1930

General Catalogue 1930

Utah State University

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Utah State Agricultural College Bulletin

CATALOGUE ISSUE
1930-31

FORTY-FIRST YEAR
With List of Students for 1929-1930

Published by the College
JUNE, 1930
LOGAN, UTAH
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COLLEGE CALENDAR FOR 1930-31

FALL QUARTER

September 22, Monday..................Registration of Freshmen.
September 23, Tuesday..................Registration of Soph’s, Jun’s & Seniors.
September 24, Wednesday.................Instruction begins.
September 25, Thursday..................President’s Assembly.
October 13, Monday.....................Honor Societies’ Assembly.
October 15, Wednesday...................Prospective graduates submit applications for candidacy.
October 20, Monday.....................Last day for changing registration.
October 22, Wed. (1 o’clock)..........Women’s Assembly.
November 11, Tuesday..................Armistice Day (half holiday).
November 14, Friday....................Fathers and Mothers Day Assembly.
November 25, Tuesday..................Thanksgiving Assembly.
November 26, Wed. (noon)................Thanksgiving Recess begins.
December 1, Monday....................Instruction resumes.
December 18, Thursday..................Christmas Assembly.
December 19, Friday....................Fall Quarter closes.
December 20, Saturday..................Christmas Recess begins.

WINTER QUARTER

January 5, Monday....................Registration.
January 6, Tuesday....................Instruction begins.
January 15, Thursday...................Utah Extension-Service Assembly.
January 15, Thursday...................Candidates submit applications for graduation.
January 21, Wed. (1 o’clock)..........Women’s Assembly.
February 2, Monday....................Last day for changing registration.
February 12, Thursday..................Lincoln’s Birthday (holiday).
February 20, Friday....................Lincoln-Washington Assembly.
March 6, Friday........................Founders’ Day Assembly.
March 19, Thursday.....................Winter Quarter ends.

SPRING QUARTER

March 20, Friday.......................Registration.
March 23, Monday.......................Instruction begins.
March 25, Wednesday...................Easter Assembly.
April 8, Wednesday (1 o’clock)....Women’s Assembly.
April 20, Monday.......................Last day for changing registration.
May 8, Friday..........................Mothers Day Assembly.
May 15, Friday..........................Scholarship Awards, Scholars’ Banquet.
May 20, Wednesday.....................Senior Assembly.
May 29, Friday..........................Spring Quarter ends.
May 31, Sunday.........................Baccalaureate Sermon.
June 1, Monday.........................Commencement, Alumni Banquet and Ball.

SUMMER SESSION

June 8, Monday.........................Summer Session begins.
July 17, Friday.........................Summer Session ends.
BOARD OF TRUSTEES

A. W. IVINS ...........................................................................Salt Lake City
C. G. ADNEY ...........................................................................Corinne
MRS. LEE CHAS. MILLER .........................................................Salt Lake City
WESTON VERNON ....................................................................Logan
FREDERICK P. CHAMP ................................................................Logan
JOHN E. GRIFFIN .....................................................................Newton
FRANK B. STEPHENS ................................................................Salt Lake City
MRS. BURTON W. MUSSEER ......................................................Salt Lake City
WALTER K. GRANGER ................................................................Cedar City
ROY BULLEN ...........................................................................Salt Lake City
LORENZO N. STOHL ...............................................................Salt Lake City
DAVID WANGSGARD ................................................................Ogden
MILTON H. WELLING, Secretary of State, (ex-officio)..............Salt Lake City

OFFICERS OF BOARD

A. W. IVINS ...........................................................................President
C. G. ADNEY ...........................................................................Vice-President
RUSSEL E. BERNTSON ................................................................Secretary-Treasurer

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Executive Committee—A. W. Ivins, C. G. Adney, John E. Griffin, Mrs. Lee Chas. Miller, Weston Vernon, Logan.
Committee on Agriculture—C. G. Adney, Walter K. Granger, John E. Griffin, Mrs. Lee Chas. Miller
Committee on Mechanic Arts—John E. Griffin, C. G. Adney, David Wangsgard.
Committee on Engineering—Roy Bullen, Weston Vernon, David Wangsgard.
Committee on Home Economics—Mrs. Burton W. Musser, Lorenzo N. Stohl, Frederick P. Champ.
Committee on Commerce—Frederick P. Champ, Lorenzo N. Stohl, Roy Bullen.
Committee on Experiment Station—Lorenzo N. Stohl, Mrs. Burton W. Musser, Walter K. Granger.
Committee on Extension Division—Frank B. Stephens, Mrs. Lee Chas. Miller, C. G. Adney.
Committee on Faculty and Course of Study—Weston Vernon, Frederick P. Champ, John E. Griffin.
Committee on Live Stock—C. G. Adney, John E. Griffin, Walter K. Granger, Mrs. Lee Chas. Miller.
Committee on Buildings and Grounds—Frederick P. Champ, Weston Vernon, John E. Griffin.
Committee on Power, Heat and Light—Roy Bullen, Lorenzo N. Stohl, Milton H. Welling.
Committee on Branch Agricultural College—Walter K. Granger, Mrs. Lee Chas. Miller, Milton H. Welling, Mrs. Burton W. Musser.
Committee on Legislation and Finance—Mrs. Lee Chas. Miller, Roy Bullen, Frederick P. Champ, Mrs. Burton W. Musser, Frank B. Stephens.
OFFICERS OF ADMINISTRATION AND INSTRUCTION*

THE COLLEGE FACULTY

(Arranged in groups in the order of seniority of appointment. The numerals in parentheses following the title indicate the year in which the present rank was conferred.)

ELMER GEORGE PETERSON, B. S., A. M., Ph. D.
President (16)

WILLIAM PETERSON, B. S.
Director of Extension Division (24), Professor of Geology (06)

HYRUM JOHN FREDERICK, D. V. M.
Professor of Veterinary Science (06)

FRANK RUSSELL ARNOLD, A. B., A. M.
Professor of Modern Languages (06)

JOHN THOMAS CAINE, B. S., M. S. A.
Auditor (12)

FRANKLIN LORENZO WEST, B. S., Ph. D.
Dean of the Faculty (21), Professor of Physics (08)

JOSEPH EAMES GREEVES, M. S., Ph. D.
Professor of Bacteriology and Bio-Chemistry (13)

CALVIN FLETCHER, B. Pd.
Professor of Art (13)

RAY BENEDET WEST, B. S. C. E.
Dean of the School of Engineering (21), Professor of Engineering (13)

JAMES HENRY LINFORD, B. S., D. Did.
Director, Summer Session; Superintendent Correspondence-Study Department (13)

ARTHUR HERBERT SAXER, M. S., Ph. D.
Dean of the Schools of Arts and Science and of Education (21), Professor of Mathematics (13), Acting Registrar 1930-31

NEILS ALVIN PEDERSEN, A. M., Ph. D.
Professor of English and Speech (13)

PARLEY ERASTUS PETERSON, A. B., C. P. A.
Professor of Accounting (13)

FRANKLIN DAVID DAINES, A. B., A. M.
Professor of Political Science (17)

REUBEN LORENZO HILL, B. S., Ph. D.
Professor of Chemistry (19)

ORSON WINSO ISRAELSON, M. S., Ph. D.
Professor of Irrigation and Drainage (19)

GEORGE STEWART, M. S., Ph. D.
Professor of Agronomy (19)

*The College Council consists of the President and all members of the Faculty with the rank of Assistant Professor or higher.
Johanna Moen, B. S.
Professor of Textiles and Clothing (20)

George Ballif Caine, B. S., M. A.
Professor of Dairy Husbandry (20)

William Lawrence Wanlass, A. M., Ph. D.
Dean School of Commerce (21), Professor of Economics and Marketing (20)

Henry Peterson, A. B., A. M.
Professor of Psychology (21)

Joel Edward Ricks, A. B., A. M.
Professor of History (22)

Willard Gardner, M. S., Ph. D.
Professor of Physics (24)

Bert Lorin Richards, M. S., Ph. D.
Professor of Botany and Plant Pathology (24)

Kenneth Cole Ikeler, B. S. A., M. S. A.
Dean, School of Agriculture (26), Professor of Animal Husbandry (25)

William Williams Henderson, A. M., Ph. D.
Professor of Zoology and Entomology (26)

Byron Alder, B. S.
Professor of Poultry Husbandry (27)

E. Lowell Romney, A. B.
Director of Athletics (19)

Asa Bullen, B. S., L. L. B.
Special Lecturer in Commercial Law (17)

Joseph Arch Geddes, A. M., Ph. D.
Professor of Sociology (28)

Christine Bockholt Clayton, B. S., M. S.
Professor of Foods and Dietetics (28)

William Bowker Preston, M. D.
Professor of Physiology (29), Health Supervisor of Students (20)

Thornton G. Taylor, M. F.
Professor of Forestry (29)

W. Preston Thomas, M. S.
Professor of Agricultural Economics (29)

Russell Elwood Berntson
Executive Secretary, Treasurer and Purchasing Agent (24)

Robert E. Phillips, Major, C. A. C.
Professor of Military Science and Tactics (30)

August J. Hansen, B. S.
Associate Professor of Carpentry and Woodwork (17)

Aaron Newey, B. S.
Associate Professor of Machine Work (17)
THE COLLEGE FACULTY

ALFRED H. POWELL
Associate Professor of Farm and Auto Mechanics (20)

CHARLES TERRY HIRST, B. S., M. S.
Associate Professor of Chemistry (24)

SHERWIN MAESER, A. B., Ph. D.
Associate Professor of Chemistry (24)

DON WARREN PITTMAN, B. S., M. S.
Associate Professor of Agronomy (24)

JOSEPH R. JENSON, A. B.
Associate Professor of Physical Education (25)

WALLACE J. VICKERS, A. M., Ph. D.
Associate Professor of English (26)

F. B. WANN, A. B., Ph. D.
Associate Professor of Plant Physiology (26)

EZRA G. CARTER, M. S., D. P. H.
Associate Professor of Public Health and Physiology (27)

KATHERINE COOPER CARLISLE, B. S.
Associate Professor Physical Education for Women (28)

RAYMOND J. BECRRAFT, B. S., M. S.
Associate Professor of Range Management (28)

GEORGE DEWEY CLYDE, B. S., M. S.
Associate Professor of Engineering (28)

ALMA NICHOLAS SORENSEN, A. B., A. M.
Associate Professor of English (28)

ERNEST A. JACOBSEN, A. B., A. M.
Associate Professor of Education (29)

LEGRANDE R. HUMPHREYS, B. S.
State Supervisor of Vocational Agriculture (26)
In Charge Teacher Training in Agriculture and Shop Work (29)

DAVID S. JENNINGS, B. S., Ph. D.
Associate Professor of Soils (29)

CHARLES M. GENAUX, B. S., M. F.
Associate Professor of Forestry (29)

CHARLOTTE KYLE, B. A., M. A.
Assistant Professor of English (16)

LEON D. HARDY, B. S., M. S.
Assistant Professor in Correspondence-Study Department (20)

SAMUEL ROY EGBERT, B. S.
Assistant Professor of Forging (21)

CHARLOTTE E. DANCY
Assistant Professor of Physiology and Nursing (21)

AARON F. BRACKEN, B. S., M. A.
Assistant Professor of Agronomy (24)

ALMA ESPLIN, B. S.
Assistant Professor of Wool Management (25)
VERA CARLSON
Secretary to the President (25)

HATTIE SMITH
Assistant Librarian (16)

DAN ARTHUR SWENSON, B. S.
Assistant Professor of Woodwork (26)

FANNIE MAUGHAN VERNON
Assistant Professor English Extension (26)

SIDNEY STOCK, B. S.
Assistant Professor of Farm and Auto Mechanics (26)

CHARLES E. MCCLELLAN, A. B., M. A.
Assistant Professor of Education (26)

REED BAILEY, B. S., M. S.
Assistant Professor of Geology (26)

WALTER WELTI, B. A.
Assistant Professor of Vocal Music (26)

JOHN LAWRENCE HANLEY, FIRST LIEUTENANT U. S. A.
Assistant Professor of Military Science and Tactics (27)

DELROY VERNAL GARDNER, B. S., M. B. A.
Assistant Professor of Accounting (27)

DELMAR C. TINGEY, B. S., M. A.
Assistant Professor in Agronomy (27)

HARRY H. SMITH, B. S., M. S.
Assistant Professor in Animal Husbandry (27)

FRANCIS M. COE, B. S., M. S.
Assistant Professor of Horticulture (27)

WALTER U. FUHRIMAN, B. S.
Assistant Professor of Agricultural Economics (28)

ARIEL C. MERRILL, B. S., M. S.
Assistant Professor of Dairy Manufacturing (29)

†WILLIAM HAROLD BELL, B. S., M. S.
Registrar (29)

CHESTER J. MYERS, A. B., A. M.
Assistant Professor in Speech (29)

JOHN H. PITZER, Lieutenant C. A. C.
Assistant Professor of Military Science and Tactics (30)

CAROLINE M. HENDRICKS, B. S., M. S.
Assistant Professor of Sociology (30), Women's Adviser (30)

GEORGE C. JENSEN, A. M.
Assistant Professor of Modern Languages (30)

ALICE ENGLUND
Assistant Professor of Household Administration and of Home Economics Education (30)

†Absent on leave.
Helen Pixton, B. S., M. S.
Assistant Professor of Foods (30)

H. Lorin Blood, B. S., Ph. D.
Assistant Professor of Plant Pathology (30)

J. Sedley Stanford, B. S., Ph. D.
Assistant Professor of Zoology and Entomology (30)

N. Woodruff Christiansen, B. S.
Assistant Professor of Instrumental Music (30)

Harold R. Kepner, A. B., B. S. C. E., M. S.
Assistant Professor of Engineering (30)

†Harry R. Reynolds
Assistant Professor of Art (30)

Milton Merrill, B. S.
Assistant Professor of History (30), In Charge of Information Service Department (27)

†Thelma Fogelberg, B. S.
Instructor in Stenography and Business Practice (30)

Frances Barber, B. S.
Instructor in Education and Supervisor of Normal Training (28)

Vance H. Tingeey, B. S., M. S.
Instructor in Engineering and Mathematics (29)

Hamlet C. Pulley, B. S., M. S.
Instructor in Bacteriology (29)

George S. Bates, B. S., M. A.
Instructor in Education (29)

Alvin Hess, B. S., M. S.
Instructor in Education (29)

Irvin Hull, B. S.
Instructor in Economics (29)

Jessie Anderson
Instructor in Art (30)

Luella Hawley, B. S.
Instructor in Stenography and Typewriting (30)

Ellen Alta Orser, B. S.
Instructor in Textiles and Clothing (30)

Lenore Croft, B. S.
Instructor in Physical Education for Women (30)

Ruth Moench Bell, B. S.
Instructor in English (part time)

Mary Sorensen
Assistant Librarian

Eric A. Johnson, B. S.
Assistant Secretary

†Absent on leave.
STANDING COMMITTEES
1930-31

The President of the College is ex-officio a member of each standing committee.

Advanced Standing—Professor Saxer, Mr. Bell.

Attendance and Scholarship—Professors W. W. Henderson, Pedersen, Vickers, Jenson, Dancy, R. L. Hill, Becraft, Professor of Military Science.

Athletic Council—Professors A. N. Sorensen, George B. Caine, E. L. Romney, Mr. R. E. Berntson.


Boy Scout Activity—Professors Fletcher, Richards.

Campus Improvement—Professors Cardon, Clyde, Fletcher, Mr. R. O. Larson.

Certification of Teachers—Professors Saxer, Jacobsen, McClellan, Mr. Bell.


Credits from Sectarian Institutions—Professors Saxer, Ikeler, Mr. Bell.

Curriculum—Professors Stewart, Maeser.

Entrance—Professors Hirst, Egbert.

Exhibits—Professors R. B. West, Ikeler, Moen, A. J. Hansen, Alder, Mr. Merrill.

Graduate Work—Professors F. L. West, William Peterson, Greaves, Stewart, P. E. Peterson.

Graduation—Professors Maeser, P. E. Peterson, Mr. Bell.

High School Relations Committee—Professors Bailey, Henry Peterson, William Peterson, Romney, Geddes, V. D. Gardner, Mr. Merrill, Mr. Porter.

Incomplete Grades—Professor Ricks.

Library—Professors Stewart, A. N. Sorensen, Arnold, R. B. West, Miss Smith.
STANDING COMMITTEES

Loan Fund—Mr. Berntson, Professors Stewart, Dancy.
Radio Programs—Messrs. Merrill, Burgoyne, Porter.
Rhodes Scholarship—Professors Arnold, Sorensen, Maeser.
Recommendation for Employment—Professors McClellan, R. B. West.
Sectioning Committee—Professors Daines, Moen, Carter, Kyle, Wann.
Schedule and Catalogue—Mr. W. H. Bell, Professors Saxer, A. N. Sorensen.
Social Affairs—Professors Jenson and Gardner, Miss Dancy, Mrs. Hendricks, Miss Carlson.
Student Body Organization—Professors N. A. Pedersen, McClellan, V. D. Gardner.
Student Employment—Mr. Burgoyne.

NORMAL TRAINING SCHOOL STAFF 1930-31

A. H. Saxer, Ph. D.
Dean, School of Education

C. E. McClellan, M. A.
Director of Teacher Training

Frances Barber, B. S.
Supervisor and Principal

Lenore Lewis
In Charge of Sixth Grade

Thelma Garff
In Charge of Fifth Grade

Wanda Robertson
In Charge of Fourth Grade

Lorene K. Fox
In Charge of Third Grade

Addie Swapp
In Charge of Second Grade

Helen Roberts
In Charge of First Grade

Emma Eccles Jones, M. A.
In Charge of Kindergarten
EXPERIMENT STATION STAFF
1930-31

PHILIP VINCENT CARDON, B. S.
Director

WILLIAM PETERSON, B. S.
Geologist

HYRUM JOHN FREDERICK, D. V. M.
Veterinarian

JOSEPH EAMES GREAVES, Ph. D.
Chemist and Bacteriologist

GEORGE BALLIF CAINE, A. M.
Dairy Husbandman

REUBEN LORENZO HILL, Ph. D.
Human Nutritionist

GEORGE STEWART, Ph. D.
Agronomist

ORSON WINSO ISRAELSEN, Ph. D.
Irrigation and Drainage Engineer

BYRON ALDER, B. S.
Poultry Husbandman

DAVID STOUT JENNINGS, Ph. D.
In Charge, Soils Investigations

WILLARD GARDNER, Ph. D.
Physicist

KENNETH COLE IKELER, M. S.
Animal Husbandman

WILLIAM WILLIAMS HENDERSON, Ph. D.
Entomologist

BERT LORIN RICHARDS, Ph. D.
Botanist and Plant Pathologist

W. PRESTON THOMAS, M. S.
Agricultural Economist
DAVID EDWARD MADSEN, D. V. M.
Animal Pathologist

CHARLES TERRY HIRST, M. S.
Associate Chemist

DON WARREN PITTMAN, M. S.
Associate Agronomist

FRANK B. WANN, Ph. D.
Associate Plant Physiologist

JOSEPH A. GEDDES, Ph. D.
Associate Rural Sociologist

RAYMOND J. BECRAFT, M. S.
Associate in Range Management

GEORGE D. CLYDE, M. S.
Associate Irrigation and Drainage Engineer

A. C. ESPLIN, B. S.
Associate Animal Husbandman

CHARLES J. SORENSON, M. A.
Associate Entomologist

GEORGE F. KNOWLTON, M. S.
Associate Entomologist

H. LORAN BLOOD, Ph. D.
Associate Plant Pathologist

AARON F. BRACKEN, M. S.
Assistant Agronomist and
Supt., Nephi Dry-Farm Substation

*A. L. WILSON, M. A.
Assistant Horticulturist and
Supt., Davis County Substation

DELMAR CLIVE TINGLEY, M. A.
Assistant Agronomist

ALMEDA PERRY BROWN, M. A.
Assistant Home Economist

*On leave.
Francis M. Coe, M. S.
Assistant Horticulturist

Harry H. Smith, M. S.
Assistant Animal Husbandman

Hamlet C. Pulley, M. S.
Assistant Bacteriologist

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Assistant Dairy Husbandman and Supt., Dairy Experimental Farm

John W. Carlson, M. A.
Assistant Agronomist and Supt., Uintah Basin Substation

Benjamin F. Hume, B. S.
Assistant Animal Husbandman and Supt., Panguitch Substation

I. Delos Zobell, B. S.
Assistant Agronomist and Supt., Carbon County Substation

Lemoyne Wilson, B. S.
Assistant Agronomist and Supt., San Pete County Substation

James H. Eagar, B. S.
Assistant Agronomist and Supt., San Juan County Substation

Blanche Condit Pittman, A. B.
Librarian and in Charge of Publications and Editorial Divisions

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Secretary to Director

Russell E. Berntson
Secretary-Treasurer

Edith Hayball, B. S.
Assistant Statistician

Stella Sorenson, B. S.
Stenographer
EXPERIMENT STATION STAFF

MAIDA MUIR, B. S.
Stenographer

GEORGE WHORNHAM, B. S.
Assistant Field Agronomist

CLARENCE BURNHAM, B. S.
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DE WITT SMITH, B. S.
Graduate Research Assistant

GEORGE T. BLANCH, B. S.
Graduate Research Assistant

FLOYD CLARK, B. S.
Graduate Research Assistant

In Cooperation with U. S. D. A.

WESLEY KELLER, B. S.
Agent, Sugar Beet Diseases
Bureau of Plant Industry

HENRY DAINES, B. S.
Assistant in Sugar-Plant Investigations,
Bureau of Plant Industry

EXTENSION SERVICE STAFF

WILLIAM PETERSON, B. S.
Director

WILLIAM WHITE OWENS, B. S., M.A.
Assistant Director and County Agent Leader

RENA BAKER MAYCOCK
State Leader, Home Demonstration Work

JAMES CHRISTIAN HOGENSON, M. S. A.
Extension Agronomist

BYRON ALDER, B. S.
Extension Poultryman

AFTON ODELL, B. S.
Extension Specialist in Clothing
DAVID P. MURRAY, B. S.
State Boys' and Girls' Club Specialist

ALMA C. ESPLIN, B. S.
Extension Animal Husbandman, Sheep

EFFIE SMITH BARROWS, B. S.
Extension Economist, Home Management

ELNA MILLER, B. S., M. S.
Extension Nutritionist

KENNETH C. IKELER, B. S., M. S.
Extension Animal Husbandman

GEORGE B. CAINE, B. S., A. M.
Extension Dairyman

CHARLES M. GENAUX, B. S., M. S.
Extension Forester

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ROBERT L. WRIGLEY, B. S.
Asst. Professor, County Extension Agent, Cache County

LYMAN H. RICH, B. S., M. S.
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DELORE NICHOLS, B. S.
Asst. Professor, County Extension Agent, Davis County

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Asst. Professor, Extension Agent, Weber County

CHARLES O. STOTT, B. S.
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STEPHEN R. BOSWELL, B. S.
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Asst. Prof., District Extension Agent, Weber and Morgan Counties

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Assistant Professor, County Extension Agent, Morgan County

MORGAN P. MCKAY, B. S.
Assistant Professor, County Extension Agent, Millard County

IVY LOWRY HALL, B. S.
Asst. Prof. Home Demonstration Agent, Salt Lake and Summit Counties

ERASTUS PETERSON, B. S.
Assistant Professor, County Extension Agent, Uintah County

DAVID SHARP, JR, B. S.
Assistant Professor, County Extension Agent, Summit County

LEW MAR PRICE, B. S.
Assistant Professor, County Extension Agent, Beaver County

RUSSELL R. KEETCH, B. S.
Assistant Professor, County Extension Agent, Wasatch County

HUGH HURST, B. S., D. V. M.
Assistant Professor, County Extension Agent, Tooele County

MYRTLE DAVIDSON, B. S.
Assistant Professor, District Agent, Cache and Box Elder Counties

WALTER F. SMITH, B. S.
Assistant Professor, County Extension Agent, Washington County

ANSON B. CALL, JR., B. S., M. S.
Assistant County Extension Agent, Utah County

RUTH ZOLLINGER, B. S.
Assistant Professor, Home Demonstration Extension Agent, Tooele County

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Assistant Professor, County Extension Agent, Duchesne County
C. A. Hymas, B. S.
Assistant Professor, County Extension Agent, Piute and Garfield Counties

Ruby Stringham, B. S.
Assistant Professor, Home Demonstration Extension Agent, Davis County

Wilford D. Porter, B. S.
Secretary to Director and Extension Editor

Ida R. Mitchell
Clerk

Mary Hansen
Stenographer
Utah State Agricultural College

The Utah State Agricultural College is in Logan, the county seat of Cache county, one of the most prosperous agricultural sections in the State. The city has a population, thrifty and progressive, of about 12,000; it is quiet, orderly, clean and generally attractive. An excellent bus line serves the city. Logan is on the Yellowstone Highway, the Utah Idaho Central Electric line and the Oregon Short Line Railroad.

The College, uniquely situated on a broad hill overlooking the city, one mile east of Main Street, commands a view of the entire valley and surrounding mountain ranges. The site of the College was formed by the receding waters of prehistoric Lake Bonneville, which built an enormous delta at the mouth of Logan canyon upon which the College buildings and farms are located. The beauty and geological significance of the location are perhaps unsurpassed. A half mile to the south is Logan river. A mile to the east is a magnificent mountain range with a picturesque canyon. In other directions are town and farms of Cache County distinctly visible through the clear atmosphere. The valley is a fertile, slightly uneven plain, 4,600 feet above sea level, about twelve by sixty miles in dimensions, almost entirely under cultivation and surrounded by the Wasatch mountains. It is one of the most attractive and healthful valleys in the West.

POLICY

The Utah State Agricultural College provided, in accordance with the spirit of the law under which it was organized, a liberal, thorough, and practical education. The two extremes in education, empiricism and the purely theoretical, are avoided; for the practical is based upon and united with the thoroughly scientific. In addition to the practical work of the different courses, students are given thorough training in the sciences, mathematics, history, English, art, music, speech, modern language, and other related subjects. The object is to foster all that makes for right living, good citizenship, and high efficiency.

Under this general policy, the special purpose of the Utah State Agricultural College is to be of service in the upbuilding of the State and the great West to which it belongs. The instruction in agriculture and engineering, in addition to the purely professional aspects of these fields of study, deals with the special problems relating to the conquest of the great areas of unoccupied lands, the development of engineering structures, the proper use of the water supply, and the kinds of crops or live stock which in Utah may be most profitable; instruction in mechanic arts points out the most promising trades and teaches them so as to meet the needs of the State; instruction in commerce relates to the undeveloped resources and the present commercial conditions of the State, and investigates the principles and methods to be applied in the
commercial growth of Utah; instruction in home economics teaches the women right living and economic independence.

The Constitution of Utah establishes the Utah State Agricultural College and the University of Utah as the two public institutions of higher learning in Utah. Each of these institutions is independent in government, although each is a part of the public school system. Each, under the Constitution and the statutes of Utah and in harmony with the rulings of their respective governing boards, offers undergraduate and graduate work leading to the Bachelor’s and Master’s degrees. The College, in addition to this high status given it in Utah under the Constitution, is one of forty-eight institutions in the United States definitely recognized by the Federal government as the institution of higher learning in the respective states for the development of the Federal program of education included in the Morrill and Nelson Acts of the Federal Congress.

HISTORY

The Utah State Agricultural College was founded March 8th, 1888, when the Legislative Assembly accepted the terms of the national law passed by Congress on July 2nd, 1862. Under this Act of Congress, and the Enabling Act providing for the admission of Utah to the Union, 200,000 acres of land were granted to the State from the sale of which there should be established a perpetual fund, the interest to be used in maintaining the College.

Under the Hatch Act, approved in 1887, the State receives $15,000 annually for the Experiment Station. Under the Adams Act of 1906, the State receives an additional $15,000 annually for research work by the Experiment Station. Under the Morrill Act of 1890, amended by the Nelson Act of 1907, the State receives $50,000 annually for instruction at the Agricultural College. Under the Smith-Lever Act, the State receives annually about $34,000 for agricultural extension work to be done by the Agricultural College. Under the Purnell Act, the State received in 1928-29 an appropriation of $50,000, which will increase by $10,000 each year until an annual income of $60,000 has been reached, for special work in agricultural and home economics.

These Federal appropriations, together with the annual income from the land-grant fund, represent the income received from the general government. Since most of these funds must be used, in accordance with the law, for specific purposes, the institution is dependent on State appropriations for funds with which to provide additional instruction and for general maintenance. These needs have been generously met in the past by the Legislative Assemblies of the State. In 1888 the sum of $15,000 was appropriated for buildings, and the county of Cache and the city of Logan gave one hundred acres of land on which to build the College. Since that time the State has, from time to time, appropriated sufficient funds to erect and maintain most of the buildings described in a later section, besides providing for instruction, experimentation, and extension work.

By legislative action, the College receives annually 28.34 per cent
of 28 per cent of the total tax revenue of the State, after deducting the revenue from 2.4 mills on the total State valuation (which is not to be exceeded), set aside for the support of the elementary and the high schools. Special maintenance appropriations are made by the legislature for general support, and for buildings. The State, moreover, provides adequately for extension purposes and experimental work.

In September, 1890, the Institution was opened for the admission of students. Degree courses were offered in agriculture, domestic art, engineering, mechanic arts, and commerce; a preparatory course and short courses in agriculture and engineering were also given. Since that time many improvements have been made in the courses. Various special, practical, year and winter courses in agriculture, commerce, mechanic arts and home economics have been added; the standard of the college work has been raised. In 1927 the divisions of instruction were established as follows: The School of Agriculture, the School of Engineering, the School of Home Economics, the School of Commerce, the School of Arts and Science, and the School of Education.

In 1913, the Branch Normal School at Cedar City was made a branch of the Utah State Agricultural College, and is so maintained.

In 1926, the College was admitted to the accepted list of the Association of American Universities.

In 1929, the State Legislature codified the laws of the State relating to the College, and changed the name to Utah State Agricultural College.

GOVERNMENT

The government of the College is vested in the Board of Trustees and, under its control, in the four other administrative bodies,—the Deans and Directors’ Council, the College Council, the College Faculty, and the Staff of the Experiment Station. These, in their several capacities, determine the policy and maintain the efficiency of the Institution.

THE BOARD OF TRUSTEES consists of thirteen members. Twelve are appointed by the Governor with the approval of the State Senate; the thirteenth is the Secretary of State who is ex-officio a member. This Board assumes the legal responsibility of the institution, cares for its general interests, and directs its course by the enactment of all necessary by-laws and regulations. Vested in it is the power to establish professorships, to employ the instructing force and other officers of the College, and to formulate the general policy of the Institution.

Between sessions, the power of the trustees rests with an executive committee, whose actions are referred to the Board for approval. In addition there are committees, largely advisory, that deal with the general interests of the College.

THE DEANS AND DIRECTORS’ COUNCIL consists of the President, the Deans of the various schools,—Agriculture, Home Economics, Engineering, Commerce, and Arts and Science, the Dean of
the Faculty, the Director of the Summer Session, the Directors of the Experiment Station and the Extension Service. This body has immediate supervision of instruction and discipline in all the various schools. It constitutes a permanent executive and administrative committee of the College Council and Faculty.

THE BUDGET COMMITTEE, which is advisory to the President, consists of the Deans of the five Schools and the Executive Secretary of the Institution, the Dean of the faculty being chairman of the Committee. In all budget matters involving the Experiment Station or Extension Service, the respective Directors become members of the Budget Committee.

THE COLLEGE COUNCIL consists of the President of the College and all members of the faculty holding the rank of professor, associate professor, or assistant professor. Questions of discipline and policy are decided by this body.

THE COLLEGE FACULTY includes the President, professors, associate professors, assistant professors, ranking professors, instructors, and assistants. It is concerned with ordinary questions of methods and discipline and with other matters pertaining to the general welfare of the College.

THE STANDING COMMITTEES have delegated to them the immediate direction of all the phases of college life. The conduct of the student in his college home, and his regularity in performing college duties; the publications of the College and of the students; the interests of the students on the athletic field, in the amusement halls, and their various organizations,—all are within the province of appropriate committees.

THE EXPERIMENT STATION STAFF consists of the President of the College, the Director of the Station, and the heads of departments and their associates and assistants. The staff is engaged in the investigation of problems peculiar to agriculture and rural welfare in this part of the country. It is further responsible for the circulation, through its various publications and correspondence, of such information as is of practical value to the farming communities.

THE EXTENSION SERVICE consists of the President of the College, the Director of the Extension Service, and the various Specialists, County Agents, and Home Demonstrators.

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

The work of the College falls into three distinct divisions: first, the College Proper, giving instruction on the home campus of the College; second, the Research Division, having for its object the discovery of new truth or the new application of established truth, for the advancement of life; third, the Extension Division, which carries instruction to the people who can not come to the College Campus.

To accomplish this work the following administrative divisions exist:

I. The College Proper.
   The School of Agriculture and Forestry.
   The School of Arts and Science.
   The School of Commerce.
   The School of Education.
   The School of Engineering.
   The School of Home Economics.
   The Summer Session.

II. Research.
    Experiment Station.

III. Extension.
    The Extension Service.

The instructional and investigational forces with the equipment necessary to carry out the work of the above divisions are organized into departments of co-ordinate authority, each of which represents a somewhat definite field of knowledge. All officers of instruction or experimentation belong to one or another of these departments. One professor, designated head, carries the administrative responsibility of the department.
THE SCHOOL OF AGRICULTURE AND FORESTRY

KENNETH C. IKELER, Dean

Agriculture is the largest and most fundamental single industry, and is one of the most promising of modern professions. The new agriculture is not a profession of unceasing toil. The business of scientific farming challenges the training and ability of the best young blood of our nation. The freedom, health, intellect and profit derived from the new and scientific agriculture are attracting large numbers of thinking people. Utah and the entire Intermountain West will continue to offer excellent opportunities to those who prepare themselves for scientific agricultural pursuits.

Most of the students who graduate in Agriculture come from the farm, but not all of them. The Utah State Agricultural College is equipped to teach practical as well as scientific agriculture. Our aim is "Science with Practice." We teach the sciences underlying practical agriculture, and supplement these with studies of sufficient breadth to place the student upon the high intellectual level of those trained in other professions. A great deal of the college instructional work requires demonstration material. This is amply supplied by the college farm, the experimental plant breeding plots, and the numerous breeds of livestock and poultry.

The student about to enter training in the Science of Agriculture, may wish to know something of the opportunities offered in his chosen profession. Young men thoroughly trained in agriculture will find a large field for the exercise of their talents. It is not to be expected that all graduates trained in Scientific Agriculture will return to the farm. The demand is too great for agriculturally trained students in other allied lines of industry. Agriculture needs clear thinkers, and skillful doers, not only on crop and livestock farms and in orchards and gardens, but also in our banks, legislative halls, and educational institutions.

ADMISSION

See statements of entrance requirements of the College on page 59.

Students who expect to become candidates for the Bachelor’s degree are reminded that they should complete the requirements of the Junior College before they will be allowed to enter the Senior College. Read carefully the statements regarding "Junior College," and "Senior College" found on pages 61, 62.
GENERAL REQUIREMENTS FOR GRADUATION

Candidates for the Bachelor of Science degree must meet in full all entrance requirements and present 180 quarter hours of College work as outlined below (exclusive of the required courses in Physical Education).

THE FOUR BASIC GROUPS

The candidate must include work in each of the four basic groups as follows:

**Language Group:** 18 hours (English, Modern Languages, Public Speaking). Must include English 10, 11 unless excused by the English Department.

**Social Science Group:** 12 hours (History, Economics, Political Science, Sociology).

**Biological Science Group:** 12 hours (Botany, Zoology, Public Health, Bacteriology, Physiology.)

**Exact Science Group:** 12 hours (Chemistry, Physics, Mathematics, Geology, Accounting 101, 102, 103).

MAJOR SUBJECT

Every student, at the time he enters the Senior College, must select a major subject in which at the time of graduation he must have completed at least thirty quarter hours of work. The Student should consult with the professor in charge of his major work, and must secure the approval of the proposed combination of courses. (Read page 62)

In the School of Agriculture, students may major in the following departments: Agricultural Economics, Agronomy, Animal Husbandry, Bacteriology, Botany and Plant Pathology, Chemistry, Dairy Husbandry, Dairy Manufacturing, Entomology, Forestry and Range Management, Horticulture, Poultry Husbandry, Veterinary Science.

MINOR SUBJECTS

From eighteen to thirty hours in some field of work closely related to the major subject will be chosen by the candidate with the advice and consent of the major department and the Dean of the School. (See page 62)

SENIOR COLLEGE WORK

Fifty-four (54) hours of Senior College work taken after the candidate has completed at least 90 hours of work must be presented by each candidate for the B. S. degree. (See page 61 for a definition of Senior College work).

RESIDENCE SCHOLARSHIP, ETC.

See page 63 for requirements for graduation.
OUTLINE OF THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE IN AGRICULTURE

First Year
Language Group.................. 9
Social Science................... 6
Biological Science............. 6
Exact Science................... 6
*Electives .....................18 to 24

Total .......................... 45 to 51

Second Year
Language Group.................. 9
Social Science................... 6
Biological Science............. 6
Exact Science................... 6
*Electives .....................18 to 24

Total .......................... 45 to 51

*The electives should include at least 9 hours in the proposed major subject.

Third Year
Major Subject.................... 9
Minor Subject................... 6
Special Group................... 21
Electives .....................9 to 15

Total .......................... 45 to 51

Fourth Year
Major Subject.................... 12
Minor Subject................... 6
Special Group................... 21
Electives .....................10 to 15

Total .......................... 45 to 51

THE B. S. DEGREE IN AGRICULTURE WITH HIGH SCHOOL TEACHER’S RECOMMENDATION

It is a decided advantage to candidates for the High School Teacher’s Certificate to hold the standard Bachelor’s degree in Agriculture if their major work is in this field. Arrangements have been made with the School of Education to provide candidates for the Bachelor of Science degree in Agriculture with the necessary professional educational courses to qualify them for the teacher’s Professional High School Certificate. The High School Teacher’s recommendation is given by the College, and the Professional High School Certificate is awarded by the State Board of Education, to those who include the following courses along with those presented for the B. S. degree:

The candidate must present 27 hours of Professional Educational subjects, which shall include Psychology 101 and either 102 or 103, and Education 111, 115, and 121 or their equivalents. The candidate’s Biological Science group must include Bacteriology 1 and Health Education 108, and the Social Science group shall include 5 credits of applied Sociology or Ethics, and 5 credits in Economics or Political Science.

Graduates of Standard Normal Courses, or those who have had one or more years of successful teaching experience, may have some of these requirements waived. Consult the Dean in regard to this matter.

Candidates for the Bachelor’s degree with the High School Teacher’s recommendation will be allowed to use the 27 hours of professional education credits as desirable related work mentioned in their requirements for the major subject. (See page 62)
OUTLINE OF THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE IN AGRICULTURE AND THE TEACHER'S PROFESSIONAL HIGH SCHOOL CERTIFICATE

The first two years of this course will be the same as for the B. S. degree previously outlined, except that the candidate should elect in the Social Science and the Biological Science groups the particular courses mentioned in the preceding paragraph.

Junior and Senior Years

During the third and fourth years the student should complete his major and minor work as outlined for the B. S. Degree and for his related work including the following:

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>Senior Year</th>
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</thead>
<tbody>
<tr>
<td>Psychology 101 and 102 or 103</td>
<td>Training Educ. 115...8 hours</td>
</tr>
</tbody>
</table>
| Education 111 and 121...6 hours | Psychology or Educa-
| | tion...7 hours |

The following courses are suggestive for students in Vocational Agriculture with majors in Agronomy, Animal Industry, and Horticulture. All students in Vocational Agriculture should follow the same course in the Freshman and Sophomore years.

JUNIOR COLLEGE
(Same for all Majors)

<table>
<thead>
<tr>
<th>FRESHMAN YEAR</th>
<th>F.</th>
<th>W.</th>
<th>S.</th>
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<tbody>
<tr>
<td>Botany 21, 22</td>
<td>4</td>
<td>4</td>
<td>.</td>
</tr>
<tr>
<td>Econ. 51, 52</td>
<td>5</td>
<td>5</td>
<td>.</td>
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<tr>
<td>English 10</td>
<td>5</td>
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<tr>
<td>Zoology 14</td>
<td>4</td>
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<tr>
<td>Bact. 1, or Zool. 1</td>
<td>5</td>
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<tr>
<td>Dairy 1</td>
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<tr>
<td>Hort. 1, 101</td>
<td>4</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Poultry 1</td>
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<tr>
<td>A. E. 13</td>
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<table>
<thead>
<tr>
<th>SOPHOMORE YEAR</th>
<th>F.</th>
<th>W.</th>
<th>S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 3, 4, 26</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>English 11</td>
<td>4</td>
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<tr>
<td>Ag. Econ. 51</td>
<td>4</td>
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<tr>
<td>Agron. 2, 1</td>
<td>4</td>
<td>4</td>
<td>.</td>
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<tr>
<td>An. Hus. 1</td>
<td>5</td>
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<tr>
<td>An. Hus. 2</td>
<td>5</td>
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<tr>
<td>A. E.</td>
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<tr>
<td>A. E. 14</td>
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<tr>
<td>Choice of Agron. 3 (Forage Crops); Hort. 3 (Landscape Gardening); An. Hus. 3 (Market Classes &amp; Grades)</td>
<td>.</td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

| Credits | 17 | 17 | 17 |
### JUNIOR YEAR
(Agronomy and Soils)

<table>
<thead>
<tr>
<th>Course</th>
<th>F</th>
<th>W</th>
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<tbody>
<tr>
<td>Geology 105, 106</td>
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<tr>
<td>Zool. 111</td>
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<tr>
<td>Agron. 106, 108</td>
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<tr>
<td>Dairy Husbandry 110</td>
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<tr>
<td>Education 111, 121</td>
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<tr>
<td>Psychology 101, 103</td>
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<tr>
<td>An. Hus. 103</td>
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<tr>
<td>Bact. 109</td>
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<tr>
<td>Eng. 125</td>
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<tr>
<td>Gen. Geology</td>
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<td>5</td>
<td>5</td>
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<tr>
<td>Genetics</td>
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<tr>
<td>Soils</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Dairy Production</td>
<td></td>
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<td>5</td>
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<tr>
<td>Science of Ed., Org. &amp; Admin.</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Psychology</td>
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<tr>
<td>Feeding</td>
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<tr>
<td>Health Education</td>
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<td>Journalism</td>
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<td>17</td>
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</tbody>
</table>

### SENIOR YEAR
(Agronomy and Soils)

<table>
<thead>
<tr>
<th>Course</th>
<th>F</th>
<th>W</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agron. 111, 112, 113</td>
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<tr>
<td>Agron. 117</td>
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<tr>
<td>Agron. 116 or 119</td>
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<td>Agric. Economics 102</td>
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<tr>
<td>Ag. Economics 62</td>
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<td>Bot. 130</td>
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<td>Agr. 104</td>
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<td>Ed. 127</td>
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<td>Minor group and elective courses</td>
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### JUNIOR YEAR
(Animal Industry)

<table>
<thead>
<tr>
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<td>An. Hus. 111</td>
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<td>An. Hus. 103</td>
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<td>An. Hus. 105</td>
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<td>An. Hus. 109</td>
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<tr>
<td>Poultry Husb. 105</td>
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<td>Zool. 111</td>
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<td>Agron. 106</td>
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<td>English 125, 126</td>
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<td>Bact. 109</td>
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<td>Psychology 101, 102</td>
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<td>Ed. 111, 121</td>
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<tr>
<td>Meats</td>
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<td>Management</td>
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<td>3</td>
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<td>Feeding</td>
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<td>Breeding</td>
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<td>5</td>
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<td>Sheep and Wool</td>
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<td>Poultry Management</td>
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<td>Genetics</td>
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<td>Soils</td>
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<td>Journalism</td>
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<tr>
<td>Health Education</td>
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</table>
## SENIOR YEAR

(Animal Industry)

<table>
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<td>An. Hus. 120, 121, 122 Seminar</td>
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<td>1</td>
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<tr>
<td>Agron. 117 Geography of Agr.</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Hort. 3 Landscape Gardening</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>English 1 Extemporaneous Speaking</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 126 Methods of Agr. Teaching</td>
<td>8</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Dairy Husb. 109 Dairy Production</td>
<td>3</td>
<td>8</td>
<td>3</td>
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<tr>
<td>Vet. Science 107, 118 Elective</td>
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<td>Minor, group and elective courses</td>
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## JUNIOR YEAR

(Horticulture)

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>Hort. 108 Small fruits</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Hort. 4 Vegetable Gardening</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Hort. 7, 8, 9 Greenhouse &amp; Nursery Practice</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Agron. 106 Soils</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Agron. 117 Geography of Agriculture</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Botany 130, 131 Plant Pathology</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>English 125, 126, 127 Journalism</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Psychology 101, 103 Psychology</td>
<td>3</td>
<td>3</td>
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<td>Ed. 111, 121 Science of Ed.; Org. &amp; Admin.</td>
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<tr>
<td>Minor, group and elective courses</td>
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</tbody>
</table>

## SENIOR YEAR

(Horticulture)

<table>
<thead>
<tr>
<th>Course</th>
<th>F.</th>
<th>W.</th>
<th>S.</th>
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<tbody>
<tr>
<td>Hort. 151, 152 Systematic and Com. Pomology</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>Hort. 107 Spraying</td>
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<td>3</td>
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<tr>
<td>Hort. 110, 111 Orchard Practice</td>
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<tr>
<td>Hort. 153, 154 Seminar</td>
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<td>1</td>
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<tr>
<td>Ed. 126 Methods of Agr. Teaching</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 127 Practice Teaching</td>
<td>8</td>
<td>8</td>
<td>3</td>
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<tr>
<td>Minor, group and elective courses</td>
<td>10</td>
<td>7</td>
<td>5</td>
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</tbody>
</table>

## Minor, group and elective courses

|                | 17 | 17 | 17 |
THE SCHOOL OF ARTS AND SCIENCE
A. H. SAXER, Dean

Since its foundation the Utah State Agricultural College has offered strong courses in the Sciences and, to a less extent, courses in the Arts, to carry out the technical work of the Schools of Agriculture, Home Economics, Commerce, and Engineering, and to assure to these students a liberal education and training for efficient citizenship.

An efficient instructing force and complete modern equipment have been provided in the natural and physical sciences, as well as in English, Mathematics, History, and Languages. This makes it possible to satisfy the growing demand for strong baccalaureate courses affording a broad general education in the earlier years, and admitting of specialization later. Such courses constitute the School of Arts and Science which, paralleling the other degree courses of the College, lead to the degree of Bachelor of Science.

