic Science and Art; sophomore year; second semester; three credits; three recitations.

7. **English Literature I.** A general outline course based upon Long's History of English Literature. This includes a survey of the principal forms of literature as exemplified by the masters in each field. The aim is to cultivate an appreciation of what is excellent in quality and form. Masterpieces representing the best thought and form are studied in class or assigned to students for

careful reading and reports. Chief attention given to Chaucer, Shakespeare, Milton, Pope, Johnson, and Goldsmith.

The course in Domestic Science and Art; junior year; first semester; three credits; three recitations.

8. **English Literature II.** A continuation of course 7. A study of the writers of the nineteenth century: Scott, Macaulay, Dickens, Thackeray, George Eliot, Matthew Arnold, Carlyle, Ruskin and others. The required readings are designed to illustrate the different forms and periods of English literature.

The course in Domestic Science and Art; junior year; second semester; three credits; three recitations.

9. **American Literature I.** A study of the leading periods and principal writers of our country, with particular emphasis on what is sometimes called the First National Period, including such authors as Irving, Cooper, Bryant, Poe, Hawthorne, Longfellow, and Holmes; also prominent writers of the present day; lectures; class room study and reading; compositions.

The courses in Domestic Science and Art, Electrical Engineering, and Pharmacy; elective in the other courses; senior year; first semester; two credits; two recitations.

10. **American Literature II.** A continuation of course 9. The metropolitan writers; present schools and tendencies; literature in the West; lectures; class room study and reading; compositions.

The courses in Domestic Science and Art, Electrical Engineering, and Pharmacy; elective in the others; second semester; two credits; two recitations.

11. **Business English.** Besides giving a thorough training in commercial correspondence, the course aims to ground the student in the vocabulary, forms, and usages peculiar to business and administrative pursuits. Incidental writing, summaries, advertising, preparation of copy and proofreading receive much attention.

The standards of commercial English are each year advancing; and familiarity with proper usage of recognized form is of paramount importance to those who are looking forward to a business career.

The Commercial course; freshman and secondary years; first semester; three credits; three recitations.

PUBLIC SPEAKING.

Professor Hetzel.
Mr. Mathews.
Miss Williams.

The course in Public Speaking is intended to serve three purposes: (1) to train students in the use of English as a means for expression and communication for the ordinary demands of social, commercial and professional life; (2) to continue that training to suit the special needs of those who intend to take up lines of activity which necessitate speaking in public; (3) to develop skill in elocution, interpretative reading and dramatic presentation. The courses have been prepared to meet the particular needs of the students in the various courses.

The Oregon Agricultural College participates in several intercollegiate oratorical contests and debates. The courses in Public Speaking are designed to give preparation for these contests. Candidates for positions on these teams or those desiring training for the Literary Society contests are advised to consider courses 5, 6, and 7. Students who are interested in dramatic presentation, or who wish to become public readers or teachers should consider courses 8 and 9.

All students in Agriculture, Engineering, Commerce, and Pharmacy are required to take courses 1, 2, 3, and 4. These courses are made very practical and are designed to teach students how to analyze, organize and present argument in support of propositions of the same nature as those which they expect to meet in their chosen lines of work.

1. **Argumentative Themes.** This course is devoted principally to training in analysis, evidence, and brief-drawing. The work consists of lectures, a study of text-books, and practice in the composition of various forms of argumentative themes.

All Engineering courses and in Pharmacy; sophomore year; first semester one credit; one recitation.

In the courses in Agriculture, Commerce, and Forestry; junior year; first semester; one credit; one recitation.

2. **Presentation.** This course deals with the principles of conviction and persuasion, and with the problems of presentation. Students are taught how to recognize and solve problems which arise because of the different interests and characters of individuals and communities.

All Engineering courses and in Pharmacy; sophomore year; second semester; one credit; one recitation.

In the courses in Agriculture, Commerce, and Forestry; junior year; second semester; one credit; one recitation.

3. **Composition of Address.** This course deals with the composition of the most important kinds of addresses, including the argument, the eulogy, the commemorative address, and various forms of non-forensics. The work consists of lectures, a study of text-books, analysis of masterpieces, practice in the composition of the various forms and frequent class room exercises.

All Engineering courses; junior year; first semester; two credits; two recitations.

In the courses in Agriculture, Commerce, Forestry, and Pharmacy; senior year; first semester; two credits; two recitations.

4. **Extempore Speaking.** Daily practice in the presentation of the various forms of addresses. Speeches are prepared on topics of special and particular interest to the students and delivered with the view of making them most effective as means in the advancement of a particular cause. Extensive criticism is offered as to methods of selection, organization and presentation.

All Engineering courses; junior year; second semester; two credits; two recitations.

In the courses in Agriculture, Commerce, and Pharmacy; senior year; second semester; two credits; two recitations.

5. **Practical Public Speaking I.** Practice in the presentation of the various forms of public address, voice training, study of gesture, bearing, and the elements of ease, grace, and force in presentation. Practice in the rapid preparation of speeches on topics of current interest, and in the impromtu delivery of same. Designed for those who wish some general training in public speaking. Drill in parliamentary procedure.

Elective; first semester; three credits; three recitations.

6. **Practical Public Speaking II.** Continuation of course 5.

Elective; second semester; three credits; three recitations.

7. **Debating.** Practical work in brief-drawing, the collection and handling of evidence, and debating. Each student will prepare several debates under the direction of the instructor; construct briefs and participate in class room debates. Personal consultation with the instructor on thought, composition and delivery. This course is a critical and practical study of debating. The class is limited in number. The course can be taken only with the consent of the instructor.

Elective; first semester; two credits; two recitations.

8. **Oratory.** This course is intended as special preparation for those who wish to enter oratorical work. The work consists of lectures on the theory of oratory, the preparation of original orations, class room exercises and personal conferences and criticism. The course can be taken only with the consent of the instructor.

Elective; first semester; one credit; one recitation.

9. **Elocution I.** Literary interpretation, including analysis, memorizing, and rendering of selected masterpieces of prose and poetry. The aim of this course is to enable the student not only to understand and appreciate the thought and spirit of literature, but to render it naturally and effectively; to correct erroneous habits of speech and to give freedom, purity, and strength of tone; to cultivate the power of expression through imagination; to eliminate artificiality, affectation and self-consciousness.

Elective; first semester; two credits; two recitations.

10. **Elocution II.** Continuation of course 9.

Elective; second semester; two credits; two recitations.

11. **Elocution III.** Advanced literary interpretation. Training in the delivery of masterpieces of prose and poetry; repertoire; Bible reading; interpretative study of Spakespeare and the Modern Drama; voice culture; bodily expression; impersonation.

Elective; first semester; two credits; two recitations.
Prerequisite: Course 8.

12. **Elocution IV.** Continuation of course 11.

Elective; second semester; two credits; two recitations.

MODERN LANGUAGES.

Professor Taillandier.
Miss Kuney.
Mr. ————

The instruction in Modern Languages covers a three-year course in French, German, and Spanish.

Two years of either French, German, or Spanish are required in all degree courses except Mining Engineering, in which course it is an elective.

The work in either German or French is intended to prepare the student for the reading of scientific texts, to enable him to translate understandingly and with ease any scientific work which he may wish to read in the execution of his profession; in Spanish, the aim is to teach students the use of the living language, not merely to read, but to understand and speak it, with a view to possible work in Mexico, or the Philippine Islands.

Considerable attention is given to conversation.

The following courses are offered:

1. **French I.** Fraser and Squair's Complete French Grammar, Super's French Reader, Compayre's Yvan Gall.

Sophomore year; first semester; three credits; three recitations.

2. **French II.** A continuation of course 1.

Sophomore year; second semester; three credits; three recitations.

Prerequisite: Modern Language 1.

3. **French III.** Continuation of the grammar; Bronson's Everyday French; Buell's French Daily Life; easy texts, such as Bazin, Contes Choisis; Scribe, Le Verre D'Eau, etc.

Junior year; first semester; three credits; three recitations.

Prerequisites: Modern Language 1 and 2.

4. **French IV.** A continuation of course 3.

Junior year; second semester; three credits; three recitations.

Prerequisites: Modern Language 1, 2 and 3.

5. **French V.** Readings of modern French writers, such as Daudet, Sand, Merimee, etc. French Composition: J. E. Mansion.

Senior year; first semester; three credits; three recitations.

Prerequisites: Modern Language 1, 2, 3, 4.

6. **French VI.** A continuation of course 5.

Senior year; second semester; three credits; three recitations.

Prerequisites: Modern Language 1, 2, 3, 4, and 5.

7. **German I.** Bierwirth's Beginning German. Ed. 1906. Bacon's Im Vaterland.

Sophomore year; first semester; three credits; three recitations.

8. **German II.** A continuation of course 7.

Sophomore year; second semester; three credits; three recitations.

Prerequisite: Modern Language 7.

9. **German III.** Jagemann's Syntax; Bronson's Colloquial German; Mosher's Willkommen in Deutschland.

Junior year; first semester; three credits; three recitations.

Prerequisites: Modern Language 7 and 8.

10. **German IV.** A continuation of course 9.

Junior year; second semester; three credits; three recitations.

Prerequisites: Modern Language 7, 8, and 9.

11. **German V.** Reading of selected prose works such as Hauff's Lichtenstein, Heine's Harzreise, etc. Paul R. Pope's German Composition.

Senior year; first semester; three credits; three recitations.

Prerequisites: Modern Language 7, 8, 9, and 10.

12. **German VI.** A continuation of course 11.

Senior year; second semester; three credits; three recitations.

Prerequisites: Modern Language 7, 8, 9, 10, and 11.

13. **Spanish I.** Loiseaux's Elementary Spanish Grammar; Worman's First and Second Spanish Book; Ramsey's Elementary Spanish Reader.

Sophomore year; first semester; three credits; three recitations.

14. **Spanish II.** A continuation of course 13.

Sophomore year; second semester; three credits; three recitations.

Prerequisite: Modern Language 13.

15. **Spanish III.** Ramsey's Spanish Grammar; Bonilla, Daily Spanish Life; Loiseaux's Spanish Reader; Bransby's Spanish Reader.

Junior year; first semester; three credits; three recitations.

Prerequisites: Modern Language 13, 14.

16. **Spanish IV.** A continuation of course 15.
Junior year; second semester; three credits; three recitations.
Prerequisites: Modern Language 13, 14, and 15.

17. **Spanish V.** Giese and Cool's Spanish Anecdotes; Loiseaux's Composition; Reading of selected prose works by Galdos, Valera, Alarcon, etc.
Senior year; first semester; three credits; three recitations.
Prerequisites: Modern Language 13, 14, 15, and 16.

18. **Spanish VI.** A continuation of course 17.
Senior year; second semester; three credits; three recitations.
Prerequisites: Modern Language 13, 14, 15, 16, and 17.

LATIN.

Miss Bowden.

Instruction in Latin includes one year of required work in the course in Pharmacy; two years elective in the department of Domestic Science and Art, and a third year as a general elective. The course consists of a thorough drill on the inflections, a study of etymology and syntax, and much practice in composition. The aim is to give the student some power in understanding technical terms used in science, and to increase his knowledge and vocabulary in English. The value of the study as an aid in English Grammar is also brought out.

In the translation, an effort is made to interpret the spirit of the ancient Romans and to get an insight into their character and civilization, as well as to secure some appreciation of their literature.

1. **Latin I.** A knowledge of syntax and inflections such as is given in any good preparatory Latin book; also the ability to read simple fables and stories.

The course in Pharmacy; freshman year; elective, in the course in Domestic Science and Art; sophomore year; first semester; three credits; three recitations.

2. **Latin II.** A continuation of course 1.

The course in Pharmacy; freshman year; elective, in the course in Domestic Science and Art; sophomore year; second semester; three credits; three recitations.

3. **Latin III.** Caesar's Gallic War; Latin composition; systematic study of Latin Grammar; Book I and fifteen chapters in Book II.

Elective; junior year; first semester; three credits; three recitations.

4. **Latin IV.** A continuation of course 3; finish Book II and read also Books III and IV.

Elective; junior year; second semester; three credits; three recitations.

5. **Latin V.** Three orations of Cicero; Latin composition; Latin grammar; sight reading.

Elective; first semester; three credits; three recitations.

6. **Latin VI.** Three orations of Cicero; Latin composition; Latin grammar; sight reading.

Elective; second semester; three credits; three recitations.

HISTORY.

Professor Horner.

A. **Ancient History.** A survey of the ancient eastern nations, with a careful study of Greece and Rome.

The Secondary courses; first year; first semester; three credits; three recitations.

B. **Mediaeval and Modern History.** A study of the social and political institutions of Europe, with discussions touching the material progress of these ages; famous works of art; foundations, inventions, discoveries, enterprises, improvements, and investigations.

The Secondary courses; first year; second semester; three credits; three recitations.

1. **English History.** An outline of political and constitutional history to serve as a framework for the study of the economic, social, and intellectual development of the nation.

The course in Domestic Science and Art; freshman year; first semester; three credits; three recitations.

2. **United States History.** With special attention to the colonial, political, and industrial aspects.

The courses in Commerce and Domestic Science and Art; freshman year; second semester; three credits; three recitations.

3. **Modern Europe.** The Development of Modern Europe Since the Congress of Vienna.

Elective; three credits; three recitations.

ART.

Assistant Professor McLouth.
Mr. ————

The chief aim of the course in Drawing is to teach the student to see truly, to obtain quicker perceptions, and to develop a keenness of observation, accurate judgment, and concentration of the mind. Few among us see truly what we see, and then only what we have been educated to see. Besides the general quickening of perception and the training of the eye to accurate sight, it affords the means of noting the forms of objects such as no written description can secure. It is a mode of expression second only to language itself.

In considering the study of drawing, its importance is too often lost sight of, and yet it may be safely said that drawing is a corner stone in the foundation of not only industrial education, but of a scientific education as well. In engineering courses, for instance, a knowledge of drawing is one of the first requirements. Drawing is an invaluable element in general education as a handmaid to the other branches of study; and the foremost educators advocate the study of drawing as the first step in any system of industrial education.

A. **Drawing I.** The purpose of this course is to teach the student to see correctly and to judge accurately, to give him enough general knowledge of drawing to make it an aid in the pursuance of other branches of study where graphic representation is an important feature of the work; and to give him such a training as will best and most fully meet the needs of the subsequent work.

The course consists of the principles of drawing, elementary perspective and its application, drawing in charcoal and pencil (line and light and shade) from geometric forms, block casts, and simple still life. Much attention is given to proportion and accurate outline, because in laboratory drawing, such as in Botany and Zoology, true outline is of greatest importance.

The Secondary courses and an entrance requirement to all degree courses; first year; first semester; two credits; four class periods.

B. **Machine Sketching.** This course is continued throughout the second semester, but is divided and designed to meet the requirements of the several Engineering courses. A considerable proportion of the time is given to machine sketching to acquaint the student with the method of securing and retaining data for complete working drawings by the aid of sketches; making and reading working drawings; detailing complicated parts, orthographic projection, and lettering. The conventions of practice and the method of making clear, accurately dimensioned sketches for working drawings is given first consideration. In machine sketching, the objects from which the sketches are made are selected from approved designs of commercial machinery and electrical apparatus to give familiarity with correct forms. This work is carried on in the machine shops.

The Secondary courses in Mechanic Arts; is also an entrance requirement to all of the degree courses in Engineering; first year; second semester; two credits; four class periods.

Prerequisite: Course A.

C. **Drawing II.** This course is designed for students in Agriculture, Domestic Science and Art, Forestry, Commerce, and Pharmacy, to further carry out the aims of course A, but instead of drawing in charcoal from geometric forms and block casts,

more complicated drawings are made, the work being in pencil and pen and ink from plants and insect specimens. Students in the course in Domestic Science and Art will give special attention to flowers and foliage with a view to design.

The Secondary courses in Agriculture, Domestic Science and Art, Forestry, Commerce, and Pharmacy; first year; second semester; two credits; four class periods.

Prerequisite: Course A.

D. **Drawing III.** This course is given to better equip the student in the course in Domestic Science and Art with a strong foundation for the applied art work following, that they may be better able to carry out the subsequent courses intelligently. The work is a continuation of Drawing A.

The Secondary course in Domestic Science and Art, and an entrance requirement to the Degree course in Domestic Science and Art; second year; first semester; two credits; four class periods.

Prerequisites: Courses A and C.

E. **Drawing III.** A continuation of course D.

Second semester; two credits; four class periods.

The Secondary course in Domestic Science and Art, and an entrance requirement to the Degree course in Domestic Science and Art; second year; second semester; two credits; four class periods.

Prerequisites: Courses A, C, and D.

1. **Freehand Lettering and Title Design.** This course is especially designed for students in Civil and Mining Engineering, and consists of freehand lettering, the construction of Roman and Gothic letters and spacing, design of lines and titles, the single line titles, the choice of style and size of letters, how to lay out and execute the design and tinting.

The courses in Civil Engineering and Commerce; freshman year; first semester; two credits; two class periods.

Prerequisites: Courses A, C, and D.

2. **Stencil Design I.** Stenciling is coming to be the principal factor in home decoration, not only of walls, as is generally thought and expressed by the word fresco, but also of wall coverings, as well as stenciling on textiles that can be taken down the same as costly tapestry. Draperies of all kinds, curtains, table

coverings, runners, screens, and sofa pillows are among the things that can be beautifully stenciled. And all this is not beyond our reach. It can be done by all to a greater or less degree of success. Even the most modest degree of success will without doubt add materially to the beauty and attractiveness of a home. It is then with this purpose in view that course 2 is given. The work is a continuation of course D, giving special attention to the study of flowers and foliage with the idea of design. Each student will execute a number of patterns, cutting stencils suitable for application to the materials (linen, crash, and art burlap) most available for house decoration.

The course in Domestic Science and Art; sophomore year; first semester; two credits; four class periods.

Prerequisites: Courses A, C, D, and E.

3. **Stencil Design II.** A continuation of course 2.

Second semester; two credits; four class periods.

The course in Domestic Science and Art; sophomore year; second semester; two credits; four class periods.

4. **Cast and Still-Life Drawing.** This course offers advanced work in drawing—line and light and shade from casts and still-life, and is designed especially for students who enter the upper classes, though without the required credit and yet who are capable of pursuing work above the elementary.

First and second semesters; two credits; four class periods.

LIBRARY.

Mrs. Kidder.
Miss Knepper.
Miss Herse.

1. **Library Practice.** This course teaches by means of lectures and practical problems the use of catalogues, indexes, and reference books, such as dictionaries, encyclopedias, atlases, handbooks of general information, handbooks of history, statistics, quotations, etc.

All Degree courses; freshman year; first semester; one credit; one recitation.

PHYSICAL EDUCATION.

Professor Angell.
Mr. Arbuthnot.
Miss Williams.
Miss Houston.

It is the purpose of the department of Physical Education to furnish students ample opportunity for physical development. The ill effects of the sedentary life of students may be counterbalanced by activity in the gymnasium and on the athletic field. All secondary, freshman, and sophomore students are required to take two periods of exercise each week throughout the college year. Before being assigned to a class, each student will be given a thorough physical examination. The more important measures will be taken, and the condition of the vital organs noted. Advice will be given as to the best exercise to be used in securing a symmetrical development. Students below normal in health and muscular strength will receive special attention and consideration.

Fall Work. This course consists chiefly of outdoor exercises, cross-country running, baseball, tennis, football, and other games.

Winter Work. Calisthenics and light apparatus drills; class work on the horse, parallel and horizontal bars, rings, and similar apparatus; recreative games; basket-ball, wrestling, and boxing.

Spring Work. Track and field athletics, baseball, tennis, cross-country running.

Normal Course. Many students expect to take up the profession of teaching after graduation from college. A general knowledge of the theories of physical education and methods of gymnastics and athletic instruction is often of material assistance in securing important teaching positions.

Students showing an especial aptitude and interest in physical education will be admitted to this course. The work will include lectures on the history and development of physical training, the general physiological principles of exercises, methods of teaching and first aid to the injured. Calisthenics, gymnastic drills, appa-

ratus work, games, and athletics will comprise the practical work of the course.

Elective; hours and credits subject to arrangement.

COURSES FOR WOMEN.

All sophomores, freshmen, and students of the Secondary courses, unless physically unable, are required to take physical training. The classes meet twice a week for sixty-minute periods.

This course is planned for consecutively progressive work, and consists of systematic exercises for the development of all parts of the body. The purpose of the course is to develop a strong and symmetrical physique, with a graceful and easy carriage; to correct physical defects and deficiency in nervous control, and to insure the individual health and organic vigor.

In addition to the regular class work in the gymnasium, various games and pastimes are open to all young women of the College. The course is designed to be recreative as well as educational, and the cultivation of the play instinct is emphasized as an important factor in physical training.

Women pursuing this course are required to provide themselves with a gymnasium suit, consisting of a blouse waist and bloomers, with the regulation gymnasium shoes.

Elementary Course. Free developing exercises for poise, presence, and bearing, for the vital organs, for respiration; light apparatus work, Indian clubs, dumb-bells, wands, gymnastic tactics; military and fancy marching; harmonic movements; gymnastic games.

Advanced Course. Difficult free movements from Swedish and German systems; apparatus work of various kinds; single stick; marching, running, jumping; artistic gymnastics; Gilbert work and folk dances.

HYGIENE.

This course is arranged to give general information regarding the laws of health to all freshman students. Its purpose will be to instruct in a popular way in the general principles of hygiene. Lectures will be given, by specialists, that lead to a comprehensive

knowledge of the human machine and its relation to healthful social life. Lectures on bacteriology, and its relation to health and well being, will be included in the course. Ventilation, physical exercise, recreation, diet, and bathing, will also be discussed. Hygiene of occupation will be considered and the importance of good physical habits as a commercial asset will be emphasized in this course.