ADMISSION

See statement of entrance requirements of the College on page 59. Students who expect to become candidates for the Bachelor's degree are reminded that they should complete the requirements of the Junior College before they will be allowed to enter the Senior College. Read carefully the statements regarding "Junior College" and "Senior College" found on pages 61, 62.

GENERAL REQUIREMENTS FOR GRADUATION

Candidates for the Bachelor of Science Degree must meet in full all entrance requirements and present 180 quarter hours of College work as outlined below (exclusive of the required courses in Physical Education).

THE FOUR BASIC GROUPS

The candidate must include work in each of the four basic groups as follows:

Language Group: 18 hours (English, Modern Languages, Public Speaking). Must include English 10, 11, unless excused by the English Department.

Social Science Group: 12 hours (History, Economics, Political Science, Sociology).

Biological Science Group: 12 hours (Botany, Zoology, Public Health, Bacteriology, Physiology).

Exact Science Group: 12 hours (Chemistry, Physics, Mathematics, Geology, Accounting 101, 102, 103).

MAJOR SUBJECT

Every student, at the time he enters the Senior College, must select a major subject in which at the time of graduation he must have com-
completed at least 30 quarter hours of work. The student should consult with the professor in charge of his major work, and must secure his approval of the proposed combination of courses. (Read page 62)

In the school of Arts and Science, students may major in the following departments: Art, Bacteriology and Bio-Chemistry, Botany, Chemistry, English and Public Speaking, Geology, History, Mathematics, Modern Languages, Music, Physics, Physiology and Public Health, Political Science, Zoology and Entomology.

MINOR SUBJECTS

From eighteen to thirty hours in some field of work closely related to the major subject will be chosen by the candidate with the advice and consent of the major department and the Dean of the School. (See page 62.)

SENIOR COLLEGE WORK

Fifty-four (54) hours of Senior College work taken after the candidate has completed at least 90 hours of work must be presented by each candidate for the B. S. degree. See page 61 for a definition of Senior College Work.

RESIDENCE, SCHOLARSHIP, ETC.

See page 63 for requirements for graduation.

OUTLINE OF THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE

**First Year**

<table>
<thead>
<tr>
<th>Language Group, including</th>
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<tbody>
<tr>
<td>English 10</td>
<td>9</td>
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<tr>
<td>Social Science</td>
<td>6</td>
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<tr>
<td>*Biol. or Exact Sc.</td>
<td>12</td>
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<tr>
<td>Electives</td>
<td>18 to 24</td>
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</table>

The electives should include at least fifteen hours in the proposed major.

*Biological or Exact Science should be chosen so that the candidate has at least 12 hours in each of the two groups.

**Junior and Senior Years**

During the third and fourth year the student should complete his major and minor subjects and any related work prescribed by the Dean or Major Department. See page 62 for these requirements.

**THE B. S. DEGREE IN ARTS AND SCIENCE WITH HIGH SCHOOL TEACHER’S RECOMMENDATION**

It is a decided advantage to candidates for the High School Teacher’s Certificate to hold the standard Bachelor’s degree in Arts and
Science if their major work is in this field. Arrangements have been made with the School of Education to provide candidates for the Bachelor of Science degree in Arts and Science with the necessary professional courses to qualify them for the Teacher's Professional High School Certificate. The High School Teacher's recommendation is given by the College, and the Professional High School Certificate is awarded by the State Board of Education, to those who include the following courses along with those presented for the B. S. degree:

The candidate must present 27 hours of Professional Educational subjects, which shall include Psychology 102 or 103, and Education 111, 115, and 121, or their equivalents. The candidate's Biological Science group must include Bacteriology 1, and Health Education 108; and the Social Science group shall include 5 credits of applied Sociology or Ethics, and 5 credits in Economics or Political Science.

Graduates of Standard Normal Courses, or those who have had one or more years of successful teaching experience, may have some of these requirements waived. Consult the Dean in regard to this matter.

Candidates for the Bachelor's degree with the High School Teacher's recommendation will be allowed to use the 27 hours of professional education credits as desirable related work mentioned in the requirement for the major subject. (See page 62.)

**OUTLINE OF THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE AND THE TEACHER'S PROFESSIONAL HIGH SCHOOL CERTIFICATE**

The first two years of this course will be the same as for the B. S. degree previously outlined, except that the candidate should elect in the Social Science and the Biological Science groups the particular course mentioned in the preceding paragraph.

**Junior and Senior Years**

During the third and fourth years the student should complete his major and minor work as outlined for the B. S. Degree, and for his related work include the following:

**Junior Year**

Psychology 101, and 102 or 103 .................................................. 6 hours  
Education 111 and 121 ................................................................. 6 hours

**Senior Year**

Training (Educ. 115) .................................................................... 8 hours  
Psychology or Education ................................................................. 7 hours
PRE-MEDICAL CURRICULUM AND THE BACHELOR OF SCIENCE DEGREE

The Utah State Agricultural College is on the accredited list of the Association of American Universities, and also on the approved list of the Council on Medical Education. The College offers the following three-year preparatory course, which meets the requirements for entrance to practically all Class A medical schools in the United States.

Candidates desiring admission to the pre-medical course should offer the usual entrance subjects. Such candidates are strongly advised to present two or three units of some one foreign language, preferably French or German. This will materially reduce the amount of college work necessary in Language, and thereby increase the student's electives.

Candidates are reminded that the mere completion of a prescribed course of study does not guarantee admission to any Class A medical school. The better medical schools find it necessary to limit the number of students who are admitted to their classes, and they select only those applicants who show the most promise and who have the better preparation and scholarship.

PRE-MEDICAL COURSE BASED ON THE REQUIREMENTS OF THE UNIVERSITY OF UTAH SCHOOL OF MEDICINE

*FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Name of Course</th>
<th>Dept. No.</th>
<th>Quarter Credits</th>
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<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
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<tr>
<td>English Including Freshman Composition</td>
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<tr>
<td>Inorganic Chemistry Chemistry 3, 4, 5</td>
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<td>5</td>
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<tr>
<td>General Zoology Zoology 3, 4</td>
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<td>General Botany Botany 1</td>
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<tr>
<td>Social Science</td>
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<tr>
<td>Total</td>
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</table>

*Physical Education and Military Science are required of all students during the Freshman and Sophomore years.

SOPHOMORE YEAR

<table>
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<tr>
<th>Name of Course</th>
<th>Dept. No.</th>
<th>Quarter Credits</th>
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<tr>
<td></td>
<td>I</td>
<td>II</td>
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<tr>
<td>Organic Chemistry Chemistry 21, 22</td>
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<td>Quantitative Analysis Chemistry 102, 103</td>
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<tr>
<td>First Year French or French 1, 2, 3, or</td>
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<tr>
<td>First Year German German 1, 2, 3</td>
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<tr>
<td>Mathematics Math. 35</td>
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JUNIOR YEAR

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<tr>
<th>Course</th>
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<td>General Physics</td>
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<td>Physics 20, 21 22</td>
<td>5</td>
</tr>
<tr>
<td>2nd Year French or German</td>
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<tr>
<td>French or German</td>
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<tr>
<td>General Psychology</td>
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<td>Psychology 101, 105-106</td>
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<td>Zoology</td>
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<td>Zoology 117-118-119</td>
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<tr>
<td>*Elective including 2 hours in French or German</td>
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<tr>
<td>Total</td>
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</tbody>
</table>

*Should be taken to prepare for major work if student intends to remain and finish for his B. S. Degree.

BACHELOR OF SCIENCE DEGREE

Students who complete the foregoing three-year medical course, and register in a Class A medical school and successfully complete the first year of work prescribed in such school, will be awarded the Bachelor of Science degree in the School of Arts and Science at the Utah State Agricultural College, upon presenting satisfactory evidence that the work has been completed with a reasonably high standard of achievement. The foregoing schedule meets in full the requirements for admission to the medical school of the University of Utah. Students are urged to complete the first two years of their medical work at the State University School of Medicine.

FOUR YEAR COURSE

Students who expect to enter medical schools that require an academic degree for entrance, or who, for other reasons, desire the Bachelor of Science degree before entering upon their medical course, may complete the requirements for the degree of Bachelor of Science in the School of Arts and Science with a major in Chemistry or Zoology. Such students should consult with the professor in charge of their proposed major subject, and arrange for the additional work necessary to complete the requirements for the Bachelor of Science degree.
THE SCHOOL OF COMMERCE

W. L. WANLESS, Dean

The purpose of the School of Commerce is to give opportunity for liberal education with special emphasis upon the commercial and industrial phases of life. Persons who complete the commercial courses are prepared to assume leadership and responsibility in business and in various industries and professions. In order to meet the growing demands and to keep pace with recent tendencies in business education, students may major in accounting, business administration, merchandising, advertising and selling, secretarial work, economics, political science, sociology, agricultural economics and marketing.

For the professions of law and medicine the commercial courses afford excellent preparation. Graduates are prepared for positions as teachers in commercial schools. The demand for qualified teachers is greater than the supply, while many desirable positions as industrial managers are open to those who are qualified by training and experience. In the field of retail and wholesale merchandising are unlimited opportunities.

ADMISSION

See statement of entrance requirements of the College on page 59. Students who expect to become candidates for the Bachelor’s degree are reminded that they should complete the requirements of the Junior College before they will be allowed to enter the Senior College. Read carefully the statements regarding “Junior College” and “Senior College” found on pages 61, 62.

GENERAL REQUIREMENTS FOR GRADUATION

Candidates for the Bachelor of Science degree must meet in full all entrance requirements, and present 180 quarter hours of College work as outlined below (exclusive of the required courses in Physical Education).

THE FOUR BASIC GROUPS

The candidate must include work in each of the four basic groups as follows:

Language Group: 18 hours (English, Modern Languages, Public Speaking). Must include English 10, 11 unless excused by the English Department.

Social Science Group: 12 hours (History, Economics, Political Science, Sociology).

Biological Science Group: 12 hours (Botany, Zoology, Public Health, Bacteriology, Physiology).

Exact Science Group: 12 hours (Chemistry, Physics, Mathematics, Geology, Accounting 101, 102, 103).
MAJOR SUBJECT

Every student, at the time he enters the Senior College, must select a major subject in which at the time of graduation he must have completed at least 30 quarter hours of work. The student should consult with the professor in charge of his major work, and must secure the approval of the proposed combination of courses. (Read page ...)

In the School of Commerce, students may major in the following subjects: Accounting, Business Administration, Merchandising, Advertising and Selling, Secretarial work, Economics, Political Science, Sociology, Agricultural Economics and Marketing.

MINOR SUBJECTS

From eighteen to thirty hours in some field of work closely related to the major subject will be chosen by the candidate with the advice and consent of the major department and the Dean of the School. (See page 62.)

SENIOR COLLEGE WORK

Fifty-four (54) hours of Senior College work taken after the candidate has completed at least 90 hours of work must be presented by each candidate for the B. S. degree. See page 61 for a definition of Senior College Work.

RESIDENCE, SCHOLARSHIP, ETC.

See page 63 for requirements for graduation.

THE B. S. DEGREE

See table under Commerce, Courses of Instruction, for outline of course leading to the B. S. Degree.

JUNIOR AND SENIOR YEARS

During the third and fourth years the student should complete his major and minor subjects and any related work prescribed by the Dean or Major Department. See list of courses at the beginning of each department announcement.

THE B. S. DEGREE IN COMMERCE WITH HIGH SCHOOL TEACHER'S RECOMMENDATION

It is a decided advantage to candidates for the High School Teacher's Certificate to hold the standard Bachelor's degree in Commerce, if their major work is in this field. Arrangements have been made with the School of Education to provide the candidates for the
Bachelor of Science degree in Commerce with the necessary professional educational courses to qualify them for the teacher's Professional High School Certificate. The High School Teacher's recommendation is given by the College, and the Professional High School Certificate awarded by the State Board of Education, to those who include the following courses along with those presented for the B. S. degree:

The candidate must present twenty-seven hours of Professional Educational subjects which shall include Psychology 101 and either 102 or 103, and Education 111, 115, and 121, or their equivalents. The candidate's Biological Science group must include Bacteriology 1 and Health Education 108, and the Social Science group must include five credits of applied Sociology or Ethics and five credits in Economics or Political Science.

Graduates of standard Normal Courses, or those who have had one or more years of successful teaching experience, may have some of these requirements waived. Consult the Dean in regard to this matter.

Candidates for the Bachelor's Degree with the High School Teacher's recommendation will be allowed to use the twenty-seven hours of professional education credits as desirable related work.

THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE AND THE TEACHER'S PROFESSIONAL HIGH SCHOOL CERTIFICATE

The first two years of this course will be the same as for the B. S. degree, except that the candidate should elect in the Social Science and Biological Science Groups the particular courses mentioned in the preceding paragraph. See table under Commerce, Courses of Instruction, for outline of course.

JUNIOR AND SENIOR YEARS

During the third and fourth years the student should complete his major and minor work as outlined for the B. S. Degree and for his related work include the following:

Junior Year

Psychology 101, and 102 or 103......................................................... 6 hours
Education 111 and 121............................................................... 6 hours

Senior Year

Training (Educ. 115)................................................................. 8 hours
Psychology or Education......................................................... 7 hours
THE SCHOOL OF EDUCATION

A. H. Saxer, Dean

The School of Education at the Utah State Agricultural College was authorized by enactment of the State Legislature in 1927, and has for its specific function the training of teachers for the various certificates and diplomas authorized by the State Board of Education.

TEACHER TRAINING

The entire public school system of the city of Logan from the lowest grades up through the Senior High School has been placed at the disposal of the College for teacher training purposes. This assures prospective teachers that they will receive their training in one of the best public school systems in the State.

WHITTIER TRAINING SCHOOL

The Whittier School, one of the regular school buildings of the Logan City School System, located a short distance from the College, has been placed entirely at the disposal of the School of Education for teacher training purposes. This school comprises the first six grades and the kindergarten. Each grade has been placed in charge of an experienced and skillful teacher, whose duties include supervision of practice teaching. In addition, an experienced supervisor in Elementary Education has been placed in charge of this work. Two-year Normal students will do their training in this building. The courses in Principles of Teaching Elementary subjects, and Elementary School Curriculum are taken by second-year students in connection with their teacher training work.

THE TWO-YEAR NORMAL CERTIFICATE

The two-year Normal Certificate will be awarded to all students who satisfactorily complete the course of study for this certificate outlined on page ..., provided that the last forty-five hours required for the certificate have been earned at this institution and that thirty of the last forty-five have been earned in residence. Graduates of the two-year normal course are awarded the grammar grade certificate, by the State Board of Education.

SENIOR COLLEGE

Experience has shown that a large percentage of two-year normal graduates finally return to College to complete the work for the standard four-year College degree. Such students will find it distinctly to their advantage to have met the requirements for Senior College
standing. This can be done by a proper choice of the electives which are permitted in the normal course. (See requirements for Senior College on page 61.) This will assure the student that he is prepared to complete the remaining two years of his college course, without handicap or delay, at any standard college or university, and in the particular field that he has chosen to do his major work.

**THE FOUR YEAR COLLEGE COURSE**

The four-year course in the School of Education leads to the degree Bachelor of Science in Education, and the Certificate in School Administration, the Certificate in Supervision, or the High School Teacher's Certificate. Teachers with experience who do not hold the Bachelor's degree and who wish to advance in their chosen field or prepare for administrative positions will find it to their advantage to qualify for the Bachelor's degree in the School of Education. Candidates preparing to teach in the field of Music, Art, Public Health, or Physical Education will register in the School of Education and choose their teaching major along these lines.

**THE B. S. DEGREE WITH TEACHER'S RECOMMENDATION**

It is a decided advantage to candidates for the High School certificate to hold the Standard Bachelor's degree in the particular School, (Agriculture, Home Economics, Commerce, Engineering or Arts and Sciences) in which their major work is chosen. Arrangements have been made with all of the different Schools within the Utah State Agricultural College to provide the candidates for their respective degrees with the necessary professional educational courses to qualify them to teach in these fields. Outlines of courses leading to the B. S. degree with the High School teacher's recommendation will be found under the respective schools.

**ADMISSION**

See statement of entrance requirements of the College on page 59

Candidates for the two-year normal certificates are reminded that they must present fifteen units of approved high school work, but they need not present all of the ten specified units unless they desire to qualify for Senior College standing at the same time. (See pages 61, 62.)

**GENERAL REQUIREMENTS FOR GRADUATION**

Candidates for the Bachelor of Science degree must meet in full all entrance requirements and present 180 quarter hours of college work as outlined below (exclusive of the required courses in Physical Education).
THE FOUR BASIC GROUPS

The candidate must include work in each of the four basic groups as follows:

**Language Group:** 18 hours (English, Modern Languages, Public Speaking). Must include English 10, 11 unless excused by the English Department.

**Social Science Group:** 12 hours (History, Economics, Political Science, Sociology). Must include five hours of applied Sociology or Ethics, and five hours of Political Science or Economics.

**Biological Science Group:** 12 hours (Botany, Zoology, Public Health, Bacteriology, Physiology). Must include Bacteriology 1 and Health Education 108.

**Exact Science Group:** 12 hours (Chemistry, Physics, Mathematics, Geology, Accounting 101, 102, 103).

PROFESSIONAL EDUCATION SUBJECTS

The candidate must present 27 hours of Professional Educational subjects which shall include Psychology (102 or 103) and Education (111, 115 and 121), or their equivalents. Graduates of Standard Normal Courses or those who have had successful teaching experience may have some of these requirements waived. Consult the Dean in regard to this matter.

TEACHING MAJORS

A teaching major of at least 30 hours shall be completed in one subject that is taught in High School, (Physical Education, Art, Music, etc.).

TEACHING MINOR

A second teaching major (or teaching minor) of at least 18 hours shall be chosen in some group of subjects closely related to the teaching major.

SENIOR COLLEGE WORK

Fifty-four (54) hours of Senior College work taken after the candidate has completed at least 90 hours of work must be presented by each candidate for the B. S. degree. (See page 61 for a definition of Senior College Work.)

RESIDENCE, SCHOLARSHIP, ETC.

See page 63 for detailed requirements for graduation.

CERTIFICATES IN SCHOOL ADMINISTRATION AND IN SUPERVISION

The four-year course as outlined below leads to the degree of Bachelor of Science in Education, and the Professional High School certificate. Teachers with experience who desire to qualify for the Certificate in School Administration or Supervision must include History of Education, Educational Supervision, Educational Administration, Tests and Measurements, and special work in the Educational Seminar, depending upon the certificate desired.
# OUTLINE OF COURSE FOR THE TWO YEAR NORMAL CERTIFICATE

<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys. Ed., 13, 14, 15, or Phys. Ed., 1, 2, 3</td>
<td>Physical Education</td>
</tr>
<tr>
<td>Psychology</td>
<td>English</td>
</tr>
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<td></td>
<td>Education 4, 5, 6, 41</td>
</tr>
<tr>
<td>Health Education</td>
<td>Training, Ed. 42</td>
</tr>
<tr>
<td>English 10</td>
<td>*Exact or Biological Science</td>
</tr>
<tr>
<td>Soc. Science Group</td>
<td>Electives 10 to 16 hours</td>
</tr>
<tr>
<td>*Exact or Biological Science Group</td>
<td>Total hours must be at least 95.</td>
</tr>
</tbody>
</table>

†Electives 13 to 19 hours.  
*At least five hours of exact science must be chosen during the two years.  

# OUTLINE OF THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE AND THE TEACHER'S PROFESSIONAL HIGH SCHOOL CERTIFICATE

<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Group including</td>
<td>Language Group including</td>
</tr>
<tr>
<td>English 10</td>
<td>English</td>
</tr>
<tr>
<td>Social Science Group</td>
<td>Social Science</td>
</tr>
<tr>
<td>*Biol. or Exact Science</td>
<td>*Biol. or Exact Science</td>
</tr>
<tr>
<td>Electives</td>
<td>Electives</td>
</tr>
</tbody>
</table>

Note:—The Social Science Group should include at least five hours in Economics or Political Science, and five hours in applied Sociology or Ethics.  
*Biological and Exact Science should be so chosen that the candidate has at least 12 hours in each group.  
The Biological Science Group should include Bacteriology 1 and Health Education 108.  
The Electives should include at least nine hours in the proposed teaching major and six hours in the minor.  (See requirements for major and minor on page ...).

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Fourth Year</th>
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<tbody>
<tr>
<td>Educational Psychology 101,</td>
<td>*Training Ed. (115)</td>
</tr>
<tr>
<td>and 102 or 103</td>
<td>*Education or Psychology</td>
</tr>
<tr>
<td>*Education 111 and 121</td>
<td>Teaching Major</td>
</tr>
<tr>
<td>Teaching Major</td>
<td>Teaching Minor</td>
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<td>Teaching Minor</td>
<td>Electives</td>
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<tr>
<td>Electives</td>
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</tr>
</tbody>
</table>

*Graduates of Standard Normal Courses and those who have taught successfully for one or more years may have some of these requirements waived.

Smith-Hughes Courses for teachers in Vocational High Schools. See page 50, for Home Economics. See page 29 for Agriculture.
SCHOOL OF ENGINEERING

RAY B. WEST, Dean

It is the aim of this school to give the students a broad foundation in the fundamental principles of Engineering, together with sufficient knowledge of professional practice to enable them to apply these principles.

The School consists of three major divisions: Civil Engineering, Agricultural Engineering, and Mechanic Arts, each of which offers courses leading to a degree of Bachelor of Science in its special field. Civil Engineering students may choose their major in Irrigation and Drainage, Highways, Structural Design, or Sanitation; by arranging certain optional courses with the Dean. Agricultural Engineering students may specialize in Irrigation and Drainage, Farm Machinery and Farm Power, or Farm Structures, by choosing the electives in these fields.

ADMISSION

See statement of entrance requirements of the College on page 59. Prospective engineering students are advised that they will be somewhat handicapped if they do not present for entrance one and one-half units of algebra and one unit of geometry.

REQUIREMENTS FOR GRADUATION IN ENGINEERING

Candidates for the Bachelor of Science Degree in Civil Engineering or in Agricultural Engineering must complete any one of the prescribed courses listed on the following pages, together with two years of Military Science and two years of Physical Education unless officially excused from either or both. Each candidate for a degree in Engineering must prepare a satisfactory thesis on a problem to be assigned by the department in which he elects his major. See C. E. 198-199.

The degree of Master of Science will be awarded upon completion of any one of the optional courses listed below, and additional work as outlined on page 67 under the general requirements for the Master's Degree.
PREScribed Courses in Civil Engineering

The Freshman and Sophomore Years are common to all C. E. Courses, and the Freshman C. E. Course constitutes also the Freshman A. E. Course.

**FRESHMAN**

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Catalogue</th>
<th>F</th>
<th>W</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shop Practice</td>
<td>C. E. 3-4</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Freshmen Composition</td>
<td>Eng. 10</td>
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<tr>
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<td>Math.</td>
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<tr>
<td>Trigonometry</td>
<td>Math.</td>
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<tr>
<td>Analytic Geometry</td>
<td>Math.</td>
<td>5</td>
<td>5</td>
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</tr>
<tr>
<td>General Chemistry</td>
<td>Chem. 1</td>
<td>5</td>
<td>5</td>
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<tr>
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<td>C. E. 61</td>
<td>3</td>
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<td>Descriptive Geometry</td>
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<tr>
<td>Materials of Engineering</td>
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<tr>
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**SOPHOMORE**

<table>
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</thead>
<tbody>
<tr>
<td>Calculus</td>
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<td>5</td>
<td>5</td>
<td>15</td>
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<tr>
<td>Physics</td>
<td>Phys. 20-1-2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>15</td>
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<tr>
<td>Plane Surveying</td>
<td>C. E. 81-82</td>
<td>4</td>
<td>4</td>
<td>8</td>
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</tr>
<tr>
<td>Engineering Geology</td>
<td>Geol. 10</td>
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<tr>
<td>Electives</td>
<td>A. E.</td>
<td>3</td>
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<tr>
<td>Soph. Eng. Composition</td>
<td>Eng. 11</td>
<td>4</td>
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<tr>
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<td>C. E.</td>
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<tr>
<td><strong>Totals</strong></td>
<td></td>
<td>18</td>
<td>17</td>
<td>17</td>
<td>52</td>
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</tbody>
</table>

*Prescribed courses leading to the degree Bachelor of Science in Agricultural Engineering, for the Sophomore, Junior, and Senior years, are announced on page......

**After completing the Sophomore year the student who is working towards the degree Bachelor of Science in Civil Engineering should elect a major in one of the four branches, Irrigation and Drainage, Highways, Structural, or Sanitary Engineering. Prescribed Junior and Senior year courses in each of these branches of Civil Engineering are announced on the following pages.
### JUNIORS

<table>
<thead>
<tr>
<th>Subjects</th>
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<th>T.</th>
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</thead>
<tbody>
<tr>
<td>Highway Location &amp; Des.</td>
<td>C. E. 120</td>
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<tr>
<td>Hydraulics</td>
<td>C. E. 141</td>
<td>5</td>
<td>5</td>
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</tr>
<tr>
<td>Water Supply &amp; Hydrology</td>
<td>C. E. 192</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Strength of Materials</td>
<td>C. E. 103</td>
<td>5</td>
<td>5</td>
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</tr>
<tr>
<td>Applied Mechanics</td>
<td>C. E. 101</td>
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<td>3</td>
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<tr>
<td>Contracts &amp; Specifications</td>
<td>C. E. 190</td>
<td>5</td>
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<tr>
<td>Reinforced Concrete</td>
<td>C. E. 106</td>
<td>3</td>
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<tr>
<td>Heat &amp; Power</td>
<td>C. E. 196</td>
<td>3</td>
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<tr>
<td>Graphic Statics &amp; Br. A.</td>
<td>C. E. 110</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Irrig. Pract. &amp; Soils</td>
<td>C. E. 120</td>
<td>3</td>
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<tr>
<td>Drainage Design</td>
<td>C. E. 145*</td>
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<tr>
<td>Railroads</td>
<td>C. E. 191*</td>
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</tbody>
</table>

Totals: 18 | 18 | 18 | 54

### SENIORS

<table>
<thead>
<tr>
<th>Subjects</th>
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<th>T.</th>
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<tbody>
<tr>
<td>Highway Transportation</td>
<td>C. E. 121</td>
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<tr>
<td>Highway Administration</td>
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<tr>
<td>Design of Irrig. Systems</td>
<td>C. E. 146-147</td>
<td>5</td>
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<td>5</td>
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<tr>
<td>Hydro-Electric Design</td>
<td>C. E. 148</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Irrigation Institutions</td>
<td>C. E. 149</td>
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<tr>
<td>Electrical Machinery</td>
<td>C. E. 197</td>
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<td>Advanced Surveying</td>
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<td>3</td>
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<tr>
<td>Sewerage &amp; Sewage Disp.</td>
<td>C. E. 194</td>
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<td>Bridge Design</td>
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<tr>
<td>Foundations</td>
<td>C. E. 107</td>
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<tr>
<td>Operation &amp; Maintenance</td>
<td>C. E. 144</td>
<td>3</td>
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<tr>
<td>Masonry Construction</td>
<td>C. E. 108</td>
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<tr>
<td>Engineering Economics</td>
<td>C. E. 192</td>
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<tr>
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<td>C. E. 241-2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Totals: 18 | 18 | 18 | 54

Electives should be chosen from the following:

- Accounting
- Agronomy
- Business
- Economics
- Geology
- Mathematics
- Military Science
- All branches of Engineering
# Prescribed Courses in Agricultural Engineering

See page 45 for Freshman year common to all Engineering Courses.

## Sophomore Year

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Catalogue</th>
<th>F</th>
<th>W</th>
<th>S</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Calculus</td>
<td>Math.47-118-119</td>
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</tr>
<tr>
<td>Heat, Light, Sound</td>
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<td>Plane Surveying</td>
<td>A. E. 1-2</td>
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<td>General Economics</td>
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<tr>
<td>Sophomore Composition</td>
<td>Eng. 11</td>
<td>4</td>
<td>4</td>
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<tr>
<td>General Crops</td>
<td>Agron. 101</td>
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<tr>
<td><strong>Totals</strong></td>
<td></td>
<td>18</td>
<td>18</td>
<td>18</td>
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</table>

## Junior Year

<table>
<thead>
<tr>
<th>Subjects</th>
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</thead>
<tbody>
<tr>
<td>Hydraulics</td>
<td>C. E. 141-142</td>
<td>3</td>
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<tr>
<td>App. Mech. &amp; Str. of Mat’ls</td>
<td>C. E. 101-102-103</td>
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<td>Agricultural Economics</td>
<td>Ag. Ec. 101-102-106</td>
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<td>Contracts and Specifications</td>
<td>C. E. 190</td>
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<td>Reinforced Concrete</td>
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<tr>
<td>Farm Machinery</td>
<td>A. E. 15</td>
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<td>Sewage Disposal</td>
<td>C. E. 193</td>
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<td>3</td>
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<td></td>
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## Senior Year

<table>
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<tr>
<th>Subjects</th>
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<tbody>
<tr>
<td>Highway Transportation</td>
<td>C. E. 125</td>
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<tr>
<td>Irrig. Design</td>
<td>C. E. 146-147</td>
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<tr>
<td>Op. and Maint Irr. Systems</td>
<td>C. E. 144</td>
<td>3</td>
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<tr>
<td>Adv. Surveying</td>
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<td>Soils</td>
<td>Agron. 106</td>
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<tr>
<td>Farm Structures</td>
<td>A. E. 6</td>
<td>3</td>
<td></td>
<td>3</td>
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<tr>
<td>Farm Motors</td>
<td>A. E. 13</td>
<td>3</td>
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<tr>
<td>Public Speaking</td>
<td>Speech</td>
<td>3</td>
<td></td>
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<td></td>
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<td>Electives</td>
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<td>6</td>
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<tr>
<td><strong>Totals</strong></td>
<td></td>
<td>16</td>
<td>17</td>
<td>17</td>
<td>50</td>
</tr>
</tbody>
</table>

**Electives—**

1. Planning Farm Structures and Homes.
3. Irrigation Institutions.
5. Shop Courses and Agricultural Courses on Approval.
MECHANIC ARTS

This division offers a four-year course leading to the degree of Bachelor of Science in Mechanic Arts, with the object of training efficient auto mechanics and garage foremen, auto electricians, machine shop foremen and High School shop teachers. It lays an Engineering and Mechanical foundation for building and contracting. Two years' trade courses in Machine Work, Forging, Woodwork, Auto Mechanics, and Auto Ignition are provided for those who wish to become proficient tradesmen in these lines.

The shops are modern and well equipped, and ample floor space is provided.

REQUIREMENTS FOR GRADUATION

Candidates for the degree Bachelor of Science in Mechanic Arts must meet in full all college entrance requirements and present 180 quarter hours of college work as outlined below, exclusive of the required courses in Physical Education.

THE FOUR BASIC GROUPS

The candidate must present the following number of quarter hours of work in each of the basic groups: Language Group, 12 hours, (must include English, 10, 11); Social Science Group, 9 hours; Biological Science Group, 9 hours; Exact Science Group, 18 hours; Special Group, 18 hours; Special Technical Group, 30 hours.

MAJOR AND MINOR

A major of 30 hours and a minor of 18 hours are required. For further explanation of these see page 62. The Mechanic Arts courses from which the Major, Minor, and Special Technical groups must be selected are announced under Courses of Instruction.
The School of Home Economics is organized for study along the lines essential to successful home life in modern society. The activities of the present-day household include the promotion of the health and comfort of its members through proper food, clothing and shelter, the fostering of satisfactory family relationships, and the functioning of the family group as an important part of the community.

In keeping with the newer trend of Home Economics, which stresses the importance of a knowledge of child study, courses are now being offered in the physical care of the mother and child, nutrition of children, clothing of children, child psychology, the relation of the child to the family group and child development.

Women who graduate from the School of Home Economics are fitted for various lines of work, including homemaking, teaching, and extension service. The training given furnishes also a basis for specialization leading to positions in hospitals, institutions of various kinds and in the commercial field.

ADMISSION

See statement of entrance requirements of the College on page 59.

GENERAL REQUIREMENTS FOR GRADUATION

Candidates for the Bachelor of Science Degree must meet in full all entrance requirements and present 180 quarter hours of college work as outlined below (exclusive of the required courses in Physical Education).

THE FOUR BASIC GROUPS

Candidates must present twelve hours from each of the following three basic groups of work, and eighteen hours from the fourth basic group:

Social Science Group: (History, Economics, Political Science, Sociology.)

Biological Science Group: (Botany, Zoology, Bacteriology, Public Health, Physiology).

Exact Science Group: (Chemistry, Physics, Mathematics, Accounting 101, 102, 103).

Language Group: (English, Modern Languages, or Public Speaking.) Must include English 10, 11, unless excused by the English Department.

MAJOR SUBJECT

Those students wishing to specialize or to prepare themselves for graduate work may major in Foods, Textiles, or Household Administration. The major may be chosen by the candidate but should receive the approval of the professor in charge of the Department concerned prior to entering Senior College. (See page 62.)
MINOR SUBJECTS
From 18 to 30 hours of work in some field closely related to the major subject will be chosen as a minor by the candidate with the advice and consent of the Dean of the School and the Head of the Department. (See page 62.)

SENIOR COLLEGE WORK
Fifty-four hours of Senior College work taken after the candidate has completed at least ninety-six hours of work must be presented by each candidate for the B. S. Degree. (See page 61 for a definition of Senior College work.)

THE B. S. DEGREE IN HOME ECONOMICS WITH HIGH SCHOOL TEACHER'S RECOMMENDATION
Candidates for the High School Teacher's Certificate in Home Economics are advised to take the Smith-Hughes Course as outlined below. This course will prepare them equally well to teach in all three fields of Home Economics: Foods, Clothing, and Household Administration. The Professional educational subjects and other requirements for certification in Utah are included in this prescribed course as well as the requirements for a B. S. Degree in Home Economics. The following are the required courses for State certification.

27 hours of Professional Educational subjects which shall include Psychology 101 and either 102, or 103, and Education 111, 121 and 122 or their equivalents. The candidate's Biological Science Group must include Bacteriology 1, and Health Education 108. Five hours of Applied Sociology or Ethics must be included in the Social Science Group in addition to 5 hours of Economics or Political Science. Graduates of Standard Normal Courses or those who have had one or more years of successful teaching experience may have some of these requirements waived. Consult the Dean in regard to this matter.

OUTLINE OF THE FOUR YEAR COURSE LEADING TO THE B. S. DEGREE AND SMITH-HUGHES TEACHER'S CERTIFICATE

<table>
<thead>
<tr>
<th>FRESHMAN YEAR*</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Foods 20, 21</td>
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<td>5</td>
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<tr>
<td>Clothing 10, 11</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Art 1, 2, 3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>H. A. 10</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English 10, Lit. 15</td>
<td>5</td>
<td>3</td>
<td></td>
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<tr>
<td>Physiology 4 and Bacteriology 1 and 2</td>
<td>5</td>
<td>5</td>
<td>3</td>
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<tr>
<td>Sociology 4</td>
<td></td>
<td></td>
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<tr>
<td>Physical Education</td>
<td>Req.</td>
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</tr>
<tr>
<td>Electives</td>
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*Physical Education is required of all girls during the first two years.
### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Food Economics 30</td>
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<tr>
<td>Clothing 50 (or 20, 21)</td>
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<tr>
<td>Economics 51</td>
<td>5</td>
<td></td>
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<tr>
<td>H. A. 25</td>
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<tr>
<td>Chemistry 1, 26</td>
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<td>5</td>
<td>5</td>
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<tr>
<td>English 13</td>
<td>2</td>
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<td>Sophomore Composition</td>
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<tr>
<td>Geology or Physics</td>
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<td>U. S. History 14</td>
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<tr>
<td>Physical Education</td>
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### Junior Year

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<th>Course</th>
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<tr>
<td>Foods 106</td>
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<tr>
<td>Clothing 115, 125</td>
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<tr>
<td>H. A. 125, 149</td>
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<td>3</td>
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<tr>
<td>Art 123</td>
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<tr>
<td>Psychology 101, 103</td>
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<tr>
<td>English</td>
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<td></td>
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<tr>
<td>Education 111, 119</td>
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<td>4</td>
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<tr>
<td>Public Health 108</td>
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<td>3</td>
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</tr>
<tr>
<td>Sociology 171</td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
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<td></td>
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<tr>
<td><strong>Total</strong></td>
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### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
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<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Foods 140, 141</td>
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<tr>
<td>H. A. 130</td>
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<tr>
<td>H. A. 150</td>
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<tr>
<td>Education 120, 121</td>
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<td>Education 122</td>
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<td>Clothing 160, 161, 162</td>
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A Summary of Requirements for Graduation, with a Smith-Hughes Teacher’s Certificate:

Foods, 20, 21, 30, 106, 140, 141 (25 hours).
Clothing 10, 11, 50 or 20, 21, 115, 125, 160, 161, 162 (21 or 23 hours)
H. A. 10, 24, 125, 130, 149, 150, Art 123, Soc. 171 (25 hours).
Bacteriology 3.
Public Health 3.
Economics 5.
Sociology 5.
Senior College 54 hours.
Education 27.
English 18.
Exact Science 12.
Social Science 12.
Biological Science 12.
THE SUMMER SESSION

For over twenty years the College has conducted Summer Sessions as an important part of its curriculum. Since 1924 the curriculum has been materially enlarged and enriched and a very efficient lecture course established. The purpose of this large educational undertaking is to bring to Logan, with its delightful summer climate and its many recreational features, a number of the leading educators of the nation, and build, in the intermountain west, a summer school of wide influence.

During the Summer session nearly all of the departments of the College are represented, the courses of instruction being arranged to meet the particular need of Summer students.

The courses offered in Education, Psychology, and related departments make it possible for the student to meet all of the requirements for Utah certification in School Administration and Supervision for High Schools, Junior High Schools, and Grammar Schools; also the subjects offered will meet most of the requirements for certification in surrounding states.

The departments of Botany, Geology, and Zoology are especially emphasized because of the location of the School. Cache Valley, Logan Canyon, and nearby Bear Lake afford unparalleled opportunities for the study of plant and animal life and geological formations, while Bear River Bay near Brigham City, only thirty-five miles from the College campus, affords possibly as fine an opportunity as can be found anywhere in America for the study of water fowl and fish life.

Students desiring to make up conditions or prepare for advanced work are given all the assistance possible. The entire equipment of the Institution is available, and every care is taken to preserve the standard and the spirit of the College.

GRADUATE CREDIT

Summer quarter students are allowed six years in which to satisfy requirements for the Master's degree. This makes it possible to secure this degree without giving up present teaching employment. Those who expect to register for work leading to this degree should submit their credits to the Dean of the Faculty several weeks in advance of registration and indicate the subject in which they wish to major. This will make it possible to have the course of study approved at the time of registration.
The establishment of Land-grant colleges, under provisions of the First Morrill Act (1862), soon led to the development of a national sentiment favoring the creation of agricultural experiment stations in the various states and territories of the union, to supplement the educational functions of the colleges.

In keeping with this sentiment Congress, in 1887, passed the Hatch Act providing for the establishment in each state and territory, under the direction of the Land-grant college, an experiment station “to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science.” The Hatch Act appropriated $15,000 per annum to each state.

Supplementing the Hatch Act, another act known as the Adams Act, was passed by the National Congress in 1906. Under the provisions of this act, an additional sum of $15,000 per annum was appropriated for the use of each state experiment station “to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States, having due regard to the varying conditions and needs of the respective states and territories.”

For the still more complete endowment of the agricultural experiment stations Congress, in 1925, passed the Purnell Act, which gave to each station the sum of $20,000 per annum with an addition of $10,000 each year thereafter until, for the fiscal year ending June 30, 1929, the total sum of $60,000 was available, and shall continue to be available each year indefinitely. “The funds appropriated pursuant to this act shall be applied only to paying the necessary expenses of conducting investigations or making experiments bearing directly on the production, manufacture, preparation, use, distribution, and marketing of agricultural products and including such scientific researches as have for their purpose the establishment and maintenance of a permanent and efficient agricultural industry, and such economic and sociological investigations as have for their purpose the development and improvement of the rural home and rural life, and for printing and disseminating the results of said researches.”

In addition to the Federal funds appropriated for agricultural research under the provisions of the Hatch, Adams, and Purnell Acts, the state agricultural experiment stations receive money appropriated by their respective state legislatures. The amount of money coming from the state treasury is governed in each case by the relative importance of agriculture within the state and the urgency of the agricultural problems demanding solution. Hence, while the Federal funds are uniform in size in all states, the total funds differ widely, owing to the variation in state appropriations.
In 1889, two years after the Hatch Act was passed, the State of Utah, taking advantage of the provisions of that act, established the Utah Agricultural Experiment Station as a major division of the Utah State Agricultural College. Since its establishment, the Station has functioned as an active investigational unit, steadily extending its investigations into an ever-broadening field of research.

The research work is conducted on a project basis, each project, after approval, being assigned to one or more of the researchers who make up the Station Staff. While most of the projects now in progress are wholly under the supervision of state workers, a few projects are conducted cooperatively with various Bureaus of the U. S. Department of Agriculture, which assigns additional workers to the respective fields of investigation.

The present scope of Station research work is indicated by the titles of some of the projects listed under different departments, as follows:

**Agronomy:** Dry-farming, Irrigation Practice, Soil Moisture, Soil Fertility, Plant Breeding, Crop Rotations, Weed Control, Miscellaneous Field Studies, and Fertilizer Experiments.

**Animal Husbandry:** Hog Rations, Beef Cattle Production, Wool and Sheep Management, and Production Costs in Dairying.

**Bacteriology and Chemistry:** Factors Influencing Bacterial Activities of the Soil, Composition of the Irrigation Water of the Intermountain Region, Changes Occurring in Food During Storage, and Permanent Fertility Studies.

**Entomology:** The Chalcis-Fly in Alfalfa-Seed, the Sugar-Beet Leafhopper, and Miscellaneous Insects, including the Fruit-Tree Leaf Roller, Pear Leaf Blister Mite, Sugar-Beet Maggot, and Squash Bugs.

**Geology:** Underground Water Development.


**Home Economics:** Food Habits of Elementary Rural School Children in Relation to Their Physical Well-being.

**Horticulture:** A Horticultural Survey, Ornamental Trees and Shrubs, Fruit Varieties, Breeding Horticultural Plants, Orchard Management, and Truck Crop Production, Cherry Pollination Studies, and Orchard Rootstocks Investigations.

**Human Nutrition:** The Physical Curd Character of Milk and its Probable Relation to Infant Nutrition.

**Irrigation and Drainage:** Pumping for Irrigation, Relative Elevation of the Water-Table and the Plane of Saturation in Fine-Textured Soils, Snow Surveys, Flood and Gravel Control, and Consolidation of Irrigation Companies.
Physics: Fundamental Soil Moisture Constants.

Plant Pathology: Potato Diseases, Canning Crop Diseases, Plant Disease Survey, Chlorosis, and the Psyllid Yellows of the Potato.


Range Management: Range Survey and Range Reseeding.

Soils: Action of Alkali and Soil Moisture.

Veterinary Science: Effects of Sugar-Beets and Their By-Products when used for Feeding Livestock, and Miscellaneous Veterinary Science Investigations, including Diseases of Dairy Cattle, Sheep, and Poultry, and the Effects of Poisonous Plants on the Range.

Much of the research work conducted in furtherance of the foregoing projects, and others, is carried on in the various laboratories and greenhouses located on the college campus, but many phases of the work must of necessity be conducted on the farms and open ranges of Utah. A number of studies are made each year in cooperation with stockmen, farmers, and farm women and many more are made on the substations located in various parts of the state.

The educational importance of the Experiment Station is emphasized by the fact that most members of the Station Staff are also members of the regular college faculty, which makes it possible for students to receive first-hand information regarding the methods employed in research, and to familiarize themselves with the results recorded each year from the researches in progress. Under proper arrangements, also students are given access to the Station Library; and Staff members are always willing to direct students who are interested in any of the several branches of science.

For students especially prepared to help in research, and who at the same time wish to continue their studies in the college, the Experiment Station offers each year a limited number of research graduate assistantships. These graduate assistantships allow the students to whom they are granted to earn $500 during the ten months of the school year, in addition to thirty hours of graduate credit.
THE EXTENSION SERVICE

WILLIAM PETERSON, Director

The Division of Extension Service is the joint representative of the United States Department of Agriculture and the Utah State Agricultural College. It is charged under Federal legislation (Smith Lever Act, May 8, 1914) and under State legislation (Sections 5290 to 5296, 1917) with the task of disseminating information that shall further the interests of agriculture and rural living.

The Extension Service thus becomes an official carrier of experimental and research information from the federal department and from the state college to the rural people. It assists also in translating scientific information into good farm or home practices by conducting tests or demonstrations into methods of application under farm or home conditions. Much effort is given to stimulating individuals and organized groups to try out and carry on practices that have been tested and are known to be good.

The Extension Service organization consists of State and of county staff members. The state includes a director, an assistant director, supervisors, and subject-matter specialists. The county staff consists of one or more county agents in each county that fulfills requirements necessary to secure the services of an agent.

The Extension Service works preferably with existing rural organizations as a means of reaching the largest possible number of people. Individuals may receive attention, however, upon personal requests. Assistance is given to men, women, boys and girls in problems pertaining to Agriculture and to Home Economics including Project Leadership and Organization Methods. Problems that are of common interest to groups are given in project form, and followed up progressively until satisfactory solutions are found and approved practices established. The State Specialists work with the County Agricultural Agents and the County Home Demonstration Agents in assembling information and determining methods of solution. Voluntary Project Leaders are trained by Specialists and County Agents to assist in organizing and leading project groups. Usually the selection of Project Leaders is made in cooperation with a sponsoring organization. State and County special short-course training is provided annually for these leaders. The State training courses are held at the College and are more intensive than those of the county.
CORRESPONDENCE-STUDY

The Utah State Agricultural College was one of the first educational institutions of the inter-mountain region to establish a Correspondence-study department. Correspondence-study furnishes an excellent opportunity for systematic instruction to the student of high school or of college grade; also the teacher, the professional or business man, the club woman, the project leader in extension work—to all who cannot leave home.

Students must be nineteen years of age, or submit fifteen units of high school work, or be graduates of a high school for admission to correspondence-study courses of college grade.

One-fifth of the credits necessary for a degree may be earned through this department.

Courses offered:


2. Practical studies designed to advance men and women in a given occupation.

3. Preparatory, or High School Studies for those who have been unable to complete their high school courses and who wish to satisfy the entrance requirements of the College; also for those who wish to fit themselves for careers in which the equivalent of a high school education is necessary.

In isolated communities there are many who cannot obtain a good high school education because of the expense involved in leaving home. There are also those even in favored communities who, on account of the necessity of bread winning, are unable to leave their employment for nine or ten months of the year. Both of these classes may now receive a high school education.