The course in Hygiene for young women will be given in a separate section.

All Degree courses; freshman year; second semester; one credit; one lecture.

COURSE NUMBERS IN PHYSICAL EDUCATION.

1. First year Secondary; first semester.
2. First year Secondary; second semester.
3. Second year Secondary; first semester.
4. Second year Secondary; second semester.
5. Freshman year; first semester.
6. Freshman year; second semester.
7. Sophomore year; first semester.
8. Sophomore year; second semester.

INDUSTRIAL PEDAGOGY.

Professor Ressler.

The department of Industrial Pedagogy offers courses in the preparation of teachers for the public schools in the subjects of elementary agriculture, domestic science and art, and manual training. The introduction of these branches in the elementary and high schools of the State is proceeding rapidly. School officers are confronted with the problems of courses of instruction, estimates of equipment, correlation of the new with the old subjects in the curriculum, and others, in addition to the main one of specially trained teachers.

This department, in conjunction with the other College departments concerned, has undertaken to prepare tentative courses of

study in each of the industrial branches, adapted to the age of the pupils and to the social demands on the school. It will also undertake to assist teachers in the work of instruction, by general and special suggestions through College and other publications, and by correspondence and visitation where possible. Detailed lists of equipment and apparatus, with cost, suitable for small and large schools, will be furnished on request.

In addition to the regular courses during the academic year, short courses will be given each summer for the benefit of teachers and others unable to take advantage of the regular session. Special bulletins of these summer courses are issued each year.

The regular courses of the department are open to juniors and seniors and to special students who have had the necessary courses in the subject-matter in the branches they desire to teach. High school graduates and teachers of some experience may qualify as special teachers in two years. The academic courses in agriculture, domestic science and art, and manual training are listed and described under their respective departments. The courses required for teachers will correspond in the main to those given in the secondary and freshman years. This arrangement is temporary and subject to change as the needs of the students and the development of the department require.

The following courses will be offered during the year 1910-11:

1. **Psychology I.** A study of general psychology by lectures, recitations, and reports; a description of the facts and laws of mental activity with applications to the ordinary affairs of life; demonstrations and experiments showing the relation of mental life to the nervous system; the significance of habit in conduct and character.

Elective; junior and senior years; first semester; three credits; three recitations.

2. **Psychology II.** The application of the facts and principles of psychology to teaching; a study of the growth of the child mind and the relation of the various periods to educational organization; adaption of courses of instruction, methods of teaching, discipline, and general school activities to the stages of the pupil's development; lectures, recitations, reports, and simple investigations.

Elective; junior and senior years; second semester; three credits; three recitations.

3. **History of Education.** A general review of the growth and development of education and its relation to the civilization of the times; particular attention given to the rise of industrial education in Europe and America, and its place in the social and political life of the country.

Elective; junior and senior years; first semester; three credits; three recitations.

4. **School Organization and Management.** A discussion and analysis of the American system of education, with an interpretation of the purpose and spirit of each division; problems of administration and teaching in the public schools; the correlation of the industrial branches with the other subjects in the curriculum; practical exercises in making programs, keeping records, filling out reports, and performing other duties required by the Oregon school law.

Elective; junior and senior years; second semester; three credits; three recitations.

5. **General Method.** The principles of teaching, including method of the recitation, preparation of lesson plans, and observations of model teaching; library references to periodicals and current literature relating to public school agriculture, domestic science and art, and manual training.

Elective; junior and senior years; first semester; two credits; two recitations.

6. **Special Method I.** A careful, detailed study of the public school course in agriculture, with numerous lesson plans on typical subjects; observation of model lessons and practice teaching in the public schools.

Elective; senior year; second semester; two credits; two recitations.

7. **Special Method II.** Same as I, applied to public school course in domestic science and art.

Elective; senior year; second semester; two credits; two recitations.

8. **Special Method III.** Same as I, applied to public school course in manual training.

Elective; senior year; second semester; two credits; two recitations.

MILITARY SCIENCE AND TACTICS.

Captain McAlexander.

"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because peace is enervating, and no man is wise enough to foretell when soldiers may be in demand again."—General Sherman.

The military body of this College consists of one regiment of infantry having three battalions of four companies each, a hospital corps detachment, and a band of thirty-two instruments. The drill and administration are the same as in the Regular Army.

One of the objects of this instruction is to prepare the cadet so that upon graduation he will be thoroughly competent to hold a commission in the National Guard or volunteer army.

The greater part of the instruction is directed toward having cadets adopt a systematic rule of conduct, inculcating accurate methods in everything they undertake. This not only places cadets in the condition to receive favorably all instruction in the military department, but facilitates study in the other departments, and becomes a valuable asset to a young man going out into the world in any profession.

Military drill improves the habits and manners of the student, develops him physically, and gives him that military knowledge which it is desirable every citizen should possess that he may render intelligent aid to his country or state in the time of need. It cultivates a manly spirit, ready and implicit obedience, respect for authority, and self-restraint—all qualities of inestimable value to a young man.

Instruction in the course is prescribed for all undergraduate male students. Students physically unable to bear arms are excused from active military drill but will be assigned some light duty by

the head of the department. The instruction is both practical and theoretical.

The new armory contains a drill room 120x300 feet in extent, ample office room, and suitable rooms for storing guns and other ordnance.

Eight hundred and forty modern U. S. magazine rifles (Krag-Jorgensen) and equipment have been obtained. Other necessary accoutrements and apparatus for the thorough equipment of the military department are furnished by the College.

Appointment and promotion of officers and non-commissioned officers, and their relative rank in each grade, are determined according to the military standing of the cadets, based upon a careful consideration of the following points: knowledge of drill and other duties as determined by examination, practical application of this knowledge on the drill field, and recommendations of superior officers; zeal, soldierly bearing, and aptitude for command; character; military record; general standing in College.

Commissioned officers are selected from the senior class or such as have had three or more years of drill; non-commissioned officers from the junior and sophomore classes; all reductions are to the grade of private. All appointments and promotions are made by the commandant with the approval of the President of the College.

Drill. Secondary, freshman, sophomore, junior and senior years, four hours per week. Senior privates (excepting bandmen) who have had two or more years of drill may be excused from such drill during the second semester. The practical course in infantry includes the school of the soldier, company and battalion, in close and extended order; evolutions of the regiment; ceremonies; guard and outpost duty; target practice and battle tactics.

Paragraph 20, General Orders No. 155, War Department, July 24, 1907, directs that, "Upon occasions of Military Ceremony, in the execution of drills, guard duty, and when students are receiving any other practical military instruction, they shall appear in the uniform prescribed by the institution. They shall be held strictly accountable for the arms and accoutrements issued to them."

The wearing of mixed civilian and uniform clothing is prohibited at all times. The uniform complete costs about $18.00, and is of

the regulation olive drab color adopted by the United States Army, and makes a very neat and serviceable suit.

Students must come prepared to deposit the price of the uniform, for which they will be measured as soon as they learn the position of a soldier.

Proficiency in the military department is a requisite to graduation.

1. **Theoretical Instruction I.** This instruction consists of recitations in Infantry, Drill Regulations, Field Service Regulations, Manual of Guard Duty, and Army Regulations; instruction in military correspondence and reports and returns; lectures on military subjects that pertain to the organization and administration of the United States military forces in peace and in war. Junior year; first semester; one credit; one recitation or lecture.

2. **Theoretical Instruction II.** Junior year; second semester; one credit; one recitation or lecture.

3. **Theoretical Instruction III.** Senior year; first semester; one credit; one recitation or lecture.

4. **Theoretical Instruction IV.** Senior year; second semester; one credit; one recitation or lecture.

The Brodie Banner is a richly decorated silken banner that is carried by the best drilled company as a mark of merit. Each year it goes to the company making the highest total number of credits in competitive drill. Company G carries the honor for 1909-10.

ROSTER.

Field and Staff.

Colonel ..... Fred E. Ewart
Lieutenant Colonel....M. A. McCall
Lieut. Col. Insp.....M. R. Cox
Lieut. Col. A. G.....R. L. Davidson
Captain and Adjutant..F. J. Williams
Captain and Q. M.....I. Province
Captain M't'd Det.....S. Maurer

Non-Commissioned Staff.

Sergeant Major...H. J. Pfandhoefer
Q. M. Sergeant .....
Commissary Sergeant .....
Color Sergeant .....H. Gill
Color Sergeant.....A. W. Dodge
Ordnance Sergeant.....M. A. Young

Band.

Director.....H. L. Beard
Chief Musician.....C. A. Vincent
Chief Trumpeter....C. N. Anderson
Principal Musician.....F. McGinnis
Drum Major.....W. R. Carlson
Sergeant.....H. D. Bowman
Sergeant.....A. G. E. Abendroth
Sergeant.....H. L. Prather
Sergeant.....C. Mays
Corporal.....W. A. Sellwood
Corporal.....C. L. Reed
Corporal.....R. Fleser
Corporal.....A. C. Archbold
Corporal.....E. Woodcock
Corporal.....T. R. Hudson
Corporal.....H. M. Propst
Corporal.....J. T. Burch

First Battalion.

Major.....W. T. Stratton Sergeant Major....L. A. Duckworth
First Lieut. and Adjt...H. H. Barbur
Second Lieut. and Q. M...R. W. Rees

	Company A.	Company B.
Captain	C. A. Burris	V. P. Gianella
First Lieutenant	C. P. Richards	J. O. Vines
Second Lieutenant	J. W. Powell	C. L. Nelson
First Sergeant	A. O'Connor	C. E. Metcalf
Sergeant	W. D. Haskell	W. C. Dyer
Sergeant	L. C. Keene	G. L. Harper
Sergeant	A. L. Raines	W. E. Taylor
Sergeant	D. S. Young	M. T. Calif
Sergeant		C. C. Thompson
Corporal	J. O. Enberg	S. H. Arbuthnot
Corporal	E. F. Eschricht	O. B. McFadden
Corporal	H. Sigglin	E. Y. Haskell
Corporal	R. L. Stoneberg	G. Rieben

	Company C.	Company D.
Captain	J. M. Reynolds	J. J. Thompson
First Lieutenant	G. Zimmerman	L. H. Booth
Second Lieutenant	J. L. McAllister	
First Sergeant	C. L. Jamison	R. S. Loosley
Sergeant	R. F. Ginther	W. J. Thornton
Sergeant	F. E. Graham	W. DuMoulin
Sergeant	J. L. Batchelder	H. J. Gilkey
Sergeant	M. H. Horton	
Sergeant	G. Startzoff	
Corporal	C. D. Houser	C. E. Sitton
Corporal	W. E. Morris	H. M. Teel
Corporal	W. A. Armstrong	C. R. Thomson
Corporal	R. D. Bridges	E. F. Weatherford

Second Battalion.

Major.....U. E. Brown Sergeant Major.....A. P. Gibson
First Lieut. and Adjt...E. M. Billings
Second Lieut. & Q.M...C. C. Dickson

	Company E.	Company F.
Captain	A. H. Schmidt	E. E. Carrol
First Lieutenant	J. D. Lines	
Second Lieutenant		L. C. Rulifson
First Sergeant	M. E. Smead	C. A. Dunn
Sergeant	W. Keck	E. B. Lemon
Sergeant	A. P. Gibson	J. W. Graham
Sergeant	O. B. Hardy	I. R. Chapman
Sergeant	W. W. Harris	O. J. Olson
Sergeant	J. Q. Adams	
Corporal	R. W. Castle	L. Beaty
Corporal	G. C. Jones	L. E. Eagy
Corporal	R. O. McGee	F. B. Gross
Corporal	M. A. Nickerson	R. Q. Wills

	Company G.	Company H.
Captain	C. F. Galligan	L. V. Hendricks
First Lieutenant	F. R. Brown	R. W. Nelson
Second Lieutenant	H. H. Siemens	L. J. True
First Sergeant	F. W. Wright	H. A. Lindgren
Sergeant	L. R. McKenzie	A. A. Ashahr
Sergeant	B. Olsen	G. F. Neefus
Sergeant	E. J. Atckison	
Sergeant	K. B. Grimm	
Corporal	V. P. Gibson	W. Lottman
Corporal	L. M. Turner	J. F. Meyers
Corporal	E. S. Dement	E. Scovill
Corporal		J. C. Leedy

Third Battalion.

Major.....J. C. Plankinton Sergeant Major.....J. K. Fairchild
First Lieut. and Adjt....J. F. Ketels
Second Lieut. and Q. M.....

	Company I.	Company K.
Captain	R. P. Landis	L. B. Howey
First Lieutenant	F. W. Thompson	W. Going
Second Lieutenant	L. H. Spring	R. W. Skibbe
First Sergeant	O. N. Moore	P. R. Poff
Sergeant	C. E. Armstrong	R. Anderson
Sergeant	C. A. French	B. N. Hawley
Sergeant	I. M. Morgan	H. Montgomery
Sergeant		J. W. Surry
Sergeant		O. Shattuck
Corporal	J. H. Belknap	G. Carrol
Corporal	L. E. Emery	G. Hicinbotham
Corporal	R. Mitchell	A. Lafky
Corporal	C. D. Moffitt	N. L. Simon

	Company L.	Company M.
Captain	A. Finlay	D. H. Rowe
First Lieutenant	R. H. Roberts	E. J. Silva
Second Lieutenant		S. E. Tripp
First Sergeant	B. Fowles	H. J. Eberly
Sergeant	E. Withycombe	C. W. Allen
Sergeant	C. Despain	L. Weigel
Sergeant	E. A. Olsen	A. W. Jones
Sergeant	A. M. Jeppeson	R. Schultz
Corporal	F. Boulan	E. G. Rice
Corporal	O. D. Sitton	H. H. Dean
Corporal	C. H. Eagy	J. B. Mann
Corporal	M. Koon	J. Fleming

THE SCHOOL OF MUSIC.

FACULTY.

Professor William Frederic Gaskins, M. B., Director.,
Voice Culture, Singing, Conducting, Music History.

Genevieve Baum-Gaskins,
Voice, Organ, Piano.

Professor William Robinson Boone,
Piano, Theory.

May Babbitt-Ressler,
Piano, Music Pedagogics.

William Howard Eis,
Violin, Composition, Orchestration.

Harry L. Beard,
Bandmaster.

THE SCHOOL OF MUSIC.

In response to the desire of students, their parents, and friends of the Oregon Agricultural College, provision has been made for the presentation of comprehensive courses of instruction in music.

The studious atmosphere, wholesome discipline, and attractive environment of the College are conditions favorable alike to beginners and advanced students. Children or adults may begin these courses at any time with the privilege of advancing to completion as rapidly as is consistent with creditable scholarship.

The members of the faculty have received training in the best eastern music schools and of eminent specialists; each has had ample experience in teaching; all employ superior methods of instruction and frequently give evidence of their ability, skill, and experience, by performing in public.

DEPARTMENT OF VOICE.

Professor William Frederic Gaskins, Mus., Bach.,

Voice Culture, Singing, Conducting, Music History,

Director of the School of Music.

Post graduate Hillsdale College Conservatory; post graduate American Conservatory. Pupil of Karlton Hackett, Chicago; J. Harry Wheeler, New York; J. C. Wilcox, New York; John M. Merrill, Boston; Frederic Leason, Philadelphia; J. D. Mehan, New York.

Genevieve Baum-Gaskins,

Voice, Organ, Piano.

Graduate American Conservatory, Chicago. Pupil of J. D. Mehan, New York; John J. Hattstaedt, Chicago; Karlton Hackett, Chicago; Wm. Middleschulte, Chicago; William Frederic Gaskins, Chicago.

DEPARTMENT OF PIANO.

Professor William Robinson Boone,

Piano, Theory.

Graduate Hans Schneider Piano School, Providence, R. I.; Stubbs' Choir School, New York. Pupil of Samuel Whitney, New York; Everett Truette, Boston; Everett Hill, New York.

May Babbitt-Ressler,

Pupil of Arthur Foote, Boston.

DEPARTMENT OF STRINGED INSTRUMENTS.

William Howard Eis,

Violin, Composition, Orchestration.

Post graduate American Conservatory, Chicago. Pupil of Adolf Weidig, Chicago.

DEPARTMENT OF BRASS AND WOOD WIND INSTRUMENTS.

Harry L. Beard,

Band Conducting.

Instruction in the theory and art of playing band instruments.

The faculty of the School of Music is composed of thoroughly trained musicians who often publicly demonstrate their talent and

skill. They were selected from among a large number of applicants because of their superior ability and previous success as teachers.

The advantage of beginning music study with instructors skilled in the psychology and practice of teaching cannot be overestimated, and results in an appreciable saving of time and expense and a maximum gain in efficiency. Hence the School of Music offers the following comprehensive courses of study to earnest students who wish to acquire scholarly musicianship at modest expense. These courses may be begun at any time during the school year, and all students may advance as rapidly as is consistent with good scholarship. The time required for completion of the courses is dependent upon the age, previous preparation, talent, ability and character of the work of each student.

Students in the School of Music may enter classes in the several departments of the College, and to enhance their general culture are encouraged to take at least one study throughout the school year other than the work required in the regular music courses. Students of the Oregon Agricultural College will be permitted to study music only with instructors connected with the School of Music.

The following courses are offered:

1. **Voice I.** Exercises for correct breath control; purity of tone production; freedom of action and blending of registers; articulation and correct pronunciation and enunciation of vowels or consonants; elements of phrasing and style. Students will appear on programs if required, singing from memory, and will attend all recitals and rehearsals unless otherwise specified.

Required: Two lessons a week in voice; practice with instrument, one or two hours daily; sight reading and ear training, one hour a week; harmony and history of music, two hours a week each; choir and chorus practice throughout the year.

2. **Voice II.** This course consists of exercises for tone placing; phrasing and style; legato, marcato and portamento delivery. Physiology of vocal mechanism, songs, and exercises of medium grade in English, German, or Italian. All students will attend recitals, and appear upon program if required, singing from memory.

Required: Two lessons a week in voice; practice with instrument, one to two hours daily; two lessons a week in harmony; one lesson a week in counterpoint; advanced history of music thirty-six weeks; choir and chorus practice throughout the year.

Prerequisite: Course 1 or its equivalent.

3. **Voice III.** This course embraces the study of tone color, agility; trill, messa di voce; recitation; declamation; phrasing, style; songs in English, German, Italian, or French. All students are required to attend recitals and rehearsals and appear upon programs when requested, singing from memory.

Required: Two lessons a week in voice; two lessons a week in harmony and counterpoint; practice with instrument, one to three hours daily; one lesson a week in theory and composition; choir and chorus practice throughout the year. A certificate is granted upon the satisfactory completion of this course.

Prerequisite: Course 2 or its equivalent.

4. **Voice IV.** This course embraces advanced work in vocal technique by means of difficult exercises, songs, oratorios, operatic arias, memory singing in public; all students are required to attend recitals and rehearsals and appear upon programs when requested.

Required: Two lessons a week in voice; practice with instrument, one to three hours daily; choir and chorus practice throughout the year. A gold medal will be granted upon the satisfactory completion of this course.

Prerequisite: Course 3 or its equivalent.

5. **Piano I.** In this course the student is required to memorize and play with correct fingering all chromatic major and both forms of minor scales, legato in quarter and eighth notes; arpeggios formed on major and minor triads; major and minor chords in triad and four-note form; dominent seventh chord; four-note form with all inversions played with sustained arm touch, hands separately; figured chords in quarter and eighth notes; octaves and staccato octaves in any required scale; sight reading, and six compositions of third grade.

Required: Two lessons a week on piano; two lessons a week in harmony; two lessons a week in music history; practice with instrument, three to four hours daily.

Prerequisite: Preparatory work of such scope as to insure fair scholarship.

6. **Piano II.** The work of this course requires that the student play from memory with correct fingering, all major, minor, and chromatic scales; dominant and diminished seventh chords with their inversions; broken chords played in quarter and eighth notes; arpeggios formed on the major and minor triads, metronome quarter note; one hundred; staccato octaves in major scales, quarter and eighth notes; sight reading; recognition of major and minor scales, and all intervals from the tonic of the major scale.

In addition to the above, the student must have satisfactorily completed advanced music history in the regular second year class.

Required: Two lessons a week on piano; two lessons a week in harmony; one lesson a week in counterpoint; two lessons a week in advanced music history for thirty-six weeks; practice with instrument, three to four hours daily.

Prerequisite: Course 5 or its equivalent.

7. **Piano III.** In addition to the work of the foregoing courses, the student must play from memory with correct fingering, major and minor scales in thirds, sixths, and octaves, similar and contrary motion, compass four octaves, in quarter, eighth, and sixteenth notes; triplet rhythms in quarter and eighth notes; metronome quarter note 120; tempo scales studied to metronome quarter note 120-130; major and minor chords in triad, and four-note form; dominant seventh and diminished seventh chords four-note form, extended and broken with all inversions and in moderate tempo; arpeggios formed on the major and minor common chords; and be able to transpose easy hymns; sight read readily; to play from memory five compositions of the preceding grade in a satisfactory manner.

Required: Two lessons a week on piano; two lessons a week for thirty-six weeks in harmony and harmonic analysis; one lesson a week in counterpoint; practice with instrument three to five hours daily.

Prerequisite: Course 6 or its equivalent.

8. **Piano IV.** The technical tests in this course will be similar to those in the previous courses, except that the tempo will be

increased, with additional study of unusual fingerings and chord formations. Exercises in scales in double thirds, and sixth in parallel motion will be required to be played in quarter and eighth notes; sight playing, transposing, and extemporaneous harmonizing melodies at the keyboard; students will be required to play at sight a composition equally as difficult as Beethoven's Sonata in A Flat, op. 26, and must be able to transpose and play at sight in any given key, a simple hymn or chorale. For graduation, students are required to perform publicly under the direction of the School of Music, playing a program not less than one hour in length, arranged by the instructor and approved by the Director, and which shall include two or more numbers equal in difficulty to any compositions in the list of senior pieces.

Following is the list of senior pieces, of which the student must play ten from memory:. Wagner-Liszt—Tannhauser March; Chopin —Scherzo in B Minor, op. 31; Mendelssohn—Rondo Capriccioso, op. 14, Prelude and Fugue in A Minor; Variations Serieuses; Schumann —Kreisleriana, op. 16, Carnival, op. 9; MacDowell—Marzwind and Wald-Idyllen, op. 19, Nos. 1, 3, and 4; Weber—Polacca Brillante, op. 72, Fugue in A Minor—Bach, or his Italian Concerto; Suite in D—Handel; Caprice Espannol, op. 37—Moskowski; Concert Etude, op. 36—MacDowell; Ballade—Grieg; Liebstod (Tristan and Isolde) —Liszt; Bach, Chromatic Fantasy and Fugue; Brahms, Ballade; Scherzo in E Flat Minor, op. 4. Beethoven Sonatas, op. 53 and 57. Chopin, Ballade in A Flat. Grieg, Ballade, Sonata in E Minor. Liszt, Hungarian Rhapsodies, Nos. 2 and 6. Mozart, Fantasia in C Minor, Sonata in F. Rubinstein, Staccato Etude. Concertos by Beethoven, Chopin, Henselt, Hummel, Liszt, MacDowell, Mendelssohn, Mozart and Sain-Saens, or five others at teacher's option. A gold medal will be granted upon the satisfactory completion of this course.

Required: Two lessons à week on piano; practice with instrument three to five hours daily; two lessons a week in composition.

To satisfactorily complete this course the student must fulfil the requirements above outlined and appear in programs when required.

9. **Theory.** The course in Theory will comprise systematic and progressive study in the elements of music. Consideration will be given to the theories of acoustics, to notation, scales, keys, modes, intervals, melodic progression, tempo, dynamics, rhythm and ear training. Advanced theory will embrace harmony, counterpoint, and subdivisions thereof, music history, concluding with form, composition and orchestration.

10. **Violin I.** This course is preparatory and designed to develop correct fingering, free bowing, and accuracy as to pitch and rhythm. Appropriate studies by the following composers, or acceptable equivalents, are required for satisfactory performance before advancing to course 11: Schubert, Dancla, DeBeriot, Pleyel duets, Dort, Hayser. Accurate playing of all major and minor scales is required; students must appear in public recitals when requested, playing from memory.

Required: Two lessons a week, harmony and music history, as in course 5.

11. **Violin II.** Prerequisite: Course 10. Studies by David Kayser, Schradieck, Kreutzer, or acceptable equivalents, for accuracy in playing all positions, and skill in scales and arpeggios at rapid tempos. Suitable solos, concertos, sonatas, etc., also ensemble playing at discretion of instructor. Students must appear in public recitals when requested, playing from memory. A certificate is granted upon satisfactory completion of this course.

Required: Two lessons a week, harmony, counterpoint and advanced music history as in course 6.

12. **Violin III.** This course comprises the most advanced studies by Fiorillo, Rode, Paganini, Bach, concertos and sonatas of the old and modern schools, solos by Vieuxtemps, Wieniawski, and other compositions of similar difficulty. Students must appear in public recitals when requested, playing from memory.

To graduate, the student must satisfactorily complete the above or its equivalent, complete theory course 7 (as outlined for Piano III), and give public recital, playing from memory program not less than an hour in length, arranged by instructor and approved by Director.

13. **Band.** Instruction will be given by the regular College Band Leader in the use of brass, wood, wind, and percussion instruments.

To become a member of the College Band a student must pass a satisfactory examination in the elements of music and ability to perform on his instrument.

Members are required to attend rehearsals each school day and a reasonable amount of individual practice is expected.

There is no charge for instruction in the band. Each member must furnish his own instrument and music stand, except basses, baritones, altos, and drums, which are furnished by the College.

At the beginning of the college year the band will adopt the low pitch, as this is used by the best professional bands throughout the United States. Any student desiring to enter the band should see that his instrument is in low pitch.

The courses for the various band instruments are as follows:

Cornet—Methods by Arbou, characteristic studies by St. Jacome.

Clarinet—Methods by Dieppo; studies by Dieppo and Blume.

French Horn—Methods by Franz; studies by Franz and Kayffman.

In all other band instruments, including the oboe, bassoon, saxaphone, alto, and bass clarinets, drummers' traps, xylophone, and orchestra bells, the courses will be similar to those given above.

The work in theory required to complete these courses is similar and equivalent to that outlined for piano courses 5 and 6.

GENERAL INFORMATION.

Non-resident young women are required to live in Waldo Hall, where their conduct is subject to the approval of the Dean of Women. Outside rooming and boarding places may be obtained subject to the approval of the College authorities. The rates for board and room are reasonable and may be had upon application to the Dean of Women.

Lessons in all departments are of thirty minutes duration.

Voices will be tested free of charge by appointment with the Director.

Pianos for practice will be available for students of the School of Music at reasonable rentals. These pianos will be of good

quality and kept in good condition. Students of the School of Music not owning pianos will not be permitted to practice upon instruments outside of the School of Music unless by special arrangement with the Director.

This will always insure superior instruments for private use at regular periods. Students will be required to practice alone unless furnished with written permission from the Director.

Any injury to instruments, besides the normal wear and use in practice, must be paid for by the student or persons responsible therefor. Music will be furnished pupils through the School of Music or the local dealers at teachers' rates. Thus students will secure the necessary exercises, studies, songs, and pieces, at the lowest cost. In all but exceptional instances, music for use in the chorus and choir will be furnished free by the College. That students will be given every encouragement for thorough and economical study is obvious.

Recitals will be given every month, or oftener, by members of the faculty, or of various classes, at which every student of the School of Music is expected to be present.

The Glee and Mandolin Clubs and Orchestra give frequent public recitals and concerts, and each has at least one rehearsal a week. Information concerning membership in these organizations may be obtained by application to the Director.

Choir and Chorus Practice. Membership is free to students of the College, and open to talented singers not connected therewith by payment of a nominal fee at the College business office, and acceptance of qualifications and credentials by the Director.

It is the intention to conduct one chorus rehearsal each week.

Several concerts will be given during the year, in which oratorios, operas, and mixed choruses will be sung. Whenever practicable, operas will be presented with appropriate costumes, action, and scenery.

Applicants for instruction may take complete or partial courses. Those registering for the former are classified as "regular music," while others are classified as "special music."

Any student in the Oregon Agricultural College may take at least one lesson a week in music if of satisfactory scholarship in his major course.

All students connecting themselves with the School of Music thereby agree to observe its rules and requirements.

No student is permitted to omit lessons or practice without sufficient excuse, and no refund will be made for absence from lessons or practice, or for discontinuance, except in cases of severe illness. For unavoidable absence, lessons may be made up only by appointment, and before the expiration of the term.

The school year consists of three terms of twelve weeks each, beginning September 23.

Registration and incidental fee, $1.00 a term; payable in advance at the beginning of each term.

Tuition for instruction is as follows, payable in advance by the term, at the business office of the Financial Secretary. Less than twelve lessons will not be given except by special arrangement with the Director.

Voice. Professor Gaskins. Private instruction.

Twelve lessons, one a week	$12.00
Twenty-four lessons, two a week	24.00
Thirty-six lessons, three a week	36.00

Voice, Piano. Genevieve Baum-Gaskins. Private instruction.

Twelve lessons, one a week	$12.00
Twenty-four lessons, two a week	24.00
Thirty-six lessons, three a week	36.00

Piano. Professor Boone. Private instruction.

Twelve lessons, one a week	$12.00
Twenty-four lessons, two a week	24.00
Thirty-six lessons, three a week	36.00

Piano. May Babbitt-Ressler. Private instruction.

Twelve lessons, one a week	$12.00
Twenty-four lessons, two a week	24.00
Thirty-six lessons, three a week	36.00

Violin. Instructor Eis. Private instruction.

Twelve lessons, one a week	$12.00
Twenty-four lessons, two a week	24.00
Thirty-six lessons, three a week	36.00

Band Instruments. Instructor Beard. Private instruction.

Twelve lessons, one a week	$ 9.00
Twenty-four lessons, two a week	18.00
Thirty-six lessons, three a week	27.00

Music History.

Two hours a week, a term	$ 3.00

Theory, Harmony, Counterpoint, Composition, in class instruction.

Two hours a week, a term	$ 6.00

Rentals. Pianos for practice will be furnished students of the School of Music at the following rates:

Term of twelve weeks, one hour a day	$ 3.50
Two hours	6.00
Three hours	8.50
Four hours	9.50
Five hours	10.00

For additional information, address William Frederic Gaskins, Director, Administration Building, Oregon Agricultural College, Corvallis, Oregon.

WINTER SHORT COURSES.

Upon the farms and in the homes of this state are thousands of young people who are to become the farmers, gardeners, stockmen, orchardists, housekeepers, and home-makers of the future. To keep pace with the rapid development in the science, art, and practice of agriculture and home-making, and thus be enabled to attain the highest possible success, in these fields of endeavor, one should obtain as much special training as possible. Many of these young people, however, are so situated that it is impossible for them to attend any of the regular four-year courses in these subjects. There are also, no doubt, many mature farmers, and housewives, well past the usual school age, who desire to acquaint themselves more fully with the most recent developments in their respective lines of labor. To meet the needs of such persons, both young and old, various plans have been adopted in the several states, the most important of which are the Farmers' Institutes and the Winter Short Courses.

During the past thirteen years the Oregon Agricultural College has, each winter, offered a two-week course of lectures and demonstrations which has been known as the Short Course in Agriculture. During the greater portion of that time there has also been offered each year a six-week course in dairying for those who desired to obtain some knowledge of modern dairy and creamery methods. These courses have been so generally successful and have called forth so many expressions of approval from those who attended them, that last year it was decided to enlarge the scope of this work, and accordingly the College now offers the following eight courses for the coming winter:

Agronomy, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Business Methods, Mechanic Arts, Domestic Science and Art, Forestry, Music, and "Farmers' Week."

Each of these courses, except the one in Mechanic Arts, which will consist entirely of practical work in the shops or in the draughting room, will consist of a series of lectures supplemented

by demonstrations, and by practical exercises in the dairy, the orchard, and the various laboratories.

The work offered will be adapted to the practical needs of farmers, fruit-growers, dairymen, mechanics, or of women in the home. It is believed, also, that teachers who desire to prepare themselves to teach elementary agriculture, now required in our public schools, will find these courses decidedly helpful.

The various courses are so planned as to provide the largest amount of practical information in the short time available. The subjects to be discussed are those in which every farmer should be interested, and the aim will be to present them in the most practical manner possible. The laboratories and collections, the shops, the creamery, the orchards, the college farm, the cutting, fitting and sewing rooms, the dining rooms and kitchens, all offer facilities for demonstration or for practical exercises by the students attending these courses.

Students should report to the deans of the various courses for registration and for assignment to the various classes. A list of boarding and lodging places may be consulted at the office of the Y. M. C. A.

No entrance examination or other educational test will be required; but no one will be received who is less than sixteen years of age. Over five hundred men and women registered in these courses in 1910, their ages ranging from sixteen to over fifty.

There will be no fees whatever for attending the exercises of Farmers' Week. Those who attend the other courses will be expected to pay a registration fee of $1.00. In addition, students in the six-week course in Dairying will pay a laboratory fee of $2.00 and a breakage deposit of $3.00; those in Mechanic Arts will pay a fee of $2.00 for the course in blacksmithing and $2.00 for woodwork; those in Household Science and Art will pay a fee of $1.50 to cover cost of materials used in the course in cookery, and each student will be expected to furnish her own materials for all other classes. Board and lodging may be had in Corvallis at $3.50 to $4.50 per week.

A pleasing and profitable feature of these courses will be a series of lectures by some of the most prominent men of the State—

men who are especially well qualified by successful experience to speak upon some particular phase of Agriculture.

"Farmers' Week." The exercises of Farmers Week will begin Tuesday, February 13, and close Saturday, February 17. They will be conducted somewhat upon the plan of an extended farmers' institute and will consist principally of lectures, supplemented by such demonstrations and practical exercises as are made possible by the equipment of the College and Experiment Station. The aim of the course will be to give to those in attendance the largest possible amount of information regarding the principles of successful agricultural and horticultural practices. The lectures and demonstrations by the various members of the faculty will be supplemented by one or more lectures each day by some of the most successful men of the State.

Are you interested in your own soil and its improvement, in the growth of clover, alfalfa, vetch, kale, and other crops; in better, more economical and more profitable feeding of dairy cows and other stock, or in their diseases? Do you wish to know how to bud and graft; how to pack your fruit successfully; how to distinguish the principal crop pests and how to control them; how to use the Babcock test? Are you interested in walnut growing? If so, be sure to attend this Farmers' Week. Bring your problems with you. Come prepared to ask questions and let all talk them over together. A large number of the most successful farmers in the State will be here. Be one of them! The railroads will be asked to give special rates, of which further announcements will be made.

All six-week courses begin Tuesday, January 3, 1911.

AGRONOMY.

While all of the Short Course subjects in Agronomy described below are offered chiefly for the benefit of Short Course students in Dairy Husbandry, Horticulture, and Animal Husbandry who must have information along the lines suggested, yet there are an increasing number of Short Course students who are not specializing in dairying and fruit growing but, like the great majority of

Oregon farmers, are engaged in general agriculture. These students, representing as they do the largest class of farmers in the State, should receive every encouragement in securing the broad training in practical agriculture which they so much need. To this end the Short Course in Agronomy has been so enlarged as to permit students engaged in general agriculture to devote the major part of their time to it, yet allowing them also to take a few subjects in such other departments as may seem advisable.

For this work, the three Agronomy laboratories, for the use of students in soils, crops, and farm machines, are second to none in the country. The Experiment Station farm and the Agronomy library are also valued adjuncts to the other facilities for this work. Instructions will be given through lectures, readings, demonstrations, laboratory and field practice. No entrance examinations. Recommended expenditure for books, three dollars.

1. **Farm Soils.** Fundamental facts related to the soil and its handling. Soil structure, soil moisture, moisture conservation in Oregon, irrigation in Willamette Valley, soil heat and air, soil bacteria, tillage, soil sampling, soil judging.

Three hours per week.

2. **Soil Building.** Profitable crop rotations for every kind of farming. Value, preservation, and correct use of farm manures. The good and bad features of each of the soil types of Oregon and the crops and treatment adapted to each.

3. **Forage Crops.** Pasture, hay, soiling, and silage crops from seed to cutting and storage. Testing seeds, sources and improvement of seed, pasturing vs. soiling, soiling crops, silage, alfalfa in Western Oregon.

Three hours per week.

4. **Seed Crops.** Production of small grains for seed. Vetch, kale, alsike, red clover, and corn, seed production. Seed potatoes, alfalfa and field pea seed in Eastern Oregon.

Two hours per week.

5. **Farm Machines.** The construction and best use of tillage and seeding implements; of harvesting, grinding, and pumping

machines. The examination and testing of farm engines for efficiency and cost of running.

Three hours per week.

6. **Farm Structures.** The designing and drawing of plans, with specifications and cost estimates, of farm houses and barns to fit home conditions. Building of concrete posts, tanks, walks, foundations, etc.

Two hours per week.

7. **Farm Drainage.** The need of and the benefits derived from tile drainage. The location and laying of drains, the cost and efficiency thereof.

Three hours per week.

8. **Farm Management.** The choosing and laying out of a farm. The economic handling of the fields, labor, structures, machines, and stock, on successful farms. Farm sanitation, farm markets, country roads.

Two hours per week.

ANIMAL HUSBANDRY.

The work in this department will consist of a popular discussion of the practical problems relating to breeds and breeding; feeds and feeding, stock judging and care of farm live stock in health and disease.

It is a recognized fact that animal husbandry is the corner stone of successful farming. Thus every student in agriculture should at least possess a knowledge of the fundamental principles of one of the most important industries of the farm.

Breeding. This will consist of lectures on selection, heredity, atavism, and the dominant principles of reproduction.

Breeds. A study of the characteristics and adaptability of the various breeds and classes of live stock for the Oregon farm.

Feeds and Feeding. Will consist of text-book work in the various problems of feeding and animal nutrition. A study of rations for milk and meat production and the value of home-grown feed as compared with commercial food stuffs.

Judging. Practical work in score-card and judging by comparison will be given. The college herds and flocks will be available, which consist of five breeds of cattle, three breeds of draft horses, two breeds of sheep, and two of swine. In addition to this, at least two carloads of some of the best stock the State affords will be brought in for use in this course.

Veterinary. A popular discussion of the common ailments of farm live stock.

The student may elect to take the whole or any part of this work in connection with work in other departments.

DAIRY HUSBANDRY.

The course in Dairying is designed to familiarize the student with the modern forms of dairy apparatus, and teach the underlying principles in the production, care, and manufacture of milk, into butter and cheese. Both the how and the why will be the aim of the instructors, and it is the intention that the ideas set forth will be applicable to the farm dairy as well as the larger creamery or cheese factory.

Students will meet for work six days per week. The forenoon of each day will be mainly occupied in laboratory work in cream separation, buttermaking, milk testing, and cheesemaking. In the afternoon, lectures and recitations will occupy the time.

The dairy herd consists of representatives of the leading dairy breeds, thus enabling the student to become familiar with the characteristics of dairy animals. A milking machine will be in operation at the dairy barn, and students will have an opportunity to become familiar with its use, as well as the methods of feeding, testing, and keeping the records of the dairy herd.

Special Expenses.

General fee (for material used)	$2.00
Laboratory deposit (mostly returnable)	2.00
Books	5.00
White suit	1.50

The laboratory deposit is partly to cover value of lock, key, and glassware loaned the student, and will be refunded at the close of the term, less the value of apparatus not returned by the student.

Michel's "Creamery Butter-Making," Farrington & Woll's "Testing Milk and Its Products," Decker's "Cheese-Making," and Conn's "Practical Dairy Bacteriology," will be the principal books used.

In addition to the classes conducted by the regular dairy instructors, work will be given in the departments of Agronomy, Animal Husbandry, Bacteriology, and Commerce.

POULTRY HUSBANDRY.

Poultry-keeping is an important part of every well-regulated system of diversified farming, and in favorable locations it offers splendid opportunities as a special business. It requires study and experience, however, to make it a success. The winter course students will be given every opportunity with the time available to acquaint themselves with the practical as well as theoretical side of modern poultry-keeping.

The Poultry department is equipped with a number of poultry houses of different types; about 300 fowls of different breeds; eighteen incubators, representing several different makes; brooders and brooder coops, bone and clover cutters, trap-nests. Sets of charts, lantern slides and photographs are used to illustrate breeds of fowls, poultry houses and poultry farms.

HORTICULTURE.

The work offered in Horticulture is very broad, including Fruit Growing, Truck Gardening, Nursery Practice, and Landscape Gardening. The courses consist of lectures, text-book, and field exercises, and are designed to give the training that will enable our students to take charge of orchards or to assist them in developing fruit lands.

1. **Fruit Growing.** A series of lectures, recitations, and readings on the general principles of fruit growing and the special culture of our leading fruits, such as apples, pears, peaches, grapes, small fruits, and nuts.

2. **Orchard Practice.** This course deals with the practical application in the orchard of the principles of fruit growing discussed in the previous course.

3. **Apple Packing.** A four-week course is offered in which two hours' practice is given each day, thus giving ample time in which to become proficient. Expert packers will be on hand to give instruction in the most up-to-date methods of grading and packing.

4. **Plant Propagation.** In this course instruction will be given in the proper methods to be used in top-working old orchards and in nursery practice and walnut grafting.

5. **Vegetable Gardening.** Attention will be given both to the home and commercial phases of vegetable growing. Problems dealing with locations, soils, cultivation, rotation and succession of crops, harvesting, storing, and marketing will be considered.

6. **Landscape Gardening.** This course deals primarily with the principles of landscape gardening as they are adapted to the country home, school yard, or church.

7. **Orchard Pests.** The identification and control of orchard pests will be taken up by lectures and practicums.

8. **Hot Beds and Cold Frames.** This course will consist of exercises dealing with the proper construction and use of cold frames and hot beds.

In addition to the work offered above, an opportunity will be given to take work in other departments.

FORESTRY.

The Short Course in Forestry will consider those topics of special and general interest to rangers, fire wardens, and cruisers. Incidentally, however, subjects of great importance to timbermen, loggers, and millmen will be considered. The general aim will be

to make a thoroughly practical course, and to this end a series of lectures, laboratory exercises, and field work will be given to cover the following phases of forestry.

Forest Measurement. (a) Demonstrations afield. Methods in common use; defects; how to estimate; grading standing timber; methods and estimating from logs, mining timbers, cordwood, bolts, etc.

(b) Valuation survey methods; construction of volume tables; scaling.

Surveying. Use of compass and chain; magnetic variations; surveying claims; closing, tying corners, meanders, and triangulation.

Mapping. Use of instruments; graphic representation, contour intervals, hachures, lettering, symbols, drawing to scale; special systems used by the national service in timber sales, agricultural settlements, boundary reports, etc.

Engineering. Use of level, laying out roads, trails, ditches; principles of bridge construction.

Law. Land, mining, live stock, water and fruit laws which affect national forest administration. Rules of practice before the land offices.

Policies. Why national or state forests; timber sales, grazing policies, duties of forest officers.

Methods. Regulations governing disposal of timber, range, land, rights of way; protection against fires, trespass and other injuries. Improvement work, fiscal matters, investigations, permits, reports, and general supervision.