4. Reading Courses for the housewife; short, practical, non-credit courses in sanitation, home management, home decoration, home care of the sick, etc.

5. Reading Sources for the farmer; short, practical, non-credit courses in agronomy, animal husbandry, and horticulture.

6. Reading Courses for the business man; short, practical non-credit courses in analysis of retail merchandising, retail store accounting, bookkeeping for the cooperative grain elevators and creameries.

A special catalogue of Correspondence-study courses will be mailed on request.
ADMISSION

Entrance to the Freshman class is based upon graduation from an accredited high school, or upon the presentation of fifteen approved high school units of work, or upon examination, in case of students of special training not obtained in high school. Prospective students are strongly urged to send a record of their credits to the Registrar at least two weeks before the opening of school. Students who expect to become candidates for the Bachelor's degree from any of the Schools of the College should include (among those units presented for entrance), ten units in the following five groups: English, Mathematics, Social Science, Natural Science, and Modern Languages, of which at least seven must be as follows:

- English ........................................ three units
- Algebra ....................................... one unit
- Geometry ..................................... one unit
- Social Science ................................ one unit
- Natural Science ............................... one unit
  (Requiring laboratory work)

Students may not receive more than Sophomore standing until the foregoing requirements have been met.

When a deficiency exists; that is, when a student has fifteen units of high school work but lacks one or more of the units specified above, the student will be required to complete nine quarter hours of college work for each unit in which he is deficient, in addition to the regular group requirements in that field.

A student who has less than fifteen units of high school work cannot enter unless he is beyond high school age, in which case he must register as a vocational student (see below).

Physical Education and Military Drill will not be accepted in the fifteen approved units.

VOCATIONAL STUDENTS

Persons 19 years of age, or over, who have less than 15 units of high school work and who have not been in attendance at any high school within one year preceding the time of application for admission to the Utah State Agricultural College, may, at the discretion of the Entrance Committee, be admitted as vocational students. Such persons are not candidates for a degree, and have no collegiate rating. They may register for any courses which their previous training or experience will enable them to carry successfully, but only after consultation with the instructors concerned, and their written approval.

If the applicant has been in attendance at a high school within one year preceding the time of application for admission to the Utah State Agricultural College, his application will not be considered unless it is
accompanied by a statement from the superintendent of the high school attended, to the effect that the applicant is a person worthy of admission to the College, and that in his opinion the applicant could be better served at the Utah State Agricultural College than at the high school concerned.

Such persons may receive college standing and become candidates for a degree:

a. By using the credits obtained while vocational students to satisfy college entrance requirements. In such cases 12 quarter hours will be taken for each deficient high school unit.

b. By passing written entrance examinations. These examinations will be offered the third day of each quarter. The questions will be prepared, and papers graded, by the departments concerned. The examinations will be conducted by the Entrance Committee.

No credits obtained prior to the quarter in which college standing was established can be used toward a degree.

Advanced Standing: The College does not grant credit for excess high school work. Advanced standing for work done in some other accredited college after the completion of 15 units of high school work may be granted by the Committee on Advanced Standing, provided the student presents satisfactory evidence that the work offered is equivalent to the work for which he wishes to substitute it. Transcripts submitted for evaluation become the property of the institution, and will not be returned.

Class Standing: Forty hours (40) of approved college work, in addition to the prescribed entrance requirements, are required for Sophomore rank; ninety hours and Senior College Standing for Junior rank (See page ....) and one hundred thirty hours and Senior College Standing for Senior rank. The foregoing requirements are to be exclusive of the required courses in Physical Education.

Registration: The Fall quarter opens on Monday, September 22, on which date entrance examinations will be given for those requesting them. Freshmen will register on Monday, September 22; other students will register on Tuesday, September 23. The Winter quarter begins on Monday, January 5; the Spring quarter opens on Friday, March 20; the Summer session on Monday, June 8. It is of decided advantage to register upon the opening date. The amount of work for which any students will be allowed to register will be reduced by one and one-half credit hours for each week or fraction thereof that the student is late in registering.

Fifteen hours, exclusive of Physical Education, is the normal registration for any one quarter. A student may, however, with the consent of the Dean, register for seventeen hours.

Quarter Hours. A quarter hour credit is the credit given for one

A fee of one dollar per day will be charged those who register late. In no case, however, will the fee for late registration exceed five dollars.
hour of lecture or three hours of laboratory work each week for twelve weeks.

The collegiate work of the Institution is divided into two divisions: Junior College, and Senior College. Courses numbered 1 to 99 inclusive, are Junior College courses. Those listed from 100 to 199, inclusive, are Senior College courses. All courses with the numbers 200 and over are Graduate courses.

Qualified students may enter courses in any quarter, unless a statement to the contrary appears in the description of the courses.

THE JUNIOR COLLEGE

The work of the Junior College comprises the studies of the Freshman and Sophomore years. In this College it is expected that the student, in addition to fulfilling the prerequisites for the major work upon which he will concentrate in the upper division, will make an effort to establish a basis for the breadth of culture which will give him a realization of the methods and the results of some of the more important types of intellectual endeavor, and a mental perspective that will aid him in reaching sound judgments. The Junior College requirements are designed to provide in some degree for the accomplishment of this purpose, without unduly limiting the student's opportunity to satisfy his individual tastes and preferences.

Students who expect to become candidates for advanced degrees either in Arts and Science or in the professional schools in this institution or in other leading colleges of the country should plan their courses with great care through consultation with their deans, in order to insure proper foundation for advanced work.

During the two years the student is expected to completely satisfy the entrance requirements (see page ....) and complete 96 hours, which shall include 54 hours of work in four basic groups as follows:

Language Group: 18 hours (English, Modern Languages or Public Speaking). Must include English 10, 11 unless excused by the English Department.

Social Science Group: 12 hours (History, Economics, Political Science, Sociology).

Biological Science Group: 12 hours (Botany, Zoology, Entomology, Public Health, Bacteriology, Physiology).

Exact Science Group: 12 hours (Chemistry, Physics, Mathematics, Geology, Accounting 101, 102, 103, when preceded by the Mathematics prerequisite).

In addition, the 96 hours should include at least 15 hours of work in one subject, or school. This work is to serve as a beginning for his major work which is to be continued in the Senior College. The student must fulfill all the requirements in Physical Education and Military Science. Junior College students will not be allowed to enter Senior
College courses except in meritorious cases, and upon formal application approved by both the dean and the instructor of the course.

SENIOR COLLEGE

Only such students as have completed the Junior College requirements may be registered in the Senior College.

Graduates of standard normal schools and junior colleges and students from other colleges who present at least 90 hours of college work exclusive of required courses in Physical Education, may be registered in the senior college, even though they lack some of the group requirements of the junior college, provided they register so as to remove these deficiencies within two quarters of the time of registration.

Major Subject

The student must select a major subject upon entering the senior college. The Dean will assign the student to the professor in charge of this major who will register the student during his junior and senior years and act as his adviser.

The Major Department has the authority to prescribe not less than thirty, nor more than fifty hours of work in the Major Subject (exclusive of any courses which may have been used to satisfy Junior College requirements in any of the four basic groups). The Major Department and the Dean shall also prescribe such other related courses as may be considered desirable, provided always that the students' free electives may not be reduced below thirty-six hours.

Minor Subjects

A minor subject or group of related subjects consisting of from eighteen to thirty hours of work closely related or basic to the major must be selected by the student and approved by the Dean of the School and the Major Department.
GRADUATION

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

The College confers the Degree of Bachelor of Science in Agriculture, Arts and Science, Agricultural Engineering, Civil Engineering, Commerce and Business Administration, Home Economics, Education, or Mechanic Arts upon students who meet the requirements specified herewith:

Before a student can become a candidate for a baccalaureate degree, the abstract of his record in the College must show: first, that he has satisfied the entrance requirements as prescribed for the class with which he expects to be graduated; second, that the collegiate work for which he has credit, his conditional and other pending credits, the completion of which is reasonably assured, and the work for which he is registered or is planning to register, together satisfy the requirements for graduation including Physical Education and Military Science as prescribed for his class.

Students who are planning to graduate at the next commencement should apply for candidacy not later than the 4th week of the fall quarter. The Graduation Committee will then check over the records and admit to candidacy all students whose records show that the conditions specified above have been fully met. Students who have not fully met the conditions as specified will be officially notified of their deficiencies and withheld from candidacy until such time as the deficiencies have been removed.

GENERAL REQUIREMENTS

1. Six quarters work in Physical Education by men and women, provided that candidates who are officially excused from physical education present one credit of other work for each quarter that they have been excused.
2. Six quarters of work in Military Science for men unless officially excused from this requirement.
3. One hundred eighty credits of collegiate work, exclusive of the required courses in Physical Education.
4. Fifty-four hours of Senior College work taken after the candidate has presented at least ninety college credits, in addition to the required courses in Physical Education or their substitutes.
5. The completion of a major, a minor, and related work as outlined under Senior College. (See page 62.)
6. The completion of required work in the four basic groups as outlined under Junior College. (See page ....)

Paragraphs 5 and 6 above do not apply to students who are pursuing a prescribed course of study such as in Engineering, Pre-medical work, Forestry and Smith-Hughes Teacher Training courses.
7. Candidates must have been in residence at the Utah State Agricultural College during three full quarters. During this period the candidate must have obtained at least 45 resident credits. The last 45 credits presented for the degree must have been earned in the College, and of these 45, at least 30 must have been earned in residence. The residence requirement may be satisfied by residence Summer School work.

8. An average grade of "C" or higher; credits of "D" grade not to exceed one-fifth of those used toward graduation; and no credit for courses having a grade lower than "D".

9. Written application to graduate, filed with the Graduation Committee about January 15, containing information requested. A special fee of one dollar will be charged those applying later than that date.

10. Recommendation for graduation in writing by:
   (a) The Professor in charge of the major subject.
   (b) The Dean of the school in which the major work is done, and
   (c) The Committee on Graduation.

11. The candidates must be of good moral character and must have discharged all college fees.

12. Attendance in person at the Commencement and Baccalaureate exercise at which the candidate expects to secure the degree, unless excused in writing by the Graduation Committee for very urgent reasons.

   The College reserves the right to change at any time the requirements for graduation, and every candidate for a degree shall be held to a compliance with such changes, as far as the uncompleted portion of his course is affected.

   Students who do not graduate with the class with which they entered are held to the requirements, including entrance, which are applicable to the class with which they graduate.

**MILITARY SCIENCE REGULATIONS**

The Utah State Agricultural College has been designated by law as an institution where units of the Reserve Officers' Training Corps are maintained. As such, it has promised the Government to give certain military instruction of a definite kind and character.

The student by registration at the Institution, obligates himself to conform to such requirements as are or may be prescribed by the College Council under the regulations of the Reserve Officers' Training Corps. These requirements, at present, are as follows: Two years of military training (6 credit hours) are required of all able-bodied male students. By regulation of the College the course is required during the first and second years at the Institution.

In order to remain in and receive instruction at the College or to graduate finally from the College, the student must be in attendance at all military classes and do satisfactory work in them.
It shall be the duty of every student of whom military training is required, to see that he is properly registered for the course and to report for instruction. Students who are required to take military training but fail to register or to report for classes will, with the approval of the President, be excluded from all classes in the College. The responsibility of complying with the regulations regarding military science rests entirely with the student.

Upon petition, the following classes of students may defer, or be excused from, the requirements in military science:

a. Students who are physically disqualified may be excused from Military Science by the College Medical Examiner. Participation in athletics cancels all excuses from Military Science based on physical disability.

b. Any student entering as a junior or senior may be excused from military science. Students entering as sophomores do not come within the meaning of this paragraph.

c. In exceptional cases, students over twenty-five years of age at the time of original entrance into the College may be excused from military science.

d. Married students may be excused from the requirements in military science.

e. Students who are not citizens of the United States and who do not intend to become citizens will not be permitted to take military training.

f. A student who is working his way through college by means of employment which conflicts with Military Science may have said requirements deferred during any quarter in which he is so employed. Students taking advantage of this provision must present a letter from their employer substantiating their claim and setting forth the hours of employment.

g. Students who attend college during the Winter quarter only may have the requirements in Military Science deferred during that quarter.

h. Students who are active in the Army, Navy, or Marine Corps of the United States, or who are commissioned officers of the National Guard or Naval Militia, or reserve officers of the military or naval forces of the United States, or members of the Naval Reserves will not be permitted to enroll in the Reserve Officers' Training Corps.

Vocational students are automatically excused from the requirements in Military Science.

A student claiming exemption from military science for any of the reasons noted above will present a petition for such excuse to the appointed Committee on or before the beginning of the quarter in which he desires to be excused. All such petitions will be prepared on the prescribed form which may be obtained in the office of the Professor of Military Science and Tactics, and will be accompanied by letters, or other documentary evidence substantiating the claim. No student will be permitted to submit a petition who has not already duly registered for military science and has entered upon the course of instruction.
Petitions filed after the expiration of two weeks following the date of the student's registration will not be received except for illness or physical disability occurring after such date.

Pending the action of his petition, the student will register for the course prescribed for his class and will enter upon the work of such course.

Any student who may be excused from attendance in military science for any valid reason must make up the deficiency in other departments of study.

Every student registered for military science is required to make a uniform deposit of $5.00. A laboratory fee of $1.50 will be deducted from this deposit. The balance, less the cost of any property lost or damaged, will be refunded upon the completion of the year or upon withdrawal from the course.

GRADUATION WITH HONORS

In order to stimulate individual work and to encourage superior students to strive toward their highest possible attainments the college affords opportunity for graduation with honors. Measurements of attainments of honor students is based largely on the student's ability to pursue individual work through a period of two years in preparation for a group of comprehensive examinations. The important elements of the plan are to leave the student sufficient opportunity to develop independence and initiative and yet to provide him with a plan of work, and enough individual instruction to prevent misdirected effort.

Any student of more than usual ability and scholarship who has been admitted to senior college standing may be advanced to candidacy for the Bachelor's Degree with honors under the following conditions:

1. Completion of 48 credit hours in the four basic groups; namely, biological science, exact science, social science and language, and not less than 9 credit hours in each of these groups, provided that a candidate in the School of Engineering shall have 9 credit hours in each of the groups except biological science.

2. Showing of superiority in the proposed major field.

3. Grades as follows at the time of application for candidacy for graduation with honors:
   a. Not less than 50 per cent of the credit hours "A" grade.
   b. Not less than 85 per cent of the credit hours "A" and "B" grade.
   c. No grade used for eligibility for honors work lower than "C".

4. Written approval by the major and minor departments.

5. Presentation to the College Council by the Graduation Committee together with a two-thirds favorable vote of the Council not earlier than the end of the Sophomore Year nor later than the beginning of the second quarter of the Junior Year.
DEPARTMENTAL PLANS AND REQUIREMENTS FOR HONORS WORK

The honors student must satisfy a major department and two minor departments.

In addition to the requirements above specified for advancement to candidacy for graduation with honors the following requirements must be satisfied for graduation:

REQUIREMENTS FOR THE BACHELOR'S DEGREE WITH HONORS

1. Full time work in residence during a period of not less than five quarters nor more than nine quarters after being advanced to candidacy for the honors degree. Three quarters residence must be immediately preceding the conferring of the degree.

2. The completion of 180 credit hours, of which not less than 75 hours must be honors work.

3. The candidate must be recommended for graduation with honors unanimously by the professors in the major and minor departments and must receive favorable vote of two-thirds of the members of the College Council.

GRADUATION AT THE CLOSE OF THE SUMMER SESSION

Any student who can satisfy the requirements for graduation by the close of the Summer Session may be presented to the College Council in May. Such students are listed with the class of the following year, and receive their public graduation at the following Commencement. The graduation of such students, however, will be certified to by the proper authorities of the college as soon as their work is completed.

REQUIREMENTS FOR THE MASTER'S DEGREE

Registration of all graduate students shall be made by the chairman of the committee on graduate work.

The degree of Master of Science may be granted on the completion of the following requirements:

The candidate must have been in actual residence at the College three full quarters after receiving the standard Bachelor's degree (or after having met the requirements for this degree), and must obtain forty-five (45) credits of which at least twenty (20) must be of graduate
grade, in addition to the 180 college credits and 15 high school units, or their equivalent, required for the Bachelor's degree.

Summer school students with the baccalaureate degree are allowed six years in which to complete their work and residence requirements for the Master's degree.

To be admitted to the candidacy for the Master's degree the student must have his course of study approved by November 1, or at least seven months preceding the date on which he expects to receive the degree, by the committee on graduate work, the professor in charge of his major subject, and the dean of the school in which his major subject is taken.

A thesis covering the work done in the major department (from 9 to 15 credits) must be prepared by May 1, and must be accepted by the group which approved his candidacy. At least two copies of the thesis must be filed with the college librarian.

The candidate must successfully pass an oral examination which will be given under the direction of the committee on graduate work by the professor in charge of his major subject, the dean of the school in which his major work is taken, and three professors to be selected by the committee on graduate work.

Graduate students should not register for more than 15 credit hours. Students who have established records of high scholarship may be permitted to register for additional credits, (not to exceed 17 per quarter) by the Dean of the Graduate Division.
STUDENT EXPENSES

Students must pay the following fees upon registration:

UTAH STUDENTS

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<th>Winter and Spring Quarters</th>
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STUDENTS FROM OTHER STATES

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All students registered for Military Science and Tactics are required to make a $5.00 deposit for uniform.

A fee of one dollar per day will be charged those who register late. In no case, however, will the fee for late registration exceed five dollars.

All students registering in the fall must pay fee for the entire year. If the student desires to discontinue, refund will be made on all fees except the registration and student body fees. By state law, the Institution may relieve worthy and deserving students from payment of the registration fee, provided that not more than ten per cent of the total student body be relieved of the fee in any one year.

According to the constitution of the Student Body, every regular student must obtain at time of registration a Student Body card which will admit him to all activities controlled by the Student Body organization; athletic events—football, baseball, tennis and track—dramatics and musical entertainment, socials, lectures, etc., and, in addition, give him a copy of the annual year book and subscription to the college paper. This system has been found to be a great saving to the students and a
most excellent means of fostering proper interest in student activities.

Since all students are required to take Physical Education they must provide themselves with gymnasium suits and gymnasium shoes. The cost is about $6.00.

Each student in Foods and Dietetics courses and Household Administration 150, must provide herself with the following: Two hair nets, one or two white petticoats, two washable white uniforms, two white work aprons. Each student in Home Nursing courses must provide herself with the following: One or two white petticoats, two washable white uniforms. The uniforms required for the Home Nursing course, and the aprons and uniforms required for the Foods course and Household administration 150, must be of the standard designs provided by the Textile and Clothing Department. Materials should be procured after consultation with the instructors in charge.

All graduates from the School of Home Economics who desire to qualify as teachers in home economics under the Smith-Hughes Act must spend the required period of residence in the Home Economics Cottage, as indicated in Household Administration 150. The expenses are $6.00 per week for board and room.

The fee charged for a diploma of graduation is $5.00.

Good board and room in a private home costs from $6.00 to $7.50 a week. By renting rooms and boarding themselves, students are able to reduce considerably the cost of room and board.

The College maintains a modern well equipped cafeteria, where students may eat at cost.

The following table furnishes an estimate of the actual yearly expenses of students attending the Utah State Agricultural College:

<table>
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<tr>
<th>Low</th>
<th>Average</th>
<th>Liberal</th>
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<tbody>
<tr>
<td>Tuition, books, fees, etc.</td>
<td>$94.00</td>
<td>$94.00</td>
</tr>
<tr>
<td>Room and Board</td>
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<tr>
<td>Total</td>
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<td>$445.00</td>
</tr>
</tbody>
</table>

Students are held responsible for any injury done by them to the College property.

The Senior Loan Fund, a gift of the class of 1911, and added to by the class of 1922, has helped many students through school.

**SELF HELP**

A large number of the students of the Utah State Agricultural College earn part of their expenses while in residence. During the fall and spring particularly there is some demand for workers by farmers, fruit growers and owners of city property. The College itself gives employment to many students, and college offices are glad to aid students in finding work.

Young people who expect to earn their way through college should
first of all, by earnest labor and careful economy, accumulate as large a college expense fund as possible. It is desirable, though not essential, that this sum be sufficient to cover the expense of the first year. Correspondence or conference with the College Secretary usually reveals some way to earn the additional amount needed. After one year in college, the earnings of the student in vacation and during the college year generally enable him to continue his course without interruption.

It is the policy of the College to encourage and aid in every possible way earnest, ambitious young men and women who want an education and an opportunity to help themselves.

SCHOLARSHIPS AND AWARDS

The Johansen Scholarship Fund of $5,000, a gift of the Late Mrs. Johana Johansen, provides three scholarships annually, worth in the aggregate from $300 to $350, for help of worthy students of Junior or Senior rank. Applications for this scholarship must be filed with the chairman of the committee on honors and awards before April 15, for the succeeding year.

The One Thousand Dollar Liberty Bond Endowment yields a loan fund of $40, which is to be loaned by the Director's Council to a student who has made formal application before April 12, and who has need of financial help and who has demonstrated a high degree of scholarship in the work of previous quarters.

The 1927 Class Gift to the College yields an income sufficiently large to insure two annual scholarships of $125.00. Recipients are to be selected by the Awards and Honors Committee.

The U. S. A. C. Faculty Women's League has a loan fund for the women students of the college. Loans may range from $50 to $200. Preference is given to senior women students. Loans are made at any time during the year when money is available.

The College Award is conferred annually upon the male student of the institution who shows evidence of being able in greatest measure to repay to the Nation the investment which it has made in him, on the basis of the following rating:

(a) The potential vocational or professional efficiency of the student as shown by his scholarly attainment, industry, natural ability and talent (50 points); and

(b) His patriotism, honesty, and good judgment as a student citizen, as an indication of his future attitude as a voter or public servant, combining a progressive spirit with a love of country and a concern for the safety and development of American institutions of liberty and justice, and his qualities of social leadership, as shown in student affairs, based upon physical and moral cleanliness and strength (50 points).

The College Award is conferred annually upon the woman student of the institution who shows evidence in greatest measure of:
(a) Potential vocational or professional efficiency as shown in scholarship, industry, and natural ability (50 points; and
(b) Womanly qualities, development of the social graces, not necessarily social prominence, and attitude of mind (50 points).

The Rhodes Scholarships. An appointment to the Rhodes Scholarships in Oxford University, England, is made each year from the State of Utah. They are of the value of $2,000.00 a year, and are tenable for three years. Students who wish to apply for them must have some social and athletic distinction as well as high scholarship in mathematics, sciences, or letters. All applicants must also have three years of French, and it is advisable to have Latin, German, and English history, as well as high school mathematics. Full information and application blanks may be secured at the President's Office or from Professor Frank R. Arnold, chairman of the Rhodes Scholarship committee. Students who wish to apply for these scholarships are advised to start preparing for them in Freshman year. They are usually given to seniors or graduate students.

The American Legion Scholarship Medal is awarded each year to the letterman on the football team who maintains the highest scholastic record during the football season.

The R. O. T. C. Medal, a gift of the Institution, is awarded each year to the student in Military Science and Tactics who most nearly represents the ideal that the Reserve Officers' Training Corps is striving to develop, upon the following basis:
(a) Character, 20 points.
(b) Scholarship, 15 points.
(c) College Activity, 15 points.
(d) Leadership, 20 points.
(e) Aptitude for and interest in Military Science, 20 points.
(f) Physique and bearing, 10 points.

The American Legion Military Medal is given to a letterman who exhibits the most wholesome attitude toward military training during the year in which he earns his letter.

The Thatcher Brothers Banking Company, as a member of the First Security Corporation System offers annually a scholarship of $150.00 to that student who excels in Banking and other related subjects.

The A. A. Firmage Scholarship of $100.00 is awarded annually to that student who in his Senior College work excels in merchandising and closely related subjects.

The Hendricks Medal, a gift of Mrs. Carrie M. Hendricks in memory of the late Professor George B. Hendricks, is awarded yearly to the student who delivers the best extemporaneous speech.

The Sons of the American Revolution award a medal annually for the best patriotic speech.

The Vernon Medal, a gift of Dr. Weston Vernon, is given each year
for the best short story written around western characters and with a western setting.

The U. S. A. C. Women's Club offers each year a prize of $10.00 for the best literary essay.

The Phi Upsilon Omricon Scholarship of $50.00 is given annually by the Kappa Chapter of that organization to the freshman girl in the School of Home Economics ranking highest on the following points:

1. Scholarship.
2. Participation in student activities.
3. Service and cooperation.
4. Leadership.
5. Strong moral character.

In addition, the candidate must be a member of the Home Economics Club.

The Gertrude Musser Howard Medal is to be awarded annually to a senior student in the School of Home Economics on the following basis:

(a) Qualities of womanhood, as represented by health, physical and moral cleanliness, personality, cooperation, and leadership.
(b) Application of home economics principles.
(c) Scholastic attainment.

The Utah State Agricultural College Science Medal, a gift of Professor William Peterson, is given each year to the student writing the best review of recent scientific research in either mathematics, physics, chemistry, geology, zoology, botany, or astronomy.

The Leadership Challenge Cup is a gift to the college by Dean Kenneth C. Ikeler. The cup will be awarded each year to the Senior student in Agriculture that has exhibited the greatest measure of constructive organization and leadership in the School of Agriculture throughout his college course.

Scholarship A's are given at the close of each year to the six highest ranking students.

Several further awards are given for athletic and other student body activities.

A list of the recipients of various honors will be found at the back of the catalogue.

BUILDINGS

The College now has nearly thirty buildings, all modern, well lighted and heated, and all carefully planned.

The Main Building is 360 feet long, 200 feet deep in the central part, and four stories high. It contains the large auditorium, seating about 1,500, the administrative offices of the College and the Experiment Station, and many class rooms and laboratories.
The Home Economics Building is one of the largest and best equipped structures devoted entirely to domestic science and arts in the inter-mountain region.

The Thomas Smart Gymnasium is one of the finest and most complete college gymnasiums in the Rocky Mountain region. It contains a main exercise hall, 114 by 70 feet, the equipment of which can be quickly put in place or hoisted out of the way to suit any need, and a smaller floor for women. Ten feet above the main floor is a running-track, hand-ball court and wrestling and boxing room. The large pool, showers and steam baths, and dressing rooms with steel lockers are ideal.

The Extension Service Building is a two story structure 45 feet long and 35 feet wide, containing the offices of the Extension Service staff, with a dark room for photography.

The Mechanic Arts Building, a two-story brick structure, has a floor area of 40,000 square feet and contains the wood-working department, machine shops, forging rooms, foundry, carriage building rooms, mechanic arts museum, drafting rooms, blue-printing room, room for painting and staining and class rooms—all well equipped.

Widtsoe Hall, containing three stories, thoroughly modern in plan and equipment, is occupied by the Departments of Chemistry, Physics and Bacteriology.

The Livestock Building of three stories is exceptionally well fitted with facilities for the study of dairying, hog, horse, poultry and sheep husbandry, and range management.

The Agricultural Engineering Building, an excellently arranged three-story brick structure, houses the Departments of Irrigation and Drainage, Surveying, Hydraulics, Mechanical Drawing, Architecture, Household Sanitation, Farm Mechanics, including Auto and Tractor work, and some related phases of the work of the institution.

The Library Building, cultural center of the College, is one of the best of its kind in this region. It is appealing in design and furnishings, and is fireproof.

The Plant Industry Building is a four story brick building, thoroughly modern in arrangement. It houses the departments of Agronomy, Botany, Plant Pathology, and Horticulture.

The Barns contain the various breeds of cattle, horses, sheep and hogs most common in the western section.

The Horse Barn is the most modern structure of its kind that can be built.

The Stock Judging Pavilion makes it possible to do stock judging in all kinds of weather.

The Poultry Yards are equipped with various types of buildings to accommodate about one thousand fowls, a brooder house with a capacity
of 2,500 chicks and a modern incubator cellar with standard incubators of several makes and designs. The laboratory is well supplied with different styles and sizes of incubators, brooders, food hoppers, etc., suited to use in study of the management of large and small flocks.

**The Green Houses** are prepared for laboratory instruction in the propagation of horticultural plants, and in the practice of floriculture and vegetable gardening.

**The Veterinary Hospital** contains a well equipped dispensary, operating room, stalls for patients, and up-to-date fixtures.

**The Seed House** is designed as a store house for the seeds of the Department of Agronomy.

A modern heating plant recently renovated and enlarged keeps the building comfortably warm during the winter months.

**EQUIPMENT**

The **Bacteriological Laboratory** is well equipped with modern apparatus. To encourage careful work, the students are provided with individual lockers.

The **Chemical Laboratories** are modern and thoroughly equipped.

The **Physical Laboratory Equipment** is complete, consisting of all the necessary apparatus for class demonstrations.

The **Physiological Laboratory** is supplied with an excellent collection of native animals, skeletons, many enlarged models of organs, and complete slides of all the tissues.

The **Zoological and Entomological Laboratory** is equipped with improved instruments, embryological models, skeletons from the vertebrae groups, collections of mounted birds, mammals, reptiles, fishes and insects.

The **Botanical and Plant Pathological Laboratory** is well equipped for general work as well as for research. The department maintains a good working library in connection with the laboratory.

The **Department of Agronomy** is provided with a large collection of agricultural plants, seeds, and soils representing the main crops and types of soil of the inter-mountain region.

The **College Farms** are equipped with the best and latest implements and machinery for carrying on work scientifically. They are divided for illustrative and experimental purposes, into numerous plats on which many varieties of farm crops are grown and upon which important experiments are carried on.

The **Soil Physics Laboratory** has a good supply of apparatus for accurate and up-to-date work.

The **Farm Crops Laboratory** has a large supply of farm crops on hand and is well supplied with apparatus.
The Commercial Rooms, occupying the entire third floor of the front of the Main building, are specially designed and furnished for business. A full complement of standard machines is supplied.

The College Museum contains many specimens illustrative of geology, mineralogy, paleontology and vertebrate and invertebrate zoology, including a large series of plants of the western mountain region and an extensive series of plants of the western highlands. An extensive collection of grains represents the produce of Utah and other states. Contributions of fossils, ores, animals, plants, relics or other material of value to the museum, are appreciated. All gifts are labeled and preserved and the names of the donors are recorded.

The Art Rooms, composed of six studios, are supplied with plain and adjustable tables, easels and model stands, individual lockers, cases for material, casts from the old masters in sculpture, reproductions of great paintings, still-life models and draperies, and a valuable collection of ceramics, textiles, and books on art.

The Library occupies most of the space in the new building. It is the laboratory for every course given at the College, and contains 36,000 books, and a large number of pamphlets. The books are classified by the Dewey decimal system and there is a complete dictionary and catalogue. The shelf list, also on cards, forms a classified catalogue for official use.

The library is also a depository for United States documents and for the Carnegie Institute. The files of the United States Department of Agriculture and publications of the Experiment Stations are nearly complete; the bulletins are bound and made easy of access by the printed card catalogues. There are one hundred and forty periodicals on the subscription lists, besides about one hundred which are received as exchanges for publications of the college and of the Experiment Station. Practically all the newspapers of the State are on file in the Reading Room. The Reading Room is beautiful and comfortable, and is provided with modern facilities for study.

CAMPUS AND FARMS

The land occupied by the College embraces about 155 acres. Of this, forty acres constitute the campus, laid out with flower beds, broad stretches of lawn, tennis courts, wide drives and walks.

Immediately east of the Main building is the quadrangle of about ten acres. A large athletic stadium located just north of the campus on a ten-acre tract of land affording a beautiful view of the east mountains and Cache Valley, is an attractive place for U. S. A. C. athletic contests. The farms comprise 97 acres, the orchards and the small fruit and vegetable gardens, 10 acres.

Other farms are maintained under the direction of the Experiment Station in various parts of the State.

The equipment of the Branch Agricultural College is described in the circular of that institution.
THE STUDENT BODY ORGANIZATION

The Student Body Organization embraces all the students of the Institution. Its prime object is to foster a proper spirit of college loyalty, and to give the students practice in managing public affairs. It also secures dispatch and efficiency, as well as uniformity, in the administration of all matters pertaining to the entire student body, and induces all students to participate in college activities. The organization provides each member with a maximum of proper athletic, theatrical, and social recreation at a minimum expense. This society has control, under faculty direction, of the following student activities:

1. **Athletics**, including all inter-class and intercollegiate contests in football, basketball, track, tennis, swimming, and wrestling events. The College is a member of the Rocky Mountain Conference, a fact which insures an interesting athletic program.

2. **Musicals**, including all public performances of the Band, the Orchestra, and Musical clubs.

3. **Theatricals.** In the past, A Midsummer Night's Dream, She Stoops to Conquer, Pygmalion, Milestones, The Admirable Crichton, What Every Woman Knows, Twelfth Night, and various other productions have been presented.

4. **Debating and Public Speaking.** Triangular debating arrangements have been made whereby, annually, the Agricultural College debates the University of Utah and the Brigham Young University on the same question. Interstate debates are also held. Those who make places on the teams not only win awards, but are admitted to membership in the Agora, an honorary debating fraternity. Debaters showing special excellence are admitted to membership in Tau Kappa Alpha, a national honorary debating fraternity, a chapter of which is established at the College. Interest in debating is keen.

The annual oratorical contest for the Hendricks medal and for that given by the Sons of the American Revolution maintain among the students an active interest in extemporaneous public speaking.

5. **Student Publications.** The students of the College, under the direction of the faculty of English, publish a weekly school paper, Student Life, and the College year book, named The Buzzer; the Scribblers' Club publish The Scribble; The Agricultural Club, the Ag. Club Link. Interest in journalistic work is stimulated by the presence on the campus of the chapter of the national honorary journalistic fraternity, Pi Delta Epsilon.

6. **Lyceum Course.** Each year the Student Body presents from six to eight numbers of national or local repute. These entertainments are free to members of the Student Body.
Not affiliated with the Student Body organizations, but standing largely for the interest of the various schools, are the following clubs:

The Agricultural Club, which aims to promote interest in scientific and practical agriculture. The club has effected similar organizations in the high schools of the State. Special lectures, often illustrated, are given at intervals throughout the season. The club conducts an annual tour, studying farm conditions in northern Utah.

The American Association of Engineers, a local chapter of the national organization made up of students and practicing engineers. Any student majoring in any branch of engineering is eligible for membership. The purpose of the organization is the advancement of the engineering profession and the promotion of the economic and social welfare of the engineer. Regular monthly luncheons are held at which men of repute are invited to speak on pertinent current problems.

The Home Economics Club, to which all students registered in the School of Home Economics are eligible. The object of the club is four-fold:

1. To stimulate interest in Home Economics;
2. To broaden and elevate each member's ideals for social, industrial, and economic life, thereby helping her better to fit into the home and community;
3. To provide wholesome recreation;
4. To foster ties of friendship among the members.

The Mechanic Arts Association, designed to promote the social and intellectual interests of its members. All the teachers and all the regularly enrolled students of mechanic arts are eligible to membership. Monthly meetings are held throughout the year, at some of which lectures are given by specialists.

The Utah Foresters, whose purpose it is to foster mutual interest and scholarship in Forestry, to help promote the interests of the Forestry movement and to form and strengthen friendships among forestry students at the Utah State Agricultural College and among foresters of this region. Talks are given by members of the Forest Service throughout the school year. The Forester's banquet and the Forester's ball are among the club's activities. The club publication, issued annually, is known as "The Utah Juniper".

Phi Kappa Phi, a chapter of the national honorary scholarship fraternity.

Tau Kappa Alpha, a chapter of the national honorary debating fraternity open to both men and women.

Alpha Kappa Psi, a national fraternity, devoted to the interests of commerce and business.

The Friars Club, a state-wide organization which purposes to keep alive the "Missionary Spirit" among its members, and to promote social and educational functions, is open to male students who have spent six months or more in exclusive missionary work.
Scabbard and Blade, a company of the national, honorary, military fraternity of the same name, organized to perpetuate American ideals and efficiency among young college men and open to cadet officers who have shown particular excellence in their R. O. T. C. work.

Pi Delta Epsilon, a chapter of the national honorary journalistic fraternity.

The Agora, a local organization open to men and women from the inter-collegiate debating teams. Its purpose is to foster debating in the College and keep alive among the old debaters an interest in such contests. Students may become members of both Tau Kappa Alpha and the Agora.

The Chemistry and Physics Club, organized to promote interest in chemistry.

The Be-No Club, organized to foster scholarship, fellowship and loyalty.

The Booklovers' Club, organized for the study of subjects related to English literature, but not usually treated in the classroom.

The Scribblers Club, an organization of writers.

The Cosmos Club, organized for the study of present day problems; open only to men.

Theta Alpha Phi, an honorary, professional dramatic fraternity.

The Jesters, a group of campus players chosen from a list of successful performers in high school.

The Tennis Club, organized to promote interest in tennis and to develop players for intercollegiate matches.

The Empyrean Club, organized for the study of current problems; open only to women of Senior College Standing.

Le Cercle Francais, maintained by students in French for practice in speaking the language.

The Cosmopolitan Club, composed of faculty members and students and organized for the purpose of furthering internationalism and world peace. To be eligible for membership, candidates must be of foreign birth, must have lived in a foreign country or show a keen interest in world problems.

Beaux Arts Guild, designed to encourage interest in the various phases of Art by lectures and informal social meetings.

Alpha Sigma Nu, a senior honorary society. Membership is maintained by election from the Junior Class held each spring.

The Men's Rifle Club, organized to foster marksmanship among its members.

The Women's Rifle Club, composed of women interested in the use of firearms.

The Botany Club, composed of students especially interested in botany. Lectures are given by faculty members and initiation discussions by new members.

Phi Upsilon Omricon. The Kappa charter of this national profes-
sional and honorary fraternity is installed at the College. Its purpose
is to stimulate interest in Home Economics.

The Short Story Club, organized to promote interest in the short
story.

The Girls' Athletic Club, composed of women students who are par-
ticularly interested in athletic contests, hiking, etc.

Various other clubs, as well as a number of fraternities and soror-
ties are also to be found on the campus.

DEPARTMENT OF INSTRUCTION

(Arranged Alphabetically)

Agricultural Economics and
Marketing
Agronomy and Soils
Animal Industry
  a. Animal Husbandry
  b. Dairy Husbandry and
     Manufacturing
  c. Poultry Husbandry
  d. Veterinary Science
Bacteriology and Biochemistry
Botany
Business Administration and
Accounting
  a. Accounting
  b. Advertising and Selling
  c. Business Administration
  d. Secretarial Work
Chemistry
Economics and Sociology
Education
English and Speech
Engineering
  1. Civil Engineering
     a. Applied Mechanics and
        Design
     b. Highways
     c. Irrigation and Drainage
     d. Mechanical Drawing
     e. Surveying
  2. Agricultural Engineering
     a. Rural Architecture
     b. Farm Machinery and
        Farm Motors
  3. Mechanic Arts
     a. Auto Mechanics
     b. Auto Ignition—Radio
     c. Forging
     d. Machine Work
     e. Woodwork
Foods and Dietetics
Forestry
Geology
History
Horticulture
Household Administration
Mathematics
Military Science and Tactics
Modern Languages and Latin
Music
Physical Education
  a. For Men
  b. For Women
  c. Physical Science
  d. Physiology and Public Health
  e. Psychology
  f. Textiles and Clothing
  g. Zoology and Entomology

RECI TATION TABLE

The recitation hours are sixty minutes in duration and begin at 8:00
a.m. The following shows the entire schedule:

1st hour, 8:00-9:00 4th hour, 11:00-12:00 7th hour, 2:00-3:00
2nd hour, 9:00-10:00 5th hour, 12:00-1:00 8th hour, 3:00-4:00
3rd hour, 10:00-11:00 6th hour, 1:00-2:00 9th hour, 4:00-5:00
Courses of Instruction

AGRICULTURE AND FORESTRY

AGRICULTURAL ECONOMICS AND MARKETING

(Administered jointly by the schools of Agriculture and Commerce)

W. P. THOMAS, Professor; W. U. FUHRIMAN, Assistant Professor.

Students in either the School of Agriculture or the School of Commerce may major in this department. The choice of School in which to register should depend upon whether the student intends to enter the field of Agriculture, or the field of Commerce.

53. Principles of Agricultural Economics—A general study of the more important economic principles, forces and institutions affecting agricultural income, production, marketing, finance, prices, labor, land utilization, tenancy, taxation, tariff, etc.; the inter-relation of these factors; and the relation of agriculture to other industries. Prerequisite, six hours of General Economics. Spring quarter. Five credits.

Fuhriman


Fuhriman

102. Farm Management—An analysis of the principles and problems of farm organization and management. A study of the problems of choosing, buying, organizing, and managing the various types of farms. Discussion of proper size, balance, diversity, and the relationship between the various enterprises. Prerequisite, Agricultural Economics 53. Fall quarter. Five credits.

Fuhriman

103. Farm Accounts—The practical application of accounting principles to farm management problems. Modifications to suit the different types of farming enterprises will be studied. Assembling and interpretation of accounting data. Lectures and assigned practice problems. Fall quarter. Four credits. (Not given 1930-31.)

Peterson
104. **Economic Development of Agriculture**—A historical analysis of agriculture through the various stages of its economic development, with special reference to the United States. Fall quarter. Three credits. *Fuhriman*

105. **Agricultural Finance**—A study of agricultural credit with regard to requirements, facilities, instruments, and methods of financing agriculture. This involves an analysis of our present financial organization and its relation to agriculture. Special attention will be given to the agencies authorized by the Federal Government to provide financial aid and credit to farmers and farmers' organizations. Prerequisite, General Economics. Winter quarter. Three credits. *Fuhriman*

106. **Land Economics**—Principles underlying the utilization, valuation, tenure, and conservation of our land resources available for crops, pastures, and forests. Prerequisite, Agricultural Economics 53. (Not given 1930-31.)

113. **Cooperative Marketing**—This course deals with the fundamental principles of cooperative marketing of agricultural products, the legal status of cooperation in the United States and a study of the growth and development of cooperative marketing. The development, possibilities and limitations of cooperative marketing in Utah, together with the organization, financing, membership, marketing and production factors will be studied. The problems confronting cooperative marketing associations and the industry as a whole will be given special consideration. Winter quarter. Five credits. *Thomas and Fuhriman*

114. **Marketing Fruits and Vegetables**—Trends in production, consumption, and marketing fruits and vegetables in United States as a whole and in Utah, together with special problems of over-production, local and foreign competition, quality of products, transportation factors; grading, inspection, and marketing methods will be given consideration. Spring quarter. Three credits. (Not given 1930-31.) *Fuhriman*

116. **Marketing Livestock and Livestock Products**—The production and marketing factors as they relate to the marketing of livestock and livestock products with special reference to Utah's conditions. Spring quarter. Three to five credits. *Fuhriman*

**Note:** Students registering for 3 hours will be required to attend Monday, Wednesday, and either Tuesday or Friday classes. Tuesday's lecture will discuss the marketing of livestock products. Friday's lecture will consider the marketing of livestock. Each student will be required to make detailed study of the marketing of one product.

120. **Agricultural Prices**—Relationship between production and prices of agricultural products; trends in prices of agricultural commodities
in Utah and competing states, in comparison with prices of non-agricultural products, and price cycles in their relation to Utah's agriculture. State and National Agricultural Outlook, as it applies to Utah will be given special consideration. The aim of the course is to make application of principles in prices, production and marketing to an agricultural program for the individual and the group. Prerequisites, six hours of General Economics, and Agricultural Economics 53. Winter quarter. Three credits.

**Thomas**

191. **Advanced Farm Management**—A detailed farm management analysis, including methods of making surveys, collecting, tabulating, organizing, and analyzing data and a study of the application of results toward the improvement of the farm business. The student will be expected to do some actual field work and to analyze farm management data in the laboratory. Spring quarter. Five credits.

**Fuhriman**

210. **Research in Agricultural Economics**—Time and credit to be arranged.

**Thomas and Fuhriman**

211, 212, 213. **Agricultural Economics and Marketing Seminar**—All seniors and graduate students majoring in this department are required to take part in these round table discussions of current problems and recent publications in Agricultural Economics and Marketing. Fall, Winter, and Spring quarters. One credit each quarter.

**Thomas and Fuhriman**

**SUGGESTED COURSE OF STUDY FOR MAJORS IN AGRICULTURAL ECONOMICS IN THE SCHOOL OF AGRICULTURE**

**FRESHMAN YEAR**

<table>
<thead>
<tr>
<th>Course</th>
<th>Fall</th>
<th>Winter</th>
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<tbody>
<tr>
<td>Economics 51, 52</td>
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<tr>
<td>Agri. Economics 53</td>
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<tr>
<td>Chemistry 1</td>
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<td>English 10</td>
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<tr>
<td>Mathematics 35</td>
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<td>Sociology 70</td>
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<td>Typewriting</td>
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<tr>
<td>Biological Science*</td>
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<td>Agriculture*</td>
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<td>Agri. Economics 62</td>
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<td>Mathematics 75</td>
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<td>English 11</td>
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<tr>
<td>Political Science 11, 12</td>
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<td>Agri. Economics 104</td>
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<td>English or Language</td>
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<td>Elective</td>
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**JUNIOR YEAR**

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<tbody>
<tr>
<td>Agri. Economics 105</td>
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<tr>
<td>Agri. Economics 114 or 116</td>
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<tr>
<td>Economics 135</td>
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<tr>
<td>Accounting 111</td>
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<tr>
<td>Agronomy 117</td>
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<tr>
<td>Sociology 101</td>
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<td>Agriculture*</td>
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<td>Elective*</td>
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**SENIOR YEAR**

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<th>Course</th>
<th>Fall</th>
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<tbody>
<tr>
<td>Agri. Economics 102 and 191</td>
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<td>Agri. Economics 113</td>
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<td>Agri. Economics 120</td>
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<td>Economics 165</td>
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<td>Economics 206</td>
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<td>Elective*</td>
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*The courses to be selected will depend upon the special interest and need of the student, and his minor subject. He should consult his major and minor professors in the selection of these courses.

**AGRONOMY AND SOILS**

GEORGE STEWART, Professor; D. W. PITTMAN, Associate Professor; A. F. BRACKÉN, D. C. TINGEY, Assistant Professors.

**Note:** Students who major in Agronomy are expected to take Courses 1 or 2, 3, 106, 108, 109, 111, 113, 117, 104 or 110, and one of
these three: 114, 116, 119. Irrigation and Agricultural Economics 102 are recommended in the minor of agronomy majors. Students not majoring in agronomy but who wish to be recommended as capable of doing agronomy teaching or technical work should take courses 3, 1 or 101, 106, 109, 117, and one of these three: 104, 108, 116.

1. **Cereal Crops**—The history, cultivation, production, and marketing of cereal crops; a basis for judging and grading plant products. Must be preceded or accompanied by Botany or Chemistry. Three lectures. One lab. Winter quarter. Four credits.

   *Bracken*

2. **Root Crops**—Sugar-beets, potatoes, mangels, turnips, other root crops, and beans; cultural methods, market types, and commercial possibilities are studied in detail. Three lectures. One lab. Fall quarter. Four credits.

   *Tingey*

3. **Forage and Miscellaneous Crops**—Alfalfa, clovers, grasses, and other forages; methods of handling hay; meadow and pasture management, and soilin crops, are discussed. Must be preceded or accompanied by Botany or Chemistry. Three lectures. One lab. Spring quarter. Four credits.

   *Tingey*

101. **General Crops**—Essentials in the production of principal field crops; small grains, corn, potatoes, sugar-beets, and miscellaneous crops. Designed for those students not majoring in Agronomy who wish minimum work in crops. Courses 1 and 2 are recommended for Agronomy majors instead of course 101. Prerequisites, Chemistry and Botany. Three lectures, one or more labs. Spring quarter. Four or five credits.

   *Pittman*

104. **Weeds, Seeds and Grading**—Common weeds of Utah and methods of eradicating them; the quality and care of seeds; market classes and grades of grain, seeds, hay, and potatoes. Prerequisites, Botany, Agronomy 1 and 2 or 3 (or 101); some horticulture preferred. One lecture, two labs. Fall quarter. Three credits.

   *Tingey*

105. **Seed Analysis and Testing**—Impurities of farm and garden seeds; methods of analysis and testing; the inspection and marketing of seeds. Prerequisites, Botany, Agronomy 1, 2, (or 101, 104.) Not given except on application of two or more students who have open, during the week, the same two laboratory periods, of three hours each. Any quarter. Two or more credits. Two or more laboratory periods a week. Time to be arranged.

   *Tingey*

106. **Soils**—Review of the entire field of soils study; designed as a foundation course for all students of agriculture. Prerequisites, Chem-
istry 1, 2 (High School chemistry not adequate). Three lectures, one lab. Fall quarter. Four credits.

Pittman

108. **Management of Arid Soil**—The composition, nature, and management of soils of arid regions; special attention to water relations, alkali, rotations, and other problems in the management of arid soils. Prerequisites, Agronomy 106 and either Geology or Bacteriology 1, preferably both. Winter quarter. Four or more credits.

Pittman

109. **Plant Breeding**—Varieties of field crops; their selection and improvement; attention to the methods of plant breeding as practiced in America and Europe. Prerequisites, Genetics and Botany. Three lectures, one lab. Winter quarter. Four or more credits.

Stewart

110. **Soil Fertility**—Principles of soil fertility; fertilizers and their most productive use; review of experimental work in America and Europe. Prerequisites, Chemistry 1, 2, and Agronomy 106. Spring quarter. Two or more credits.

Pittman

111, 112, 113. **Seminar**—Current agronomic literature; agricultural problems; assigned topics. Required of all seniors and graduates in agronomy; open also to juniors. Fall, Winter, and Spring quarters. One or two credits each quarter.

Stewart

114. **History of Agriculture**—Development of agriculture, with emphasis on practical and scientific phases; the successive steps by which modern agriculture has attained its present status. Winter quarter. Two to five credits. (Not given 1930-31.)

Bracken

116. **Dry Farming**—Principles of dry-farming from practical and scientific standpoints; a survey of agricultural work in the Great Plains and the Mountain regions; an analysis of the possibilities in typical climatic areas and on important soil types. Selecting and organizing a dry-farm unit. Advanced students may obtain additional credit for extra work. Winter quarter. Three lectures. Two to four credits.

Bracken

117. **Geography of Agriculture**—Relation of geography to present agricultural development; where plant and animal products are produced; why only in the present regions; a survey of the United States with respect to possible new agricultural development; effect of the relative position of the large markets to agriculture, especially in Utah. Spring quarter. Three or more credits. Two credits may be taken by special arrangement.

Stewart
119. **Crop Products**—Nature, importance, and uses of various crop products; their physical and chemical nature; their effects on the market value of the crop; and their place in agricultural technology. Related soil problems are also discussed. Prerequisites, Organic Chemistry and Botany. Winter quarter. Three credits.

**Bracken**

207. **Soil Technology**—An advanced course in soil technology for students who wish fundamental work in soil science. A study of the formation, classification, and functions of soils in relation to their environments. Prerequisite, Organic Chemistry, Bacteriology and Geology. Winter quarter. Two or more credits.

**Pittman**

208. **Management of Arid Soils**—Special problems in the management of arid soils. Original papers are considered in addition to regular lectures and discussions. Three lectures, one or more labs. Winter quarter. Three to six credits.

**Pittman**

209. **Advanced Plant Breeding**—The science and practice of plant breeding. Original papers and lectures. Three lectures, one or more labs. Winter quarter. Three to six credits.

**Stewart**

212. **Graduate Seminar**—Current scientific papers and topics in Agronomy. Fall, Winter or Spring quarter. One to three credits.

**Stewart**

214. **History of Agriculture**—Development of scientific agriculture with emphasis on recent period. Original papers and lecture material. Winter quarter. Two to five credits. (Not given 1930-31.)

**Bracken**

215. **Plant Production**—Recent experimental information on plant production and soil management; analysis of research methods; classification of important varieties of field crops, reviews of the scientific literature. Prerequisites, at least one course in Botany, Agronomy, and Bacteriology or Geology. Open to approved senior college students. Spring quarter. Two to five credits.

**Stewart**

217. **Geography of Agriculture**—Relation of geography to production and to development of agriculture. Winter quarter. Two to five or more credits.

**Stewart**

218. **Special Problems or Advanced Laboratory**—Students desiring to do advanced laboratory work, or to make a special study of any particular problem will make a complete study of available literature on this problem under supervision of the instructor, and write a thesis.
One to five credits. Prerequisites, Agronomy 106, and either General Bacteriology or General Geology. Any quarter.  

Stewart, Pittman

230. Research and Thesis—Organizing and prosecuting a thesis, or a research problem without thesis. Any quarter. Two or more credits each quarter.  

Stewart, Bracken, Tingey, Pittman

ANIMAL INDUSTRY SECTION

The Animal Industry Section includes the courses of instruction in the closely related special departments of Animal Husbandry, Dairy Husbandry, Dairy Manufacturing, Poultry Husbandry, and Veterinary Science.

ANIMAL HUSBANDRY

KENNETH C. IKELER, GEORGE B. CAINE, Professors; A. C. ESPLIN, HARRY H. SMITH, Assistant Professors.

The Department of Animal Husbandry offers instruction in the selection, breeding, feeding, management, and marketing of cattle, horses, sheep, and swine; in the slaughtering, cutting, and curing of meats, and in the production and grading of wool.

The following courses should be taken by students who major in Animal Husbandry: 1, 2, 3, and one of (6, 7, 8, 9, 10), 100, (101 or 102), 103, 104, 105, 107, 108; D. H. 109 or 110, and Animal Husbandry Seminar, A. H. 120, 121, 122. Courses in Dairy Husbandry, Dairy Manufacturing, Poultry Husbandry, and Veterinary Science may be used to strong advantage in the major. Accounting, Agronomy and Soils, Agricultural Economics and Marketing, Bacteriology, Botany, Commercial Law, Entomology, Farm Mechanics, Geology, Horticulture, Irrigation, Mathematics, Organic Chemistry, Physics, and Range are among the supporting courses most strongly recommended for graduation in Animal Husbandry.

1. Market Types of Live Stock—The score card and comparative judging of the market grades of commercial cattle, horses, swine, and sheep. Fall quarter. Five credits.

Smith, Caine

2. Breed Types of Livestock—The origin, history, characteristics, and selection of the economic breeds of horses, cattle, sheep, and swine. Winter quarter. Five credits.

Ikeler, Caine, Esplin

3. Market Classes and Grades of Live Stock—The commercial classes and grades of market cattle, sheep and hogs. Students will compile market quotations and will classify and evaluate animals for market. Prerequisite, A. H. 1 or 2. Spring quarter. Three credits.

Smith
4. Market and Breed Types of Livestock (For Forestry and Range Students)—The practical selection and judging of commercial and breed types of horses, cattle, sheep and hogs. Spring quarter. Three credits.

6. Beef Cattle Production—The selection, feeding, and marketing of range and feeder cattle, and the management of the breeding herd of beef cattle. This course includes a trip to Ogden and Salt Lake Stock Yards for study purposes. Fall quarter. Three credits.

Smith


Smith


Smith

Caine

9. Sheep Husbandry—A study of the methods of producing sheep for meat and wool under range and farm conditions. Also a study of sheep husbandry of the leading sheep producing countries of the world. Special emphasis is placed upon sheep and wool production upon the ranches and the farm. The farm sheep include small commercial herds, pure bred herds, and winter lamb feeding. Winter quarter. Three credits.

Esplin


Esplin

100. Principles and Practices of Judging Live Stock—This is a course designed for students that wish to register for Animal Husbandry 107 and become candidate for the Livestock judging team the following fall. Spring quarter. Two credits.

Smith

Caine, Smith, Esplin
102. **Problems in Pedigreed Live Stock**—This course emphasizes the qualities essential in the animal breeder for constructive and financial success in producing pure bred animals. The business aspects, capital involved, the purchasing of foundation stock, and the production, conditioning, advertising, and selling of pedigreed stock. Spring quarter. Three credits.  

*Ikeler*

103. **Feeds and Feeding**—The principles of feeding and how animals digest and utilize feed. The balancing of rations and the feeding of horses, cattle, sheep, and hogs for economical production. Winter quarter. Five credits.  

*Smith*


*Ikeler*

105. **Livestock Breeding**—The principles and practices of livestock improvement. A study of heredity, variation, selection, breed analysis, and herd synthesis, inbreeding, outcrossing, and cross breeding. Prerequisite, Zoology 111 (Genetics). Spring quarter. Five credits.  

*Ikeler*

106. **Herd Book Study**—The tracing of livestock pedigrees from herd books. Problems in pedigrees, methods of breeding, leading tribes and families. Spring quarter. One to three credits.  

*Smith*

107. **Advanced Stock Judging**—The comparative judging of breeding and market horses, cattle, sheep, and swine to prepare students for officiating at livestock shows. Herds away from the college will also be studied for the purpose of selecting a livestock judging team. Fall quarter. Four credits.  

*Caine, Smith, Esplin*

108. **Advanced Wool**—This course is a study of wool as a finished product of the ranch and farm, considering the fleece as a unit. The study includes the physical and chemical properties of the wool fibre, grading and sorting, explanation of terms used in market reports, and determination of shrinkage. Consideration is given the world wool supplies as fleece wools, pulled wools and reworked or shoddy wools. Visits to Logan City Knitting Factories and Brigham City Woolen Mills are included. Prerequisites: Chemistry 1, 2 or 3, 4, 5. Winter quarter. Three credits.  

*Esplin*

109. **Farm Meats and Meat Products**—The slaughtering of farm animals and the cutting and curing of meats on the farm. Trips will
be taken to local meat shops and to the Ogden and Salt Lake packing houses. The students will evaluate the animals on foot and measure their judgment in the dressing percent, and quality of the product in the carcass. Winter quarter. Three credits.

110. **Selection of Meats for the Household**—A study of the principles and practice in the selection of quality meats for the table. This course is open for women students. Winter quarter. Two credits.

120, 121, 122. **Animal Husbandry Seminar**—Reports and discussion of current literature and research in Animal Husbandry, by students and faculty members. Fall, Winter, and Spring quarters. One credit each quarter.

200. **Graduate Research**—Students working towards a graduate degree in Animal Husbandry are required to conduct research in some branch of the subject. Any quarter. *Time and credit by arrangement.*

203. **Scientific Meat Studies**—A study in the cutting and curing of meats; for Senior College and graduate students. It emphasizes the physical structure and the chemical composition of meats, and their relationship to nutritional qualities. Prerequisites: Animal Husbandry 11, and Organic Chemistry. Winter quarter. Two credits.

204. **Wool Problems**—Research work in wool. Winter quarter.

205. **Animal Production**—This is a survey of the research conducted in the breeding and feeding of livestock. Prerequisites: Animal Husbandry 104 and 106. Spring quarter. Three credits.

207. **Animal Experimentation**—The organization of live stock experiments. Time and credit by arrangement.

210. **Graduate Thesis**—The outlining, prosecuting and summarizing of Animal Husbandry research data for a thesis. Two to five credits each quarter.

215. **Graduate Seminar**—Weekly check up and report on graduate work.
### Freshman Year

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### Animal Industry

#### Senior Year

*(Animal Industry)*

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### Dairy Husbandry and Manufacturing

**George B. Caine, Professor; A. C. Merrill, Assistant Professor.**

Students majoring in Dairy Husbandry must complete the following major courses for graduation. Dairy 1 or 2, Dairy 8, Animal Husbandry 1, 103, 104, 105, 107, as well as all courses listed in the Department of Dairy Husbandry. Agronomy 109 can replace a major course. Courses in Chemistry, Bacteriology, Botany, Crops, Accounting, Advertising, English, and Mechanics should be followed carefully to fill other groups.

1. **Elements of the Dairy Industry**—Designed to give all students entering the field of dairying an insight into the component parts. It is also designed to give Smith-Hughes students, prospective county agents, and others who have a need for a knowledge of milk testing and other elementary principles, an insight into the industry. The following will receive consideration: history and present status of the dairy industry, the chemical composition of milk and milk products, the Babcock test for milk and cream, tests for adulterations of milk, acid test and other tests for quality of milk, the manufacture of some dairy products, the relation of dairying to other industries and to human welfare and some marketing problems. Four lectures, one lab. Fall quarter. Five credits.

   **Merrill**


   **Caine**
12. Breeds of Dairy Cattle—Study of history and development of all breeds of dairy cattle. Special emphasis on the various families within the breeds. Requirements for official testing. Pedigree and Herd Book Study. Three lectures, one lab. Winter quarter. Four credits.

Caine


Caine


Caine


Caine

115. Seminar—Discussion and reports of current literature. Time and credit to be arranged.

216. Research—Special problems in connection with dairy production. Breeding or Feeding of dairy cattle. For seniors and graduate students. Credit will be granted according to work done. Time and credit to be arranged.

DAIRY MANUFACTURING

Students majoring in Dairy Manufacturing should complete the following courses: Dairy 1, 2, 4, 5, 6, 101, 102, 103, 104, 105 and at least six hours of 106. In addition, Chemistry 107, 108, as well as Bacteriology, 104. Students are advised to take the prerequisite courses for chemistry and bacteriology during their freshmen and sophomore years. For minor courses of study the following subjects are especially desirable: Dairy Husbandry, Chemistry, Bacteriology, Mechanical Engineering, and Commerce. It is expected that students spend at least six months in a dairy manufacturing establishment before graduation. It is strongly recommended that more than six months be spent in dairies if possible. This can usually be arranged by securing summer work through the Department.

4. Operation of Dairy Manufacturing Plants—A brief study in the operation of steam boilers, mechanical refrigeration, electric motors, power transmission systems, and other common mechanical devices
used in dairy plants. Studies in operation costs and wastes, keeping plant records. Personnel and labor problems will also receive consideration. Prerequisites, Dairy 1. Two lectures and one lab. Spring quarter. Three credits.

5. Testing and Judging Milk and Milk Products—Special methods of testing, standardizing and judging dairy products. Inspection methods. Prerequisite, Dairy 1 or 2. One lecture, one lab. Spring quarter. Two credits.

Merrill

6. Market Milk—Modern sanitary methods of producing, processing and marketing milk for city milk supply. Prerequisite to Dairy 102. Two lectures, one lab. Fall quarter. Three credits.

Merrill

101. Manufacture of Ice Cream and Ices—Purchase of raw materials. Chemical and physical structure of an ice cream mix and their relation to the finished product. Standardizing and processing of standard commercial ice creams and ices. Four lectures and one lab. Spring quarter. Five credits.

Merrill


Merrill

103. Manufacture of Cheese—Receiving and grading milk, manufacture of American, Cheddar, and various other standard varieties of cheese. Three lectures, two labs. Fall quarter. Five credits.

Merrill


Merrill


Merrill

106. Special Problems—A course for students wishing to study certain specialized phases of the dairy industry. Assigned reading of recent research and laboratory work in the processing of milk and
manufacture of dairy products. This course requires a thesis. Students are expected to carry at least six hours of this during their senior year. Any quarter. Time and credit to be arranged.

Merrill

201. Research—Original research work in problems of the dairy industry. Graduate students only. Credits to be arranged. Merrill

POULTRY HUSBANDRY

BYRON ALDER, Professor

1. General Poultry—A study of breeds, judging, breeding, incubation, brooding, housing, feeding, marketing. Designed to meet the needs of students wishing a general knowledge of the poultry industry and the problems of production, and a foundation upon which other courses are built. Three lectures, one lab. Winter or Spring quarter. Four credits.

Alder

2. General Poultry—Same as Poultry 1, except that no laboratory is given. Winter or Spring quarter. Three credits.

Alder

3. General Poultry—The course is planned to meet the needs of Home Economics students. Not given unless six students apply.

Alder

4. Incubation and Brooding—Practice work with incubator and a study of the factors which influence the hatching quality of eggs and the raising of chicks. Prerequisite, Poultry 1, Spring quarter. Two credits.

Alder

8. Turkey Raising—A study of the breeds, breeding, feeding, marketing, etc. Winter quarter. Two credits.

Alder

105. Poultry Management—The housing, care, feeding, and management of different breeds under western conditions. Prerequisite, Poultry 1. Winter quarter. Three credits.

(Not given 1930-31.)

Alder

106. Breeds and Breeding—The origin and development of the breeds and varieties of poultry; practice in judging; a review of the literature on breeding for utility and exhibition. Prerequisite, Poultry 1. Winter quarter. Three credits.

Alder

107. Poultry Feeds and Feeding—A study of nutrition problems;
the feeds and methods of feeding. Prerequisite, Poultry 1, or 2. Winter quarter. Three credits.

125. **Research**—Research work in special problems. Prerequisites, Poultry 1 and 4. Time and credit to be arranged.

126. **Seminar**—Current poultry literature studies; assigned problems and special topics. Winter quarter. One credit.

127. **Poultry Practice**—Special practice at the poultry yards. Time and credit to be arranged.

**VETERINARY SCIENCE**

H. J. FREDERICK, Professor

10. **Veterinary Elements**—Introduction to anatomy and physiology and the common ailments of domestic animals; the most prevalent diseases, their distribution, causes, symptoms, course, diagnosis, and treatment; observation and practice in the free weekly clinics. Fall or Winter quarter. Five credits.

**Frederick**

15. **Indications of Disease in Animals**—General appearance, nursing, restraint, conformation and soundness, and post-mortem demonstrations. Winter quarter. Three credits.

**Frederick**

20, 21, 22. **Comparative Anatomy**—Especially for students in agriculture and animal husbandry; also students wishing to follow veterinary science. This course is supplemented with practical work in discussion, and illustrated by skeletons and models. Fall, Winter, and Spring quarters. Three credits each quarter. Given if ten students apply.

**Frederick**

40, 41, 42. **Physiology**—The vital functions of the different species of domestic animals, and those of the human body are compared; the physical and chemical laws as related to physiology, the general properties of animal cells, their origin, development, and growth; special physiology of the various organs and tissues of the animal body. Fall, Winter, and Spring quarters. Three credits each quarter. Any or all quarters may be taken.

**Frederick**

50, 51, 52. **Clinics**—Free clinics at the hospital in which students of veterinary science must assist. The numerous cases represent all diseases common to this locality, and furnish the clinic with abundant
material for observation and practice. Fall, Winter, and Spring quarters. Hours and credits to be arranged.

60. **Principles of Horse Shoeing**—The anatomy and physiology of the horse's foot; the form of the foot and the direction of the limb; variations in the flight of the foot; styles of going; shoeing of normal and irregular feet; winter shoeing; correction of defects in gait, and methods of shoeing hoofs defective in form, or diseased. Winter quarter. Three credits.

70. **Poultry Diseases**—The common diseases affecting poultry in this region. Symptoms, diagnosis, prevention, and treatment. Lectures and practical demonstrations. Winter quarter.

107. **Hygiene and Infectious Diseases**—A discussion of water and food supply, disinfection, care and management of animals, and feeding of sick animals. The common infectious diseases prevalent here. Methods which should be adopted in their control and eradication. Tests applied for diagnosis, vaccination, and serum treatment of animals. Lectures and Lab. Winter or Spring quarter. Four credits.

118, 119. **Anatomy and Physiology**—A study of the form, structure and functions of the animal body. Attention is given to all domestic animals and students are required to locate and point out the parts related to the form, movement and utility of the animal. Fall and Spring quarters. Three credits each quarter. (Given if 10 students apply.)

120. **Sanitary Inspection**—Inspection of slaughter houses, packing houses, butcher shops, etc., and means of detection of communicable diseases and spoilage in meat products. Prerequisite, Bacteriology 2. One quarter. Three credits. (Given if 10 students apply.)

130, 131. **Obstetrics**. Obstetrical anatomy, reproduction, hygiene of pregnant animals. Obstetric operations, accidents of parturition, and diseases of the new-born. The college herd and the surrounding stock breeding community give ample opportunity for practical work. Winter and Spring quarters. Two credits each quarter.

**BOTANY**

B. L. RICHARDS, Professor; F. B. WANN, Associate Professor; H. L. BLOOD, Assistant Professor; H. R. DAINES, Assistant.

Botany 21, 22, 30, 120, 126, 130, 131, 240 and 241 or equivalent required for students majoring in Botany.
1. **Elementary General Botany**—A brief study of the nature and development of plants; plant parts and their functions; the food of plants; the relation of plants to human needs. Three lectures, two demonstration periods. Fall or Spring quarter. Five credits.

*Richards and Blood*

21, 22. **General Botany and Comparative Morphology**—A general course dealing with the structure, growth, nutrition and reproduction of plants. Gross morphology and functions of the flowering plants are emphasized in the Fall quarter; comparative morphology of the plant groups from evolutionary standpoint in the Winter quarter. Designed especially for students in Agriculture. Two lectures and two labs. Fall and Winter quarters. Four credits each quarter.

*Wann*

23. **Plant Morphology**—Life histories and structural relationship of plants representative of the four big groups. The course is so organized as to give a broad view of the processes of evolution. Prerequisite Botany 1 or 21, 22. Three lectures, two labs. Spring quarter. Five credits.

*Staff*

30. **Systematic Botany**—Fundamentals of plant classification, with emphasis on flowering plants, especially economic groups. Individual practice with botanical keys. Prerequisite, Botany 1 or 21, 22, or equivalent. Two lectures, one laboratory. Spring quarter. Three or four credits.

*Blood*

102. **Systematic Botany**—A continuation of course 30. Individual work with particular families or floras. Summer quarter. Two or three credits. Time to be arranged.

*Blood*

116. **Histological Technique**—Methods of killing and preserving botanical specimens and the preparation of permanent sections of plant material. Designed especially for teachers of Botany and research students. Time and credit to be arranged.

*Staff*

120. **Elementary Plant Physiology**—A course dealing with fundamental principles of the development of the plant in relation to its environment, including a study of absorption, nutrition, food manufacture, metabolism, translocation, and growth. Special emphasis is placed on water relations, light, and temperature. Prerequisite, Botany 21, 22. Should be preceded or accompanied by organic chemistry. Three lectures, two labs. Spring quarter. Five credits.

*Wann*

122. **Physiological Diseases of Plants**—A study of the abnormalities in plant growth caused by disturbances in the physiological functions
of the plant. Prerequisite, Botany 120. Winter quarter. Three credits. Richards

(Not given 1930-31.)

126. Plant Ecology—Distribution and structural adaptation of plants as affected by environmental factors. Occasional field trips. Prerequisite, Botany 120. Three lectures, two labs. Fall quarter. Five credits.

130. Principles of Plant Pathology—Fundamental principles underlying diseases in plants. Types of diseases are so studied as to give the student a comprehensive view of the subject of plant pathology. Prerequisites, Botany 1 or 21, 22. One lecture, two labs. Fall quarter. Three credits.

131. Field and Orchard Crop Pathology—The various diseases of field and orchard crops will receive attention in such a way as to permit students to select such diseases as will best support their major interests. Prerequisite, Botany 130. One lecture, two labs. Winter quarter. Three credits.

133. Mycology—Morphology and the taxonomic relations of fungi with emphasis on economic forms. Prerequisites, Botany 1, or 21, 22. Winter quarter. One lecture, two labs. Three credits.

135. Forest Pathology—A detailed study of the nature, cause and control of the various diseases underlying decay of forest timber. Special attention will be given also to industrial problems connected with the staining, rotting, and preservation of wood in its various commercial forms. One lecture, two labs. Spring quarter. Three credits.

221. Photographing Technique—Fundamental principles of photography as applied to advanced work in biology and plant pathology. Special attention is given to microphotography and lantern slide production. One lecture, two labs. Winter quarter. Three credits. Richards

222. A Continuation of Course 221—Special cultural methods as applied to Plant Pathology, Physiology, and related subjects. Students may register for courses 221 and 222 only by special permission. Winter or Spring quarter. Two to five credits according to work done. Richards, Wann, Blood
240, 241, 242. **Seminar**—Fall, Winter and Spring quarters. Two credits each quarter. Time to be arranged. *Richards, Wann, Blood*

250. **Research**—Open to all qualified Senior college students in Ecology, Physiology and Pathology. *Richards, Wann, Blood*

**FORESTRY AND RANGE**

T. G. TAYLOR, Professor; R. J. BECRAFT, C. M. GENAUX, Associate Professors; ........................................ Instructor.

The Department of Forestry and Range was organized in 1927 as a result of a definite development of interest in the region for college training in this field. No other forestry school exists in the Intermountain Forest Service District comprising Utah and large portions of adjacent states.

The course of study constitutes four years' training, comparable to that of other standard forestry schools and graduates are awarded the Bachelor's degree in forestry. The program of courses has been carefully outlined with advice from the U. S. Forest Service officials as to pertinent subjects. The aim is to train men for private or government positions in (1) technical forest management or the growing and protection of the timber crop, and (2) technical range management. The practical management of renewable resources as forests, ranges, watersheds, and game is fully covered.

Graduation requirements include completion of the course as outlined and attendance at Summer Camp, the first session of which is planned for the summer of 1932.

Students who expect to compete for appointments to U. S. Forest Service positions should plan ahead for Civil Service examinations. The Forest Ranger examination is usually offered each year in October. Technical examinations for Junior Forester and Junior Range Examiner are held in March and entrance requirements demand either four years college training, or its equivalent in experience. The course of study has been outlined to prepare students for these technical examinations in their senior year.

Direct training in forestry is adequately supported by fundamental courses in the sciences (mathematics, physics, chemistry, geology) and other related fields: botany, zoology, entomology, pathology, surveying, English, etc. For outdoor forestry the Cache National Forest with headquarters at Logan, offers an excellent laboratory and is utilized for direct contact with various forestry operations. A department forest is to be acquired in connection with the Summer Camp program and here students will have an opportunity to carry on field work in forestry and range. The creditable diversity of tree species in and near Logan is being supplemented as rapidly as possible by a college arboretum. A forest nursery program is now under way in cooperation with the National Government and forest trees are being distributed to the
farmers of the state, at cost, for woodlot, windbreak and shelter belt plantings under the terms of the Clarke-McNary Act. The presence of the nursery which is situated on college property furnishes a considerable amount of work for the students of the department who wish it. Special lecturers of the U. S. Forest Service at Ogden make periodic trips to Logan to talk to the students of the department.

The department has so far successfully placed all qualified students in temporary positions with the Forest Service during summer vacation periods.

Because of location in an Agriculture College, the major in Range Management is strongly supported by course work in allied subjects, such as Botany (general, systematic, agrostology, physiology, ecology), Agronomy (including soils), Animal Husbandry (types and breeds, beef cattle and sheep management, animal nutrition), etc. The central position in the great western grazing region provides an ideal outdoor laboratory. This is attested by the location within the state of the Salina Experiment Station of the Bureau of Animal Industry for work with poisonous plants, and the Great Basin Experiment Station at Ephraim, the Forest Service station for research in Range Management.

1. **Elementary Forestry**—General survey of the profession, character of the work, relation of forestry to the welfare of the state and nation. Fall quarter. Two lectures, one lab. Three credits.

6. **Mensuration I**—The methods of measurement of logs, trees, and stands. The theory of log rules and volume table construction and their use in timber measurement. Three lectures, one lab. Fall quarter. Four credits.

7. **Mensuration II**—The methods of determining the rate of growth and yields of trees and stands of timber. The relationship of growth study to timber survey and the management of the Forest. Three lectures. Winter quarter. Three credits.


13. **Dendrology II**—Same as Dendrology I except for broad leaved trees. Three lectures, one lab. Field trips. Spring quarter. Four credits.

18. **Fire Protection**—The organization problem in forest fire protection. The proper method of attack to control fires. The course is aimed to fit one to take a definite place in a fire organization. Winter quarter. Three credits.
25. **Logging**—Various methods of handling timber from the tree to the mill for different forest regions of the United States. Fall quarter. Three credits.

26. **Milling**—The manufacture of lumber and other sawed products from logs. The various types of mills in use with special attention to the portable and semi-portable types. Kiln drying and air drying of lumber. Winter quarter. Three credits.

(Not given, 1930-31.)

31. **Forest History and Policy**—The development of forestry in the United States including the important state and federal legislation looking to this end. Winter quarter. Three credits.

114. **Silvics**—A study of the climatic, soil and biotic conditions under which trees grow with a consideration of the effect of the vegetation upon the habitat. Fall quarter. Three credits.

115. **Silviculture**—Systems of marking to insure natural regeneration. Methods of thinning stands to stimulate the rate of growth. A study of methods of cutting the important timber stands of the United States. Winter quarter. Three credits.

116. **Planting**—The raising of forest tree planting stock by artificial methods. The collection and storage of seed, nursery practice and field planting. Spring quarter. Two lectures, one lab. Three credits.

121. **Forest Management**—Division of the forest into working units, choice of rotation, determination of the cut, frequency of returns, relation to market. Fall quarter. Four credits.

122. **Valuation**—The value of the forest property for continued timber production. The determination of loss by forest fires and other causes. Forest insurance; timber bonds; the appraisal of timber. Winter quarter. Five credits.

125. **Wood Technology**—Structural and physical properties of economic woods and their identification. Two lectures, one lab. Fall quarter. Three credits.

127. **Forest products**—The utilization of wood for products other than sawed material as the manufacture of turpentine, pulp and paper,
rayon, etc. The use of preservatives to prolong the life of wood. Winter quarter. Four credits. (Not given 1930-31.)

132. Forest Administration—The administration of national and state forests. Winter quarter. Three credits. (Not given 1930-31.)


Taylor


Taylor

142. Forestry Research Methods—The method of conducting a complete research problem. How to select a problem, prepare a working plan, execute the work; derive conclusions with the aid of graphic and statistical methods and prepare the results for publication. Winter quarter. Three credits.

Genaux

143-144. Forestry Seminar—A study of forest problems and general consideration of forestry practice. Fall and Winter quarters. Three hours each quarter. Two credits each quarter.

Taylor and Genaux

145-146. Forestry Thesis—Individual accomplishment of an original problem in forestry. Fall and Winter quarters. Time by special arrangement. Three credits each quarter.

Taylor and Genaux

Summer Camp—Eight weeks. Following the junior year all students majoring in forestry and range are required to spend eight weeks in camp on the department forest. The entire time will be devoted to field work in mensuration, forest management, silviculture and range. Twelve hours credit for summer camp will be allowed. The first summer camp is planned for 1932.

Staff

162. Range Management—Grazing regions, range forage plants and their growth requirements, seasonal use, grazing capacity, range improvement, methods of handling livestock. Four lectures, one lab. Field trips. Fall quarter. Five credits.

Becraft

166. Range Management Plans—Detail of methods in range reconnaissance, assemblage and application of data, grazing management
plans on government and private ranges. Prerequisite, Range 162. One lecture, one lab. Fall quarter. Two credits.

176. **Range Forage Plants**—Native forage plants; taxonomy; economic value, distribution, associations. Prerequisite, Botany 30. Three lectures, two labs. Winter quarter. Five credits.

(Not given 1930-31.)

181. **Range Economics**—Development of the range industry, land utilization, control systems, range and ranch units, grazing resources and capacity, value of range forage, production costs of livestock. Winter quarter. Two credits.

193-194. **Range Seminar**—General discussion of range problems and current development. Fall and Winter quarters. Three lectures. Two credits each quarter.


**OUTLINE OF COURSES IN FORESTRY AND RANGE**

### Freshman

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<th>Course</th>
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<tr>
<td>Freshman English</td>
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<tr>
<td>General &amp; Systematic Bot. Bot. 21, 22, 30</td>
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<td>Algebra, Trigonometry Math. 35, 46</td>
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<td>Market &amp; Breed Types An. Hus. 4</td>
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<td>Elem. Forestry, Fire Pro For. 1, 18</td>
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### Sophomore

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<td>Inorganic &amp; Organic Chem. Chem. 3, 4, 26</td>
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<td>Plane Surveying &amp; Mapping A. E. 1, C. E. 83, A. E. 2</td>
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<td>Mensuration For. 6, 7</td>
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<td>Logging and Milling For. 25, 26</td>
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**Sophomore Range**—Same as Sophomore Forestry except substitute Sheep Management, An. Hus. 9, 3 credits for Mensuration, For. 7, and Elementary Zoology, Zoo. 1, 5 credits, for Forest Entomology, Zoo. 105.

**Junior Forestry**

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<td>Wood Technol., For. Prod.</td>
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<td>Forest Administration</td>
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<td>Forestry Research Methods</td>
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<td>Range</td>
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| Total                                 | 17 | 17 | 17 |

**Senior Forestry**

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<td>Related Resources</td>
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<td>Range Management Plans</td>
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<td>Forestry Seminar</td>
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<td>Forestry Thesis</td>
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| Total                                 | 17 | 17 | 17 |

**ELECTIVE COURSES—FORESTRY AND RANGE**

Required:

- **Language** ............................................. 9 credits
- **Social Science** ...................................... 9 credits

**Junior Range**

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<th>Course</th>
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<tbody>
<tr>
<td>Plant Ecology, Physiology</td>
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<tr>
<td>Forest Geology</td>
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<tr>
<td>Feeds and Feeding</td>
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<tr>
<td>Silvics, Silviculture, Planting</td>
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<td>Forest Administration</td>
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<tr>
<td>Forestry Research Methods</td>
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<td>Range, Forage Plants</td>
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| Total                                 | 17 | 17 | 17 |
HORTICULTURE

FRANCIS M. COE, A. L. WILSON,* Assistant Professors.

The State of Utah and the Intermountain and Pacific Coast regions offer excellent commercial opportunities to men with fundamental and practical horticultural training. The wide variety of fruit and truck crops for market and cannery offer excellent possibilities for the college trained man who plans to farm. The widespread interest in beautification makes the allied fields of landscape gardening, floriculture, and nursery business attractive to qualified men and women. Opportunities are also open in high school Smith-Hughes and college teaching, in inspection and regulatory work, in experiment station and extension work, in the government service, and in many allied industries, such as seed, nursery, spray material, agricultural journalism, and fruit and vegetable marketing.

Major, minor, or elective work in Pomology (fruit culture), Olericulture (vegetable gardening) and Landscape Gardening and Floriculture. Emphasis is placed on the practical art, as well as on the fundamental science of Horticulture. Work in laboratories, greenhouses, gardens, and orchards of the College and surrounding country is used to supplement the lectures and recitations, and field trips are made to commercial fruit and truck farms to study practical problems at first hand.

Students majoring in Horticulture should, in addition to the Junior College courses in this department, secure a thorough grounding in Chemistry (including organic), Botany and Plant Pathology, Entomology, and Soil Science in preparation for advanced work in Horticulture. Courses in Agronomy, Animal Husbandry, Dairy and Poultry Husbandry, Agricultural Economics and Marketing, Irrigation and Drainage, and Farm Mechanics are especially suitable to accompany course work in Horticulture. Courses in speech and journalism are also urged. Students are invited to confer with the departmental staff in arranging their courses of study. Recommended courses of study

*Absent on leave.
may be found on pages 111 and 112. Students will avoid many conflicts by adhering closely to the published course of study.

For a major in Pomology the following courses are required: 1 or 100, 101, 102, 103, 108, 110, 151, 152 and Seminar. For a major in General Horticulture, courses 1 or 100, 101, 3, 4, 6, 7, 108, and Seminar are required.

1. **General Horticulture**—This course is designed to meet the needs of students in Agriculture, Commerce and Education, and is a prerequisite to courses in Horticulture except 3, 4, 6, 100 and 108. Course 101 is the continuation course which completes the subject matter.

   Lecture, recitation, and laboratory work on the outlook and opportunities for profitable fruit production in the intermountain region, propagation of fruit trees and plants, varieties and their selection, soils and sites for fruit growing, layout and planting, harvesting, grading and packing. Brief introductory work in vegetable gardening, plant propagation, landscape gardening and floriculture. Three lectures, one lab. Participation in the annual Horticultural Show is a part of this course. Should be preceded or accompanied by Botany 21. Fall quarter. Four credits.

2. **Landscape Gardening**—Elementary theory and practice of laying out and beautifying home grounds in the city and on the farm. Trees, shrubs, vines, perennial and annual flowers and their use in ornamental gardening. Garden appreciation. Problems in improvement of home grounds, rural and urban. This course is designed to meet the needs of women as well as men students, and should be particularly valuable to teachers. Two lectures, one lab. Spring quarter. Three credits.

3. **Vegetable Gardening**—Principles of home and market gardening; varieties, culture, and marketing of commercial truck and canning crops. Winter quarter. Three credits. (Not given 1930-31.)

4. **Plant Propagation, Greenhouse and Nursery Practice**—Propagation of plants by seedage, layerage, division, and graftage; practical work in propagating and growing fruit, flower and ornamental plants in greenhouse, hotbed, nursery and garden. For both men and women interested. One lecture and lab. Spring quarter. Two credits.

5. **Greenhouse Practice**—Practice work in the production of greenhouse and nursery crops, including greenhouse management and outdoor nursery work according to season. Prerequisite, Course 6. Fall, Winter, and Spring quarters. One or two credits each quarter.

6. **Principles of Pomology**—This course is designed to meet the needs of Senior College students majoring in other departments for brief practical work in fruit production. With course 101 which follows, it comprises a complete course in modern fruit growing practice, with sufficient emphasis on fundamental principles to enable the student to adapt himself to changing practices and conditions. This course (or
course 1) with 101 is recommended to fill Smith-Hughes requirements in Horticulture.

Lecture and recitation work in establishing orchards, varieties and their selection, propagation, management, harvesting, grading, packing, etc., accompanied by laboratory work and field trips. Students assist in staging the annual Horticultural Show and participate in exhibiting, packing, identification and other contests. Three lectures, one lab. Prerequisites: Botany 21, Chem. 1 or 3. Should be preceded or accompanied by Agron. 106 (Soils) and Chem. 26 (Organic Chemistry). Fall quarter. Four credits.

101. **Practical Pomology**—Continuation of Courses 1 or 100. Soil management in the orchard, pruning and training, grafting, pollination, thinning, brief instruction in spraying and pest control, and small fruit culture. Three lectures, one lab. Winter quarter. Four credits.

102, 103. **Fundamentals of Fruit Production**—A thorough review of fundamental principles and practices as developed by research in horticultural science. Geography, climatic factors, propagation, water relations, nutrition, soil management, pruning and training, fruit setting. Practical applications of fundamentals are considered. Field trips and laboratory work is given to present problems of orchard management. Three lectures, one lab. Prerequisites: Botany 21, Chem. 1 or 3 and 26. Should be preceded or accompanied by Agron. 106 (Soils). Fall and winter quarters. Four credits each quarter. (Not given 1930-31; given 1931-32.)

104. **Truck Crop Production**—Advanced work in Olericulture, stressing fundamental principles and science of vegetable production. Botany, classification, culture, marketing, geography, pest control, and improvement of vegetable crops. Prerequisites: Bot. 21, Chem. 26, Hort. 4. Winter quarter. Three credits. (Not given 1930-31.)

107. **Spraying**—Fungicides and insecticides used in the control of fruit and vegetable insects and diseases; their preparation, properties and use in spraying; spray machinery and equipment, dusts and dusting; spray schedules; economics of spraying; fumigation; rodent control. Practical laboratory and field work in the preparation, mixing and application of spray materials. Problems in practical spray management. Prerequisites: Hort. 1; Chem. 1; Botany 130 (Plant Pathology); and Zool. 14; (Ec. Entomology). Two lectures, 1 lab. Spring quarter. Three credits. (Not given 1930-31.)

108. **Small Fruits and Grapes**—Commercial and home culture of raspberries, blackberries, currants, gooseberries, strawberries, and grapes. Soils and sites for small fruit plantations; varieties, propa-
gation, planting, training, pruning, culture, harvesting, and marketing. Practical laboratory work in greenhouse, nursery, and field; trips to vineyards and berry farms. Three lectures, one lab. Winter quarter. Four credits.

110, 111. **Advanced Orchard Practice**—Field work in seasonal orchard operations. Fall quarter includes picking, grading and packing of fruits, and field trips to orchards in Cache and Box Elder Counties. Spring operations are pruning, renovation, grafting, planting, spraying, cultivation, irrigation and thinning. Must be preceded or accompanied by Hort. 101 and 102, Orchard Management. Given for 5 or more students. Fall and spring quarters. One credit each quarter.

120, 121, 122. **Advanced Landscape Gardening**—Continuation of course 3. Students work on assigned projects under supervision of instructor. Prerequisite, Hort. 3. Fall, Winter, and Spring quarters. Two credits each quarter. (Not given 1930-31.)

130. **History and Literature of Horticulture**—Brief study of the history of horticulture, survey of the literature to acquaint students with sources of horticultural knowledge. Winter quarter. Two credits. (Not given 1930-31.)

131. **Subtropical Fruits and Nut Culture**—Culture of citrus fruits, avocados, figs, dates, bananas and other tropical and subtropical fruits: Walnuts, almonds, filberts, pecans and other nuts. Winter quarter. Three credits. (Not given 1930-31.)

151. **Systematic Pomology**—Varieties of fruits; their classification, identification, and adaptation; critical study of many varieties of fruits; the more important fruit groups and their inter-relationships. Breeding and improvement of fruit plants. Practical work in variety identification, fruit exhibition and judging. Assigned readings on fruit varieties. Staging the Horticulture Show including selection of competitive entries and participation in judging contest required as a part of this course. Prerequisite, Hort. 1. Fall quarter. Five credits.

152. **Commercial Pomology**—Problems dealing with the handling and marketing of fruits, including picking, grading, packing, transportation, storage, distribution and sale; study of buildings and equipment for packing and storing fruit; roadside and local marketing. Hort. 110, Orchard Practice should precede this course. Prerequisite Hort. 1. Winter quarter. Four credits.

153, 154. **Seminar**—Discussion of current Horticultural topics, recent research work, reports on subjects not covered by regular courses, pre-
sentation of original papers on selected topics. Required of Senior College students in Horticulture and elective to other upper division students. All students are welcome to participate as visitors. Fall and Winter quarters. One credit each quarter.

Staff

155. Special Problems—Studies of advanced problems in Pomology, Landscape Gardening, or Vegetable Gardening for qualified senior or graduate students. Problem or subject selected by student. Assigned readings and research work in library, laboratory, greenhouse or field, presented as thesis. Registration by permission only. Two to five hours credit.

Staff

Hort. 190, 290. Summer Horticultural Travel Course—A supervised field trip to the Northwestern states and California to study orchard, small fruit, vegetable and ornamental enterprises in their highest development. This course is intended for seniors and graduates to put the finishing touches to their horticultural training through first hand observation of successful enterprises in these leading horticultural states. Travel will be by automobile, students defraying their own expenses, which will be kept at a minimum. Trips will require about six weeks in late summer, and will carry six credits. Will be given only if sufficient students are interested.

Coe

201, 202, 203, 204-a, 204-b. Research—Original research on horticultural problems for graduate students qualified to do investigational work in Horticulture, to be presented as graduate thesis for major or minor credit. Graduate thesis work may be used in partial fulfillment of requirements for the Master of Science degree, with major or minor in Horticulture. Re-registration until problem is completed. Registration by permission only. Course 201, Fall quarter; 202, Winter quarter; 203, Spring quarter; 204-a and 204-b, first and second Summer Sessions, respectively. Three to ten credits.

Staff

SUGGESTED COURSE FOR STUDENTS MAJORING
IN HORTICULTURE

FRESHMAN YEAR

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<th>Course</th>
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<td>Zool. 13, 14</td>
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<tr>
<td>Econ. 51, 52</td>
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<tr>
<td>Hort. 1, 101</td>
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<td>Hort. 6</td>
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<td>A. E. 13</td>
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<tr>
<td>An. Hus. 4</td>
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<td>Poultry 1</td>
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## SOPHOMORE YEAR

<table>
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<tr>
<th>Course</th>
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<tr>
<td>Chem. 3, 4, 26</td>
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<td>English 11</td>
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<td>Bact. 1</td>
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<td>Soc. 101</td>
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<tr>
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<td>Hort. 108</td>
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<td>Hort. 3</td>
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<td>Dairy Hus. 1</td>
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<td>Ag. Econ. 51</td>
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<td>Agron. 101</td>
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| Total                                      | 16      |

## JUNIOR YEAR

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<td>Botany 130, 131</td>
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<td>Zool. 111</td>
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<tr>
<td>Botany 120</td>
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<td>Hort. 102, 103</td>
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<td>Hort. 107</td>
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<td>Hort. 104</td>
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<td>Hort. 110, 111</td>
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<td>Agron. 117</td>
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| Total                                      | 17      |

## SENIOR YEAR

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<td>Hort. 130</td>
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<td>Hort. 131</td>
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<td>Hort. 155</td>
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<tr>
<td>English 1</td>
<td>5</td>
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<tr>
<td>Ag. Econ. 11</td>
<td>3</td>
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<tr>
<td>Electives</td>
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| Total                                      | 17      |
ARTS AND SCIENCE AND EDUCATION

ART

CALVIN FLETCHER, Professor;* H. R. REYNOLDS, Assistant Professor; JESSIE ANDERSON, Instructor.

1. **Nature Appreciation**—Study of beauty in natural form with a view of its use in design. Fall quarter. Three credits.

   *Fletcher and Anderson*

2. **Organization and Design**—General principles of design in pattern and color, color theory, etc. Winter quarter. Three credits.

   *Fletcher and Anderson*

3. **Art Appreciation**—Art principles as applied to costume, interior decoration, painting, sculpture and architecture will be discussed. Spring quarter. Three credits.

   *Fletcher and Anderson*

31. **Commercial Art and Posters**—Design in advertising, commercial illustration, posters, displays, lettering, etc., will comprise the course. It is recommended to students of commerce, show card and illustration. Spring quarter. Three credits.