Silviculture. The botany of the tree; silvicultural characteristics; tree requirements, soil, water, light, heat; reproduction after cutting, seedage; chiefly field work.

Geology. Common minerals, manner of occurrence; lode and placer work; how to select ore samples; soil erosion; simple methods of determining the validity of coal and mineral claims.

General Lectures. Veterinary, horseshoeing, blacksmithing, packing, camp equipment, camp sanitation; first aid to the injured; tree diseases and pests; range problems; forage values; methods of handling sheep and cattle on the range; the lumber market and timber values. Conservation principles.

DOMESTIC SCIENCE AND ART.

The purpose of the work planned for the students who enter the winter course classes in Domestic Science and Art is the consideration of home problems through practical work in laundrying, cooking, and sewing, together with lectures and conferences upon problems connected with the home, such as home sanitation, home nursing, house furnishing and decoration, and home gardening. An effort will be made during the last week of the course to give a thorough review of the work accomplished in such a manner that it may be possible for farmers' wives who come for Farmers' Week only, to attend Domestic Science and Art classes and lectures with interest and profit.

Cooking. The classes in cooking will be instructed in the proper methods of cooking each class of foods, vegetables and fruits, including salads, meats and fish, flour mixtures, pastries and desserts of various kinds; attention will be given to good combinations with reference to proper proportions of food principles, palatability, and attractiveness. Family meals and meals for special occasions, such as dinners, luncheons, receptions, and teas, will be served by the class. A brief study of the food required at various ages in health and in ill health will be made, including the preparation of school lunches; an invalid tray and proper food for babies, children, and the aged. The course will cover lectures on such subjects as the selection and care of dining room and kitchen furnishings, the laying of the table and dining room decorations.

Laundry Work. The principles of laundry work are taught through practical application. The subjects considered, illustrated by practical work are: the treatment of hard water, choice of starch, bluing and soap, laundrying of bed and body linen, dresses, waists, collars and cuffs, flannels and table linen, removal of stains, cleaning of laces and colored embroideries.

Sewing. An opportunity will be offered in the sewing classes for those who have little knowledge or experience in sewing to learn correct methods of sewing through the construction of simple

articles. Each student will make a set of underwear, and if time will permit, a dressing jacket, kimono, or other simple garment.

Bought patterns will be used for some of the articles to be made, the student will be taught to draft simple patterns to be used in the making of other articles. The best way of using, fitting and changing these patterns and the most economic methods of cutting material will be shown.

For students who sew well, and have had considerable experience in sewing, classes in advanced work will be offered. This course will consist of lessons in drafting and in some of the principles of dressmaking. Drafts for waists, sleeves and skirts will be given and students will be taught how to make patterns for dresses from any design in the fashion magazines or designs made by themselves. Each student will make one or more dresses, using some light-weight material in cotton, silk, or wool. The material and design of the dress will be chosen in accordance with the occasions for which the dress is to be used.

ENGINEERING AND MECHANIC ARTS.

Realizing the fundamental importance of this subject, the Oregon Agricultural College offers a four-week course in surveying and road construction. The course will be adapted to the needs of farmers and road officials. The work will be divested, as far as possible, of all technicalities and may be taken by anyone with a good working knowledge of arithmetic.

Road Construction. The course in Road Construction will follow in a general way Baker's "Roads and Pavements." Other authorities, including the literature supplied by the Office of Road Inquiry of the Department of Agriculture and various state publications, will be freely drawn upon and used.

Earth, gravel, and broken stone roads will each be studied. Drainage and its importance to highway construction, including methods of drainage, carrying capacity of tile, manner of laying tile drains, determining proper grades for drains, etc., will be carefully studied.

Methods of repair and maintenance will be given due consideration. Every effort will be made to make this course practical and useful. Two hours per week.

MECHANIC ARTS.

Four courses are offered in Mechanic Arts. These courses extend through six weeks and are practicums or laboratory courses where the student actually performs the work, receiving instructions in principles and methods involved at the same time.

Woodwork. To those who are not already familiar with such matters, instruction and practice will be given in sharpening chisels, planes, and other edge tools, in filing and setting saws, and in the use of the carpenter's square in framing braces, rafters, hips, etc.

Practical mechanics, who already have a working knowledge of hand tools, may obtain instruction in band sawing, jig sawing, wood turning, and work on the moulder.

The time required for this course is two consecutive periods daily.

Blacksmithing. This course is offered to those who desire to learn how to make simple repairs and improvements about the farm and shops. Instruction is given in building and managing a forge fire, in bending, forging and welding iron, making and threading bolts and nuts, also in making and tempering punches and cold chisels.

The full course requires attendance during two consecutive periods daily.

Mechanical Drawing. It is the purpose of this course to aid those who desire to obtain sufficient knowledge to enable them to make rough plans of buildings, or drainage systems, or sketches of machinery, as well as to read intelligently complete drawings.

No costly or elaborate set of instruments will be required for this work. The purpose of the course is to meet the requirements of the farmer or mechanic rather than those of the engineer.

Time required, two periods daily.

Gasoline Engine. Those who desire to become familiar with the care and operation of small gasoline engines may do so by taking the work on Saturdays under a competent instructor.

BUSINESS METHODS ON THE FARM.

The Oregon Agricultural College is taking a leading part among schools in emphasizing the business side of farming, the shop, and the household. The fact that there is a business side to every vocation has been recognized by providing a course in bookkeeping, business practice, and commercial law especially adapted to the need of short-course students. The course will consist of simple methods of keeping farm accounts and statistics; the organization of a model farm from the financial point of view; marketing products; legal forms, etc. The actual work will be done by the students so far as the time will permit. This course is given by the School of Commerce. All short-course students are eligible to take the work.

MUSIC.

Students who register in the Short Courses beginning January 3, 1911, may receive instruction in pianoforte, voice culture, and singing, violin and other stringed instruments, wind instruments of all kinds, harmony, music history, and chorus singing, by making application to the Director of the School of Music, room 37, Administration Building. Catalogue of regular music courses, containing also detailed information regarding fees, mailed free to all applicants.

CATALOGUE OF STUDENTS.

(Key to abbreviations following students' names: Agri.—Agriculture; D. S.—Domestic Science and Art; C. E.—Civil Engineering; Elec.—Electrical Engineering; Mech.—Mechanical Engineering; Mech. Arts—Mechanic Arts; Min.—Mining Engineering; Com.—Commerce; Phar.—Pharmacy.)

GRADUATES.

Name.	Course.	Postoffice.	County.
A. Louis Briggs	Com.	Cottage Grove	Lane
Edward Cleveland Callaway	Phar.	Spokane, Washington	
Cecil Carl Clark	Agri.	Portland	Multnomah
William Harling Davolt	Elec.	Kelso, Washington	
Glen DeHaven	Agri.	Rickreall	Polk
Alice Leora Edwards	D. S.	Monroe	Benton
Frederick Llewellyn Griffin	Agri.	Corvallis	Benton
Laura Hill Griffin	Agri.	Corvallis	Benton
Violet Hancock	Com.	Cove	Union
Alicia Pearl Horner	Com.	Corvallis	Benton
Charles Harry Howard	Elec.	Corvallis	Benton
Ernest Allsworth Hudson	C. E.	Milton	Umatilla
Vesta Kerr	D. S.	Corvallis	Benton
James Koeber	Agri.	Sherwood	Washington
Fred Marshall McHenry	Com.	Corvallis	Benton
Modesta Florence Rosendorf	Com.	Corvallis	Benton
Edna Mae Russ	D. S.	Corvallis	Benton
Mulk Raj Soi	Elec.	Batala, India	
Helen Maude Sprague	D. S.	Corvallis	Benton
Marion Louise Sproat	Com.	Hood River	Hood River
Peter Chris Zimmerman	Elec.	Yamhill	Yamhill

SENIORS.

Name.	Course.	Postoffice.	County.
Albert George Emil Abendroth	Min.	Portland	Multnomah
Frances Alva Aitken	D. S.	Portland	Multnomah
Harry Asbahr	Agri.	Cornelius	Washington
Torrey Lynn Austin	C. E.	Liberty, Idaho	
Grace Monemia Bath	D. S.	Hillsboro	Washington

Name.	Course.	Postoffice.	County.
Beulah Beeler	D. S.	Corvallis	Benton
Henry Bergman	Mech.	Gardner	Douglas
Everett Monroe Billings	Elec.	Union	Union
Walter Bjerregaard	C. E.	Ephraim, Utah	
Otto Karl Blackaby	Mech.	Ontario	Malheur
Hedwig S. Bleeg	D. S.	Hillsdale	Multnomah
Latimer Hobart Booth	Elec.	Mt. Hood	Hood River
Harry David Bowman	Elec.	Hillsboro	Washington
LeRoy Breithaupt	Agri.	Clackamas	Clackamas
Frank Ross Brown	Agri.	Camas, Washington	
Urie Eugene Brown	Min.	Shedds	Linn
Chloe Allen Burris	El c.	Caldwell, Idaho	
Harry Palmer Cady	Elec.	Corvallis	Benton
Elmer Dewitt Calvin	C. E.	Amity	Yamhill
Emil Elmo Carroll	Phar.	Union	Union
Edith Hazel Casteel	Com.	Yaquina	Lincoln
Mary Enid Cate	D. S.	Corvallis	Benton
Bliss Lucius Clark	Agri.	Hood River	Hood River
Oliver Kenneth Cole	Elec.	Turner	Marion
Frank Wood Connell	C. E.	Hillsboro	Washington
Grace Elizabeth Connell	D. S.	Hillsboro	Washington
Malcolm Robert Cox	Min.	Schurz, Nevada	
Bertha Leona Cramer	Com.	Corvallis	Benton
Wren Clark Crews	C. E.	Toppenish, Washington	
Homer Morton Cross	Agri.	Hebo	Tillamook
Howard C. Cunningham	C. E.	Fort Klamath	Klamath
Mabry Zerilda Currin	D. S.	Heppner	Morrow
Robert Leroy Davidson	C. E.	Union	Union
Mary Louvia Davis	Com.	Corvallis	Benton
Clarence Cummings Dickson	Agri.	Shedds	Linn
Minnie Diven	Com.	Vale	Malheur
Ezra Stephen Dixon	Min.	Forest Grove	Washington
Anna Leta Edington	D. S.	Corvallis	Benton
Bertha Beulah Edwards	D. S.	Monroe	Benton
Harry John Evans	Min.	Bourne	Baker
Fred Egerton Ewart	Elec.	Portland	Multnomah
Alvin Finlay	C. E.	Portland	Multnomah
Russell Harrison Fleser	Elec.	Union	Union
Carl Francis Galligan	Agri.	Hood River	Hood River
Joseph Allen Ganong	C. E.	Oregon City	Clackamas
Vincent Paul Gianella	Elec.	Honcut, California	
Beulah Gustavia Gilkey	D. S.	Corvallis	Benton
Wallace Going	Elec.	Portland	Multnomah
Agnes Goodrich	D. S.	Dayton	Yamhill
Julius Gordon	Elec.	Portland	Multnomah

Name.	Course.	Postoffice.	County.
Lyle Vallington Hendricks	Phar.	McMinnville	Yamhill
Bertha Emma Herse	D. S.	Corvallis	Benton
Ruth Jeannette Hess	D. S.	Portland	Multnomah
Isabella Horner	D. S.	Corvallis	Benton
Frances Houston	Com.	Kalispell, Montana	
Leland Barton Howey	Com.	Coquille	Coos
Zoe Irwin	D. S.	Corvallis	Benton
Laura Estella Jackson	D. S.	Lorane	Lane
John Frederick Ketels	Phar.	Portland	Multnomah
Richard Percy Landis	Phar.	Albany	Linn
Myrtle Lay	D. S.	Molalla	Clackamas
Esther Vestal Leech	D. S.	Grants Pass	Josephine
John Donald Lines	Mech.	Albany	Linn
Fred Samuel McCall	Agri.	Salem	Marion
Max Adams McCall	Agri.	Scio	Linn
Frederick Emmett McGrew	Com.	Portland	Multnomah
Gertrude Elizabeth McHenry	Com.	Corvallis	Benton
Glenn Kenneth McKenzie	Min.	Kalama, Washington	
Wayne Carl McLagan	Elec.	Tangent	Linn
James Stewart McMahan	C. E.	Corvallis	Benton
Harold Dickson Marsh	Mech.	Portland	Multnomah
Siegfried Maurer	Min.	Eugene	Lane
Frank M. Moore	Phar.	Ashland	Jackson
John Armour Muldrick	Min.	Canyon City	Grant
Robert W. Nelson	C. E.	Lafayette	Yamhill
Ira Edward Newsom	Phar.	Portland	Multnomah
Howard O'Connor	C. E.	Montague, California	
Bhola De Pande	Agri.	Dehra Dun, India	
Bessie Florence Parsons	D. S.	Albany	Linn
Frederick Eugene Pernot	Elec.	Corvallis	Benton
Jack Francis Pernot	For.	Corvallis	Benton
Ivy Cecil Peterson	Com.	Beaverton	Washington
Edgar George Pickler	Min.	La Grande	Union
John Clyde Plankinton	Elec.	Dallas	Polk
Joel William Powell	Elec.	Hood River	Hood River
Horace Minor Propst	Elec.	Albany	Linn
Irving Province	Com.	Mitchell	Wheeler
Elta Raber	D. S.	Corvallis	Benton
Roy Eugene Rawson	Elec.	Vancouver, Washington	
Ralph Waldo Rees	Agri.	Newberg	Yamhill
Jay Merritt Reynolds	Agri.	La Grande	Union
Charles Percy Richards	C. E.	Asotin, Washington	
Katie Maysel Ridgeway	D. S.	Buell	Polk
Ray H. Roberts	Agri.	Lebanon	Linn
Emily Fern Rodgers	D. S.	Portland	Multnomah

Name.	Course.	Postoffice.	County.
Alvhild Romtvedt	D. S.	Toledo	Lincoln
Gordon Rosendorf	Phar.	Corvallis	Benton
Donald Hefley Rowe	Min.	Portland	Multnomah
Adolph Harry Schmidt	C. E.	The Dalles	Wasco
Walter Earle Sears	Phar.	McCoy	Polk
Raymond Seely	Agri.	Sherwood	Washington
Oliver Park Seim	Mech.	Astoria	Clatsop
William Alvi Sellwood	C. E.	Milwaukee	Clackamas
Richard William Skibbe	C. E.	The Dalles	Wasco
Mabel Rae Snow	D. S.	Boise, Idaho	
Edgar Adolph Sorenson	Elec.	Springfield	Lane
Roy H. Sprague	Mech.	Corvallis	Benton
Leland Hobart Spring	Agri.	Lebanon	Linn
Edison Blaine Stanley	Com.	Lone Rock	Gilliam
Frank Benjamin Steen	Agri.	Lebanon	Linn
William Thomas Stratton	Phar.	Hamilton, Montana	
Lester Eugene Stutz	Elec.	Redwood City, California	
Owen Hancock Test	C. E.	Ontario	Malheur
Ruth Thayer	D. S.	Portland	Multnomah
George Henry Thomas	Agri.	Dee	Hood River
Frank Wilson Thompson	Min.	Burns	Harney
James Jay Thompson	Agri.	Macleay	Marion
Carl Cliffton Titus	Mech.	Kingston	Linn
Stanley Everett Tripp	Min.	Corvallis	Benton
Leighton Jay True	Agri.	Corvallis	Benton
Laura Elsie Van Meter	D. S.	Hoskins	Benton
Chester Andrus Vincent	C. E.	St. Johns	Multnomah
John Oscar Vines	Elec.	Vale	Malheur
Edwin Wheeler Wallace	Mech.	Independence	Polk
Arthur M. Weatherford	Com.	Dayton, Washington	
Floyd James Williams	Elec.	Roselawn, California	
Lena May Wilson	D. S.	Albany	Linn
Sinclair Albert Wilson	For.	Linnton	Multnomah
Carl Wolff	Mech.	Portland	Multnomah
George S. Zimmerman	Agri.	Yamhill	Yamhill

JUNIORS.

Name.	Course.	Postoffice.	County.
Isabella Vivien Ackerman	D. S.	Salem	Marion
James Quincy Adams	Agri.	Sheboygan, Wisconsin	
Challis William Allen	Com.	Lostine	Wallowa
Chancie J. Allison	Elec.	Portland	Multnomah
Roy J. Anderson	Elec.	Tillamook	Tillamook

Name.	Course.	Postoffice.	County.
Charles Eric Armstrong	Mech.	Corvallis	Benton
Albert Asbahr	Agri.	Cornelius	Washington
Edward James Atckison	Min.	Portland	Multnomah
Hazel Emma Baker	D. S.	Corvallis	Benton
Mabel Mary Baker	D. S.	Corvallis	Benton
Harold Harrison Barbur	For.	Portland	Multnomah
James Linwood Batchelder	Agri.	Hillsboro	Washington
Walter Boone Beasley	Elec.	Hermiston	Umatilla
Leslie Beaty	Agri.	Ballston	Polk
Nora Emma Beebe	D. S.	Central Point	Jackson
Roy Borden	Elec.	Newport	Lincoln
Jennie Margarette Bossen	Com.	Langlois	Curry
Thomas James Brackett	Agri.	Greenland, N. H.	
Harvey Wilber Bradley	Agri.	Beaverton	Washington
Rolstyn Daniel Bridges	Com.	Cordova, Alaska	
Edith Stanley Brogden	D. S.	Hillsboro	Washington
Earl Chase Brooks	Mech.	Corvallis	Benton
Vernon Jordan Brown	Phar.	Corvallis	Benton
Merlon Taylor Calef	C. E.	Portland	Multnomah
Clyde Nathan Carey	Elec.	Springbrook	Yamhill
William Robert Carlson	C. E.	Bridal Veil	Multnomah
John Darwin Carnegie	Elec.	Albany	Linn
Roxana Cate	D. S.	Corvallis	Benton
Isaac Ray Chapman	Phar.	Fossil	Wheeler
Orrin Kerry Charles	Com.	Portland	Multnomah
Berthel Claude Copple	Agri.	Corvallis	Benton
Harold Leslie Davis	Mech.	Hoquiam, Washington	
Keren Lee Davis	D. S.	Portland	Multnomah
Lucile Allen Davis	D. S.	Portland	Multnomah
Robert Clyde Day	Elec.	La Grande	Union
Charles Despain	Elec.	Pendleton	Umatilla
Alexander William Dodge	Agri.	Pasadena, California	
Walter Wilbur duMoulin	Elec.	Corvallis	Benton
John H. Dunham	Agri.	San Francisco, California	
Clifford Dunn	Min.	Cloverdale	Tillamook
William Connell Dyer	C. E.	Salem	Marion
Clarence Herbert Eagy	Com.	Albany	Linn
Mary Lillian Earnest	D. S.	Denzer	Lincoln
Howard James Eberly	For.	North Yakima, Wash.	
Otto Herman Elmer	Agri.	Mulino	Clackamas
John Oscar Enberg	Min.	Baker City	Baker
Hortense Eppley	D. S.	Salem	Marion
Jackson Kenelem Fairchild	Elec.	Portland	Multnomah
Bradford Fowles	Elec.	Mountaindale, Wash.	
Charles August French	Elec.	Corvallis	Benton

Name.	Course.	Postoffice.	County.
Abner Jared Fuller	Elec.	Corvallis	Benton
Viola Gardner	Com.	Corvallis	Benton
Bessie Garrett	Phar.	Ashland	Jackson
Albert P. Gibson	Elec.	Ontario	Malheur
Herbert J. Gilkey	C. E.	Grants Pass	Josephine
Harold Gill	For.	Portland	Multnomah
Roy Fred Ginther	Phar.	Corvallis	Benton
Raymond Chase Gleason	Elec.	Sumpter	Baker
Elmer E. Goshorn, Jr.	C. E.	Lents	Multnomah
James William Graham	Mech.	Gardiner	Douglas
Kenneth B. Grim	C. E.	Hubbard	Marion
Frederick Benhart Gross	Mech.	Athena	Umatilla
James Harrison Haight	Elec.	Little Shasta, California	
Lorain Walter Haller	Elec.	Telocaset	Union
Orlando B. Hardy, Jr.	Agri.	Bend	Crook
George Lyle Harper	C. E.	Grants Pass	Josephine
Lee Marion Harris	Elec.	Vale	Malheur
Willamette W. Harris	Agri.	Oregon City	Clackamas
Charles Hartsock	Mech.	Albany	Linn
Elmo Yeaton Haskell	C. E.	Central Point	Jackson
Vera Etta Haskell	D. S.	Corvallis	Benton
William Dexter Haskell	Mech.	Corvallis	Benton
Bird Norman Hawley	Agri.	Star	Lane
Philo Benjamin Hawley	Agri.	Cottage Grove	Lane
Homer Harry Hayes	Com.	Joseph	Wallowa
William Melville Herren	Mech.	Portland	Multnomah
Carl Victor Hersey	C. E.	Portland	Multnomah
Leroy Vernon Hicks	Elec.	Ashland	Jackson
Claude Elgin Howard	Com.	Corvallis	Benton
George Clarence Howard	C. E.	Corvallis	Benton
Chester Carl Howe	Min.	Corvallis	Benton
Myra Evangeline Hukill	D. S.	Corvallis	Benton
Clarence Loyd Jamison	Min.	Fairbanks, Alaska	
Russell Samuel Jeffreys	Min.	Portland	Multnomah
Anders Marimus Jeppesen	Mech.	Bacona	Washington
Alfin Johnson	C. E.	Seaside	Clatsop
Alva W. Jones	Com.	Heppner	Morrow
Glenn C. Jones	Com.	Heppner	Morrow
Walter Keck	C. E.	Hammond	Clatsop
Lawrence Keene	Min.	Salem	Marion
Leona Kerr	D. S.	Corvallis	Benton
Angie Charlotte Kyle	Com.	Monroe	Benton
Albert F. J. Lafky	Agri.	Salem	Marion
Horace Richard Landfare	Min.	Portland	Multnomah
Ielleen Allanna Leech	D. S.	Grants Pass	Josephine