   *Anderson*

32. **Color**—The Enjoyment and Use of Color, by Sargent, will be used as a text. A thorough study of color will be taken up. Recommended for students in Commerce and all students specializing in art or any who desire a good understanding and appreciation of color. Winter quarter. Three credits.

   *Anderson*

33. **History and Appreciation of Painting and Sculpture**—Survey of the great achievements of art throughout the ages together with analysis of modern technical processes necessary to the understanding of present day paintings, sculpture, and architecture. Recommended to students of Commerce and all others interested in understanding the work of the great artists of all time. Spring quarter. Three credits.

   *Anderson*

51. **Drawing for Public Schools**—Methods of vitalizing the teaching of drawing in the graded schools including use of line and color media; also blackboard work. Spring quarter. Three credits.

   *Fletcher*

52. **Design and Handiwork for Graded Schools**—Methods of doing and teaching design and color to children. Work in stick printing, etc.

   *Absent on leave.*
stenciling, weaving, basketry, jesso and other crafts used to relate design and color to the crafts studied. Fall or Winter quarter. Five credits.

Fletcher

53. Handiwork for Graded Schools—Stick printing, stenciling, weaving, basketry, enameling, jesso, pottery and other crafts suited to graded school will be taken up. Spring quarter. Three credits. (Not given 1930-31.)

122. Home Planning, Construction and Design—The principles of home design, garden design, house construction, heating, sanitary equipment, etc., together with painting, color and wood finishing will comprise the course. Fall quarter. Three credits.

Anderson

Note: Art 122, 123 and 126 may be used in Household Administration Department to apply on major.

123. Interior Decoration—Decoration and furnishing of interiors including furniture, walls, tableware, pottery, pictures, flowers and the practical assembling of all features which go to make the home beautiful. Also the historic styles of furniture and furnishing will be taken up. Four lectures, one lab. Winter quarter. Five credits.

Anderson

124. Perspective Theory—The principles of cylindrical, parallel, and oblique perspective as used in drawing will be covered. Fall quarter. Three credits.

Anderson

125. Anatomy and Figure Drawing—Study of art form in the human figure by means of artistic anatomy and creative expression by use of the human figure. Fall quarter. Three credits. (Not given 1930-31.)

Fletcher

126. History and Appreciation of Architecture—The characteristics of the great historic styles of building and their evolution, will be studied, with a view to developing good taste and judgment in this field at the present time. Winter quarter. Three credits.

Fletcher

STUDIO COURSES

Conducted as individual laboratory work. Three hours work each week required for each credit granted. Two, three or more credits may be taken each quarter. Students must file their studio hour schedule with the professor in charge of the course during the first week of their attendance.

All studio courses are given in the Art Studios on 3rd floor, Main building, and may be taken up in any quarter.
One or more examples of student's work may be retained during the succeeding year for exhibition.

A class in pose drawing will meet Wednesday, 2-5, during the Winter quarter.

A sketch class will be organized to work out of doors on Wednesday afternoons during the Fall and Spring quarters. Any medium within the range of the student's ability may be used. Sketching is recommended especially to painting, drawing and illustration students.

4. **Drawing**—Free hand drawing from still life, cast and nature.

5. **Elementary Painting**—In water color, oil, or pastel.

6. **Elementary Modeling**—From antique and nature.

7. **Illustration**—Elementary illustration and processes for newspapers, books, and magazines.

8. **Embroidery Design**—Design for embroidery, lace weaving, etc.

9. **Historic Ornament**—Egyptian, Assyrian, Greek, French, and Renaissance may be studied.

10. **Elementary Show Card**—Show card and elementary sign writing.

11. **Pottery**—Elementary, including building, turning, glazing, firing, etc., such as may be done with limited equipment.

12. **China Painting**—Elementary painting processes. Prerequisites, Art 1, 2, 3, or equivalent.

13. **Copper Work**—Simple exercises in sawing, raising, and repousse.

14. **Leather Work**—Elementary etching, dyeing, cutting, and tooling in leather mats, purses, bags, etc.

15. **BASKETRY**—Weaving processes in reed, raffia, and grass.

16. **Enameling**—Work on glass, wood, ivory, Polychrome, etc.
17. Fabric Decoration—Elementary stenciling, tie and dye, block-printing and Batik.  

106. Advanced Drawing—Life drawing from draped figures, animal drawing, and advanced antique.

108. Advanced Painting—Oil, water color, or pastel may be used.

109. Advanced Modeling—From animals or living models.

110. Advanced Illustration—Newspaper, magazine, costume and decorative illustration, illumination, poster work, or cartooning may be pursued. Opportunity is also given to pursue scientific illustration. Students will pursue one line at a time.

111. Professional Design—Design for textiles, wall paper, interior decoration, furniture, etc. One line to be taken at a time.

112. Advanced Costume Design—Prerequisites, Textiles, 105, 115.


114. Fancy Lettering and Illumination—Pen lettering and decoration for memorials, documents, Christmas greetings, place cards, etc.

115. Advanced China Decoration—Incrusted work, enameling, lustre, and past to be taken up.

116. Advanced Art Metalry—

117. Jewelry—Sawing, wire work, filigree, stone setting, enameling, soldering, will be taken up with brooches, rings, lavalliers, pins, chains, etc.

118. Advanced Leather Work—Tooling, carving, mounting and finishing.

119. Advanced Wood Ornamentation and Picture Framing—Carving, inlay, scraffito, esso, etc.
120. **Advanced Fabric Decoration**—Advanced work in Batik, dyeing, stencilling, and block-printing.

*Anderson*

151. **Art Education for High Schools**—What to teach and how to present it. Drawing Design, crafts and theory will all be considered. A basic knowledge of drawing and design is prerequisite. Required of all art majors who expect to teach in High School. Fall quarter. Three credits.

*Fletcher*

206. **Advanced Drawing**—From animals, life, and close anatomical analysis.

*Fletcher*

208. **Advanced Painting**—Landscape or portrait may be pursued.

*Fletcher*

209. **Advanced Modeling**—Original projects in sculpture to be carried out.

*Fletcher*

211. **Professional Design**—Interior decoration, or commercial design may be taken up.

*Fletcher*

**BACTERIOLOGY AND BIOCHEMISTRY**

J. E. GREAVES, Professor; H. C. PULLEY, Instructor.

1. **General Bacteriology**—This course deals with the biology and significance of bacteria. The following are considered: The development of bacteriology; the morphology and physiology of bacteria; bacteria in air, food and water, and the role they play in the arts and industries. Where possible this course should be accompanied by Bacteriology 2. Fall, Winter or Spring quarter. Three credits.

*Greaves and Pulley*

2. **General Bacteriology (Laboratory)**—It is desirable that this accompany Bact. 1. Breakage deposit $3.00. Fall, Winter, or Spring quarter.

*Greaves and Pulley*

101. **Bacteriology**—An advanced course in special phases of bacteriology. Prerequisite, General and organic chemistry. Given in 1929-30 if called for by at least six properly prepared students. Graduate students may arrange with the professor and receive graduate credit by registering for 201. Winter quarter. Three credits.

*Greaves*

102. **Soil Bacteriology**—Bacteria are considered in relation to soil.
fertility. The class will be conducted much as a seminar. Graduate students should arrange with the professor in charge for graduate credit, and register for 202. Prerequisite, Bacteriology 1. Fall quarter. Three credits. (Given only if registration justifies.)

Greaves

103. **Soil Bacteriology**—Methods used in bacteriological investigations. Should accompany Bacteriology 102. Prerequisites, Bacteriology 1, 2, and Chemistry 103. Breakage deposit $3.00. Fall quarter. Two credits. (Given only if registration justifies.)

Greaves and Pulley

104. **Dairy Bacteriology** (Lecture)—The bacteria of milk, butter, and cheese, and their relation to disease. Prerequisite, Bacteriology 1. Winter quarter. Three to five credits.

Pulley

106. **Pathogenic Bacteriology**—The pathogenic bacteria are considered in relation to disease, the subject of immunity is stressed. Prerequisite, Bacteriology 1. Breakage deposits, $3.00. Fall quarter. Five credits.

Pulley

111. **Biochemistry**—The transformation going on in the plant and animal. Prerequisite, Organic Chemistry. Spring quarter. Five credits.

Greaves

112. **Biochemistry**—A laboratory course which may accompany Bacteriology 111. Spring quarter. Two credits.

Pulley

113, 114, 115. **Advanced Biochemistry**—A study of the chemical transformation going on in the animal body. The class will be conducted much as a seminar. Graduate students should arrange with the professor in charge for graduate credit, and register for 213, 214, and 215. Two credits each quarter. Fall, Winter, and Spring quarters.

Greaves

116. **Sanitary Analysis**—Methods used by the sanitary inspector in examining water, milk, and other foods. Prerequisites, Chemistry 103, and Bacteriology 1 and 2. Time and credit to be arranged.

Greaves and Pulley

GRADUATE COURSES

207. **Research**—The laboratory and library facilities are especially arranged for advanced students in bacteriological investigation in agriculture, household science, the industries, sanitary science, and veterinary science. Time and credit to be arranged.

Greaves and Pulley
208, 209, 210. Seminar—Fall, Winter, and Spring quarters. Time and credit to be arranged.

Greaves and Pulley

CHEMISTRY

R. L. HILL, Professor; C. T. HIRST, SHERWIN MAESER, Associate Professors.

Students desiring to major in chemistry should consult with the head of the department as soon as possible, since departmental approval is necessary for graduation. Courses 102, 103, 104, 105, 106, 112, 113, 160, are required for a major. Majors must also complete physics 20, 21, 22, and Math. 47.

1. General Chemistry—An informational course in beginning college chemistry, designed especially for students who desire a brief applied survey of the field of inorganic chemistry. Credit in this course cannot be used as a prerequisite for any course in chemistry except Chemistry 26. Students majoring in chemistry or desiring premedical credit should register for Chemistry 3, 4, and 5. This course should be preceded if possible by Physics 1.

Five lectures and one quiz period per week. Five credits. Any quarter. Students must elect one quiz section. Quiz sections limited to 15 students.

Hill, Hirst, Maeser

3, 4, 5. Inorganic Chemistry—A more complete course in inorganic chemistry, including a beginning in qualitative analysis. Prerequisites, High School Chemistry, or Physics or Chemistry 1, or Physics 1 and 2. The course is so arranged that students who do not have time for a full year course in chemistry may get a general knowledge of the more fundamental principles in the first two terms (3, 4). Those majoring in chemistry or in other natural sciences, or doing premedical work should register also for the third term (5). Three lectures, two labs. Fall, Winter, and Spring quarters. Five credits each quarter.

Maeser

14, 15. Qualitative Analysis—A course in the theory and practice of inorganic qualitative analysis. Prerequisite, Chem. 4. Winter and Spring quarters. Three credits each quarter.

Hirst


Hill

26. Organic Chemistry—An informational course in organic chemistry arranged for students who desire a brief applied course. Students
majoring in chemistry or desiring premedical credit should register for Chemistry 21 and 22. Prerequisite, Chemistry 1, or 4. Four lectures, one quiz, and one lab. Winter or Spring quarter. Five credits.

Hill and Hirst

126. **Applied Organic Chemistry**—The application of organic chemistry to plant and animal life. This course is a brief course for students who have taken only Chemistry 1 and 26. Students with credit in Chemistry 5, and 22, should register for Bact. 111, or Chem. 112. Credit in this course is not allowed on a major in Chemistry. Prerequisite, Chem. 26. Fall quarter. Three credits. (Not given 1930-31.)

Hill

102-103. **Quantitative Analysis**—A course in the application of theory and the fundamental principles of gravimetric and volumetric analysis to inorganic, agricultural, and food analysis. Prerequisite, Chem. 5, or 15. Winter and Spring quarters. Three credits each quarter.

Hirst

104, 105, 106. **Physical Chemistry**—See Physics 104, 105, 106.

107, 108. **Dairy Chemistry**—The chemistry of milk and milk products, including tests for adulterants, preservatives, and the routine quantitative methods of the analysis of dairy products. Prerequisite, Chem. 22, or 26. Fall and Winter quarters. Three lectures, two labs. Five credits each quarter.

Hill

112, 113. **Advanced Organic Chemistry**—The more important theories and reactions employed in organic chemistry. Prerequisite, Chemistry 22. Fall and Winter quarters. Two credits each quarter.

Maeser

114. **The Nitrogen Compounds**—A course devoted primarily to the proteins, alkaloids, and purine derivatives. Prerequisite, Chemistry 22. Five credits. (Not given 1930-31.)

115. **Organic Preparations**—An advanced laboratory course in practical laboratory methods of synthetic organic chemistry. Prerequisites, Chemistry 22, and 103. Any quarter. Credit and hours to be arranged.

Maeser

116. **Inorganic Preparations**—An advanced laboratory course in practical laboratory methods of synthetic Inorganic Chemistry. Prerequisites, Chemistry 5, or 15, and 103. Any quarter. Credit and hours to be arranged.

Maeser

120. **Special Courses in Quantitative Analysis**—Prerequisite, Chemistry 103. Winter or Spring quarter. Time and credit to be arranged.

120-A. **Water Analysis**—
120-B. Food Analysis—
120-C. Soil Analysis—
120-D. Urine Analysis—
120-E. Gas Analysis—

Hirst

160. Chemistry Seminar—Required of all seniors majoring in Chemistry. Spring quarter. Two credits.

Maeser

180, or 280. Research—Senior or Graduate students majoring in Chemistry may elect research in any branch of the subject. Time and credit to be arranged.

Staff

EDUCATION

A. H. SAXER, Professor; E. A. JACOBSEN, L. R. HUMPH-ERYS, Associate Professors; C. E. McCLELLAN, ALICE ENG-LUND, Assistant Professors; FRANCES BARBER, GEORGE W. BATES, ALVIN HESS, Instructors.

4. Principles of Education—A study of (a) the meaning and purpose of education, formal and informal; (b) the nature of the human mind and the learning process; (c) the objectives of education as determined by the individual's needs and by the demands of the social group; (d) the nature and function of the school as an educative agency. Winter or Spring quarter. Three credits.

McClellan

5. Elementary School Curriculum—This course is designed to familiarize prospective elementary teachers with the content of the elementary curriculum and the objectives and standards to be realized in the grades. Fall or Winter quarter. Three credits.

McClellan and Barber

6. Educational Organization and Administration—A brief survey of the evolution of American public schools. A comparative study of the organization and function of the different units of educational control (national, state and local); methods of raising and apportioning school funds. Special attention will be given to Utah School law and its administration. Fall or Spring quarter. Three credits.

Jacobsen

41. Principles of Teaching in Elementary School—The spontaneous purposeful activity of the child as the basic principle determining teaching procedure. Subject matter reviewed in the light of the foregoing theses. Significance to teachers of the fact of individual differences. Consideration of school room equipment, organization and play activity. Fall, Winter, or Spring quarter. Three credits.

Barber
42. **Practice Teaching**—This course is for sophomores who have had educational psychology, principles of education and methods. The apprentice plan is followed which requires an initial period of observation with minor responsibility but with gradual increase of work and responsibility as trainees' ability is demonstrated. Fall, Winter, or Spring quarter. Ten credits. The quarter during which the student is to do practice teaching must be arranged for at the time of registration in the Fall quarter.

**Barber**

105. **The Junior High School**—A course dealing with historical development of the junior high school movement together with present theories, principles and practices underlying its operation. Winter quarter. Three credits.

**Jacobsen**

110. **History of Education**—A brief review of the historical development of educational theories and practices from the Greeks to the present. Special emphasis will be placed upon the relation of education to the social, religious, political and industrial conditions of the period. Important educational reforms and reformers will be studied for the lessons they may teach to modern education. Fall quarter. Three credits.

**Jacobsen**

111. **Science of Education**—A study of the scientific data of education as related to the processes and methods used in high school teaching. Consideration will be given to educational values and objectives and to tests and measurements by which standards are determined. Prerequisite, Psychology 102, or 103. Fall or Spring quarter. Three credits.

**Jacobsen and McClellan**

112. **Rural Education**—A survey and study of proposed objectives for rural schools; tendencies in curriculum revision and the organization of rural schools; the preparation of rural teachers, and the functions of the schools as agents in the solution of rural life problems. Winter quarter. Three credits.

**Humpherys**

114. **Methods in Secondary Education**—A course dealing with the application of the principles of education in the teaching process. Such problems as motivation, presentation of subject matter, and discipline, as they occur in actual teaching will be considered. Winter quarter. Three credits.

**McClellan**

115. **Practice Teaching in High School**—For those preparing for Junior High School or Senior High School certification by the State. The apprenticeship plan is followed which requires a period of observation and the performance of minor duties at first with gradual increase...
as the trainee proves himself equal to the work. Prerequisites, psychology 102, or 103, and Education 111 or 114. Four to eight credits. Fall, Winter or Spring quarter. Arrangements must be made at the time of registration in the Fall if training is desired at any time during the year. 

McGlellan, Bates and Hess


Englund

120. Problems in Teaching Home Economics—Objectives and principles involved in teaching subjects related to Home Economics. Planning of courses of study based upon the problem method of teaching. (Especially for teachers who are to qualify for Smith-Hughes certificate) Prerequisites, Methods in Teaching Home Economics 119. Fall quarter. Three credits.

Englund

121. The Organization and Administration of Secondary Education—(a) The State Law and regulations of the State Board of Education pertaining to public high school; (b) high school courses of study, including the Utah State course; (c) organization, duties and activities of the teaching staff and the student body; (d) special study of the objectives of social education, including character education as applied to secondary schools and the methods of realizing these objectives. Fall, Winter, or Spring quarter. Three credits.

Jacobsen

122. Practice Teaching in Home Economics—Supervised teaching carried on in the Logan High School. (For twelve weeks). One group and two individual conferences with each girl weekly. Prerequisite, Education 119. Fall, Winter or Spring quarter. Five to eight credits.

Englund


Humpherys

125. Practice Teaching in Shop Work—Supervised observation and practice teaching in various shop units in selected schools near the College. Individual conferences and round table discussion. Prerequisite, Education 124. Winter, or Spring quarter. Five to eight credits.

Humpherys

126. Methods of Teaching Agriculture—For prospective Smith-
Hughes and Agricultural Teachers. The home project and agricultural job analysis will be the basis of the course. Special topics considered are: The Smith-Hughes law and how it operates in Utah; selection and arrangement of subject matter; lesson planning; management of students in class room, laboratory and field; visual and extension methods of teaching. Prerequisite, Education 111 or its equivalent. Winter quarter. Five credits.

127. Practice Teaching in Agriculture—Opportunity will be provided for a limited number of men to do some personally directed teaching in Smith-Hughes work in the Logan High School, North Cache High School, and the South Cache High School. Prerequisite, first three years of Smith-Hughes course. Fall, Winter, or Spring quarter. Eight credits.

131. Educational Tests and Measurements—A course dealing with the history, principles and practices of the testing movement. Analysis of types of tests, their construction and use, with some practice in giving, scoring, and interpretation. Spring quarter. Three credits.

229. Educational Administration—A study of state, city, and rural school systems, with the principles underlying their organization and administration; an examination of the powers, duties, and responsibilities belonging to state and local boards of education, and upon superintendents, principals, and other school officials. A review of the literature of the field. Prerequisites, Psychology and History of Education. Fall quarter. Two credits.

230. Educational Supervision—A study of the objectives, ideals and present practices of the school; an examination of courses of study as a means of reaching desired objectives—a study of psychological principles as applied to present practices in teaching; a consideration of the technique necessary for the supervisor in determining success or failure on the part of the teacher. Specially arranged visits to teachers at work will constitute a part of the course. Winter quarter. Two credits.

231. Educational Survey—A study of techniques of evaluation of school systems and of revealing and solving educational problems by survey methods. The making of a practical survey will be included as part of the course. Spring quarter. Two credits.

269. Introduction to Research in Education—An inquiry into the nature and source of research problems, with a study of the underlying principles and the methods of working out such problems in the field
of education. Some attention is given to the matter of thesis writing as a problem related to research. Winter quarter. Three credits.

McClellan

271, 272, 273. Research in Education—This course gives opportunity to seniors and graduate students who are in a position to carry on some worthwhile piece of research in education in which they are especially interested. No regular class is held, but students receive the necessary instruction and guidance for their work through special conferences with the Instructor in charge. Time and credit to be arranged.

Jacobsen and McClellan

For Special Methods, Educational Psychology and other closely related courses see the following:

Art 51. Drawing for Public Schools.
Art 52. Design for Graded Schools.
Art 53. Handiwork for Graded Schools.
Art 151. Art Education for High Schools.
Math. 75. Elementary Statistical Methods.
Physical Education 120. Methods of Coaching.
Physical Education 152. Methods of Teaching Physical Education.
Psychology. All courses in Educational Psychology.

ENGLISH AND SPEECH

N. ALVIN PEDERSEN, FRANK R. ARNOLD, Professors; WALLACE J. VICKERS, ALMA N. SORENSEN, Associate Professors; CHARLOTTE KYLE, CHESTER J. MYERS, GEORGE C. JENSEN, Assistant Professors; RUTH MOENCH BELL, Assistant.

English 10, 11, 50, 51, 52, 105, 108, 109, 140, 141, 153, together with two years of French or German, and English History are required of majors in English.

English A—Drill in fundamentals of preparatory English for students unprepared to take English 10. Three days a week. Winter quarter. No credit. Students taking this course will be charged an extra fee of five dollars.

9. Scientific Vocabulary—Intensive study of English word formation, derivation, synonyms, and figurative language in order to acquire a large English vocabulary, and to be able to understand scientific terms. Spring quarter. Three credits.

Arnold

10. *Freshman Composition—Fundamentals in sentence and paragraph structure; practice in outlining; attention to correct usage; expository and argumentative writing. Fall, Winter or Spring quarter. Five credits.

Sorensen, Vickers, Kyle, Bell
11. *Sophomore Composition*—Open to sophomores who have completed English 10. Practice in selecting and organizing material; drill in effective presentation of subject matter; diction; narrative and descriptive writing. Fall, Winter, or Spring quarter. Four credits. 

Sorensen, Vickers, Kyle, Bell

13. *Children's Literature*—Introduction to the prose and poetry of childhood and adolescence. The course should be helpful to teachers. Fall quarter. Two credits.

Pedersen

15. *Miscellaneous Literature*—Prose fiction and poetry from different ages and countries. Spring quarter. Three credits.

Pedersen

31. *World Literature*—A survey course including a study of epic and romance, tragedy, comedy, the tale, satire, etc., as these forms of literature have appeared in Greek, Roman, Hebrew, Italian, French, German, English, and American literature. The course offers an opportunity for contact with the great literature of the world. Fall quarter. Five credits.

Vickers

50, 51, 52. *The History of English Literature*—The literature of Great Britain from the Anglo-Saxon period to the present time, with emphasis upon the literature since the time of Shakespeare. To register for Winter or Spring quarter exclusive of Fall quarter, consult instructor. Fall, Winter, and Spring quarters. Three credits each quarter.

Sorensen and Jensen

53, 54, 55. *Nineteenth Century Novel*—Class discussion and reports. French, Russian, Italian, German, English, and American novels. Fall, Winter, and Spring quarters. Three credits each quarter.

Kyle


Kyle

70. *The Short Story*—A study of the technique of the short story. Stories by Poe, Maupassant, Poe, Hawthorne, Bret Harte, Kipling, O. Henry and others will be analyzed. Attention will be given to the best short stories appearing in current magazines. Spring quarter. Three credits.

Kyle

80, 81. *American Literature*—From Colonial times to the present. Winter and Spring quarters. Three credits each quarter.

Kyle

*English 10 and 11 are required of all graduates.*
ENGLISH

86. Emerson. (Not given 1930-31.)
87. Carlyle. (Not given 1930-31.)
88. Browning—Principally a study of Browning’s monologues. Fall quarter. Two credits. 

Sorensen

English 10 and 11 are prerequisites for all courses in English that follow.


Vickers


Pedersen

111. The Eighteenth Century Novel—Sources of the English novel and its development in the eighteenth century, with attention to its influence on the continent. Fall quarter. Five credits. 

Sorensen

120. Debating—Fall quarter. Three credits. 

Vickers

121. Debating—Winter quarter. One hour of credit is given to those who make the College debating teams. 

125, 126, 127. Journalism—News collecting, study of country and city newspapers, preparation of agricultural feature stories for magazine and newspapers. Students of ability may sell much of their class work to the College Department of Information-Service, thus getting much training in publicity work and in Agricultural editorship. Fall, Winter, and Spring quarters. Two credits each quarter. (Not given 1930-31.) 

Arnold

130. The Bible as English Literature—The literature of the Bible arranged chronologically and studied in its relationship to the historical, social, and religious background of the Hebrews. Winter quarter. Five credits. 

Vickers

131. Introduction to Greek Drama—This course provides an opportunity to become acquainted with the greatest of all ancient drama. The plays are read in translation. Winter quarter. Five credits. 

Vickers

136. The Teaching of English in Secondary Schools—Open to seniors who have a major or minor in English. Fall quarter. Two credits. 

Vickers
140, 141. **Shakespeare**—Detailed study in class of six plays: Macbeth, Henry the Fourth, King Lear, Hamlet, Othello, Twelfth Night. Collateral readings: various other Shakespearean plays as well as a biography. To register for Winter quarter exclusive of Fall quarter, consult instructor. Fall and Winter quarters. Four credits each quarter.

Pedersen

143. **Milton**—Selected prose and poetry, with the emphasis upon Paradise Lost. Spring quarter. Five credits.

Vickers

153 **Chaucer**—Extensive reading course. Attention is paid to pronunciation. Spring quarter. Five credits.

Pedersen

155. **The Recent Novel**—A study of such writers as Bennett, Galsworthy, Wells, Anderson, Cather, Cabell. No student should register without first consulting the instructor. Winter quarter. Two credits.

Pedersen

163. **The Modern Drama**—A study is made of the plays of Ibsen, O'Neill, Galsworthy, Andreyev, Benavente, Brieux, Gorki, Maeterlinck, Rostand, Stringberg, Wedekind and others. Spring quarter. Two credits.

Pedersen

166, 167. **Types of Fiction**—Period restricted to the eighteenth and nineteenth centuries. The appearance and development of important types in England and America, together with a comparative study of selected European fiction in translation. Winter and Spring quarters. Two credits each quarter.

Sorensen

175. **Biography**—An appreciative study of great personalities in the light of their times. Boswell, Cellini, Strachey, Ludvig and others will be studied. Winter quarter. Five credits.

Sorensen

184. **Epic Poetry**—The Iliad, Odyssey, Aeneid, and parts of Dante's Divine Comedy in translation. Fall quarter. Four credits. (Not given 1930-31.)

Vickers

185. **Contemporary Poetry**—Studies in the poetry of representative English and American authors since 1900. Spring quarter. Five credits.

Sorensen

**SPEECH**

1. **Fundamentals of Speech**—Practice in extemporaneous speaking with a definite study of those principles which make speech effective.
Emphasis on delivery. Class limited to twenty-five. Fall quarter. Five credits.

**Pedersen and Myers**

2. **Vocal Interpretation**—The vocal interpretation of the printed page. The aim of the course is to develop the ability to appreciate intellectually and emotionally any good literature, and to interpret it so that others will appreciate it. Class limited to twenty-five. Fall or Spring. Five credits.

**Myers**


**Pedersen and Myers**

4. **Principles of Reading**—An analysis and study of the printed page. Beneficial to those who wish to read effectively either orally or silently. Of value to teachers of reading. Fall or winter. Class limited to twenty-five. Five credits.

**Myers**

5. **Speech Technique**—Special attention is to be given to voice science, gesture, breathing, posture, and phonetics. A course which aims at ease in cultural speech; for those who are interested in coming before the public in any form of speech work. Required of all those who take any senior college speech work. Class limited to twenty-five. Spring quarter. Three credits.

**Myers**

6. **Dialect**—A study of the dialect forms of such writers as Burns, Kipling, Drummond, Riley, Dunbar, Harris and Kirk. A course for those who desire a knowledge of the monologue and the use of various dialectic forms. Class limited to twenty-five. Spring quarter. Five credits.

**Myers**

102. **Dramatic Production (Acting)**—Study and production of plays. Attention is given to work in the art of stage make-up, stage technique, and technique of acting. Public performance of one-act plays. Class limited to twenty-five. Prerequisites, Speech 2, 4, 5, 6. Winter quarter. Five credits.

**Myers**

104. **Platform Reading**—An analytical study of oral literary forms, emphasizing the differentiation of such forms. The course deals with both dramatic and non-dramatic material. Prerequisites, Speech 2, 4, 5, 6. Spring quarter. Three credits.

**Pedersen**
GEOLOGY

WILLIAM PETERSON, Professor; REED W. BAILEY, Assistant Professor.

1. Geology and Geography of Utah—This course is planned especially to give the student a knowledge of the state, its mountains and valleys, rivers and lakes, and how they came to be. The geological processes such as running water, wind and moving ice, that have operated in this intermountain region, and modified the land forms, will be studied. There will be a brief study made of the geological history of the state, of the sequence of events that have led up to its present form, and the ancient life that lived here. This work will also include a study of the National parks and monuments in the State. Special reports and field trips will be required. Fall or Winter quarter. Five credits.

5. The Natural Economic Resources of Utah and their Utilization—Includes a study of land and water relationships, water power, timber, and metal and mineral deposits, as they have influenced the industry of the area. Special study will be given to the geographic distribution and economic importance of deposits containing gold, silver, iron, copper, zinc, manganese, clay, gypsum, coal, sulphur, cement, lime, gilsonite, elaterite, oil shale, oil, salt, alunite, phosphate, sulphate, etc. Winter quarter. Five credits.

10. Engineering Geology—General principles of geology and their application to engineering problems. A study will be made of the materials of the earth, such as rock, gravel, sand, and clay; of structural features of the earth's crust; of maps representing these materials and structures, with their application to the construction of roads, dams, and canals, and the development of water supply, drainage, etc. The course will consist of four lectures and one laboratory period. Winter quarter. Five credits.

12. Forest Geology—Planned specially for the student in forestry. It will include physiography, a study of land forms and the processes which made them, such as running water, wind, weathering, and moving ice, (glaciers), the formation of forest soils and the rocks from which they come. A study of topographic maps will be made. Spring quarter. Five credits.

105, 106. General Geology—Physical and Historical Geology. A study of the materials making up the earth’s crust, their arrangement and origin. Also, a study of the dynamic agents, such as wind, running water, moving ice, volcanic activities, etc., which operate upon the earth.
and modify its outer portion. A study of the sequence of events which have happened to the earth in the past as revealed by the rocks and fossils. A review of the building of the continent with its mountain ranges, and the succession of life which has inhabited the earth. Field trips will be required. Prerequisites, College Chemistry, and Zoology. Winter and Spring quarters. Five credits each quarter.

108. Economic Geology—The first part of the course will deal with the non-metals, with special emphasis on mineral fertilizers and coal; the second part, with metals, such as iron, lead, zinc, copper, gold, and silver, and their economic use. Prerequisite, General Geology. Fall quarter. Five credits.

110. Common Minerals and Rocks—The origin and formation of the different kinds of rocks, both sedimentary and igneous, and of about seventy-five minerals with methods for their determination. Prerequisite General Geology. Three lectures, two labs. Fall quarter. Five credits. (Not given 1930-31.)

111. Geology of Ground Water—A study of structure to determine the cause of springs, artesian wells, etc. Structural characteristics that will yield water, either through tunneling or boring. Prerequisites, Geology 105, 106, and Physics 1, 2. Spring quarter. Five credits.

113. Paleontology—Life succession as found in fossil record. Special emphasis will be placed on the origin and the development of the mammals of today. Spring quarter. Five credits.

114. Field Methods—Necessary in mapping the detailed geology of an assigned area. Fall and Spring quarters. Time and credits to be arranged.

120. Structural and Metamorphic Geology—A description and interpretation of structural features found in the earth's crust. Structures related to Ground Water, and Mining and Oil development will be emphasized. Regional structures such as mountain ranges will be studied. Metamorphic rocks and their origin will be a part of the course. Prerequisite, General Geology. Five credits. (Not given in 1930-31.)
JOEL E. RICKS, Professor; MILTON MERRILL, Assistant Professor.

1, 2, 3. European History—Survey of European History from the fall of Rome to the present. Fall, Winter, and Spring quarters. Five credits each quarter.

Merrill

13, 14, 15. United States History—Survey of United States History from the earliest times to the present. Fall, Winter, and Spring quarters. Five credits each quarter.

Ricks

131, 132, 133. United States History—History of the West. The Old West; the frontiers. The Rise of the New West; the Trans­mississippi West; economic and social problems of the West; relation of the West to the Nation. Fall, Winter and Spring quarters. Three credits each quarter.

Ricks

126. European History—Europe, 1815 to 1870. Social, economic and political problems of Europe from Congress of Vienna to 1870. Fall quarter. Two credits.

Ricks


Ricks

197, 198. Seminar in United States History—Required of all seniors majoring in History. Winter and Spring quarters. One credit each quarter.

Ricks

MATHEMATICS

A. H. SAXER, Professor; LeGRANDE HUMPHHERYS, Associate Professor; ROY EGBERT, HAROLD KEPNER, Assistant Professors; V. H. TINGEY, Instructor.

20, 21. Elementary Analysis—A course arranged for students who can take but two quarters of mathematics, and who have presented but one unit of algebra for entrance. Graphical methods for presenting facts. Relation of the graph to algebra, arithmetic, and geometry. Detailed analytical discussion of the linear equation. Graphical and algebraical solution of triangles. Trigonometry and use of trigo-
nometric tables. Use of logarithms, slide, rule, etc. Prerequisite, one year of high school algebra. Fall and Winter quarters. Three credits each quarter. (See Math. 35.)
(Not given in 1930-31.)

35. **College Algebra**—Quadratic equations and beyond. Will include a brief review of entrance algebra. This course or its equivalent is a prerequisite to all courses which follow. Fall, Winter or Spring quarter. Five credits.

40. **Solid Geometry**—Prerequisites: 1½ units of High School algebra and plane geometry. Fall, Winter, and Spring quarters. Two credits each quarter.

46. **Trigonometry**—Prerequisite, Math. 35. Winter quarter. Five credits.

47. **Elementary Calculus**—An introduction to differential and integral calculus, including a thorough introduction to Analytic Geometry. Prerequisite, Math. 46. Fall quarter. Five credits.

48. **Analytical Geometry**—Prerequisite, Math. 46. Spring quarter. Five credits.

60. **The Mathematical Theory of Investment**—Prerequisite, Mathematics 21 or 35. Fall quarter. Three credits.

61. **Probability and Life Insurance**—A continuation of Mathematics 60. Prerequisite, Mathematics 60. Winter quarter. Two credits.

75. **Elementary Statistical Methods**—An introduction to the mathematical theory of statistics together with application in the fields of Education and Business. Prerequisite, Math. 21, or 35, or their equivalent. Spring quarter. Five credits.

118, 119. **Differential and Integral Calculus**—A continuation of Course 47. Winter and Spring quarters. Five credits each quarter.

120. **Advanced Analytical Geometry**—With applications. Prerequisite, Mathematics 119. Fall quarter. Three credits.

121. **Advanced Calculus**—Together with applications to engineering
and the sciences. Prerequisite, Mathematics 120. Winter quarter. Three credits.

Saxer

122. Differential Equations and Their Applications—Prerequisite, Mathematics 121. Spring quarter. Three credits.

Saxer

160, 161, 162. Seminar in Mathematics—Arranged for students majoring in mathematics, honors candidates, and graduate students. Advanced topics in Analytical Geometry, Calculus, Differential Equations, and Statistical Methods may be chosen. Any quarter. Time and credit to be arranged.

Saxer

MODERN LANGUAGES AND LATIN

F. R. ARNOLD, Professor; GEO. C. JENSEN, Assistant Professor.

FRENCH

1, 2, 3. First Year French—Beginner’s French with grammar and conversation. About 800 pages of modern prose are read. Fall, Winter, and Spring quarters. Five credits each quarter.

Arnold


Arnold

104, 105, 106. French Conversation and Composition—Weekly debates in French on such subjects as militarism, education, country towns, and college pleasures. Writing up of each debate in French. Prerequisite, two years of college French or three years of high school. Fall, Winter, and Spring quarters. One credit each quarter.

(Not given in 1930-1931.)

Arnold

107, 108, 109. French Composition—Translation of English into French. Prerequisite, two years of college French or equivalent. Fall, Winter and Spring quarters. One credit each quarter.

110, 111, 112. Research Work in French Periodicals and Books, or any one of the following subjects:

(a) Landscape gardening.
(b) Percheron horses.
(c) French finance.
(d) French scientific reports.
(e) Home economics.
(f) Aviation.

The work will consist of outside reading and weekly reports to the instructor. Prerequisites, two years of college French, or three years of high school. Fall, Winter, and Spring quarters. Hours and credits to be arranged with instructor.

Arnold

113, 114, 115. Reading Course in Classic Plays of Seventeenth Century in France—Fall quarter, plays of Corneille. Winter quarter, plays of Racine. Spring quarter, plays of Moliere. Prerequisite, two years of college French. Two credits each quarter.
(Not given 1930-31.)

Arnold

116, 117, 118. Reading Course in Romantic Plays from “Hernani” to “Cyrano de Bergerac.” Prerequisite, two years of college French. Fall, Winter, and Spring quarters. Two credits each quarter.
(Not given 1930-31.)

Arnold

119, 120, 121. French of the 18th Century—Voltaire, Rousseau, Marivaux, and Beaumarchais. Prerequisite, two years of college French. Fall, Winter and Spring quarters. Two credits each quarter.

Arnold

SPANISH

1. First Year Spanish—Grammar, conversation and reading. Winter quarter. Four credits.
2. Continuation of Spanish 1—Spring quarter. Three credits.

LATIN

1, 2, 3. Grammar and Reading—And study of English vocabulary. Fall, Winter, and Spring quarters. Three credits each quarter.

Arnold

9. Scientific Vocabulary—Intensive study of English word formation, derivation, synonyms, and figurative language in order to acquire a large English vocabulary, and to be able to understand scientific terms. Spring quarter. Three credits. See English 9.

Arnold

Latin 101, 102, 103. Reading of Caesar and Virgil—Fall, Winter and Spring quarter. Two credits each quarter.

Arnold

GERMAN

1, 2, 3. First Year German—Grammar, reading, and conversation. Fall, Winter, and Spring quarters. Five credits each quarter.

Jensen
101, 102, 103. **Second Year German**—Reading of modern texts, grammar, composition. Fall, Winter, and Spring quarters. Three credits each quarter.

Jensen

104. **Scientific German**—Reading of Scientific texts. Specially recommended for students who are planning to do advanced work in the sciences, or who are working for advanced degrees. Prerequisite, two years of college German. Fall quarter. Two credits.

Jensen

105, 106. **Research work in German Periodicals and scientific books in the following subjects:**

(a) Chemistry.
(b) Medicine.
(c) Biology.
(d) Botany.
(e) Agronomy.
(f) Sociology.
(g) Physics.

Prerequisite, German 104. The work will consist of outside reading and weekly reports to the instructor. Fall, Winter and Spring quarters. Hours and credits to be arranged with instructor.

Jensen

108, 109. **Conversation on German Life and Composition on the Same Subject**—Winter and Spring quarters. Two credits each quarter.

Jensen

131. **Goethe’s Prose**—Especially recommended for literary students and returned missionaries. Prerequisite, two years of college German. Winter quarter. Three credits.

Jensen

132. **Heine’s Poetry and Selected Prose**—Prerequisite, two years of college German. Spring quarter. Three credits.

Jensen

**MUSIC**

WALTER WELTI, N. WOODRUFF CHRISTIANSEN, Assistant Professors.

**ASSOCIATED TEACHERS**

William Spicker, Violin.
Albert J. Southwick, Vocal.
A. L. Farrell, Vocal.
Samuel E. Clark, Piano.
Mrs. Walter Welti, Piano.
Mrs. Frances Winton Champ, Piano.
All students majoring in music must be proficient on at least one instrument or voice. Enough instruction must have been taken to reach the required standard. (The head of the department should be consulted at least three quarters before graduation in relation to the foregoing.) In addition, a department major must include for instrumentalists music 109, 110, 111, 112, 121, 122; for vocalists, music 109, 110, 111, 112, 30, 21.


   Welti

4, 5, 6. **Appreciation and History of Music**—From text. This course outlines the development of music from its beginning to the present. Fall, Winter and Spring quarters. Three credits each quarter.

   Welti

15, 16, 17. **Orchestra Combinations**—Students may enter this course by permission of the teacher only. Instrumental trios, quartets, etc., for ensemble training. Students taking this course will be required to furnish music for assemblies and school functions. Fall, Winter, and Spring quarters. One-half credit each quarter. Time to be arranged.

   Christiansen

18, 19, 20. **Symphony Orchestra**—Provides training and practical experience in a wide range of orchestral work. Students are required to play at all public appearances of the orchestra. Fall, Winter, and Spring quarters. One and a half credits each quarter.

   Christiansen

21, 22, 23. **Chorus**—To furnish music for chapel exercises and special occasions. Three hours a week. Fall, Winter and Spring quarters. One credit each quarter.

   Welti

24, 25, 26. **Male Glee Club**—Fall quarter open to all male singers. Membership is limited in number; consult instructor. Fall, Winter, and Spring quarters. One credit each quarter.

   Welti

27, 28, 29. **Ladies’ Chorus**—Open to all women singers. Membership is limited; consult instructor. Fall, Winter and Spring quarters. One credit each quarter.

   Welti

30, 31. **Public School Music for Grade Teachers**—To prepare teachers to teach music in the grades. The fundamentals of music and how to present them to children, emphasizing singing and song
material. Care and development of the child voice. Winter and Spring quarters. Three credits each quarter.

Welti

35. Vocal Combinations—Male, female, and mixed quartets, trios, etc. Time to be arranged. One credit each quarter.

Welti

40. Beginner's Band—For students needing preparatory work for the regular school band. Fall quarter. One-half credit.

Christiansen

41, 42, 43. Band—To provide for study and practice of band instruments, and to furnish music for athletic meets and out-door gatherings. Fall, Winter, and Spring quarters. One credit each quarter.

Christiansen

44, 45, 46. Brass Quartets—(Students may take this course by permission of the teachers only). Students taking this course will be required to play for school functions. Fall, Winter and Spring quarters. One-half credit each quarter.

Christiansen

109, 110. Elementary Harmony—Prerequisite, ability to read music well at sight. Unless students have had good training in the fundamentals, Music I should be taken as a preliminary study to harmony. Chord construction up to modulation. Winter and Spring quarters. Three credits each quarter.

Christiansen and Welti

111, 112. Advanced Harmony—Prerequisites, Music 109, 110. Chord construction including modulation, secondary sevenths, mixed chords. This course leads to a practical knowledge of this subject, useful for any instrument, vocal, arranging or composition. Winter and Spring quarters. Three credits each quarter.

Christiansen

121, 122. Instrumentation and Arranging—A study will be made of the various band and orchestra instruments, their character, transpositions, as well as the essential points in the teaching of them. Designed for students who may teach elementary bands and orchestras or who intend to follow music as a profession. Winter and Spring quarters. Two credits each quarter.

Christiansen

PRIVATE INSTRUCTION COURSES

(Note: The following subjects are given in private lessons only. Special fees are charged, ranging from $1.00 to $2.50 per lesson, varying with the different teachers and subjects.)

50, 51, 52 Private Piano Lessons—(A minimum of 6 hours prac-
Music

practice a week for one lesson, and 12 for two lessons). For one lesson a week, one and one-half credits each quarter. For two lessons a week three credits each quarter. Time to be arranged.

Associated Teachers

53, 54, 55. Privat Vocal Lessons—For one lesson a week, one and one-half credits each quarter. For two lessons a week three credits each quarter. Time to be arranged. A definite group of song material must be learned by memory each quarter, depending on the amount of credit registered for.

Welti and Associated Teachers

56, 57, 58. Brass and Wood Wind Instruments—A minimum of six hours practice a week for one lesson, and twelve hours for two lessons. For one lesson a week, one and a half credits each quarter. For two lessons a week, three credits each quarter. Time to be arranged.

Christiansen

60, 61, 62. Private Violin Lessons—(A minimum of eight hours a week for one lesson and fifteen hours for two lessons). For one lesson per week 1½ credits each quarter. For two lessons per week, 3 credits each quarter.

Christiansen and Associated Teachers

130, 131, 132 Counterpoint—Study of polyphonic music writing. A continuation of advanced harmony. Prerequisites, 109, 110, 111, 112. Given in private lessons only. One and one-half credits each quarter for one lesson a week. Time to be arranged.

Christiansen

Physical Education

W. B. PRESTON, CHRISTINE B. CLAYTON, Professors; JOS. R. JENSON, CATHARINE C. CARLISLE, Associate Professors; E. L. ROMNEY, Director of Athletics; CHARLOTTE E. DANCY, Assistant Professor; LEONORE CROFT, Instructor.

Because Physical Education determines capacity for efficiently carrying out work which a student prepares for in College, it is being emphasized more and more each year.

At the beginning of every school year each student is given a medical and physical examination so that he can be adjusted properly to his physical activities.

Physical Education is required in the Utah State Agricultural College for six quarters. One credit hour is given for each quarter.

Freshmen are required to meet twice a week for corrective gymnastics. Sophomores meet twice a week for advanced activity courses, which may be elected.
THE COLLEGE HEALTH SERVICE

The Health Service is maintained primarily for the care of students who may become ill during their stay on the campus. It is also looked upon as an educational department to teach preventive medicine and hygiene. Through its consultations, examinations, and advice, it attempts to point out the causes of ill health, and to present clearly the fundamental laws of good health.

PROFESSIONAL COURSES IN PHYSICAL EDUCATION

Because of the great demand for trained leaders in community recreation and playground managers, for directors of physical education in high schools, high school coaches, etc., this department offers an opportunity to major or minor in physical education and also to meet the state requirements for certification of teachers of physical education and coaching in high schools.

PHYSICAL EDUCATION FOR MEN

1, 2, 3. Freshman Athletics—Designed to furnish activity of such kind and in such a way as will insure correct posture and physical efficiency. Required of all Freshmen. Every quarter. One credit each quarter.

Jenson and

4, 5, 6. Sophomore Athletics—A continuation of Physical Education 1 with emphasis on more advanced types of gymnastics and heavy apparatus. Every quarter. One credit each quarter.

Jenson

8, 9, 10. Individual Athletics—The work of this course is given for those students who are physically unable to take Physical Education 1, 2, 3, 4, 5, 6. It is arranged to meet the needs of the individual students, as indicated by the physical examination and study of personal tendencies. Fall, Winter, and Spring quarters. One credit each quarter. Hours to be arranged.

Jenson

PHYSICAL EDUCATION FOR WOMEN

13, 14, 15. Freshman Gymnastics—This course consists of marching, natural gymnastics, dancing, athletic activities, and games. Required for graduation. Fall, Winter, and Spring quarters. One credit each quarter.

Carlisle and Croft

16, 17, 18. Advanced Gymnastics—A study of advanced exercises, gymnastics, marching, apparatus work, and teaching methods. Fall, Winter, and Spring quarters. One credit each quarter.

Carlisle
19, 20, 21. **Individual Gymnastics**—This course is given for those students physically unable to take the required work in physical education. It is arranged to meet individual needs as shown by physical examination and study of personal tendencies. Fall, Winter, and Spring quarters. One credit each quarter. Hours to be arranged.

**PROFESSIONAL COURSES**

31, 32, 33. **Natural Dancing**—For women. This course consists of dancing based on natural movements. It offers opportunity for music interpretation and pantomimic dancing. Fall, Winter, and Spring quarters. One credit each quarter.

41, 42, 43. **Elementary Folk Dancing**—For men and women. Includes study of fundamental dance steps, simple folk and national dances, and the presentation of dance material to different age groups. Particularly suited to needs of Two-year Normal students. Fall, Winter and Spring quarters. One credit each quarter.

64. **Clogging and Gymnastic Dancing**—For men. Elementary work in clogging, gymnastic and athletic dancing. Material suitable for presentation to boys in the elementary and high schools. Spring quarter. One credit.

71. **The Dramatic Game**—For women. This course takes up the fundamental play rhythms and music and singing games, showing their historical and racial significance; the development of simple folk dances from singing games; trade dances; Indian dances; pantomimes and ceremonies. Fall quarter. Two credits.

72. **Theory and Practice of Plays and Games**—For men and women. A study of play periods and material appropriate for each period. The selection of play material is considered, together with methods of presentation in the elementary school and on the playground. Winter quarter. Three credits.

73. **Community Recreation Leadership**—For men and women. Consists of lectures and practical work. Lectures will consider selection of suitable material, and methods of handling various groups. The practice hour will take up games and folk dances. Spring quarter. Two credits.

74. **Advanced Swimming**—For men. A continuation of course 3.
The student will be required to pass certain standard tests. Winter quarter. Two credits.

Jenson and .............

75. Competitive Activities—A course designed to teach students to play basketball, volley ball, tennis, baseball, soccer, football; also the organization of internal athletics, leagues, etc. Fall quarter. Two credits.

Jenson

76. Advanced Gymnastics—A study of methods of teaching gymnastics, such as parallel bars, side horse, rings, Indian club, as well as advanced floor work in calisthenics. Winter quarter. Two credits.

Jenson

77. Personal Hygiene for Men—Lectures covering personal and general hygiene, including care of skin, hair, teeth, nails; care of special senses as eye, ear, nose, and throat; study of rest, exercise, and recreation. Fall quarter. Two credits.

Jenson

81, 82, 83. Competitive Athletics—For women. Includes practice and methods of coaching sports and athletics for girls. Baseball, basketball, archery, volley ball, tennis, track and field events, arranged seasonally. Winter and Spring quarters, two credits. Fall quarter, one credit.

Carlisle and Croft

91, 92, 93. Swimming—For women. This course covers elementary and intermediate work in swimming. Fall, Winter, and Spring quarters. One credit each quarter.

94. Advanced Swimming—For women. This course covers advanced swimming, diving and life saving. Winter quarter. One credit.


Carter

108a. Corrective Gymnastics for Women—Prerequisite, Physical Education 106. Open to Juniors and Seniors only. This course gives theory of exercise for correction of the common physical defects—spinal curvature, flat feet, and all postural difficulties. Winter quarter. Two credits.

Carlisle

108b. Practice in Corrective Gymnastics—Practical application of material studied in Physical Education 108a. Spring quarter. One credit. Two hours a week, to be arranged.

Carlisle

109. Corrective Gymnastics—For men. Open to Juniors and Seniors. This course is devoted to the application of gymnastics for
the correction of such common defects as flat feet, spinal curvature, poor posture, etc. Prerequisite, Physical Education 106. Spring quarter. Three credits.

Jenson

111. **Nutrition**—For Athletes and Physical Education Majors. For description, refer to Department of Foods and Dietetics. Fall quarter. Two credits.

Clayton

120. **Methods of Coaching**—For men. A theoretical consideration of training and coaching of men's athletic teams. Fall, Winter and Spring quarters. One credit each quarter. Time to be arranged.

Romney

134, 135, 136. **Advanced Natural Dancing**—A continuation of Physical Education 31, 32, 33. This course also includes methods of teaching musical interpretation through natural movement. Fall, Winter and Spring quarters. One credit each quarter.

Carlisle

144, 145, 146. **Advanced Folk Dancing**—A continuation of Physical Education 41, 42, 43. More elaborate Folk dances are taught in this course, which also includes clogging, program dances, and a consideration of Pageant and Festival production. Fall, Winter, and Spring quarters. One credit each quarter.

Carlisle

151. **Principles of Physical Education**—A study of the principles upon which physical education is based; the place of physical education in our modern educational scheme; a brief consideration of the organization and administration of a department of physical education. Fall quarter. Three credits.

Carlisle

152. **Methods of Teaching Physical Education**—A study of physical education activities and methods of presentation. Planned as an introductory course to Education 115. Winter quarter. Three credits.

Carlisle

161. **Principles of Physical Training for Men**—Open to Juniors and Seniors. This course includes a comparison of the various systems of Gymnastics teaching in vogue today; also, the objective of Physical Education. Special attention is given to consideration of high school course of study. Prerequisites, Physical Education 73, 74, 75, 76, 77, 106. Winter quarter. Five credits.

Jenson

170. **Physical Diagnosis and Measurements**—For men and women. This course aims to train the prospective physical director to detect the common physical defects. Instruction is given in methods of taking
measurements, and in strength tests. Prerequisite, Physical Education 106. Spring quarter. Three credits.

For other required and closely related courses see:
- Textiles 105.
- Bacteriology 1, 2.
- Zoology 1, 111, 112.

**PHYSICS**

FRANK L. WEST, WILLARD GARDNER, D. S. JENNINGS, Professors.

1, 2. **General Physics**—A lecture demonstration course, designed for students not majoring in Physics or Engineering and requiring a minimum of mathematics. It includes mechanics, heat, electricity and magnetism, sound and light with their most interesting applications to industry and to life. Fall and Winter or Winter and Spring quarters. Five credits each quarter.

Physics 2 may be taken without Physics 1.

West

10. **General Astronomy**—Prerequisite, General Physics. Fall quarter. Two credits.

West

16. **Meteorology, or Physics of the Atmosphere**—The methods of weather observation, predictions, frost warnings and the relation of climate to man, to forestry and to agriculture. Prerequisite, Elementary physics. Spring quarter. Two credits. (Not given 1930-31.)

West

20, 21, 22. **Mechanics, Molecular Physics, Electricity and Magnetism, Heat, Light and Sound**—Prerequisite, High School physics. Three lectures and two labs. Fall, Winter, and Spring quarters. Five credits each quarter.

Gardner

104, 105, 106. **Physical Chemistry**—Including atomic, kinetic and electron theories, gaseous, liquid and solid states; solutions, thermochemistry, electro-chemistry, radio-activity and elementary thermodynamics. General physics, chemistry, calculus and Physics 107 should precede or accompany this course. Fall, Winter and Spring quarters. Three credits each quarter.

West

107. **Physical Chemistry Laboratory Work**—Fall, Winter, and Spring quarters. One credit each quarter.

Jennings

108. **Advanced Laboratory Work**—Electricity and magnetism, or physical chemistry. One to five credits each quarter. Recommended
to students majoring in physics. Fall, Winter, and Spring quarters. Time to be arranged.

110, 111. Direct and Alternating Current Electricity and its Application to Industry—Winter and Spring quarters. Two credits each quarter.


118. Thermodynamics, for Engineering Students—Fall quarter. Four credits. (See C. E. 196.)


150, 151, 152. Applied Mechanics for Engineers—Prerequisite, Calculus. Fall, Winter and Spring quarters. Five credits each quarter. (See C. E. 101, 102, 103.)

3. Elementary Psychology—A general course introducing the stu-
dent to the science of psychology and to its applications in teaching and other activities of modern life. Open to the students of all schools. Fall, Winter, or Spring quarter. Five credits.

8. Elementary Educational Psychology—Open to Freshmen and Sophomores who have had Psychology 1 or equivalent. This course prepares for teaching in elementary schools. Fall, Winter, or Spring quarter. Three credits.

Peterson and Jacobson

18. Applied Psychology—This course will include the application of psychology to such activities as home-making, manufacture, commerce, and the various professions (other than teaching). Prerequisite, Psychology 3 or equivalent. Winter quarter. Three credits.

Peterson

101. Principles of Psychology—Open to Juniors and Seniors. Deals with the science of human behavior and prepares for the specific lines of applied psychology. Fall or Winter quarter. Three credits.

Peterson

102. Advanced Educational Psychology—Open to students who have had Psychology 101 or equivalent. Prepares for teaching in high school and for leadership in other lines. Winter or Spring quarter. Three credits.

Peterson

103. Psychology of Adolescence—Open to students who have had Psychology 101 or equivalent. A study of the behavior of adolescents. Spring quarter. Three credits.

Jacobson

105. Experiments in Educational Psychology—Prerequisite, Psychology 101 or equivalent. An elementary experimental study of habit formation, sensation, perception, memory, etc. Winter quarter. Two credits.

Peterson

106. Experiments in Educational Psychology—Continuation of Psychology 105. Spring quarter. Two credits.

Peterson

110. Psychology of Infancy and Early Childhood—Prerequisite, Psychology 101 or equivalent. A study of the behavior of infants and small children. Spring quarter. Three credits.

Peterson

PHYSIOLOGY AND PUBLIC HEALTH

W. B. PRESTON, Professor; E. G. CARTER, Associate Professor; C. E. DANCY, Assistant Professor.

4. Anatomy and Physiology—A study of the structure and functions
of the human body. Fall, Winter, or Spring quarter. Five credits. 

Carter and Dancy

5. Laboratory Physiology—A course of laboratory exercises and demonstrations selected to illustrate the fundamental principles of physiology. Should accompany Anatomy and Physiology 4. Fall, Winter, or Spring quarter. One credit. 

Carter

*14. Health Education. (May be used for Grammar Grade certification)—This course deals with the adaptation of subject matter and methods to health education in the grades. Consideration will be given the various devices used at the present time in health teaching. The health of the teacher and the health habits of the pupils are emphasized. Two year Normal students only may register in this course, unless special permission is obtained. Fall, Winter, or Spring quarter. Four credits. 

Carter


Carter

107. Physiology—An advanced course in special phases of physiology. Four lectures and one demonstration period per week. Prerequisites, Physiology 4 and General Chemistry or Physics. Winter quarter. Five credits. 

Carter

108, 109. Public Health and Hygiene. (May be used for High School certification)—This course deals with the physical and mental health of the individual, and his relationship to other members of the community. Some of the subjects considered are: Nature and prevention of diseases, food in its relationship to the well-being of the individual, heating and ventilation, occupational diseases, and especially the promotion of health through education. Prerequisite, Bacteriology 1. Winter and Spring quarters. Three credits each quarter. 

Preston and Carter

110. Physiology—Advanced physiology of the glands of internal secretion. Prerequisite, Physiology 4 or 107. Spring quarter. Two credits. 

Carter


Carter

170. Physical Diagnosis and Measurements—For men and women. 

*Can not be counted in the Biological Science Group.
This course aims to train the prospective physical director to detect the common physical defects. Instruction is given in methods of taking measurements and in strength tests. Prerequisite, Physiology 106. Spring quarter. Three credits.

**ZOOLOGY AND ENTOMOLOGY**

W. W. HENDERSON, Professor; J. SEDLEY STANFORD, Assistant Professor.

Students specializing in Zoology must take courses 3, 4, 13, 111, 112, 116, 117, 118, 119, 124, 125 and 126.

1. **Principles of Zoology**—A study of morphology, physiology, differentiation, adaptation, and other zoological principles. Special emphasis is placed on man's relation to the rest of the animal world. This course is intended for those who have not studied Zoology before, and who desire only a general view of biological principles. It is recommended for all students except those in Agriculture and Arts and Science who desire a more comprehensive course. Four lectures, one quiz, and one lab. period. Fall, Winter, or Spring quarter. Five credits.

2. **Invertebrate Zoology**—A type study of the phyla of the animal kingdom except the Chordates. General classification and the relationship of groups of animals to each other. Emphasis is placed upon structural characteristics, development and functions. This course is well adapted for premedical students. Three lectures and two labs. Fall quarter. Five credits.

3. **Vertebrate Zoology**—Continuation of course 3; a type study of the Chordates and of the classes of Vertebrata. Useful for premedical students. Three lectures and two labs. Winter quarter. Five credits.

4. **General Entomology**—A study of the structure, classification and life histories of insects. A course for students who desire a general knowledge of our common insects. Required of all students majoring in Zoology. Some field trips will be taken. Three lectures and one lab. Fall quarter. Four credits.

5. **Agricultural Entomology**—Life histories and control of the more injurious insects affecting agricultural crops, with special reference to those of the intermountain region. It is preferred that this course be preceded by Entomology 13. Three lectures and one lab. Winter quarter. Four credits.

6. **Insect Morphology**—A comparative study of the external an-
atomy of insects. Emphasis will be laid on structures used in classification. Prerequisite, Entomology 13. Required for courses, 102, 103, and 104. Two lectures and one lab. Spring quarter. Three credits.

Stanford

102, 103, 104. **Systematic Entomology**—The structure of insects is studied sufficiently to enable the student to use keys employed in classification. Each student must collect, mount and properly identify a representative collection of insects found in the vicinity of Logan. Fall, Winter, and Spring quarters. Three laboratory periods. Three credits each quarter. Graduate credit may be allowed for this course.

Henderson

105. **Forest Entomology**—A study of the major insects affecting forests and forest products. Prerequisite, Entomology 13. Three lectures and one lab. Spring quarter. Four credits.

Stanford

106. **Entomological Literature**—Each student investigates and reports on the literature of some insect within his state. Historical development of entomology, current entomological literature and bibliographies are considered. Prerequisites, Entomology 13, 14, and 102. Graduate credit may be allowed for this course. Three lectures. Spring quarter. Three credits. (Not given 1930-31.)

Stanford

107. **Entomological Technique**—A study of methods of collecting, preserving, and rearing insects, designed to fit students for specialized work in entomology. Graduate credit may be allowed for this course. Prerequisites, Entomology 13, 14 and 102. One lecture and one lab. Spring quarter. Two credits.

Stanford


Stanford

111. **Genetics**—The biological principles of life and the inheritance of characters. A study of the germ cells with reference to heredity. The questions of variation, mutation, the inheritance of acquired characters, pure-lines, Mendelism, sex-determination and genetic principles generally are the main subjects of discussion. Prerequisite, Zoology 1 or 4. Five lectures. Fall or Winter quarter. Five credits.

Henderson

112. **Eugenics**—The principles of genetics as applied to the human race. Attention is given the historical development of and needs for eugenics, the inheritance of physical, mental and moral traits, human crosses, consanguineous marriages, eugenic procedure, and other principles which influence the innate qualities of human beings. Prerequi-
site, Zoology 111. Three lectures. Spring quarter. Three credits.

113, 114. Comparative Anatomy—The structure of the vertebrate animal body. In the Winter quarter students will make a thorough dissection of a sexually mature dog-fish shark and in the Spring quarter of a sexually mature cat. Prerequisite, Zoology 1, 3 or 4. Zoology 113 is prerequisite to Zoology 114. Two lectures and two laboratory periods a week. Winter and Spring quarters. Four credits each quarter. (Not given 1930-31.)

Henderson

116. Parasitology—The classification, morphology, and life history of human parasites. The disease producing protozoans, flukes, tape-worms, and round worms receive special study. Arthropods as external parasites and carriers of pathogenic organisms receive attention. This course should be taken by all premedical students. Three lectures and one lab. Spring quarter. Four credits.

Henderson

117. Histological Technique—A practical course in fixing, imbedding, sectioning, staining, mounting and magnifying of tissues. One lecture and two laboratory periods a week. Fall quarter. Three credits.

Stanford

118. Histology and Organology—A study of the microscopic structure of vertebrate organs and the functions of tissue aggregations. Prerequisite, Zoology 117. One lecture and two laboratory periods a week. Winter quarter. Three credits.

Stanford

119. Vertebrate Embryology—A study of the developmental stages more common to animals in general and a particular consideration of vertebrate development based on the chick and the pig. One lecture and two laboratory periods a week. Spring quarter. Three credits.

Stanford

124, 125, 126. Seminar—The students and the faculty of the department meet for one hour each week and hear reports from the members of the seminar on topics of mutual interest. Students specializing in Zoology must attend and participate in the activities of this seminar for at least three quarters. One credit each quarter. Time to be arranged.

The Staff

131. Organic Evolution—A critical study of the facts of evolution as obtained from a careful study of comparative anatomy, embryology, geographical distribution, blood tests and other fields upon which the doctrine of evolution is based. Factors causing evolution will be considered and discussions will be undertaken on other bodies of related thought. Prerequisite, some thorough course in biology. Three lectures. Spring quarter. Three credits.

Henderson
ZOOLOGY AND ENTOMOLOGY

GRADUATE COURSES

201. Zoological Research—The student who wishes to engage in some line of original research and is qualified to do so may elect and study some topic from eugenics, ecology, morphology, or other branch of Zoology. Open to under-graduate students only by special arrange­ment with the department. Thesis required. Hours to be arranged.

Henderson

210. Entomological Research—Students may select or will be assigned certain problems dealing with different phases of entomology. The amount of credit will depend on the nature of the problem and the time spent. Thesis. Open to under-graduate students only by special permission. Prerequisites, Entomology 13, 14, and 102.

Stanford

COMMERCIAL GUIDE FOR REGISTRATION

With the purpose of having students in the School of Commerce fill their group requirements in the first two years and provide a solid groundwork for their later courses, the following approved registration is provided for their guidance in the first two years.

(See next page for table.)
<table>
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<tr>
<th>Credits</th>
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<th>BUSINESS ADMINISTRATION AND ACCOUNTING</th>
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**Required of all men students. Physical Education 13, 14, 15, 16, 17, 18 for women.
## ECONOMICS

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*By completing an additional year’s work, including Political Science 116, 124, 125, 150, 151, 152, Psychology 101, Sociology 140, and Economics 155, students may be graduated upon the presentation of credits representing a full year’s study in some standard law school.
Students in either the School of Agriculture or the School of Commerce may major in this department. The choice of School in which to register should depend upon whether the student intends to enter the field of Agriculture or Commerce.

53. Principles of Agricultural Economics—A general study of the more important economic principles, forces and institutions affecting agricultural income, production, marketing, finance, prices, labor, land utilization, tenancy, taxation, tariff, etc.; the inter-relation of these factors; and the relation of agriculture to other industries. Prerequisite, six hours of General Economics. Spring quarter. Five credits.


102. Farm Management—An analysis of the principles and problems of farm organization and management. A study of the problems of choosing, buying, organizing, and managing the various types of farms. Discussion of proper size, balance, diversity, and the relationship between the various enterprises. Prerequisite, Agricultural Economics 53. Fall quarter. Five credits.

103. Farm Accounts—The practical application of accounting principles to farm management problems. Modifications to suit the different types of farming enterprises will be studied. Assembling and interpretation of accounting data. Lectures and assigned practice problems. Fall quarter. Four credits (Not given 1930-31.)

104. Economic Development of Agriculture—A historical analysis of agriculture through the various stages of its economic development, with special reference to the United States. Fall quarter. Three credits.

105. Agricultural Finance—A study of agricultural credit with regard to requirements, facilities, instruments, and methods of financing
agriculture. This involves an analysis of our present financial organization and its relation to agriculture. Special attention will be given to the agencies authorized by the Federal Government to provide financial aid and credit to farmers and farmers’ organizations. Prerequisite, General Economics. Winter quarter. Three credits.

Fuhriman

106. Land Economics—Principles underlying the utilization, valuation, tenure, and conservation of our land resources available for crops, pastures, and forests. Prerequisite, Agricultural Economics 53. (Not given 1930-31.)

113. Cooperative Marketing—This course deals with the fundamental principles of cooperative marketing of agricultural products, the legal status of cooperation in the United States and a study of the growth and development of cooperative marketing.

The development, possibilities and limitations of cooperative marketing in Utah, together with the organization, financing, membership, marketing and production factors will be studied. The problems confronting cooperative marketing associations and the industry as a whole will be given special consideration. Winter quarter. Five credits.

Thomas and Fuhriman

114. Marketing Fruits and Vegetables—Trends in production, consumption, and marketing fruits and vegetables in United States as a whole and in Utah, together with special problems of over-production, local and foreign competition, quality of products, transportation factors; grading, inspection, and marketing methods will be given consideration. Three credits. (Not given 1930-31.)

Fuhriman

116. Marketing Livestock and Livestock Products—The production and marketing factors as they relate to the marketing of livestock and livestock products with special reference to Utah’s conditions. Spring quarter. Three to five credits.

(Note: Students registering for 3 hours will be required to attend Monday, Wednesday, and either Tuesday or Friday classes. Tuesday’s lecture will discuss the marketing of livestock products. Friday’s lecture will consider the marketing of livestock. Each student will be required to make detailed study of the marketing of one product.)

Fuhriman

120. Agricultural Prices—Relationship between production and prices of agricultural products; trends in prices of agricultural commodities in Utah and competing states, in comparison with prices of non-agricultural products, and price cycles in their relation to Utah’s agriculture. State and National Agricultural Outlook, as it applies to Utah will be given special consideration. The aim of the course is to make
application of principles in prices, production and marketing to an agricultural program for the individual and the group. Prerequisites, six hours of General Economics and Agricultural Economics 53. Winter quarter. Three credits.

191. Advanced Farm Management—A detailed farm management analysis, including methods of making surveys, collecting, tabulating, organizing, and analyzing data and a study of the application of results toward the improvement of the farm business. The student will be expected to do some actual field work and to analyze farm management data in the laboratory. Spring quarter. Five credits.

Fuhriman

210. Research in Agricultural Economics—Time and credit to be arranged.

Thomas and Fuhriman

211, 212, 213. Agricultural Economics and Marketing Seminar—All seniors and graduate students majoring in this department are required to take part in these round table discussions of current problems and recent publications in Agricultural Economics and Marketing. Fall, Winter, and Spring quarters. One credit each quarter.

Thomas and Fuhriman

SUGGESTED COURSE OF STUDY FOR MAJORS IN AGRICULTURAL ECONOMICS IN THE SCHOOL OF COMMERCE

FRESHMAN YEAR

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### SOPHOMORE YEAR

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<tr>
<td>Political Science 11, 12</td>
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<td>5</td>
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<tr>
<td>Bus. Administration 25</td>
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<tr>
<td>Economics 30</td>
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<td>English or Language</td>
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<tr>
<td>Biological Science*</td>
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<tr>
<td>Agriculture*</td>
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<td>0-2</td>
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### JUNIOR YEAR

<table>
<thead>
<tr>
<th>Course</th>
<th>F.</th>
<th>W. (Hours)</th>
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<tbody>
<tr>
<td>Agri. Economics 105</td>
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<tr>
<td>Agri. Economics 114 or 116</td>
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<tr>
<td>Economics 155</td>
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<tr>
<td>Bus. Stat., Econ. 131</td>
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<tr>
<td>Accounting 101</td>
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<tr>
<td>Agronomy 117</td>
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<tr>
<td>Sociology 101</td>
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<tr>
<td>Agriculture*</td>
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<td>Electives*</td>
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### SENIOR YEAR

<table>
<thead>
<tr>
<th>Course</th>
<th>F.</th>
<th>W. (Hours)</th>
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<tbody>
<tr>
<td>Agri. Economics 102, 191</td>
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<tr>
<td>Agri. Economics 113</td>
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<td>Agri. Economics 120</td>
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<td>Economics 165</td>
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<td>Economics 206</td>
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<tr>
<td>Seminar Agri., Economics 211, 212, 213</td>
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<tr>
<td>Seminar Econ. 180, 181, 182</td>
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<tr>
<td>Research 210</td>
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<tr>
<td>Electives*</td>
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<td>3-5</td>
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*The particular courses to be selected will depend upon the special interest and needs of the student and his minor subject. He should consult with his major and minor professors in the selection of these courses.*
BUSINESS ADMINISTRATION

P. E. PETERSON, W. L. WANLASS, Professors; V. D. GARDNER, IRVIN HULL, Assistant Professors; *THELMA FOGELBERG, LUELL HAWLEY, Instructors.

Accounting 101, 102, 103 may be used to satisfy in part of the group requirements in Exact Science. No other courses in accounting may be so used.

Students majoring in the Department of Business Administration and Accounting may concentrate in the fields of Accounting, Finance, Management, Merchandising, and Secretarial Science. In addition to the recommended basic work in the first two years the student is advised to complete the courses listed in the following table according to his field of concentration. (Students majoring in the field of Secretarial Science should register under the advice of the Department head.)

(To be included either in the major or special group)

<table>
<thead>
<tr>
<th>Fields of Concentration</th>
<th>Recommended Courses</th>
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<tbody>
<tr>
<td>Finance:</td>
<td>Business Administration 130, 131, 140, 141, 149; Economics 131, 132, 165, 167, 168, 195, 206; Political Science 104, 105, 109 or 106, 107, 108; Accounting 101, 102, 103, 111.</td>
</tr>
<tr>
<td>Management:</td>
<td>Business Administration 130, 131, 133, 134, 151, 152, 153, 149; Accounting 101, 102, 103, 111; Economics 131, 132, 145, 195, 206.</td>
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<tr>
<td>Merchandising:</td>
<td>Business Administration 151, 152, 154, 155, 156, 161, 162, 131, 149; Accounting 101, 102, 103, 111; Economics 131, 132, 145, 195, 206; Political Science 104, 105, 109 or 106, 107, 108.</td>
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ACCOUNTING

Accounting 1, 2. **Introductory Accounting**—The purpose of this course is to present the basic principles of accounting and to furnish working material in the form of questions, problems, and practice sets which require the application of the theory advanced. Principles learned here will be useful as a basis for further study of accounting and as an aid in the understanding and control of the more common problems of business. Technique will be strongly emphasized. Fall or Winter, and Spring quarters. Five credits each quarter.

*Gardner and Hawley*

101. **Fundamentals of Accounting**—A basic course in fundamental theory. Emphasis will be given to the construction and interpretation of accounts. Required of all students majoring in Business Administration and Accounting. Graduate credit may be allowed upon the completion of some additional work. Prerequisite, Mathematics 35. Fall quarter. Five credits.

*Peterson*
102, 103. **Problems in Accounting Principles**—This course logically follows course 101 and brings to the classroom some of the vividness of the real problems as they arise in business. Selected cases and problems will be used. A critical understanding of accounting as it serves the executive is the aim of this course. Required of all majors in Business Administration and Accounting. Graduate credit may be allowed upon the completion of some additional work. Prerequisite, Accounting 101. Winter and Spring quarters. Three credits each quarter.

**Peterson**

104. **C. P. A. Problems**—A selection of the problems used by the various State Boards of Accountancy and the American Institute of Accountants. (Not given 1930-31.)

**Gardner**

107. **Household Accounts**—The practical application of accounting principles to home management problems. Students are expected to acquire a fair technique in handling of accounting records. Lectures and assigned practice problems. (Not given 1930-31.)

**Peterson**

111. **Industrial Cost Accounting**—A detailed study of the principles of cost accounting as applied to manufacturing industry, with particular stress upon methods of burden distribution and interpretation of cost statistics. Lectures with assigned problems and cases. Winter quarter. Five credits.

**Peterson**

120, 121. **Auditing**—A study is made of the theory and practice of auditing. Rules of professional conduct, and the duties and responsibilities of auditors are emphasized. A considerable time will be devoted to the mechanics of auditing, the preparation of audit programs, working papers, and final report. Open to graduate students. Prerequisites, Accounting 101, 102. Lectures, assigned cases and field work. Winter and Spring quarters. Four credits each quarter. Two lectures and two laboratory periods.

**Peterson**

122. **Auditing Practice**—The department is usually able to provide a limited amount of actual auditing practice. Only qualified students will be permitted to register for this work. Students must receive the approval of instructor before registering. Fall quarter. Two credits.

**Peterson**

124, 125. **Seminar**—A reading and research course for graduates, seniors, and specially approved juniors in accounting. Required of all accounting majors. Current development in the field will be considered in lectures and reports. Fall and Spring quarters. One credit each quarter. (Not given 1930-31.)

**Peterson**

*On leave of absence.*
BUSINESS ADMINISTRATION

25. Introductory Business Administration—An introductory course in the fundamentals of business administration. It is intended that this course shall furnish the students with a background for the study of the more complex problems of business. Not open to freshmen. Lectures and reports. Fall quarter. Five credits.

Peterson

28. Business Finance—This course treats of the structure of the corporate enterprise; providing capital for a new company; expansion of existing companies; recapitalization and reorganization of the corporation. Financial and operating ratios will be discussed. Proper financial plans and methods of marketing securities will also be considered. Open to qualified Sophomores. Prerequisites, Economics 51, 52, or equivalent. Spring quarter. Five credits.

Gardner

54. Psychology in Business Relations—This course combines the study of all branches of business psychology for the business man and student, including the psychology of the consumer and psychology in marketing, advertising, selling and employment. Fall quarter. Three credits.

Hull

130. Problems in Investment—With concrete cases used as a basis of discussion the varying investment needs of different classes of people will be studied in the first part of the course. In the second part, attention will be given to different types of investment houses; while in the third, types of investments securities will be analyzed. (Not given 1930-31.)

Gardner

131. Corporation Finance—This course is designed for students concentrating in accounting and finance. The financial plans and devices of various types and sizes of companies will be studied, with a view of determining sound means of raising and conserving funds in different phases of the business cycle. Some attention will be given to financial policy in re-organization. (Not given 1930-31.)

Gardner

132. Business Forecasting—The uncertainty which now attends the outcome of business undertakings constitutes the principal defect of the modern business system. In recent years science has been applied to this field. There is now a great body of material which, if properly understood and used, would be of inestimable value in forecasting business conditions. The aim of this course will be to acquaint students with the principles of business barometers. Prerequisites, Economics 51, 52, and 131, and Business Administration 25. (Not given 1930-31.)

Wanlass

133, 134. Industrial Management Problems—Selected cases will be
taken up for study and report. Problems in industrial location; on choice of site; on buildings and layout; on selection, purchase, and arrangement of equipment; on purchasing and stores; on organization; on industrial research; on labor relations; and on problems in managerial control. Prerequisite, Business Administration 25. Winter and Spring quarters. Five credits each quarter. (Not given 1930-31.)

Gardner

136. Business Ethics—After a general survey of the science of ethics special consideration will be given to those principles of professional conduct which are rapidly being introduced into modern business. The work of trade associations and professional organizations will be critically analyzed. Spring quarter. Three credits. (Not given 1930-31.)

Wanlass

137. Management Seminar—A course for seniors and specially approved juniors in which current developments in the field will be considered in lectures and reports. Winter quarter. One credit. (Not given 1930-31.)

Gardner

140. Risk and Risk-bearing—This course deals with risks—why they exist, their influence on economic activity—who are subject to risks and the various ways of dealing with risks. The risks of the investor, worker, consumer, and business manager are treated—involving the study of speculation, research, forecasting, business judgment, the prices paid for risk-bearing services as insurance, and a somewhat critical appraisal of our present risk-bearing organization. Fall quarter. Five credits.

Hull

141. Principles of Real Estate—A general course designed for the business man rather than solely for the specialist. The technic of real estate appraisal, transfer, legal restrictions, and the forms and papers used in real estate transactions. Winter quarter. Three credits. (Not given 1930-31.)

Hull

149. Business Policy—This is a co-ordinating course aimed to develop perspective and judgment. Problems will be discussed in finance, control, legal and ethical aspects. Required of all majors in Business Administration. Spring quarter. Five credits.

Gardner

MERCHANDISING

51. Principles of Selling—Designed to meet the needs of students who want a general knowledge of the principles (psychological and economic) underlying retail, wholesale, and specialty selling. Spring quarter. Three credits.

Hull

151, 152, 153. Problems in Merchandising—The aim of this course
is to present by means of carefully selected cases the manager's merchandising problems. Methods of marketing merchandise; selection of channels of distribution for consumers and industrial goods; sales organization and control; advertising and sales promotion; stock-turn; price policies. Fall and Winter quarters. Five credits each quarter.

154, 155. **Principles of Advertising**—Designed to meet the needs of students who want a general appreciation of advertising as a tool in business. Attention will be given to the "advertisability" of products, the relationship of advertising to given plans of distribution and production, and to finance. The work will include choice of appeals for various classes of goods, choice of media, and the mechanics of good advertising. Principles will be applied to the analysis of magazine and newspaper advertising, and to the preparation of some advertisements. Fall and Winter quarters. Five credits each quarter. (Not given 1930-31.)

156. **Sales Administration**—The salesman in marketing strategy. Recruiting, selecting, developing, and equipping of salesmen. Direction of sales campaigns. Stimulating sales activities. Spring quarter. Three credits. (Not given 1930-31.)

161, 162. **Retail Store Management Problems**—The aim of this course is to present, by means of carefully selected and co-ordinated cases, the management problems of retail stores. The problems studied include accounting, statistics, organization, merchandise, selling, stocks, buying, personnel, finance, price policies, and general administrative policies. The case method. Winter and Spring quarters. Five credits each quarter.

**SECRETARIAL WORK**

A considerable demand has been found for a short intensive course in secretarial science. Students wishing to complete such a course should register according to the following study program.

**First Year:**
- Freshman Composition
- Introductory Accounting
- Stenography—Elementary or Advanced depending upon whether or not the student has had any high school stenography.
- Typewriting—Elementary or Advanced depending upon whether or not the student has had any high school typewriting.
- Introductory Psychology
- Elementary Educational Psychology
- Economic Resources
- Social Relations
Citizenship
Women and Culture
Machine Bookkeeping
Elective—Calculator Operation

**Second Year:**
Scientific Vocabulary
Stenography—Advanced—If student has not had any in high school.
Typewriting—Advanced
Secretarial Science—If student intends to finish in two years and has
had typewriting and stenography in high school.
Business English
General Economics
Principles of Sociology
Commercial Law
Physiology
Dress Appreciation
Mathematics, Chemistry, or Physics
Upper division students should register under the advice of the
Head of the Department.

30. **Business English**—This course aims to give the student practice
in the writing of different kinds of business letters and reports. Special
attention will be given to report writing. Fall quarter. Three credits.

75, 76. **Elementary Stenography**—Thorough drill in the fundamen-
tals of the Gregg system of shorthand. Winter and Spring quarter.
Five credits each quarter.

78, 79, 80. **Advanced Stenography**—Thorough review of the prin-
ciples of the Gregg system of shorthand. Special attention will be
paid to the acquirement of speed. Prerequisites, one year stenography
and typewriting. Fall, Winter, and Spring quarters. Three credits
each quarter.

86, 87, 88. **Beginning Course in Typewriting**—Parts of the type-
writer and how to use them; mastery of the keyboard, emphasizing
position, rhythm, technique, and accuracy. Practice also furnished in
letter writing, tabulation and legal documents. Fall, Winter, and Spring
quarters. One credit each quarter. Students must have daily practice.
The Tuesday and Thursday hours to be arranged for by the student.

89, 90 91. **Advanced Course in Typewriting**—Studies for the at-
tainment of speed and accuracy. One credit each quarter. Fall, Win-
ter, and Spring quarters. Students must have daily practice. The
Tuesday and Thursday hours to be arranged for by student.

95. **Calculator Operation**—Instruction and practice in the use of the
Burroughs calculating machines. Fall or Spring quarters. One credit. A fee of $1.00 will be charged.

Burroughs Posting Machines—A laboratory course giving instructions in the use of the Burroughs Posting Machine. Registration limited to 9 students. Three hours per week. Fall or Spring quarters. One credit. A fee of $1.00 will be charged.

Secretarial Science—This course is intended as a finishing course for students who intend to major in secretarial work. The Fall quarter’s work will be devoted to a review of shorthand, drill for high speed, and a study of advanced phrase-forms. The Spring quarter will be devoted to filing and indexing, handling mail, modern methods, duties of the stenographic and allied departments, and secretarial ethics. Prerequisites, two years of typewriting, two years of stenography; Accounting 1 and 2, or equivalent, and Economics 51, 52. Fall and Spring quarters. Three credits each quarter.

ECONOMICS

W. L. WANLASS, F. D. DAINES, JOS. A. GEDDES, WILLIAM PETERSON, Professors; V. D. GARDNER, IRVIN HULL, Assistant Professors.

Students majoring in this Department should include the following senior college courses in either the major or special group. Economics 116, 125, 131, 132, 135, 140, 155, 165, 167, 180, 181, 182, 195, and 206; Agricultural Economics 115; Accounting 101 and 102; Political Science 106, 107, 108, 109, 124, and 125.

Economic Resources of the United States—An analysis of resources and industries, with particular emphasis upon their regional distribution in United States. Relations of social and physical conditions. Climate, mineral, agricultural products, transportation facilities, etc. Special attention paid to those forces bringing about changes in our economic structure. Section 1, Fall quarter; Section 2, Winter quarter. Three credits.

Natural Economic Resources of Utah—Includes a study of land and water relationships, water power, timber, and metal and mineral deposits, as they have influenced the industry of the era. Special study will be given to the geographic distribution and economic importance of deposits containing gold, silver, iron, copper, zinc, manganese, clay, gypsum, coal, sulphur, cement, lime, gilsonite, elaterite, oil shale, oil salt, alunite, phosphate, sulphate, etc. The various manufacturing processes involved in the turning Utah’s natural resources into finished products will be studied. Attention will be given to the size,
character, and location of the deposits as they affect manufacturing processes, as well as the markets for the products and the competition with other supplies. Winter quarter. Five credits. William Peterson

30. Economic Development of the United States—This course indicates the dominance of economic forces in history. A critical study of the evolution and progress of American agriculture, industry, commerce, transportation, banking, labor organizations, etc., from the Colonial period to the present time, ending with a survey of existing institutions. Section 1, Winter quarter; Section 2, Spring quarter. Three credits. Hull

51, 52. General Economics—After a brief survey of man’s economic development, a careful study is made of those fundamental laws and principles that govern our modern economic life. Some attention is also given to present economic problems preparatory to a more intensive study in the advanced courses in this department. 51 is given either Fall or Winter quarters; 52 is given either Winter or Spring quarters. (Not open to Freshmen.) Five credits each quarter. Five sections. Staff

110. Commerce and Commercial Policies—Attention given to the fundamentals of trade and commerce, to the methods of increasing, limiting and directing American trade, and an analysis of sound commercial policies. Prerequisites, Economics 51, 52. Three credits. (Not given 1930-31.)

116. Economic Development of Western Europe—A critical survey of the development of economic institutions and practices in Western Europe from the beginning of the Colonial period to the present time. Special attention will be given to those countries that have contributed most to the economic life of the United States. Five credits. (Not given 1930-31.)

125. Labor Problems—A study of the labor situation from the social point of view. Special attention is given to labor problems and to methods of securing industrial peace. Prerequisites, Economics 51, 52. Three credits. (Not given, 1930-31.) Geddes

131, 132. Statistical Methods—This course deals with statistical methods rather than the mathematics of statistics. Special attention will be given to those forms and methods of procedure that are used in the social sciences and agricultural with most emphasis upon business application. Actual statistical studies will be made by each stu-

*May not be included in Social Science group.
135. **Transportation Economics**—Emphasis is placed chiefly on railroad transportation in the United States. Some attention will be given to highways transportation. The underlying economic principles will receive more attention than the practical phases of transportation. Special attention will be given to those problems that are peculiar to the intermountain section. Prerequisites, Economics 51, 52. Spring quarter. Three credits.

**Wanlass**

140. **International Economic Relations**—Special attention will be given to the basic economic relationships existing between the industrial nations of the world, international commerce, tariffs and trade restrictions, international debts and finance, and various means of promoting progress on a basis of sound economics. Prerequisites, Economics 51 and 52. Spring quarter. Three credits.

**Wanlass**

145. **Economics of Consumption**—There is an economics of consumption that is quite as important as the economics of production. This course deals with personal and group expenditures, standards of living, budgets, variations in consumption, etc. Spring quarter. Two credits.

**Wanlass**

155. **Principles of Taxation**—After a brief survey of the fundamental economic principles of public finance, a critical examination of our federal, state, and local taxes and the various business taxes will be studied. Special attention will be given to tax problems in Utah. Prerequisites, Economics 51, 52. Winter quarter. Five credits.

(Not given 1930-31.)

**Wanlass**

165. **Money and Credit**—The nature, development and uses of money and credit. Special attention given to bimetallism, the gold standard, the money market and the relation of money and credit prices. Prerequisites, Economics 51, 52. Fall quarter. Five credits.

**Wanlass**

167. **Banking**—The functions and operation of such financial institutions as commercial banks, savings banks, and trust companies will be studied critically. This will be followed by an historical treatment of banking in the United States and a survey of European and Canadian Banking in comparison with our Federal Reserve System. Varied reading and reports on pertinent problems will be part of the course. Prerequisites, Economics 51, 52. Winter quarter. Five credits.

**Wanlass**

**Wanlass**

175. **Public Utility Economics**—In this course will be presented first-hand information on the economic problems of the great organizations which provide our communications, transportation, light, heat, and power—selected from the reports of a great number of leading Public Utility Companies. Prerequisites, Economics 51, 52. Spring quarter. Three credits.

**Hull**

180, 181, 182. **Current Economic Problems.** (Economics Seminar.)—A reading and research course designed for junior, senior, and graduate students who are majoring in economics and related subjects. Special reports on current economic problems and literature will be made. Required of students graduating in economics. Fall, Winter, and Spring quarters. One credit each quarter. Two years credit allowed.

**Wanlass and Hull**

195. **History of Economic Doctrines**—A critical study of the origin and development of the economic theories of the leading thinkers in the leading nations of the world from 1750 to the present time. (Not given 1930-31.)

**Wanlass**

200. **Research in Economics**—Special investigations in problems of economics may be carried on by senior and graduate students. Credit will be granted according to work done.

**Wanlass**

206. **Advanced Economic Theory**—A critical analysis of present day economic theories and doctrines. The purpose of the course is to enable students to get a better grounding in economics and to correlate the work of the various courses in economics. Only senior and graduate students who have had considerable work in economics will be admitted. Spring quarter. Two credits.

**Wanlass**

**SOCIOMETRY**

JOSEPH A. GEDDES, FRANKLIN L. WEST, Professors; CAROLINE M. HENDRICKS, Assistant Professor.

Sociology 70 is prerequisite for all upper division courses in Soci-
ology. Sociology 4 may be used for group requirements but is not accepted as a prerequisite. Social Hygiene heretofore given separately has now been combined with Sociology 4, which is developmental study as contrasted with the scientific group.


Nuclei courses about which the choice of major and special group courses should revolve are suggested as follows:

Rural Welfare—Soc. 101, Soc. 140, Soc. 185, 190, 191, 192.

General Sociology—By consultation with department.
Research—Ec. 131, Soc. 140, Soc. 190, 191, 192. Graduate work in this field, open to Seniors, includes Soc. 201, 202, 204.

The special group may be filled from the following list of subjects through consultation with the department:

Accounting 107.
Zoology 111, 112, 131.
Psychology 101.
Public Health 108, 190.
Economics 131, 145, 195.
Political Science 124, 125.
Household Administration 125 (for women).
Geology 105, 106.

4. Social Relations—Given in conjunction with Political Science 4 and Economics 4 as an orientation course for freshmen. It emphasizes developmental materials as contrasted with a scientific treatise. Social conflicts and maladjustments are treated in such a way as to clarify adjustments and accommodations. Credit may be used to fill group requirements, but may not be used as a prerequisite for upper division courses. Fall, Winter or Spring quarter. Three credits.

West and Mrs. Hendricks

61. Women and Culture—Open to women students only. A study is made of women’s contribution to culture. Traditional forms of individual refinement are observed, with the purpose of becoming familiar with inherently harmonious, balanced-types of personality. The richly varied, yet unified, life is emphasized. Fall quarter. Two credits.

Mrs. Hendricks

70. Principles of Sociology—The foundations of sociology are studied in order that a plan of social progress may be formulated. The problems of social origins, social structures, public opinion, social activities, social organization, and social evolution are carefully considered. Prerequisite for all upper division classes. Fall, Winter, or Spring quarter. Three credits.

Mrs. Hendricks
100. **Applied Educational Sociology**—By utilizing a series of practical problems it is aimed to prepare the public school teacher for meeting the problems of school and community. Fall quarter. Three credits.  
*Geddes*

101. **Applied Rural Sociology**—A study is made of the problems of rural life as a basis for constructive action in developing and maintaining an efficient and wholesome civilization in the country. Fall quarter. Three credits.  
*Geddes*

140. **Social Psychology**—The influence of the “groups” in the formation of the “norms” of life and in exerting pressure on the personality is stressed. Fall quarter. Three credits. (Not given 1930-31.)  
*Geddes*

141. **Urban Sociology**—This course deals with city life. The ecological distribution of the population, the relation between groups, the problems of class conflict, the forms of social control, the improvements in impersonal relationships are basic considerations. (Not given 1930-31.)  
*Geddes*

161. **Modern Social Problems**—A selection of a series of social problems is made. These problems are studied with the two-fold object of ascertaining the present situation and of arriving at common-sense solutions. Spring quarter. Three credits.  
*Geddes*

170. **Juvenile Delinquency**—A study of juvenile offenders. The causes of delinquency are considered with the purpose of arriving at intelligent remedies. Various methods of home, social, and institutional treatment are studied; parental cooperation, personal supervision allied with probation and parole, institutional treatment, etc. Winter quarter. Three credits.  
*Mrs. Hendricks*

171. **Social Problems of the Family**—In this course the relations of the family with outside groups, agencies, and institutions are stressed. Attention is also paid to the inter-relation between the different members of the family. Home life is treated as a changing, developing, basic organization which should be in constant reciprocal relation with outside agencies. Fall or Spring quarter. Three credits.  
*Mrs. Hendricks*

172. **Poverty and Dependency**—A study is made of the extent of poverty, its causes, remedies now in use and others which give promise. Social methods of caring for dependents are examined. Emphasis is placed on programs which look to prevention and to minimization as well as to adequate care. Spring quarter. Three credits.  
(Not given 1930-31.)  
*Mrs. Hendricks*
185. **Community Organization and Leadership**—A course dealing with the efforts of communities to organize the various fields which have to do with the chief interests of life. The coordination of agencies, the opportunities for leadership, the effects of disorganization are studied. Spring quarter. Three credits. 