Name.	Course.	Postoffice.	County.
Edward R. Leibner	Com.	Albany	Linn
Erwin Betran Lemon	Com.	Grass Valley	Sherman
Harry Arthur Lindgren	Agri.	Melrose	Douglas
Raymond Stewart Looseley	Agri.	Ft. Klamath	Klamath
Fern Gladys Loughridge	Com.	Hedrick, Iowa	
Joseph L. McAllister	C. E.	Yamhill	Yamhill
Melville Thomas McAllister	C. E.	Yamhill	Yamhill
Margaret McCall	D. S.	Scio	Linn
William H. McDaniel	Elec.	Portland	Multnomah
Forrest William McGinnis	Agri.	Corvallis	Benton
Iva McGinnis	Com.	Corvallis	Benton
Howard Elmer McLean	Elec.	Wallowa	Wallowa
Lenora Makelim	D. S.	Portland	Multnomah
Claude Alvin Mattson	C. E.	Astoria	Clatsop
Cecil Elam Metcalf	Min.	Portland	Multnomah
Samuel Michael	Com.	Baker City	Baker
Watson Boone Miles	Com.	Lostine	Wallowa
Fred A. Miller	Mech.	Portland	Multnomah
Rawla Arnold Miller	Elec.	Athena	Umatilla
Zoe Velma Miller	Phar.	Amity	Yamhill
Harry Clay Montgomery	C. E.	Arthur, Missouri	
Otto N. Moore	Elec.	Portland	Multnomah
Bertha Morgan	D. S.	Ione	Morrow
Ira Monroe Morgan	Agri.	Ione	Morrow
Charles LeRoy Nelson	Mech.	Scappoose	Columbia
Ivar Emanuel Nelson	Elec.	Ione	Morrow
Marion Arthur Nickerson	C. E.	Oregon City	Clackamas
Adolph Nilsson	For.	Portland	Multnomah
Gertrude Frances Nolan	Com.	Corvallis	Benton
Arthur O'Connor	C. E.	Montague, California	
Earle Arney Olsen	Com.	Warrenton	Clatsop
Bernhard Olsen	Elec.	Milwaukee	Clackamas
Ruby Irene Olsen	D. S.	Corvallis	Benton
Wells Oviatt	Elec.	Corvallis	Benton
Ada Park	Com.	Corvallis	Benton
Lawrence William Park	Mech.	Corvallis	Benton
Otis Larrabee Patterson	C. E.	Canyon City	Grant
Louis Clifton Perry	C. E.	Portland	Multnomah
Henry John Pfandhoefer	Elec.	Falls City	Polk
Lige Edward Phillips	Min.	Salem	Marion
Myra Belva Pierce	Com.	Corvallis	Benton
Carrie Maude Pimm	D. S.	Philomath	Benton
Phillip Ray Poff	C. E.	St. Johns	Multnomah
Herman Lair Prather	Mech.	Buena Vista	Polk
Minnie Price	D. S.	Kings Valley	Benton

Name.	Course.	Postoffice.	County.
Clifford Wayne Raber	Agri.	Corvallis	Benton
Helen Raber	D. S.	Corvallis	Benton
Alvin Lester Raines	C. E.	Lacomb	Linn
William Fritz Raithel	For.	St. Barbara, California	
George Rieben	Agri.	Banks	Washington
Lillie Riggs	Com.	Vancouver, Washington	
LeRoy Comstock Rulifson	C. E.	Salem	Marion
Lawrence George Russell	C. E.	Corvallis	Benton
C. Howard Schartow	Agri.	Toledo, Ohio	
Ruth Winnifred Scovill	Phar.	Grants Pass	Josephine
Alice Gertrude Shepard	D. S.	Portland	Multnomah
Holly H. Siemens	Mech.	Klamath Falls	Klamath
Carl Herman Sigglin	C. E.	Portland	Multnomah
Earl Jackson Silva	Elec.	Rainer	Columbia
Neil Likens Simons	Min.	Portland	Multnomah
Maurice Edgar Smead	Com.	Heppner	Morrow
Chester Lyman Smith	Elec.	Springfield	Lane
Genevieve Smith	D. S.	Corvallis	Benton
Lester Charles Smith	C. E.	Grays River, Washington	
Mason Goodwin Smith	Min.	Burns	Harney
Philip Smith	Min.	Portland	Multnomah
Robert Lawrence Smith	Mech.	Portland	Multnomah
Ruth McNary Smith	D. S.	Marshfield	Coos
Ruby Irene Starr	D. S.	Corvallis	Benton
Thurman J. Starker	For.	Portland	Multnomah
Noble Dunshee Stearns	Mech.	Portland	Multnomah
Ralph K. St. Pierre	Agri.	Salem	Marion
Charles Ernest Stricklin	C. E.	Olex	Gilliam
Fred Jacob Stutz	C. E.	Redwood City, California	
John Wyatt Surry	Agri.	Lyons	Linn
Lawrence Edgar Swan	C. E.	Hubbard	Marion
Nellie Sykes	D. S.	Salem	Marion
William Everett Taylor	Mech.	Oregon City	Clackamas
Charles Claude Thompson	Agri.	Hood River	Hood River
William Jeptha Thornton	Phar.	Roseburg	Douglas
Genevieve Tillery	D. S.	Corvallis	Benton
Fred Venard Tooley	Agri.	Portland	Multnomah
Herman Chris Tschanz	Elec.	Eugene	Lane
Loy Monroe Turner	C. E.	Heppner	Morrow
Gustav Peter Wanstrom	Agri.	Fishhawk	Columbia
Ora Weaver	Com.	Myrtle Creek	Douglas
Lincoln Ward Wheeler	Agri.	San Diego, California	
Mabel Gertrude Williamson	D. S.	Wells	Benton
Mary Althea Wilson	D. S.	Gresham	Multnomah
Earl Withycombe	C. E.	Corvallis	Benton

Name.	Course.	Postoffice.	County.
Frank W. Wright	Elec.	Portland	Multnomah
Joseph Benjamin Yoder	Mech.	Hubbard	Marion
Dorris Shelby Young	Agri.	Sherwood	Clackamas

SOPHOMORES.

Name.	Course.	Postoffice.	County.
Ethel Miriam Allen	D. S.	Bend	Crook
Lawrence Fremont Allen	Phar.	Lostine	Wallowa
Carl Nathaniel Anderson	Min.	Portland	Multnomah
Esther Grayce Anderson	D. S.	Corvallis	Benton
Marguerite Andrews	Com.	Medford	Jackson
Wilbur DeWitt Andrews	Mech.	Oregon City	Clackamas
Gladys Bertha Angell	D. S.	Mooers, New York	
Hugh Barkeley Antrim	C. E.	Amity	Yamhill
Samuel Hubbell Arbuthnot	Agri.	Portland	Multnomah
William Anthony Armstrong	Mech.	Corvallis	Benton
Margaret Mary Asbahr	D. S.	Cornelius	Washington
Rae Atherton	D. S.	Dayton, Washington	
Almont Arlie Bailey	Com.	Portland	Multnomah
James Edwin Bannister	C. E.	Parkplace	Clackamas
John Wolverton Barcroft	Phar.	Newberg	Yamhill
Esme Marguerite Bassett	D. S.	Springfield	Lane
Alice Bateman	D. S.	Gales Creek	Washington
Roy Arthur Baynard	Phar.	Silverton	Marion
Harry M. Beck	Com.	Corvallis	Benton
John Harrison Belknap	Elec.	Corvallis	Benton
Clyde Clark Benson	Mech.	Portland	Multnomah
Elsie Mary Bevens	D. S.	Corvallis	Benton
Robert Godfrey Blomgren	C. E.	Weston	Umatilla
Sidney H. Boddinghouse	Agri.	Wilmette, Illinois	
James Charles Bonner	Agri.	Silverton	Marion
Sadie Bonner	D. S.	Silverton	Marion
Frank H. Boulan	Agri.	Portland	Multnomah
Walter L. Broomhall	Com.	Baker City	Baker
Fred Grant Brown	C. E.	Ft. Klamath	Klamath
Robert W. Brown	Com.	Drewsey	Harney
Saxon Berners Bruce	C. E.	Monmouth	Polk
Lizzie Buchanan	D. S.	Corvallis	Benton
John Townsend Burch	C. E.	Rickreall	Polk
Allan Burdick	Mech.	Portland	Multnomah
Malo Cady	D. S.	Corvallis	Benton
Glover Carroll	Agri.	Portland	Multnomah
Walter Guy Carson	C. E.	Irrigon	Morrow

Name.	Course.	Postoffice.	County.
Ray Winton Castle	C. E.	Irrigon	Morrow
James Marion Caughell	C. E.	Gold Beach	Curry
Chester William Chambers	Com.	Kings Valley	Benton
George Elmer Chapman	Com.	Fossil	Wheeler
Joe Chernis	C. E.	Portland	Multnomah
William Clark	Agri	Hood River	Hood River
Frank William Clyne	Agri.	Los Angeles, California	
Reid C. Cochran	Com.	Corvallis	Benton
John O. Conrad	Mech.	Newberg	Yamhill
Ernest Sylvester Cook	Agri.	Portland	Multnomah
Robert Arnold Cook	Agri.	Portland	Multnomah
Benjamin Harrison Cooper	Agri.	Corvallis	Benton
Ruth Lillian Corbett	D. S.	Corvallis	Benton
Ethel Louise Courtney	D. S.	Dayton, Washington	
Otto Arnold Dahl	Agri.	Silverton	Marion
Charles Vador Darling	Mech.	Portland	Multnomah
Bessie Davidson	D. S.	Corvallis	Benton
Charles Edgar Davis	Agri.	Grass Valley	Sherman
Leona Georgia Davis	D. S.	Grass Valley	Sherman
Wilbur Luther Davis	Phar.	Portland	Multnomah
Harold Karl Dean	Agri.	Baker City	Baker
Charles Robert Dear	Elec.	Oakland	Douglas
Ellis Samuel Dement	Agri.	Myrtle Point	Coos
Lester Thomas Dement	Agri.	Myrtle Point	Coos
Lila Grace Dobell	D. S.	Corvallis	Benton
Irene Fern Dodd	Phar.	Falls City	Polk
Luther Andy Duckworth	Min.	Sumpter	Baker
Lulu Eddy	Phar.	Roseburg	Douglas
Jesse Boyd Edington	C. E.	Athena	Umatilla
Caryl Edwards	D. S.	Monroe	Benton
Hazel Edwards	D. S.	Monroe	Benton
Bertha Margaret Eliason	Com.	Ashland	Jackson
Nellie Edel Elliott	D. S.	Damascus	Clackamas
Ruby Edith Elliott	D. S.	Gresham	Multnomah
Albert Frederick Eschricht	Min.	Portland	Multnomah
Fred George Evenden	Phar.	Warrenton	Clatsop
Jesse Ray Fleming	Agri.	Bakeoven	Wasoc
Mabel Gardner	D. S.	Corvallis	Benton
Page Engene Gardner	Phar.	Cornelius	Washington
Vane G. Gibson	Agri.	Warmspring	Crook
Mahlon Bruce Gilbert	Elec.	Pilot Rock	Umatilla
Ernest L. Graham	Mech.	Portland	Multnomah
Jay P. Green	Agri.	Twin Falls, Idaho	
John Delbert Griffin	Agri.	Astoria	Clatsop
Robert Harlow	C. E.	Portland	Multnomah

Name.	Course.	Postoffice.	County.
Clara Levena Hartzog	D. S.	Lakeview	Lake
Katherine Hasenbalg	Com.	Corvallis	Benton
Charles D. Hatfield	Agri.	Melrose	Douglas
Grace Hawley	D. S.	Corvallis	Benton
Earl William Heckart	Mech.	Corvallis	Benton
Charles Clarence Heid	Agri.	Fairfield, Illinois	
George F. Hess	Elec.	Corvallis	Benton
Edgar Carl Hexter	Agri.	Portland	Multnomah
George Prentice Hicinbothom	Elec.	Oregon City	Clackamas
Deane Hollister	D. S.	Corvallis	Benton
Mervin Herbert Horton	Phar.	Burns	Harney
Charles Dorsey Houser	Phar.	Milwaukee	Clackamas
Charles Kennedy Hubbard	C. E.	Dundee	Yamhill
Mabel Florence Huff	D. S.	Corvallis	Benton
Gwendolen Hughes	D. S.	Ridgefield, Washington	
McKinley Huntington	Agri.	Yoncalla	Douglas
Oscar W. James	C. E.	Robinette	Baker
Jane Agnes Johnston	D. S.	Corvallis	Benton
Leo Edvin Johnson	Mech.	Carlton	Yamhill
Leota Jones	Com.	Corvallis	Benton
Jonas Oliver Jorstad	Agri.	Monroe	Benton
T. Khankhoje	Agri.	Wardha, India	
Minerva Kiger	Phar.	Corvallis	Benton
Olin McClellan Kiggins	Agri.	Portland	Multnomah
George Walter King	Min.	Portland	Multnomah
Earl Victor Knapp	Com.	Camas, Washington	
Lizzie Koeber	D. S.	Sherwood	Washington
Morris Koon	Agri.	Junction City	Lane
Orr Belknap Kyle	Phar.	Monroe	Benton
Chester De Bolt Lafferty	Com.	Corvallis	Benton
Mark Gustave Lafky	Agri.	Salem	Marion
Walter Winifred Larson	C. E.	Laurel	Washington
Alice Leedy	D. S.	Sherwood	Washington
Jay C. Leedy	Agri.	Sherwood	Washington
Clyde Clayton Levan	Min.	Portland	Multnomah
Harvey J. Lickel	For.	Spearfish, South Dakota	
Gertrude Estelle Lilly	Phar.	Corvallis	Beuton
Alfred Gunn Lunn	Agri.	Camden, New Jersey	
George Herbert McAllister	Phar.	Yamhill	Yamhill
Ralph McCulloch	Agri.	Ashland	Jackson
O'Brian McFadden	Com.	Corvallis	Benton
LeRoy Roderick McKenzie	Elec.	Summerville	Union
Charles Grant McLaughlin	Agri.	Independence	Polk
Alfred Edwin Maneely	Elec.	New Plymouth, Idaho	
James B. Mann	Mech.	Portland	Multnomah

Name.	Course.	Postoffice.	County.
Carl Henry Manock	Phar.	Corvallis	Benton
Chris Elbert Mays	Phar.	Elgin	Union
Charles Edward Merritt	Elec.	Corvallis	Benton
Emily Marie Miller	D. S.	Corvallis	Benton
Roger Q. Mills	Agri.	Portland	Multnomah
John Rowland Mires	Min.	Ellensburg, Washington	
Willard Mitchell	D. S.	Newberg	Yamhill
Bertha Mable Moeck	Com.	Rainier	Columbia
George W. Morris	Elec.	Punxsutawney, Pa.	
Walter Edmund Morris	Com.	Punxsutawney, Pa.	
Earl Willis Moses	Agri.	Hood River	Hood River
Clarence S. Murray	Phar.	North Yakima, Wash.	
William Neland	Min.	Portland	Multnomah
Margaret Nicolai	D. S.	Portland	Multnomah
William Henry Nitschke	Elec.	The Dalles	Wasco
Herbert R. Olson	Elec.	Portland	Multnomah
Emmet N. Palmer	Agri.	Seattle, Washington	
Leslie L. Palmer	Agri.	Seattle, Washington	
Wade Brown Patterson	C. E.	Portland	Multnomah
Knight Pearcy	Agri.	Portland	Multnomah
Desire Joseph Perard	Phar.	Toppenish, Washington	
Thomas Theodore Pettit	Elec.	Corvallis	Benton
Alice Pimm	D. S.	Philomath	Benton
Fred Plympton	C. E.	Portland	Multnomah
Lester D. Porter	Com.	Corvallis	Benton
Lawrence Aubrey Prescott	Phar.	Seattle, Washington	
Harold Dudley Pugh	Min.	Portland	Multnomah
Lois Purdy	D. S.	Gaston	Washington
Clifford L. Reed	Phar.	Burns	Harney
Thomas Reierson	Mech.	Portland	Multnomah
Lester Clifford Rhodes	Min.	Corvallis	Benton
Ernest Graham Rice	Min.	Portland	Multnomah
Ruby Ailene Rice	D. S.	Corvallis	Benton
Robert Earl Riley	For.	Portland	Multnomah
Harrison Morton Roberts	Com.	Eugene	Lane
Stephen Arlie Roberts	Com.	Eugene	Lane
Wilda Salomon	D. S.	Salem	Marion
Louis Sawyer	Agri.	Albany	Linn
Arnold Dorn Schmidt	Elec.	Gresham	Multnomah
Robert Schulz	C. E.	Vancouver, Washington	
Eugene Herman Scovill	C. E.	Grants Pass	Josephine
Obil Shattuck	Agri.	Ft. Klamath	Klamath
Charles E. Sitton	Agri.	Carlton	Yamhill
Otto D. Sitton	Agri.	Carlton	Yamhill
Hiram Chester Smith	C. E.	Newberg	Yamhill

Name.	Course.	Postoffice.	County.
Hugh Smith	Elec.	Marshfield	Coos
Julius Spees	Elec.	Oregon City	Clackamas
Florence LaRue Starbird	D. S.	Portland	Multnomah
Reuben Leonard Stoneberg	Com.	Coburg	Lane
Arthur Vance Swarthout	Com.	Pinckney, Michigan	
Lloyd Alexander Taylor	Com.	Corvallis	Benton
Gilbert Thayer	Elec.	Rainier	Columbia
Charles Robertson Thomson	Elec.	Portland	Multnomah
Jennie Olympia Totten	D. S.	Corvallis	Benton
Harold Sale Turlay	Elec.	Astoria	Clatsop
George A. Urquhart	Elec.	Moro	Sherman
Albert Henry Utzinger	C. E.	Seaside	Clatsop
Nathan D. Vail	Agri.	Corvallis	Benton
William Roy Varner	Elec.	Lostine	Wallowa
Emma A. Vick	D. S.	Molalla	Clackamas
Alfred Edmund Volck	Agri.	Junction City	Lane
Otto George Voss	Mech.	Astoria	Clatsop
Paul Theodore Emil Wagner	Agri.	Portland	Multnomah
Harold Edward Wahlberg	Agri.	Lents	Multnomah
Clara Ellise Wallan	D. S.	Adams	Yamhill
Paul R. Watson	C. E.	Battle Ground, Wash.	
Elmer Francis Weatherford	Com.	Sumpter	Baker
Harold Whitby	Agri.	Corvallis	Benton
Harris Whitby	Agri.	Corvallis	Benton
Edwin Latimer Whitney	Agri.	Portland	Multnomah
Blanche Whittemore	Com.	Pendleton	Umatilla
Clyde Whittemore	D. S.	Pendleton	Umatilla
Louis Emil Wiegel	Min.	Indianapolis, Indiana	
Frank Earl Wilson	Elec.	Klamath Falls	Klamath
Raymond Ustick Williams	Agri.	Denver, Colorado	
Glenna Wilson	Com.	Mt. Hood	Hood River
Ora Wilson	D. S.	Dayton, Washington	
Roy Alfred Wilson	Phar.	McMinnville	Yamhill
*Nora Winniford	D. S.	Corvallis	Benton
Basil Witzig	Mech.	Parkplace	Clackamas
Maynard A. Young	Agri.	Burnt Ranch	Wheeler
Walter Young	Agri.	Milwaukee	Clackamas

*Deceased.

FRESHMEN.