**Geddes**

190, 191, 192. **Seminar in Sociology**—Fall, Winter, and Spring quarters. One credit each quarter. 

**Department**

The following courses may also be used to satisfy the requirements for a major in Sociology.

- **Public Opinion** (Political Science 124)
- **Eugenics** (Zoology and Entomology 112) (Eugenics cannot be used to satisfy the Social Science group requirement of 12 hours.
- **Labor Problems** (Economics 125.)

**GRADUATE COURSES**

201. **Research in Sociology**—For advanced students only. A project is organized and field work is carried on under supervision. Original studies are made. Prerequisites, Sociology 4, 70, Math. 22. Credit and hours to be arranged. 

**Geddes**

202. **The Study of Society**—An advanced course in Sociological theory, Sociology is studied both as a classified body of facts and as a method of investigation. Prerequisites, Sociology 70. Winter quarter. Five credits. 

**Geddes**

204. **Methods in Social Research**—A study of present methods of carrying on social research. Exploration, the interview, the survey, the diary, the letter, the life history, interpretation of data are stressed. Prerequisites, Sociology 4, 70, Math. 22. Winter quarter. Two credits. (Not given 1930-31.) 

**Geddes**

**POLITICAL SCIENCE**

F. D. DAINES, ASA BULLEN, Professors.

Students majoring in this department should include the following senior college courses either in the major or special group: Political Science, 103, 116, 117, 118, 124, 125, 150, 151, 152; Psychology 101; Sociology 140; History 157, 158, 159; and, Economics 125, 131, 132, 155.

4. **Citizenship**—The aim of this course is to make a study of the social environment, from the point of view of discovering the points of contact between the individual and the problems of human relationship. Fall, Winter, or Spring quarter. Three credits. 

**Daines**
5. **State Government**—The relationship of the States and the Nation in our federal form of government. The government of Utah will receive special attention. Three credits. (Not given 1930-31.)

11, 12, 13. **Commercial Law**—The law of contracts, agency, negotiable papers, banks and banking, guaranty and suretyship. A comprehensive study of the principles of law underlying each of the above subjects. Open to all students of Sophomore standing or above. Fall, Winter, and Spring quarters. Three credits each quarter.

*Bullen*

103. **International Relations**—Psychological, economic, racial and other obstacles to international cooperation, as exemplified in recent events. The Treaty of Versailles; the League of Nations; the present day world politics. Prerequisite, one year of Social Science. Fall quarter. Five credits. (Not given 1930-31.)

*Daines*

104, 105. **Commercial Law**—The law of bailments, sales of personal property, partnerships, corporations and bankruptcy. Prerequisites, Political Science 11, 12, 13. Fall and Winter quarters. Three credits each quarter. (Not given 1930-31.)

*Bullen*

106, 107, 108. **Commercial Law**—The law of property, real and personal, including deeds, conveyancing and abstracts of title, mortgages, wills and estates. The law of insurance and debtor and creditor. Prerequisites, Political Science 11, 12, 13. Fall, Winter, and Spring quarters. Three credits each quarter.

*Bullen*


*Bullen*

112. **State administration**—The organization and activities of state agencies of administration. A comparison of administrative organization of Utah with that of other states in the Union. Three credits. (Not given 1930-31.)

113, 114. **Municipal Government and Administration**—The government and problems of cities, with special reference to American experience. Organization, personnel, and practices which have developed in the performance of the various business functions of the city government. Prerequisite, one year of Social Science. Fall and Winter quarters. Three credits each quarter.

*Daines*

116. **Theory of State**—The nature of the State, its organization and
activities, and its relation to individuals and to other states. Prerequisites, one year of Social Science. Spring quarter. Three credits.

Daines

117. American Political Ideas—Fundamental theories underlying American Political institutions and governmental policies. Prerequisite, one year of Social Science. Fall quarter. Five credits. (Not given 1930-31.)

Daines

118. Political Parties—Their function in government; their organization and methods. Prerequisite, one year of Social Science. Fall quarter. Three credits.

Daines

124, 125. Public Opinion—The aim of this course is to investigate the psychological and other factors involved in the determination of opinion on public questions. The reliability of sources of information and the subjective influences that must be taken into consideration are considered. The use of various methods of spreading propaganda is considered. Prerequisite, one year of Social Science. Winter and Spring quarters. Three credits each quarter.

Daines


Daines

150, 151, 152. Current Political Problems. (Political Science Seminar)—A course designed for junior, senior, and graduate students majoring in Political Science. Required of those graduating in Political Science. Fall, Winter, and Spring quarters. One credit each quarter.

Daines
MILITARY SCIENCE AND TACTICS


CIVIL ENGINEERING

APPLIED MECHANICS AND DESIGN

CE 1, 2. Materials of Engineering—The chemistry of steel, the alloys, etc., and their special use in machine parts; strengths composition and proper use of wood, plaster, glass, glue, point, brick, etc. Cement, sand and gravel. Mechanical analysis curves, water-cement, ratio, cement and concrete testing. Fall and Spring quarters. Two credits each quarter.

Newey and West


Staff

CE 101, 102. Engineering Mechanics—Statics and kinetics, resultant forces, equilibrium of force systems, friction; moments and moments of inertia; force, mass, and acceleration; work and energy; impulse and momentum. Winter and Spring quarters. Five credits each quarter. (See also Physics 150, 151.)

Kepner

CE 103. Applied Mechanics and Strength of Materials—The simple machine, reactions, moments, and shears; the design of beams and columns. Fall quarter. Five credits. (See also Physics 152.)

Clyde

(Courses numbered below 100 designate Junior College courses. Courses numbered from 100 to 199 are Senior College, and those numbered above are Graduate Courses.)

CE 106. Reinforced Concrete—The fundamental principles of rein-

CE 107. **Masonry Construction**—A continuation of course 106, with special application of foundations, bridges, retaining walls, drains, and irrigation structures. Fall quarter. Three credits.

CE 108. **Foundations**—Fall quarter. Three credits.

CE 110. **Graphic Statics and Bridge Analysis**—The graphic analysis of stresses in framed structures, and the algebraic and graphical analysis of stress in the modern types of bridge trusses. Special attention is given to influence lines and equivalent uniform loads. Winter quarter. Five credits.

CE 113. **Bridge Design**—The design of the modern types of bridges and culverts in wood, steel and concrete. Prerequisite, CE 103 and CE 110. Fall quarter. Four credits.

CE 201. **Indeterminate Structures**—The elastic theory; method of least work; moment area method, and method of elastic weights. Three credits.

CE 202. **Indeterminate Structures**—The application of CE 201 to the solution of problems in steel and concrete. Box culverts, continuous span concrete slab bridges, swing bridges, and other problems. Three credits.

**HIGHWAYS**

CE 120. **Highway Construction**—Location, grade, drainage, resistance to traction, road materials, construction methods and costs. Fall quarter. Five credits.

CE 121. **Highway Administration and Design**—State, County, and City highway departments, highway and local improvement laws, traffic regulations, taxation, and methods of financing country roads and city pavements. Economic design and reconstruction. Fall quarter. Three credits.

CE 125. **Transportation**—Development of highway transportation, comparison of methods of transport of passengers and commodities by highway, railway, and waterway. Organized and operated Rural Motor
express lines, freight lines, and bus lines, etc. Winter quarter. Three credits.

CE 122, 123, 124. Seminar—One credit each quarter. Fall, Winter, and Spring quarters.

IRRIGATION AND DRAINAGE

CE 141. Hydraulics—Laws of liquids in motion and at rest; flow in natural and artificial channels and elementary principles of water power development. Fall quarter. Five credits.


CE 146, 147. Design of Irrigation Systems—Sources of water supply, diversion works, canal alignment and cross section, flumes, drops, and spillways. Prerequisites, CE 141, and CE 101, 102, 103. Fall and Winter quarters. Five credits each quarter.


CE 149. Irrigation Institutions—Water right doctrines, laws governing the adjudication and acquirement of water rights, and the distribution of water; organization of irrigation enterprises. Prerequisite or parallel, a general course in Economics or Sociology. Winter quarter. Three credits.

CE 241, 242. Research in Irrigation and Drainage—Specially pre-
pared undergraduates or graduate students may elect a problem in ir-
rigation or drainage for investigation, subject to the approval of the
professor in charge. Such investigations may be conducted at the
College or elsewhere. The studies may be used as a basis for a thesis,
to meet in part the requirements for an advanced degree. Students may
register at the beginning of any quarter. Credits and hours to be
arranged.

Israelsen or Clyde

MECHANICAL DRAWING

Drawing rooms are open from 8:00 a.m. to 5:00 p.m., daily. Su-
ervised instruction given from 2:00 to 5:00 p.m. A student may reg-
ister for any number of credits. Three hours per week are required
for one credit. All classes conducted simultaneously in Room 307,
Engineering Building. All drawing courses are offered each quarter:
All courses in Drawing to be given by Professor Kepner.

CE 61. Engineering Drawing—The use and care of instruments,
applied geometry and orthographic projection. Fall quarter. Three
credits.

CE 62. Engineering Drawing—Pictorial presentation, isometric,
oblique and cabinet projections. Developing surfaces and intersections.
Winter quarter. Two credits.

CE 63. Descriptive Geometry—The point, line, plane and simple
solids are studied. Spring quarter. Three credits.

CE 68. Machine Drafting—Drawing of fastening machine parts,
 dazu., such as bolts, screws. Three credits.

CE 71. Map and Topographical Drawing—Surveys, symbols,
topographical maps, etc. Three credits.

CE 72. Industrial Drawing Lettering—The use and care of instru-
ments and the elements of orthographic projection. The graphical
presentation of business data, plant layout, routing, flow sheets, etc.
Inspection trips will be made to typical industries. Winter quarter.
Three credits.

CE 75. Architectural Drawing—Building details including the
complete working drawings for a small farm house, plans, elevations,
and specifications. Three credits.

SURVEYING

CE 81. Plane Surveying—Use of tape, transit, level, compass, etc.,
in field problems and traverses. Differential and profile leveling,
plotting, mapping, and care of instruments used by engineers. Fall
quarter. Four credits.

Tingey

CE 82. Plane Surveying—Topographical surveying, hydrographic
surveying and some rural and city surveying. Prerequisite, Trigo-
nometry. Spring quarter. Four credits.

Tingey
CE 83. **Mapping and Office Practice**—Practice in the mapping of the various kinds of surveys that may be encountered by the engineer. Winter quarter. Two credits.

CE 181. **Advanced Surveying**—Instructions and practice in the application of surveying methods used in the layout and construction of canals, roads, railroads, and other engineering works. Prerequisite, CE 81 and 82. Spring quarter. Five credits.

**General**

CE 190. **Contracts and Specifications**—The form and essential consideration in drawing up engineering contracts and specifications. Fall quarter. Three credits.

CE 191. **Railroads**—Economics of railroad location, and railroad construction. Winter quarter. Three credits.


CE 196. **Heat and Power Machinery**—Steam generation; fuels and combustion; construction and operation of boilers; elementary thermodynamics. Types, details and tests of steam engines and gas engines. Measurement of power. Spring quarter. Three credits. See also Physics 118.

CE 197. **Electric Machinery**—Principles of continuous and alternating current, generators and motors; transmission and distribution; air compressors. Spring quarter. Three credits. See also Physics 112.

CE 198, 199. **Undergraduate Thesis**—Senior year, one credit each quarter. Fall and Winter quarters. Hours to be arranged.

**AGRICULTURAL ENGINEERING**

AE 1, 2. **Agricultural Surveying**—For students of Forestry and Agriculture. Practice in the handling of surveying instruments, leveling, and traversing. The surveying of forest roads. Public Land surveys
and the retracing of section lines. Fall and Spring quarters. Four credits each quarter.

**Tingey**

**AE 3. Agricultural Drawing**—The use and care of instruments and orthographic projection. Farm structures. Two credits.

**AE 4. Agricultural Mapping**—Maps and topographical drawing of farm problems. Two credits.

**AE 6. Farm Structures**—The arrangement, design and construction of barns, stables, poultry houses, silos and other farm structures. Winter quarter. Three credits.

**Humpherys**

**AE 7. Poultry House Design**—The plans and layout of the various types of structures used in Poultry Husbandry, complete layout of poultry ranch. Winter or Spring quarters. Three credits.

**Humpherys**

**AE 8. Barn and Stable Design**—Various types of barns and stables, layouts and construction. Winter or Spring quarter. Three credits.

**Humpherys**

**AE 9. Concrete Construction for Agricultural Purposes**—Various mixtures of cement and their uses; the use of concrete in making varns, water troughs, posts, etc. Spring quarter. Three credits. Hours to be arranged.

**West**

**AE 11. House Construction**—Various methods of construction, the frame, two brick, three brick, stucco, single cement, block and stuccoed hollowed tile; cost and economy of each; interior finishing. Winter quarter. Five credits.

**West**

**AE 12. Irrigation and Drainage Practice**—Water measurements, effect of soil and plants on time and frequency of irrigation, duty of water, design of farm ditches and preparation for farm drainage. These courses may be used as a major or minor in the Department of Agronomy. Summer quarter designed especially for high school instructors. Spring quarter. Three credits.

**Israelsen**

**AE 201. Research in Irrigation and Drainage**—Specially prepared undergraduate, or graduate students in civil or agricultural engineering may elect a problem in irrigation or drainage for investigation, subject to the approval of the professor in charge. Such investigations may be conducted at the College or elsewhere. The studies may be used as a basis for a thesis to meet in part the requirements for an advanced degree. Any quarter. Credits and hours to be arranged.

**Israelsen or Clyde**
AE 13. **Farm Motors**—This course will cover the care, adjustment and lubrication of the automobile, tractor, the stationary gas engine, and the home lighting and water systems, the care of this equipment when not in use, and precautions to be taken when preparing it for operation. It will also include bearings and bearing adjustment, babbiting and fitting of babbitted bearings, soldering and fundamental principles of power transmission by the use of belting and pulleys, care of belts and speed calculations. Fall quarter. Three credits.

*Powell*

AE 14. **Farm Shop Repair Work**—(See Wood Work Unit C.) This course is especially arranged for agricultural students. The application of foregoing operations to repairs on the farm. The repairing of the following farm implements will be included in the course: the plow, wagon, harrow, hay rake, mowing machine, binder, header, etc.; making and tempering punches and cold chisel; sharpening and tempering harrow teeth, picks, etc. Fall and Spring quarters. Two credits.

*Egbert*

AE 15. **Farm Machinery**—A complete assembling, adjusting, care and repair of the various types of farm implements and farm machinery. Spring quarter. Three credits.

*Powell*

AE 16. **Gasoline Tractor Operation and Repairing**—The overhauling of the tractor including babbiting of bearings, fitting of new parts and operation of tractor. Fall quarter. Repeating Spring quarter. Three credits.

*Powell*

AE 102. **Tractor Repair and Operation**—An advanced course for men wishing to specialize in tractor service work. It includes field work, operating problems, trouble shooting and repairs. Fall quarter. Four credits.

*Powell*

**MECHANIC ARTS**

**AUTO MECHANICS**

MA 1. **Principles of Automobile Construction and Operation**—A course for beginners. This course is a thorough study of the design and construction and function of the various units and parts of the automobile, with special reference to gas engine principles and the mechanism involved. This course or its equivalent must be taken by all students who wish to specialize in any branch of automobile work. Fall quarter. Three credits.

*Powell*

MA 2. **Principles of Automobile Construction and Operation**—A continuation of Auto Mechanics 1. It also deals with the dismounting
and the assembling of the automobile. Winter quarter. Three credits.

MA 3. **Automobile Care and Maintenance (Special)**—For winter students only. This course is designed especially for winter course or short term students who wish to learn enough about the care and operation of the automobile, to enable them to make their own minor repairs and adjustments. Oils, lubrication, valve grinding, bearing cutting, fitting of piston rings, etc., will be taken up, along with many other problems that the average owner has to be familiar with if he is going to do his own repairing and care for his car properly. Winter quarter. Three credits.

**Note:** Mechanic Arts 4, 101, and 102, are advanced courses. They must be taken by all students who intend to specialize in garage management, garage practice, teaching, or repairing. The course will cover the detailed theory, operation, advantages in design and construction of all modern makes of cars, and automobile equipment and appliances. Methods of systematic location of trouble, dismantling, repairing, and assembling. Modern shop methods, tools and equipment. Prerequisites, Mechanical Arts 1 and 2, or their equivalent.

MA 4. **Automobile Repair**—Spring quarter. Three credits.

MA 5. **Automobile Care, Adjustment and Lubrication**—For automobile owners and others desiring a course that will enable them to do their own service work on automobiles, to enable them to operate the car in the most efficient way and to reduce to a minimum the cost of operation. It will include all phases of lubrication, carburetion, brake adjustment, tappet adjustment and correct general principles of operation. Fall, Winter or Spring quarters. Two credits.


MA 103. **Gasoline Engine Carburation and Carburetor**—Internal combustion, engine fuels, and a thorough treatise on the principles of carburetion, the construction of carburetors and their relation to successful gas engine operation. Practice in repairing, overhauling and adjusting of carburetors, thorough study of the modern devices and improvements on new models will be taken up. Prerequisites, MA 4 and MA 111. Fall quarter. Three credits.
MA 104. Farm Machinery Research—The economic application of power and machinery to farm crop production, and costs of operations. Fall or Spring quarter. Four credits.

**Ignition, Starting, Lighting and Radio**

All courses taught by Sidney Stock, Assistant Professor

MA 11. Elements of Electricity and Magnetism—A complete study of magnets, magnetism, and the elementary principles of electricity. It includes a study of the units of electricity, their governing laws, power measurements, induction, electro magnets, sizes of wires and their carrying capacity, dry cells and their application to the automotive electrical industry. Required of all students specializing in Ignition, Starting, and Lighting. Fall quarter. Three credits.

MA 12. Ignition, Starting and Lighting (Special)—For winter quarter students only. This course is designed especially for short term students who wish to learn enough about the electrical apparatus of the automobile to enable them to care for and locate electrical troubles and make minor repairs. It will include a study of spark plugs, high and low tension coils, ignition timing, high and low tension magnetos, battery ignition systems, care and testing of batteries and adjusting the charging rate or generators. Winter quarter. Four credits.

MA 13. Storage Batteries—The aim of this course is to furnish students the experience necessary to enable them to care for and handle a battery service station and repair shop. A thorough study of the different types and makes of batteries will be made. Practice will be given in testing, charging, discharging, disassembling and rebuilding and in the diagnosis of battery trouble. Prerequisite, MA 11. Winter quarter. Three credits.

MA 14. High and Low Tension Magnetos—A complete study of all low and high tension magnetos as to design, construction and operation. Prerequisite, MA 11. Spring quarter. Three credits.

MA 15. Special Course in Ignition, Starting and Lighting for Car Owners—The course will cover the care, operation, adjustment, and methods of locating all electrical troubles on the storage battery, starting motors, generators, ignition units, lighting, and other electrical equipment used on the modern automobile. It should be especially interesting and valuable for anyone who drives an automobile. Open to both men and women. Two lectures and one laboratory or demonstration period. Winter quarter. Three credits.

MA 111. Starting, Lighting and Ignition Systems—A complete study of the modern starting, lighting and ignition systems, their operation, design and construction; and direct current motor and generator; voltage and current regulation by vibration relays; third brush; battery cutouts; reading and drawing of wiring diagrams and electrical devices. Ample practice is given in disassembling and assembling, also trouble shooting. Testing and adjusting of the various units is taken up, to
enable the students to handle such work in the repair shop. Prerequisites, MA 11, 13 and 14. Fall quarter. Four credits.

MA 112. Motor and Generator Repair and Armature Winding—A thorough study of direct current starting motors and generators; their construction, operation and repair including armature field and communicator testing; a systematic location and repair of all troubles encountered in the modern starting motors and generators; armature winding, as far as is practical for modern up-to-date garages and service station. Prerequisite, Ignition 111. Winter quarter. Four credits.

MA 113. Ignition Trouble Work—The systematic location of trouble, service work, adjustable and minor repairs. Spring quarter. Four credits.

MA 114. Storage Battery Repair and Shop Management—This course should prepare a student to handle a storage battery service station and repair shop. Considerable practice in the diagnosis of storage battery troubles, rebuilding of batteries, servicing of new batteries and winter storage methods. It will also include methods and commercial management cost and installation of battery shop equipment. Spring quarter. Four credits.

MA 115. Automotive Electrical Equipment and Shop Management—This course should prepare a student to handle an Automotive Electrical service station and repair shop. Considerable practice in the wiring, trouble shooting and repair of all kinds of electrical equipment. Shop kinks and the development of skill, accuracy and speed to prepare the student better to compete with those already in the commercial field, will be given. Business methods and commercial management, also costs and proper installation of shop equipment. Prerequisite, Starting, Lighting and Ignition 112. Spring quarter. Four credits.

MA 123. Practical Electricity—Required of all students who prepare to teach in Junior High Schools. This course will include a consideration of the fundamental principles of electricity and their application in the construction of such projects as bell circuits, house wiring, electro-magnet, heating elements, motor generators, transformers. Spring quarter. Four credits.

PRACTICAL RADIO CONSTRUCTION AND SERVICE

The aims and purposes of courses MA 23, 24, 25, are to acquaint students with the units used in radio reception and broadcasting; their construction, and operation; methods of locating troubles; also the building and repair of radio receiving sets.

Students will be required to pay a laboratory fee or deposit, and to purchase all necessary material and equipment to be used in the building of their sets. Cost should not exceed $30.00 for the three quarters work.

MA 23. Principles and Operation of Radio Receiving Sets—Fundamental operating principles of radio receiving sets, kinds and types of antennae and their installation, the installation and connecting of battery sets, function and operation of vacuum tubes, “A,” “B,” and “C”
batteries, condensers, coils, transformers, etc., introducing radio fre­quency detection and audio frequency, building and operating of crystal receivers, and one, two, three, and four tube regenerative sets. Fall or Winter quarter. Four credits.

MA 24. Radio Receiving Sets—A continuation of MA 23. The more completed circuits, the building and wiring of these sets, more advanced work in radio frequency detections, audio frequency and regeneration, inductive resistance, transformer coupling, and tuning; operation and repair of head phones, loud speakers, magnetic and dynamic speakers. Winter quarter. Four credits.


AVIATION


MA 28. Aviation Engines and Airplane Instruments—A study of the operation of airplane motors. Kinds and types of used on modern planes. Adjustment, tuning, and repair. Carburetion and ignition system. Airplane instruments and navigation, the use and importance of same to the pilot during the flight. Spring quarter. Four credits.

OXY-ACETYLENE ELECTRIC ARC AND RESISTANCE WELDING

RESISTANCE WELDING

MA 21. Oxy-acetylene and Electric Welding—The oxy-acetylene welding process, equipment and gases, properties of the various metals, etc. Practice in the welding of cast iron, steel, aluminum, and other metals is given, also the proper methods of pre-heating and the preparation of cylinder, clocks and other castings that are to be welded in the
latter part of the course. A special fee of $25.00 is required for all students taking this course. Winter quarter. Three credits.

MA 22. A continuation of course 21. Time and credit to be arranged.

**FORGING AND GENERAL BLACKSMITHING**

All courses taught by S. R. Egbert, Assistant Professor

An average of one-third of the time in all courses in forging is spent in demonstrating and lecturing. All courses are given in the forge rooms, Mechanic Arts building.

MA 31, 32, 33. **Forge Practice**—Forging, welding, tempering, tool making and other operations essential to forge work. Open to Vocational Students. Fall, Winter, and Spring quarters. Section 1, three credits. Section 3, three credits. Section 4, two credits.

MA 34, 35, 36. **Forge Shop Operation**—Advanced and general repair work, including plow work, spring work, axle and tire setting, and horse-shoeing. Prerequisites, Forge Practice 31, 32, 33. Fall, Winter and Spring quarters. Section 1, three credits. Section 2, five credits.

MA 37, 38, 39. **Select Work From Forge Practice 31, 32, 33**—For automobile and tractor students who cannot spend each day in the shops. Fall, Winter and Spring quarters. Section 1 and 3, three credits each quarter. Section 4, two credits.

MA 40, 41, 42. **Farm Shop Work**—This course is especially arranged for students in agriculture. The application of forging operations to repair on the farm. The repairing of the following farm implements will be included in the course: plow, harrow, wagon, hayrake, mowing machine, binder, header, etc. Making and tempering punches and cold chisels, sharpening and tempering harrow teeth, picks, etc. Welding. Fall, Winter, and Spring quarters. Two credits each quarter.

MA 131. **Advanced Shop Practice**—Composition and head treatment of steel. The student may emphasize any line of blacksmithing work that suits his particular needs. Prerequisites, Forging 34, 35, 36. Five credits. Credit will be given for unfinished courses according to work done. Not less than two credits will be given.

MA 132. **Smith-Hughes Unit**—Metal Work. Cold metal, hot metal, soldering, sheet metal, and plumbing. Fall and Spring quarters. Three credits each quarter.

MA 133. **Foundry**—Operated for demonstration and the making of castings. If sufficient number of students apply, the foundry will be run for instructional purposes also.

MA 134. **Smith-Hughes Course**—Including cold metal, soldering and sheet metal. Monday, Wednesday and Friday from 2:00 to 5:00 during last half of Spring quarter. One and a half credits.

For related work given during first half of the quarter see Department of Woodwork, MA 168.
MACHINE WORK

All courses taught by Aaron Newey, Associate Professor

The courses offered in the Machine Work Department give good basic training for the student who is thinking of a career along any line of mechanical work. The operations and principles taught will help in advancement in many lines of mechanical endeavor. Students preparing for engineering, electrical work, auto-mechanics, aviation mechanics, ignition, tractor work, farm machinery; and those interested in model building, research, and experimenting, can well afford to take machine work; for it gives training in the use of the essential metal working tools.

All courses in Machine Work are open to vocational students.

MA 51, 52, 53. Machine Shop Practice—Lathe, planer, shaper, and drill-press operations, the use of hand tools, laying out, making automobile and machine parts, and other operations that are essential in machine shop practice. These courses include assignments of reading on machine work subjects, and the application of mathematics to machine work. Fall, Winter, or Spring quarter. Section I, four credits. Section 2, five credits.

Note: MA 51, 52, 53 may not be used to fill requirements for major.

MA 54. Short Course—Work selected from Machine Shop Practice 51. Fall, Winter or Spring quarter. Section 2 and 3, three credits. Section 1, 4 and 5, two credits.

MA 55. Advanced Short Course—Work selected from Machine Shop Practice 51 and 52. Prerequisite, Short Course 54. Fall, Winter or Spring quarter. Section 2 and 3, three credits. Section 1, 4 and 5, two credits.

MA 56, 57, 58. General Machine Work—Advanced lathe, planer and milling machine work, grinding milling cutters, gear cutting, making tools and special shop equipment. Prerequisite, MA 53. Fall, Winter or Spring quarter. Section 1, four credits. Section 2, five credits.

MA 151, 152, 153. Tool Making—These courses include practice in making arbors, gauges, taps, reamers, milling cutters, etc., and in designing and building special tools and equipment. Prerequisite, MA 58. Five credits each quarter. Time to be arranged with instructor.

MA 155. S. H. Teachers' Machine Course—This course is planned to give a student, who is training to become a shop-work teacher, a general training in the operations and methods of doing machine work. Its purpose is to broaden his understanding of mechanic arts and make him more proficient in tool processes and in the care and repair of school shop equipment. Only students of senior standing may register. From two to nine credits. Time and credit to be arranged with the instructor.

Note: For unfinished courses credits will be given according to work done, provided the student re-registers. Not less than two credits will be given.
WOODWORK

The shops are open daily from 8:00 to 12:00, and from 1:00 to 5:00, except Saturdays.

Regular five credit courses run five days a week, three hours a day, during Fall, Winter, and Spring quarters. Three hours a week throughout the quarter are required for each credit.

Lectures on technology, covering each course, will be given twice a week throughout the year, dealing with materials and tools used in woodwork.

All courses in Woodwork are open to vocational students.

MA 61. Elementary Woodwork—Scarfing, mortising, dovetailing and jointing. Proper handling of tools is emphasized.

MA 62. Elementary Woodwork—Panels, sashes, doors, etc.; also thorough practice in tool sharpening.

MA 63. Elementary Woodwork—Feedhoppers, trestles, gates, grindstones, frames, beehives, etc., and simple furniture.

Note: Courses 61, 62, 63, may not be used to fill requirements for major.

MA 64, 65, 66. Mill Work—The use of wood working machinery, building of a modern work bench and tool chest, elementary wood turning. Prerequisite, MA 63.

MA 67, 68, 69. Housebuilding and Cabinet Making—Framing and roofing, door frames and window frames, French doors, casing up, and finishing. Also furniture in fir and oak, staining, fuming, etc.

MA 70. Farm Woodwork—A special course for students in the Winter term. Embraces such problems in wood work as are commonly met on the farm.

MA 71. Wood Carving—Simple problems in straight and curved lines, conventional ornamentation and designs. Time and credit to be arranged with the instructor.

MA 161, 162, 163. Advanced Woodwork—Special furniture in hard-wood, mahogany, walnut, etc., including advanced wood turning, veneering, inlaying, and hand polishing. Prerequisite, MA 69.

MA 164. Pattern Making—Making of practical patterns for use in
the college foundry. Time and credit to be arranged with the instructor.

Swenson

MA 165. **Advanced Short Course**—For students who do not fit into the regular schedule. Prerequisite, work equivalent to that listed under courses numbered below 100.

Swenson

MA 166. **Picture Framing**—Making of simple mouldings and frames, finishing, mat cutting, mounting and fitting. May be had in connection with the advanced courses in woodwork. Time and credit to be arranged with the instructor.

Swenson

MA 167. **Wood Finishing**—Paints, oils and their manufacture, water, oil and spirit stains. Varnishes, kinds and preparation. May be taken any quarter if six or more students apply. One lecture a week each quarter. One credit. Time to be arranged with the instructor.

Hansen

MA 168. **Smith-Hughes Course**—A course designed to meet the needs of teachers in Smith-Hughes work and for students in agriculture. Consists of tool sharpening and farm woodwork, form setting and concrete work, framing and housebuilding, leather and rope work.

For related work given last half of the quarter see Department of Forging, MA 134.

Swenson

**MILITARY SCIENCE AND TACTICS**


The Utah State Agricultural College, having accepted the provisions of the Act of Congress approved July 2, 1862, is classified as a Land Grant College and is therefore obliged to offer a course in military science and tactics as a part of the College curricula.

Recognizing that preparation for the national defense is one of the important duties of citizenship, and that qualities of patriotism, loyalty, discipline, leadership, and respect for constituted authority inculcated by proper military training are valuable in the formation of character, it has been the consistent policy of the College to cooperate with the Federal Government in making the Department of Military Science and tactics as effective as practicable.

To this end, military training has been made a required subject for all male students qualified and eligible therefor. Two years' training in the basic course is required of such students in all Schools of the College unless excused by proper authority.
At the request of the College authorities a senior unit of the Reserve Officers' Training Corps was authorized at this Institution by the President of the United States under the provisions of Section 33 of the Army Reorganization Act of June 4, 1920. Accordingly, the Board of Trustees has agreed to maintain a course in Military Science and Tactics as a required subject for all able-bodied male students during their first two years at the College.

The primary object of establishing units of the Reserve Officers' Training Corps is to qualify students for appointment in the Officers' Reserve Corps of the United States Army. This training will also be as valuable to the student in his industrial or professional career as it would be should the nation call upon him to act as a leader in its defensive forces.

Enrollment in the Reserve Officers' Training Corps is not in any sense "conscription," nor does it convey liability to service in any component or branch of the United States Army. As its name implies, the R. O. T. C. is an instrument of training and instruction only.

REQUIREMENT IN MILITARY SCIENCE

Two years of military training are required of all able-bodied male students. By regulation of the College the course is required during the first and second years at the Institution.

No male student will be excused from the requirements in military science except for the reasons as listed on page 65 of this catalogue.

Any student claiming exemption for any valid reason will be required to present a petition on the prescribed form which may be obtained at the office of the Professor of Military Science and Tactics.

RESERVE OFFICERS' TRAINING CORPS

The four years course in the Reserve Officers' Training Corps is divided into the basic course and the advanced course.

The basic course consists of the first two years in Military Science and corresponds to the freshman and sophomore years. When entered upon by any student it shall, as regards such student, be a prerequisite for graduation unless he is relieved from this obligation by proper authority.

The advanced course consists of the third and fourth years of Military Science, and corresponds to the junior and senior years. Entrance upon the advanced course is elective, but once entered upon such course becomes a prerequisite for graduation, in accordance with the terms of the establishment of the Reserve Officers' Training Corps.

UNIFORMS AND EQUIPMENT

A serviceable uniform of standard army pattern is furnished by the War Department to each student taking military training. Shoes are not furnished. Each student should provide himself with a pair of
high tan shoes, not lace boot, before entering the College, as they will be required immediately upon his admission.

Every student registered for military science is required to make a uniform deposit of $5.00. A laboratory fee of $1.00 will be deducted from this deposit. The balance, less the cost of any property lost or damaged, will be refunded upon the completion of the year or upon withdrawal from the course.

The uniform and equipment issued for the use of student remains the property of the United States. At the end of each year, or at such other times as students may terminate their military training, all clothing and other supplies will be returned in a serviceable condition, not later than one week following the termination of such training. Articles which have been lost, damaged, or destroyed will be charged against the student concerned.

BASIC COURSE

Students in the basic course are required to pursue their courses diligently until satisfactorily completed, and to meet such requirements for the care of equipment as may be prescribed. In case of failure in any quarter of the freshman or sophomore years, the student will be required to repeat the work during the next quarter in residence.

Students who complete the two years' basic course are qualified as non-commissioned officers in the organized reserve, to which position they are appointed if they so desire.

ADVANCED COURSE

The advanced course is elective.

The general prerequisites for admission to the advanced courses are:

a. Completion of two years' training in the basic course in any senior unit of the Reserve Officers' Training Corps.

b. Selection for further military training by the President of the College and the Professor of Military Science and Tactics.

c. The execution of an agreement in writing, whereby the student in consideration of the commutation of subsistence furnished to him, agrees:

(1) To continue in the Reserve Officers' Training Corps during the remainder of his course in this College.

(2) To devote a minimum of five hours per week during this period to the military training prescribed.

(3) To pursue such courses of camp training during this period that may be prescribed by the Secretary of War.

d. The student must be registered in one of the Schools of the College as an undergraduate while pursuing the advanced course.

Each student enrolled in the advanced course will be paid commutation of subsistence at the rate of thirty cents per day from the beginning of the first year of the advanced course to the end of the second year of the advanced course, except while attending camp, when the student will be subsisted in kind.
The course of camp training is for six weeks during the summer vacation, normally following the student's completion of the first year of the advanced course. The United States furnishes uniforms, transportation to and from the camp at the rate of five cents per mile, and subsistence for students attending the training camp. Students are also paid at the rate of seventy cents per day during their attendance at camp.

R. O. T. C. BAND

A military band is an element of the Reserve Officers' Training Corps, under the direction of the Band Instructor, and is governed by the rules of the Department of Military Science and Tactics. Uniforms and instruments are furnished by the War Department.

Members of the band will be selected from among those students who are registered in Military Science and who have demonstrated their ability for such selection. Tryouts for the band will be conducted under the supervision of the Band Instructor and will be held preferably during the first two weeks of each quarter. Members of the band receiving credit in Military Science will be limited to not more than thirty-six (36) students.

Students who are selected for the band will be required to take such theoretical work in Military Science as may be prescribed by the Professor of Military Science and Tactics, and sufficient practical drill to insure their making a creditable appearance in ranks.

Instruction taken by members of the band is credited as instruction in Military Science, but will not be accepted toward qualification for admission to the advanced course.

CREDITS

Students who satisfactorily complete the basic course receive one credit hour per quarter, which is included in the 180 credit hours required for graduation.

Students who satisfactorily complete the advanced course receive three credit hours per quarter, which counts toward the 180 credit hours required for graduation. In addition, students enrolled in the advanced course will receive three credit hours for satisfactory completion of the six weeks course at the training camp, held during the summer, between the junior and senior years.

Students majoring in the Schools of Arts and Science and Engineering may submit Advanced Military Science as a minor for graduation.

Members of the band who successfully complete the work in the various quarters receive credits as follows: First and Second years, one credit per quarter in Military Science.

COURSES OF INSTRUCTION

Classes in Military Science will not be held at times other than as scheduled, but any student desiring extra instruction may make the
necessary arrangements with the professor of Military Science and Tactics.

**BASIC COURSES**

1. **Military Science**—First Year. Fall quarter. Three hours per week. One credit.
   Instruction during this period will include infantry and artillery drill; ceremonies; military courtesy and discipline; military policy; rifle marksmanship.
   
   Hanley

2. **Military Science**—First year. Winter quarter. Three hours per week. One credit.
   Instruction during this period will include infantry and artillery drill; Coast Artillery instruction (second class subjects).
   
   Hanley

3. **Military Science**—First Year. Spring quarter. Three hours per week. One credit.
   Instruction during this period will include infantry and artillery drill; ceremonies, inspections, military hygiene and first aid; Coast Artillery instruction (second class subjects).

4. **Military Science**—Second Year. Fall quarter. Three hours per week. One credit.
   Instruction during this period will include drill and command (infantry and artillery); ceremonies; Coast Artillery instruction (first class subjects).
   
   Hanley

5. **Military Science**—Second Year. Winter quarter. Three hours per week. One credit.
   
   Phillips

Instruction during this period will include drill and command (infantry and artillery); Coast Artillery instruction (first class subjects).

6. **Military Science**—Second Year. Spring quarter. Three hours per week. One credit.
   
   Phillips

Instruction during this period will include drill and command (infantry and artillery); ceremonies; inspections; Coast Artillery instruction (first class subjects).

**R. O. T. C. BAND COURSES**

1B, 2B, 3B. **R. O. T. C. Band**—First Year. One credit per quarter.

Kraft

4B, 5B, 6B. **R. O. T. C. Band**—Second Year. One credit per quarter.

Kraft
101. Military Science—First Year. Fall quarter. Five hours per week. Three credits. Prerequisite, Military Science 203.

Instruction during this period will include military map reading and sketching; drill and command; drill regulations and Coast Artillery instruction (expert subjects).

Hanley

102. Military Science—First Year. Winter quarter. Five hours per week. Three credits. Prerequisite, Military Science 301.

Instruction during this period will include drill and command; gunnery; Coast Artillery instruction (expert subjects).

Phillips

103. Military Science—First Year. Spring quarter. Five hours per week. Three credits. Prerequisite, Military Science 302.

Instruction during this period will include drill and command; gunnery; conduct of fire; analysis of drill and service practice.

Phillips

104. Military Science—Second Year—Fall quarter. Five hours per week. Three credits. Prerequisite, Military Science 303.

Instruction during this period will include drill and command; artillery material; military law; administration and supply.

Phillips

105. Military Science—Second Year. Winter quarter. Five hours per week. Three credits. Prerequisite, Military Science 401.

Instruction during this period will include drill and command; motor transportation; military history; artillery tactics.

Hanley

106. Military Science—Second Year. Spring quarter. Five hours per week. Three credits. Prerequisite, Military Science 402.

Instruction during this period will include drill and command; field engineering; orientation.

Hanley
HOME ECONOMICS

JOHANNA MOEN, CHRISTINE B. CLAYTON, Professors; CHARLOTTE DANCY, HELEN Pixton, ALICE ENGLUND, Assistant Professors; ALTA ORSER, Instructor.

FOOD AND DIETETICS

Students who elect Foods and Dietetics as their major are required to complete the following courses: Foods 20, 21, 30, 106, 107, 140 and 141. Foods 143 and 192 are recommended for all Foods majors in their Senior year. Closely related courses such as Inorganic Chemistry, Organic Chemistry, Physiological Chemistry, Bacteriology, Physiology, General Economics, and Botany are recommended for all Foods and Dietetics majors.

5. Principles of Nutrition—A practical study of the relation of food to health. Natural food groups and their relation to each other are studied through the selection of foods and menu making. Not open to Foods and Dietetics majors. Winter quarter. Two credits.

Clayton

9. Meal Preparation—Selection and preparation of food through meal service. This course is designed especially for those who desire some work in the preparation of food but are not Home Economics majors. Not open to Foods and Dietetics majors. Fall quarter. Three credits.

Pixton

20, 21. Food Study and Meal Preparation—A study of the food classes, methods of preparation, serving and principles of nutrition. This course is designed for Home Economics students only. Foods 20, Fall or Winter quarters. Foods 21, Winter or Spring quarters. Five credits each quarter. Three lecture periods and two laboratory periods.

Pixton

30. Food Economics—This course aims to train the student to become an intelligent consumer. It deals with household marketing; the study of grades, brands, and qualities of products as found on the market; factors governing cost; food laws; ethics of buying and selling. Field problems and projects. Prerequisites, Inorganic Chemistry and General Economics. Spring quarter. Four credits.

Pixton

105. Food Preservation—The preservation of foods by canning, preserving, pickling; storage and refrigeration is included in this course. Prerequisites, Food Preparation, Food Economics, Bacteriology 1. Fall quarter. Three credits.

(Not given 1930-31.)

Clayton
106. **Food Engineering**—This course consists of a study of the most efficient methods of preparing and serving meals at a minimum cost of money, time, and energy. Prerequisites, Food Economics and Food Study. Winter quarter. Three credits.

107. **Catering**—Meal preparation and service suited to various social occasions. Commercial projects in the purchase, preparation and serving of food are undertaken. Prerequisite, Food Engineering. Spring quarter. Three credits.

111. **Nutrition (for Athletes and P. E. Majors)**—A practical study of nutrition in relation to health with emphasis on the needs of the body during muscular activity. Fall quarter. Two credits.

140. **Dietetics**—A review of the fundamentals of Biochemistry most closely related to the nutrition of man. The quantitative basis of human nutrition is studied and illustrated through laboratory procedure in the calculation and preparation of dietaries. This course is open to Home Economics majors and students of medicine. Prerequisites, Organic Chemistry, and Food Study. Fall quarter. Four credits.


43, 143. **Nutrition Work With Children**—This course is designed especially to suit the needs of teachers, health workers, and parents. The nutritional requirements for growth and development will be emphasized. Devices for the teaching of correct eating habits will be demonstrated. Spring quarter. Two credits.

160. **Experimental Cookery**—This course will consist of such individual or group problems as have been suggested by preceding courses in Food Study and will involve both cooking and chemical experiments. Open only to advanced students. Spring quarter. Two hours credit. Hours to be arranged.

192. **Readings in Nutrition**—Introduction to problems in nutrition through assigned readings and reports of current literature. Spring quarter. Two consecutive hours once per week. Two credits.

210. **Research**—Investigation of problems concerned with food preparation or nutrition. Time and credit to be arranged.
TEXTILES AND CLOTHING

Students who elect Textiles and Clothing as their major are required to complete the following courses: Textiles and Clothing 10, 20, 30, 105, 115, 125, 160. Closely related courses such as Art 1, 2, 3, 17 and 32, Chemistry 109, Textile Chemistry, are recommended for Textiles and Clothing majors. Students who wish to prepare for positions in the commercial field should in addition to courses in Textiles and Clothing and Art elect courses in Economics and Merchandising.

1, 2. Elementary Clothing—Emphasis on the relation of personality to dress through the study of art principles applied to clothing construction; pattern study, selection and construction of underclothing and dresses. Lectures and laboratory work. Three credits each quarter. Fall, Winter and Spring quarters. Student may enter at beginning of course only. Not open to Textiles and Clothing majors. Section 1, Fall and Winter. Section 2, Winter and Spring.

5. Clothing Appreciation—This course aims to develop an appreciation of appropriateness, good color and design in dress. Clothing Economics and Clothing Hygiene will also be discussed. Selection and care is emphasized. Fall quarter; repeated in Spring quarter. Two credits.

10, 11. Clothing Selection and Construction—A study of the fundamental principles of pattern making, design, selection and construction of dresses, underwear and household furnishings. Prerequisites, Art 1, 2, 3. Lectures and laboratory work. Fall, Winter and Spring quarters. Three credits each quarter. Section 1, Fall and Winter. Section 2, Fall and Winter. Section 3, Winter and Spring.

20, 21. Economics of Textiles—Part 1 is a study of standard textiles from the standpoint of growth, structure, preparation, design, and relative value of materials for clothing and house furnishing. Attention is given to the historical and economic phases of the textile industry.

Part 2, includes identification of fibers and substitute material by means of the microscope and physical tests. The aim of this work is to form a basis for intelligent purchase and use of materials. Prerequisites or parallel courses, Economics 50 and 51. Fall and Winter quarters. Three credits each quarter.

30. Millinery—Special study of individual problems in selection of hats; blocking felt and straw hats; designing in paper. Application of principles of making fabric hats; flower making. Prerequisites or
parallel courses, Art 1, 2, 3; Textiles 10, 11, or their equivalents. Spring quarter. Three credits.

Orser

50. **Textile Selection**—Judgment in selection and purchasing of textiles in relation to design, quality and cost as affected by economic and social factors. Elective to students other than Textile majors. Fall quarter. Three credits.

Orser

105. **History of Costume**—A survey of ancient Egyptian, Grecian, Roman, early and modern French costumes. It aims to give practical information for the use of students and teachers of Clothing, Costume Design, and Physical Education majors. Fall quarter. Three credits.

Moen

115. **Costume Design**—Art structure in its application to dress. Studies of personality and types of people; harmonies in spacing, rhythm, balance, color theory. Designing for various occasions. Outside work required. Prerequisites, Art 1, 2, 3. Winter quarter. Three credits.

Orser

125. **Applied Costume Design**—Practical training in the application of the principles of costume design, color harmony, texture, for different individuals and purposes. Practice in constructive design is given by modeling in cloth on the dress form. Outside work required. Spring quarter. Three credits.

Orser

140. **Applied Decoration**—A study of principles of design in relation to decoration of dress and household furnishings. Various means will be used in developing simple decorations for all types of garments and household furnishings. Outside work required. Prerequisites, Art 1, 2, 3, and Textiles 10, 11. Spring quarter. Three credits.

(Not given 1930-31.)

Moen

160, 161, 162. **Advanced Problems in Clothing**—Special application of principles of design and construction to tailored garments, afternoon and evening dresses, infant’s and children’s clothing. Demonstrations and laboratory work. Prerequisites, Textiles and Clothing, 10, 11, 20, 21, 105, 115, 125. Fall, Winter and Spring quarters. Two credits each quarter.

Moen

190. **Special Problems**—Arranged for advanced students in Textiles and Clothing. Working out problems of special interest, readings and reports. Spring quarter. Time and credit to be arranged.

Moen
HOUSEHOLD ADMINISTRATION

Students who elect Household Administration as their major are required to complete the following courses, 10, 25, Art 122, Art 123, 125, 130, 149, 150, Soc. 171. Students wishing to qualify as teachers of Home Economics must complete Education 119, 120, 122.

All students interested in the welfare of the child are advised to register for the following courses: Mothercraft, Nutrition work with Children, Child Psychology, Child Development.

10. Survey in Home Economics—Deals with the orientation of the student, to her college environment, and the guidance of the student in the choice of the field of home economics for her profession. Open to all College women. Fall quarter. One credit.

25. Care of the Sick—A course in home nursing and first aid to the injured. The first hour is devoted to discussion; the laboratory to demonstrations and practice. Reading of reference works and writing of special reports. Laboratory apron required. See Instructor. Fall, Winter or Spring quarter. Two credits. Class limited to 16.

125. Mothercraft—The course includes the anatomy and physiology of the reproductive system. The preparation for motherhood. The physical care of the mother and child from the prenatal period to the end of the first year of the child's life. Prerequisite, Physiology 4. Fall, Winter or Spring quarter. Three credits. Section limited to 20.

130. Child Development—Physical and mental growth of the preschool child. Winter quarter. Two credits.

149. Household Management—A study of good methods of house-keeping and the simplification and organization of housework; management of time, money, energy, selection and care of household furnishings. Prerequisites, Clothing 10, 11, 50 or equivalent, Foods 20, 21, 30, 106. Winter quarter. Three credits.

150. Residence in Home Economics Cottage—Residence in the Home Economics Cottage for a period of twelve weeks. Gives opportunity for the application of principles of science and art to the home. Prerequisite or parallel, Household Administration 149. Fall, Winter or Spring quarter. Five credits.

For Closely Related Courses see:
Accounting 107—Household Accounts.
Art 122—Home Planning, Construction and Design.
Art 123—Interior Decoration.
Art 126—History and Appreciation of Architecture.
Education 119—Methods of Teaching Home Economics.
Education 120—Problems in Teaching Home Economics.
Education 122—Practice Teaching in Home Economics.
Sociology 171—Social Problems of the Family.
Psychology 110—Psychology of Infancy and Early Childhood.
THIRTY-SEVENTH ANNUAL
COMMENCEMENT

List of Graduates 1929-30

GRADUATE DIVISION

Graduates with the Degree of
MASTER OF SCIENCE

School of Agriculture

ANDERSON, MELVIN E.
B. S., U. S. A. C., 1925
Thesis: The Relation of the Hopping Plant Louse to the “Psyllid Yel-
lows” of Potatoes.

HANSEN, MYRON TANNER
B. S., U. S. A. C., 1926
Thesis: Inheritance Studies in Kanred x Martin and in G-149 x Ridit.

HENDERSON, GEORGE R.
B. S., U. S. A. C., 1929

LEONARD, EUGENE O.
B. S., Whitman College, 1927
Thesis: The Effect of Nutrients on the Alkaloidal Content of Atropa
Belladonna.

MORRIS, ARTHUR J.
B. S., U. S. A. C., 1923
Thesis: A Study of Bull Associations in Cache County, Utah.

ROLAND, LEWIS ELMER
B. S., U. S. A. C., 1928
Thesis: A Study of the Relative Economic Value of Vitamin A in
Alfalfa as Compared with Cod Liver Oil for Chickens.

SINGH, ARJAN
Diploma, Cawnpore Agricultural College (India)
Thesis: Principles of Dry Farming as Developed by American Field
Experiments.

WOODWARD, ROLLO WILLIAM
B. S., U. S. A. C., 1925
Thesis: Correlated Inheritance in a Wheat Cross Between Kanred and
Hybrid 128 x White Odessa.
School of Arts and Science

BOWEN, MILES F.
B. S., U. S. A. C., 1929

CLARK, CYRUS L.
B. S., U. S. A. C., 1928

HARRIS, A. EVAN
B. S., U. S. A. C., 1927

STIRLAND, L. LaGRANDE
B. S., U. S. A. C., 1928
Thesis: The Spruce Gall Aphid Adelges Colleye (Gill) in Utah.

School of Commerce

HENRIE, D. WAYNE
B. S., U. S. A. C., 1928

School of Education

HENRIE, LEONE C.
B. S., U. S. A. C., 1927

KENNER, ROBERT LEE
B. S., U. S. A. C., 1922

MURRAY, EVAN BAILEY
B. S., U. S. A. C., 1927
Thesis: Utah’s Needs For Junior Colleges and Available Resources.

TINGEY, VANCE H.
B. S., U. S. A. C., 1929
UNDERGRADUATE DIVISION

Graduates with the Degree of Bachelor of Science

Agriculture and Forestry

Agriculture
Bailey, Edwin A.
Bankhead, George Emerald
Beagley, Lewis C.
Bergeson, Douglas A.
Blanch, George Thomas
Boyle, Wm. Dean
Brown, J. Keith
Childs, Myron D.
Clark, Leland A.
Dalley, C. Leland
Davis, Carl Garrett
Davis, Lloyd Nelson
Day, Joseph F.
Decker, John Franklin
Farrar, Elmer Worthington
Harris, Linden E.
Horsley, Ernest M.

Forestry
Kilburn, A. Golden
Knight, Lester P.
Madsen, Louis L.
Morgan, George C.
Nelson, Alfred Nephi
Nelson, Leslie W.
Roberts, Lyman
Smith, Oliver F.
Stephens, Melvin J.
Stibal, John S.
Taylor, Owen A.
Ward, Edward Dee
Westenskow, Elden
Wood, Raymond H.
Wright, Chester

Home Economics
Adams, Clare Lenora
Alder, Aldora
Badger, Breta E.
Christensen, Frances M.
Daines, Wanda Parkinson
Davis, Ruth
Fiske, Lucretia Evelyn
Froyd, Maxine
Haggerty, Berniece
Harston, Fay
Israelsen, Alice

Arts and Science
Affleck, Clark B.
Bankhead, Melvin Jay
Bates, A. Parley
Bennett, Kathryn
Bickmore, William Kenneth
Brian, Donald Fount
Cheney, Thomas E.
Cummings, Leona
Davis, Floraine Benson

Eliason, Newel G.
Evans, Daisy M.
Fennesbeck, Alice V.
Fullmer, Rex F.
Gunnell, Francis Hawkes
Gunnell, Merrill H.
Harding, Margaret
Hartvigsen, Milton Farrel
Hayes, Margaret May
Heese, Mary M.  
Hendricks, Russel Hyer  
Jadot, Renee Marie  
Lauritzen, Cyril W.  
Mason, Ivie Rae  
Mattson, Mary Maxine  
Merrill, Jean D.  
Miller, Horton C.  
Monson, June  
Murdock, J. Neil  
Nelson, Ernest Leland  
Nelson, Milton E.  
Owen, J. Wallace  
Probst, Reed G.  
Ripplinger, Lawrence Arnold  
Rogers, Daisy Webster  
Scholes, Wallace B.  
Shaw, Byron T.  
Skidmore, Kathryn  
Smith, DeWitt C.  
Starr, Nora  
Theurer, Melba  
Thomas, Jos. M.  
Vickers, Maurine Louise  
Webb, Delmar H.  
Wilson, Edna Ann

Engineering  
Civil Engineering  
Bennion, Vernal R.  
Gregory, G. Robert  
Hill, Leland K.  
Larson, Vaud E.  
Olsen, Owen J.  
Stoddard, Frederick G.

Mechanic Arts  
Parker, William R.  
Vargas, Aniceto T.  
Williams, David E.

Commerce  
Ballantyne, Mary Stewart  
Bankhead, Laura  
Budge, Vernon M.  
Burgoyne, Irvin C.  
Calder, David H.  
Call, Joseph Grant  
Cheney, Gretta  
Christensen, Rulon  
Clark, Glenn C.  
Cowley, Joseph F.  
Cruikshank, Donald Burgoyne  
Davis, Henry Floyd  
Davis, Orpha  
Dunn, Charles O.  
Halversen, Leon Lemon  
Jenkins, Laurence W.  
Kennard, Gordon Keith  
Layton, Myron Morris  
Lindquist, Kenneth O.  
Lloyd, Lewis Haslam  
Pearson, Margaret  
Russell, Anthony  
Shipley, Merlin C.  
West, Geneva R.  
Wilson, Harriet May

Education  
Baldwin, Thora  
Brenchley, Louis H.  
Davis, Chester Verner  
Ensign, Olive  
Faylor, Sybil Orpha  
Hall, Oreta  
Hansen, Anthon M.  
Hawkins, Clarence J.  
Hunsaker, Hyrum B.  
Hyde, Helen R.  
Judah, George A.  
Lamb, Delbert Molen  
Pearson, Anne  
Randall, Elmer Ray
Graduation With Honors

Rex, Mary Brown
Richards, Cleopha
Rigby, Gwendolyn
Schaub, Geneva

Smith, William E.
Vanderhoff, Jess Kenneth
Welch, Golden M.

Graduation With Honors

Newel G. Eliason..........Physics

Graduates With the Normal Diploma

Anderson, Arlene L.
Anderson, Geo. W.
Beckstead, Thelma Jean
Bennett, Ruth
Benson, Gladys
Beutler, Irene
Bickmore, Afton
Bird, Orlie
Boyle, Bernice
Briggs, Mary LaVaun
Chandler, J. Wilbur
Doty, Eda
Edwards, Erma
Eschler, Eunice
Fletcher, Sara
Granger, Hellen G.
Hansen, Wilma Anetta
Hendrickson, Virginia
Jensen, Lucille LaDean
Jeppsen, Wanda
Johnson, Irva
Johnson, Pearl M.
Jones, Orlene
Keller, Iva Lou
Keller, T. June
Killam, Mildred
Lowe, Reva W.

Maughan, Katheryne
Mifflin, Devoto D.
Overfelt, Helen
Park, Marjorie
Pearse, Mary R.
Powelson, Edith
Pugsley, Edna M.
Reeder, Elaine
Rosengreen, Bernice L.
Roskelley, Thelma
Sant, Sadie
Schenk, Erma
Schissel, Connie
Smith, Josephine
Snow, M. Helen
South, Agnes V.
Stewart, Gracia
Stewart, Jennie C.
Stout, Eunice Mae
Tingey, Aleda
Towers, Helen L.
Whitesides, Ima
Williams, Dora
Winn, Blanche
Woodward, Blanche
Yeates, Myrtle Vilate

OFFICERS RESERVE CORPS OF THE ARMY OF THE UNITED STATES

Second Lieutenant, Coast Artillery Corps

Bankhead, Melvin J.
Budge, Vernon Morgan
Clark, Glenn Clair
Cruikshank, Donald Burgoyne
Eliason, Newel G.

Griffin, Herbert Thomas
Jensen, Edmund James
Layton, Myron Morris
Olsen, Owen John
Vanderhoff, Jess Kenneth
HONORS 1929-30

PHI KAPPA PHI

Agriculture
Louis L. Madsen
George Blanch
George C. Morgan
John Decker
Leslie Nelson
Adelbert Fausett

Commerce
H. Floyd Davis
Irvin Burgoyne
Vernon Budge
Anthony Russell
Donald Cruikshank

Home Economics
Rhea Johnson
Aldora Alder
Alice Israelens
Constance Porter

Arts and Science
Mary M. Mattsson
Daisy M. Evans
Newell G. Eliason
Leone Cummings
Nora Starr

SCHOLARSHIP A's
Gayle Bunderson
Grant H. Calder
Floyd L. Clark
Rex Dibble
Doris Farr

Robert K. Gerber
Milton F. Hartvigsen
Wayne Hinton
Amy Kearsley
Louis L. Madsen

Marriner Merrill
Elmer Randall
Helen Roberts
Donna Slater
R. W. Woodward

VALEDICTORIAN
Louis L. Madsen

SCHOLARSHIPS

The following students were awarded the Johansen Scholarships for 1930-31:

Zona Power
Charles Rippon
Elenora Tasso

The following students were awarded the 1927 Class Research Scholarships for 1930-31:

Helen Smith
Gilbert Hutchings

The Phi Upsilon Omicron Scholarship for 1930-31 was awarded to Beryl Lenkersdorfer

SPECIAL AWARDS

The College Awards. Two certificates given for distinguished College Citizenship were awarded to Donald Cruikshank and Faun Singleton.

The Sons of American Revolution Medal. Given to the student who delivers the best patriotic speech, was won by Darrell Crocket.

The Reserve Officers' Training Corps Medal. Given to the member of the R. O. T. C. who best represents the ideal of the Corps, was awarded to Glenn C. Clark.
The U. S. A. C. Science Medal. Given to the author of the best paper on some selected scientific subject, was won by Margaret Harding.

The Vernon Medal. Given to the writer of the best short story written around a western setting, was won by Mary Mattsson.

U. S. A. C. Women's Club Essay Prize. A ten dollar book prize given to the writer of the best literary essay, was won by Jean Pedersen.

The American Legion Scholarship Medals. Given to the Lettermen maintaining the highest scholastic standing during the Football Season, were won by Edward Cliff and Elmo Smith.

The American Legion Military Medal. Given to the Letterman exhibiting the most wholesome attitude toward military training during the Football Season, was awarded to Elmo Smith.

The John M. Howard Medal. Given to the student who most nearly represents the ideal of the School of Home Economics, was awarded to Ellen Alta Orser.

The Leadership Challenge Cup. Given to the Senior student in Agriculture that has exhibited the greatest measure of constructive organization and leadership in the School of Agriculture throughout his college course, was awarded to Raymond H. Wood.

The John K. Madsen Trophy. Given to the student who ranks the highest in judging sheep, was won by Willard Johnson.

The John M. Ritchie Trophy. Given to the student who ranks the highest in judging horses, was won by Wayne Lowe.

The Ogden Union Stock Yards Trophy. Given to the student who ranks the highest in judging beef cattle, was won by Lamont E. Tueller.

The Salt Lake Union Stock Yards Trophy. Given to the student who ranks the highest in judging swine, was won by David Evans.

The American Packing Company Trophy. Given to the student who ranks the highest in judging commercial meat carcasses, was won by Louis L. Madsen.

The American-Hawaiian Steamship Trophy. Given to the student who ranks the highest in judging wool, was won by Donald Cox.

Live Stock Judging Medals. Given to the men who make the College Livestock Judging Team, were awarded to: Louis L. Madsen, Melvin J. Stephens, John K. Loosle, John F. Decker, Elden Westenskow and Lloyd N. Davis.

**STUDENT BODY**

**Student Officers**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Rulon Walker</td>
<td>President</td>
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<tr>
<td>Laura Bankhead</td>
<td>Vice-President</td>
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<tr>
<td>O. W. Buchanan</td>
<td>Secretary</td>
</tr>
<tr>
<td>Ronald Flamm</td>
<td>Editor, &quot;Student Life&quot;</td>
</tr>
<tr>
<td>Hyrum Cannon</td>
<td>Business Manager, &quot;Student Life&quot;</td>
</tr>
<tr>
<td>William Ballard</td>
<td>Editor-in-Chief, &quot;Buzzer&quot;</td>
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<tr>
<td>Harrison E. Parker</td>
<td>Business Manager, &quot;Buzzer&quot;</td>
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**Debating**

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<tr>
<td>Rex Dibble</td>
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<tr>
<td>Darrell Crockett</td>
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<tr>
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<tr>
<td>LaVell Crapo</td>
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<tr>
<td>Russell Cranney</td>
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### SUMMARY OF ATTENDANCE—1929-30

<table>
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<tr>
<th>Rank</th>
<th>Agriculture Men</th>
<th>Agriculture Women</th>
<th>Basic Arts and Science Men</th>
<th>Basic Arts and Science Women</th>
<th>Commerce Men</th>
<th>Education Women</th>
<th>Engineering Men</th>
<th>Home Economics Men</th>
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<td>148</td>
<td>66</td>
<td>59</td>
<td>228</td>
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Six-weeks Summer Session 1929—(259 Men, 224 Women) ........................................... 483

Less Names Repeated—(26 Men, 32 Women) ................................................................. 1866

Net Total Resident Enrollment.......................................................... 1808

Correspondence Dept. Enrollment—(215 Men, 202 Women) ........................................ 417

Extension Classes—(128 Men, 58 Women) ................................................................. 186

Names Repeated:
( Correspondence and Extension) (5 Men, 4 Women)
( Resident and non-resid’it groups) (84 Men, 65 Women)
Less Names Repeated—(89 Men, 69 Women) ................................................................. 158

Grand Total Enrollment .......................................................... 2253

ENCAMPMENT AND SHORT COURSES
Farmers’ Encampment—(1257 Men, 1000 Women) ........................................................ 2257

In addition there were 700 children.
Club Leaders’ Training School—(37 Men, 81 Women) .............................................. 118
Adult Leaders’ Training School—Women.................................................................... 55
Agents’ Conference—(38 Men, 10 Women) ................................................................. 48
Bankers’ Short Course ............................................................................................... 94

Total Registration at Encampment and Short Courses ........................................... 2572
**LIST OF STUDENTS**

1929-30

In the following list “a” stands for agriculture; “as” for arts and science; “e” for engineering and mechanic arts; “ed” for education; “ho” for home economics; “h” for commerce; “SS” for summer school; “G” for graduate; “S” for Senior; “J” for Junior; “So” for Sophomore; “F” for Freshman; “V” for Vocational; “Un” for Unclassified.

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<tr>
<th>Name</th>
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<td>Anderson, Nina ho-J</td>
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<td>Anderson, Ray S.</td>
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Baneroff, Guy SS..................................................Logan
Baneroff, Rutie as-J..............................................Logan
Baneroff, Patsy SS..................................................Logan
Baneroff, Alma Horace ed-J. Woods Cross
Baneroff, Thelma ed-So............................................Logan
Baneroff, Vernon Alfred as-F............................Bountiful
Bankhead, George E. a-S..................................Logan
Bankhead, Laura c-S.........................................Logan
Bankhead, Melvin J. a-S..................................Logan
Barger, Cecil G e-F..............................................Brigham
Barkdull, Philip H. SS..........................................Provo
Barker, William T. c-So.......................................Newton
Barnard, John Jefferson a-F. Deweyville
Barrett, Forrest LeRoy as-F..................................Eureka
Barrows, Effie a-So...........................................Logan
Barrus, Ruth ed-F..............................................Logan
Barson, John Hyrum V........................................Clarkston
Bartlett, Ann Dolores a-S..............................Ogden
Barlett, Zelda ed-So........................................Logan
Barton, George SS..............................................Ephraim
Barton, Sherman S. SS........................................Ogden
Bastow, Mary Lovina SS..................................Salt Lake City
Bates A. Parley SS.............................................Hooper
Bates, George S. SS............................................Logan
Baugt, Jr., Francis H. Sss..................................Logan
Bauq, William ed-F..................................Burley
Bauq, William H. e-F......................................Salt Lake City
Baxter, George W. SS........................................Farmington
Beach, Floyd M. SS...........................................Preston, Ida.
Beagley, Lewis Conrad a-S....................................Nephi
Bean, Minnie c-F.............................................Boise, Ida.
Bean, Nona as-F................................................Richfield
Beatty, Owen a-F-SS........................................Hurricane
Beck, Ella as-V-SS................................................Logan
Beck, Irma as-V................................................Logan
Beck, William McEll SS..................................Burley, Ida.
Beckstead, Coral ed-F........................................Logan
Beckstead, Melburn ho-J..................................Preston
Beckstead, Thelma J ed-So-SS............................Preston
Beckstrand, Olve M. ho-So................................Logan
Beecher, Calvin e-F.......................................Brigham
Bell, Alladine as-F........................................Logan
Bell, Ellen Mabel ed-So-SS.................................Logan
Bell, Ruth c-J................................................Logan
Bell, Wm. Harold SS...........................................Logan
Belliston, Carl F. ed-So........................................Nephi
Bench, Dean W. SS..............................................Fairview
Bennett, Kathryn as-So.....................................Shelley, Ida.
Bennett, Ruth ed-So........................................Logan
Bennion, Deane SS...............................................Vernal
Bennion, Donald C. ed-So.............................Farmington
Bennion, Gene ed-F...........................................Murray
Bennion, Hugh C. a-J........................................Farmington
Bennion, Marion a-J........................................Logan
Bennion, Marke a-F........................................Logan
Bennion, Noel SS................................................Logan
Bennion, Vernal Rowland e-S........................Murray
Benson, Giedy ed-So......................................Preston
Benson, Floraine as-S...................................Logan
Benson, John SS.................................................Garland
Benson, Wesley Taft c-J................................Logan
Bentley, Valentine I. a-J......................................Provo
Bergeson, Audrey J. ed-J................................Cornish
Bergeson, Douglas A. a-S ..................................Cornish
Bergeson, Rulon C. a-So..................................Lewiston
Bernards, Hilda as-So........................................Ogden

Berrells, Laura K. a-So................................Logan
Berrett, Golden L. SS.........................................Murray
Berrett, William Theodore SS............................Rexburg, Idaho
Best, Richard S. e-So......................................Ogden
Beutler, Irene ed-So............................................No. Logan
Bickmore, Afton ed-So.......................................Logan
Bickmore, Lee Smith c-J................................Paradise
Bickmore, Wm. Kenneth as-J-SS..........................Brigham
Bingham, Owen W. ed-F..................................Morgan
Binnns, John a-F................................................Am. Fork
Bird, Orile A. ed-So..........................................Mendon
Bishop, George c-J............................................Garland
Bishop, LeRoy SS.............................................Garland
Bishop, Vonna Joyce ed-F................................Logan
Black, Alma C. a-So........................................Delaware
Blackham, Stafford a-J.....................................Moroni
Blain, Rulon Larson ed-J...............................Spring City
Blanch, Geo. T. a-S..........................................Ogden
Blanchard, Archie H. a-So................................Logan
Blaser, Herman Ernest a-So................................Logan
Bohan, Stanley J. e-F........................................Mono
Bohne, E. F. e-SS..............................................Spanish Fork
Bolley, Loraine B. ho-F......................................Am Fork
Bolin, Arta c-So..............................................Idaho Falls, Idaho
Bonne-mott, Howard J. ed-So...............................Kaysville
Bos, Anna ed-G................................................Coalarm
Bosworth, Wendell a-F.......................................Provo
Bowen, Jessie M. SS........................................Ogden
Bowen, Myles F. a-g...........................................Spanish Fork
Bowen, Ronald G. a-F........................................Logan
Bowman, Maybeth SS.........................................Logan
Bown, Beryl ed-J..............................................Gunnison
Boyce, Paul C. SS.............................................Sanford
Boyer, Lavern a-F...........................................Coalville
Boyle, Bernice ed-So........................................Logan
Boyle, Juanita ed-J........................................Logan
Boyle, Phyllis Marie as-F...............................Jackson, Wyo.
Boyle, Wm. Dean a-S.........................................Logan
Brabb, Clarence Virgil SS................................Buhl, Ida.
Bradshaw, Iven B. ho-F......................................Wellsfield
Brady, Kenneth SS.............................................Sand<br>
Bramwell, Isabel c-F........................................Logan
Brandt, Howard a-So........................................Salina
Branson, Edwin Robert SS.................................Columbia, Mo.
Brasher, Maesil e-F.............................................Delta
Brasher, Ruby ho-So............................................Huntington
Brenchley, Louis H. ed-So...............................Wellsfield
Brenchley, Myron Hall e-SS.................................Wellsfield
Brian, D. Fount as-S.........................................Lea<br>
Bryan, Dow Pace c-J......................................Provo<br>
Briggs, Mary La Vaun ed-So..............................Layton<br>
Briggs, Victor a-J...............................................Logan<br>
Briskay, Earl L c-So........................................Eureka<br>
Broberg, Paul e-J.............................................Logan<br>
Bronson, Veta ed-F.............................................Burley, Ida.<br>
Brooker, Dale e-F............................................Garden City<br>
Brown, Bessie SS..............................................Hyruma<br>
Brown, Hettie c-J.............................................Provo<br>
Brown, Jennie SS..............................................Hyrum
Brown, Keith a-S...............................................Grantsville
Brown, Leora c-So.............................................Logan
Brown, Mary c-F............................................Smithfield
Brown, Nellie E. SS........................................Salt Lake City
Browning, Geneva R. SS......................................Sugar, Ida.
Buchanan, O. W. c-J..........................................Palestine, Ida.
Buchanan, Ray a-F............................................Richfield
<table>
<thead>
<tr>
<th>List of Students</th>
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<td>Budge, Helen Shurtleff</td>
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<td>Budge, Omar S.</td>
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Cook, David Wm. c-So....................Logan
Cook, Gladie L. a-V......................Logan
Cook, Bryan a-J.........................Fielding
Cooley, Chas. B. SS......................Kaysville
Cooley, Maud ed-F......................Logan
Cooper, Alta ed-F.......................Wellsville
Corbett, Berniece R c-So................Logan
Corbridge, Leota ed-F...................Preston
Cordon, Thorne C. as-So................Rigby, Ida.
Corea, Hazel SS.........................Woodruff
Cornia, Helen SS........................Woodruff
Cornia, Ruth SS..........................Woodruff
Corry, Virgina as-J.....................Cedar City
Cottam, Moroni J. SS....................Provo
Coulam, Joseph SS.......................Lehi
Cowan, Max Leroy c-So..................Payson
Cowley, Jos. F. c-S........................?
 Cox, Donald M. a-so....................Manti
Crafts, Marjorie B. ed-F................Logan
Cragun, Orville K. as-So................Smithfield
Crandall, Roberts ed-So................Teton, Ida.
Crane, Grace H. c-S........................?
Crane, Clair Burdette SS...............Circleville
Cranney, Rie ed-F.......................Logan
Craneey, Russell G c-F..................Logan
Crapo, George La Vell ed-J..............Parker, Ida.
Critchfield, Lorna L SS.................Hollywood, Cal.
Crockett, Darrell W. e-F.................Logan
Crockett, Kenneth A. as-So................Preston, Ida.
Crumey, Samuel G. a-So................Heber
Crookston, Newell ed-F..................Logan
Crookston, R. Burns SS..................Logan
Cropley, Virgil Thomas ed-F.............Tremonton
Crossley, Ila ed-F.......................Central, Ida.
Crukshank, Donald B. c-S................Montpelier, Ida.
Crukshank, Geneviee c-F................Montpelier, Ida.
Cumings, Boyd S. a-H...................Preston
Cummins, Leona c-S.....................Brigham
Currie, Brentnall a-F...................Payson
Cutler, Cha. Wm. SS.....................Preston, Ida.
Dahl, Arthur D. a-F.....................Midvale
Dahle, Robert SS........................Logan
Daines, Homer C. SS.....................Logan
Daines, Robert Henry Jr. as-G-SS........Logan
Daines, Wanda ho-S-SS...................Logan
Dalley, Charles L. a-S................Summit
Dalton, Ambrose A. e-F................Minersville
Daniels, Clara ed-F......................Helper
Daniels, La Vern SS......................Ogden
Daniels, Shirlie K. SS..................Mt. Emmons
Daniels, Theo M. as-J..................Logan
Dansie, Jesse H. a-F..................Riveron
Darley, Arch E. SS........................Mt. Pleasant
Darley, Leon J. c-So....................Logan
Dastrup, Tehma SS........................Richfield
Davidson, Myrtle SS.....................Logan
Davies, Charles H. SS..................Logan
Davis, Earl Garrett a-S................Vernal
Davis, Chester V. SS...................Ruth, Nev.
Davis, Earl e-a-F........................Jerome, Ida.
Davis, Florence as-V...................Logan
Davis, H. Floyd c-S.....................Mesa, Ariz.
Davis, Lloyd N. a-S.....................Brigham
Davis, Orpha c-S........................Logan
Davis, Ruth ho-Lake ....................Brigham
Day, Joseph F. a-S.....................Draper
Dayton, John Wm. a-F...................Cokeville, Wyo.
Decker, John F. a-S....................Mesa, Ariz.
Decker, Joseph S a-S...................Mesa, Ariz.
Degn, Walt L. c-So......................Logan
Deming, Florence as-F..................Coalville
Dent, Arthur J. a-F.....................Ivins
Deschner, Fred E. as-So................Mt. Pleasant
Despain, Bert E. a-S....................Sandy
DeSparn, Owen a-So......................Venice
Dial, Willis A. SS.......................Logan
Dibble, J. Rex c-So.....................Logan
Dittmore, Marlin L. c-So................Pleasant Grove
Dixon, Allie SS..........................Logan
Dixon, Ruel S. SS.......................Pleasant Grove
Doney, Alfonza ho-So....................Franklin, Ida.
Dorenkempfer, J. ho-J..................Woburn, Minn.
Doty, Eda ed-So.........................Richmond
Dredge, Jesse as-V......................Malad
Drysdale, Elwood ed-F....................Logan
Dudley, Myrtle SS......................Logansville
Dunlap, Mary Y. L. as-So................Logan
Duncan, Homer a-F......................Fremont
Dunford, Marcel as-V...................Logan
Dunkley, Kate ed-F.....................Preston, Ida.
Dunkley, Mary ed-F.....................Preston, Ida.
Dunn, Beryl E. c-F.....................Logan
Dunn, Charles O. c-S..................Logan
Dunn, H. Joe ed-So.....................Preston
Dunn, Ione SS...........................Logan
Dunn, John Eldon as-So................Logan
Dunn, Lois SS...........................Logan
Dunn, Meryle c-So.......................Logan
Dutson, Earnest a-J....................Hinckley
Dutson, Rollo a-F.......................Hinckley
Earks, Melba as-So.....................Provo, Ida.
Easley, Stephen c-F.....................Laketown
Eccles, Willard L. c-So................Logan
Egbert, Dorothy Ann c-F................Logan
Egbert, Gardner e-So..................Grace, Ida.
Egbert, Margaret as-F..................Logan
Ellison, Newel G. a-So..................Logan
Ellison, Orrville L. as-So................Logan
Elliot, Ruth Agnes SS..................Pueblo, Colo.
Ellis, Martell a-So......................Pleasant Grove
Ellis, Wayne A. a-J....................Pleasant Grove
Engstrom, Uno e-F.......................Eureka
Ensign, Olive ed-S......................Salt Lake City
Evans, A. E. SS..........................Logan
Evans, Alton ed-F.....................Logan
Evans, Daisy Margaret as-S................Midvale
Evans, David a-So.......................Lehi
Evans, James E. ed-F...................Panguitch
Evans, Marjorie SS.....................Berkeley, Cal.
Evans, Peter E. c-S.....................Garland
Evans, Richard S. a-F..................Layton
Evans, Shirley J. as-F..................Salt Lake City
Ewer, Afton c-F.........................Logan
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Fairweather, Ellen J. ed-So...........Ogden
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Greaves, Donald K. e-So............. Preston, Ida.
Greaves, Ora G. c-J................. Preston, Ida.
Greaves, Perney ho-F................. Logan
Greene, Julia M. as-F.............. Logan
Greene, Laura C. as-So............. Logan
Greenwood, Raphael B. c-F........... Am. Fork
Griffin, Herbert T. as-So........... Ogden
Griffin, J. Marcus as-So............ Newton
Gunderson, Vern H. SS............. Mt. Pleasant
Gunnell, Ernest B. c-F.............. Richmond
Gunnell, Francis H. SS............. Wellsville
Gunnell, Merrill H. as-S........... Wellsville
Gunnell, Waldon as-J.............. Wellsville
Gunnell, Winston R. c-So........... Wellsville
Gustin, Dale a-F.................... Logan
Gustin, James L. a-F.............. Logan
Gutkie, Joseph W. c-F............. Smithfield
Guyman, Va Lera ed-F............. Brigham
Gyllenskog, J. Grant e-F............ Smithfield
Hackett, Robert SS................. Hammond, Ind.
Hackett, Grant a-So................. Vernal
Hafen, Robert W. c-So.............. Salt Lake City
Hafen, Leland SS................. St. George
Haggerty, G. P. ed-So.............. Cokeville, Wyo.
Haines, Hazel Marie SS............. Boise, Ida.
Hakken, Edward e-F................. Logan
Hale, John M. SS................. Blackfoot, Ida.
Hale, Sumner E. ed-G.............. Logan
Hall, Varian L. SS............... Ogden
Hall, Arthur L a-F................. Mapleton
Hall, Oretta ed-S-SS............... Logan
Halladay, Arrol J. a-F............. Circleville
Halversen, Leon c-S................. Logan
Hammer, Glenn L. as-F........... Providence
Hammerly, Fred SS................. Monticello, Wis.
Hammond, D. M. as-So.............. Providence
Hammond, W. W. SS............... Providence
Hansen, Allen a-So................. Richfield
Hansen, Ann SS............... Dayton, Ida.
Hansen, Anthon SS................. Brigham
Hansen, Cleve Henry a-F............ Newton
Hansen, Colline T. a-So........... Collinston
Hansen, Dorothy ed-F.............. Brigham
Hansen, Erma ed-F................. Tremonton
Hansen, Ferrel a-V................. Monroe
Hansen, Fred W. e-F............... Tremonton
Hansen, J. Deloy a-S.............. Richfield
Hansen, Loran c-F............... Lovell, Ida.
Hansen, Mitchell c-J.............. Tremonton
Hansen, Myron T. a-G.............. Collinston
Hansen, Othello Tanner SS......... Collinston
Hansen, Roma ho-J............... Brigham
Hansen, W Lamont a-V Hill Spg., Canada
Hansen, Wendell B. a-F........... Garland
Hansen, Wilford L. a-S............ Richfield
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Hanson, Leora M. SS.............. Tetonia, Ida.
Harding, Glen J. SS.............. Ogden
Harding, Margaret a-So SS........ Logan
Harding, Phebe E. ed-F.............. Willard

Halsey, Donald W. SS.............. Logan
Halsey, Erwin I. e-F............. Washington
Halsey, G. Orson a-F............. Kingsport, Va.
Halsey, O. Orson a-F............. Kingsport, Va.
Halsey, Robert S. SS.............. Logan
Halsey, W. Orson a-So............. Idaho Springs, Colo.
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Kendrick, Clarence e-F......... Providence
Kennard, Frank J. SS........... Brigham
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Kenner, Robert Lee ed-G......... Logan
Kennington, Larissa SS.......... Star Valley, Wyo.
Kent, Joy ed-S.................. Lewiston
Kenyon, Conrad M. a-V.......... Salt Lake City
Kerr, Robert M. SS............. Rexburg, Ida.
Kiburn, A. Golden a-S......... Logan
Kiburn, Hyrum Parley SS...... Morgan
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Kimball, Crozier R. a-F....... Draper
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Kincaid, Ralph G. ed-F......... Shirtliff, Ind.
King, Lorus O. a-F............. Garland
Kirchm, Phyllis M. a-F......... Lehi
Knight, G. F. SS............... Driggs, Ida.
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Knudsen, Lilly C. SS.......... Brigham
Kofoid, Dorothy ed-F.......... Preston, Ida.
Kofoed, Bernice ed-So.......... Preston, Ida.
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Kraus, Paul SS................ Kansas City, Mo.
Kreasean, Roy Edward as-So... Bingham
Kropfli, Edward S. e-F......... Logan
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Kunz, Maxine ed-F............. Montpelier, Ida.
Kunz, W. Howard as-So.......... Logan
Land, Lyndon a-F.............. Salt Lake City
Lamb, Delbert M. SS............ Hyde Park
Landsborough, Muriel SS...... Shoshone, Ida.
Laney, Genesta SS............. Ogden
Larsen, Angela SS.............. Logan
Larsen, Austin SS.............. Mantua
Larsen, Bernice SS............. Ogden
Larsen, Clyde e-F.............. Mapleton
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Larsen, Hyrum Fielding e-F.... Ashton, Ida.
Larsen, John Byron as-F....... Logan
Larsen, Juanita c-So........... Salt Lake City
Larsen, Le Mar c-F............. Logan
Larsen, Thysa Therese c-J..... Ashton, Ida.
Larsen, Ardis c-F.............. Smithfield
Larsen, Arnold Ray e-F......... Gunnison
Larsen, Douglas P. c-F......... Logan
Larsen, Everett H. e-F......... Logan
Larsen, Frank W. a-So.......... Logan
Larsen, Howard D. e-F......... Salt Lake City
Larsen, Kimber c-F............. Preston, Ida.
Larsen, L. Wayne, a-F.......... Garland
Larsen, La Dell M. a-So......... Logan
Larsen, Lavon Freeman e-V...... Logan
Larsen, Lynn A. e-F............ Logan
Larson, R. Vernon as-G......... Smithfield
Larson, Vaud E., e-S........... Santquin
Lau, Richard a-So............. Bountiful
Lauritzen, Arden e-S .......... Logan
Lauritzen, Cyril W. as-S........ Gooding, Ida.
Lauritzen, Verda M. ho-F........ Moroni
Law, Rozella SS................ Logan
Lawrence, George e-J.......... Shelley, Ida.
Layton, Myron M. c-S........... Kaysville
Layton, Thelma SS............. Safford, Ariz.
Leak, John a-F................ West Jordan
Lee, Inez ed-J.................. Hyde Park
Lehner, Virginia W. c-V......... Logan
Leigh, Helen SS................ Cedar City
Leigh, Rufus P. c-So........... Salt Lake City
Lenkersdorfer, Beryl A. ho-F.... Logan
Lenkersdorfer, Clara ho-S........ Logan
Lewis, Glenn as-F.............. Richfield
Lewis, Iris c-Es................. Logan
Lewis, John a-F................ Kamas
Lewis, Lenore ed-J-SS........ Spanish Fork
Lichfield, Robert C. SS........ Midvale
Liddle, Wallace J. e-G........ Logan
Lighty, Stanley J. SS........... Belle Fourche, S.D.
Lineljuskeen, La Verne ho-F...... Rexburg, Ida.
Lillywhite, Horol S. ed-F....... Brigham
Lillywhite, Ray L. ed-F........ Brigham
Lindquist, Kenneth O. c-S....... Logan
Linebaugh, Glade C. a-So........ Pleasant Grove
Linford, Cyril A. as-V........... Garland
Linford, Henry B. a-J........... Logan
Linford, Jean H. as-F........... Logan
Linford, La Rue H. e-F......... Logan
Linford, Leo H. as-G............ Logan
Littledeke, Ernest C. c-F....... Smithfield
Lloyd, Erma SS................ St. Anthony, Ida.
Lloyd, Lewis H. c-S........... Logan
Loertscher, David a-F........... Salt Lake City
Long, Rufus as-F.............. Franklin, Ida.
Loosle, John K. a-J........... Clarkston
Loosli, Adrieene ho-So......... Marysville, Ida.
Love, Eloise, Salt Lake City
Loveless, Florence P. ho-G....... Logan
Lowe, Jennie Zella ho-So....... Hooper
Lowe, Melvira e-F............. Monroe
Lowe, Reva ed-So.............. Franklin, Ida.
Lowe, Wayne H. a-F............. Willard
Lund, Ethel ed-G.............. Logan
Lund, Twilla ho-F.............. Logan
Lund, Yepna ed-G.............. Logan
Lundell, Harold M. SS........... Vernal
Lundquist, Harold Edwin as-F...... Smithfield
Lyman, La Mar a-S............. Parowan
Macdonald, Owen Grant c-So..... Mesa, Ariz.
Mack, Robert H. e-V........... Ogden
Maddock, Joseph H. c-F......... Logan
Madsen, Bertrude ho-J........ Manti
Madsen, Boyd W. a-F........... Mont Pleasant
Madsen, Don W. e-F............ Price
Madsen, Louis a-S.............. Salt Lake City
Madsen, Marcelle as-J........... Brigham
Magley, Sterling a-F........... Thornton, Ida.
Mann, F. W. SS................ St. Marys, Ida.
Manning, Margaret ed-F........ Smithfield
Manning, Nephi, a-So........... Ogden
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Nielson, Clayton ed-S ...............Lewiston
Nielson, Ella M. e-F ..................Brigham
Nielson, Emma h-O ........................Hyrum
Nielson, Harold M. a-V ..............Hyrum
Nielson, Hyrum C. e-F ...............Logan
Nielson, Lillie ed-G ...................Logan
Nielson, Walter A. e-J ..............Midway
Nielson, Ruby V. ed-J ................Logan
Nielson, Ted R. e-F ...................Calgary, Canada
Niles, Susie SS .......................Salt Lake City
Nishimoto, Earl S. as-J ..............Logan
Norris, Dwain W. a-F ................Randolph
North, Vera A. SS .....................Salt Lake City
Nyman, Kenneth ed-S ................No. Logan
Oberhansly, Verne SS .................Ogden
O'Brien, Alice SS .....................Butte, Mont.
O'dell, Wesley T. c-J ................Logan
Ogdens, Maude Ormond SS ...........Logan
Oldham, Edward P. ed-F ..............Paradise
Olson, May S. SS .....................Montpelier, Ida.
Olson, John J. SS .....................Brigham
Olson, Owen J. e-S ...................Logan
Olson, LeGrand G. a-S ...............Preston
Olson, Perry L. a-S ...................Moroni
Olson, Roland SS .....................Eureka
Olson, Ruth h-J ........................Logan
Olson, Walter S. SS ...................Iron River, Franklin
Olsson, Lillie SS .....................Ogden
Orser, Ellen A. h-O ..................Roosevelt
Ostler, Ned a-So ........................Nephi
Ottosen, Elden A. SS ................Manti
Overfelt, Helen ed-S ................Gunnison
Owen, Ethel L. a-So ..................Preston, Ida.
Owen, Horace a-V .....................Logan
Owen, J. Wallace a-Ss ................Logan
Oyler, Edna ed-F .....................Tremonton
Pack, Beissie T. ed-F ................Logan
Packard, P. G. ed-F ........................Springville
Packer, Lera ed-F ........................Franklin, Ida.
Paige, Calot Edwin SS .................Beaver
Paige, Elmer a-F .......................Beaver
Painter, Rose ed-F ....................Logan
Palmer, Evelyn A. SS ................Ogden
Palmer, Jos. E. SS ....................Kaysville
Pamphill, Rev. ed-S ..................Salt Lake City
Parker, Edward L. ed-S ...............Salt Lake City
Parker, Harrison G. ed-S ............Ogden
Parker, Laura Lee N. as-S ............Logan
Parker, Max. R. a-F ..................Joseph
Parker, Rulon Ren a-F ................Joseph
Parker, Willard SS ...................Westcliffe
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Pedersen, Thelma ed-J ...............Logan
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Petersen, Thornton W. c-So ..........Hyrum
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Phillips, Fred L. c-So ................Logan
Pickett, Louisa SS ...................Burley, Ida.
Picot, Geo. F. a-So ...................Logan
Pier, Robert A. SS ....................Belvidere, S. D.
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Wallis, Idaho M. c-V..................St. George
Waier, Henry G. SS ............... Holladay
Walters, Aileen M. as-F ............. Wells ville
Walters, Daniel M. c-F .............. Wells ville
Walther, Arthur H. a-F ............. Elko, Nev.
Walther, Louise W. ho-So ........... Elko, Nev.
Wanlass, Ralph as-F .................. Logan
Ward, Edward D. a-S ................. Willard
Ward, George a-Si .................. Malad, Ida.
Ward, Golden C. e-F .................. Malad
Ward, Mary C. i-F ..................... Malad
Ward, Owen SS ......................... Willard
Ward, Reuben A. a-J .................. Brigham
Wardell, Ima ho-So .................... Logan
Warren, Rex a-J ...................... Price
Washburn, Felicia M. as-V ........... Logan
Washburn, Newel A. J-SS ............. Logan
Watkins, De Los a-So ................. Vernal
Watkins, Edith Wm. SS ............... Logan
Watson, Margaret SS ................. Winnemucca, Nev.
Watt, Leland e-F ...................... Layton
Webb, Clarice as-Si ................... Logan
Webb, Delmar H. as-S ................ Rich mond
Webb, Ruth ed-F ....................... Rich mond
Welch, Juliar M. a-F ................. Cowley, Wyo.
Welch, Golden as-S ................... Rich mond
West, Allan M. e-So ................... Logan
West, Anna ho-SS ..................... Afton, Wyo.
West, Geneva R. c-So ................ Jordan
West, Ray B. Jr. as-So ............... Logan
Westenskow, Elden a-S ................ Manti
Westenskow, Owen F. a-J ............. Manti
Weston, Milton B. a-So ................ Laketown
Weston, Ramona as-J .................. Laketown
Westover, Arus J. as-F ............... Logan
Whatcott, C. L. ed-J .................. Logan
Wheeler, Clyde as-F .................. Logan
Wheeler, Thora a-J ................... Lewiston
Whitaker, Bruce as-F ................. Kaysv ille W.
White, Elmer E. c-V ................... Ogden
White, Ida T. SS ....................... Ogden
White, Ira S. a-So ................... Vernal
White, June H. as-So ................ Paradise
Whitehouse, Franklin c-So .......... Tooele
Whitesides, Ina B. ed-So ............. Layton
Whitesides, Kenner M. e-V .......... Layton
Whitmore, James M. SS ............... Midvale
Whorham, George a-G-SS ............. Beaver
Wight, Francessa ed-F ............... Tremonton
Wight, Harvey J. e-V .................. Brigham
Wilcox, Elmer W. a-F ................. Syracuse
Wilkins, Delmer W. a-So ............. Hinckley
Williams, Alden E. SS ............... Burley, Ida.
Williams, Wesley L. c-F ............. Clifton, Ida.
Williams, Catherine SS ................ Bingham
Williams, D. E. SS .................... Price
Williams, Dona ed-So ................. Richmond
Williams, Jack V. SS .................. Malad
Williams, John T. a-So ............... Thatcher
Williams, Wesley L. c-F ............. Malad
Willie, Vernal SS ....................... Logan
Willis, Pearl SS ....................... Mesa, Ariz.
Wilson, Charles H. a-SS ............. Worland, Wyo.
Wilson, Edna A. as-S-SS ............. Logan
Wilson, Elda ho-So ................... Ogden
Wilson, Harriet SS .................... Fallon, Nev.
Wilson, Le Moyne a-G ................. Logan
Wilson, Marguerite J. SS ........... Salt Lake City
Wilson, Stanley SS ................... Payson
Wilson, Tyra ed-F ..................... Logan
Wilson, Verla ed-J ................... Logan
Wilson, Wiburn J. SS ................. Logan
Winfield, Evan H. as-V ............. New York, N. Y.
Wink, Fred a-V ....................... Salt Lake City
Winston, Anton G. a-V ............... Rich mond
Winkler, Ella C. ed-So ............... Ogden
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Winn, Elva SS ......................... Smithfield
Winn, Jack C. a-J ..................... Nephi
Wiser, Ruth ed-So ..................... Logan
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Wolfe, Archie SS ...................... Etna, Wyo.
Wood, June ed-F ..................... Hold en
Wood, Lucile A. a-J .................. Cedar City
Woodburry, Anna ho-So .............. Weston, Ida.
Wood bury, David O. SS .............. St. George
Woodhead, Veen M. c-F ............... Kenilworth
Woodland, Wm. Wesley as-F .......... Arimo, Ida.
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