Name.	Course.	Postoffice.	County.
Frank R. Aikins	Mech.	Central Point	Jackson
Ethel Edna Allen	D. S.	Rickreall	Polk
Floyd Martin Allen	Phar.	Forest Grove.	Washington

Name.	Course.	Postoffice.	County.
Roy Ware Alspaugh	Agri.	Barton	Clackamas
Cuba Oval Amick	Com.	New Pine Creek	Lake
Alston Conway Archbold, Jr.	Elec.	Hillsboro	Washington
John Walter Asplund	Elec.	Marshfield	Coos
Ramona Gladys Baum	D. S.	Corvallis	Benton
Maida Estella Beals	Phar.	Corvallis	Benton
Robert Wendell Bell	C. E.	Roseburg	Douglas
Ralph A. Blanchard	Agri.	Chicago, Illinois	
Florence Irene Booco	D. S.	Corvallis	Benton
Fred Breithaupt	Agri.	Clackamas	Clackamas
William Albert Brenner	Com.	Corvallis	Benton
Elizabeth Adaline Brissenden	Com.	Corvallis	Benton
Richard Bosworth Brissenden	Agri.	Corvallis	Benton
Clair Hollenbeck Bristow	Mech.	Portland	Multnomah
Charles Thomas Brooks	Min.	Twin Falls, Idaho	
William H. Brown	Agri.	Portville, New York	
Leone Buchanan	D. S.	Newberg	Yamhill
Bert Charles Burdick	Phar.	Portland	Multnomah
Edna Estelle Capps	D. S.	Denmark	Curry
Raymond Capps	Agri.	Denmark	Curry
Homer M. Carnes	Agri.	North Powder	Union
Roy Chambers	Elec.	Astoria	Clatsop
Earl Charles Chandler	Agri.	Sheridan	Yamhill
Irving Harold Chapman	Elec.	Payette, Idaho	
Jack Chandler Cook	Elec.	Portland	Multnomah
Harry Clifford Cooper	Phar.	Corvallis	Benton
John Edward Cooter	Agri.	Cottage Grove	Lane
Hornce Givens Cox	Agri.	Corvallis	Benton
Guy Devere Cronemiller	Elec.	Lakeview	Lake
Rowley Cruit	C. E.	Wellen	Jackson
Hershel Eugene Currey, Jr.	Phar.	Baker City	Baker
Harry Dinges	Phar.	Junction City	Lane
Cecil Muriel Dodd	Agri.	Falls City	Polk
Percy Lucas Dodd	Elec.	Falls City	Polk
Lula Mae Donelson	Com.	Hillsboro	Washington
Edgar Bruce Duncan	Agri.	Nyssa	Malheur
Ralph Eli Duncan	Com.	Portland	Multnomah
William Henry Dunham	Agri.	Portland	Multnomah
Walter LeRoy Dutton	For.	Lakeview	Lake
Ruby Ethel Earhart	Com.	Independence	Polk
James C. Evenden	For.	Warrenton	Clatsop
Harold Day Farmer	C. E.	Portland	Multnomah
Blaine Ferguson	Com.	Hailey, Idaho	
James Earl Fleming	Min.	Wenatchee, Washington	
Charles Warren French	Mech.	Corvallis	Benton

Name.	Course.	Postoffice.	County.
Fred Marion Gay	Elec.	Corvallis	Benton
Helen Gretchen Gilbert	D. S.	Pilot Rock	Umatilla
Clyde Coalfeet Graham	Com.	Portland	Multnomah
Frank Earl Graham	Elec.	Houlton	Columbia
Charles Edwin Granlund	C. E.	Portland	Multnomah
Charles John Grosse	Agri.	Carlton	Yamhill
Joseph Homer Hallock	Elec.	Portland	Multnomah
Harold Evert Hamaker	Phar.	Bonanza	Klamath
Horace Earl Hamaker	Elec.	Bonanza	Klamath
Charles Hard	Mech.	Eugene	Lane
Chancy Clifford Harrington	Com.	Corvallis	Benton
Earl Sorsby Harris	Mech.	Corvallis	Benton
Edna M. Harris	Phar.	St. Helens	Columbia
William Beaty Harris	Agri.	Roseburg	Douglas
Frank Beaty Hatfield	Mech.	Central Point	Jackson
Vera Anne Hicks	D. S.	Ashland	Jackson
David Brooks Hogan	Agri.	Arleta	Multnomah
Mabel Agnes Houck	D. S.	Corvallis	Benton
Sadie Hubbard	D. S.	Newberg	Yamhill
Thomas Russell Hudson	C. E.	The Dalles	Wasco
Charlotte B. Huff	D. S.	Portland	Multnomah
Floyd Jerry Huntley	Agri.	Gold Beach	Curry
John Ernest Jackson	Phar.	Roseburg	Douglas
Maurice Ramsey Jayne	C. E.	Hood River	Hood River
Frederick C. Jernstedt	Mech.	Carlton	Yamhill
Ernest Valentine John	C. E.	St. Helens	Columbia
Ramona Kane	Phar.	Oakland, California	
Rudolph Allen Kaser	Agri.	Washougal, Washington	
Maurice True Keady	Mech.	Corvallis	Benton
Claris L. Kelley	C. E.	Portland	Multnomah
Glenn C. Kelly	Agri.	Portland	Multnomah
Lucy Adelia King	Com.	Corvallis	Benton
Frederick C. Lackaff	Mech.	Vancouver, Wash.	
Harry Bernette Lamley	Min.	Portland	Multnomah
Donald Whitman Larwood	C. E.	Mt. Hood	Hood River
Otto Karl Laue	Phar.	Portland	Multnomah
Lester C. Leavitt	For.	Klamath Falls	Klamath
Nelson E. Likins	Mech.	Portland	Multnomah
Emma Sophia Loe	D. S.	Silverton	Marion
Will Eagleson Lottman	Agri.	Portland	Multnomah
Ernest Pinn McDaniel	Elec.	Corvallis	Benton
Joseph Gordon McKay	Phar.	Portland	Multnomah
Robert T. McKee	Mech.	Lakeview	Lake
Robert Roderick McKenzie	Elec.	Lostine	Wallowa
Elmer M. McManus	Phar.	Burns	Harney

Name.	Course.	Postoffice.	County.
Fred Orville McMillan	Elec.	Salem	Marion
Benjamin Henry McNamee	C. E.	Portland	Multnomah
Donald Wayne MacClaire	Phar.	Portland	Multnomah
Lloyd Harry Magill	Phar.	Springfield	Lane
Chester Allen Mansfield	Agri.	Portland	Multnomah
Samuel Antonie Marrotte	Elec.	Baker City	Baker
Ina Gertrude Merritt	Com.	Corvallis	Benton
William A. Miles	Agri.	Lostine	Wallowa
Guy Ernest Mitchell	Min.	Joseph	Wallowa
Cass Edward Orval Montague	C. E.	Arlington	Gilliam
Charles Bruce Montague	Com.	Portland	Multnomah
Harold Hal Montgomery	Elec.	Corvallis	Benton
William Sherman Mowry	Com.	Moro	Sherman
Maude Isabella Nebo	D. S.	Aurora	Marion
George Furnam Neefus	Min.	Portland	Multnomah
Kakuji Okamoto	Agri.	Kumamoto, Japan	
Daniel W. Parker	Agri.	Bonanza	Klamath
Glenn Stuart Paxson	Min.	Newberg	Yamhill
Harold Morris Peery	Phar.	Springfield	Lane
Lorenzo Pilkington	Agri.	Astoria	Clatsop
James Andrew Pointer	Phar.	Lexington	Morrow
Edmond Clarke Potter	Elec.	Portland	Multnomah
John Adams Price	Com.	Seaside	Clatsop
Delia Purves	D. S.	Cornelius	Washington
J. Gordon Rasmussen	Com.	Marshfield	Coos
Epsteam Reed	Mech.	Astoria	Clatsop
Orville Greenleaf Reeves	Mech.	Pendleton	Umatilla
Charles Henry Reynolds	Phar.	La Grande	Union
Mildred Iona Reynolds	D. S.	Lakeview	Lake
S. Whiteley Richardson	Min.	Salem	Marion
Frank Lee Robinson	Agri.	Albany	Linn
Lynn Adam Robinson	Mech.	Albany	Linn
Henry Isaac Savage	Mech.	Seattle, Washington	
Bertha Schroeder	D. S.	Winant	Lincoln
Hans George Schroeder	Agri.	Salem	Marion
Clark E. Schultz	Agri.	Corvallis	Benton
Henry Robert Scott	Agri.	Nyssa	Malheur
Ivan Harrison Severance	Mech.	Hardman	Morrow
Guy A. Shadduck	For.	Corvallis	Benton
Homer Harrison Shake	Elec.	Salem	Marion
Rose Mae Sheridan	D. S.	Shedds	Linn
Willis Sherman Sibray	Com.	Portland	Multnomah
Francis Willard Smith	C. E.	Portland	Multnomah
James Quincy Smith	Phar.	Salem	Marion
William A. Smith	C. E.	San Francisco, California	

Name.	Course.	Postoffice.	County.
George Thomas Startzoff	Agri.	Sitka, Alaska	
Lewis Switzer	C. E.	Medford	Jackson
Alpheus Roscoe Tartar	Com.	Corvallis	Benton
Harry Mark Teel	C. E.	Echo	Umatilla
Royal Burleigh Thompson	Elec.	Corvallis	Benton
Lester D. Tycer	Elec.	Brownsville	Linn
John Lester Vail	Elec.	Corvallis	Benton
Grace E. Wallace	Com.	Independence	Polk
Fred Merle Weatherford	Com.	Olex	Gilliam
Elbert George Wells	Agri.	Halsey	Linn
Foster Pratt Wentz	C. E.	Portland	Multnomah
William Henry Whiteley	Elec.	St. Johns, Newfoundland	
John R. Williams	C. E.	Portland	Multnomah
Arthur James Wilson	Com.	Lebanon	Linn
James Harold Wilson	Agri.	Gresham	Multnomah
William George Wilson	Elec.	Union	Union
Everett Stanton Wisdom	Agri.	Corvallis	Benton
Carl Martin Wright	Elec.	Klamath Falls	Klamath

SECOND YEAR SECONDARY.

Name.	Course.	Postoffice.	County.
Homer Ferris Aker	Agri.	Corvallis	Benton
Fred Sebastine Allen	Mech.Arts.	Grants Pass	Josephine
Allen K. Andrews	Mech.Arts.	Medford	Jackson
Frank William Astmann, Jr.	Com.	Oregon City	Clackamas
Oscar Vincent Barkman	Agri.	Corvallis	Benton
Leslie Taylor Barnett	Mech.Arts.	Wasco	Sherman
Mylo Bartu	Mech.Arts.	Crabtree	Linn
George Burkhalter	Agri.	Hillsboro	Washington
Catherine Campbell	D. S.	Monmouth	Polk
William Edward Carty	Agri.	Ridgefield, Washington	
Kenneth Charles Colbert	Mech.Arts.	Corvallis	Benton
Spencer Albert Covell	Mech.Arts.	Corvallis	Benton
Lynn Foster Cronemiller	For.	Lakeview	Lake
Willis Robert Dallas	Agri.	Kist	Columbia
Chester Allan Dickey	Com.	Molalla	Clackamas
Lawrence Elmer Eagy	Com.	Albany	Linn
Delmar Eddy	Com.	Kings Valley	Benton
Connor Whealdon Edwards	Agri.	Monroe	Benton
Charles Ekstrom	Agri.	Astoria	Clatsop
Lee Earl Emery	For.	Corvallis	Benton
Denver Charles Evans	Mech.Arts.	Eugene	Lane
Dale Stanley Ewart	Mech.Arts.	Portland	Multnomah
Harvey Louis Fischer	Com.	Silverton	Marion

Name.	Course.	Postoffice.	County.
Leon Eglin Flett	Com.	Corvallis	Benton
Will Herman Foster	Mech.Arts	Jewell	Clatsop
Fred Ivan Gilbert	Mech.Arts	Grants Pass	Josephine
Mathias Ernest Guenther	Agri.	Gaston	Washington
Roy Ray Hamersley	Mech.Arts	Alsea	Benton
Maude Anna Hanson	Com.	Corvallis	Benton
George Albert Harris	Agri.	Roseburg	Douglas
Ruth Blanche Hawley	Com.	Corvallis	Benton
Jay Brooks Vogeley Haworth	Agri.	Hood River	Hood River
Joseph Alfred Henderson	Mech.Arts	Weston	Umatilla
Melvin Rutherford Hoff	Com.	New Era	Clackamas
Emil Edwin Horning	Mech.Arts	Corvallis	Benton
D. C. Howard	Agri.	Corvallis	Benton
Retta Huntington	D. S.	Yoncalla	Douglas
Claude Percy Hyde	Agri.	Corvallis	Benton
Carl Herbert Jacobson	Mech.Arts	North Powder	Union
Charles Percy Jaquith	Agri.	Laurel	Washington
Herbert Johnson	Mech.Arts	Astoria	Clatsop
George Henry Johnson	Agri.	Boise, Idaho	
Jack Gray Kamm	Agri.	Portland	Multnomah
Frank Kan	Agri.	Nour Tanz, China	
Moichi Kawashima	Agri.	Tokyo, Japan	
Alfred August Kern	Agri.	Washougal, Washington	
Oscar Edwin Kern	Mech.Arts	Washougal, Washington	
William Kinderman	Mech.Arts	Dayton	Yamhill
Mayme Elizabeth Lance	D. S.	Corvallis	Benton
Adolph Leonard Larson	Mech.Arts	Astoria	Clatsop
Howe Gin Lee	Com.	Portland	Multnomah
Alma Lydia Leibner	Com.	Albany	Linn
Theodore Eugene Lewton	Agri.	Portland	Multnomah
Robert Lilly	Com.	Corvallis	Benton
Edward Benny Loken	Mech.Arts	Harrisburg	Linn
Glenn McAllister	Mech.Arts	Shaw	Marion
Helen McFadden	D. S.	Corvallis	Benton
Julia Elenor McFadden	D. S.	Corvallis	Benton
Roy Oliver McGee	Agri.	CascadeLocks	Hood River
Donald McPherson	Com.	Baker City	Baker
John Henry Mack	Agri.	Portland	Multnomah
Roy G. Matthies	Mech.Arts	Cornelius	Washington
Bernhardt Edward MaxMeyer	Agri.	Lents	Multnomah
Richard MaxMeyer	Agri.	Lents	Multnomah
Della Marion Mays	D. S.	Hillsboro	Washington
John F. Meyer	Com.	Crabtree	Linn
Floyd H. Minear	Mech.Arts	Medford	Jackson
Raymond Alexander Mitchell	Agri.	Amity	Yamhill

Name.	Course.	Postoffice.	County.
Cecil Paul Moffitt	Com.	Junction City	Lane
Merle Moore	Mech.Arts.	Corvallis	Benton
Sarah Morris	Com.	Rainier	Columbia
Wilbur Morris	Com.	Rainier	Columbia
George Frank Moznette	Agri.	Portland	Multnomah
Louisa Isabelle Musgrave	Com.	Corvallis	Benton
Henry Newell	Mech.Arts	Lakeview	Lake
James Emmet Norton	Com.	Airlie	Polk
Kate O'Connor	D. S.	Montague, California	
Oscar John Olson	For.	Marion	Marion
Lillian May Parcell	Com.	Portland	Multnomah
Henry Pfister	Mech.Arts	Portland	Multnomah
Harold Filmore Platt	Mech.Arts	Winnipeg, Canada	
Margurete May Pope	Com.	Portland	Multnomah
Alta Alice Purdy	D. S.	Gaston	Washington
Gustav A. Reese	Mech.Arts	Startup, Washington	
Louis Orson Rhodes	Agri.	Hood River	Hood River
John Dale Ridgeway	Mech.Arts	Buell	Polk
John Irving Roberts	Mech.Arts	Dover	Clackamas
J. Thornburn Ross, Jr.	For.	Astoria	Clatsop
Gordon Putman Ryals	Mech.Arts	Albany	Linn
Arthur Charles Sandstrom	Mech.Arts	Portland	Multnomah
Henry Sannes	Mech.Arts	Canby	Clackamas
William Roy Sawyers	Mech.Arts	Scottsburg	Douglas
Clarence George Schmidt	Mech.Arts	Portland	Multnomah
Verle Hoyt Schoff	Mech.Arts	Portland	Multnomah
Lee Byron Seavey	Agri.	Springfield	Lane
Lester Raymond Smith	Agri.	Corvallis	Benton
Walter E. Smith	Com.	Albany	Linn
Myrtle May Spaulding	Com.	Corvallis	Benton
G. W. Starr	Mech.Arts	Corvallis	Benton
Con Stillwell	Mech.Arts	Grass Valley	Sherman
Walter Curtis Stimson	Com.	Corvallis	Benton
George Thomas Strine	Mech.Arts	Portland	Multnomah
Cleve Sumerlin	Mech.Arts	Lee	Coos
Robert Burt Thorp	Mech.Arts	Seaside	Clatsop
Mabel Mary Turlay	Com.	Astoria	Clatsop
Harry Allen Van Gilder	Mech.Arts	Wasco	Wasco
George Welty Vernon	Mech.Arts	Astoria	Clatsop
Annis Wade	D. S.	Enterprise	Wallowa
Emma Fay Wade	D. S.	Enterprise	Wallowa
Frank George Waterhouse	For.	Gearhart	Clatsop
Henry Arthur White	Mech.Arts	Vancouver, Washington	
Charley Whiteside	Agri.	Corvallis	Benton
Fred Farley Wilcox	Agri.	Oregon City	Clackamas

Name.	Course.	Postoffice.	County.
Gerald Wilcox	Mech.Arts	Springwater	Clackamas
William Wilson	Com.	Astoria	Clatsop
Reginald G. Witte	For.	Milwaukee	Clackamas
Edwin Woodcock	Com.	Corvallis	Benton
Fred Byron Young	Mech.Arts	Burnt Ranch	Wheeler

FIRST YEAR SECONDARY.

Name.	Course.	Postoffice.	County.
Frank Peter Amort	Mech.Arts	Macleay	Marion
Claud Beard Andrews	Com.	Merrill	Klamath
Leona Crawford Atherton	D. S.	Dayton, Washington	
Marshal Alfred Baker	Mech.Arts	Portland	Multnomah
Harry Lester Barrett	Agri.	Portland	Multnomah
Theo G. Becker	Agri.	Laidlaw	Crook
Alfred Berglund	Agri.	Carlton	Clackamas
Edward William Blurock	Mech.Arts	Lewiston, California	
William Boentgen	Mech.Arts	Astoria	Clatsop
Edna Bowers	D. S.	Ashland	Jackson
Ethel Belle Brackett	Com.	Rufus	Sherman
George Ray Brenner	Com.	Corvallis	Benton
Henry J. Bruland	Agri.	Chicago, Illinois	
Maude Estella Buchanan	Com.	Corvallis	Benton
Frank Harold Burgoyne	Mech.Arts	Lexington	Morrow
Daisy Dean Butler	Com.	Dufur	Wasco
Carl J. Caldwell	Mech.Arts	Irrigon	Morrow
Ellen Canfield	D. S.	Hermiston	Umatilla
Lyman Harrison Case	Mech.Arts	Portland	Multnomah
Leland Casey	Agri.	Prineville	Crook
Adlia Casteel	Mech.Arts	Yaquina	Lincoln
Florence Mary Chadwick	D. S.	Warrenton	Clatsop
Jos. Addison Chamberlin	Mech.Arts	Portland	Multnomah
Nada Ree Clark	D. S.	Corvallis	Benton
Arnold Alvin Clausen	Mech.Arts	Boyd	Wasco
Cora Amelia Clausen	Com.	Boyd	Wasco
Philip B. Cohen	Agri.	Portland	Multnomah
Roy Max Cooley	Agri.	Chitco	Curry
Dorothy Coolidge	D. S.	Fraser, Colorado	
Jay Francis Coolidge	Mech.Arts	Fraser, Colorado	
Walter Judson Cox	Com.	Burton, Louisiana	
Lena May Darneille	Com.	Junction City	Lane
William Alexander Davidson	Agri.	Hood River	Hood River
Pauline Davis	D. S.	Albany	Linn
Frances Esther Dilley	Com.	Corvallis	Benton
Wm. Herschel Ellenburg	Mech.Arts	Drain	Douglas
Theodore Ellestad	Mech.Arts	Central Point	Jackson

Name.	Course.	Postoffice.	County.
Fred S. Else	Mech.Arts	Portland	Multnomah
Dorothy Evans	D. S.	Umpqua	Douglas
Albert Ray Fairbank	Mech.Arts	Lents	Multnomah
Harold Judd Fish	Mech.Arts	The Dalles	Wasco
Reuben James Forsyth	Mech.Arts	Lents	Multnomah
Fannie Mae Fortson	Com.	Sacramento, California	
Cliff Franklin Francisco	Com.	Corvallis	Benton
Guy Earl Gabriel	Mech.Arts	Corvallis	Benton
Lloyd Leroy Gabriel	Mech.Arts	Corvallis	Benton
Mildred Gabriel	D. S.	Corvallis	Benton
Pearl Gates	Com.	Corvallis	Benton
Ruth Graham	D. S.	Corvallis	Benton
Harold L. Greear	Com.	Corvallis	Benton
Leslie Lytton Haller	Agri.	Telocaset	Union
Wanda Haller	D. S.	Telocaset	Union
Victor Richard Hamaker	Agri.	Bonanza	Klamath
Lessie E. Hamersley	Com.	Alsea	Benton
Peter Hansen	Agri.	Salem	Marion
Alex J. Hayes	Com.	Corvallis	Benton
Chester Elwood Hazlitt	Agri.	Forest Grove	Washington
Maude Lucile Holgate	Com.	Corvallis	Benton
Harry Barrows Howard	Mech.Arts	Corvallis	Benton
Russell Marion Howard	Com.	Corvallis	Benton
Walter William Howard	Agri.	Corvallis	Benton
Walter Philip Hubbard	Agri.	Corvallis	Benton
Cora May Hubler	Com.	Corvallis	Benton
Beatrice Imrie	D. S.	Melrose	Douglas
Edwin August Jackson	Mech.Arts	Astoria	Clatsop
Joseph Dart Kaster	Mech.Arts	Warrendale	Multnomah
Marion Sidney Kelley	Mech.Arts	Portland	Multnomah
Charles Allen King	Mech.Arts	Ashland	Jackson
Kenneth William Kinney	Agri.	Astoria	Clatsop
Charles Chauncey Lamb	Agri.	Seneca Falls, New York	
Arthur Lloyd Lance	Agri.	Corvallis	Benton
Blanch Lillian Landrith	D. S.	Marshfield	Coos
Philip Vivian Landrith	Agri.	Marshfield	Coos
Edwin Frank Laurin	Com.	Astoria	Clatsop
Sadie Lay	D. S.	Molalla	Clackamas
Martin Lumijarvi	Agri.	Albert	Clatsop
Kathleen Lyster	D. S.	Scottsburg	Douglas
Frank S. McCready	Com.	Corvallis	Benton
Walter Dodge Merrick	Agri.	Medford	Jackson
Robert Meyer	Mech.Arts	Newport	Lincoln
Eve Mires	D. S.	Ellensburg, Washington	
Ethyl Edna Morgan	Com.	Corvallis	Benton

Name.	Course.	Postoffice.	County.
Ralph Lester Morgan	Mech.Arts	Corvallis	Benton
Oran King Morris	Mech.Arts	Corvallis	Benton
John William Mulloy	Mech.Arts	Laurel	Washington
Kenneth Nelson	Agri.	Eugene	Lane
Mont Oliver, Jr	Agri.	Boise, Idaho	
Hiroshi Ono	Agri.	Gifu, Japan	
Francis Gerald Pelland	Mech.Arts	St. Paul	Marion
Helen Gertrude Perkins	D. S.	Salem	Marion
Helen Rose Plov	D. S.	Wells	Benton
Leslie Lamond Pope	Mech.Arts	Merrill	Klatmath
Harry L. Porter	Agri.	Medford	Jackson
Pearl May Post	D. S.	Blachly	Lane
Jim W. Richardson	Com.	McMinnville	Yamhill
Weston Mathison Rider	Agri.	Hudson, New York	
Lena Root	D. S.	Portland	Multnomah
Guy Orlando Sanborn	For.	Astoria	Clatsop
Joseph Shafter	Com.	Shasta, California	
Howard William Sheldon	Mech.Arts	Blodgett	Benton
George Harrison Smith	Mech.Arts	Williams	Josephine
Glen Wood Smith	Mech.Arts	LatourellFalls	Multnomah
Grayce Velma Smith	Com.	Corvallis	Benton
Winifred Elnathan Snider	Agri.	Hillsboro	Washington
Maude Olga Stenson	Com.	Corvallis	Benton
Francis Henry Stuart	Agri.	Springfield	Lane
Howard Stokes	Com.	Portland	Multnomah
Martin Huston Swart	Mech.Arts	Salem	Marion
John Lawrence Talbot	Mech.Arts	Seattle, Washington	
Jesse Thorp	Mech.Arts	Seaside	Clatsop
John Henry Thorp	Mech.Arts	Seaside	Clatsop
Claude Toner	Mech.Arts	Yaquina	Lincoln
Ivan Frost Totten	Agri.	Corvallis	Benton
Marion Turlay	Com.	Astoria	Clatsop
Ernest Elgin Vallen	Mech.Arts	Elwood	Clackamas
Grover Vernon	For.	Lakeview	Lake
Harry Samuel Wade	Agri.	Lostine	Wallowa
Leif Erickson Wahlberg	Agri.	Lents	Multnomah
Anna Wakerlig	D. S.	Bakeoven	Wasco
Rubert Stuart Warren	Agri.	Portland	Multnomah
Richard Ninian Webster	Agri.	Marshfield	Coos
Virgil Wendell Weckert	Mech.Arts	Sherwood	Washington
Edward Thomas Welch	Mech.Arts	Albany	Linn
Goldie Ruth Wells	D. S.	Halsey	Linn
Marie Vivien Wellsher	Com.	Corvallis	Benton
Esther White	D. S.	Goldendale, Washington	
Mitchell Wilkins	Agri.	Coburg	Lane
Isaac James Wilson	Agri.	Lewiston, California	

SPECIAL.

Name.	Course.	Postoffice.	County.
John Davison Bergen	Agri.	Corvallis	Benton
Oscar Eaton Blackington	Agri.	Rockland, Maine	
John David Breuer	Com.	Myrtle Rock	Coos
Russell Mott Brooks	Agri.	Silverton	Marion
George William Brune	Agri.	Portland	Multnomah
Fred H. Buchanan	Mech.	Newberg	Yamhill
Lester Robert Campbell	Agri.	Corvallis	Benton
Mattie Ellen Cleland	D. S.	Portland	Multnomah
Emma Crawford	Com.	Corvallis	Benton
Otheo Glenn Crawford	Com.	Heppner	Morrow
Fred Nels Cronholm	C. E.	North Yakima, Wash.	
Charles Davis	Com.	Farley, Iowa	
Robert Benjamin Denny	Agri.	Beaverton	Washington
Zilpha Virginia Galloway	Agri.	McMinnville	Yamhill
Tony Geneva Jennings	D. S.	Portland	Multnomah
Via Dolores Jennings	D. S.	Portland	Multnomah
Justin Everett Judy	Agri.	Medford	Jackson
Lillian May Lake	Com.	Corvallis	Benton
John Bradon Leech	Agri.	Corvallis	Benton
Perry Harlan McAlexander	Agri.	Mt. View, California	
Floyd Marquiss	Agri.	Corvallis	Benton
Edna Meryn Mott	Com.	Beaverton	Washington
Hester Caroline Phy	D. S.	Hot Lake	Union
Enid C. Robertson	Agri.	Turner	Marion
Nell Robinson	Com.	Beaverton	Washington
Harry August Schoth	Agri.	Oregon City	Clackamas
Frank Schulmerich	Agri.	Hillsboro	Washington
Lawrence M. Schwager	Agri.	Wilkes-Barre, Pa.	
David Anderson Scott	Elec.	Corvallis	Benton
Inez Margaret Taylor	D. S.	Albany	Linn
Kirk Jacob Taylor	Agri.	Corvallis	Benton
Ethel Jane Watters	D. S.	Corvallis	Benton
Eulah Lee Uright	D. S.	Albany	Linn

OPTIONAL.

Name.	Postoffice.	County.
Carl Amato	Mayger	Columbia
Florence Bowden	Corvallis	Benton
Gertrude Luella Davidson	Corvallis	Benton
Georgietta Hansell	Adams	Umatilla
Blanche Jeffreys	Portland	Multnomah

Name.	Postoffice.	County.
Fay Kitchin	Roseburg	Douglas
Maybelle Lenette Nelson	Scappoose	Columbia
*Stella Macklin Newman	Baraboo, Wisconsin	
Mabel Nettie Powers	Bradford, Illinois	
Jessie Audra Rust	Portland	Multnomah
Frances Eliza Simpson	Elk City	Lincoln
Edith Sproat	Hood River	Hood River

*Deceased.

MUSIC.

Name.	Postoffice.	County.
Winnifred Aldrich	Corvallis	Benton
Mary Julia May Allen	Philomath	Benton
Kathleen Amy Armstrong	Corvallis	Benton
Harry Benjamin Auld	Corvallis	Benton
Irene Isabelle Bancroft	Hood River	Hood River
Evelyn Alice Barkman	Ridgefield, Washington	
Mrs. Olive Davis Bassett	Corvallis	Benton
Gertrude Elizabeth Bernard	Portland	Multnomah
Janet Ann Blackledge	Corvallis	Benton
Cecil Marie Brogden	Hillsboro	Washington
Walter S. Brown	Corvallis	Benton
Zeta Eugene Bryan	Corvallis	Benton
Alice Marie Cathey	Corvallis	Benton
Evelyn Frances Cathey	Corvallis	Benton
Lucile Chambers	Portland	Multnomah
Nellie M. Dann	Philomath	Benton
Nina Douglas	Corvallis	Benton
Iva Pearl Elston	Bluffton, Indiana	
Edith Emery	Ft. Klamath	Klamath
Hazel Emery	Ft. Klamath	Klamath
Mrs. James Evars	Philomath	Benton
Ariel Miriam Ewing	Brooklyn, New York	
Fred Conrad Eyman	Aurora	Clackamas
Grace Bartlett Feagles	Seattle, Washington	
Mrs. G. W. Fisher	Philomath	Benton
Edna May Freyler	Kansas City, Missouri	
Ethylwyn Glenva Gray	Corvallis	Benton
Greta India Gray	Corvallis	Benton
Zona Adda Haight	Albany	Linn
Blanche Ruth Hammel	Albany	Linn
William Arthur G. Hanford	Corvallis	Benton
Eleanor Christine Hardman	Denver, Colorado	
Florence Rozelle Hardman	Denver, Colorado	

Name.	Postoffice.	County.
Guy H. Heater	Newberg	Yamhill
Clarence William Johnson	Corvallis	Benton
Cleo Lorena Johnson	Corvallis	Benton
Esther Johnson	Coquille	Coos
Lillian Johnson	Corvallis	Benton
Queen Inez Johnson	Corvallis	Benton
Jean Marian Kent	Corvallis	Benton
Lynette Kerr	Corvallis	Benton
Georgia Kessi	Hood River	Hood River
Marie Alice McGinnis	Corvallis	Benton
Mrs. Etta Carter Mackenzie	Corvallis	Benton
Max Richard Miller	Corvallis	Benton
May Mitchell	Corvallis	Benton
Esmer Myrtle Mixter	Albany	Linn
Lada Flo Patterson	Corvallis	Benton
Helen Loretta Pelland	St. Paul	Marion
Mrs. E. F. Pernot	Corvallis	Benton
Mrs. Lenore Peterson	Corvallis	Benton
Mrs. Joseph Henry Pinkerton	Corvallis	Benton
Blanche Post	Shedds	Linn
Lois Lucinda Pratt	Corvallis	Benton
Glenna Dewey Record	Baker City	Baker
Vena Rickard	Corvallis	Benton
Elma Ola Rogers	Corvallis	Benton
Vida Almira Rogers	Tillamook	Tillamook
Juanita Rosendorf	Corvallis	Benton
Henry Arthur Schmidt	Milwaukee, Wisconsin	
Martha Helen Shea	Los Angeles, California	
Lawrence Skipton	Corvallis	Benton
Emma Weaver Strine	Portland	Multnomah
May Lyden Strine	Portland	Multnomah
Elnora Margaret Sudtell	Halsey	Linn
Lena Belle Tartar	Corvallis	Benton
Maude Josephine Turlay	Astoria	Clatsop
Flora Macdonald Whiteley	St. Johns, Newfoundland	
Mrs. Reuben Ernest Wills	Lebanon	Linn
Lottie Wilson	Mt. Hood	Hood River

SUMMER SCHOOL.

Name.	Course.	Postoffice.	County.
Winnifred Aldrich	Music	Corvallis	Benton
Grace Anderson	Optional	Corvallis	Benton
Edward B. Beaty	Optional	Corvallis	Benton
Gertrude Bernard	Music	Portland	Multnomah
Florence Irene Booco	D. S.	Corvallis	Benton

Name.	Course.	Postoffice.	County.
Mrs. J. C. Clark	Music	Portland	Multnomah
Mrs. W. G. Fisher	Music	Philomath	Benton
Edna May Freyler	Music	Kansas City, Missouri	
Juliet Sara Fullerton	Music	Corvallis	Benton
Frances Violet Gellatly	Music	Philomath	Benton
Mrs. Frances Goldson	Optional	Corvallis	Benton
Maud Mabel Harper	Music	Corvallis	Benton
Josephine Hinnell	D. S.	Salem	Marion
Mabel Huff	Optional	Corvallis	Benton
Jane Agnes Johnston	D. S.	Corvallis	Benton
Leona Kerr	Music	Corvallis	Benton
Lynette Kerr	Music	Corvallis	Benton
Stella Mayfield	D. S.	Elgin	Union
Mrs. W. Otten	Music	Calvin, North Dakota	
Irma Solle	D. S.	Umpqua	Douglas
Emma Alnna Vick	Optional	Molalla	Clackamas
Evelyn Walver	Optional	Corvallis	Benton

WINTER COURSES.

HORTICULTURE.

Name.	Postoffice.	County.
Mary Harris Allen	Mt. Hood	Hood River
Bruce W. Ariss	Portland	Multnomah
Philip Drury Atwater	Mt. Hood	Hood River
Rea Edwin Babson	Mt. Hood	Hood River
A. F. Beardsley	Salem	Marion
Kenneth W. Beebe	Central Point	Jackson
William Boegli	Madras	Crook
Paul Boss	Milwaukee	Clackamas
Chester E. Briedwell	Amity	Yamhill
Alex B. Brooks	Cherryville	Clackamas
Frank Patterson Brooke	Portland	Multnomah
Albert J. Brunquist	Hood River	Hood River
John J. Byl	Salem	Marion
S. A. Chappell	Elgin	Union
E. T. Chase	Portland	Multnomah
Harold D. Davis	Hoquiam, Washington	
Arthur Vincent Dunn	Grants Pass	Josephine
Reginald John Earl	Medford	Jackson
Newton E. Foster	Monmouth	Polk
F. W. Franz	Sutherlin	Douglas
David Gellatly	Gellatly, British Columbia	
John H. Goldman	Corvallis	Benton
William Allen Graham	Falls City	Polk
Christopher A. Greene	Providence, Rhode Island	

Name.	Postoffice.	County.
Paul Grossgebauer	Paterson, New Jersey	
Pliny Hamilton Hardy	New Orleans, Louisiana	
Tom Herd, Jr.	Newberg	Yamhill
Fred McAlister Huffman	La Grande	Union
Jefferson Davis Howell	Corvallis	Benton
William A. Hurd	Philomath	Benton
C. A. Johnson	Lexington	Morrow
Edward M. Johnson	Eugene	Lane
R. P. Keefer	Salem	Marion
Harold Kerns	Eugene	Lane
J. A. Kerr	Corvallis	Benton
Olin M. Kiggins	Portland	Multnomah
Charles Koehler	The Dalles	Wasco
G. A. Lawson	Shedds	Linn
J. Roscoe Lee	Baker City	Baker
B. Leis	Beaverton	Washington
W. Everett Lewis	Syracuse, New York	
Carl Lind	Corvallis	Bentou
Harold M. Magnusen	Mist	Columbia
Edward Lee McClain	Hood River	Hood River
Burke McFadden	Corvallis	Benton
Charles Grant McLaughlin	Corvallis	Benton
William Alexander Melville	Hood River	Hood River
Zimri Mills	Springbrook	Yamhill
Kenneth C. Miller	Sheridan	Yamhill
August Muller	Eugene	Lane
Mearl J. Minear	Medford	Jackson
William F. Mueller	Mulino	Clackamas
Walter Norton	Airlie	Polk
William Alexander Orr	Corvallis	Benton
Culver Kenyon Osgood	Hood River	Hood River
William Glenn Patterson	The Dalles	Wasco
Albert William Peters	Hood River	Hood River
George R. Platt	Mt. Hood	Hood River
Thomas A. Roberts	Albany	Linn
Homer A. Rogers	Mt. Hood	Hood River
Louis Sawyer	Albany	Linn
Joseph Schafter	Shasta, California	
Clinton C. Scott	Phoenix	Jackson
Louis Mollyneaux Scott	Winona Lake, Indiana	
W. G. Sherman	Milwaukee, Wisconsin	
Thomas Mercer Simister	Portland	Multnomah
Howard S. Stephens	Amity	Yamhill
Martyn Kirkpatrick St. Pierre	Salem	Marion
W. D. VanLiew	Corvallis	Benton

Name.	Postoffice.	County.
Chester C. Walton	Mt. Hood	Hood River
Henry K. Weber	Salt Lake City, Utah	
C. A. Woods	Corvallis	Benton

AGRONOMY.

Name.	Postoffice.	County.
Phil Emit Edwards	Dell	Malheur
Fred Ewing	Portland	Multnomah
Charles Ekstrom	Astoria	Clatsop
John J. Fosmark	Hubbard	Clacakamas
Donald Hart	DuBois, Pennsylvania	
Aaron S. Johnson	La Grande	Union
Alfred August Kern	Washougal, Washington	
H. Steinarson Kravik	Marietta, Minnesota	
Frederic B. Noyes	Oakland, California	
James Howat Meikle	Olequa, Washington	
Carol Dudley Miller	Eugene	Lane
A. R. Needham	Corvallis	Benton
John Oppertshauser	Corvallis	Benton
Lloyd R. Patterson	Eugene	Lane
Otto Spillman	Boring	Clackamas
Charles Fairfax Thayer	Scio	Linn
Charles Arthur Wunderlick	Cornelius	Washington

ANIMAL HUSBANDRY.

Name.	Postoffice.	County.
T. D. Aker	Corvallis	Benton
Albert F. Bassford	Corvallis	Benton
Charles M. Bulkey	Portland	Multnomah
Bert P. Cator	Corvallis	Benton
Jacob Stephens Cherry	Pendleton	Umatilla
Frank Clark	Elkton	Douglas
John Ellis	Fort Klamath	Klamath
Frank L. French	Corvallis	Benton
Robert Holmes Gellatly	Philomath	Benton
R. M. Johnston	Corvallis	Benton
Raymond Mark	Sheridan	Yamhill
F. P. Schreiber	Portland	Multnomah
Lawrence E. Simmons	Silverton	Marion
Alfred Lester Stevenson	Corvallis	Benton
R. M. Taylor	Corvallis	Benton
Judson Vincent	Corvallis	Benton
John William Wells	Imbler	Union
Harry A. West	Oswego	Clackamas

DAIRY HUSBANDRY.

Name.	Postoffice.	County.
Charles Barkman	Corvallis	Benton
Alfred L. Bates	Albany	Linn
Herbert Bentley	Buttler	Polk
Albert B. Chandler	Sheridan	Yamhill
Ollie Edgar Crader	Oregon City	Clackamas
Oval E. Crowe	Lorane	Lane
Peter Ebson	Astoria	Clatsop
Edwin William Hahn	Jefferson	Marion
Robert Harold Harper	Corvallis	Benton
Raymond J. Howell	Holbrook	Multnomah
J. E. Hiatt	Oregon City	Clackamas
Ralph Adrian Keiser	Corvallis	Benton
Harry Keltery	Grays River, Washington	
Behari Lal	Lucknow, India	
Herbert B. McLane	Lyons	Linn
Earl Russell	Shelburn	Linn
Fred Romtvedt	Toledo	Lincoln
William Kendall Scovell	Nehalem	Tillamook
Robert Smith	Airlie	Polk
Percy S. Williams	Placer	Josephine
Isaac J. Wilson	Lewiston, California	

MECHANIC ARTS.

Name.	Postoffice.	County.
Martin Clausen	Coquille	Coos
J. F. Coolidge	Fraser, Colorado	
Daniel Hedlund	Fishhawk	Columbia
Nathaniel Thomas Henderson	Sheridan	Yamhill
Herman E. Kamholz	Centerville, Washington	
Leo L. Laythe	Burns	Harney
Harvey J. Lickel	Spearfish, South Dakota	
Aslak Lofthus	Toledo	Lincoln
Harry J. Meiater	Portland	Multnomah
George Henry Shelton	Coquille	Coos
John Lawrence Talbot	Seattle, Washington	
Ira E. Wilson	Centerville, Washington	

DOMESTIC SCIENCE AND ART.

Name.	Postoffice.	County.
Lillian Bogert	Monmouth	Polk
Bertha Bohannon	Corvallis	Benton
Martha Boss	Milwaukee	Clackamas
Dorothy Coolidge	Fraser, Colorado	

Name.	Postoffice.	County.
Mrs. Agnes Cronholm	Corvallis	Benton
Mrs. J. H. Davenport	Salem	Marion
Frances E. Dilley	Corvallis	Benton
Grace E. Hall	Corvallis	Benton
Jennie Hockena	Alsea	Benton
Marie A. Hofer	Salem	Marion
Bertha Hooks	Corvallis	Benton
Alberta May Hubbard	Corvallis	Benton
Mrs. Hattie L. Hurd	Corvallis	Benton
Mrs. B. Kate Johnson	Eugene	Lane
Mrs. Maidie Kaupisch	Corvallis	Benton
Mrs. Myrtle Knopf	Corvallis	Benton
Bertha Loe	Silverton	Marion
Kathleen Lyster	Scottsburg	Douglas
Julia Lytle	Salem	Marion
Mrs. M. I. Minear	Medford	Jackson
Ruth Nickle	Corvallis	Benton
Margaret Kathrine Prahl	Hillsboro	Washington
Mabel Rickard	Corvallis	Benton
Mrs. Elizabeth Smith Rodgers	Mt. Hood	Hood River
Lena Root	Portland	Multnomah
Emma C. Schroten	Roseburg	Douglas
Mrs. Anabel Read Scott	Phoenix	Jackson
Mrs. Elsie G. True	Sherwood	Washington
Mrs. Kittie G. Turner	Corvallis	Benton
Nina S. Waale	Corvallis	Benton
Mrs. May Whiteside	Corvallis	Benton
Althea Wilkins	Coburg	Lane

GENERAL AGRICULTURE.

Name.	Postoffice.	County.
James Aitken	Roseburg	Douglas
T. D. Aker	Corvallis	Benton
Joseph H. Albert	Salem	Marion
Ernest R. Allen	Tangent	Linn
Mary H. Allen	Mt. Hood	Hood River
Roland Grover Allen	Tangent	Linn
John Allesina	Cleone	Multnomah
A. W. Armstrong	Corvallis	Benton
W. E. Baker	Albany	Linn
J. R. Barclay	Corvallis	Benton
Albert F. Bassford	Corvallis	Benton
G. A. Bayne	Corvallis, R. F. D.	Linn
Park B. Beatty	Halsey	Linn
Russell Beckett	Salem	Marion

Name.	Postoffice.	County.
Jerry Beebe	Eugene	Lane
Freeman D. Bevens	Corvallis	Benton
George W. Bevens	Corvallis	Benton
Charles Bland	Talent	Jackson
John R. Bonner	Corvallis	Benton
R. Roy Booth	Yoncalla	Douglas
Benton Bowers	Ashland	Jackson
Benton Bowers, Jr.	Ashland	Jackson
Clarence S. Bowne	Aumsville	Marion
Albert R. Brenner	Corvallis	Benton
Pearl E. Brenter	Ashland	Jackson
A. B. Brooke	Portland	Multnomah
L. L. Brooks	Corvallis	Benton
George H. Brown	New Era	Clackamas
Silas D. Brown	Lyons	Linn
Walter Brown	Corvallis	Benton
Charles Melon Bulkley	Portland	Multnomah
R. E. Burger	Corvallis	Benton
Robert L. Burkhart	Albany	Linn
Mrs. Robert L. Burkhart	Albany	Linn
J. W. Buster	Alsea	Benton
Owen Callaghan	Corvallis	Benton
Mrs. Owen Callaghan	Corvallis	Benton
Stephen J. Campbell	Freewater	Umatilla
Charles Cartwright	Corvallis	Benton
Claude C. Cate	Brownsville	Linn
Ralph Orin Caves	Corvallis	Benton
Charles Cleveland	Gresham	Multnomah
William W. Conder	Corvallis	Benton
E. B. Conklin	Ontario	Malheur
Charles Leonard Copple	Corvallis	Benton
James R. W. Craken	Portland	Multnomah
Andrew Crooks	Albany	Linn
W. G. Davis	Corvallis	Benton
Charles S. Dow	Astoria	Clatsop
R. J. Earl	Medford	Jackson
L. N. Edwards	Monroe	Benton
William H. Egan	Brooks	Marion
Fred R. Elliott	Dallas	Polk
W. M. Elliott	Dallas	Polk
John Ellis	Fort Klamath	Klamath
R. L. Ellis	Albany	Linn
Granville Everest	Newberg	Yamhill
Frederic Clark Ewing	Corvallis	Benton

Name.	Postoffice.	County.
A. L. Fortson	Corvallis	Benton
H. W. Fortson	Seattle, Washington	
Newton Elmer Foster	Monmouth	Polk
L. G. Freeman	Corvallis	Benton
Adolf Fromberg	Corvallis	Benton
Samuel Joe Galloway	Hillsboro	Washington
W. F. Gay	Corvallis, R. F. D.	Linn
John R. Gee	Nashville	Lincoln
David Gellatly	Gellatly, British Columbia	
Robert Holmes Gellatly	Philomath	Benton
William Andrew Gellatly	Corvallis	Benton
C. M. Giddings	Albany	Linn
James Irving Gilbert	Corvallis	Benton
John B. Goodman	Corvallis	Benton
Ben D. Graf	Portland	Multnomah
W. A. Graham	Falls City	Polk
C. A. Green	Providence, Rhode Island	
James Groshong	Corvallis	Benton
Frederick G. Grosse	Carlton	Yamhill
Paul Grossgebauer	Paterson, New Jersey	
P. H. Hardy	New Orleans, Louisana	
B. W. Harris	Corvallis	Benton
C. Hartley	Corvallis	Benton
J. W. Hayes	Corvallis	Benton
Edward D. Hendricks	Corvallis	Benton
Thomas Herd, Jr.	Newberg	Yamhill
Fremont Hersey	Wren	Benton
Albert A. Hinrichs	Albany	Linn
Charles Holloway	Brownsville	Linn
Edward Holloway	Brownsville	Linn
George H. Howe	Corvallis	Benton
J. D. Howell	Corvallis	Benton
Raymond Jackson Howell	Holbrook	Multnomah
F. M. Huffman	La Grande	Union
George W. Humphrey	Corvallis	Benton
W. A. Hurd	Philomath	Benton
Oscar Glenn Iden	Corvallis	Benton
Samuel G. Irvin	Newport	Lincoln
Forest E. Jenks	Tangent	Linn
Jesse S. Jenks	Tangent	Linn
C. A. Johnson	Lexington	Morrow
A. David Johnston	Hood River	Hood River
Robert M. Johnston	Corvallis	Benton
James Lincoln Jones	Corvallis	Benton
Alfred August Kern	Washougal, Washington	

Name.	Postoffice.	County.
Joseph Adison Kerr	Corvallis	Benton
Louisa J. Kerr	Corvallis	Benton
Louis H. Kirchen	Oregon City	Clackamas
H. Steinarson Kravik	Silverton	Marion
Arthur Lloyd Lance	Corvallis	Benton
Joseph T. Lance	Corvallis	Benton
Ora L. Lance	Corvallis	Benton
Charles T. Larkins	Brownsville	Linn
G. A. Lawson	Shedds	Linn
Joseph Rowe Lee	Baker City	Baker
A. J. Lewis	Oregon City	Clackamas
H. A. Lewis	Portland	Multnomah
W. E. Lewis	Syracuse, New York	
Horace Locke	Corvallis	Benton
Otto M. Locke	Corvallis	Benton
W. J. Loomis	Corvallis	Benton
William Bernard Lottman	Rainier	Columbia
Frank Loughary	Monmouth	Polk
A. T. Luther	Albany	Linn
Wm. H. Lytle	Pendleton	Umatilla
H. M. Magnusen	Mist	Columbia
Cyrus R. A. McCormick	Lebanon	Linn
Lester McFarland	Tangent	Linn
Mayro McKinney	Turner	Marion
H. B. McLane	Lyons	Linn
W. A. Melville	Hood River	Hood River
Francis M. Meyer	Corvallis	Benton
August Miller	Eugene	Lane
K. C. Miller	Sheridan	Yamhill
Michael C. Miller	Albany	Linn
Aaron Mills	Denzer	Lincoln
J. G. Mitchell	Corvallis	Benton
John R. Montgomery	Corvallis	Benton
Edward N. Moseley	Albany	Linn
Peter A. Moses	Corvallis	Benton
W. E. Mueller	Mulino	Clackamas
Anton Muks	McMinnville	Yamhill
Ross H. Nelson	Independence	Polk
S. M. Nickle	Corvallis	Benton
Clyde E. Niles	Ashland	Jackson
Fred Noeller	Corvallis	Benton
F. B. Noyes	Oakland, California	
Fred Olsen	Corvallis	Benton
Oscar W. Olson	Shedds	Linn
W. A. Orr	Corvallis	Benton

Name.	Postoffice.	County.
Isaac J. Peffin	Chitwood	Lincoln
James F. Pfouts	Junction City	Lane
Walter M. Pierce	La Grande	Union
G. R. Platt	Mt. Hood	Hood River
Jefferson A. Pooler	Salem	Marion
Bird Rickard	Corvallis	Benton
Charles G. Roberts	Hood River	Hood River
H. A. Rogers	Mt. Hood	Hood River
F. L. Robinson	Corvallis	Benton
Charles G. Sandstone	Hillsdale	Multnomah
W. S. Sawyer	Corvallis	Benton
C. C. Scott	Phoenix	Jackson
Charles Schoel	Albany	Linn
William Schulmerick	Hillsboro	Washington
William Kendall Scovell	Nehalem	Tillamook
Joe Shafter	Shasta, California	
A. B. Slocum	Albany	Linn
T. M. Simister	Portland	Multnomah
Harrie Slocum	Albany	Linn
George B. Smith	Corvallis	Benton
George G. Smith	Ajax	Gilliam
Joseph C. Smith	Corvallis	Benton
Carl Sonnichsen	Yamhill	Yamhill
Claude Sprague	Corvallis	Benton
Anna M. Stansbery	Portland	Multnomah
J. E. Stansbery	Woodlawn	Multnomah
E. N. Starr	Corvallis	Benton
P. T. Starr	Corvallis	Benton
Frank O. Stenson	Corvallis	Benton
Jake A. Stevenson	Halsey	Linn
Henry M. Stone	Corvallis	Benton
F. L. Strait	Newberg	Yamhill
Julian Stratton	Salem	Marion
Oren Stratton	Brownsville	Linn
William R. Surry	Lyons	Linn
Daniel F. Talbot	Gresham	Multnomah
Robert M. Taylor	Osborne, Kansas	
Charles Fairfax Thayer	Scio	Linn
E. A. Thurston	Wells	Benton
James H. Thurston	Suver	Polk
P. S. Thurston	Suver	Polk
W. H. Vail	Corvallis	Benton
Arthur Vaughn	Lyons	Linn
Thomas Benton Vernon	Lakeview	Lake
V. A. Vidito	Corvallis	Benton

Name.	Postoffice.	County.
Charles Wade	Corvallis	Benton
William Wade	Scottsburg	Douglas
J. T. Warman	Corvallis	Benton
H. K. Webber	Salt Lake City, Utah	
Ferda Welb	Corvallis	Benton
H. A. West	Oswego	Washington
David Whaley	Corvallis	Benton
George Whaley	Corvallis	Benton
Robert N. White	Corvallis	Benton
Rutledge L. Whitehead	Corvallis	Benton
Fred O. Wilkinson	Corvallis	Benton
E. F. Wiles	Albany	Linn
William A. Williams	Gladstone	Clackamas
John Wills	Albany	Linn
C. E. Wilson	Sheridan	Yamhill
J. Oscar Wilson	Pendleton	Umatilla
Curtis B. Winn	Albany	Linn
A. J. Wolcate	Corvallis	Benton
E. Woodward	Corvallis	Benton
Charles Arthur Wunderlich	Cornelius	Washington
M. A. Wyatt	Corvallis	Benton
Joseph Yates	Corvallis	Benton
William Yoder	Philomath	Benton

POULTRY.

Name.	Postoffice.	County.
Avery Applewhite	Corvallis	Benton
S. B. Bane	Corvallis	Benton
B. E. Barclay	Tidewater	Lincoln
D. Ross Barclay	Junction City	Lane
S. E. Beal	Corvallis	Benton
Mrs. S. E. Beal	Corvallis	Bentou
W. A. Beal	Corvallis	Benton
Mrs. W. A. Beal	Corvallis	Benton
Mrs. A. W. Benton	Corvallis	Benton
William Borden	Newport	Lincoln
Thomas Boulden	Corvallis	Benton
J. E. Buchanan	Corvallis	Benton
Mrs. R. E. Burger	Corvallis	Benton
V. M. Collins	Corvallis	Benton
A. M. Cook	Corvallis	Benton
Mrs. A. M. Cook	Corvallis	Benton
Mrs. Coople	Corvallis	Benton
M. A. Crail	Corvallis	Benton
G. W. Curtiss	Corvallis	Benton

Name.	Postoffice.	County.
Loren Cyrus	Corvallis	Benton
Mrs. L. C. Davidson	Redmond	Crook
J. W. Duncan	Albany	Linn
Emile Durrenberyeer	Albany	Linn
William Ewing	Oswego	Clackamas
F. M. Fiechter	Corvallis	Benton
Claude N. Freeman	Corvallis	Benton
G. C. Garfield	Corvallis	Benton
W. H. E. Gibbon	Corvallis	Benton
Marcus E. Gragg	Corvallis	Benton
Mrs. R. K. Hanson	Corvallis	Benton
George W. Henkle	Corvallis	Benton
Lee Henkle	Corvallis	Benton
James M. Herron	Junction City	Lane
T. C. Hetcher	Corvallis	Benton
G. E. Hinton	Corvallis	Benton
Joseph H. Hite	Corvallis	Benton
J. F. Hurlburt	Corvallis	Benton
Mrs. Seth Hurlburt	Corvallis	Benton
O. B. Ingram	Monroe	Benton
Mrs. J. H. Jackson	Corvallis	Benton
Will J. Kent	Corvallis	Benton
Walter N. Locke	Corvallis	Benton
T. A. Logsdon	Corvallis	Benton
W. H. McBee	Corvallis	Benton
Robert R. McKinney	Holley	Linn
Frank M. Lyon	Corvallis	Benton
W. H. McMahan	Corvallis	Benton
L. F. Millhollen	Corvallis	Benton
C. D. Minton	Portland	Multnomah
Mrs. Jesse Porter	Corvallis	Benton
W. E. Pratt	Corvallis	Benton
E. E. Raber	Corvallis	Benton
L. T. Reynolds	Salem	Marion
R. M. Ryer	Corvallis	Benton
J. H. Robson	Corvallis	Benton
C. E. Robinson	Corvallis	Benton
George F. Rice	Corvallis	Benton
J. L. Rexford	Corvallis	Benton
M. B. Rexford	Corvallis	Benton
Andrew Sandwick	Corvallis	Benton
G. I. Sheldon	Corvallis	Benton
Eddie E. Smith	Corvallis	Benton
Frank L. Smith	Corvallis	Benton
Cecil Stephens	Philomath	Benton

Name.	Postoffice.	County.
Charles Stephens	Philomath	Benton
Mrs. George Taylor	Corvallis	Benton
Hugh Taylor	Corvallis	Benton
Roy Tillery	North Dakota	
Harry M. Vance	Corvallis	Benton
Elizabeth Wahlberg	Lents	Multnomah
Mrs. C. V. Webber	Salt Lake City, Utah	
T. H. Wellsher	Corvallis	Benton
A. A. Williamson	Wells	Benton
L. T. Wilson	Corvallis	Benton
Robert L. Wilson	Holley	Linn
D. L. Young	Los Angeles, California	

SPECIAL COURSE FOR WOMEN.

Name.	Postoffice.	County.
Essie R. Adams	Corvallis	Benton
Rose Adams	Corvallis	Benton
Mrs. Carrie F. Aitken	Corvallis	Benton
Sue L. Aker	Corvallis	Benton
Mrs. Joseph H. Albert	Salem	Marion
Mrs. E. R. Allen	Tangent	Linn
Mrs. Alice Hill-Applewhite	Corvallis	Benton
Mrs. Lou Armstrong	Corvallis	Benton
Mrs. Ida S. Baker	Corvallis	Benton
Anna L. Bane	Corvallis	Benton
Bessie Barton	Corvallis	Benton
Chloe Barton	Corvallis	Benton
Mrs. Meta Barton	Corvallis	Benton
Lorena Barzee	Corvallis	Benton
Olive Davis Bassett	Corvallis	Benton
Beulah Beeler	Corvallis	Benton
Mrs. G. M. Beeler	Corvallis	Benton
Mrs. E. A. Belknap	Corvallis	Benton
Mrs. J. A. Bexell	Corvallis	Benton
Mrs. May Bier	Corvallis	Benton
Hedwig S. Bleeg	Hillsdale	Multnomah
Mrs. J. R. Bonner	Corvallis	Benton
Martha Boss	Milwaukee	Clackamas
Mrs. William Bowden	St. John, New Brunswick, Can.	
Mrs. A. R. Brenner	Corvallis	Benton
Mrs. Retta O. Brissenden	Corvallis	Benton
Lena Brown	Corvallis	Benton
Mrs. Mary A. Brune	Seattle, Washington	
Mrs. Orla Buxton	Forest Grove	Washington

Name.	Postoffice.	County.
Mrs. J. J. Cady	Corvallis	Benton
Mrs. Ida B. Callahan	Corvallis	Benton
Mrs. B. A. Cathey	Corvallis	Benton
Mrs. W. T. Chambers	Corvallis	Benton
Mattie Ellen Cleland	Portland	Multnomah
Mrs. James Cochran	Corvallis	Benton
Cora Alice Coolidge	Corvallis	Benton
Helen V. Crawford	Lebanon	Linn
Mrs. J. W. Crawford	Corvallis	Benton
Mrs. I. W. Culbertson	Corvallis	Benton
Mrs. J. H. Davenport	Silverton	Marion
Mrs. W. H. Davis	Corvallis	Benton
Bertha B. Edwards	Monroe	Benton
Cecil Erwin	Corvallis	Benton
Ariel M. Ewing	Brooklyn, New York	
Mrs. Helen M. Ewing	Oswego	Clackamas
Mrs. Farra	Corvallis	Benton
Zilpha V. Galloway	McMinnville	Yamhill
Mrs. F. C. Yates	Corvallis	Benton
Mrs. W. F. Gay	Corvallis	Benton
Mrs. L. M. Goldson	Corvallis	Benton
Mrs. F. O. Gray	Corvallis	Benton
Isabell Gray	Philomath	Benton
Mrs. Clara Gribble	Corvallis	Benton
Mrs. Laura Hill-Griffin	Corvallis	Benton
Edna Groves	Corvallis	Benton
Lillie M. Groves	Corvallis	Benton
Grace E. Hall	Corvallis	Benton
Mrs. Lettie Hall	Corvallis	Benton
Carrie Hammer	Corvallis	Benton
Mrs. A. N. Harlan	Corvallis	Benton
Mrs. Ida Harris	Corvallis	Benton
Mrs. J. A. Harper	Corvallis	Benton
Mrs. William John Harper	Corvallis	Benton
Mrs. Hendricks	Corvallis	Benton
Mrs. Laura Herse	Corvallis	Benton
Mrs. Otto F. L. Herse	Corvallis	Benton
Marie A. Hofer	Salem	Marion
Bertha May Hooks	Corvallis	Benton
Isabelle Horner	Corvallis	Benton
Rena Horner	Corvallis	Benton
Alberta May Hubbard	Corvallis	Benton
Mrs. Harriet Hurd	Corvallis	Benton
Mrs. R. H. Huston	Corvallis	Benton
Mrs. G. R. Hyslop	Corvallis	Benton

Name.	Postoffice.	County.
Mrs. James L. Jones	Corvallis	Benton
Mrs. A. B. Kennedy	Corvallis	Benton
Mrs. Minnie Kerr	Corvallis	Benton
Vesta Kerr	Corvallis	Benton
Mrs. W. J. Kerr	Corvallis	Benton
Mrs. Emma T. Kline	Corvallis	Benton
Myrtle Knopf	Corvallis	Benton
Mrs. M. S. Lane	Corvallis	Benton
Mrs. Etta Lee	Corvallis	Benton
Mrs. Mary Lipton	Corvallis	Benton
Mrs. W. J. Loughridge	Corvallis	Benton
Mrs. F. M. Lyon	Corvallis	Benton
Pearl Lyon	Corvallis	Benton
Mrs. L. Merritt	Corvallis	Benton
Gertrude McBee	Corvallis	Benton
Mrs. Joan McLennan	Corvallis	Benton
Mrs. Dora Miller	Corvallis	Benton
Jesse C. Mills	Corvallis	Benton
Mrs. Rose Montgomery	Corvallis	Benton
Lottie West Moore	Corvallis	Benton
Mrs. E. A. Morgan	Corvallis	Benton
Mrs. Birdie Musgrave	Corvallis	Benton
Mrs. Molly Musgrave	Corvallis	Benton
Mrs. Kate E. Nolan	Corvallis	Benton
Mrs. Adaline Olsen	Corvallis	Benton
Minnie Oren	Corvallis	Benton
Mrs. H. M. Parks	Corvallis	Benton
Mrs. Pelland	Corvallis	Benton
Mrs. H. S. Pernot	Corvallis	Benton
Mrs. Bert Pilkington	Corvallis	Benton
Mrs. Porter	Corvallis	Benton
Mrs. Johnson Porter	Corvallis	Benton
Mrs. Hattie Price	Corvallis	Benton
Mrs. E. D. Ressler	Corvallis	Benton
Mrs. R. H. Richards	Corvallis	Benton
Lillie Riggs	Vancouver, Washington	
Elizabeth Smith Rogers	Mt. Hood	Hood River
Emily F. Rodgers	Portland	Multnomah
Mrs. Sawyer	Corvallis	Benton
Mrs. Anabel Read Scott	Phoenix	Jackson
Mrs. H. D. Scudder	Corvallis	Benton
Mrs. M. J. Skipton	Corvallis	Benton
Mrs. Eddie Smith	Corvallis	Benton
Mrs. Effie E. Smith	Corvallis	Benton
Mrs. George M. Smith	Corvallis	Benton

Name.	Postoffice.	County.
Jessie Smith	Albany	Linn
Mrs. J. R. Smith	Corvallis	Benton
Rae Snow	Boise, Idaho	
Mrs. R. M. Taylor	Osborne, Kansas	
Mrs. Sarah Taylor	Corvallis	Benton
Ruth Thayer	Portland	Multnomah
Mrs. J. T. Thurston	Suver	Polk
Helen Hyde Tobin	Syracuse, New York	
Mrs. Kittie G. Turner	Corvallis	Benton
Lizzie Vance	Corvallis	Benton
Mrs. Vincent	Corvallis	Benton
Mrs. M. S. Waddle	Corvallis	Benton
Mrs. Wm. Wade	Corvallis	Benton
Mrs. J. T. Warman	Corvallis	Benton
Mrs. Mary Harris Whitby	Corvallis	Benton
May Whiteside	Corvallis	Benton
Althea Wilkins	Coburg	Lane
Mrs. E. E. Wills	Corvallis	Benton
Glenna Wilson	Corvallis	Benton
Lena May Wilson	Albany	Linn
Lottie Wilson	Corvallis	Benton
Mrs. C. B. Winn	Albany	Linn
Mrs. M. D. Wisdom	Corvallis	Benton
Mrs. Emma Woodcock	Corvallis	Benton

SUMMARY.

Classified by Courses of Study—		
Agriculture	637	
Forestry	22	
Engineering and Mechanic Arts	390	
Domestic Science and Art	338	
Commerce	150	
Pharmacy	57	
Optional	18	
Music	81	
		1,693
Counted twice		102
Total number of students		1,591

Classified by Residence—

Total from Oregon (all counties represented)		1,443	
Other states and territories			
Alaska	3		
California	23		
Colorado	5		
Idaho	10		
Illinois	5		
Indiana	3		
Iowa	2		
Louisiana	2		
Maine	1		
Minnesota	1		
Michigan	1		
Missouri	2		
Montana	2		
New Hampshire	1		
New Jersey	2		
New York	6		
Nevada	1		
North Dakota	2		
Ohio	1		
Pennsylvania	4		
Rhode Island	1		
South Dakota	1		
Utah	3		
Washington	49		
Wisconsin	4		
		135	
Foreign countries			
British Columbia	1		
Canada	2		
China	1		
India	4		
Japan	3		
Newfoundland	2		
		13	
			1,591
Total number of men		1,111	
Total number of women		480	
			1,591

Comparative Enrollment—

1888-1889	97
1889-1890	151
1890-1891	201
1891-1892	208
1892-1893	282
1893-1894	240
1894-1895	261
1895-1896	397
1896-1897	316
1897-1898	336
1898-1899	338
1899-1900	405
1900-1901	436
1901-1902	488
1902-1903	541
1903-1904	530
1904-1905	680
1905-1906	735
1906-1907	833
1907-1908	1,156
1908-1909	1,352
1909-1910	1,591

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